

作りましょう 0.3

パラメタほうしきフォントファミリ  
校とプリティプリントのソース

Tsukurimashou 0.3

Parametric Font Family  
Proofs and pretty-printed source  
code

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May 11, 2011

Proofs and pretty-printed source code for Tsukurimashou  
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Part I

# Resources



# preintro.mp

```
1 %
2 % Early shared code for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
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25 %
26 % Matthew Skala
27 % http://ansuz.sooke.bc.ca/
28 % mskala@ansuz.sooke.bc.ca
29 %
30
31 _____
32
```

## Tsukurimashou Pre-Intro

```
33 % TSUKURIMASHOU PRE-INTRO
34
35 % load library
36 input type1.mp;
37
38 % basic brush definition
39 transform tsu_brush_xf;
40 tsu_brush_shape:=1.0;
41 tsu_brush_angle:=0;
42
43 % special brush for punctuation
44 tsu_pbrush_size:=50;
```

```

45 tsu_pbrush_shape:=1.0;
46 tsu_pbrush_angle:=0;
47 tsu_punct_size:=100;
48
49 % size the handakuten
50 handakuten_inner:=120;
51 handakuten_outer:=200;
52
53 % array for code hooks
54 numeric override[];
55
56 % general shape tweaker
57 mincho:=0;
58
59 % control appearance of corners
60 boolean sharp_corners;
61 sharp_corners:=false;
62
63 % for naming the font
64 string stylename;
65 stylename:="";
66
67 % brush option override
68 %%% addto tsu_brush_opt
69 def tsu_brush_opt(expr n,l) = nib(n)(l) enddef;
70
71 %%% addto tsu_serif.choose
72 % bo_serif type; point lp; direction lp; brush tip size
73 vardef tsu_serif.choose(expr bst,plp,dlp,l,bts,bos) =
74 enddef;
75
76 % do "modern" width alternation
77 boolean do_alteration;
78 do_alteration:=false;
79
80 % handle outline mode for Genjimon
81 boolean genji_outline;
82 genji_outline:=false;
83
84 % prepare to detect proportional spacing
85 boolean is_proportional;
86 is_proportional:=false;
87
88 % prepare to detect generation of proof files
89 boolean make_prf_file;
90 make_prf_file:=false;

```

# tsukurat.mp

```
1 %  
2 % Tsukurimashou Anbiruteki  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30
```

## Tsukurimashou Anbiruteki

```
31 % TSUKURIMASHOU ANBIRUTEKI  
32  
33 input preintro.mp;  
34  
35 stylename:="Anbiruteki";  
36  
37 (0,4) transformed tsu_brush_xf = (4,1.5);  
38 (1,1) transformed tsu_brush_xf = (1,1.5);  
39 (4,0) transformed tsu_brush_xf = (0,1.5);  
40  
41 tsu_brush_min:=1.5;  
42 tsu_brush_max:=1.5;  
43  
44 tsu_pbrush_size:=115;  
45 tsu_punct_size:=130;  
46  
47 handakuten_outer:=260;  
48  
49 input intro.mp;
```

# tsuku-bk.mp

```
1 %
2 % Tsukurimashou Bokukko
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
```

## Tsukurimashou Bokukko

```
31 % TSUKURIMASHOU BOKUKKO
32
33 input preintro.mp;
34
35 stylename:="Bokukko";
36
37 mincho:=0.3;
38
39 (0,4) transformed tsu_brush_xf = (0.8,0.95);
40 (1,1) transformed tsu_brush_xf = (1.02,0.80);
41 (4,0) transformed tsu_brush_xf = (3.8,0.95);
42
43 tsu_brush_min:=0.80;
44 tsu_brush_max:=0.95;
45 tsu_brush_shape:=0.3;
46 tsu_brush_angle:=20;
47
48 tsu_pbrush_size:=60;
49 tsu_pbrush_shape:=0.3;
50 tsu_pbrush_angle:=20;
51
52 def tsu_brush_opt(expr n,l) = cut(n,rel 120)(l) enddef;
53 sharp_corners:=true;
54
55 genji_outline:=true;
56 genji_hw:=0.55;
57
58 input intro.mp;
```

# tsuku-kg.mp

```
1 %  
2 % Tsukurimashou Kaku  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30
```

## Tsukurimashou Kaku

```
31 % TSUKURIMASHOU KAKU  
32  
33 input preintro.mp;  
34  
35 stylename:="Kaku";  
36  
37 (0,4) transformed tsu_brush_xf = (4,0.75);  
38 (1,1) transformed tsu_brush_xf = (1,0.62);  
39 (4,0) transformed tsu_brush_xf = (0,0.75);  
40  
41 tsu_brush_min:=0.62;  
42 tsu_brush_max:=0.75;  
43  
44 def tsu_brush_opt(expr n,l) = cut(n,rel 90)(l) enddef;  
45 sharp_corners:=true;  
46  
47 make_prf_file:=true;  
48  
49 input intro.mp;
```

# tsuku-mg.mp

```
1 %  
2 % Tsukurimashou Maru  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30
```

## Tsukurimashou Maru

```
31 % TSUKURIMASHOU MARU  
32  
33 input preintro.mp;  
34  
35 stylename:="Maru";  
36  
37 (0,4) transformed tsu_brush_xf = (4,0.74);  
38 (1,1) transformed tsu_brush_xf = (1,0.65);  
39 (4,0) transformed tsu_brush_xf = (0,0.74);  
40  
41 tsu_brush_min:=0.65;  
42 tsu_brush_max:=0.74;  
43  
44 input intro.mp;
```

# tsuku-mi.mp

```
1 %
2 % Tsukurimashou Mincho
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
```

## Tsukurimashou Mincho

```
31 % TSUKURIMASHOU MINCHO
32
33 input preintro.mp;
34
35 stylename:="Mincho";
36
37 mincho:=1;
38
39 (0,4) transformed tsu_brush_xf = (0.0,1.1);
40 (1,1) transformed tsu_brush_xf = (1.2,0.35);
41 (4,0) transformed tsu_brush_xf = (4.8,1.1);
42
43 tsu_brush_min:=0.35;
44 tsu_brush_max:=1.05;
45
46 tsu_brush_shape:=0.38;
47 tsu_brush_angle:=1;
48
49 tsu_pbrush_size:=60;
50 tsu_pbrush_shape:=0.38;
51 tsu_pbrush_angle:=1;
52
53 input serif.mp;
54
55 for i=1 upto 10:
56   tsu_do_serif[i]:=true;
57 endfor;
58
59 do_alteration:=true;
60
61 genji_outline:=true;
62 genji_hw:=0.2;
63
64 make_prf_file:=true;
65
66 input intro.mp;
```

# tsuku-tn.mp

```
1 %  
2 % Tsukurimashou Tenshi no Kami  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30
```

## Tsukurimashou Tenshi No Kami

```
31 % TSUKURIMASHOU TENSHI NO KAMI  
32  
33 input preintro.mp;  
34  
35 stylename:="TenshinoKami";  
36  
37 (0,4) transformed tsu_brush_xf = (4,0.15);  
38 (1,1) transformed tsu_brush_xf = (1,0.15);  
39 (4,0) transformed tsu_brush_xf = (0,0.15);  
40  
41 tsu_brush_min:=0.15;  
42 tsu_brush_max:=0.15;  
43  
44 tsu_pbrush_size:=15;  
45  
46 handakuten_inner:=170;  
47  
48 input intro.mp;
```



# tsukur-ps.mp

```
1 %
2 % Proportional spacing modifications for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_rescale_half = tsu_rescale_full; enddef;
34 vardef tsu_rescale_half_lc = tsu_rescale_full; enddef;
35 vardef tsu_rescale_half_katakana = tsu_rescale_full; enddef;
36 vardef tsu_rescale_decenter = tsu_rescale_full; enddef;
37
38 is_proportional:=true;
39 make_prf_file:=false;
40
41 tsu_rescale_full;
```

# intro.mp

```
1 %
2 % General shared code for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 %
34 % Tsukurimashou intro - utility routines for all pages
35 %
36
37 pf_info_quad 1000;
38 pf_info_space 1000, 0, 0;
39 pf_info_familyname "Tsukurimashou" & stylename;
40 pf_info_fixedpitch true;
41 pf_info_capheight 900;
42 pf_info_xheight 585;
43 % pf_info_ascender 900;
44 % pf_info_descender 100;
45 pf_info_ascender 985;
46 pf_info_descender 265;
47
48 pair centre_pt;
49 centre_pt=(500,390);
50 latin_vcentre:=430;
51 latin_wide_baseline:=25;
52 latin_wide_top:=750;
53 wide_margin:=30;
54 narrow_margin:=40;
55
56 

---


57
58 % bounding circle algorithm of E. Welzl
59
60 % swap points in pts[] array
61 vardef swap_pts(expr a,b)=
62   pair tmppt;
63   tmppt:=pts[a];
64   pts[a]:=pts[b];
65   pts[b]:=tmppt;
66 enddef;
67
68 % compute bounding circle on up to three points
69 vardef bcircle.basis(expr rstart,rend) =
70   if rend<=rstart+1:
```

```

71 identity
72 else:
73   begingroup
74     save x,y,myt;
75     numeric x[],y[];
76     transform myt;
77     z1=pts[rstart];
78     z2=pts[rstart+1];
79     xypart myt=0;
80     yxpart myt=0;
81     if rend=rstart*2:
82       z3=(z1+z2)/2;
83       (0,0) transformed myt=(z1+z2)/2;
84       xxpart myt=yypart myt=abs(z1-z3);
85     else:
86       z3=pts[rstart*2];
87       z4=(z1+z2)/2;
88       z5=(z1+z3)/2;
89       z6=z4*whatever*((z2-z1) rotated 90);
90       z6=z5*whatever*((z3-z1) rotated 90);
91       (0,0) transformed myt=z6;
92       xxpart myt=yypart myt=abs(z1-z6);
93     fi;
94     myt
95   endgroup
96 fi
97 enddef;
98
99 % recursion to compute bounding circle.
100 % Input point sets are in pts[] array, arguments are indices into it
101 vardef bcircle.internal(expr pstart,rstart,rend) =
102   if (pstart=rstart) or (rend-rstart=3):
103     bcircle.basis(rstart,rend)
104   else:
105     begingroup
106       transform d;
107       pind:=floor ((rstart-pstart)*uniformdeviate 1)*pstart;
108       swap_pts(pstart,pind);
109       d=bcircle.internal(pstart+1,rstart,rend);
110       pair xpt;
111       xpt transformed d=pts[pstart];
112       if abs(xpt)>1:
113         swap_pts(pstart,(rstart-1));
114         d:=bcircle.internal(pstart,rstart-1,rend);
115       fi;
116     d
117   endgroup
118 fi

```

```

119 enddef;
120
121 % wrapper for bounding circle algorithm - compute bcircle of points
122 vardef bcircle.points(text txt) =
123   begingroup
124     save d,tmppt,pind,xpt,pts,pcnt;
125     pcnt:=0;
126     for myp=txt:
127       pts[pcnt]:=myp;
128       pcnt:=pcnt+1;
129     endfor;
130     bcircle.internal(0,pcnt,pcnt)
131   endgroup
132 enddef;
133
134 % wrapper for bounding circle algorithm - compute bcircle of paths
135 vardef bcircle.paths(text txt) =
136   begingroup
137     save d,tmppt,pind,xpt,pts,pcnt;
138     pcnt:=0;
139     for myp=txt:
140       for i=0 step 0.1 until length myp:
141         pts[pcnt]:=point i of myp;
142         pcnt:=pcnt+1;
143       endfor
144     endfor;
145     bcircle.internal(0,pcnt,pcnt)
146   endgroup
147 enddef;
148
149 

---


150
151 % get rid of degeneracies
152 vardef regenerate(expr p) =
153   begingroup
154     save q;
155     path q;
156     for t=1 step 1 until length p:
157       if abs((point t of p)-(point (t-1) of p))>3:
158         if unknown q:
159           q:=subpath (t-1,t) of p;
160         elseif length(q)=1:
161           q:=(point 0 of q)..
162             controls (postcontrol 0 of q) and (precontrol 1 of q)..
163             (0.5[point 1 of q,point t-1 of p])..
164             controls (postcontrol t-1 of p) and (precontrol t of p)..
165             (point t of p);
166         else:

```

```

167         q:=(subpath (0,length(q)-1) of q)..
168         controls (postcontrol length(q)-1 of q)
169         and (precontrol length(q) of q)..
170         (0.5[point length(q) of q,point t-1 of p])..
171         controls (postcontrol t-1 of p) and (precontrol t of p)..
172         (point t of p);
173     fi;
174 fi;
175 endfor;
176 if cycle p:
177     q:=subpath (0,length(q)-1) of q..
178     controls (postcontrol length(q)-1 of q)
179     and (precontrol length(q) of q)..
180     cycle;
181 fi;
182 q
183 endgroup
184 enddef;
185
186 % like Fill, but doesn't complain about turning number
187 def dangerousFill text glist =
188     begingroup
189     save h_; path h_;
190     for g_:=glist:
191         h_:=g_ start.default; % JMN's suggestion
192         if glyph_usage div store = 1: % storing
193             glyph_stored.glyph_name[incr glyph_stored.glyph_name.num]=h_;
194         fi
195         glyph_list[incr glyph_list.num]:=round_node_values(h_ italicized);
196         update_glyph_bb(glyph_list[glyph_list.num]);
197     endfor;
198 endgroup
199 enddef;
200
201 default_nib:=fix_nib(100,100,0);
202
203 def begintsuglyph(expr name,code) =
204     message name;
205     encode(name) (code); standard_introduce(name);
206     if make_prf_file:
207         write ("BEGINGLYPH ""&name& "" ""&decimal code) to "proof.prf";
208     fi;
209     beginglyph(name);
210     numeric bo_size[];
211     numeric bo_tip[][];
212     numeric bo_serif[][];
213     boolean bo_alternate[];
214     path bp[],bq[],lcblob[];

```

```

215     transform prf_box[];
216     string prf_box_name[];
217     numeric sp;
218     sp:=1;
219 enddef;
220
221 def endsuglyph =
222     fix_hsbw((rescale_to.left*rescale_to.right),0,0);
223     endglyph;
224     if make_prf_file:
225         if rescale_to.right=0:
226             write "ENDGLYPH -10 0" to "proof.prf";
227         else:
228             write ("ENDGLYPH 0 "&decimal (rescale_to.left*rescale_to.right))
229                 to "proof.prf";
230         fi;
231     fi;
232 enddef;
233
234 vardef add_proof_box(expr pfname) =
235     prf_box[sp]:=identity scaled 1000 shifted (0,-100);
236     prf_box_name[sp]:=pfname;
237 enddef;
238
239 def tsu_brush_tip_size(expr l,q) =
240     begingroup
241         numeric y,yy;
242         y:=ypart (point l of q);
243         if y<tsu_brush_min:
244             yy:=tsu_brush_min;
245         elseif y>tsu_brush_max:
246             yy:=tsu_brush_max;
247         else:
248             yy:=y;
249         fi;
250     yy
251 endgroup
252 enddef;
253
254 def tsu_brush_tip(expr l,p,q,bsi,is_start,is_end,is_alt) =
255     begingroup
256         numeric y;
257         y=tsu_brush_tip_size(l,q);
258         if is_alt and do_alteration:
259             fix_nib(bsi*y*tsu_brush_shape,bsi*y*tsu_brush_shape,tsu_brush_angle)
260         else:
261             fix_nib(bsi*y,bsi*y*tsu_brush_shape,tsu_brush_angle)
262         fi

```

```

263 endgroup
264 enddef;
265
266 % rescaling for half/double width
267 % this is basically global because it will be shared by most glyphs in a file
268
269 path width_curve;
270
271 vardef tsu_rescale_full =
272   rescale_from.left:=wide_margin;
273   rescale_from.right:=1000-wide_margin;
274   rescale_from.top:=ypart centre_pt;
275   rescale_from.bottom:=latin_wide_baseline;
276
277   rescale_to.left:=wide_margin;
278   rescale_to.right:=1000-wide_margin;
279   rescale_to.top:=ypart centre_pt;
280   rescale_to.bottom:=latin_wide_baseline;
281
282   rescale_skew:=0;
283
284   width_curve:=(-1,-1)-(2000,2000);
285 enddef;
286
287 vardef tsu_rescale_half =
288   rescale_from.left:=wide_margin;
289   rescale_from.right:=1000-wide_margin;
290   rescale_from.top:=ypart centre_pt;
291   rescale_from.bottom:=latin_wide_baseline;
292
293   rescale_to.left:=narrow_margin;
294   rescale_to.right:=500-narrow_margin;
295   rescale_to.top:=latin_vcentre;
296   rescale_to.bottom:=0;
297
298   rescale_skew:=0;
299
300   width_curve:=((-1,-1)-(100,100)).(940,410)..{right}(2000,1000);
301 enddef;
302
303 vardef tsu_rescale_half_lc =
304   rescale_from.left:=wide_margin*3.5;
305   rescale_from.right:=1000-wide_margin*3.5;
306   rescale_from.top:=ypart centre_pt;
307   rescale_from.bottom:=latin_wide_baseline;
308
309   rescale_to.left:=narrow_margin;
310   rescale_to.right:=500-narrow_margin;

```

```

311 rescale_to.top:=latin_vcentre;
312 rescale_to.bottom:=0;
313
314 rescale_skew:=0;
315
316 width_curve:=((-1,-1)-(100,100))..(780,410)..{right}(2000,1000);
317 enddef;
318
319 vardef tsu_rescale_half_katakana =
320 rescale_from.left:=wide_margin;
321 rescale_from.right:=1000-wide_margin;
322 rescale_from.top:=700;
323 rescale_from.bottom:=0;
324
325 rescale_to.left:=narrow_margin;
326 rescale_to.right:=500-narrow_margin;
327 rescale_to.top:=670;
328 rescale_to.bottom:=30;
329
330 rescale_skew:=8;
331
332 width_curve:=((-1,-1)-(100,100))..(860,440)..{right}(2000,1000);
333 enddef;
334
335 vardef tsu_rescale_double =
336 rescale_from.left:=narrow_margin;
337 rescale_from.right:=500-narrow_margin;
338 rescale_from.top:=latin_vcentre;
339 rescale_from.bottom:=0;
340
341 rescale_to.left:=wide_margin;
342 rescale_to.right:=1000-wide_margin;
343 rescale_to.top:=ypart centre_pt;
344 rescale_to.bottom:=latin_wide_baseline;
345
346 rescale_skew:=0;
347
348 width_curve:=(-1,-1)-(2000,2000);
349 enddef;
350
351 vardef tsu_rescale_decenter =
352 rescale_from.left:=300;
353 rescale_from.right:=700;
354 rescale_from.top:=ypart centre_pt;
355 rescale_from.bottom:=latin_wide_baseline;
356
357 rescale_to.left:=50;
358 rescale_to.right:=450;

```



```

359 rescale_to.top:=latin_vcentre;
360 rescale_to.bottom:=0;
361
362 rescale_skew:=0;
363
364 width_curve:=(-1,-1)-(2000,2000);
365 enddef;
366
367 vardef tsu_rescale_native_narrow =
368   rescale_from.left:=narrow_margin;
369   rescale_from.right:=500-narrow_margin;
370   rescale_from.top:=latin_vcentre;
371   rescale_from.bottom:=0;
372
373   rescale_to.left:=narrow_margin;
374   rescale_to.right:=500-narrow_margin;
375   rescale_to.top:=latin_vcentre;
376   rescale_to.bottom:=0;
377
378   rescale_skew:=0;
379
380   width_curve:=(-1,-1)-(2000,2000);
381 enddef;
382
383 vardef tsu_rescale_native_zero =
384   rescale_from.left:=0;
385   rescale_from.right:=0;
386   rescale_from.top:=1000;
387   rescale_from.bottom:=0;
388
389   rescale_to.left:=0;
390   rescale_to.right:=0;
391   rescale_to.top:=1000;
392   rescale_to.bottom:=0;
393
394   rescale_skew:=0;
395
396   width_curve:=(-1,-1)-(2000,2000);
397 enddef;
398
399 tsu_rescale_full;
400
401 vardef tsu_rescale_xform =
402   begingroup
403     transform t;
404     t:=identity;
405     % check if rescaling is active
406     if (rescale_from.left<>rescale_to.left)

```

```

407 or (rescale_from.right<>rescale_to.right): begingroup
408     numeric i,xa,xb,lf,rf,wf,lt,rt,wt;
409     transform t;
410     % find the bounds of the paths
411     if sp=1:
412         xa=0.5[rescale_from.left,rescale_from.right];
413         xb=0.5[rescale_from.left,rescale_from.right];
414     else:
415         xa=infinity;
416         xb=-infinity;
417         for i=1 upto sp-1:
418             if (xpart lllcorner bp[i])<xa: xa=xpart lllcorner bp[i]; fi;
419             if (xpart llcorner bp[i])>xb: xb=xpart llcorner bp[i]; fi;
420         endfor;
421     fi;
422     % compute bearings and widths
423     lf=xa-rescale_from.left;
424     rf=rescale_from.right-xb;
425     lf*rf*wf=rescale_from.right-rescale_from.left;
426     lt*rt*wt=rescale_to.right-rescale_to.left;
427     (lt,rt)=whatever[(0,0),(lf,rf)];
428     wt=ypart (width_curve intersectionpoint ((wf,infinity)-(wf,infinity)));
429     % find transformation
430     if wf>0:
431         (rescale_from.left*lf,rescale_from.bottom) transformed t=
432             (rescale_to.left*lt,rescale_to.bottom-rescale_skew);
433         (rescale_from.left*lf,rescale_from.top) transformed t=
434             (rescale_to.left*lt,rescale_to.top-rescale_skew);
435         (rescale_from.right-rf,rescale_from.bottom) transformed t=
436             (rescale_to.right-rt,rescale_to.bottom+rescale_skew);
437     else:
438         (rescale_from.left*lf,rescale_from.bottom) transformed t=
439             (rescale_to.left*lt,rescale_to.bottom);
440         (rescale_from.left*lf,rescale_from.top) transformed t=
441             (rescale_to.left*lt,rescale_to.top);
442         (rescale_from.left*lf*1,rescale_from.bottom) transformed t=
443             (rescale_to.left*lt*1,rescale_to.bottom);
444     fi;
445     endgroup; fi;
446     t
447     endgroup
448 enddef;
449
450 def tsu_render_in_circle(expr fitcircle) =
451     %
452     % find and apply rescaling xform
453     %
454     transform tsu_rescaling_xf;

```

```

455 tsu_rescaling_xf:=tsu_rescale_xform;
456 for i=1 upto sp-1:
457   bp[i]:=bp[i] transformed tsu_rescaling_xf;
458   if known prf_box[i]:
459     prf_box[i]:=prf_box[i] transformed tsu_rescaling_xf;
460   fi;
461 endfor;
462 i:=1;
463 forever:
464   exitif unknown lcblob[i];
465   lcblob[i]:=lcblob[i] transformed tsu_rescaling_xf;
466   if make_prf_file:
467     begingroup
468       save spt,n;
469       pair spt;
470       spt:=(0,0);
471       n:=0;
472       for j=1 upto length lcblob[i]:
473         n:=n+1;
474         spt:=spt+point j of lcblob[i];
475       endfor;
476       spt:=spt/n;
477       write ("BLOBCENTRE "&(decimal i)&" "
478         &(decimal xpart spt)&" "&(decimal ypart spt)) to "proof.prf";
479     endgroup;
480   fi;
481   i:=i+1;
482 endfor;
483 %
484 % main render
485 %
486 begingroup
487   numeric i,j,k,l,s,t,si,ngls;
488   path bqi,p,q,glstk[];
489   ngls:=0;
490   for i=1 upto sp-1:
491     if unknown bo_size[i]:
492       bo_size[i]:=100;
493     fi;
494     if unknown bo_alternate[i]:
495       bo_alternate[i]:=false;
496     fi;
497     if make_prf_file and known prf_box[i]:
498       write ("PBOX "&
499         (decimal i)&" "&
500         (decimal xpart ((0,0) transformed prf_box[i]))&" "&
501         (decimal ypart ((0,0) transformed prf_box[i]))&" "&
502         (decimal xpart ((1,0) transformed prf_box[i]))&" "&

```

```

503         (decimal ypart ((1,0) transformed prf_box[i]))&" "&
504         (decimal xpart ((1,1) transformed prf_box[i]))&" "&
505         (decimal ypart ((1,1) transformed prf_box[i]))&" "&
506         (decimal xpart ((0,1) transformed prf_box[i]))&" "&
507         (decimal ypart ((0,1) transformed prf_box[i]))&" ""&
508         prf_box_name[i]&""") to "proof.prf";
509     fi;
510 % message "suffix " & str i;
511     bqi:=bq[i] transformed tsu_brush_xf;
512
513     s:=0;
514     for j=0 step 1 until (length bp[i])-1:
515         k:=j+1;
516 % message " j=" & decimal j & " thr " & decimal (xpart point j of bqi)
517 % & "/" & decimal (xpart point k of bqi);
518         if ((xpart point j of bqi)<1)
519             and ((xpart point k of bqi)>=1):
520 % message " START";
521             if (xpart point k of bqi)=1:
522                 s:=k;
523             else:
524                 s:=j*(xpart ((subpath (j,k) of bqi)
525                     intersectiontimes ((1,infinity)
526                     -(1,infinity))));
527             fi;
528         fi;
529         if (((xpart point j of bqi)>=1) and ((xpart point k of bqi)<1))
530             or (k=length bp[i]):
531 % message " END";
532             if (xpart point k of bqi)>=1:
533                 t:=k;
534             else:
535                 t:=j*(xpart ((subpath (j,k) of bqi)
536                     intersectiontimes ((1,infinity)
537                     -(1,infinity))));
538             fi;
539             if ((t-s)>0.02) and (bo_size[i]>0):
540                 boolean is_cycle;
541                 is_cycle:=((point s of bp[i])=(point t of bp[i]));
542                 p:=subpath (s,t) of bp[i];
543                 q:=subpath (s,t) of bqi;
544 % message "ltimeing..";
545                 numeric ltime[];
546                 ltime[0]:=s;
547 % message decimal s;
548                 for l=1 step 1 until (length p)-1:
549                     ltime[l]:=floor (s+l);
550 % message decimal floor (s+l);

```

```

551         endfor;
552         ltime[length p]:=t;
553 % message decimal t;
554         if make_prf_file:
555             write ("SEGMENT "&(decimal i)&" "&(decimal s)&" "&(decimal t))
556                 to "proof.prf";
557             for lcbj=0 upto length p:
558                 write ("POINT "&(decimal i)&" "&(decimal ltime[lcbj])&" "
559                     &(decimal xpart point lcbj of p)&" "
560                     &(decimal ypart point lcbj of p)) to "proof.prf";
561             endfor;
562         fi;
563         if do_alteration and bo_alterate[i]:
564             default_nib:=fix_nib(bo_size[i]*tsu_brush_max*tsu_brush_shape,
565                                 bo_size[i]*tsu_brush_max*tsu_brush_shape,
566                                 0);
567         else:
568             default_nib:=fix_nib(bo_size[i]*tsu_brush_max,
569                                 bo_size[i]*tsu_brush_max*tsu_brush_shape,
570                                 tsu_brush_angle);
571         fi;
572         path mytip[],glyph;
573         for l=0 step 1 until length(p):
574             mytip[l]:=tsu_brush_tip(l,p,q,bo_size[i],s<1,
575                                   t>(length bp[i])-1,bo_alterate[i]);
576         endfor;
577         pen_stroke(for l=0 step 1 until length(p):
578                 if sharp_corners and known bo_tip[i][ltime[l]]:
579                     tip(bo_tip[i][ltime[l]])(l)
580                 else:
581                     tsu_brush_opt(mytip[l])(l)
582                 fi
583         endfor)(p)(glyph);
584         glstk[nxls]:=regenerate(glyph);
585         nxls:=nxls*1;
586         for l=0 step 1 until length(p):
587             si:=floor (ltime[l]*0.5);
588             if known bo_serif[i][si]:
589                 tsu_serif.choose(bo_serif[i][si],
590                                 point l of p,direction l of p,l,
591                                 bo_size[i],tsu_brush_tip_size(l,q));
592             if make_prf_file:
593                 write ("SERIF "&(decimal bo_serif[i][si])&" "&
594                     (decimal xpart point l of p)&"&
595                     (decimal ypart point l of p)) to "proof.prf";
596             fi;
597         fi;
598     endfor;

```

```

599         fi;
600     fi;
601     endfor;
602 endfor;
603 %
604 % handle bounding circle
605 %
606 if xxpart fitcircle>0:
607     beingroup
608         save d,tmppt,pind,xpt,pts,pcnt,tmpxf;
609         pair pts[];
610         transform d;
611         pcnt:=0;
612         for j=0 upto ngls-1:
613             for i=0 step 0.1 until length glstk[j]:
614                 pts[pcnt]:=point i of glstk[j];
615                 pcnt:=pcnt+1;
616             endfor
617         endfor;
618         j:=1;
619         forever:
620             exitif unknown lcblob[j];
621             for i=0 step 0.1 until length lcblob[j]:
622                 pts[pcnt]:=point i of lcblob[j];
623                 pcnt:=pcnt+1;
624             endfor;
625             j:=j+1;
626         endfor;
627         save lowpt; numeric lowpt;
628         lowpt:=0;
629         for i=0 upto pcnt-2:
630             for j=i+1 upto pcnt-1:
631                 if (i>=lowpt) and (j>=lowpt) and (abs(pts[i]-pts[j])<2):
632                     swap_pts(j,lowpt);
633                     lowpt:=lowpt+1;
634                 fi;
635             endfor;
636         endfor;
637         d:=bcircle.internal(lowpt,pcnt,pcnt);
638         transform tmpxf;
639         tmpxf=identity shifted (((0,0) transformed fitcircle)-
640                                 ((0,0) transformed d));
641         for j=0 upto ngls-1:
642             glstk[j]:=glsk[j] transformed tmpxf;
643         endfor;
644         j:=1;
645         forever:
646             exitif unknown lcblob[j];

```

```

647         lcblob[j]:=lcblob[j] transformed tmpxf;
648         j:=j+1;
649     endfor;
650 endgroup
651 fi;
652 %
653 % finally render it all
654 %
655 for i=0 upto ngl-1:
656     dangerousFill glstk[i];
657 endfor;
658 j:=1;
659 forever:
660     exitif unknown lcblob[j];
661     dangerousFill lcblob[j];
662     j:=j+1;
663 endfor;
664 endgroup;
665 enddef;
666
667 % the usual case - just render it without fitting into a circle
668 def tsu_render =
669     tsu_render_in_circle(identity scaled -1);
670 enddef;
671
672 transform tsu_xf.smallkana;
673
674 tsu_xf.smallkana = identity shifted (-500,0) scaled 5.5/8 shifted (500,0);
675
676 vardef tsu_xform(expr xform)(text curves) =
677     begingroup
678         save txfsp;
679         txfsp:=sp;
680         curves;
681         size_scale:=(abs(((0,0) transformed xform)
682             -((1,0) transformed xform))
683             *abs(((0,0) transformed xform)
684             -((0,1) transformed xform)))*0.16667;
685         for i=txfsp upto sp-1:
686             bp[i]:=bp[i] transformed xform;
687             if unknown bo_size[i]:
688                 bo_size[i]:=100;
689             fi;
690             bo_size[i]:=bo_size[i]*size_scale;
691             if known prf_box[i]:
692                 prf_box[i]:=prf_box[i] transformed xform;
693             fi;
694         endfor;

```

```

695     j:=1;
696     forever:
697         exitif unknown lcblob[j];
698         lcblob[j]:=lcblob[j] transformed xform;
699         j:=j+1;
700     endfor;
701 endgroup;
702 enddef;
703
704 

---


705
706 % there is some kind of bug in MetaType1 causing it to blow up when
707 % stroking a path at a certain angle of about 290 degrees. Exactly why,
708 % I don't know; the code is documented primarily in Polish and not well
709 % documented at all. The code below is a workaround to prevent it from
710 % evaluating turning angles on zero vectors; in addition to this, it is
711 % sometimes necessary to add extra points to paths to get correct-looking
712 % behaviour.
713
714 % "fixed" version
715 vardef pen_stroke_edge(expr p) =
716   save e_,e___,l_,i_,i___,myflag; path e_[\{\}\{\}],e___[\{\}\{\}];
717   l_:=length(p);
718   for i_:=0 upto l_-1:
719     e_[i_]:=pen_stroke_edge_(subpath (i_,i_+1) of p,
720     local_nib_(i_),local_nib_(i_+1));
721   endfor
722   for i_:=0 upto l_ if cycle p: -1 else: -2 fi:
723     i___:=(i_+1) mod l_;
724     boolean myflag;
725     if ((direction 1 of e_[i_])=(0,0)) or ((direction 0 of e_[i___])=(0,0)):
726       myflag:=true;
727     elseif abs(turn_ang(direction 1 of e_[i_], direction 0 of e_[i___]))>1:
728       myflag:=true;
729     else:
730       myflag:=false;
731     fi;
732     if myflag:
733       save t_; (t_.a,t_.b)=e_[i_] intersectiontimes reverse e_[i___];
734       if t_.a>0:
735         e_[i_]:=subpath (0,t_.a) of e_[i_];
736         e_[i___]:=subpath (1-t_.b,1) of e_[i___];
737       elseif known local_tip_(i___):
738         e___1:=extrapolate (0,xpart local_tip_(i___)) of e_[i___];
739         e___2:=extrapolate (ypart local_tip_(i___),1) of e_[i___];
740         save t_; (t_.a,t_.b)=e___1 intersectiontimes reverse e___2;
741         if t_.a>0:
742           e_[i_]:=subpath (0,t_.a) of e___1;

```



```

743     e_[i__]:=subpath (1-t_.b,1) of e___2;
744     fi
745     fi
746     fi
747   endfor
748   for i_:=0 upto l_-1:
749     hide(i__:=i_-1) mod l_)
750     if cycle p or (i_>0):
751       if length((point 1 of e_[i__])-(point 0 of e_[i__]))>1/4ignore_nib_limit:
752         % the constant 1/4ignore_nib_limit| plays a similar role
753         % to that of the ISNAP_TO_NODE1 variable in pf2mt1.awk
754         (point 1 of e_[i__])
755         if known local_tip(i_): – else:
756           && pen_join(predir 1 of e_[i__],postdir 0 of e_[i_],point i_ of p,
757             local_nib(i_)) &&
758         fi
759         fi
760         fi
761         % reconstruct le_[i_]l (possibly ignoring direction(s)):
762         (point 0 of e_[i_])
763         if is_line(e_[i_]):
764           % this circumvents \{}MF{}/\{}MP{} instable behaviour
765           % (the operator |...| may cause that a control point and
766           % a node coincide; note that this is feature, not a bug),
767           % and thus is advisable:
768           –
769         else:
770           if not ignore_dir(i_): {direction 0 of e_[i_]} fi ...
771           if not ignore_dir(i_+1): {direction 1 of e_[i_]} fi
772         fi
773       endfor
774     if cycle p: cycle else: (point 1 of e_[l_-1]) fi
775   enddef;
776
777   % figure out size of brush
778   (mbrush_width,mbrush_height)=urcorner (
779     fullcircle xscaled (tsu_brush_max*100) yscaled (tsu_brush_max*tsu_brush_shape*100)
780     rotated tsu_brush_angle
781   );
782   alternate_adjust:=abs(mbrush_height-mbrush_width);
783
784   serif_size:=2;

```

# frac-intro.mp

```
1 %
2 % Common code for Tsukurimashou fractions
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 transform nxf[];
34
35 frac.in.x1=200;
36 frac.in.x2=800;
37 frac.in.y1=latin_wide_baseline;
38 frac.in.y2=latin_wide_top;
39
40 frac.one.y1=0.02[frac.in.y1,frac.in.y2];
41 frac.one.y2=0.40[frac.in.y1,frac.in.y2];
42 frac.one.y3=0.51[frac.in.y1,frac.in.y2];
43 frac.one.y4=0.60[frac.in.y1,frac.in.y2];
44 frac.one.y5=0.98[frac.in.y1,frac.in.y2];
45
46 (frac.one.x1+frac.one.x2)/2=500;
47 frac.one.x2-frac.one.x1=320;
48
49 frac.two.y1=0.04[frac.in.y1,frac.in.y2];
50 frac.two.y2=0.38[frac.in.y1,frac.in.y2];
51 frac.two.y3=0.51[frac.in.y1,frac.in.y2];
52 frac.two.y4=0.62[frac.in.y1,frac.in.y2];
53 frac.two.y5=0.96[frac.in.y1,frac.in.y2];
54
55 (frac.two.x1+frac.two.x3)/2=500;
56 (frac.two.x3-frac.two.x2)=
57 (frac.two.x2-frac.two.x1);
58 frac.two.x3-frac.two.x1=600;
59
60 frac.three.y1=0.06[frac.in.y1,frac.in.y2];
61 frac.three.y2=0.36[frac.in.y1,frac.in.y2];
62 frac.three.y3=0.51[frac.in.y1,frac.in.y2];
63 frac.three.y4=0.64[frac.in.y1,frac.in.y2];
64 frac.three.y5=0.94[frac.in.y1,frac.in.y2];
65
66 (frac.three.x1+frac.three.x4)/2=500;
67 (frac.three.x4-frac.three.x3)=
68 (frac.three.x3-frac.three.x2)=
69 (frac.three.x2-frac.three.x1);
70 frac.three.x4-frac.three.x1=700;
```

```

71
72 frac.four.y1=0.08[frac.in.y1,frac.in.y2];
73 frac.four.y2=0.34[frac.in.y1,frac.in.y2];
74 frac.four.y3=0.51[frac.in.y1,frac.in.y2];
75 frac.four.y4=0.66[frac.in.y1,frac.in.y2];
76 frac.four.y5=0.92[frac.in.y1,frac.in.y2];
77
78 (frac.four.x1+frac.four.x5)/2=500;
79 (frac.four.x5-frac.four.x4)=
80 (frac.four.x4+frac.four.x3)=
81 (frac.four.x3-frac.four.x2)=
82 (frac.four.x2-frac.four.x1);
83 frac.four.x5-frac.four.x1=800;
84
85 frac.half.y1=0.10*latin_vcentre;
86 frac.half.y2=0.82*latin_vcentre;
87 frac.half.y3=latin_vcentre;
88 frac.half.y4=1.18*latin_vcentre;
89 frac.half.y5=1.90*latin_vcentre;
90
91 (frac.half.x1+frac.half.x2)/2=250;
92 frac.half.x2-frac.half.x1=330;
93
94 vardef hexdig(expr d) =
95   if d<10: decimal d else: char (d*87) fi
96 enddef;
97
98 vardef make_digit_set(expr xfm,thispage,place) =
99   numeric ccount;
100  ccount:=0;
101  forsuffices i=zero,one,two,three,four,five,six,seven,eight,nine:
102    begint Suglyph("uFF" & thispage & place & hexdig(ccount),
103      hex(place & hexdig(ccount)));
104    tsu_xform(xfm)(tsu_curve.numeral.i);
105    tsu_render;
106    endtsuglyph;
107    ccount:=ccount+1;
108  endfor;
109 enddef;

```

# latin-intro.mp

```
1 %
2 % Shared code for Tsukurimashou latin
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 latin_wide_low_h:=latin_wide_baseline*mbrush_height*0.8;
34 latin_wide_high_h:=latin_wide_top-mbrush_height*0.8;
35 latin_wide_low_r:=latin_wide_baseline*mbrush_height*0.8-7;
36 latin_wide_high_r:=latin_wide_top-mbrush_height*0.8+15;
37 if sharp_corners:
38   latin_wide_low_v:=latin_wide_baseline;
39   latin_wide_high_v:=latin_wide_top;
40 else:
41   latin_wide_low_v:=latin_wide_baseline*mbrush_height*0.8;
42   latin_wide_high_v:=latin_wide_top-mbrush_height*0.8;
43 fi;
44
45 vardef vmetric(expr a) =
46   (a[latin_wide_low_h,latin_wide_high_h])
47 enddef;
48
49 latin_wide_xheight:=vmetric(0.65);
50 latin_wide_xheight_h:=latin_wide_xheight-mbrush_height*0.6;
51 latin_wide_xheight_r:=latin_wide_xheight-mbrush_height*0.6+15;
52 if sharp_corners:
53   latin_wide_xheight_v:=latin_wide_xheight;
54 else:
55   latin_wide_xheight_v:=latin_wide_xheight-mbrush_height*0.5;
56 fi;
57
58 latin_wide_desc:=vmetric(-0.35);
59 latin_wide_desc_h:=latin_wide_desc*mbrush_height*0.6;
60 latin_wide_desc_r:=latin_wide_desc*mbrush_height*0.6-10;
61 if sharp_corners:
62   latin_wide_desc_v:=latin_wide_desc;
63 else:
64   latin_wide_desc_v:=latin_wide_desc*mbrush_height*0.5;
65 fi;
66
67 latin_wide_lc_baselift:=vmetric(0.02);
68
69 transform tsu_xf.accentedcap,tsu_xf.capaccent;
70
```

```
71 xpart tsu_xf.accentedcap=1;  
72 xypart tsu_xf.accentedcap=yxpart tsu_xf.accentedcap=0;  
73 (500,vmetric(0)) transformed tsu_xf.accentedcap=(500,vmetric(0));  
74 (500,vmetric(1)) transformed tsu_xf.accentedcap=(500,vmetric(0.85));  
75  
76 tsu_xf.capaccent=identity shifted (0,vmetric(0.98)-vmetric(0.8));
```

## accent.mp

```
1 %
2 % Accents for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_accent.acute(text curves) =
34   curves;
35   bp[sp]:=(500*1.5*tsu_punct_size,vmetric(0.95))-
36     (500-0.5*tsu_punct_size,vmetric(0.78));
37   bp[sp]:=insert_nodes(bp[sp])(0.5);
38   bq[sp]:=(2,2)-(1.6,1.6)-(1.3,1.3);
39   bo_size[sp]:=80;
40   bo_tip[sp][1]:=1;
41   sp:=sp*1;
42 enddef;
43
44 vardef tsu_accent.breve(text curves) =
45   curves;
46   bp[sp]:=(500-1.3*tsu_punct_size,vmetric(0.95)){down}..
47     (500,vmetric(0.82))..
48     {up}(500*1.3*tsu_punct_size,vmetric(0.95));
49   bq[sp]:=(1,1)-(1.9,1.9)-(1,1);
50   bo_size[sp]:=100;
51   sp:=sp*1;
52 enddef;
53
54 vardef tsu_accent.caron(text curves) =
55   curves;
56   bp[sp]:=(500-1.5*tsu_punct_size,vmetric(0.95))-
57     (500,vmetric(0.80))-
58     (500*1.5*tsu_punct_size,vmetric(0.95));
59   bq[sp]:=(2,2)-(1.4,1.4)-(1.4,1.4);
60   bo_size[sp]:=80;
61   bo_tip[sp][1]:=1;
62   sp:=sp*1;
63 enddef;
64
65 vardef tsu_accent.caron_apostrophe(expr xoffs)(text curves) =
66   begingroup
67     save xright,xsp;
68     xsp:=sp;
69     tsu_xform(identity shifted (-100,0))(curves);
70     xright:=-infinity;
```

```

71   for i=xsp upto sp-1:
72     if xpart lrcorner bp[i]>xright:
73       xright:=xpart lrcorner bp[i];
74     fi;
75   endfor;
76   tsu_curve.punct.make_comma((xright*xoffs*230,vmetric(0.94)),0);
77 endgroup;
78 enddef;
79
80 vardef tsu_accent.cedilla(text curves) =
81   curves;
82   bp[sp]:=(0,0)-(-0.3,-1.8){curl 0.7}..(2.6,-2.5)..{curl 0.2}(-2.5,3.0);
83   bp[sp]:=bp[sp] scaled (0.5*tsu_punct_size) shifted (500,latin_wide_low_r);
84   bq[sp]:=(1.4,1.4)-(1.4,1.4)-(1.7,1.7)-(1.3,1.3);
85   bo_size[sp]:=80;
86   bo_tip[sp][1]:=1;
87   sp:=sp+1;
88 enddef;
89
90 vardef tsu_accent.circumflex(text curves) =
91   curves;
92   bp[sp]:=(500-1.5*tsu_punct_size,vmetric(0.80))-
93     (500,vmetric(0.95))-
94     (500+1.5*tsu_punct_size,vmetric(0.80));
95   bq[sp]:=(1.6,1.6)-(2,2)-(1.6,1.6);
96   bo_size[sp]:=80;
97   bo_tip[sp][1]:=1;
98   sp:=sp+1;
99 enddef;
100
101 vardef tsu_accent.commabelow(text curves) =
102   curves;
103   tsu_curve.punct.make_comma((520,vmetric(-0.21)),0);
104 enddef;
105
106 vardef tsu_accent.dotabove(text curves) =
107   curves;
108   lcblob1:=fullcircle rotated 45 scaled (mbrush_width*1.72+50)
109     shifted ((500,vmetric(0.88))
110       transformed tsu_rescale_xform)
111     transformed inverse tsu_rescale_xform;
112 enddef;
113
114 vardef tsu_accent.grave(text curves) =
115   curves;
116   bp[sp]:=(500-1.5*tsu_punct_size,vmetric(0.95))-
117     (500+0.5*tsu_punct_size,vmetric(0.78));
118   bp[sp]:=insert_nodes(bp[sp])(0.5);

```

```

119 bq[sp]:=(2,2)-(1.6,1.6)-(1.3,1.3);
120 bo_size[sp]:=80;
121 bo_tip[sp][1]:=1;
122 sp:=sp*1;
123 enddef;
124
125 vardef tsu_accent.heavy_metal_umlaut(text curves) =
126 curves;
127 lcblob1:=(up-left-down-right-cycle) scaled (mbrush_width*1.5*30)
128   shifted ((520-1.5*tsu_punct_size,vmetric(0.88))
129     transformed tsu_rescale_xform)
130   transformed inverse tsu_rescale_xform;
131 lcblob2:=(up-left-down-right-cycle) scaled (mbrush_width*1.5*30)
132   shifted ((520+1.5*tsu_punct_size,vmetric(0.88))
133     transformed tsu_rescale_xform)
134   transformed inverse tsu_rescale_xform;
135 enddef;
136
137 vardef tsu_accent.hungarian_umlaut(text curves) =
138 curves;
139 bp[sp]:=(500*1.7*tsu_punct_size,vmetric(0.95))-
140   (500*0.7*tsu_punct_size,vmetric(0.78));
141 bp[sp]:=insert_nodes(bp[sp])(0.5);
142 bq[sp]:=(2,2)-(1.6,1.6)-(1.3,1.3);
143 bo_size[sp]:=80;
144 bo_tip[sp][1]:=1;
145 bp[sp*1]:=(500-0.4*tsu_punct_size,vmetric(0.95))-
146   (500-1.4*tsu_punct_size,vmetric(0.78));
147 bp[sp*1]:=insert_nodes(bp[sp*1])(0.5);
148 bq[sp*1]:=(2,2)-(1.6,1.6)-(1.3,1.3);
149 bo_size[sp*1]:=80;
150 bo_tip[sp*1][1]:=1;
151 sp:=sp*2;
152 enddef;
153
154 vardef tsu_accent.lcslash(text curves) =
155 curves;
156 bp[sp]:=((-1,-1.3)-(1,1.3))
157   scaled ((latin_wide_xheight_r-latin_wide_low_r)/2)
158   shifted (xpart centre_pt,(latin_wide_xheight_r*latin_wide_low_r)/2);
159 bq[sp]:=(2,2)-(2,2);
160 bo_size[sp]:=80;
161 sp:=sp*1;
162 enddef;
163
164 vardef tsu_accent.macron(text curves) =
165 curves;
166 bp[sp]:=(500-1.75*tsu_punct_size,vmetric(0.82))-

```



```

167     (500*1.75*tsu_punct_size,vmetric(0.82));
168   bq[sp]:=(2,2)-(2,2);
169   bo_size[sp]:=80;
170   sp:=sp*1;
171 enddef;
172
173 vardef tsu_accent.ringabove(text curves) =
174   curves;
175   lcblob1:=fullcircle rotated 45 scaled (2*tsu_punct_size)
176     shifted ((500,vmetric(0.83-0.03*mincho)-10)
177       transformed tsu_rescale_xform)
178     transformed inverse tsu_rescale_xform;
179   lcblob2:=reverse fullcircle rotated 45
180     scaled (2*tsu_punct_size-100*tsu_brush_max)
181     shifted ((500,vmetric(0.83-0.03*mincho)-10)
182       transformed tsu_rescale_xform)
183     transformed inverse tsu_rescale_xform;
184 enddef;
185
186 vardef tsu_accent.tilde(text curves) =
187   curves;
188   bp[sp]:=((-3.5,-0.5){curl 0}..(-1.4,1)..(0,0)..(1.4,1)..{curl 0}(3.5,0.5))
189     rotated 5 xyscaled (0.7*tsu_punct_size,0.5*tsu_punct_size)
190     shifted (500,vmetric(0.85));
191   bp[sp]:=insert_nodes(bp[sp])(0.5,3.5);
192   bq[sp]:=(0.7,2.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
193     (1.7,1.7)-(0.7,2.7);
194   bo_size[sp]:=80;
195   sp:=sp*1;
196 enddef;
197
198 vardef tsu_accent.ucslash(text curves) =
199   curves;
200   bp[sp]:=((-1,-1.3)-(1,1.3))
201     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
202     shifted centre_pt;
203   bq[sp]:=(2,2)-(2,2);
204   bo_size[sp]:=80;
205   sp:=sp*1;
206 enddef;
207
208 vardef tsu_accent.umlaut(text curves) =
209   curves;
210   lcblob1:=fullcircle rotated 45 scaled (mbrush_width*1.72*50)
211     shifted ((520-1.5*tsu_punct_size,vmetric(0.88))
212       transformed tsu_rescale_xform)
213     transformed inverse tsu_rescale_xform;
214   lcblob2:=fullcircle rotated 45 scaled (mbrush_width*1.72*50)

```

```
215     shifted ((520+1.5*tsu_punct_size,vmetric(0.88))
216             transformed tsu_rescale_xform)
217     transformed inverse tsu_rescale_xform;
218 enddef;
219
220 

---


221
222 vardef tsu_accent.capital(suffix acctype)(text curves) =
223     begingroup;
224     save xsp,ysp;
225     tsu_accent.acctype(
226         tsu_xform(tsu_xf.accentedcap)(curves);xsp:=sp);
227     ysp:=sp;
228     sp:=xsp;
229     tsu_xform(tsu_xf.capaccent)(sp:=ysp);
230 endgroup;
231 enddef;
```

# bottomrad.mp

```
1 %
2 % Radicals for bottom (often special forms of other radicals)
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_curve.kanji.bottomrad.four_ticks =
34   add_proof_box("kanji.bottomrad.four_ticks");
35   bp[sp]:=(210,750)..tension 1.2..(160,250)..(100,30);
36   bq[sp]:=(1.1,1.1)-(1.4,1.4)-(1.9,1.9);
37   bp[sp*1]:=(350,700)..tension 1.2..(390,300)..(400,-50);
38   bq[sp*1]:=(1.1,1.1)-(1.4,1.4)-(1.9,1.9);
39   bp[sp*2]:=(540,750)..tension 1.2..(610,320)..(630,40);
40   bq[sp*2]:=(1.1,1.1)-(1.4,1.4)-(1.9,1.9);
41   bp[sp*3]:=(740,800)..tension 1.2..(850,360)..(890,-20);
42   bq[sp*3]:=(1.1,1.1)-(1.4,1.4)-(1.9,1.9);
43   sp:=sp*4;
44 enddef;
45
46 vardef tsu_curve.kanji.bottomrad.moon =
47   add_proof_box("kanji.bottomrad.moon");
48   bp[sp]:=(250,-20)..{up}(250,760)-(750,760);
49   bq[sp]:=(1.4,1.4)-(1.6,1.6)-(1.6,1.6);
50   build_kanji.add_jtail(sp);
51   bo_tip[sp][1]:=1;
52   bo_tip[sp][2]:=1;
53   bo_serif[sp][1]:=4;
54   bo_serif[sp][2]:=4;
55   bp[sp*1]:=(250,520)-(750,520);
56   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
57   bp[sp*2]:=(250,270)-(750,270);
58   bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
59   sp:=sp*3;
60 enddef;
```

# dakuten.mp

```
1 %
2 % Dakuten and handakuten for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_curve.dakuten(expr xf) =
34   bp[sp]:=(-80,10)..(-35,-35)..(10,-90)) transformed xf;
35   bq[sp]:=(1,1)..(1.4,1.4)..(1.8,1.8);
36   bo_size[sp]:=85;
37   bo_serif[sp][2]:=4;
38
39   bp[sp*1]:=((0,80)..(50,30)..(100,-30)) transformed xf;
40   bq[sp*1]:=(1,1)..(1.4,1.4)..(1.8,1.8);
41   bo_size[sp*1]:=85;
42   bo_serif[sp*1][2]:=4;
43
44   prf_box[sp]:=identity shifted (-0.4,-0.5) scaled 200 rotated -50
45     transformed xf;
46   prf_box_name[sp]:="dakuten";
47
48   sp:=sp*2;
49 enddef;
50
51 vardef tsu_curve.handakuten(expr location) =
52   lcblob1:=fullcircle scaled handakuten_outer shifted location
53     transformed inverse tsu_rescale_xform;
54   lcblob2:=reverse fullcircle scaled handakuten_inner shifted location
55     transformed inverse tsu_rescale_xform;
56 enddef;
```

# enclosed.mp

```
1 %
2 % Enclosed characters for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_curve.circle.single =
34   Fill fullcircle scaled (810*53*tsu_brush_max) shifted centre_pt;
35   unFill reverse fullcircle scaled (810-53*tsu_brush_max) shifted centre_pt;
36 enddef;
37
38 vardef tsu_curve.circle.double =
39   Fill fullcircle scaled (880*60*tsu_brush_max) shifted centre_pt;
40   unFill reverse fullcircle scaled (880-20*tsu_brush_max) shifted centre_pt;
41   Fill fullcircle scaled (740*40*tsu_brush_max) shifted centre_pt;
42   unFill reverse fullcircle scaled (740-40*tsu_brush_max) shifted centre_pt;
43 enddef;
44
45 vardef tsu_curve.square.single(text curves) =
46   tsu_xform(tsu_xf.sletter)(curves);
47   bp[sp]:=(500,790)-(100,790)-(100,-10)-(900,-10)-(900,790)-cycle;
48   bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-cycle;
49   bo_size[sp]:=80;
50   bo_tip[sp][1]:=1;
51   bo_tip[sp][2]:=1;
52   bo_tip[sp][3]:=1;
53   bo_tip[sp][4]:=1;
54   sp:=sp*1;
55 enddef;
56
57 

---


58
59 transform tsu_xf.circled;
60 xypart tsu_xf.circled=yypart tsu_xf.circled=0.68;
61 xypart tsu_xf.circled=yxpart tsu_xf.circled=0;
62 centre_pt transformed tsu_xf.circled=centre_pt;
63
64 transform tsu_xf.cletter;
65 xypart tsu_xf.cletter=yypart tsu_xf.cletter=0.56;
66 xypart tsu_xf.cletter=yxpart tsu_xf.cletter=0;
67 centre_pt transformed tsu_xf.cletter=centre_pt;
68
69 transform tsu_xf.ctwo.left;
70 xypart tsu_xf.ctwo.left=yypart tsu_xf.ctwo.left=0.48;
```

```
71 xypart tsu_xf.ctwo.left=yxpart tsu_xf.ctwo.left=0;
72 (centre_pt*290*right) transformed tsu_xf.ctwo.left=centre_pt;
73
74 transform tsu_xf.ctwo.right;
75 xxpart tsu_xf.ctwo.right=yypart tsu_xf.ctwo.right=0.48;
76 xypart tsu_xf.ctwo.right=yxpart tsu_xf.ctwo.right=0;
77 (centre_pt*310*left) transformed tsu_xf.ctwo.right=centre_pt;
78
79 transform tsu_xf.sletter;
80 xxpart tsu_xf.sletter=yypart tsu_xf.sletter=0.71;
81 xypart tsu_xf.sletter=yxpart tsu_xf.sletter=0;
82 centre_pt transformed tsu_xf.sletter=centre_pt*10*up;
83
84 

---

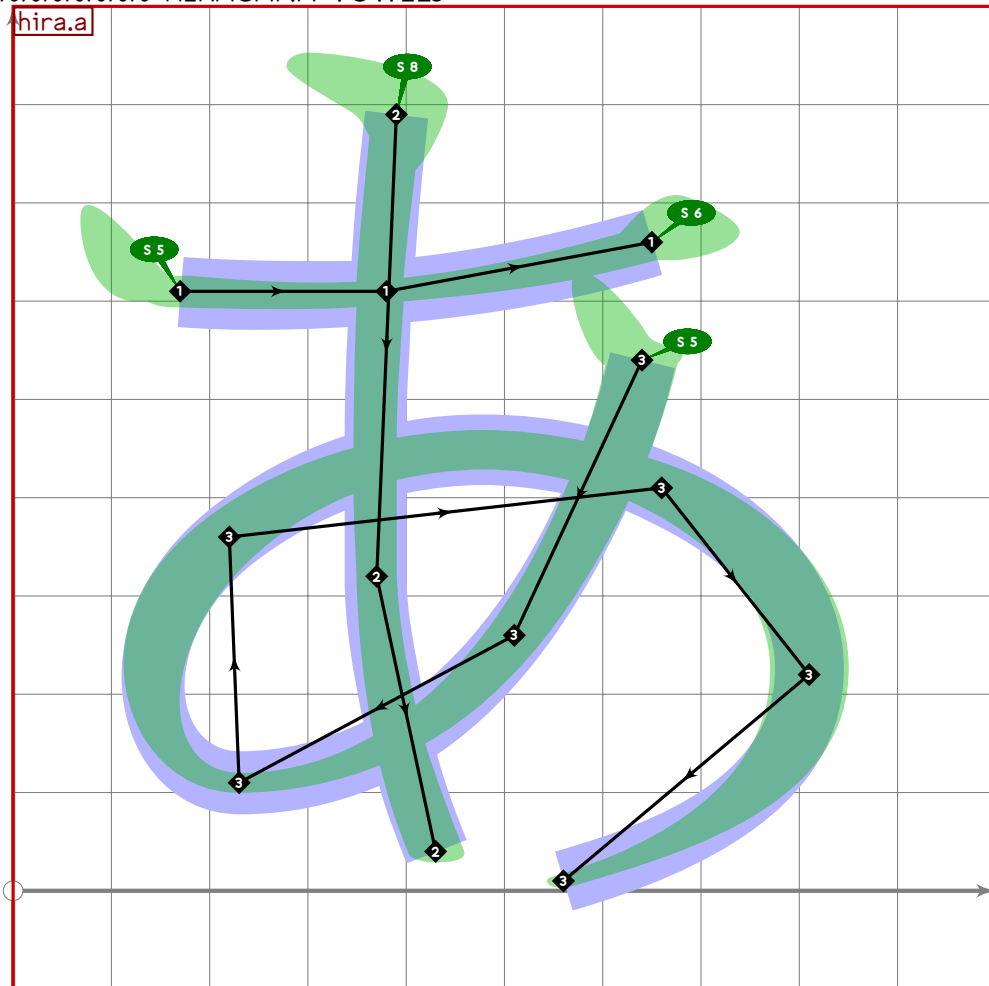

85
86 transform tsu_xf.cbound;
87 tsu_xf.cbound=identity scaled 340 shifted centre_pt;
```

# hiragana.mp

```
1 %  
2 % Hiragana for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32
```

## Hiragana Vowels

```
33 %%%%%%%%%% HIRAGANA VOWELS
```

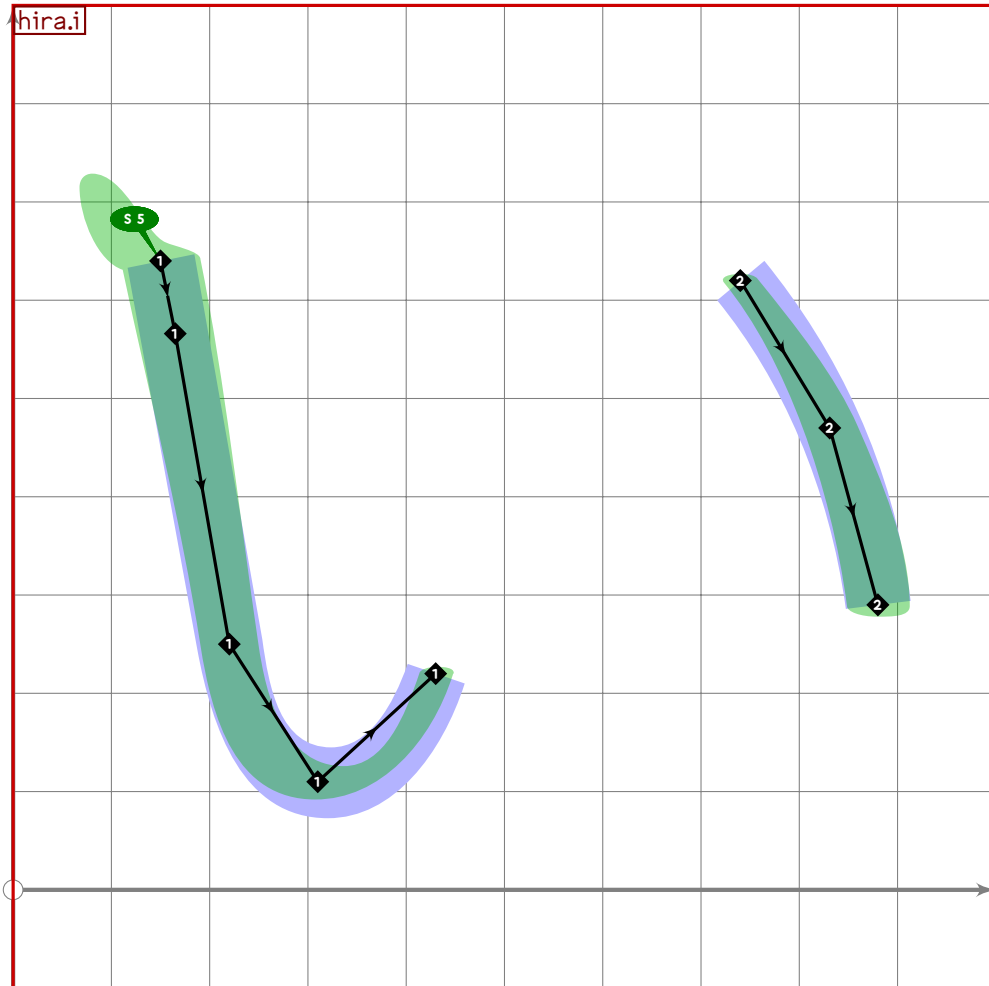


```
34  
35 vardef tsu_curve.hira.a =  
36   add_proof_box("hira.a");  
37   bp[sp]:=(170,610)..(380,610)..(650,660);  
38   bq[sp]:=(1,6,1,7)-(1,4,1,4)-(1,6,1,6);  
39   bo_serif[sp][0]:=5;  
40   bo_serif[sp][2]:=6;  
41
```

```

42 bp[sp*1]:=(390,790)..tension 1.5..(370,320)..(430,40);
43 bq[sp*1]:=(1.2,1.2)-(1.1,1.1)-(1.3,1.3);
44 bo_serif[sp*1][0]:=8;
45
46 bp[sp*2]:=(640,540)..tension 1.2..(510,260)..(230,110){left}..
47 (220,360)..(660,410)..(810,220)..{curl 0}{560,10};
48 bq[sp*2]:=(1.5,1.5)-(1.4,1.4)-(1.2,1.2)-
49 (1.7,1.7)-(1.8,1.8)-(1.6,1.6)-(1,1);
50 bo_serif[sp*2][0]:=5;
51 sp:=sp*3;
52 enddef;

```



```

53
54 vardef tsu_curve.hira.i =
55   add_proof_box("hira.i");
56   bp[sp]:=(150,640)..(165,566)..(220,250)..(310,110)..{curl 0.1}{430,220};
57   bq[sp]:=(1.6,1.6)..(1.6,1.6)..(1.3,1.3)..(1.8,1.8)..(1,1);
58   bo_serif[sp][0]:=5;
59
60   bp[sp*1]:=(740,620)..(831,470)..(880,290);
61   bq[sp*1]:=(1,1)..(1.3,1.3)..(1.4,1.4);
62   sp:=sp*2;

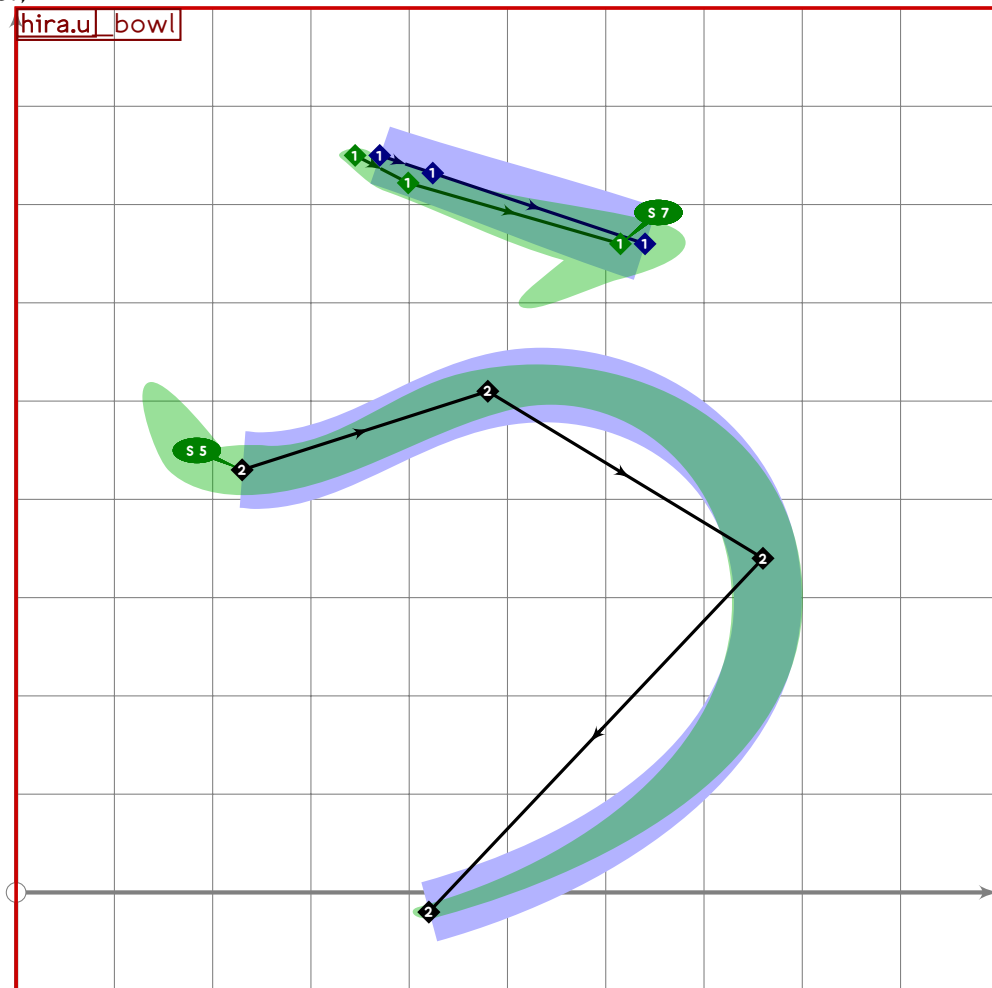
```



```

63 endif;
64
65 vardef tsu_curve.hira.u_bowl =
66   add_proof_box("hira.u_bowl");
67   bp[sp]:=(230,430){dir 355}..(480,510)..(760,340)..{curl 0.1}(420,-20);
68   bq[sp]:=(2.3,2.3)..(2,2)..(1.5,1.5)..(1,1);
69   bo_serif[sp][0]:=5;
70   sp:=sp*1;
71 endif;

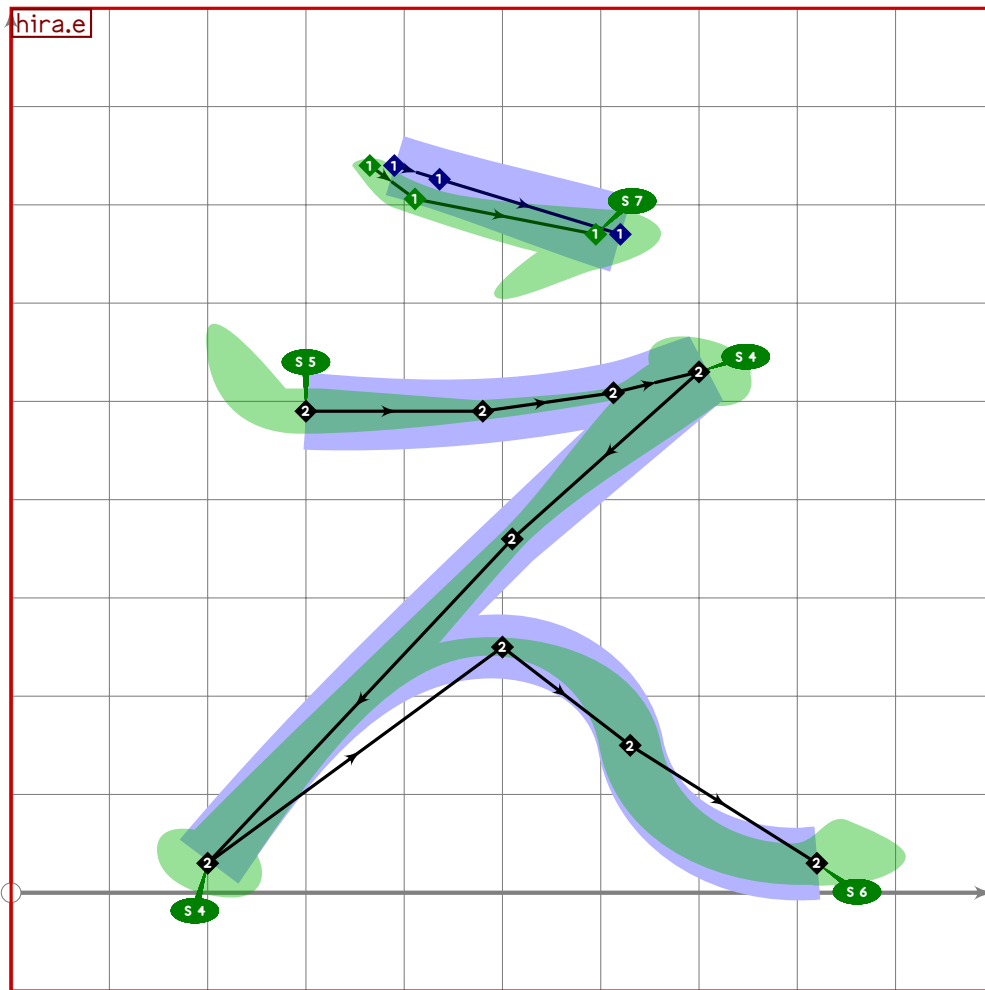
```



```

72
73 vardef tsu_curve.hira.u =
74   add_proof_box("hira.u");
75   bp[sp]:=(370,750)..(0.2[(370,750),(640,660)]*10*down*mincho)..
76   tension 2..(640,660);
77   bp[sp]:=bp[sp] shifted (25*left*mincho);
78   bq[sp]:=(1,1)..(1.4,1.4)..(2.3,2.3);
79   bo_serif[sp][2]:=7;
80   sp:=sp*1;
81   tsu_curve.hira.u_bowl;
82 endif;

```



```

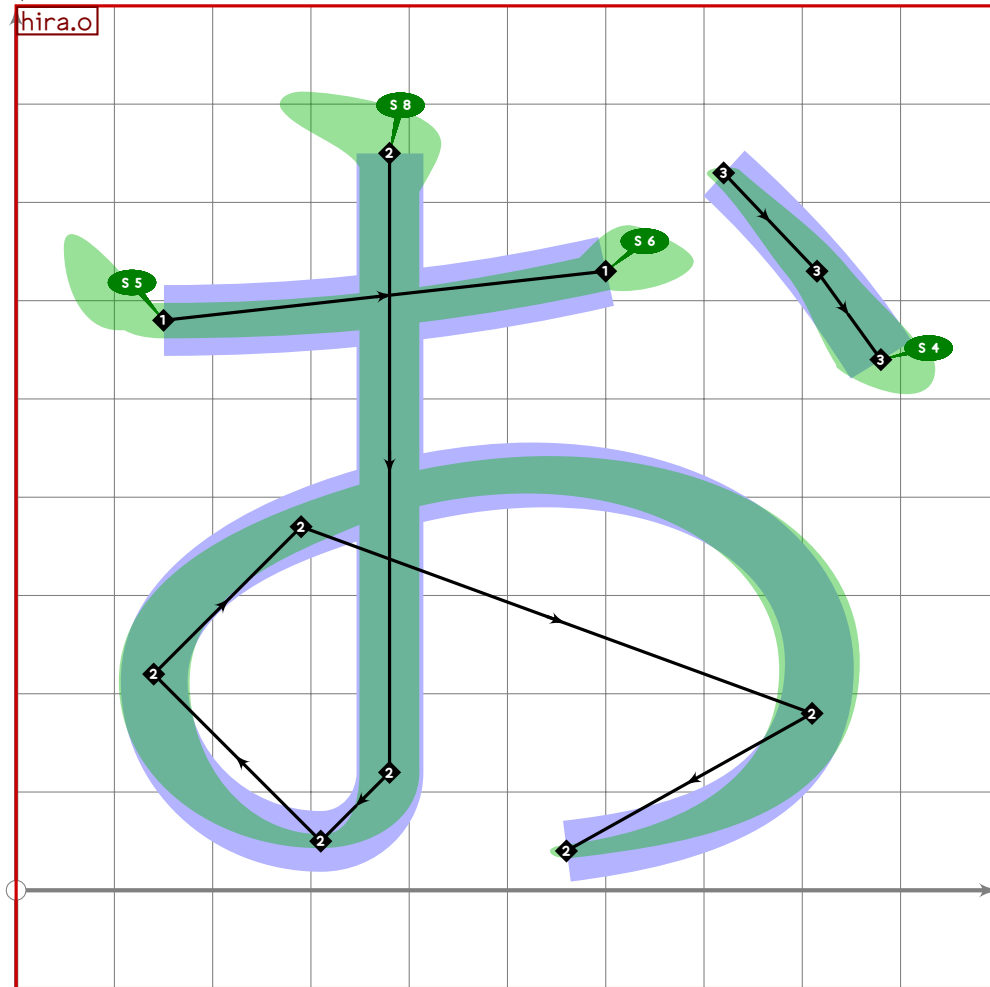
83
84 vardef tsu_curve.hira.e =
85   add_proof_box("hira.e");
86   bp[sp]:=(390,740)..(0.2[(390,740),(620,670)]*20*down*mincho)..
87     tension 2..(620,670);
88   bp[sp]:=bp[sp] shifted (25*left*mincho);
89   bq[sp]:=(1,1)..(1.4,1.4)..(2.3,2.3);
90   bo_serif[sp][2]:=7;
91
92   bp[sp*1]:=(300,490)..(480,490)..{curl 1}{(700,530)}{curl 1}..
93     (510,360)..{curl 1}{(200,30)}{curl 0}..
94     (500,250)..(630,150){dir 280}{dir 5}{(820,30);
95   bp[sp*1]:=insert_nodes(bp[sp*1])(1.6);
96   bq[sp*1]:=(2.2,2.2)-(1.3,1.3)-(1,1)-(2.01,2.01)
97     -(1,1)-(1.7,1.7)
98     -(1.2,1.2)-(1.4,1.4)-(2,2);
99   bo_tip[sp*1][3]:=0;
100  bo_tip[sp*1][5]:=0;
101  bo_serif[sp*1][0]:=5;
102  bo_serif[sp*1][3]:=4;
103  bo_serif[sp*1][5]:=4;

```

```

104 bo_serif[sp*1][8]:=6;
105 sp:=sp*2;
106 enddef;

```



```

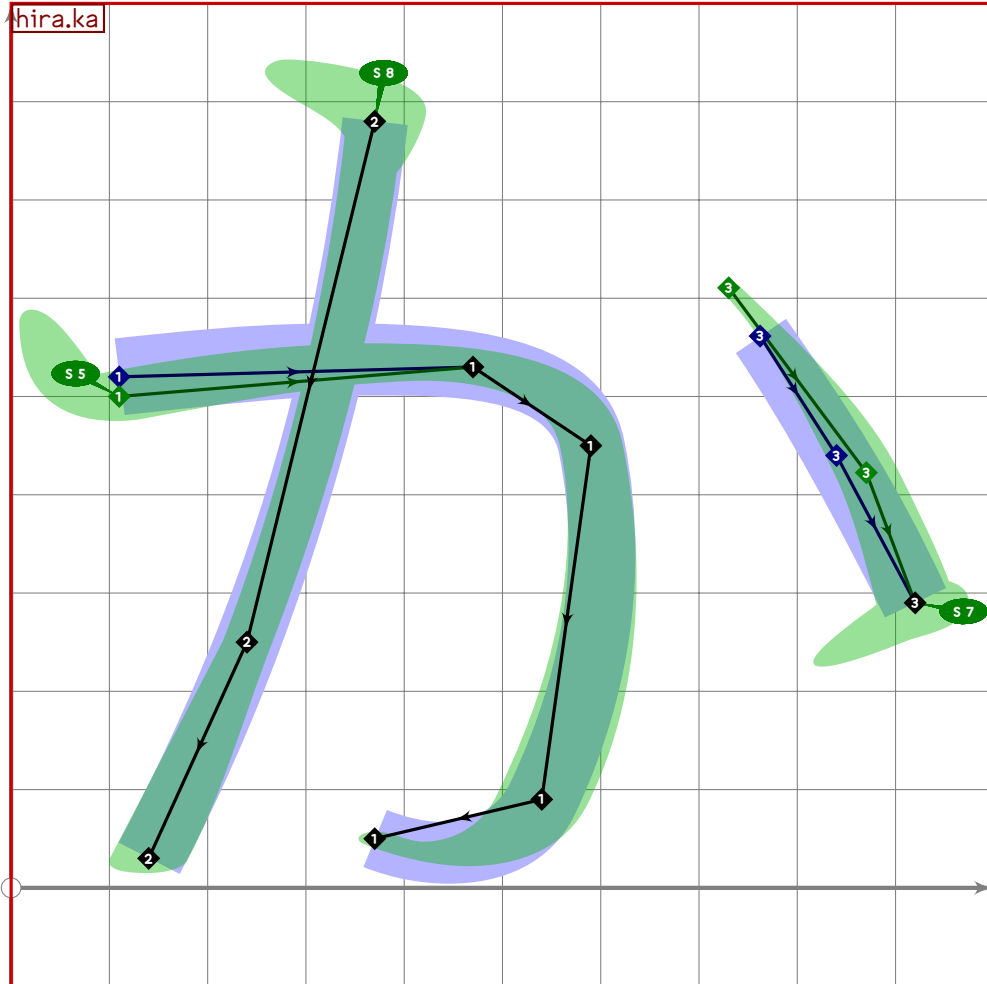
107
108 vardef tsu_curve.hira.o =
109   add_proof_box("hira.o");
110   bp[sp]:=(150,580){right}..(600,630);
111   bq[sp]:=(1.8,1.8)..(1.8,1.8);
112   bo_serif[sp][0]:=5;
113   bo_serif[sp][1]:=6;
114
115   bp[sp*1]:=(380,750)..(380,120){down}..(310,50){left}..tension 1.1..
116     (140,220)..(290,370)..(810,180)..{curl 0}(560,40);
117   bq[sp*1]:=(1.4,1.4)..(1.3,1.3)..(1,1)..(1.5,1.5)..(1.6,1.6)..
118     (1.6,1.6)..(1,1);
119   bo_serif[sp*1][0]:=8;
120
121   bp[sp*2]:=(720,730)..(815,630)..(880,540);
122   bq[sp*2]:=(1,1)..(1.4,1.4)..(1.8,1.8);
123   bo_serif[sp*2][2]=4;
124   sp:=sp*3;

```

125 enddef;  
 126

## Hiragana Kakikukeko/Gagigugego

127 %%%%%%%%%% HIRAGANA KAKIKUKEKO/GAGIGUGEGO



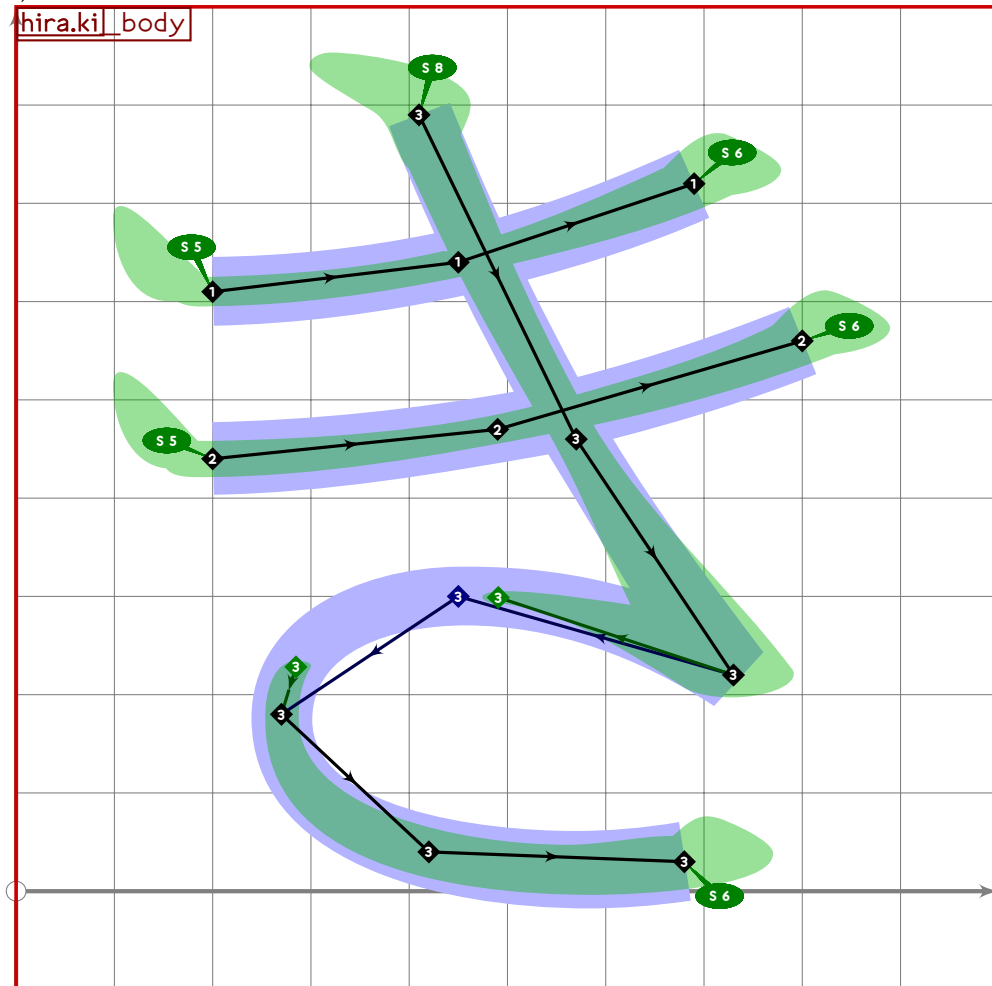
```

128
129 vardef tsu_curve.hira.ka =
130   add_proof_box("hira.ka");
131   bp[sp]:=((110,520)*20*mincho*down){curl 0}..(470,530)..(590,450)..
132     tension 2..(540,90)..{curl 0.3}(370,50);
133   bq[sp]:=(2.3,2.3)..(1.7,1.7)..(1.4,1.4)..(1.8,1.8)..(1,1);
134   bo_serif[sp][0]:=5;
135
136   bp[sp*1]:=(370,780)..(240,250)..(140,30);
137   bq[sp*1]:=(1.3,1.3)..(1.2,1.2)..(1.6,1.6);
138   bo_serif[sp*1][0]:=8;
139
140   bp[sp*2]:=(720,620)..((840,440)+35*mincho*(dir -30))..(920,290);
141   bq[sp*2]:=(0.8,0.8)..(1.4,1.4)..(1.6,1.6);
142   bo_serif[sp*2][2]:=7;
143   sp:=sp+3;
  
```

```

144 endif;
145
146 vardef tsu_curve.hira.ki_body =
147   add_proof_box("hira.ki_body");
148   bp[sp]:=(410,790)..(570,460)..{curl 1}(730,220){curl 1}..
149     (450,300)..(270,180)..(420,40)..(680,30);
150   bq[sp]:=(1.4,1.4)-(1.2,1.2)-(2.3,2)-(0.60,1)..(0.9,1)..
151     (2.1,2.1)..(2.4,2.4);
152   bo_tip[sp][2]:=0;
153   bo_serif[sp][0]:=8;
154   bo_serif[sp][6]:=6;
155   sp:=sp*1;
156 endif;

```



```

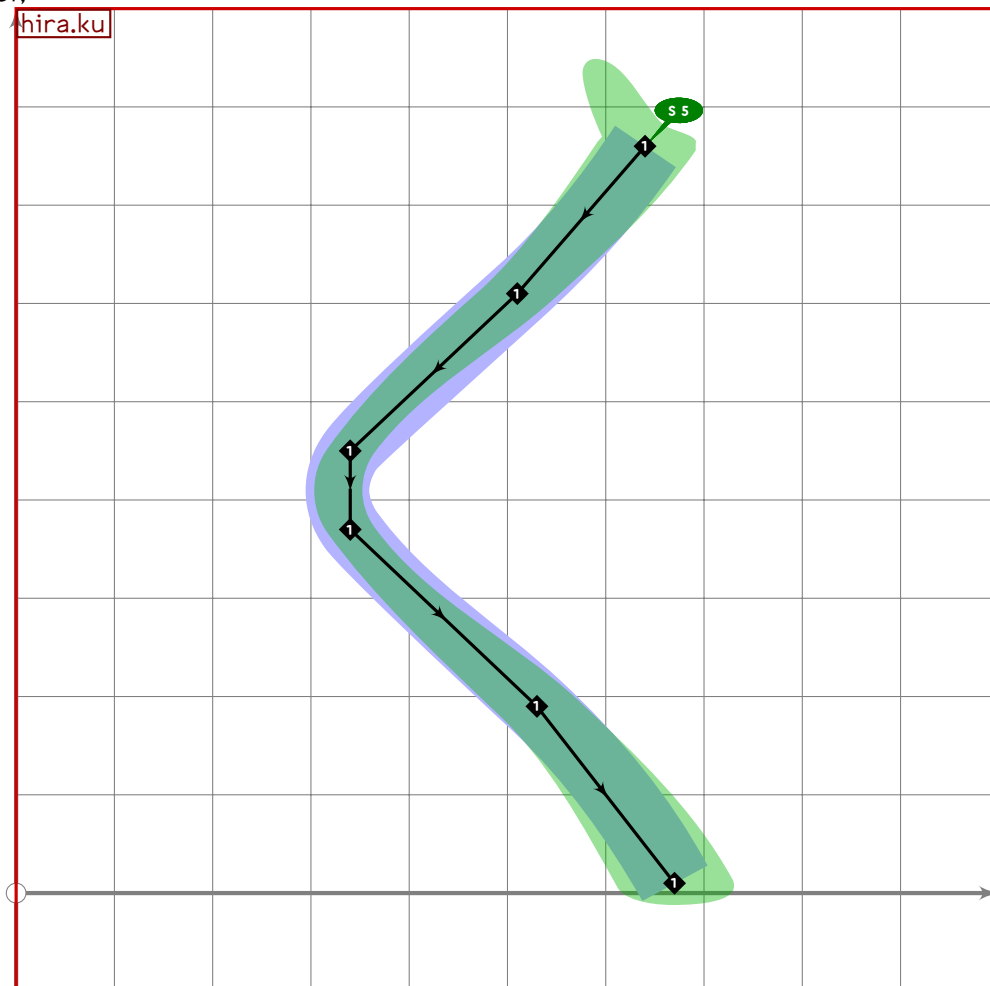
157
158 vardef tsu_curve.hira.ki =
159   add_proof_box("hira.ki");
160   bp[sp]:=(200,610)..(450,640)..(690,720);
161   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.9,1.9);
162   bo_serif[sp][0]:=5;
163   bo_serif[sp][2]:=6;
164

```

```

165 bp[sp*1]:=(200,440)..(490,470)..(800,560);
166 bq[sp*1]:=(1,9,1,9)-(1,5,1,5)-(1,9,1,9);
167 bo_serif[sp*1][0]:=5;
168 bo_serif[sp*1][2]:=6;
169 sp:=sp*2;
170 tsu_curve.hira.ki_body;
171 enddef;

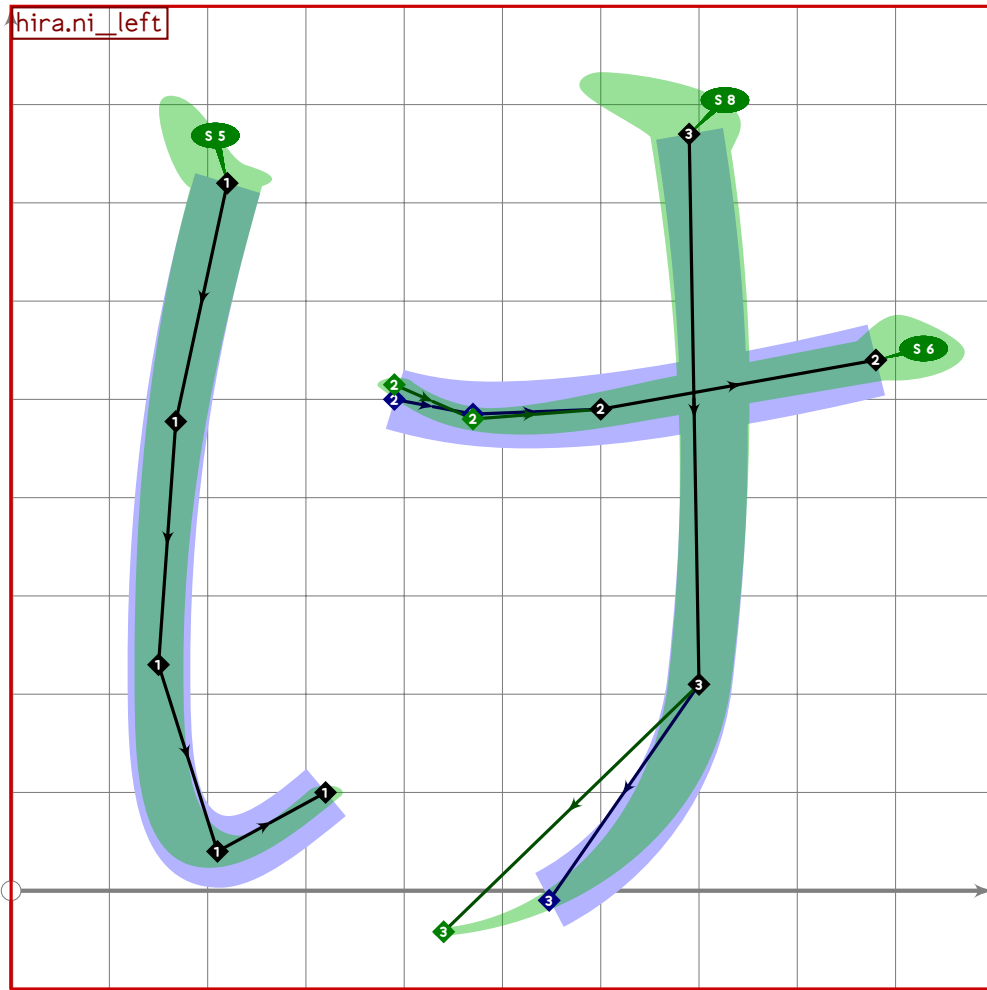
```



```

172
173 vardef tsu_curve.hira.ku =
174   add_proof_box("hira.ku");
175   bp[sp]:=(640,760)..(510,610)..(340,450)..
176     tension 0.75..(340,370)..(530,190)..(670,10);
177   bq[sp]:=(1,9,1,9)..(1,6,1,6)..(1,2,1,2)..(1,2,1,2)..(1,7,1,7)..(2,1,2,1);
178   bo_serif[sp][0]:=5;
179   sp:=sp*1;
180 enddef;

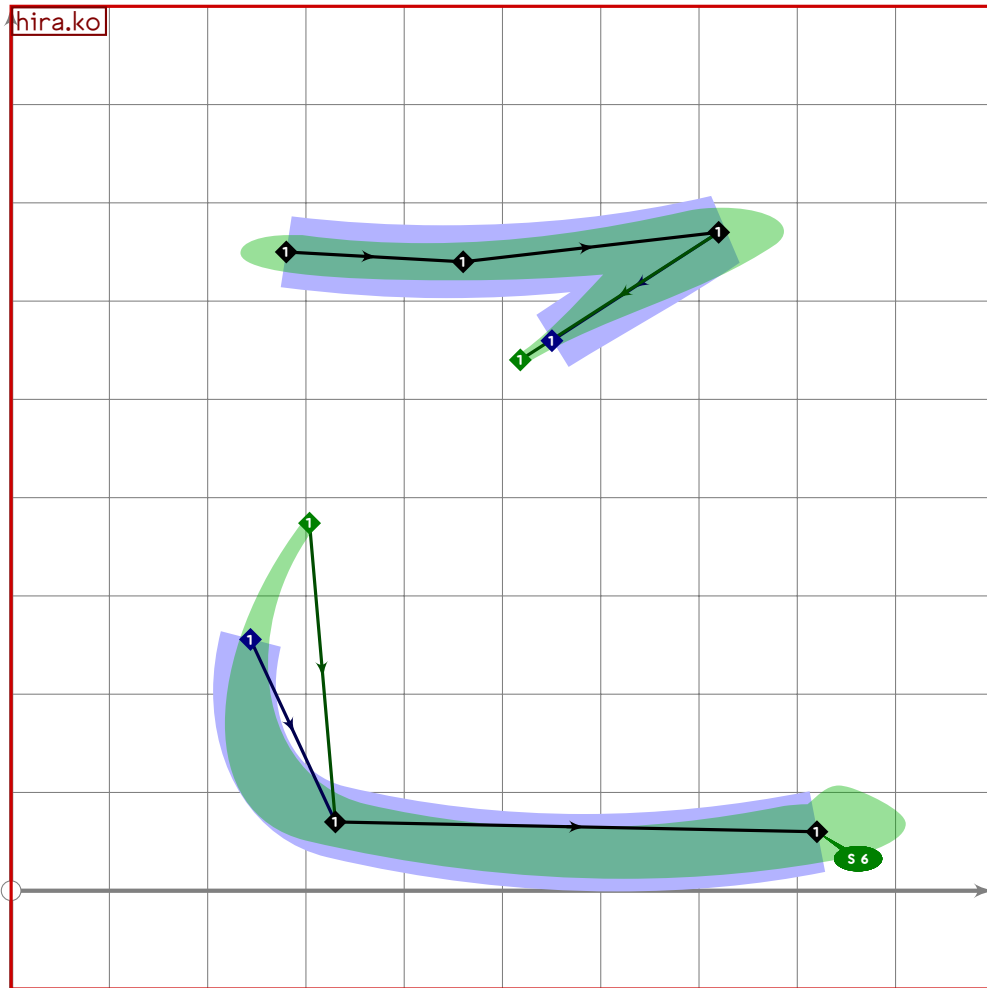
```



```

181
182 vardef tsu_curve.hira.ke =
183   add_proof_box("hira.ke");
184   tsu_curve.hira.ni_left;
185
186   bp[sp]:=(390,500+15*mincho)..(470,485-5*mincho)..(600,490)..(880,540);
187   bq[sp]:=(1,1)..(1.4,1.4)..(1.8,1.8)..(2,2);
188   bo_serif[sp][3]:=6;
189
190   bp[sp*1]:=(690,770)..tension 2..(700,210)..(280,-10);
191   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(0.6,0.6);
192   bo_serif[sp*1][0]:=8;
193   sp:=sp*2;
194 enddef;

```



```

195
196 vardef tsu_curve.hira.ko =
197   add_proof_box("hira.ko");
198   bp[sp]:=(280,650)..(460,640)..{curl 1}(720,670){curl 1}..
199     (450,500)..(330,70)..tension 2.4..(820,60);
200   bq[sp]:=(1,8,1,8)-(1,9,1,9)-(2,3,2,3)-
201     (0,35,0,25)-(2,2,1,8)..(2,8,2,4);
202   bo_tip[sp][2]=0;
203   bo_serif[sp][5]=6;
204   sp:=sp*1;
205 enddef;
206

```

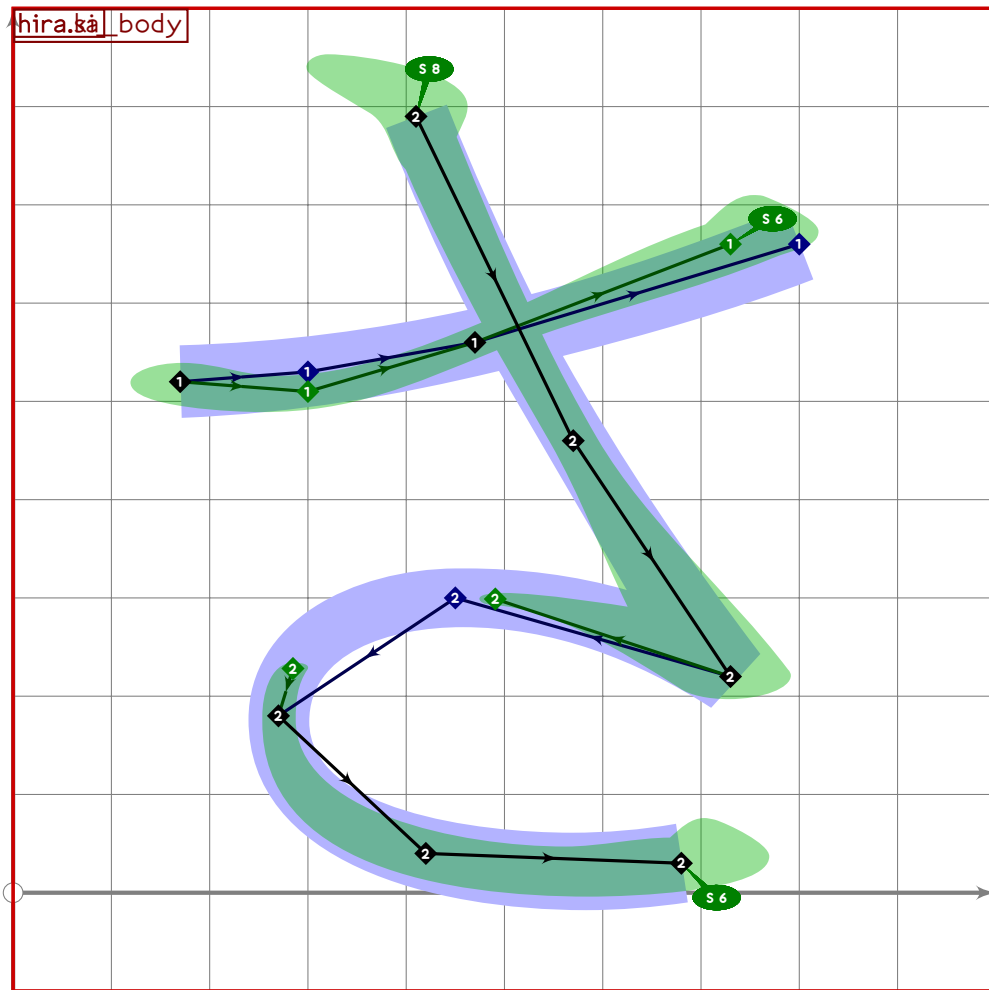
## Hiragana Sashisuseso/Zajizuzezo

```

207 %%%%%%%%%% HIRAGANA SASHISUSES0/ZAJIZUZEZO

```

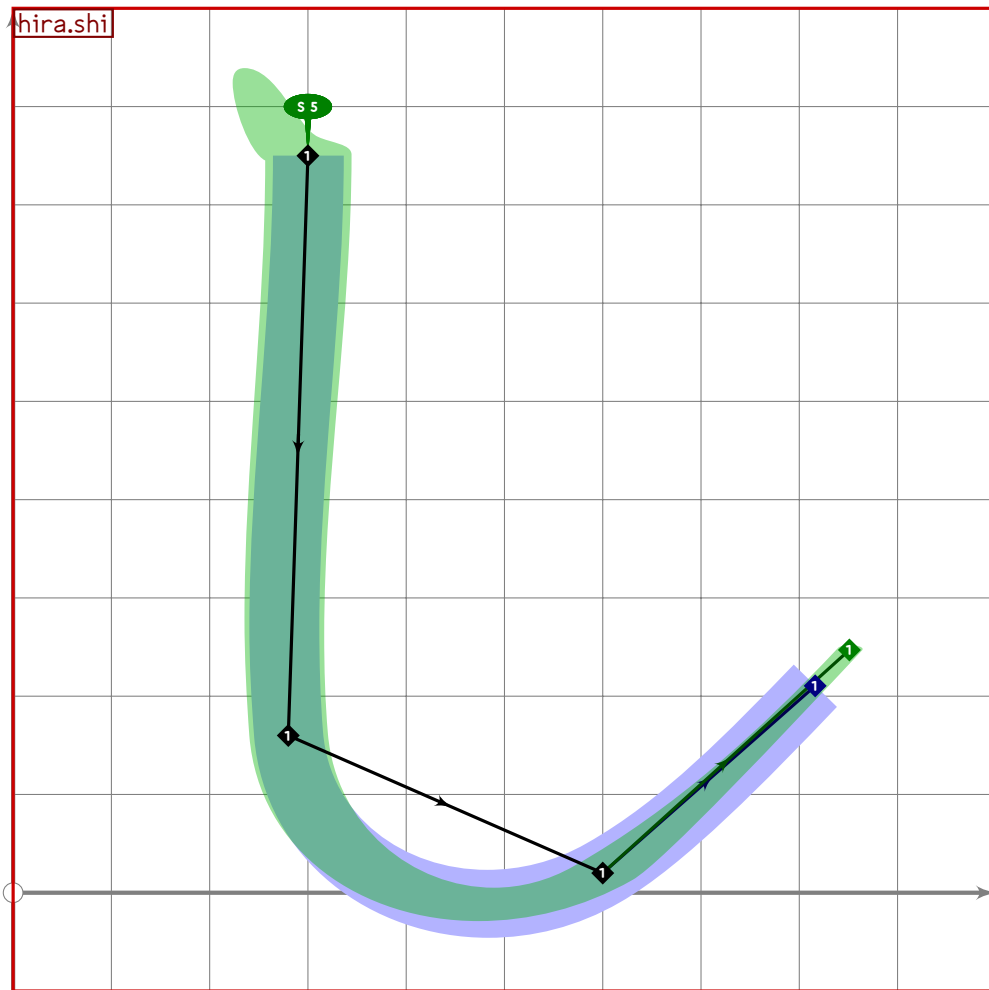




```

208
209 vardef tsu_curve.hira.sa =
210   add_proof_box("hira.sa");
211   bp[sp]:=(170,520)..(300,530-20*mincho)..(470,560)..(800-70*mincho,660);
212   bq[sp]:=(1.9,1.9)-(1.8,1.8)-(1.4,1.4)-(2.1,2.1);
213   bo_serif[sp][3]:=6;
214   sp:=sp*1;
215   tsu_curve.hira.ki_body;
216 enddef;

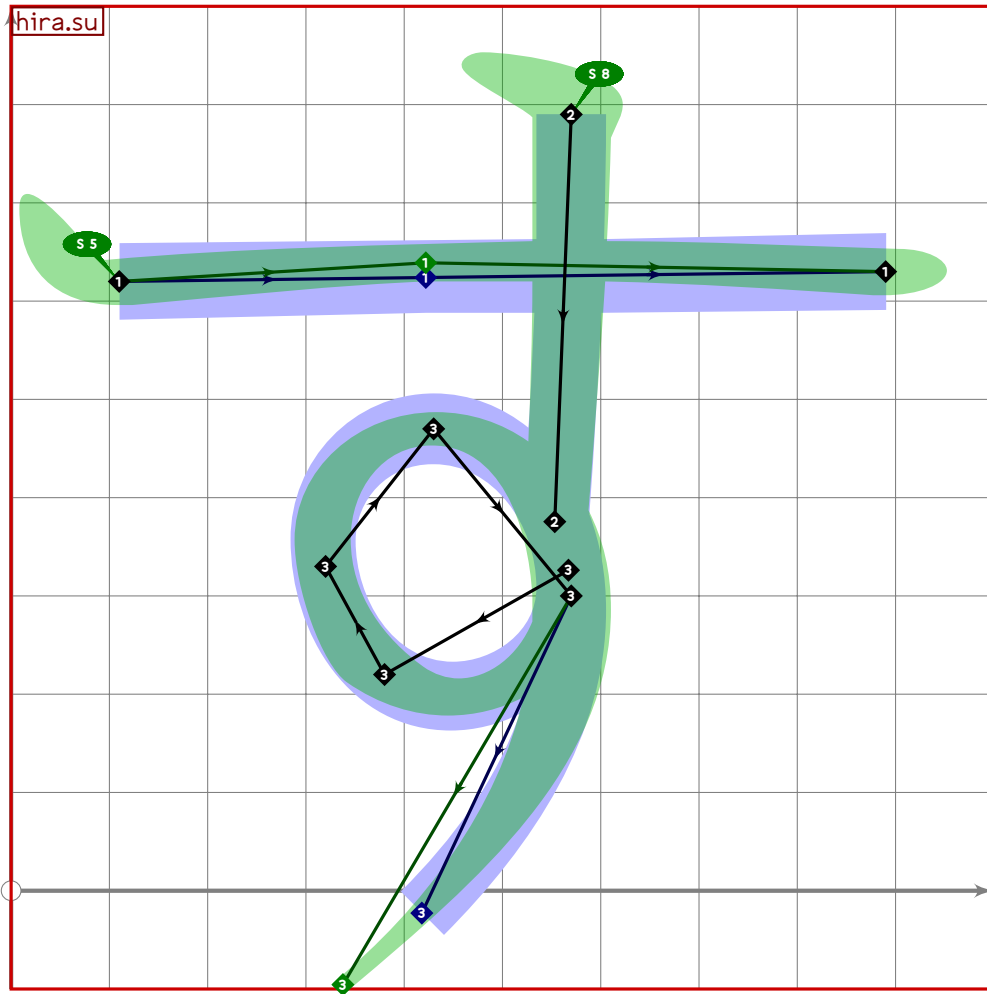
```



```

217
218 vardef tsu_curve.hira.shi =
219   add_proof_box("hira.shi");
220   bp[sp]:=(300,750){down}..tension 2.5..(280,160)..
221     (600,20)..tension 1.5..{curl 0}(990,400);
222   bq[sp]:=(1.7,1.7)..(1.6,1.6)-(1.5,1.5)-(0.4,0.55);
223   bo_serif[sp][0]:=5;
224   sp:=sp*1;
225 enddef;

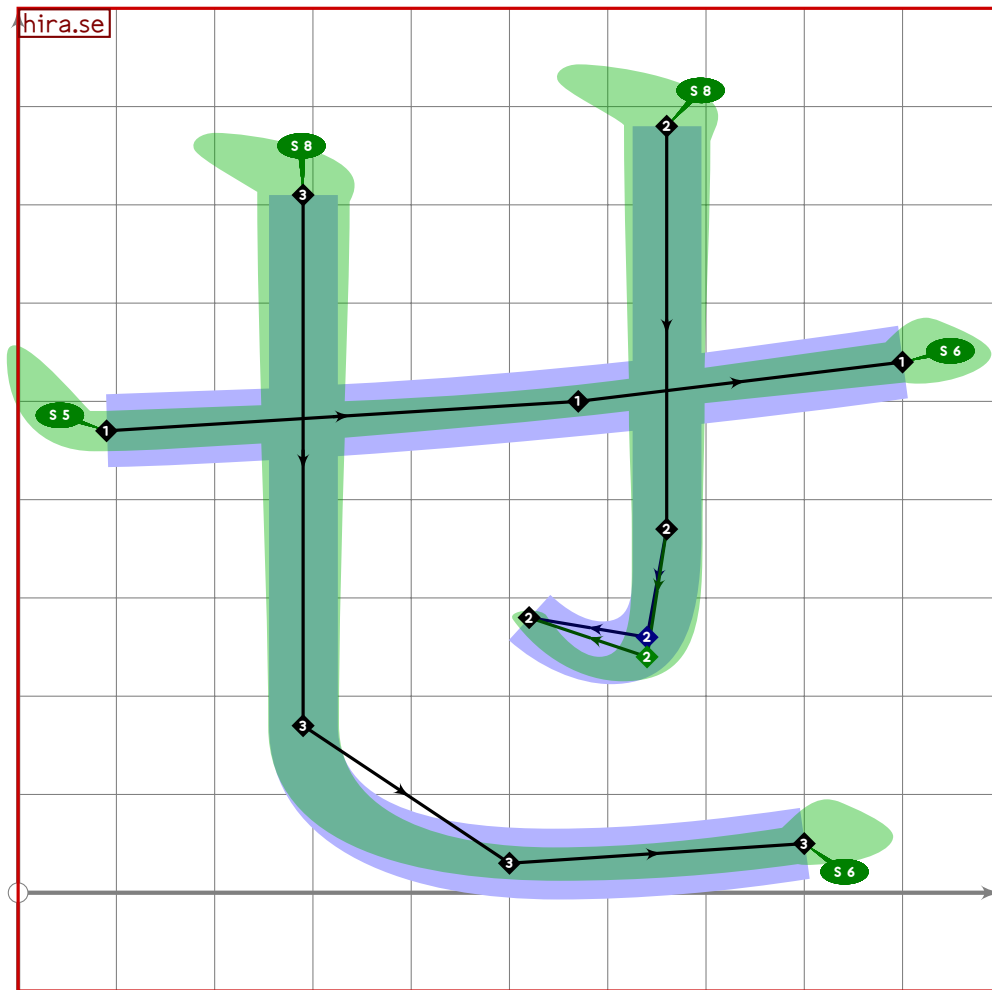
```



```

226
227 vardef tsu_curve.hira.su =
228   add_proof_box("hira.su");
229   bp[sp]:=(110,620)..(0.4[(110,620),(890,630)]+15*up*mincho)..(890,630);
230   bq[sp]:=(2.2,2.2)-(1.9,1.9)-(2.2,2.2);
231   bo_serif[sp][0]:=5;
232
233   bp[sp*2]:=(320,330)..(430,470)..(570,300)..{curl 0}(270,-150);
234   bp[sp*2]:=(point 1.9 of bp[sp*2])..(380,220)..bp[sp*2];
235   bq[sp*2]:=(1.3,1.3)-(1.7,1.7)-(1.3,1.3)-(1.7,1.7)-(1.6,1.6)-(0.7,0.7);
236
237   bp[sp*1]:=(570,790){down}..(point 3.7 of bp[sp*2]);
238   bq[sp*1]:=(1.6,1.6)..(1.4,1.4);
239   bo_serif[sp*1][0]:=8;
240   sp:=sp*3;
241 enddef;

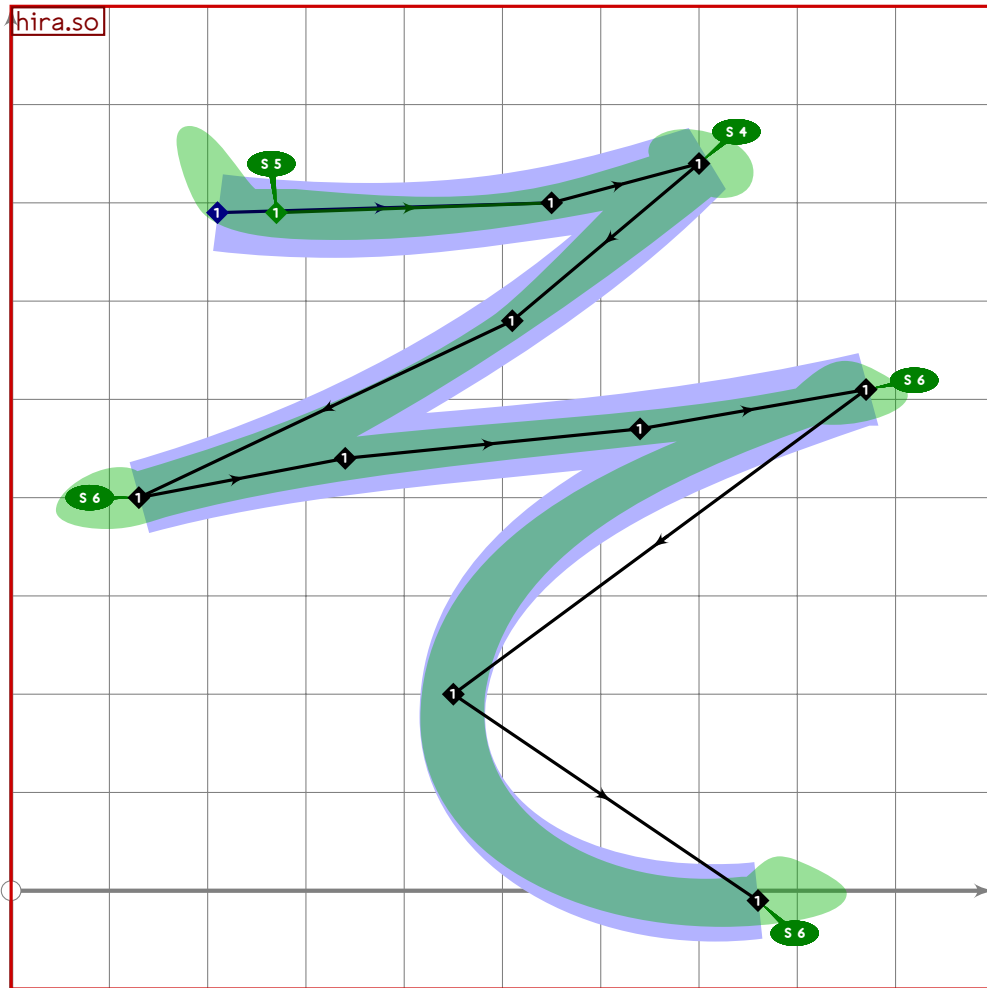
```



```

242
243 vardef tsu_curve.hira.se =
244   add_proof_box("hira.se");
245   bp[sp]:=(90,470)..(570,500)..(900,540);
246   bq[sp]:=(2,2)..(1.6,1.6)..(2,2);
247   bo_serif[sp][0]:=5;
248   bo_serif[sp][2]:=6;
249
250   bp[sp*1]:=(660,780)..(660,370){down}..(640,260-20*mincho)..{curl 0.2}(520,280);
251   bq[sp*1]:=(1.7,1.7)..(1.5,1.5)..(1.5,1.5)..(1,1);
252   bo_serif[sp*1][0]:=8;
253
254   bp[sp*2]:=(290,710)..(290,170){down}..(500,30)..
255     {direction infinity of bp[sp]}(800,50);
256   bq[sp*2]:=(1.8,1.8)..(1.5,1.5)..(1.7,1.7)..(1.8,1.8);
257   bo_serif[sp*2][0]:=8;
258   bo_serif[sp*2][3]:=6;
259   sp:=sp*3;
260 enddef;

```



```

261
262 vardef tsu_curve.hira.so =
263   add_proof_box("hira.so");
264   bp[sp]:=(210*60*mincho,690)..tension 1.2..(550,700)..
265     {curl 0}{700,740}{curl 1}..
266     (510,580)..
267     {curl 1}{130,400}{curl 2}{340,440}..(640,470)..
268     {curl 1}{870,510}{curl 0}..tension 1.2..(450,200)..{curl 0.2}{760,-10};
269   bq[sp]:=(2.3,2.3)-(1.7,1.7)-(1.8,1.8)-
270     (1.2,1.2)-
271     (2.1,2.1)-(1.9,1.9)-(1.7,1.7)-(1.5,1.5)-
272     (1.4,1.4)-(2.3,2.3);
273   bo_tip[sp][2]:=0;
274   bo_tip[sp][4]:=0;
275   bo_tip[sp][7]:=0;
276   bo_serif[sp][0]:=5;
277   bo_serif[sp][2]:=4;
278   bo_serif[sp][4]:=6;
279   bo_serif[sp][7]:=6;
280   bo_serif[sp][9]:=6;
281   sp:=sp*1;

```

```

282 endif;
283

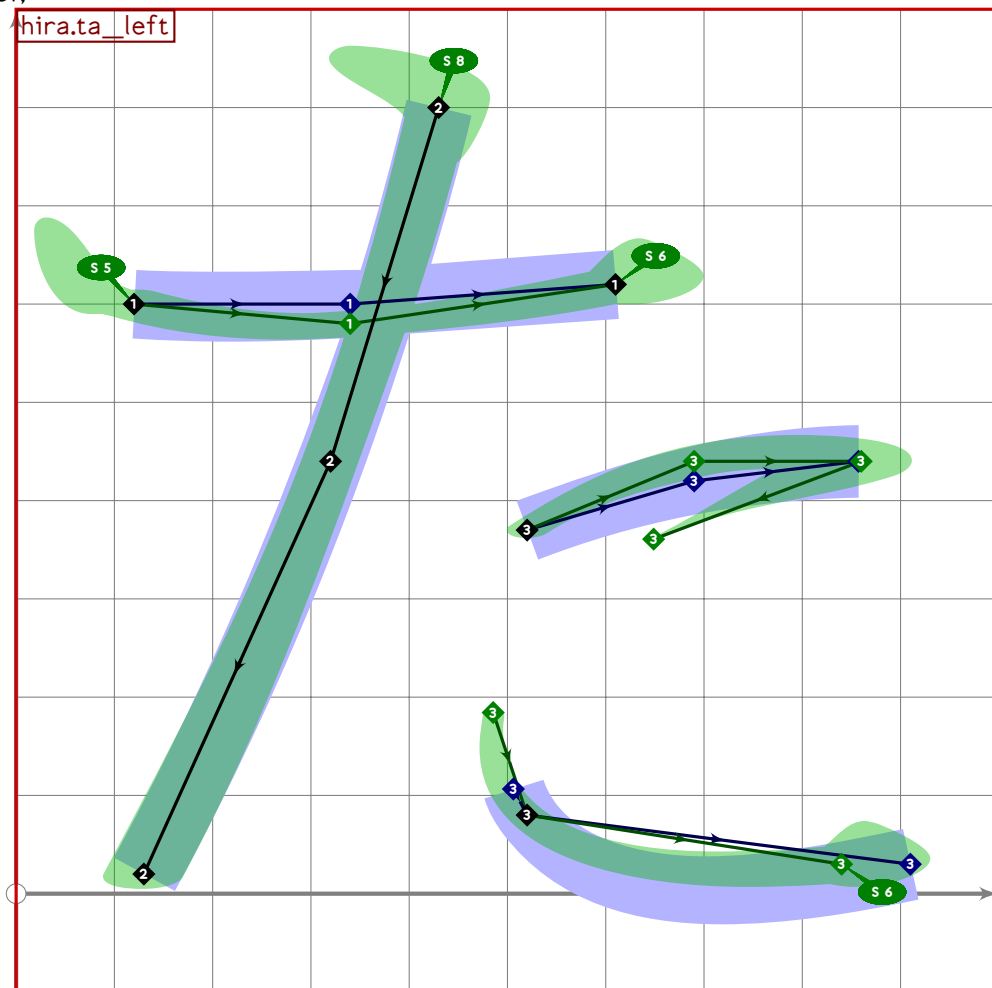
```

## Hiragana Tachitsuteto/Dajizudedo

```

284 %%%%%%%%%% HIRAGANA TACHITSUTETO/DAJIZUDED0
285
286 vardef tsu_curve.hira.ta_left =
287   add_proof_box("hira.ta_left");
288   bp[sp]:=(120,600)..(340,600-20*mincho)..tension 1.5..(610,620);
289   bq[sp]:=(1.6,1.6)..(1.5,1.5)..(1.7,1.7);
290   bo_serif[sp][0]:=5;
291   bo_serif[sp][2]:=6;
292
293   bp[sp+1]:=(430,800)..(320,440)..(130,20);
294   bq[sp+1]:=(1.4,1.4)..(1.3,1.3)..(1.6,1.6);
295   bo_serif[sp+1][0]:=8;
296   sp:=sp+2;
297 endif;

```



```

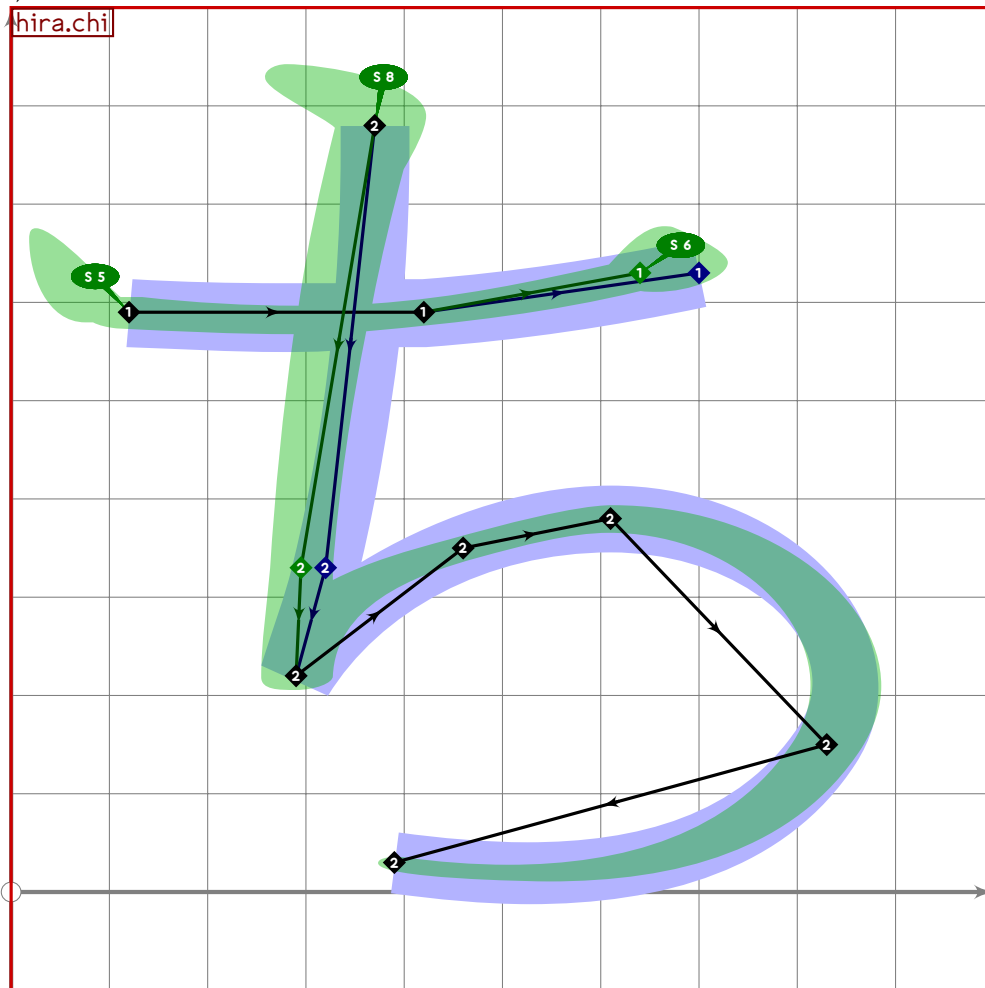
298
299 vardef tsu_curve.hira.ta =
300   add_proof_box("hira.ta");

```

```

301 tsu_curve.hira.ta_left;
302
303 bp[sp]:=(520,370)..(690,420+20*mincho)..{curl 1.5}(860,440){curl 0}..
304 (610,280+60*mincho)..(520,80)..tension 1.2 and 3..
305 {curl 0.2}(910-70*mincho,30);
306 bq[sp]:=(1,1,1)-(1.6,1.6)-(2.8,0.99)-(0.45,0.35)-(1,1,1)-(1.9,1.9);
307 bo_tip[sp][2]=0;
308 bo_serif[sp][5]=6;
309 sp:=sp*1;
310 enddef;
311
312 vardef tsu_curve.hira.chi_bottom =
313 bp[sp]:=(bp[sp]){direction infinity of bp[sp] xscaled 2}..
314 (460,350)..(610,380){right}..(830,150)..
315 tension 1.4..{curl 0.3}(390,30);
316 bq[sp]:=(bq[sp])..(1.3,1.3)..(1.5,1.5)..(1.5,1.5)..(1,1);
317 enddef;

```



```

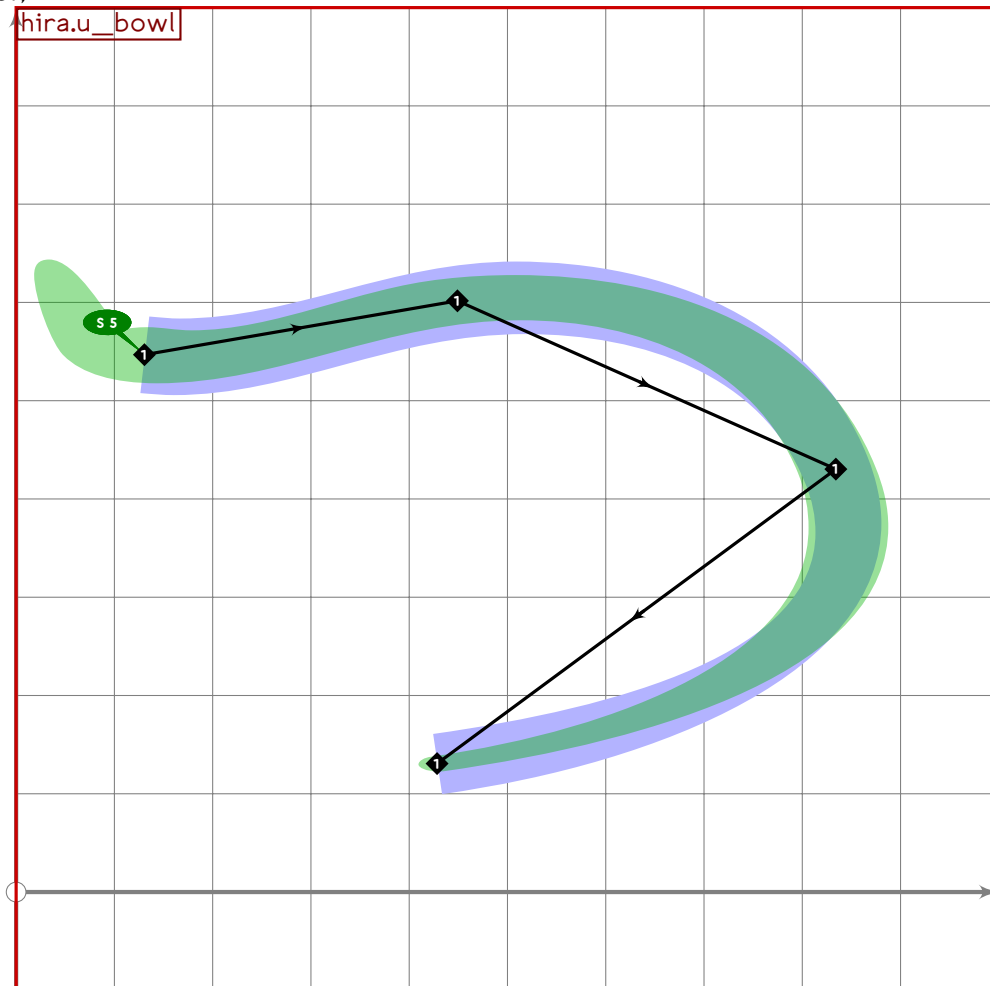
318
319 vardef tsu_curve.hira.chi =
320 add_proof_box("hira.chi");
321 bp[sp]:=(120,590)..(420,590)..(700-60*mincho,630);

```

```

322 bq[sp]:=(1.7,1.7)..(1.5,1.5)..(1.6,1.6);
323 bo_serif[sp][0]:=5;
324 bo_serif[sp][2]:=6;
325 sp:=sp*1;
326
327 bp[sp]:=(370,780)..(320-25*mincho,330)..(290,220);
328 bq[sp]:=(1.6,1.6)..(1.4,1.4)..(1.5,1.5);
329 tsu_curve.hira.chi_bottom;
330 bo_tip[sp][2]:=0;
331 bo_serif[sp][0]:=8;
332 sp:=sp*1;
333 enddef;

```



```

334
335 vardef tsu_curve.hira.tsu =
336   add_proof_box("hira.tsu");
337   begingroup
338     save xf;
339     transform xf;
340     (300,450) transformed xf=(220,560);
341     (750,350) transformed xf=(820,440);
342     (400,0) transformed xf=(400,150);

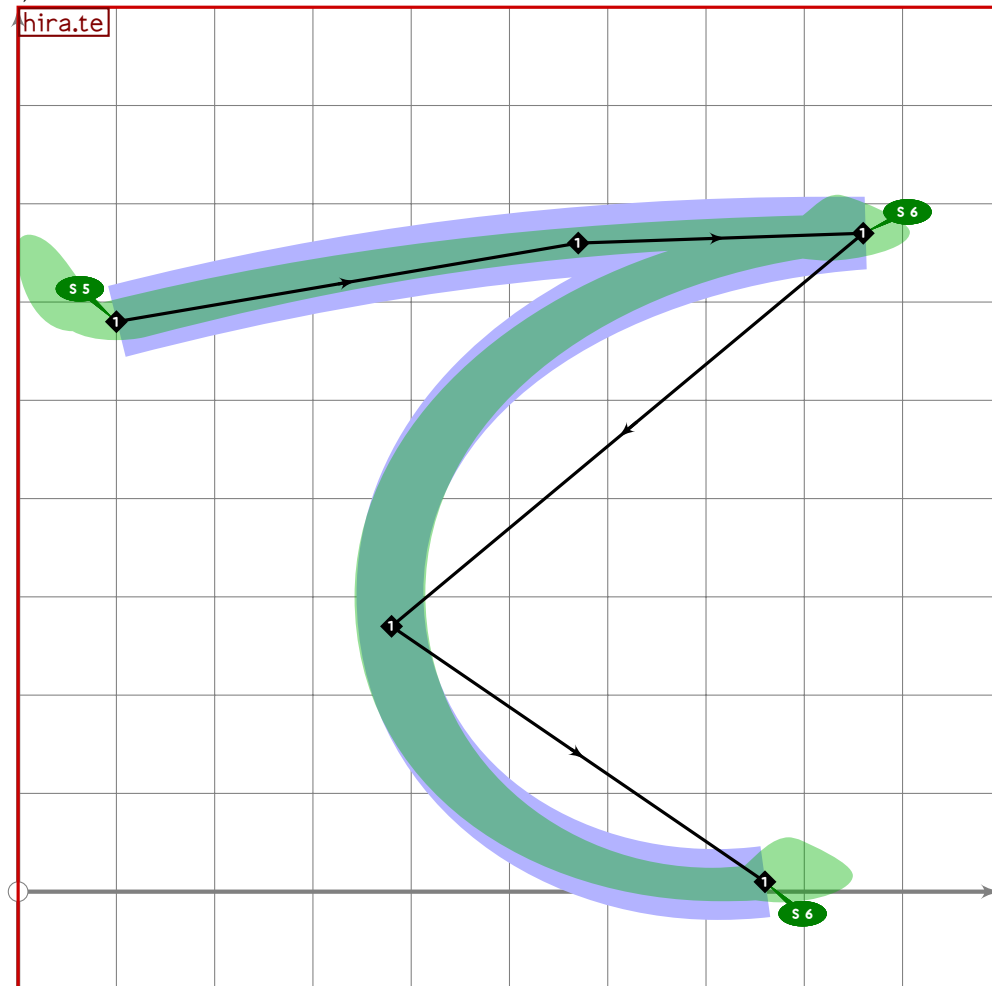
```



```

343   tsu_curve.hira.u_bowl;
344   bp[sp-1]:=bp[sp-1] transformed xf;
345   endgroup;
346   bo_size[sp-1]:=100*10*mincho;
347   enddef;

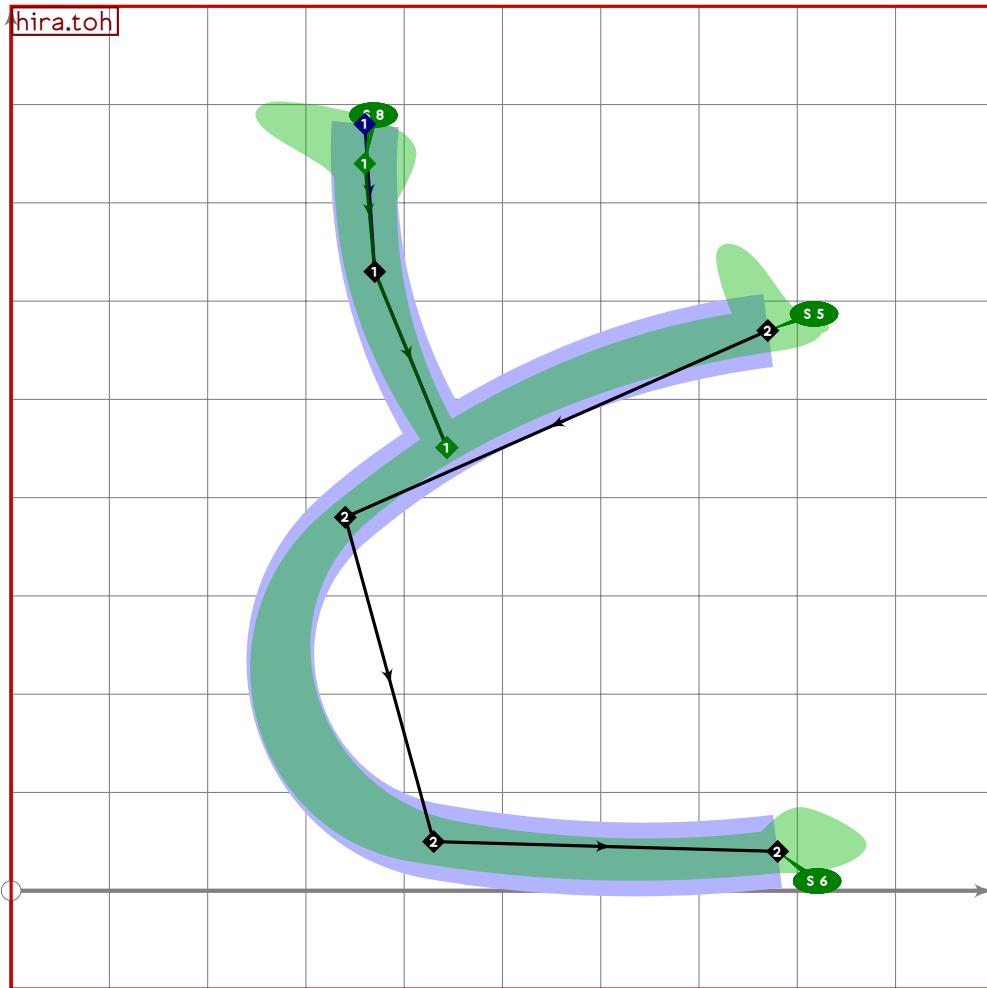
```



```

348
349   vardef tsu_curve.hira.te =
350     add_proof_box("hira.te");
351     bp[sp]:=(100,580)..(570,660)..{curl 1}(860,670){curl 0.2}..
352       (380,270)..{curl 0.6}(760,10);
353     bq[sp]:=(1.9,1.9)-(1.5,1.5)-(1.8,1.8)-(1.5,1.5)-(1.8,1.8);
354     bo_tip[sp][2]:=0;
355     bo_serif[sp][0]:=5;
356     bo_serif[sp][2]:=6;
357     bo_serif[sp][4]:=6;
358     sp:=sp*1;
359   enddef;

```



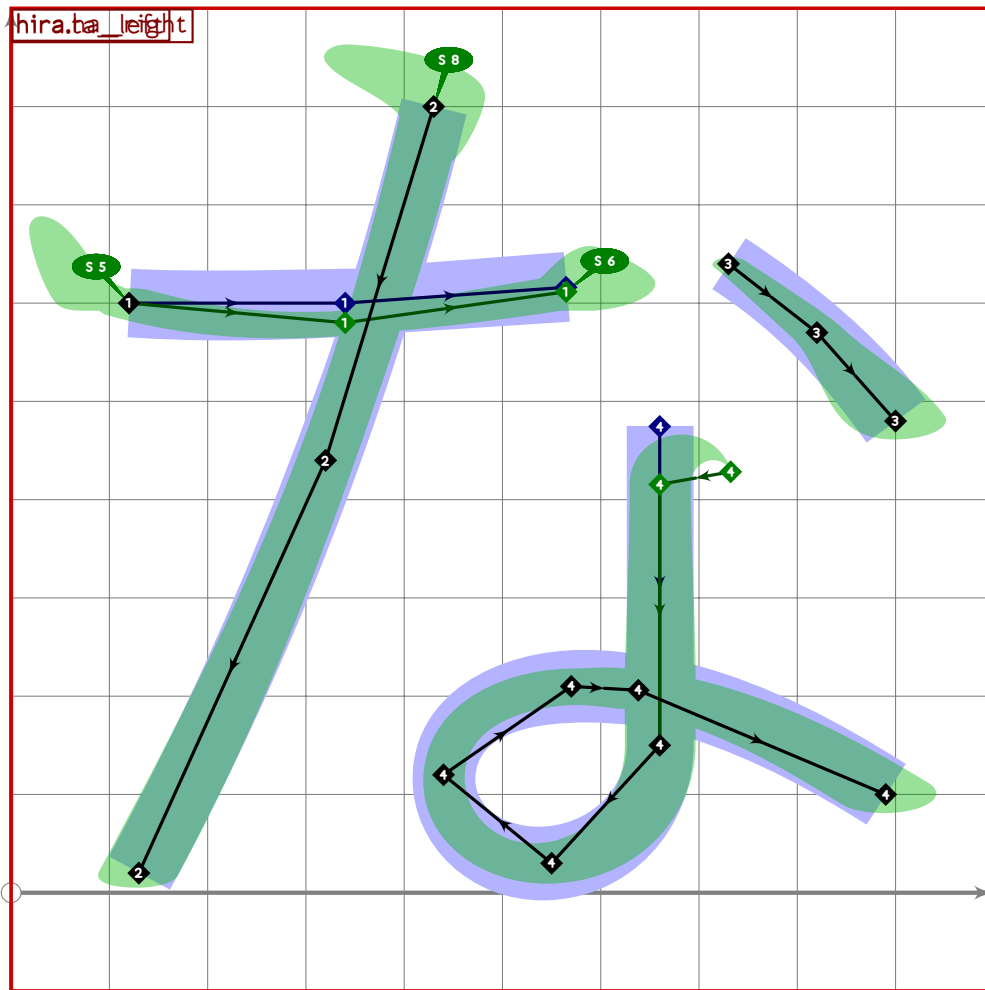
```

360
361 vardef tsu_curve.hira.toh =
362   add_proof_box("hira.toh");
363   bp[sp*1]:=(770,570)..tension 1.7..(340,380)..(430,50)..
364     tension 2..(780,40);
365   bq[sp*1]:=(2,2)-(1.2,1.2)-(2.1,2.1)-(2,2);
366   bo_serif[sp*1][0]:=5;
367   bo_serif[sp*1][3]:=6;
368
369   bp[sp]:=(360,780-40*mincho)..(370,630)..(point 0.7 of bp[sp*1]);
370   bp[sp]:=subpath (0,1.97) of bp[sp];
371   bq[sp]:=(1.4,1.4)-(1.3,1.3)-(1.1,1.1);
372   bo_serif[sp][0]:=8;
373   sp:=sp*2;
374 enddef;
375

```

## Hiragana Naninuneno

376 %%% HIRAGANA NANINUNENO



```

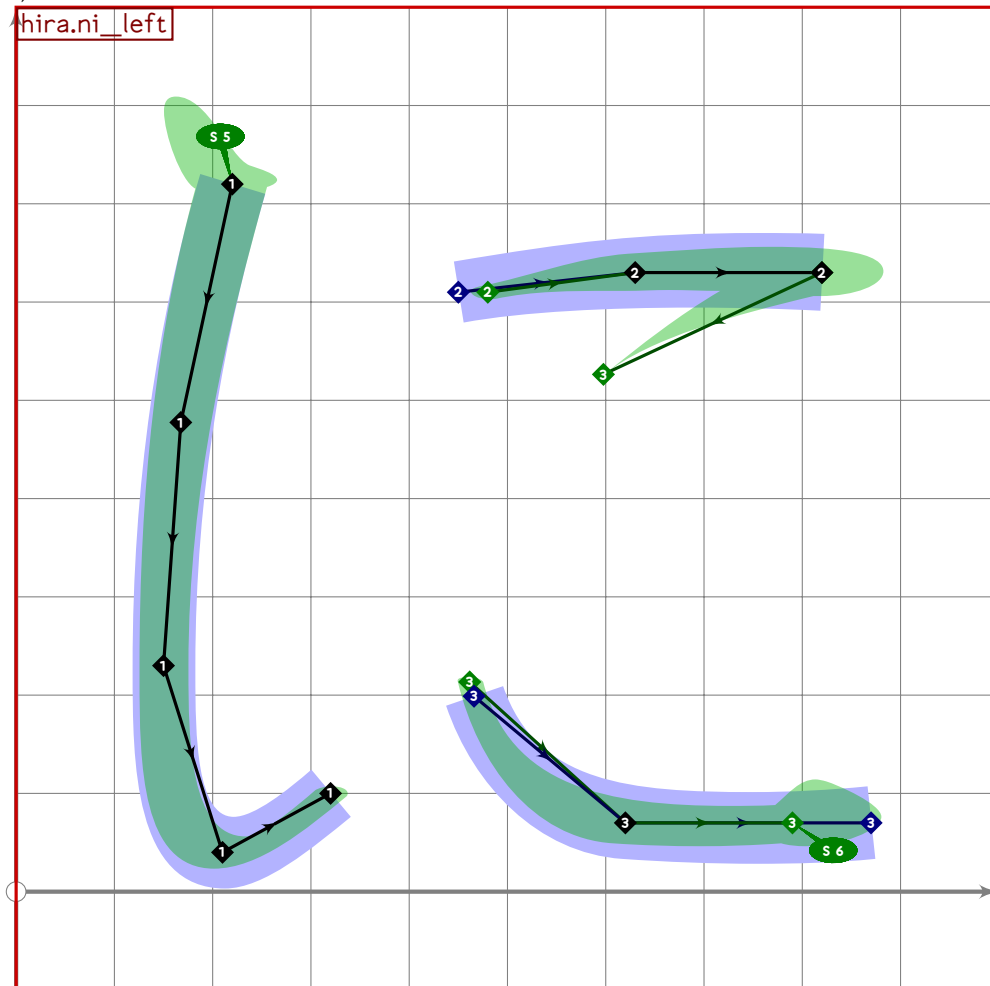
377
378 vardef tsu_curve.hira.na =
379   add_proof_box("hira.na");
380   tsu_curve.hira.ta_left;
381   bp[sp-2]:=subpath (0,1,8) of bp[sp-2];
382
383   bp[sp]:=(730,640)..(820,570)..(900,480);
384   bq[sp]:=(1,1)..(1.3,1.3)..(1.9,1.9);
385   sp:=sp*1;
386
387   tsu_curve.hira.ha_right;
388   bp[sp-1]:=(point infinity of bp[sp-1]){direction infinity of bp[sp-1]}
389     ..(subpath (0.45*0.1*mincho,infinity) of bp[sp-1]);
390   bq[sp-1]:=(0,0.4)-(1.7,1)-(1.5,1.5)-(2,2)-(1.1,1)-(1.9,1.9);
391 enddef;
392
393 vardef tsu_curve.hira.ni_left =
394   add_proof_box("hira.ni_left");
395   bp[sp]:=(220,720)..(150,230){down}..tension 1.5..(210,40)..
396     tension 1.5..{curl 0}(320,100);
397   bq[sp]:=(1.5,1.5)..(1.2,1.2)..(1.8,1.8)..(1,1);

```

```

398 bp[sp]:=insert__nodes(bp[sp])(0.5);
399 bq[sp]:=insert__nodes(bq[sp])(0.5);
400 bo_serif[sp][0]:=5;
401 sp:=sp*1;
402 enddef;

```



```

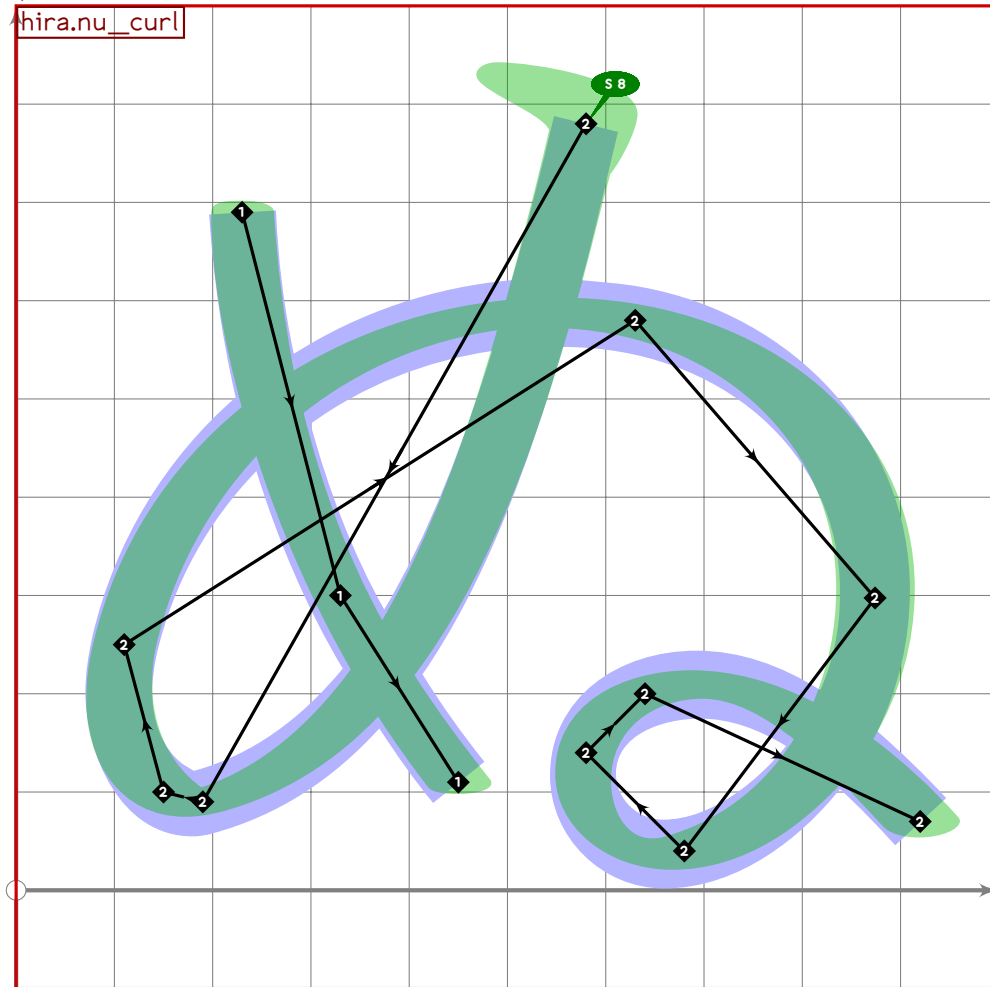
403
404 vardef tsu_curve.hira.ni =
405   add__proof__box("hira.ni");
406   tsu_curve.hira.ni_left;
407
408   bp[sp]:=(450*30*mincho,610)..(630,630)..(820,630);
409   bq[sp]:=(1,1)..(1.9,1.9)..(2.2,2.2);
410
411   bp[sp*1]:=(point infinity of bp[sp]){curl 0.6}..(530,460)..(460,220)..
412     (620,70)..tension 2..(870-80*mincho,70);
413   bq[sp*1]:=(3,0.7)-(0,0)-(0.8,0.9)-(2,2)-(1.9,1.9);
414   bo_serif[sp*1][4]:=6;
415   sp:=sp*2;
416 enddef;
417
418 vardef tsu_curve.hira.nu_curl =

```

```

419 add_proof_box("hira.nu_curl");
420 (680,40)..(580,140)..(640,200)..{curl 0}{920,70}
421 enddef;

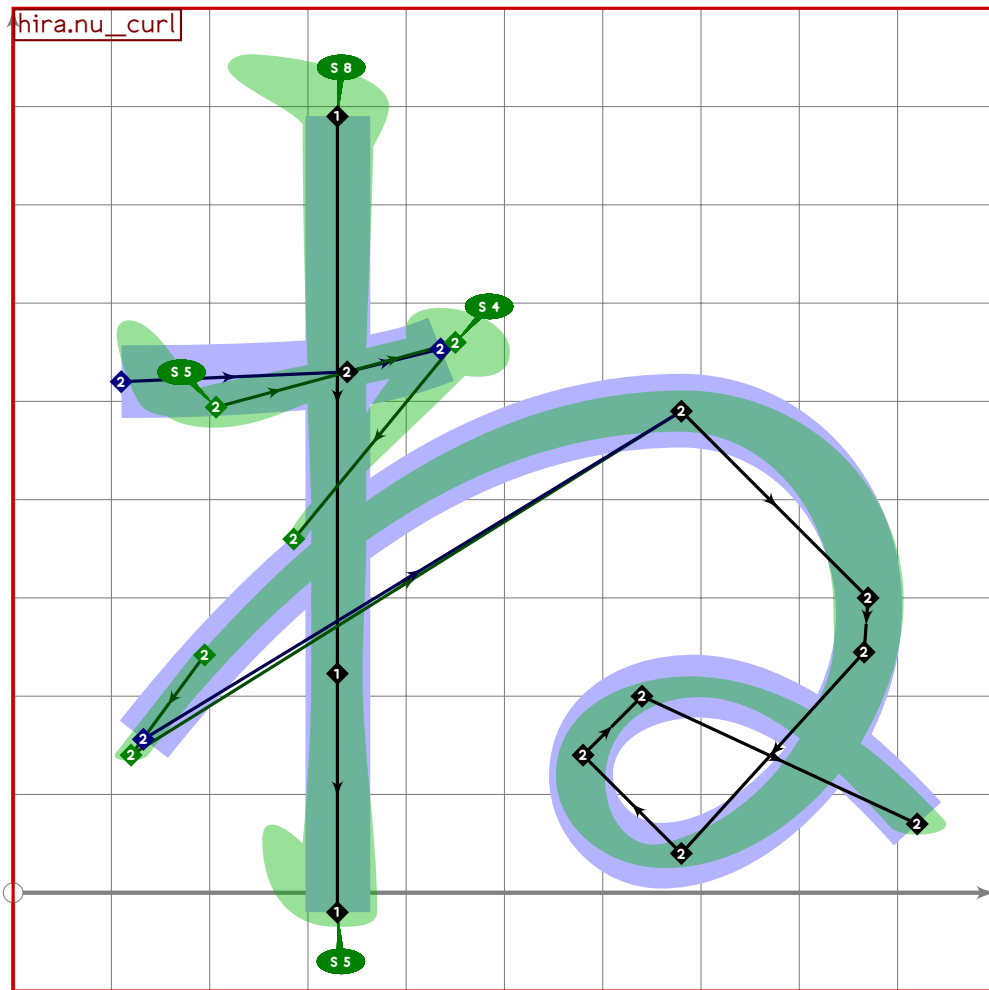
```



```

422
423 vardef tsu_curve.hira.nu =
424   add_proof_box("hira.nu");
425   tsu_curve.hira.me;
426   sp:=sp*2;
427
428   bp[sp*1]:=(subpath (0,4.8) of bp[sp*1])..tension 1.2..tsu_curve.hira.nu_curl;
429   bq[sp*1]:=(1.5,1.5)-(1.4,1.4)-(1.6,1.6)-(1.4,1.4)-
430     (1.6,1.6)-(1.6,1.6)-(1.7,1.7)-(1.3,1.3)-(1.6,1.6);
431   bo_serif[sp*1][0]:=8;
432   sp:=sp*2;
433 enddef;

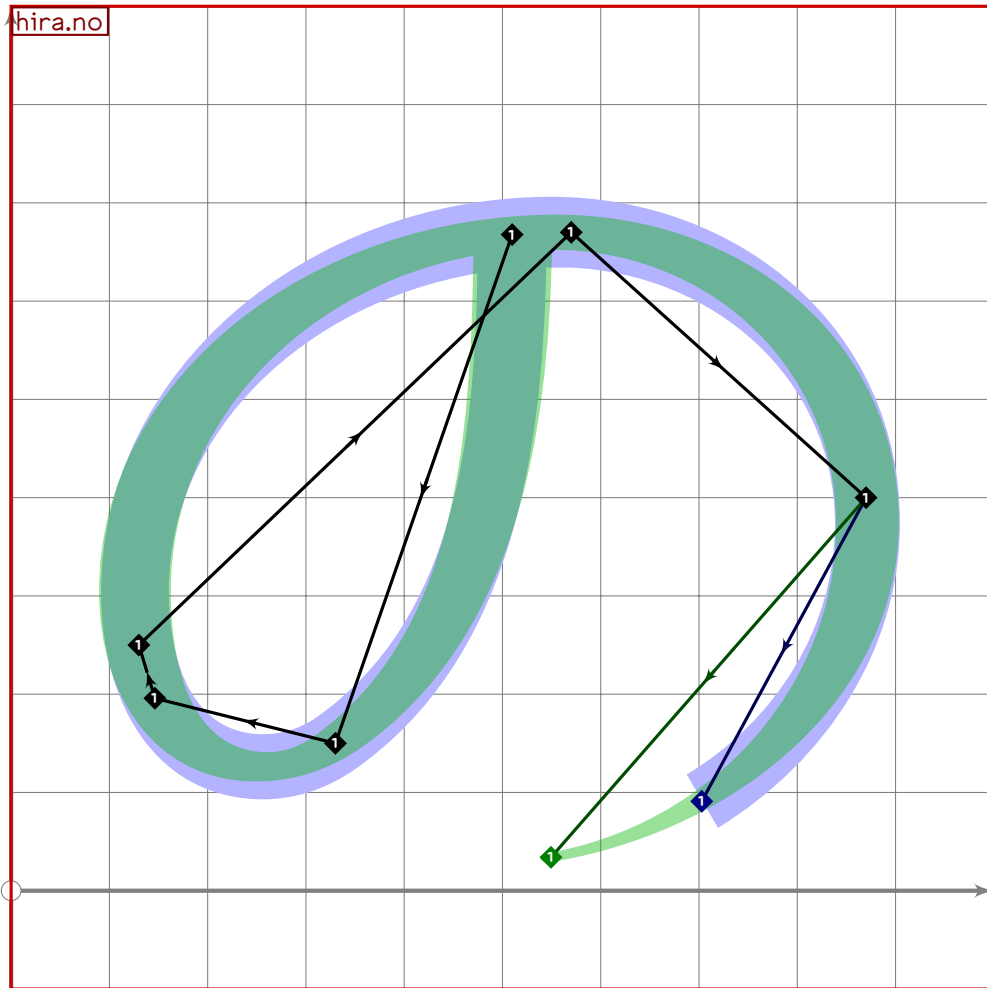
```



```

434
435 vardef tsu_curve.hira.ne =
436   add_proof_box("hira.ne");
437   tsu_curve.hira.wa;
438   sp:=sp-2;
439
440   bp[sp*1]:=(subpath (0,6.1) of bp[sp*1])..tension 1.2..tsu_curve.hira.nu_curl;
441   bq[sp*1]:=(2,2)-(1.6,1.6)-(2.2,0.9)-(0.7,0.7)-(0.97,0.97)-
442     (2,2)-(1.5,1.5)-(1.4,1.4)-(1.4,1.4)-(1.2,1.2)-(1.3,1.3);
443   sp:=sp+2;
444 enddef;

```



```

445
446 vardef tsu_curve.hira.no =
447   add_proof_box("hira.no");
448   bp[sp]:=(1,1)-(2,2);
449   begingroup
450     path px,py;
451     px:=(410,30)..(130,250)..tension 1.1..(570,670)..(870,400)..cycle;
452     py:=(510,770){down}{dir 215}(330,150);
453
454     bp[sp]:=subpath (0.85,4) of px;
455     bp[sp]:=(subpath (xpart (py intersectiontimes bp[sp]),infinity) of py)..bp[sp];
456   endgroup;
457
458   bq[sp]:=(1.6,1.6)-(1.3,1.3)-(1.4,1.4)-(1.5,1.5)-(1.8,1.8)-
459     (1.4,1.4)-(0.7,0.7);
460   sp:=sp*1;
461 enddef;
462

```

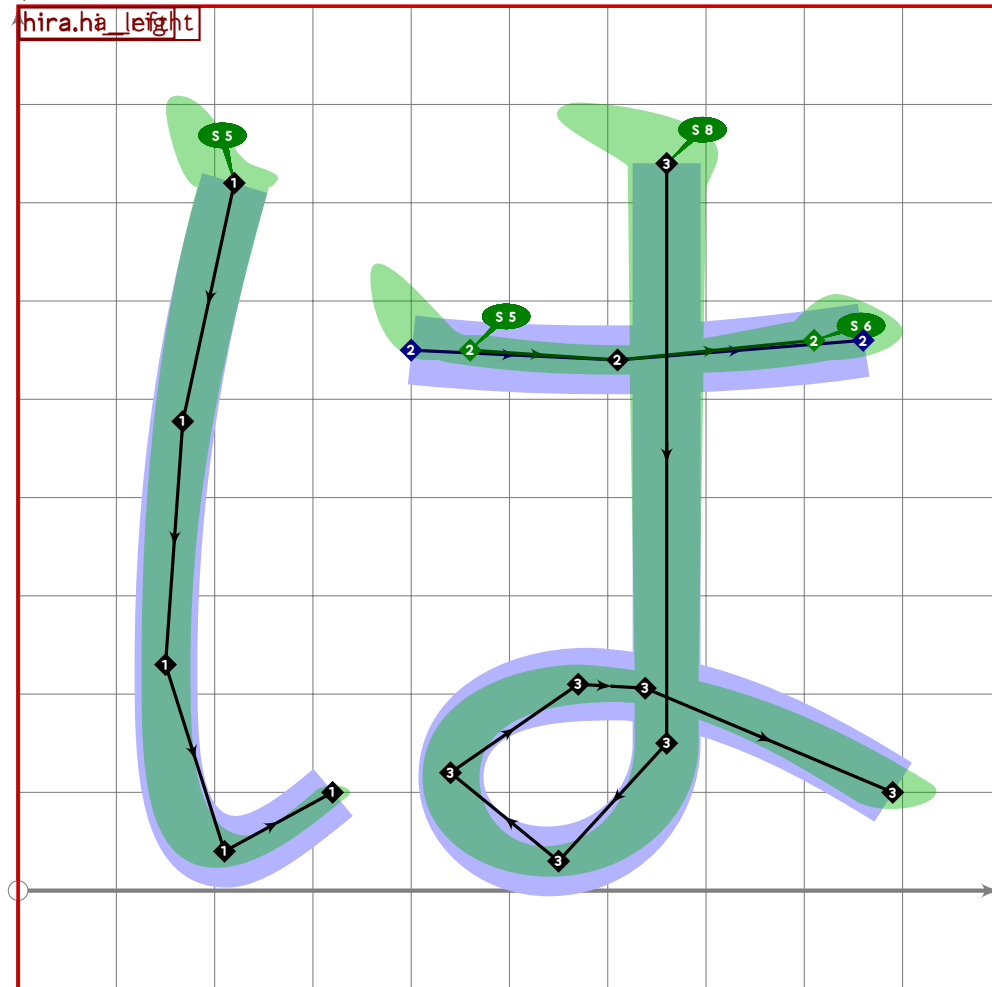
## Hiragana Hahifuheho/Babibubebo/Papipupepo

463 %%% HIRAGANA HAHIFUHEHO/BABIBUBEBO/PAPIPUPEPO

```

464
465 vardef tsu_curve.hira.ha_right =
466   add_proof_box("hira.ha_right");
467   bp[sp]:=(660,740)..(660,150){down}..(550,30)..(440,120)..
468     (570,210)..{curl 0.17}(890,100);
469   bp[sp]:=insert_nodes(bp[sp])(4,2);
470   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.6,1.6)-(1.3,1.3)-
471     (2,2)-(1.6,1.6)-(1.7,1.7);
472   sp:=sp*1;
473 enddef;

```



```

474
475 vardef tsu_curve.hira.ha =
476   add_proof_box("hira.ha");
477   tsu_curve.hira.ni_left;
478
479   bp[sp]:=(400*60*mincho,550)..(610,540)..(860-50*mincho,560);
480   bq[sp]:=(1.6,1.6)..(1.6,1.6)..(2,2);
481   bo_serif[sp][0]:=5;
482   bo_serif[sp][2]:=6;
483   sp:=sp*1;
484

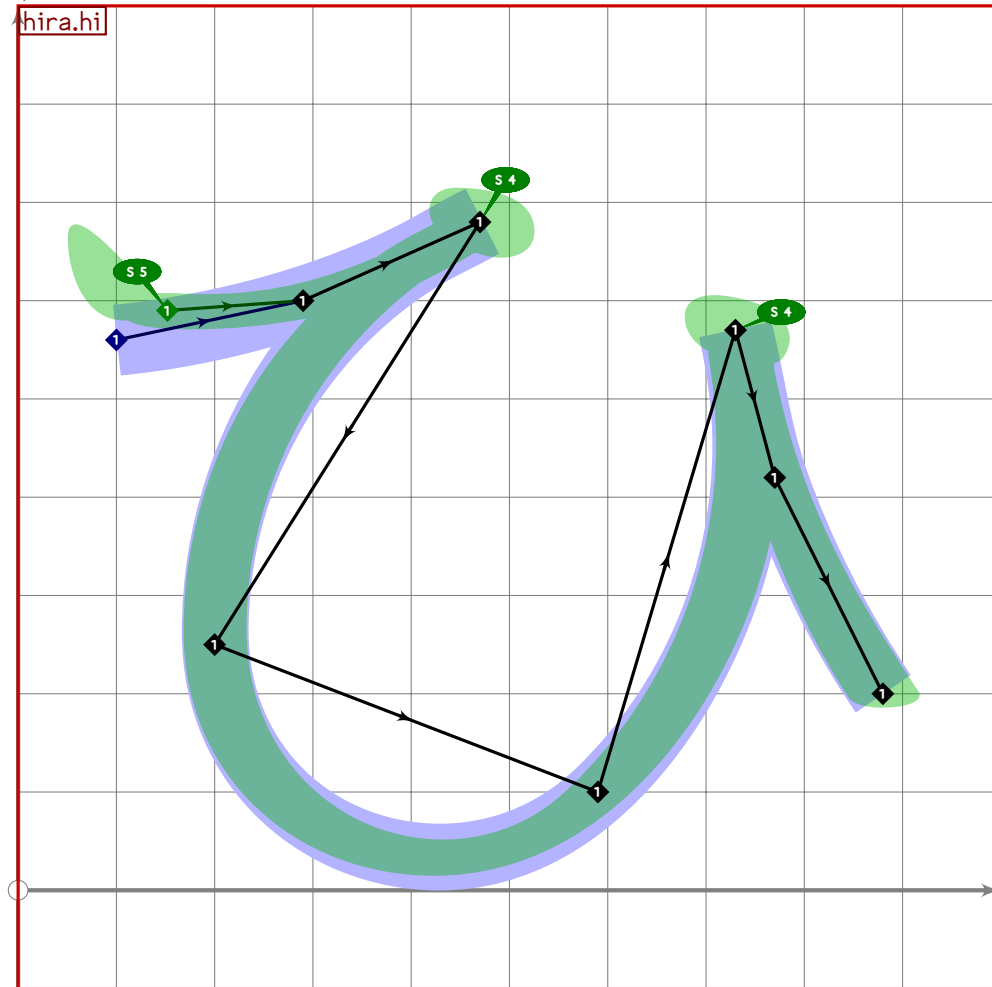
```



```

485 tsu_curve.hira.ha_right;
486 bo_serif[sp-1][0]:=8;
487 enddef;

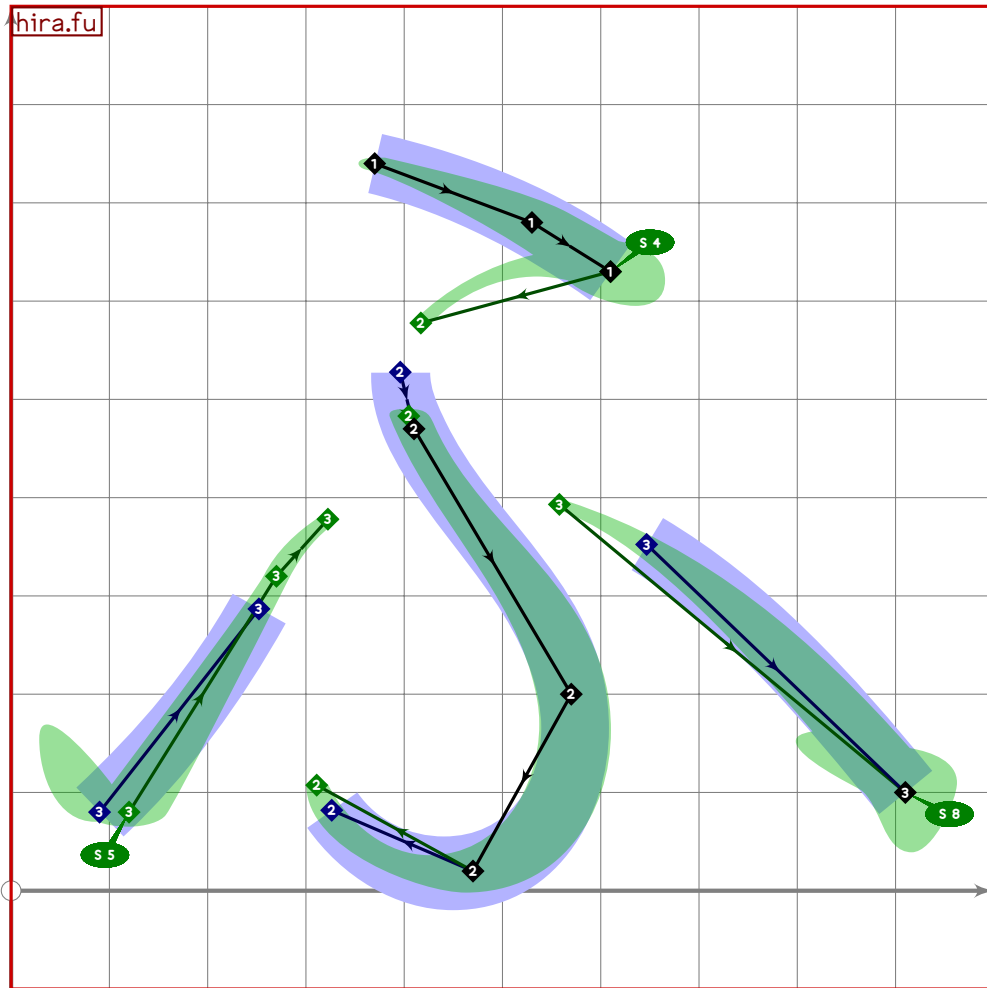
```



```

488
489 vardef tsu_curve.hira.hi =
490   add_proof_box("hira.hi");
491   bp[sp]:=((100,560)+60*mincho*dir 30)..(290,600)..
492     {curl 1}(470,680){curl 1}..
493     tension 1.3..(200,250)..(590,100)..tension 1.3..
494     {curl 1}(730,570){curl 1}..(770,420)..(880,200);
495   bq[sp]:=(1.8,1.8)-(1.7,1.7)-(1.5,1.5)-
496     (1.4,1.4)-(1.4,1.4)-(1.4,1.4)-(1.3,1.3)-(1.5,1.5);
497   bo_tip[sp][2]:=0;
498   bo_tip[sp][5]:=0;
499   bo_serif[sp][0]:=5;
500   bo_serif[sp][2]:=4;
501   bo_serif[sp][5]:=4;
502   sp:=sp*1;
503 enddef;

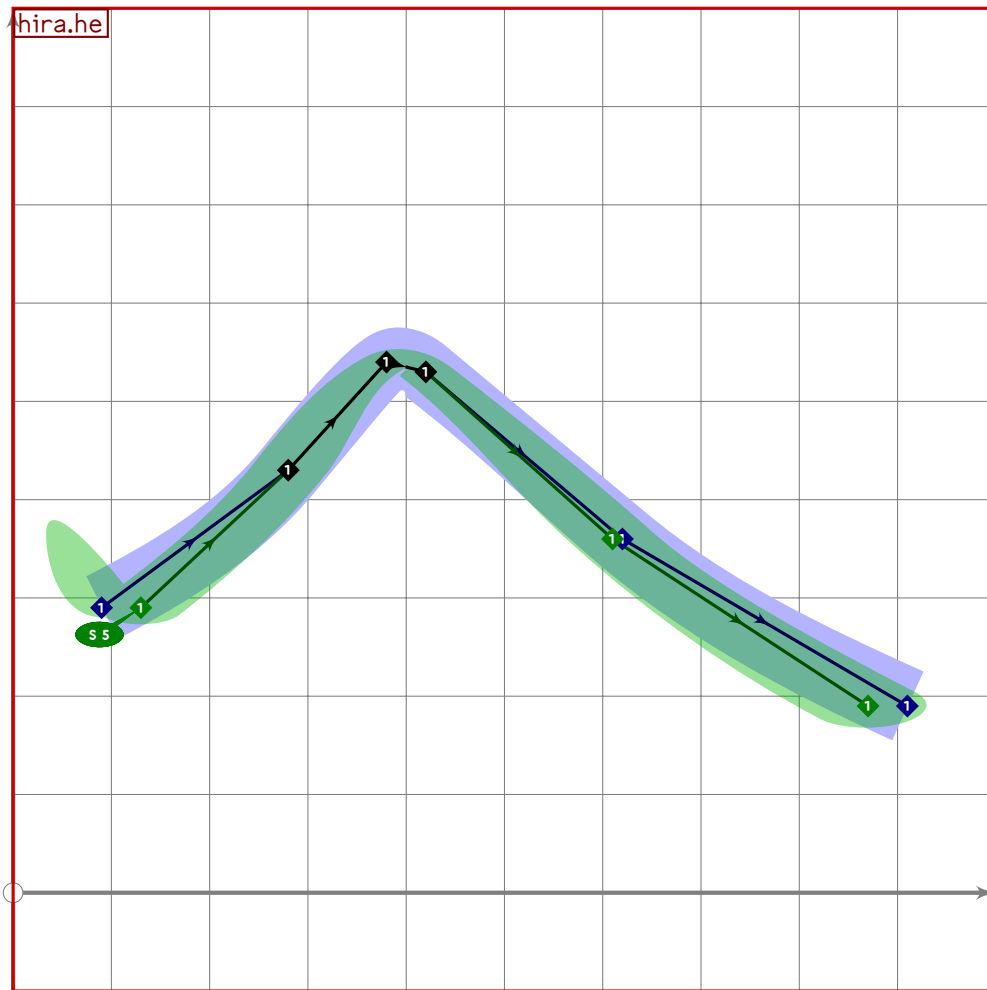
```



```

504
505 vardef tsu_curve.hira.fu =
506   add_proof_box("hira.fu");
507   bp[sp]:=(370,740)..(530,680)..(610,630);
508   bq[sp]:=(1,1)-(1.7,1.7)-(1.8,1.8);
509   bo_serif[sp][2]:=4;
510
511   bp[sp*1]:=(610,630)..tension 1.4..(410,570)..(410,470)..(570,200)..(470,20)..
512     {curl 0.3}(290,270);
513   bq[sp*1]:=(2.6,0.79)-(0.72,0.72)-(0.85,1.35)-(1.5,1.5)-(2,2)-(0,0);
514
515   bp[sp*2]:=(90*30*mincho,80)..(270,320){dir 63}..(480,410)..{curl 0}(910,100);
516   bq[sp*2]:=(1.4,1.7)-(0.9,0.9)-(0.7,0.7)-(1.6,1.6);
517   bo_serif[sp*2][0]:=5;
518   bo_serif[sp*2][3]:=8;
519   sp:=sp*3;
520 enddef;

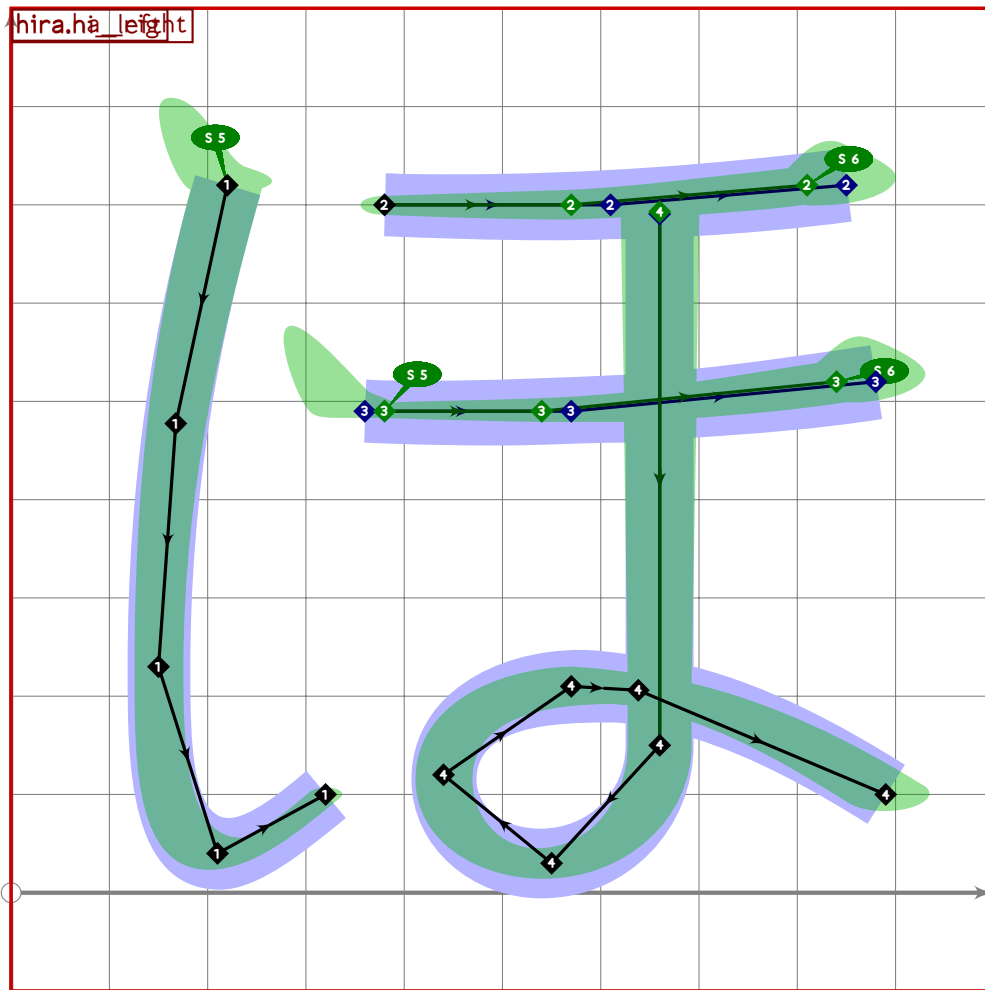
```



```

521
522 vardef tsu_curve.hira.he =
523   add_proof_box("hira.he");
524   bp[sp]:=(90+40*mincho,290){curl 0.2}..(280,430)..tension 2..(380,540)..
525     (420,530)..tension 2..(620-10*mincho,360)..{curl 0.2}(910-40*mincho,190);
526   bq[sp]:=(1.7,1.7)..(1.6,1.6)..(1.2,1.2)..(1.3,1.3)..(1.7,1.7)..(2.1,2.1);
527   bo_serif[sp][0]:=5;
528   sp:=sp*1;
529 enddef;

```



```

530
531 vardef tsu_curve.hira.ho =
532   add_proof_box("hira.ho");
533   tsu_curve.hira.ni_left;
534
535   bp[sp]:=(380,700)..(610-40*mincho,700)..(850-40*mincho,720);
536   bq[sp]:=(1.2,1.2)..(1.6,1.6)..(1.9,1.9);
537   bo_serif[sp][2]=6;
538
539   bp[sp*1]:=(360*20*mincho,490)..(570-30*mincho,490)..(880-40*mincho,520);
540   bq[sp*1]:=(1.2,1.2)..(1.5,1.5)..(2,2);
541   bo_serif[sp*1][0]=5;
542   bo_serif[sp*1][2]=6;
543   sp:=sp*2;
544
545   tsu_curve.hira.ha_right;
546   bp[sp*1]:=subpath
547     (xpart (bp[sp*1] intersectiontimes bp[sp*3])*0.02,infinity) of bp[sp*1];
548 enddef;
549

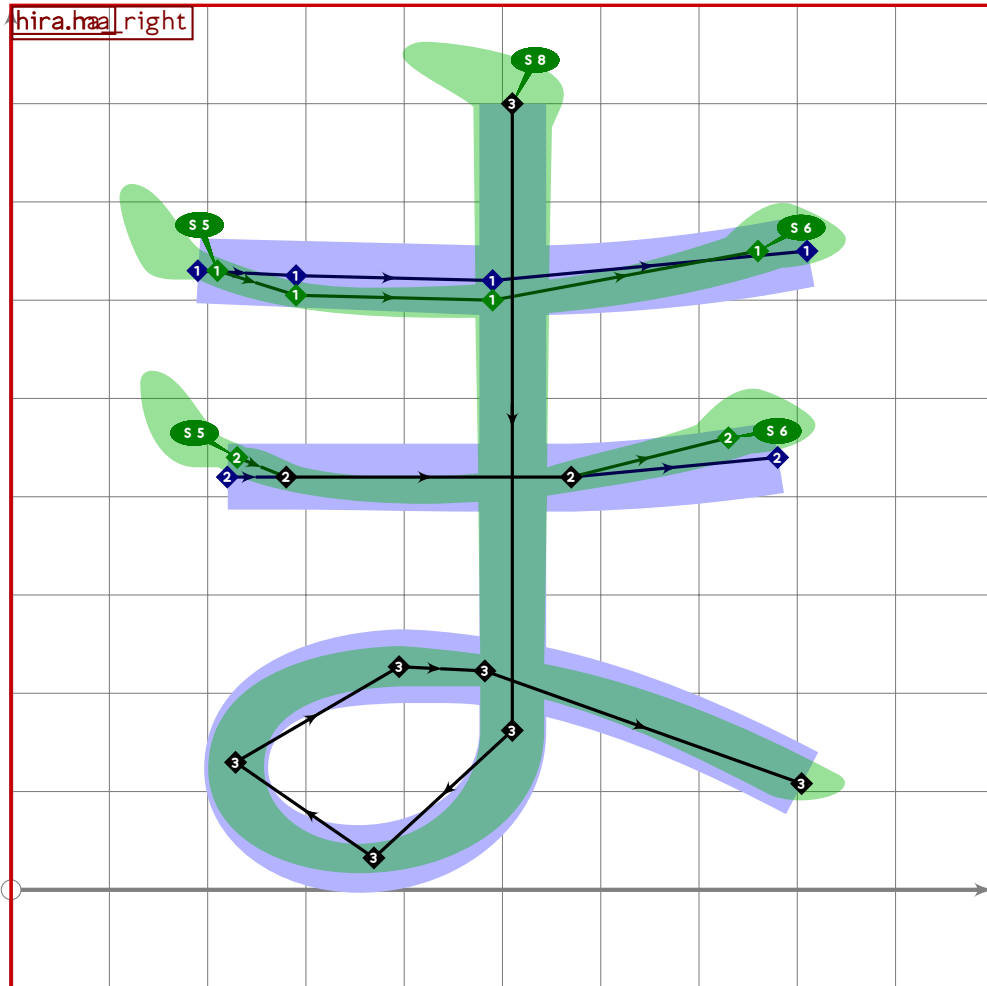
```

# Hiragana Mamimumemo

```

550 %%%%%%%%%% HIRAGANA MAMIMUMEMO
551
552 vardef tsu_curve.hira.ma_stem =
553   add_proof_box("hira.ma_stem");
554   tsu_curve.hira.ha_right;
555   begingroup
556     transform xf;
557
558     (660,0) transformed xf = (510,0);
559     (660,740) transformed xf = (510,800);
560     (910,0) transformed xf = (830,0);
561
562     bp[sp-1]:=bp[sp-1] transformed xf;
563   endgroup;
564   bo_serif[sp-1][0]:=8;
565 enddef;

```



```

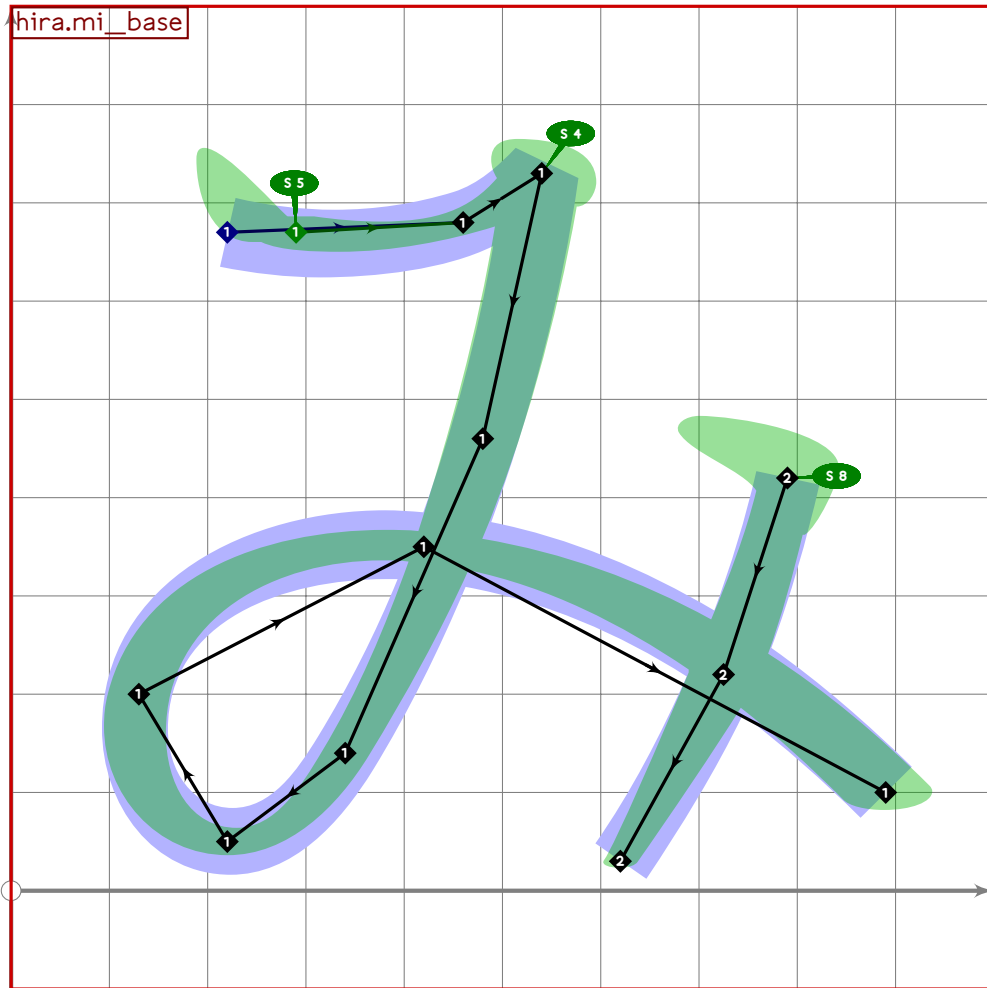
566
567 vardef tsu_curve.hira.ma =
568   add_proof_box("hira.ma");

```

```

569 bp[sp]:=(190*20*mincho,630)..(290,625-20*mincho)..tension 1.3..
570   (490,620-20*mincho)..(810-50*mincho,650);
571 bq[sp]:=(1.3,1.3)-(1.4,1.4)-(1.7,1.7)-(1.9,1.9);
572 bo_serif[sp][0]:=5;
573 bo_serif[sp][3]:=6;
574
575 bp[sp*1]:=(220*10*mincho,420*20*mincho)..(280,420)..tension 1.3..
576   (570,420)..(780-50*mincho,440*20*mincho);
577 bq[sp*1]:=(1.3,1.3)-(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
578 bo_serif[sp*1][0]:=5;
579 bo_serif[sp*1][3]:=6;
580 sp:=sp*2;
581
582   tsu_curve.hira.ma_stem;
583 enddef;
584
585 vardef tsu_curve.hira.mi_base =
586   add_proof_box("hira.mi_base");
587   bp[sp]:=(220*70*mincho,670)..tension 1.3..(460,680)..
588     {curl 1}(540,730){curl 1}..
589     (480,460)..(340,140)..(220,50)..(130,200)..(420,350)..{curl 0.4}(890,100);
590   bq[sp]:=(1.7,1.7)-(1.3,1.3)-(1.6,1.6)-
591     (1.5,1.5)-(1.2,1.2)-(1.5,1.5)-(1.4,1.4)-(1.6,1.6)-(1.8,1.8);
592   bo_tip[sp][2]:=0;
593   bo_serif[sp][0]:=5;
594   bo_serif[sp][2]:=4;
595   sp:=sp*1;
596 enddef;

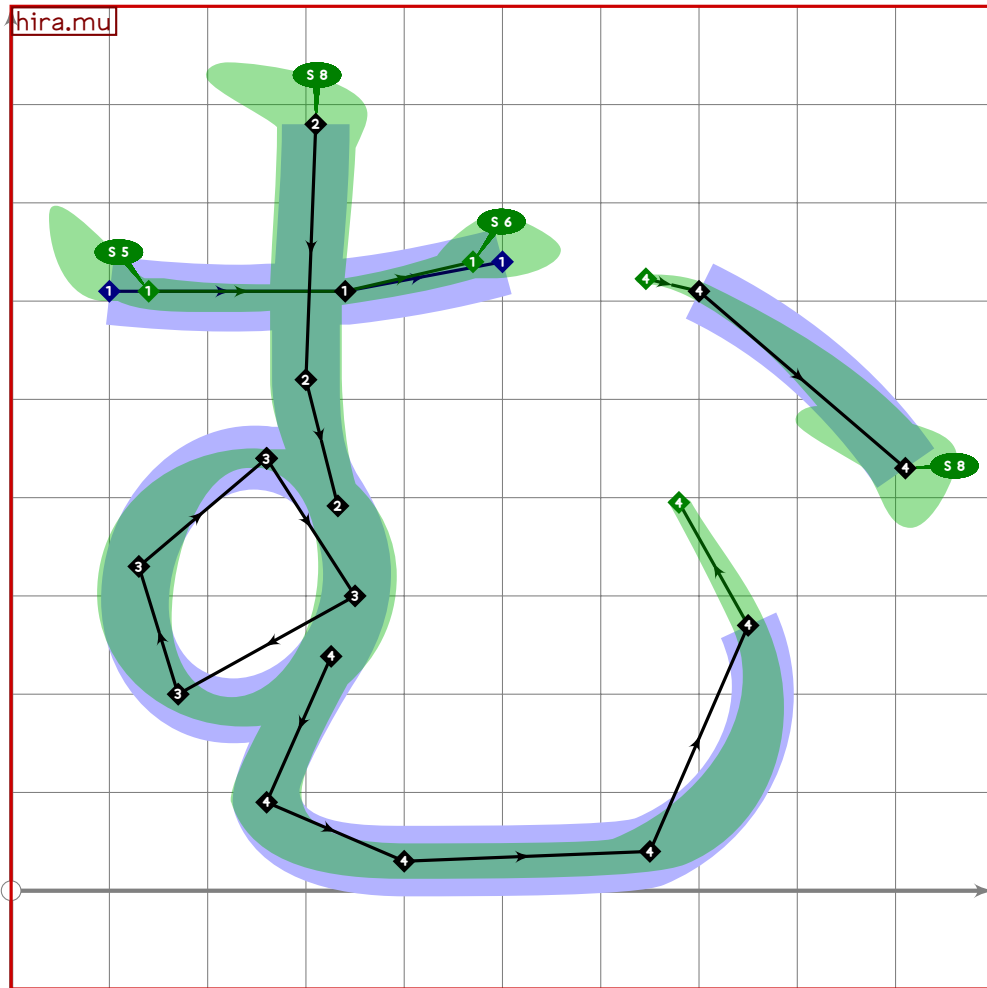
```



```

597
598 vardef tsu_curve.hira.mi =
599   add_proof_box("hira.mi");
600   tsu_curve.hira.mi_base;
601
602   bp[sp]:=(790,420)..(725,220)..(620,30);
603   bq[sp]:=(1.3,1.3)-(1.5,1.5)-(1,1);
604   bo_serif[sp][0]:=8;
605   sp:=sp*1;
606 enddef;

```



```

607
608 vardef tsu_curve.hira.mu =
609   add_proof_box("hira.mu");
610   bp[sp]:= (100+40*mincho,610)..(340,610)..(500-30*mincho,640);
611   bq[sp]:= (1.6,1.6)-(1.4,1.4)-(1.5,1.5);
612   bo_serif[sp][0]:=5;
613   bo_serif[sp][2]:=6;
614
615   bp[sp*2]:= (260,440)..(350,300)..(170,200)..(130,330)..cycle;
616   bq[sp*2]:= (1.3,1.3)..(1.6,1.6)..(1.3,1.3)..(1.6,1.6)..cycle;
617
618   bp[sp*1]:= (310,780){down}..(300,520)..
619     (point 0.5 of bp[sp*2]){direction 0.5 of bp[sp*2]};
620   bq[sp*1]:= (1.6,1.6)-(1.5,1.5)-(1.2,1.2);
621   bo_serif[sp*1][0]:=8;
622
623   bp[sp*3]:= (point 1.25 of bp[sp*2]){direction 1.20 of bp[sp*2]}..
624     (260,90)..(400,30){right}..(650,40)..(750,270)..
625     tension 2..(600,590)..(700,610)..(910,430);
626   bq[sp*3]:= (1.4,1.4)-(1.5,1.5)-(1.8,1.8)-(1.9,1.9)-
627     (1,1)-(0.6,0.6)-(1,1)-(1.6,1.6);

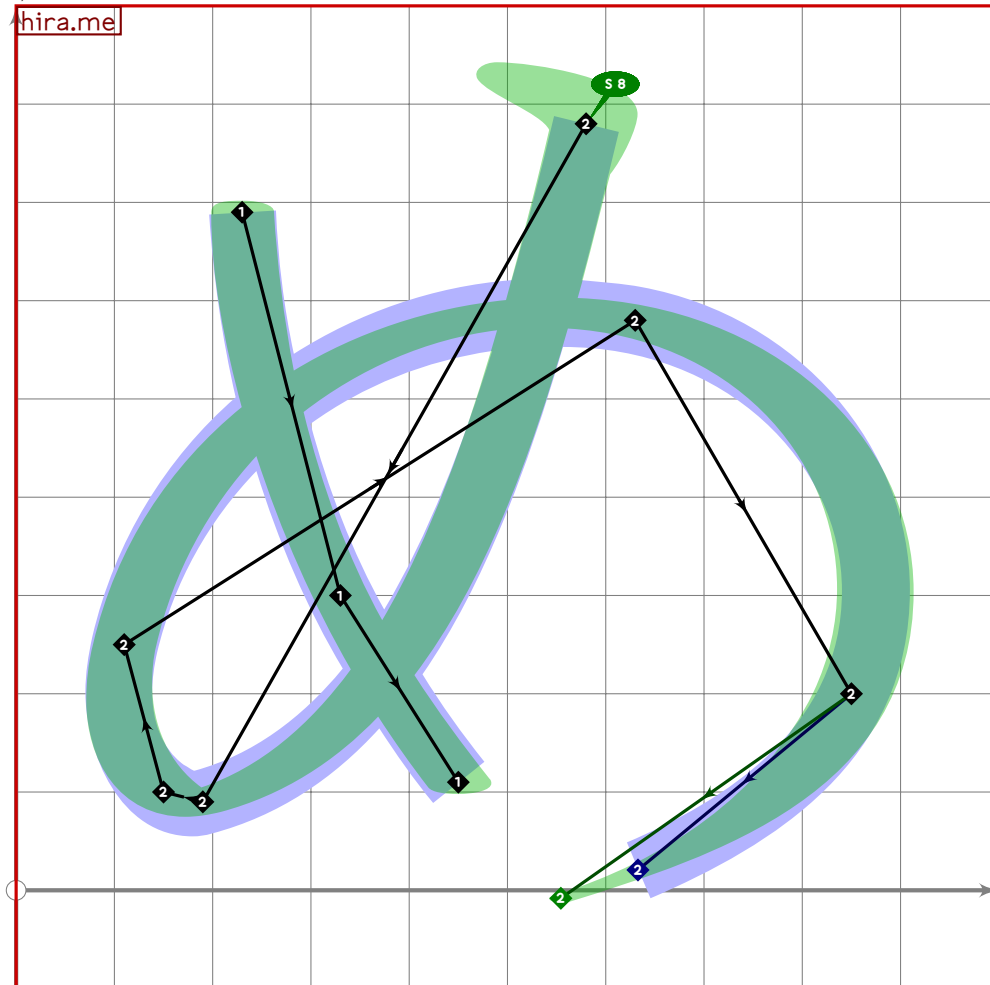
```



```

628 bo_serif[sp*3][7]:=8;
629 sp:=sp*4;
630 enddef;

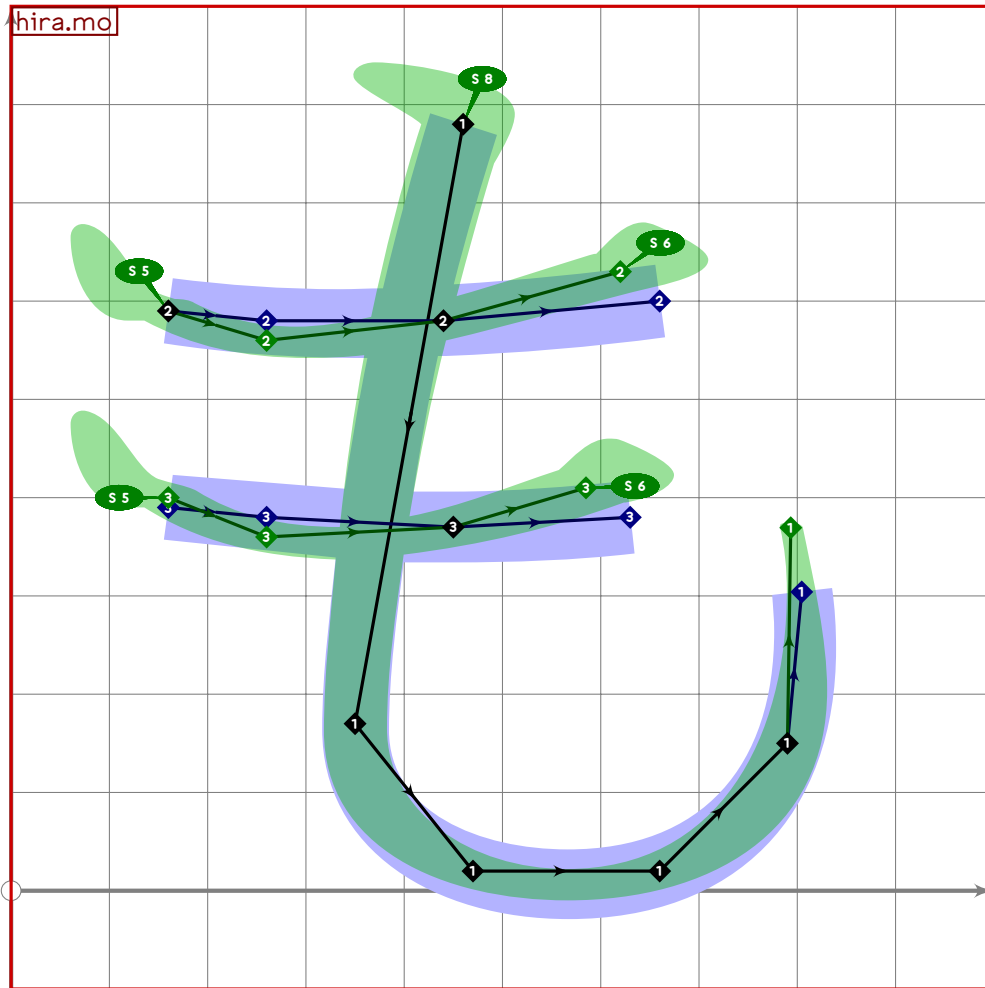
```



```

631
632 vardef tsu_curve.hira.me =
633   add_proof_box("hira.me");
634   bp[sp]:=(230,690)..(330,300)..(450,110);
635   bq[sp]:=(1.4,1.4)-(1.3,1.3)-(1.4,1.4);
636
637   bp[sp*1]:=(580,780){curl 0.2}..tension 2.5..(190,90)..(150,100)..(110,250)..
638     tension 1.1..(630,580)..(850,200)..tension 1.1..{curl 0.2}(470,-30);
639   bq[sp*1]:=(1.5,1.5)-(1.4,1.4)-(1.6,1.6)-(1.4,1.4)-
640     (1.6,1.6)-(1.6,1.6)-(0.65,0.65);
641   bo_serif[sp*1][0]:=8;
642   sp:=sp*2;
643 enddef;

```



```

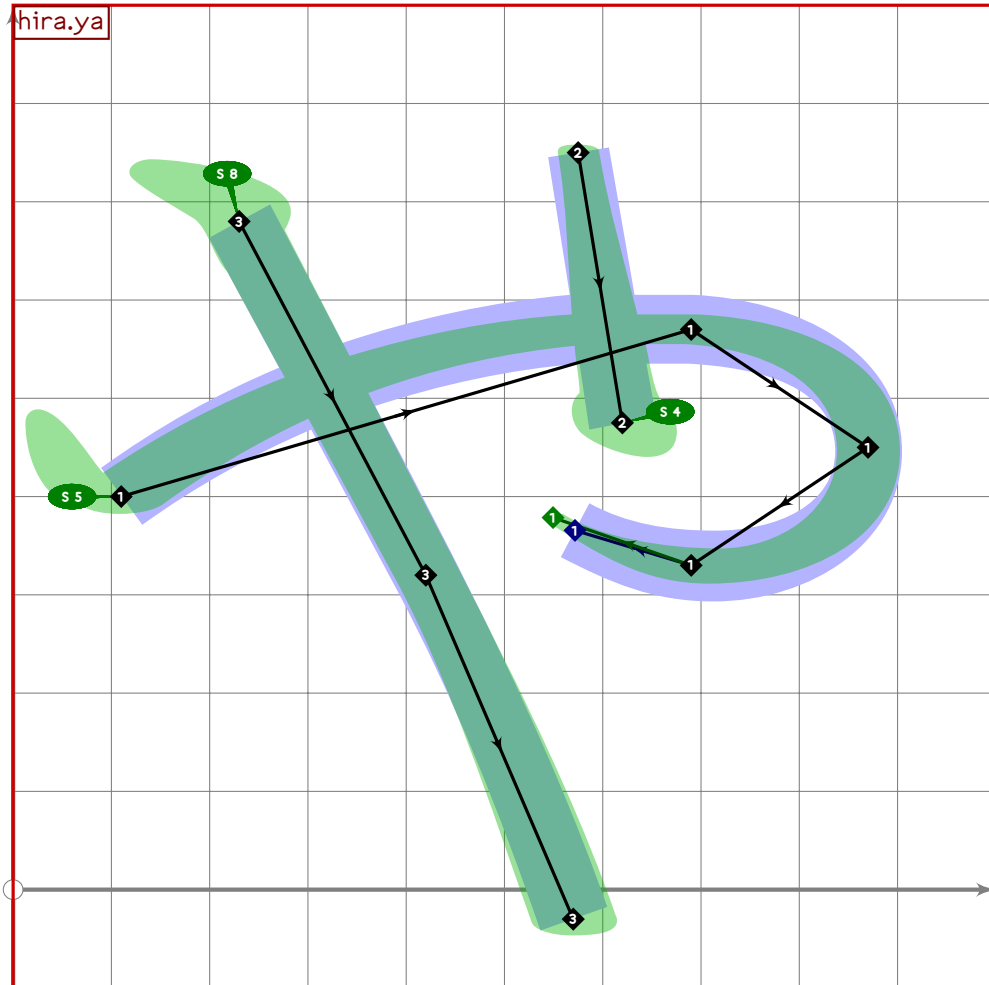
644
645 vardef tsu_curve.hira.mo =
646   add_proof_box("hira.mo");
647   bp[sp]:=(460,780)..tension 3..(350,170)..(470,20)..
648     tension 1.2..(660,20)..(790,150)..{curl 0}(770,460);
649   bq[sp]:=(1.71,7)-(1.4,1.4)-(1.6,1.6)-(1.71,7)-(1.4,1.4)-(0.6,0.6);
650   bo_serif[sp][0]:=8;
651
652   bp[sp*1]:=(160,590)..(260,580-20*mincho)..(440,580)..
653     (660-40*mincho,600*30*mincho);
654   bq[sp*1]:=(1.4,1.4)-(1.6,1.6)-(1.8,1.8)-(2,2);
655   bo_serif[sp*1][0]:=5;
656   bo_serif[sp*1][3]:=6;
657
658   bp[sp*2]:=(160,390*10*mincho)..(260,380-20*mincho)..(450,370)..
659     (630-45*mincho,380*30*mincho);
660   bq[sp*2]:=(1.4,1.4)-(1.6,1.6)-(1.8,1.8)-(2,2);
661   bo_serif[sp*2][0]:=5;
662   bo_serif[sp*2][3]:=6;
663   sp:=sp*3;
664 enddef;

```

665

# Hiragana Yayuyo

666 %%%%%%%%%% HIRAGANA YAYUYO

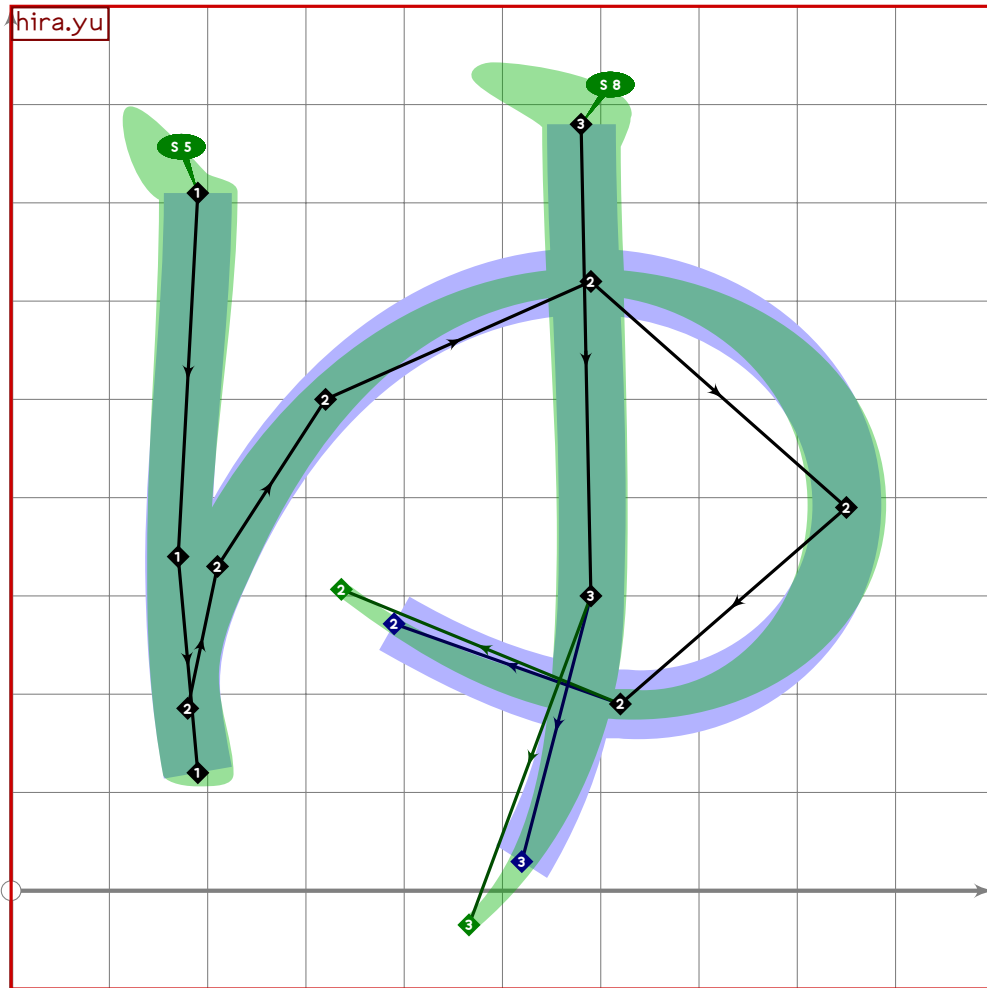


667

```

668 vardef tsu_curve.hira.ya =
669   add_proof_box("hira.ya");
670   bp[sp]:= (110,400)..(690,570)..(870,450)..(690,330)..(520,400);
671   bq[sp]:= (1.8,1.8)-(1.6,1.6)-(1.4,1.4)-(1.8,1.8)-(0.6,0.6);
672   bo_serif[sp][0]:=5;
673
674   bp[sp*1]:= (575,750)-(620,475);
675   bq[sp*1]:= (1.1,1.1)-(1.6,1.6);
676   bo_serif[sp*1][1]:=4;
677
678   bp[sp*2]:= (230,680)..tension 2..(420,320)..(570,-30);
679   bq[sp*2]:= (1.6,1.6)-(1.4,1.4)-(1.7,1.7);
680   bo_serif[sp*2][0]:=8;
681   sp:=sp*3;
682 enddef;

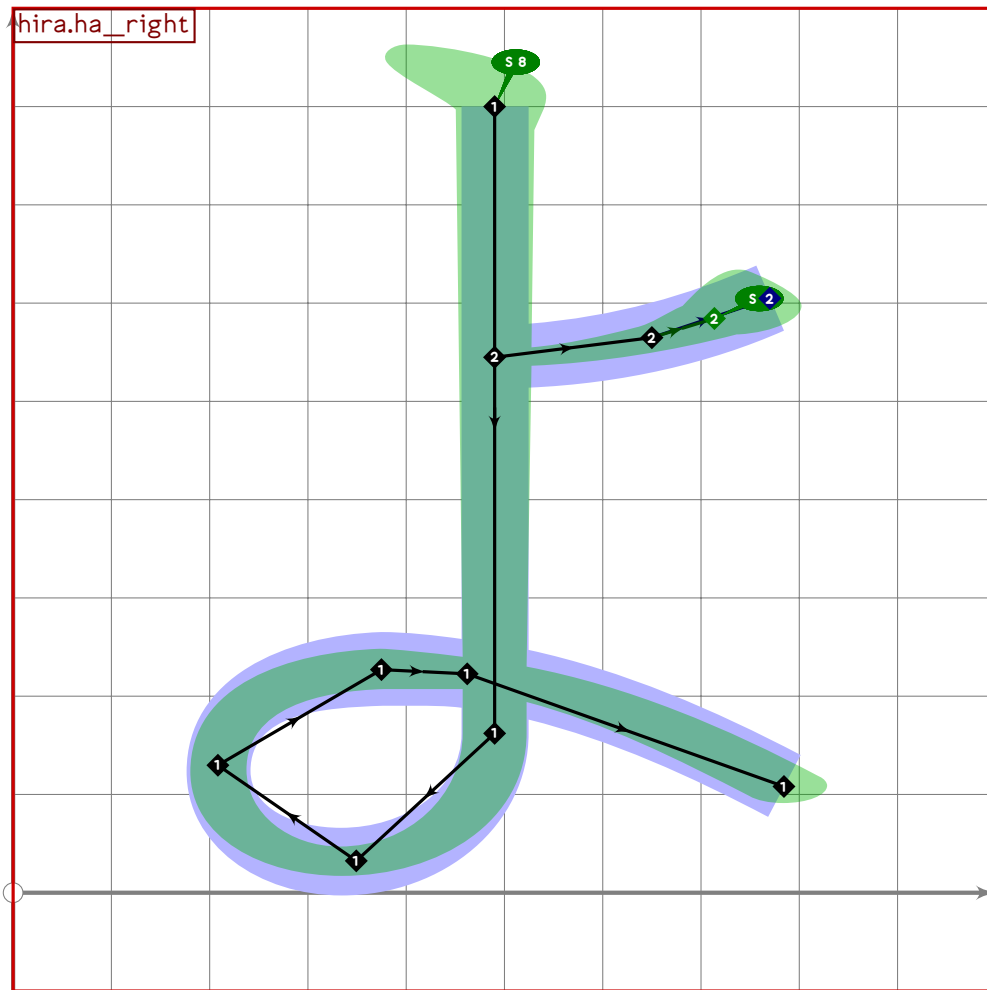
```



```

683
684 vardef tsu_curve.hira.yu =
685   add_proof_box("hira.yu");
686   bp[sp]:=(190,710){down}...(170,340)..(190,120);
687   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.5,1.5);
688   bo_serif[sp][0]:=5;
689
690   bp[sp*1]:=(point 1.7 of bp[sp]){direction 1.7 of bp[sp]}..(210,330)..
691     (320,500)..(590,620)..(850,390)..(620,190)..tension 1.3..(320,320);
692   bq[sp*1]:=(1.4,1.4)-(1.5,1.5)-(1.4,1.4)-(1.5,1.5)-(1.6,1.6)-
693     (1.6,1.6)-(0.77,0.77);
694
695   bp[sp*2]:=(580,780){down}...(590,300)..{dir 190}(360,-85);
696   bq[sp*2]:=(1.6,1.6)-(1.5,1.5)-(0.6,0.6);
697   bo_serif[sp*2][0]:=8;
698   sp:=sp*3;
699 enddef;

```



```

700
701 vardef tsu_curve.hira.yo =
702   add_proof_box("hira.yo");
703   tsu_curve.hira.ma_stem;
704
705   bp[sp-1]:=bp[sp-1] shifted (-20,0);
706   z0=point 0.4 of bp[sp-1];
707
708   bp[sp]:=z0..(z0*(160,20))..(z0*(280,60)+60*mincho*dir 200);
709   bq[sp]:=(1.2,1.2)-(1.4,1.4)-(1.8,1.8);
710   bo_serif[sp][2]:=6;
711   sp:=sp+1;
712 enddef;
713

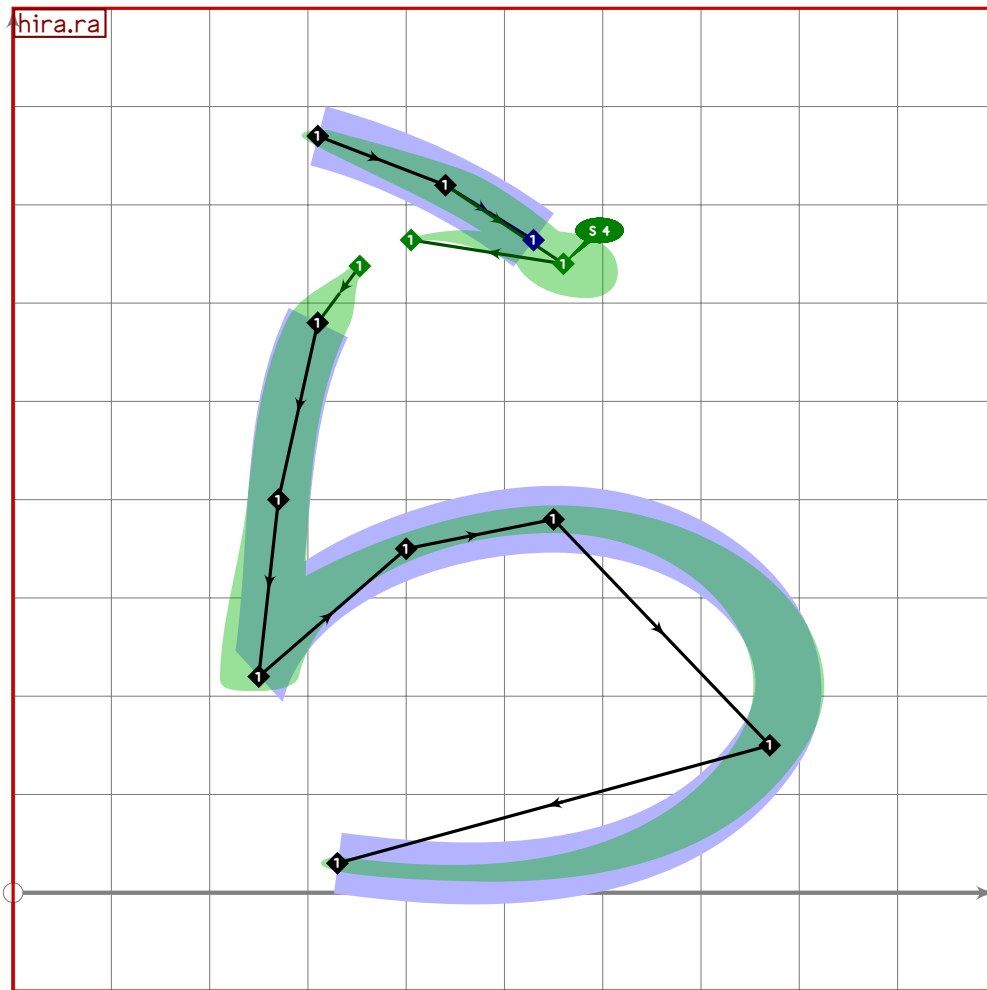
```

## Hiragana Rarirurero

```

714 %%%%%%%%%% HIRAGANA RARIRURERO

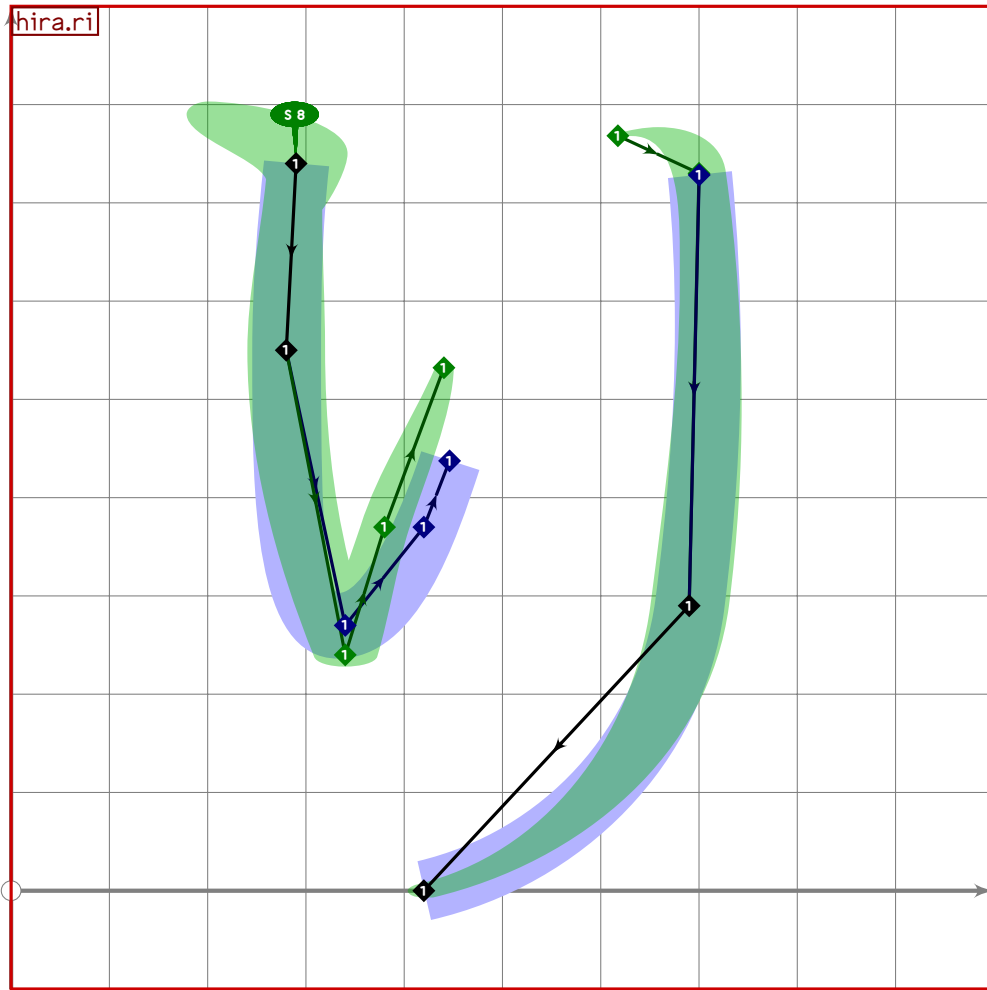
```



```

715
716 vardef tsu_curve.hira.ra =
717   add_proof_box("hira.ra");
718   bp[sp]:=(370,770)..(500,720)..{curl 1}(620,640){curl 0.1}..
719     (430,650)..(370,580)..(330,400)..(310,220);
720   bq[sp]:=(1,1)-(1.6,1.6)-(2,0.78)-(0.55,0.55)-
721     (1.8,1)-(1.4,1.4)-(1.6,1.6);
722   bo_serif[sp][2]=4;
723
724   tsu_curve.hira.chi_bottom;
725   bo_tip[sp][2]=0;
726
727   bp[sp]:=bp[sp] shifted (-60,0);
728   sp:=sp*1;
729 enddef;

```



```

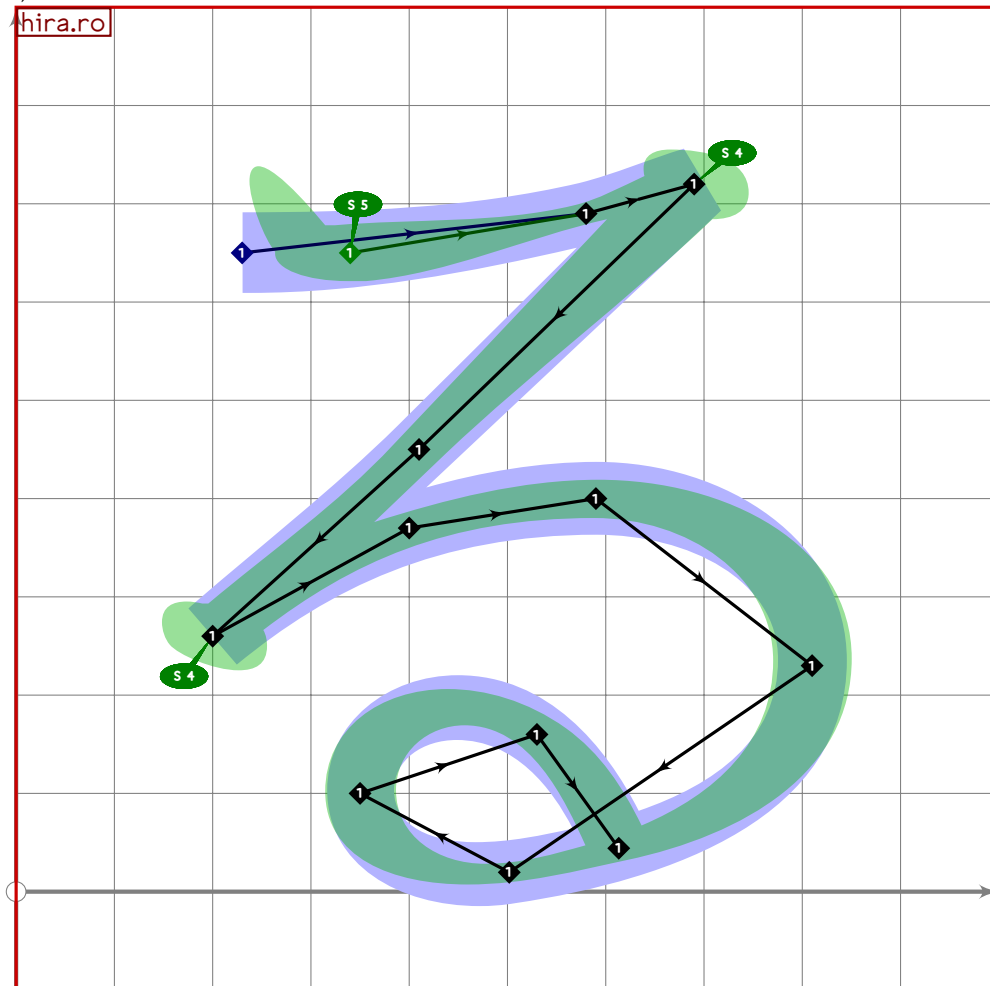
730
731 vardef tsu_curve.hira.ri =
732   add_proof_box("hira.ri");
733   bp[sp]:=(0,0)-(1,1);
734   begingroup
735     path ripx,ripy,ripz;
736     numeric x[],y[];
737     z1=(290,740);
738     z2=(280,550);
739     z3=(340,270-30*mincho);
740     z4=(420-40*mincho,370);
741     z5=(540,710);
742     z6=(700,730);
743     ripx=z1..z2{down}..tension 1.5..z3..
744       tension 1.5..z4..z5..z6..tension 5 and 1.2..
745       (690,290)..tension 0.75 and 1..{curl 0.45}(420,0);
746     ripy=z1..z2{down}..tension 1.5..{curl 1}z3{curl 1}..
747       tension 1.5..z4..z5..z6..tension 5 and 1.2..
748       (690,290)..tension 0.75 and 1..{curl 0.45}(420,0);
749     bp[sp]:=interpath(mincho,ripx,ripy);
750   endgroup;

```

```

751 bq[sp]:=(1.3,1.3)-(1.6,1.6)-(1.4,1.4)-(1.2,1.2)-(0.4,0.2)-
752 (1.5,0.99)-(1.6,1.6)-(1,1);
753 bo_serif[sp][0]:=8;
754 sp:=sp+1;
755 enddef;

```

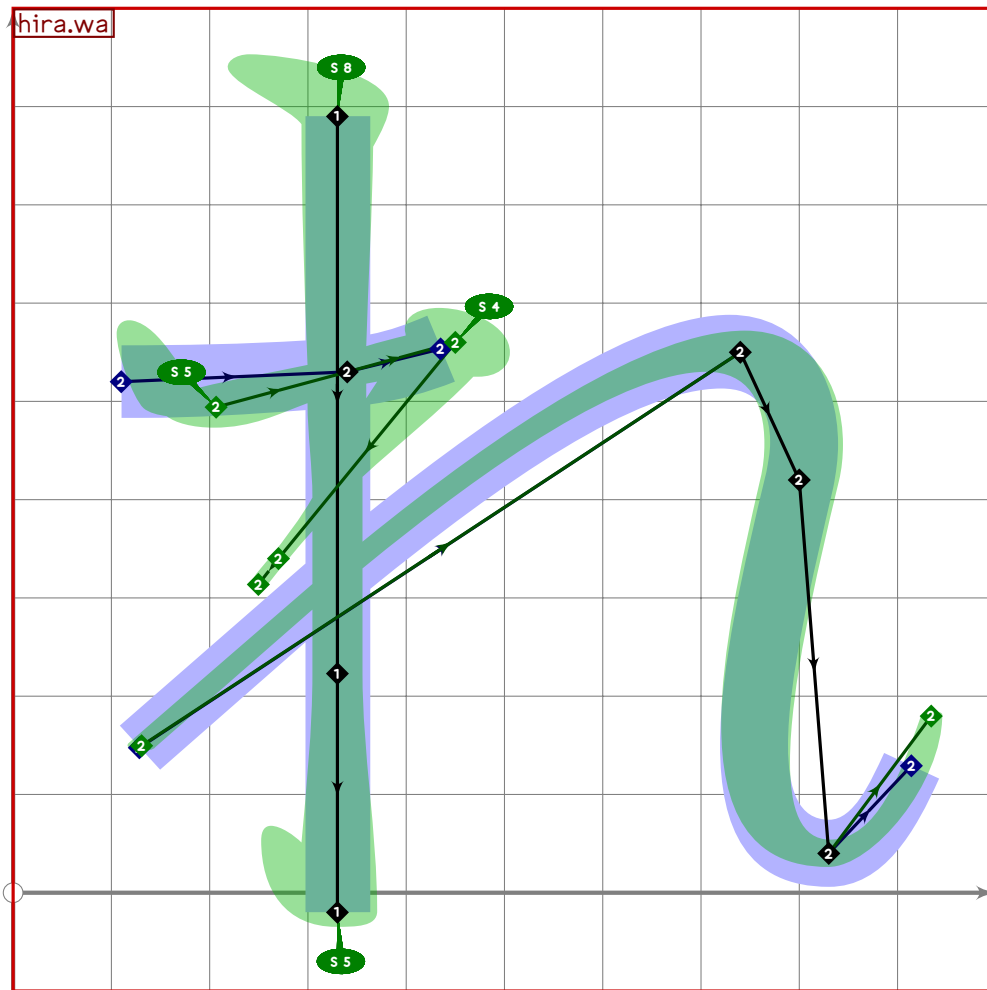


```

756
757 vardef tsu_curve.hira.ru =
758   add_proof_box("hira.ru");
759   tsu_curve.hira.ro;
760
761   bp[sp-1]:=(subpath (0,7.8) of bp[sp-1])..(350,100)..(530,160)..
762     {curl 0.2}(point 7.6 of bp[sp-1]);
763   bq[sp-1]:=(2.6,2.6)-(1.2,1.2)-(1.9,1.9)-
764     (1.3,1.3)-(1.6,1.6)-
765     (1.5,1.5)-(1.9,1.9)-(1.6,1.6)-
766     (1.2,1.2)-(1.5,1.5)-(1.4,1.4);
767 enddef;

```

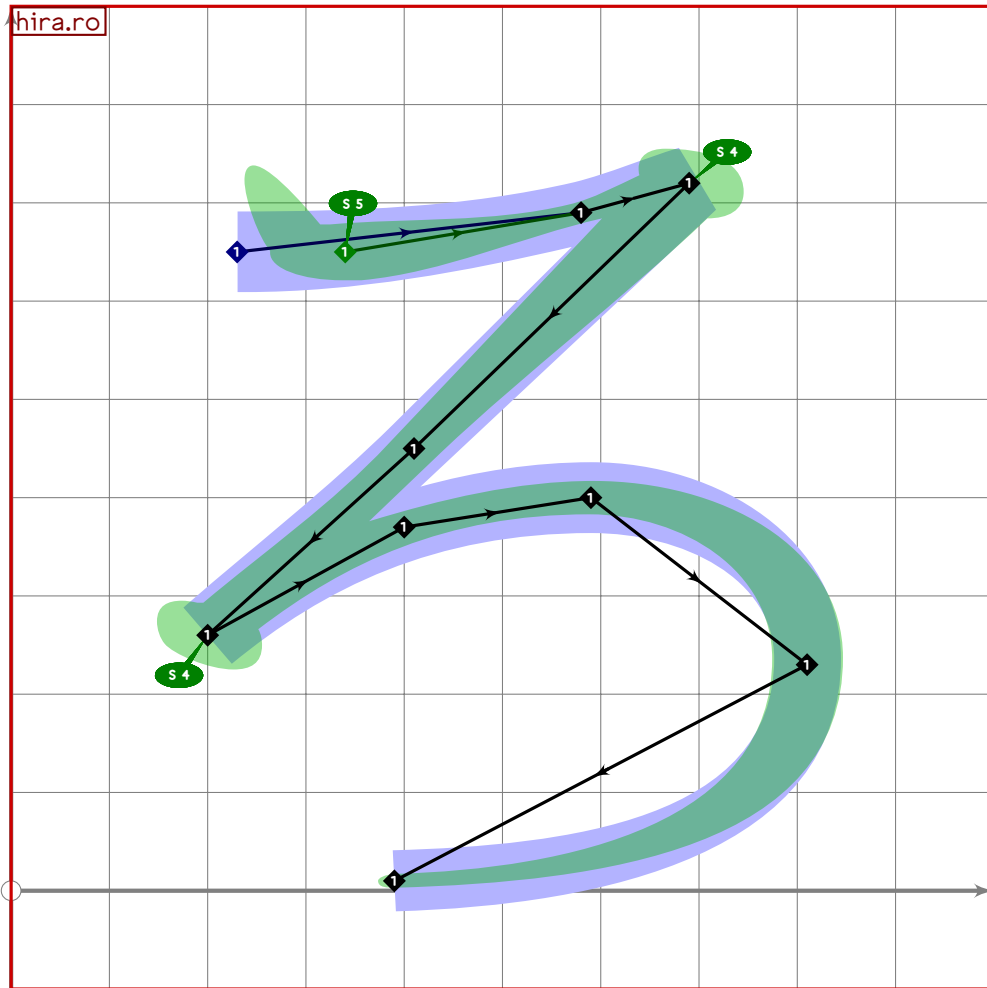




```

768
769 vardef tsu_curve.hira.re =
770   add_proof_box("hira.re");
771   tsu_curve.hira.wa;
772
773   bp[sp-1]:=(subpath (0,4) of bp[sp-1]){curl 0}..
774     tension 2..(740,550)..(800,420)..
775     (830,40){right}..tension 1.5..{curl 0}(960,270);
776   bq[sp-1]:=(2,2)-(1.6,1.6)-(2.7,0.9)-
777     (0.84,0.7)-(0.79,0.97)-
778     (2.1,2.1)-(1.6,1.6)-(1.5,1.5)-(0.5,0.5);
779   bo_serif[sp-1][2]:=4;
780 enddef;

```



```

781
782 vardef tsu_curve.hira.ro =
783   add_proof_box("hira.ro");
784   bp[sp]:=(230*110*mincho,650)..(580,690)..{curl 1}(690,720){curl 1}..
785     (410,450)..{curl 1}(200,260){curl 1}..
786     (400,370)..(590,400){right}..(810,230)..
787     tension 1.1..{curl 0}(390,10);
788   bq[sp]:=(2.6,2.6)-(1.2,1.2)-(1.9,1.9)-
789     (1.3,1.3)-(1.6,1.6)-
790     (1.5,1.5)-(1.7,1.7)-(1.5,1.5)-(1,1);
791   bo_tip[sp][2]:=0;
792   bo_tip[sp][4]:=0;
793   bo_serif[sp][0]:=5;
794   bo_serif[sp][2]:=4;
795   bo_serif[sp][4]:=4;
796   sp:=sp*1;
797 enddef;
798

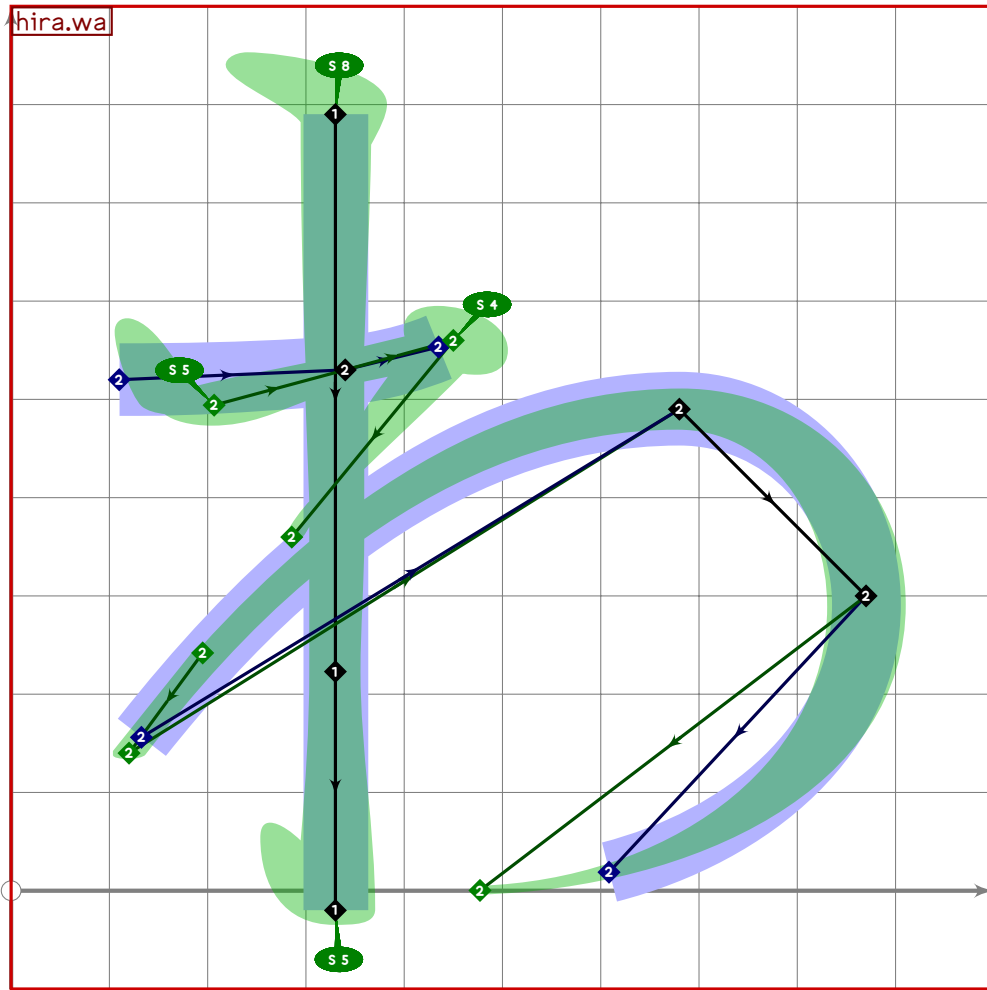
```

## Hiragana Wawiwewo/N/Iteration

```

799 %%%%%%%%%% HIRAGANA WAWIWEWO/N/ITERATION

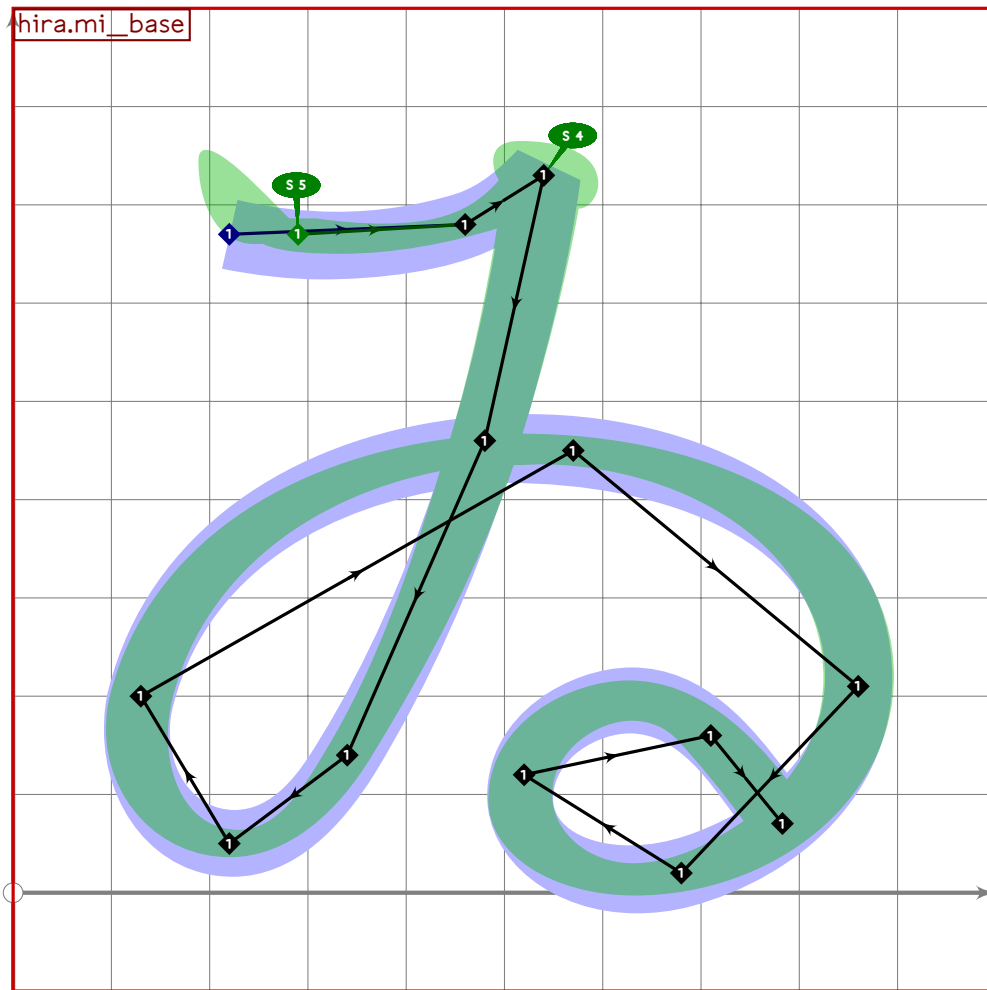
```



```

800
801 vardef tsu_curve.hira.wa =
802   add_proof_box("hira.wa");
803   bp[sp]:=(330,790)-(0.7[(330,790),(330,-20)])-(330,-20);
804   bq[sp]:=(1.5,1.5)-(1.2,1.2)-(1.6,1.6);
805   bo_serif[sp][0]:=8;
806   bo_serif[sp][2]:=5;
807
808   bp[sp*1]:=((110,520)+100*mincho*dir -15)..tension 2..(340,530)..
809     {curl 1}{450,560}{curl 1}..
810     (270,340)..{curl 1}{120,140}{curl 0.2}..
811     (680,490){right}..(870,300)..{curl 0.2}{450,0};
812   bq[sp*1]:=(2,2)-(1.6,1.6)-(2.2,0.9)-
813     (0.7,0.7)-(0.97,0.97)-
814     (2,2)-(1.6,1.6)-(0.8,0.8);
815   bo_tip[sp*1][2]:=0;
816   bo_tip[sp*1][4]:=0;
817   bo_serif[sp*1][0]:=5;
818   bo_serif[sp*1][2]:=4;
819   sp:=sp*2;
820 enddef;

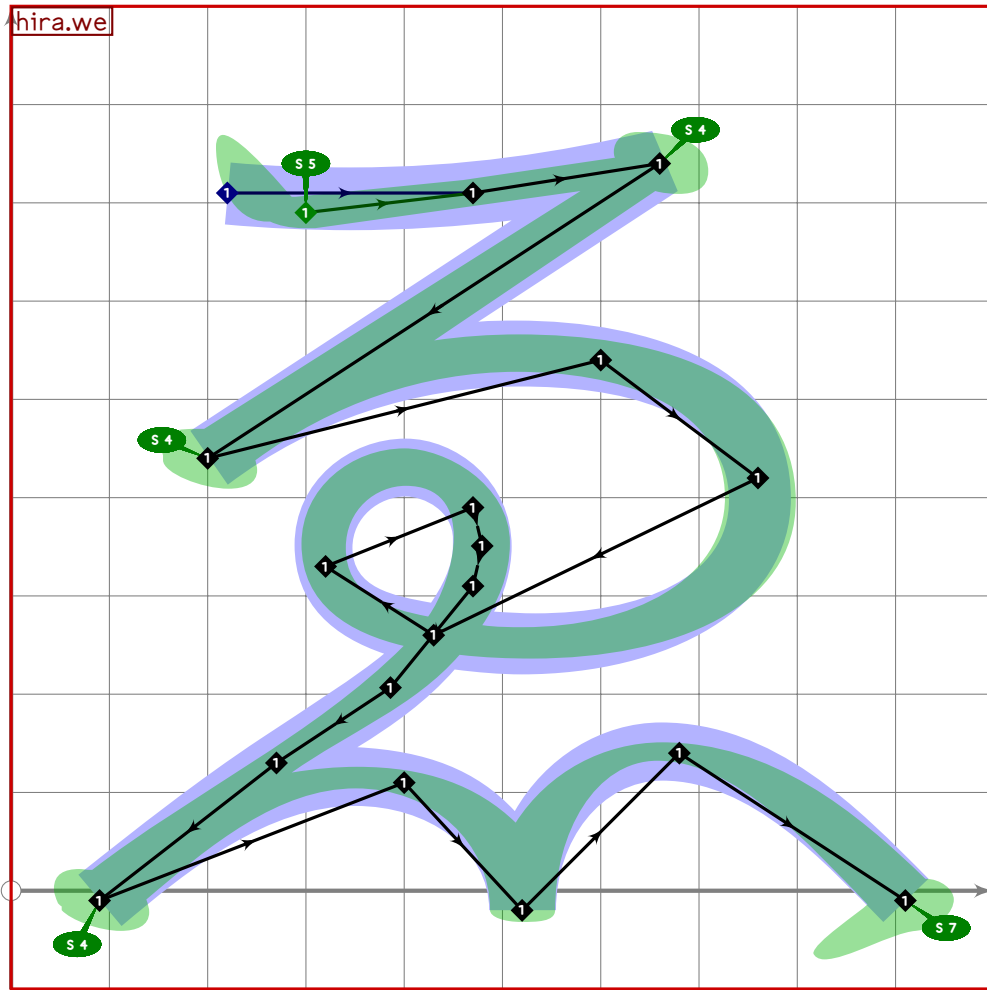
```



```

821
822 vardef tsu_curve.hira.wi =
823   add_proof_box("hira.wi");
824   tsu_curve.hira.mi_base;
825
826   bp[sp-1]:=(subpath (0,6) of bp[sp-1])..(570,450)..(860,210)..(680,20)..
827     (520,120)..tension 1.2..(710,160);
828   bp[sp-1]:=bp[sp-1]..{curl 0.3}(point 8.6 of bp[sp-1]);
829
830   bq[sp-1]:=(1.7,1.7)-(1.3,1.3)-(1.6,1.6)-
831     (1.5,1.5)-(1.2,1.2)-(1.5,1.5)-(1.4,1.4)-
832     (1.6,1.6)-(1.5,1.5)-(1.7,1.7)-(1.4,1.4)-(1.5,1.5);
833 enddef;

```



```

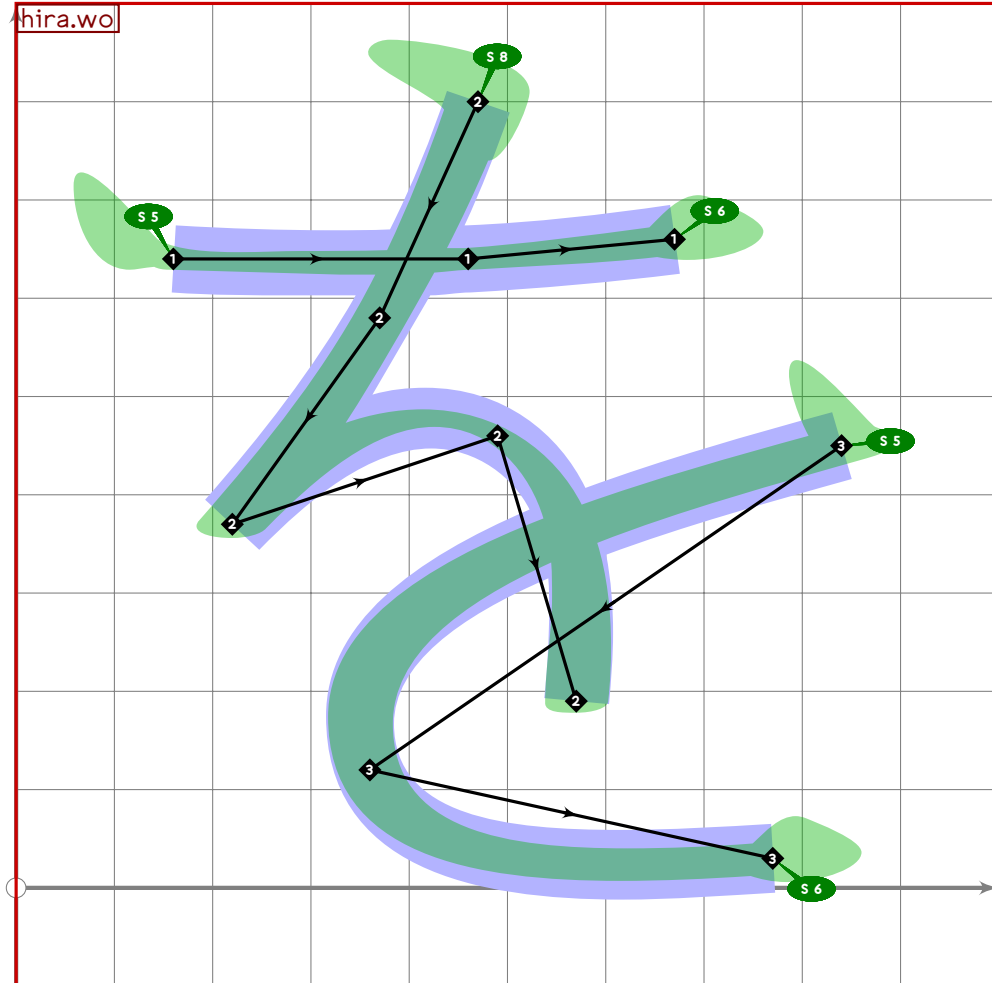
834
835 vardef tsu_curve.hira.we =
836   add_proof_box("hira.we");
837   bp[sp]:=(220*80*mincho,710-20*mincho)..(470,710)..{curl 1}(660,740)-
838     (200,440){curl 1}..
839     (600,540)..(760,420)..(430,260)..(320,330)..(470,390)..(470,310)..
840     (270,130)..{curl 0}(90,-10){curl 0}..
841     (400,110)..{down}(520,-20){up}..
842     (680,140)..tension 1.3..{curl 0.2}(910,-10);
843   bp[sp]:=insert_nodes(bp[sp])(8.5,9.5);
844   bq[sp]:=(1.8,1.8)-(1.6,1.6)-(1.5,1.5)-(1.9,1.9)-
845     (2,2)-(1.6,1.6)-(1.7,1.7)-(1.2,1.2)-(1.3,1.3)-(1.35,1.35)-
846     (1.4,1.4)-(1.5,1.5)-(1.3,1.3)-(1.8,1.8)-
847     (1.4,1.4)-(1.5,1.5)-
848     (1.3,1.3)-(1.7,1.7);
849   bo_size[sp]:=90;
850   bo_tip[sp][2]:=0;
851   bo_tip[sp][3]:=0;
852   bo_tip[sp][13]:=0;
853   bo_tip[sp][15]:=0;
854   bo_serif[sp][0]:=5;

```

```

855 bo_serif[sp][2]:=4;
856 bo_serif[sp][3]:=4;
857 bo_serif[sp][13]:=4;
858 bo_serif[sp][17]:=7;
859 sp:=sp*1;
860 enddef;

```



```

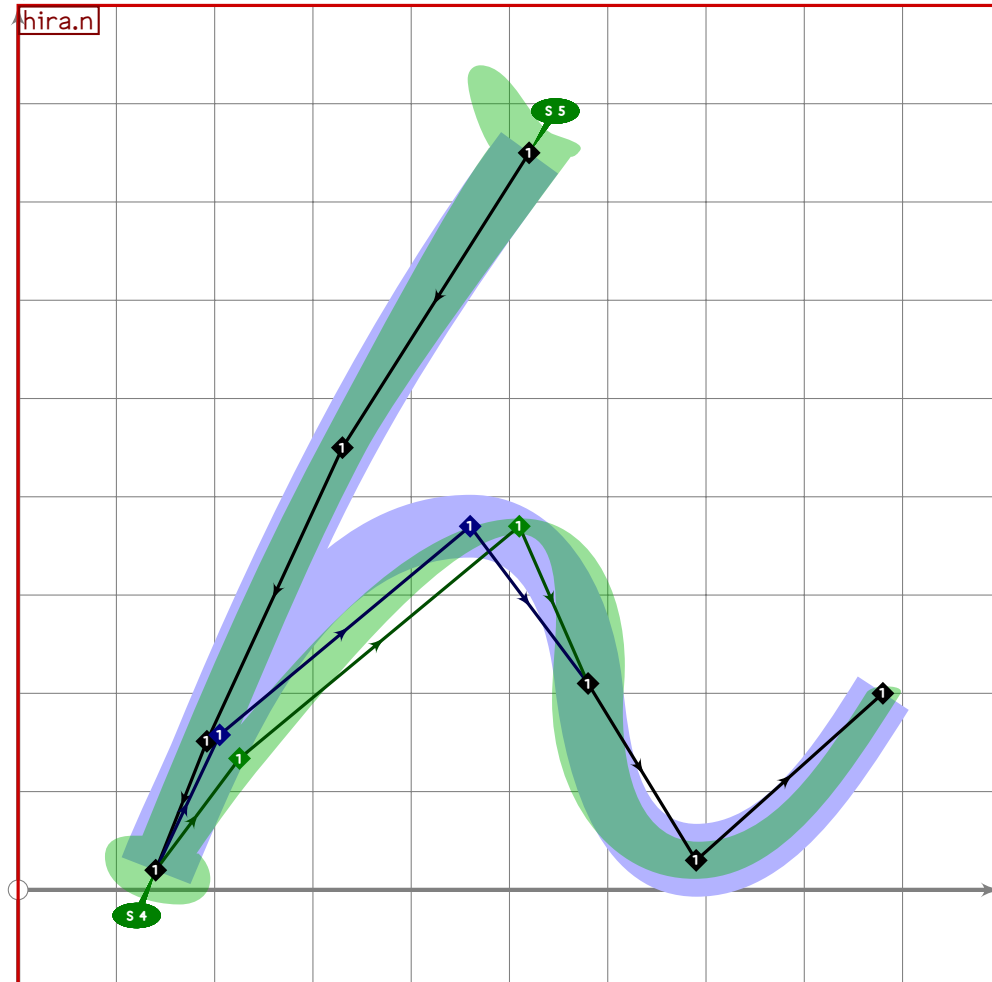
861
862 vardef tsu_curve.hira.wo =
863   add_proof_box("hira.wo");
864   bp[sp]:=(160,640)..(460,640)..(670,660);
865   bq[sp]:=(1.3,1.3)-(1.4,1.4)-(1.6,1.6);
866   bo_serif[sp][0]:=5;
867   bo_serif[sp][2]:=6;
868
869   bp[sp*1]:=(470,800)..(370,580)..{curl 1}{(220,370){curl 0}}..
870     (490,460)..{curl 0}{(570,190);
871   bq[sp*1]:=(1.4,1.4)-(1.3,1.3)-(1.5,1.5)-(1.01,1.01)-(1.4,1.4);
872   bo_tip[sp*1][2]:=0;
873   bo_serif[sp*1][0]:=8;
874
875   bp[sp*2]:=(840,450){curl 0.017}..tension 1 and 2..(360,120)..

```

```

876 tension 2 and 1..{curl 0.03}(770,30);
877 bq[sp*2]:=(1.7,1.7)-(1.4,1.4)-(1.7,1.7);
878 bo_serif[sp*2][0]:=5;
879 bo_serif[sp*2][2]:=6;
880 sp:=sp*3;
881 enddef;

```

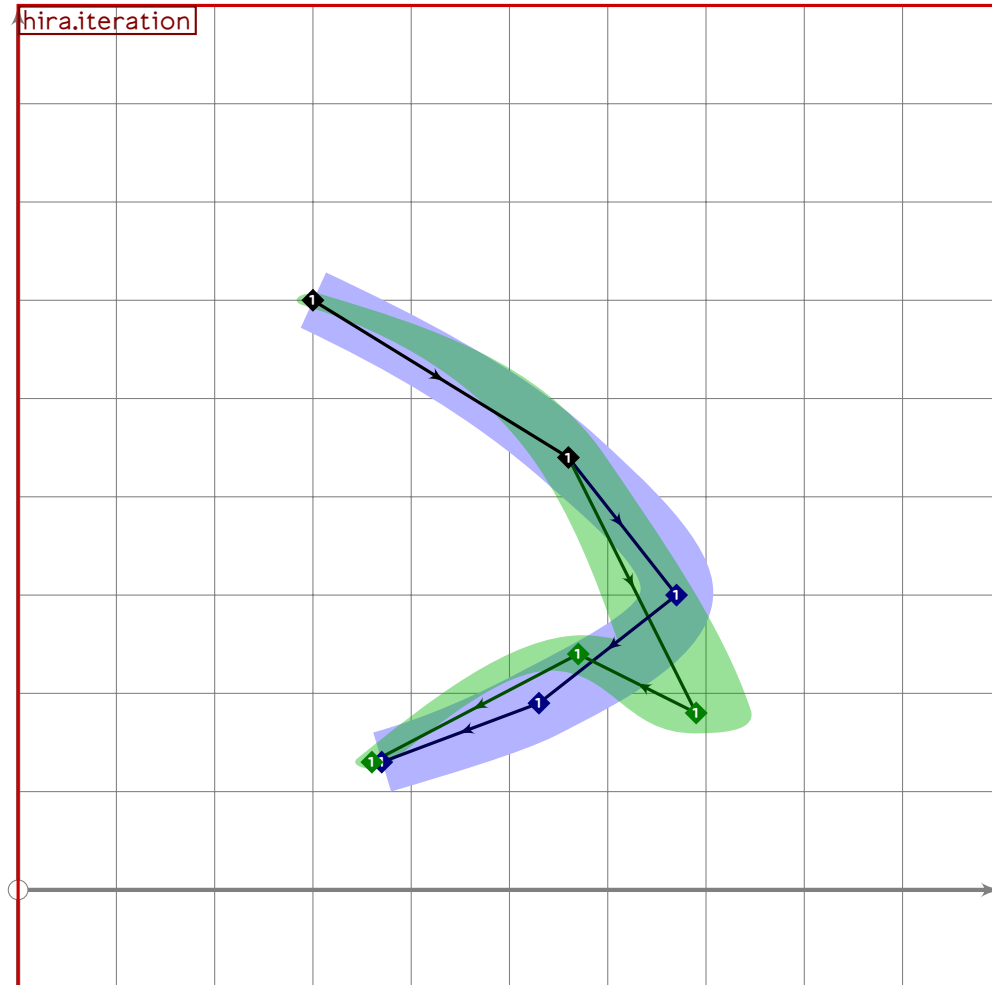


```

882
883 vardef tsu_curve.hira.n =
884   add_proof_box("hira.n");
885   bp[sp]:=(520,750)..(330,450)..{curl 0.2}(140,20){curl 0.1}..
886     tension (1.2*0.6*mincho)..(460*50*mincho,370){right}..
887     (580,210)..(690,30){right};
888   bp[sp]:=bp[sp]{right}..(880,200){direction 0.5 of bp[sp]};
889   bq[sp]:=(1.7,1.7)-(1.2,1.2)-(1.3,1.3)-
890     (1.1,1.1)-(1.5,1.5)-(1.9,1.9)-(1,1);
891   bp[sp]:=insert__nodes(bp[sp])(1.7,2.3);
892   bq[sp]:=insert__nodes(bq[sp])(1.7,2.3);
893   bo_tip[sp][3]:=0;
894   bo_serif[sp][0]:=5;
895   bo_serif[sp][3]:=4;
896   sp:=sp*1;

```

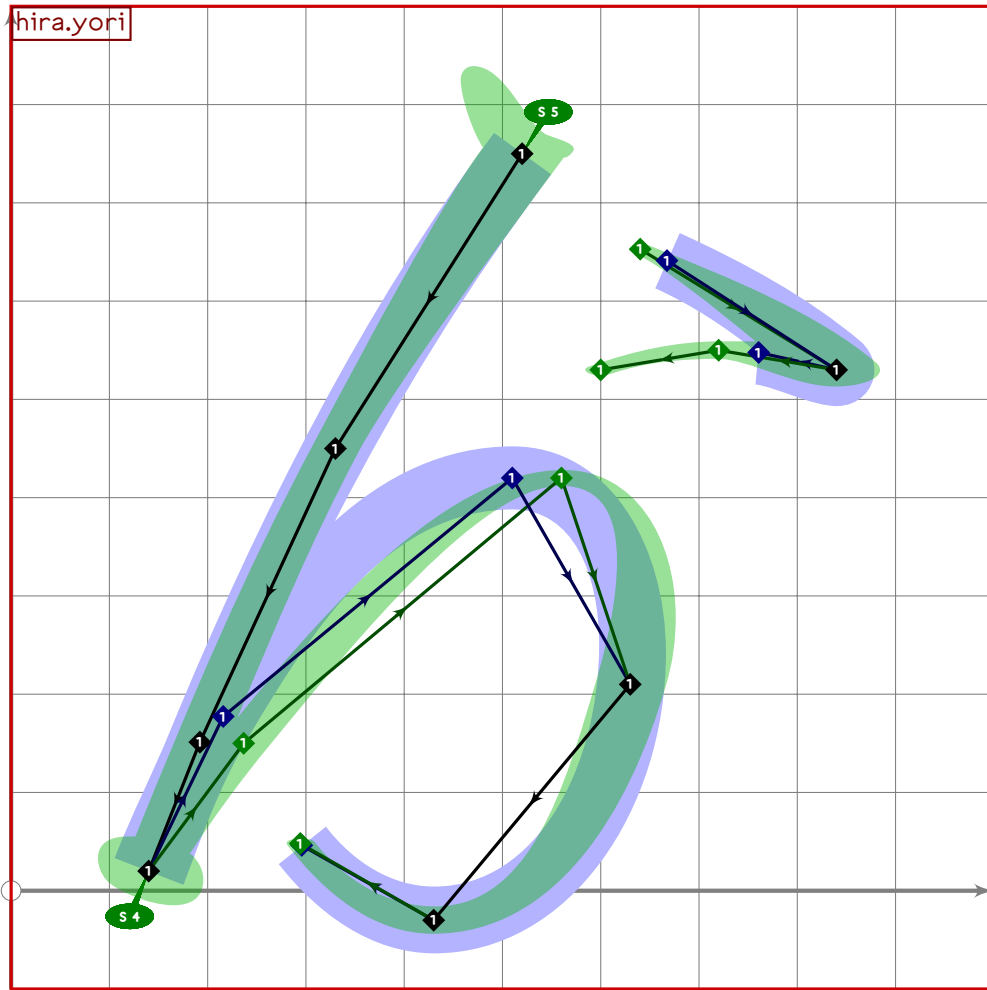
897 enddef;



898

```
899 vardef tsu_curve.hira.iteration =
900   add_proof_box("hira.iteration");
901   bp[sp]:=begingroup
902     path rix,ripy;
903     rix:=(300,600){curl 0.2}..(560,440)..
904       tension 1.5 and 2..(670,300)..
905       tension 2 and 1.5..(530,190)..{curl 0.2}(370,130);
906     ripy:=(300,600){curl 0.2}..(560,440)..
907       tension 1.5..{curl 1}(690,180){curl 1}..
908       tension 2 and 1.5..(570,240)..tension 1.4..{curl 0}(360,130);
909     interpath(mincho,rix,ripy)
910   endgroup;
911   bq[sp]:=(1,1)-(1.5,1.5)-(2,2)-(1.9,1.9)-(1,1);
912   bo_tip[sp][2]:=0;
913   sp:=sp*1;
914 enddef;
```





```

915
916 vardef tsu_curve.hira.yori =
917   add_proof_box("hira.yori");
918   bp[sp]:=(520,750)..(330,450)..{curl 0.2}(140,20){curl 0.1}..
919     tension (1.2*0.6*mincho)..(510+50*mincho,420){right}..
920     (630,210)..(430,-30){left}..tension 1.3..(290,600)..
921     {curl 0.1}(840,530){curl 1}..(720,550)..(600,530);
922   bq[sp]:=(1.7,1.7)-(1.2,1.2)-(1.3,1.3)-
923     (1.1,1.1)-
924     (1.5,1.5)-(1.5,1.5)-(-1,-0.4)-
925     (1.8,1.6)-(1.6,0.7)-(1.9,0);
926   bp[sp]:=insert__nodes(bp[sp])(1.7,2.3);
927   bq[sp]:=insert__nodes(bq[sp])(1.7,2.3);
928   bo_tip[sp][3]:=0;
929   bo_tip[sp][9]:=0;
930   bo_serif[sp][0]:=5;
931   bo_serif[sp][3]:=4;
932   sp:=sp*1;
933 enddef;

```

# iching.mp

```
1 %
2 % I Ching characters for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 iching.size:=680;
34
35 vardef make_iching_xform(expr numlines) =
36   transform iching_xform;
37   numeric x[];
38
39   x2-x1=iching.size;
40   (x1+x2)/2=500;
41
42   (-1,(numlines*1)/2) transformed iching_xform=
43     (x1,0.5[latin_wide_low_h,latin_wide_high_h]);
44   (1,(numlines*1)/2) transformed iching_xform=
45     (x2,0.5[latin_wide_low_h,latin_wide_high_h]);
46   (-1,(numlines*1)/2-2.5) transformed iching_xform=
47     (x1,latin_wide_low_h);
48 enddef;
49
50 vardef tsu_curve.iching.line(expr line,numlines,linetype) =
51   make_iching_xform(numlines);
52   if linetype=0:
53     bp[sp]:=(-1,line)-(-0.28,line)) transformed iching_xform;
54     bq[sp]:=(2,2)-(2,2);
55     bp[sp+1]:=bp[sp] reflectedabout (centre_pt,centre_pt+down);
56     bq[sp+1]:=(2,2)-(2,2);
57     sp:=sp+2;
58   else:
59     bp[sp]:=(-1,line)-(1,line)) transformed iching_xform;
60     bq[sp]:=(2,2)-(2,2);
61     sp:=sp+1;
62   fi;
63 enddef;
64
65 % WARNING, nonstandard calling convention, simply returns a path to fill
66 vardef tsu_curve.iching.dot(expr line,numlines) =
67   begingroup;
68   make_iching_xform(numlines);
69   (fullcircle scaled (tsu_punct_size*1.10)
70     shifted (((1,line) transformed iching_xform)
```

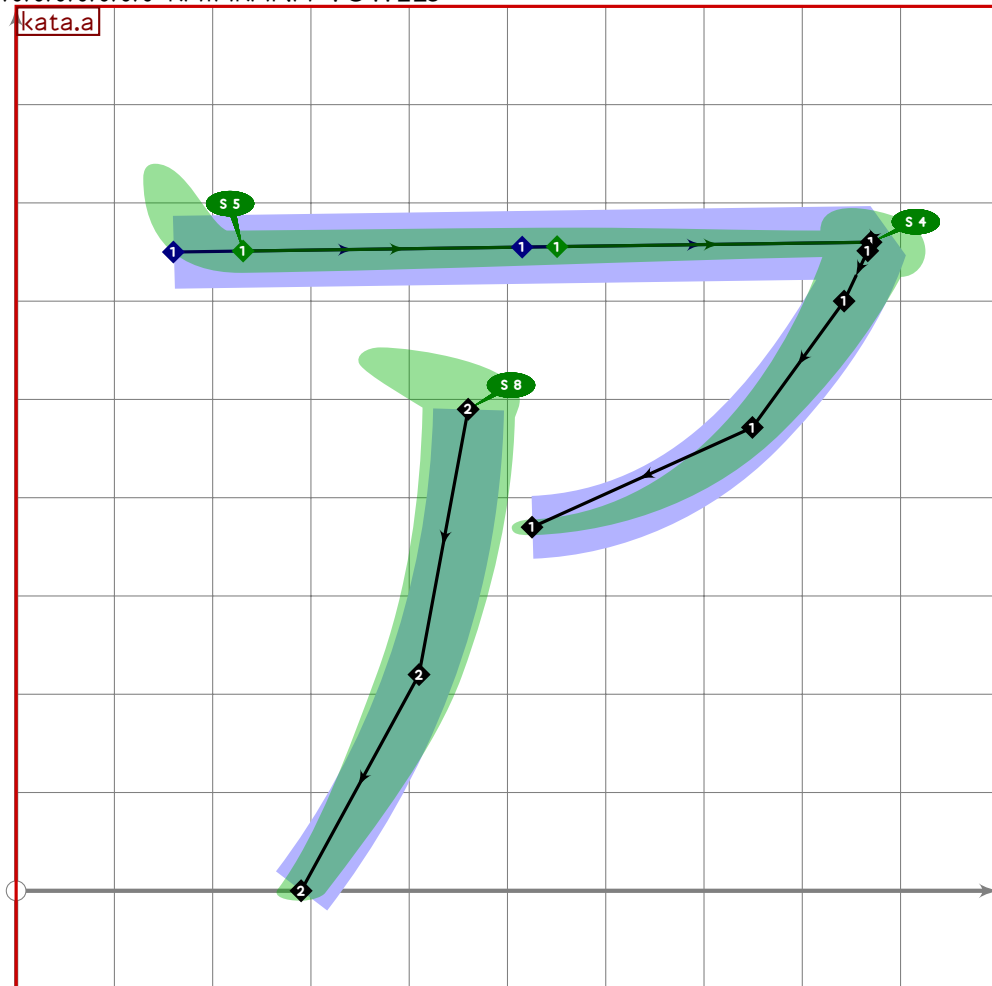
```
71          *(1000-iching.size)*0.25*right))
72  endgroup
73 enddef;
```

# katakana.mp

```
1 %  
2 % Katakana for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32
```

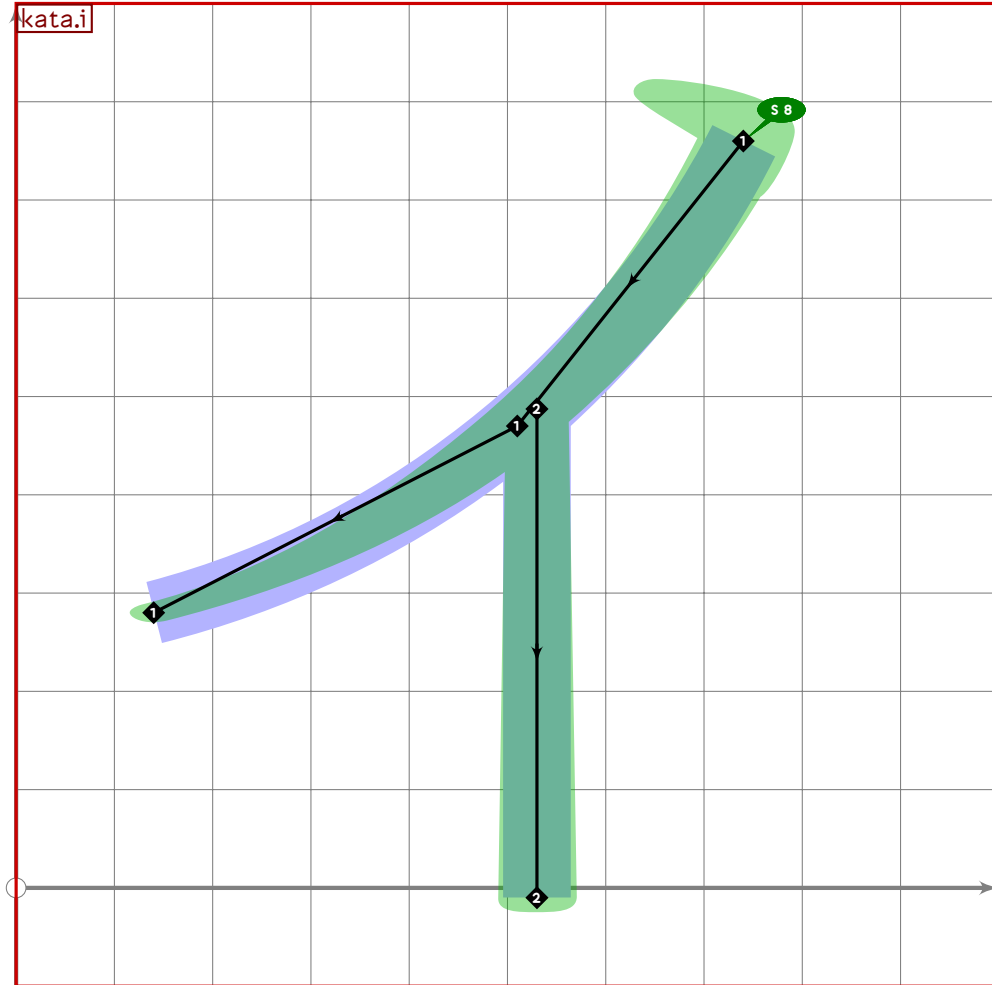
## Katakana Vowels

```
33 %%%%%%%%% KATAKANA VOWELS
```



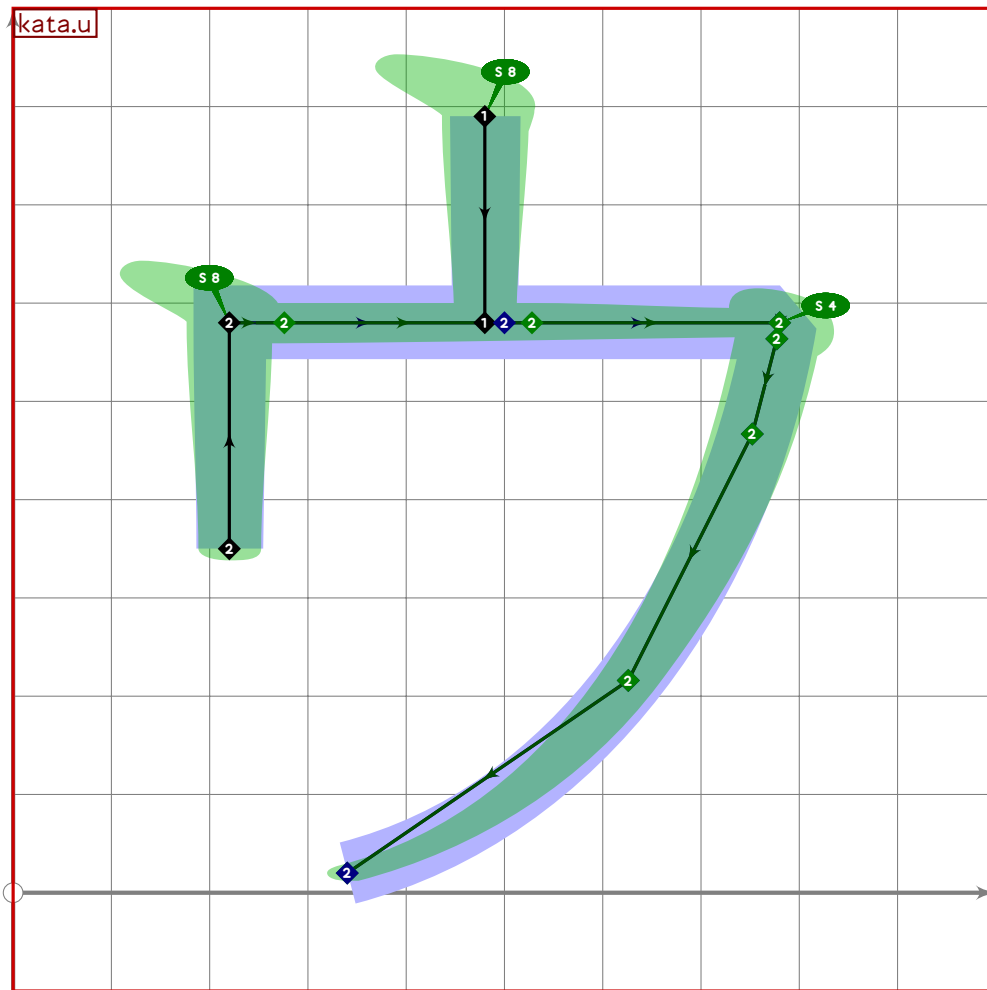
```
34  
35 vardef tsu_curve.kata.a =  
36   add_proof_box("kata.a");  
37   tsu_curve.kata.fu_stroke(sp)((160,650),(870,660),(525,370));  
38   bp[sp*1]:=(460,490)..(410,220)..(290,0);  
39   bq[sp*1]:=(1.8,1.8)-(1.7,1.7)-(1.2,1.2);  
40   bo_serif[sp*1][0]:=8;  
41   sp:=sp*2;
```

42 enddef;



43

```
44 vardef tsu_curve.kata.i =  
45   add_proof_box("kata.i");  
46   bp[sp]:=(740,760)..(510,470)..(140,280);  
47   bq[sp]:=(1.8,1.8)-(1.7,1.7)-(1.2,1.2);  
48   bo_serif[sp][0]:=8;  
49   bp[sp*1]:=(bp[sp] intersectionpoint ((530,-infinity)-(530,infinity)))-  
50     (530,-10);  
51   bq[sp*1]:=(1.4,1.4)-(1.6,1.6);  
52   sp:=sp*2;  
53 enddef;
```



```

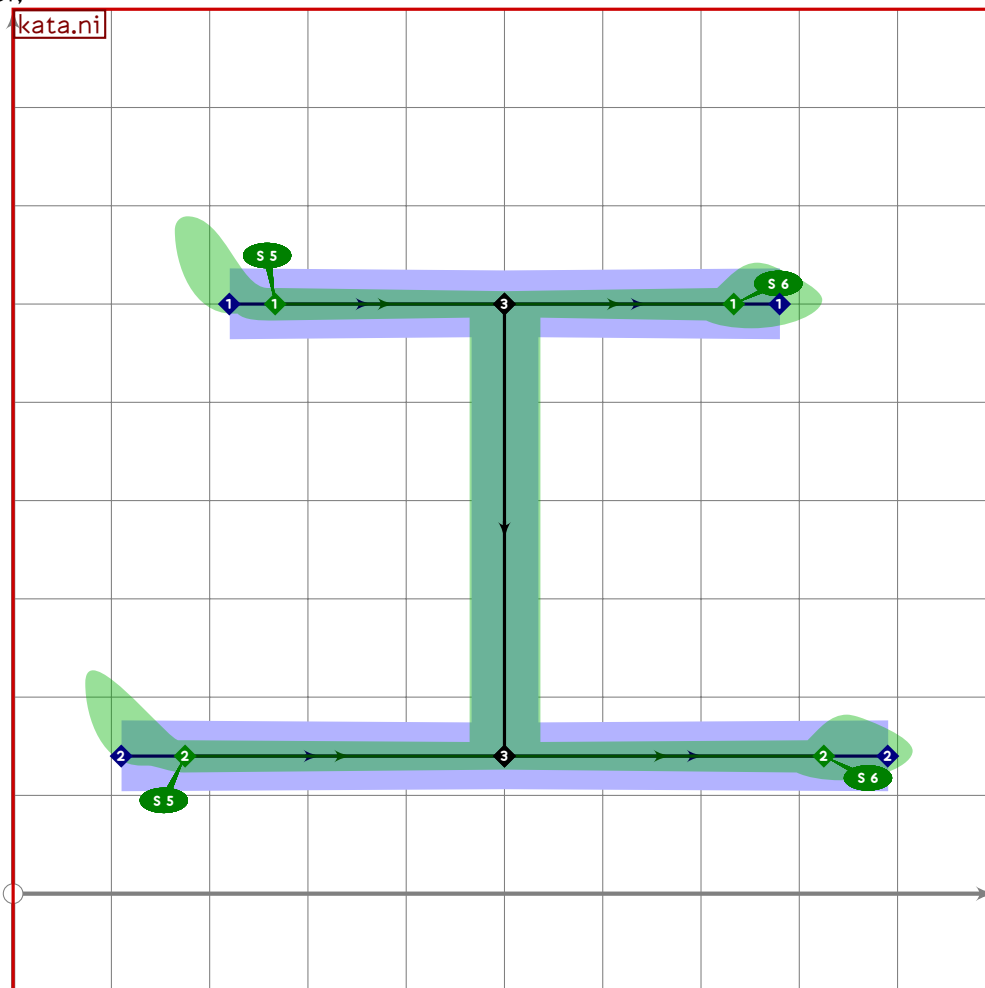
54
55 vardef tsu_curve.kata.u =
56   add_proof_box("kata.u");
57   bp[sp]:= (480,790)-(480,580);
58   bq[sp]:= (1.7,1.7)-(1.4,1.4);
59   bo_serif[sp][0]:=8;
60
61   tsu_curve.kata.fu_stroke(sp+1)((220,580),(780,580),(340,20));
62   if mincho>0.01:
63     bp[sp+1]:= (220,350)-(220,580)-bp[sp+1];
64     bq[sp+1]:= (1.4,1.4)-(1.7,1.7)-bq[sp+1];
65     bo_tip[sp+1][2]:=1;
66     bo_tip[sp+1][4]:=0;
67     bo_serif[sp+1][2]:=whatever;
68     bo_serif[sp+1][4]:=4;
69   else:
70     bp[sp+1]:= (220,350)-bp[sp+1];
71     bq[sp+1]:= (1.4,1.4)-bq[sp+1];
72     bo_tip[sp+1][1]:=1;
73     bo_tip[sp+1][3]:=0;
74     bo_serif[sp+1][3]:=4;

```

```

75 fi;
76 bo_serif[sp+1][0]:=whatever;
77 bo_serif[sp+1][1]:=8;
78 sp:=sp+2;
79 enddef;

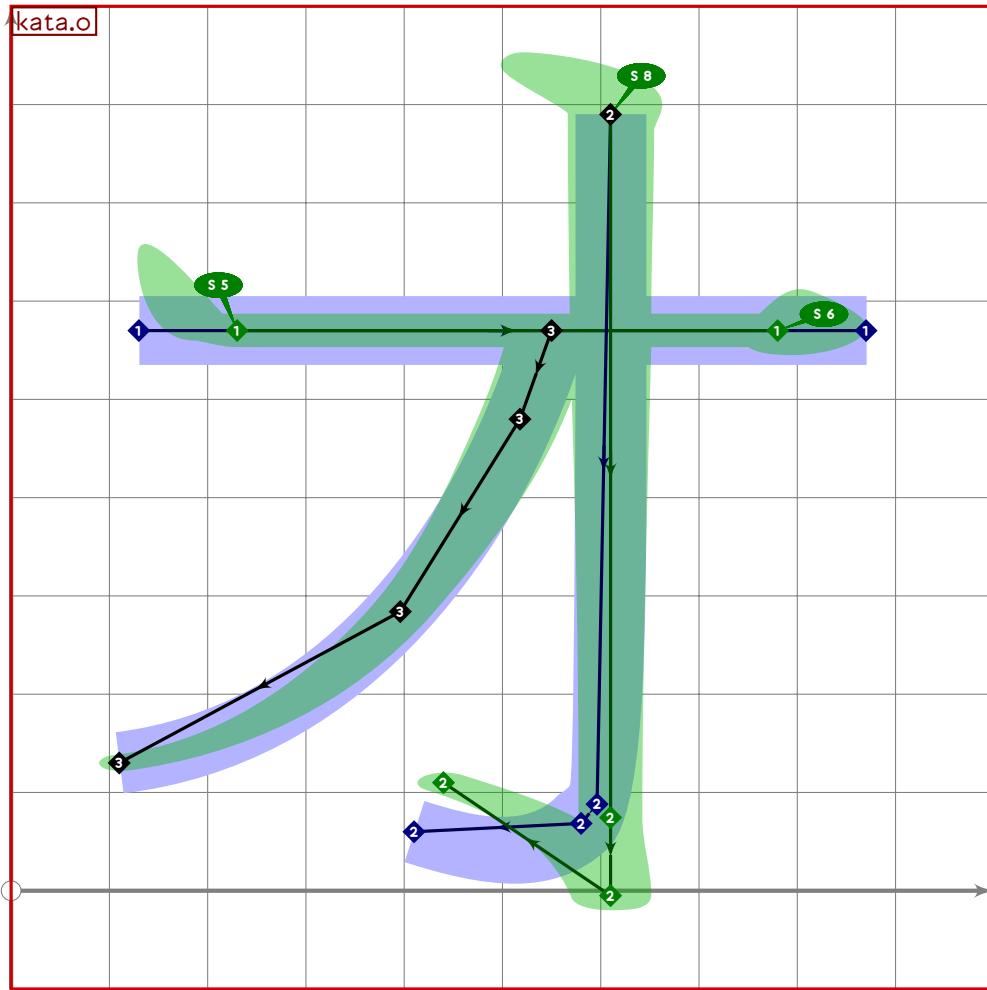
```



```

80
81 vardef tsu_curve.kata.e =
82   add_proof_box("kata.e");
83   tsu_curve.kata.ni;
84   bp[sp]:=(point 1 of bp[sp-2])-(point 1 of bp[sp-1]);
85   bq[sp]:=(1.5,1.5)-(1.5,1.5);
86   sp:=sp+1;
87 enddef;

```



```

88
89 vardef tsu_curve.kata.o =
90   add_proof_box("kata.o");
91   bp[sp]:=(130+100*mincho,570)-(870-90*mincho,570);
92   bq[sp]:=(1.8,1.8)-(1.6,1.6);
93   bo_serif[sp][0]:=5;
94   bo_serif[sp][1]:=6;
95   tsu_curve.kata.ho_centre(sp+1)((610,790),(610,20));
96   tsu_curve.kata.no_stroke(sp+2)((550,570),(110,130));
97   sp:=sp+3;
98 enddef;
99

```

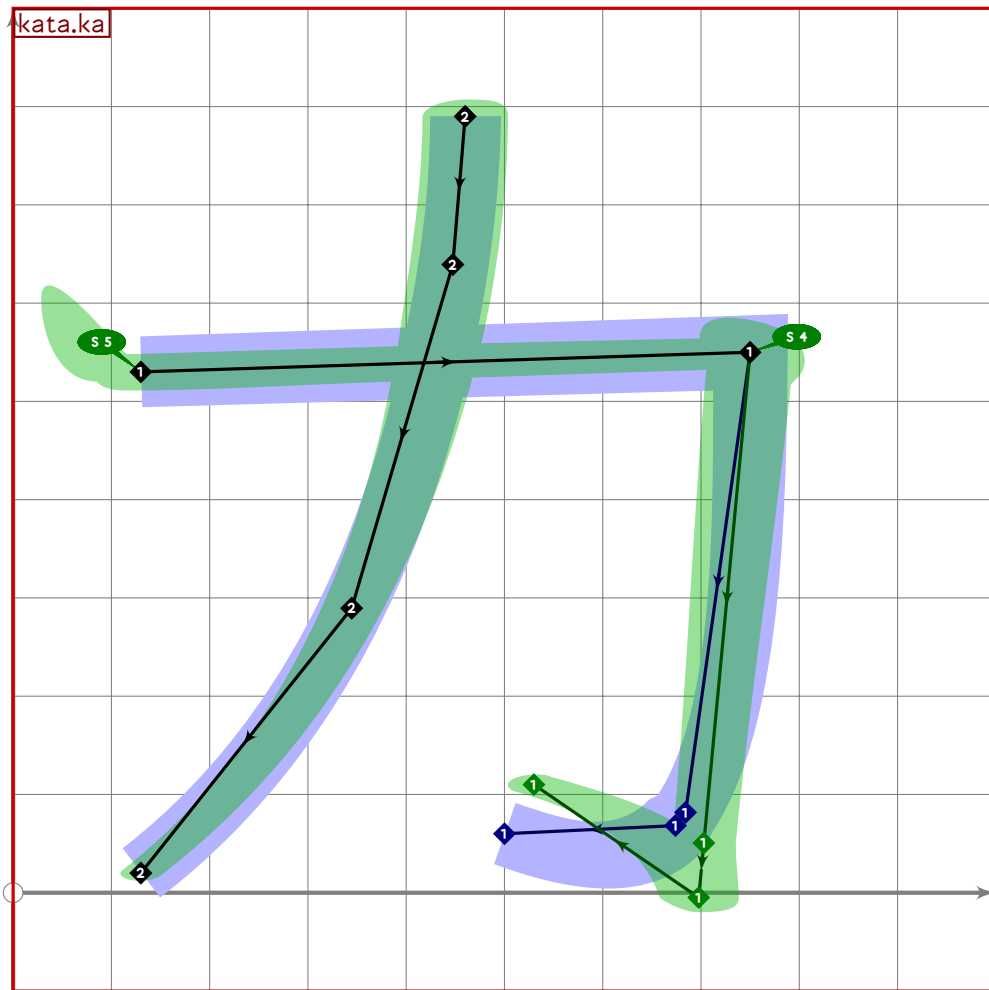
### Katakana Kakikukeko/Gagigugego

```

100 %%% KATAKANA KAKIKUKEKO/GAGIGUGEGO

```

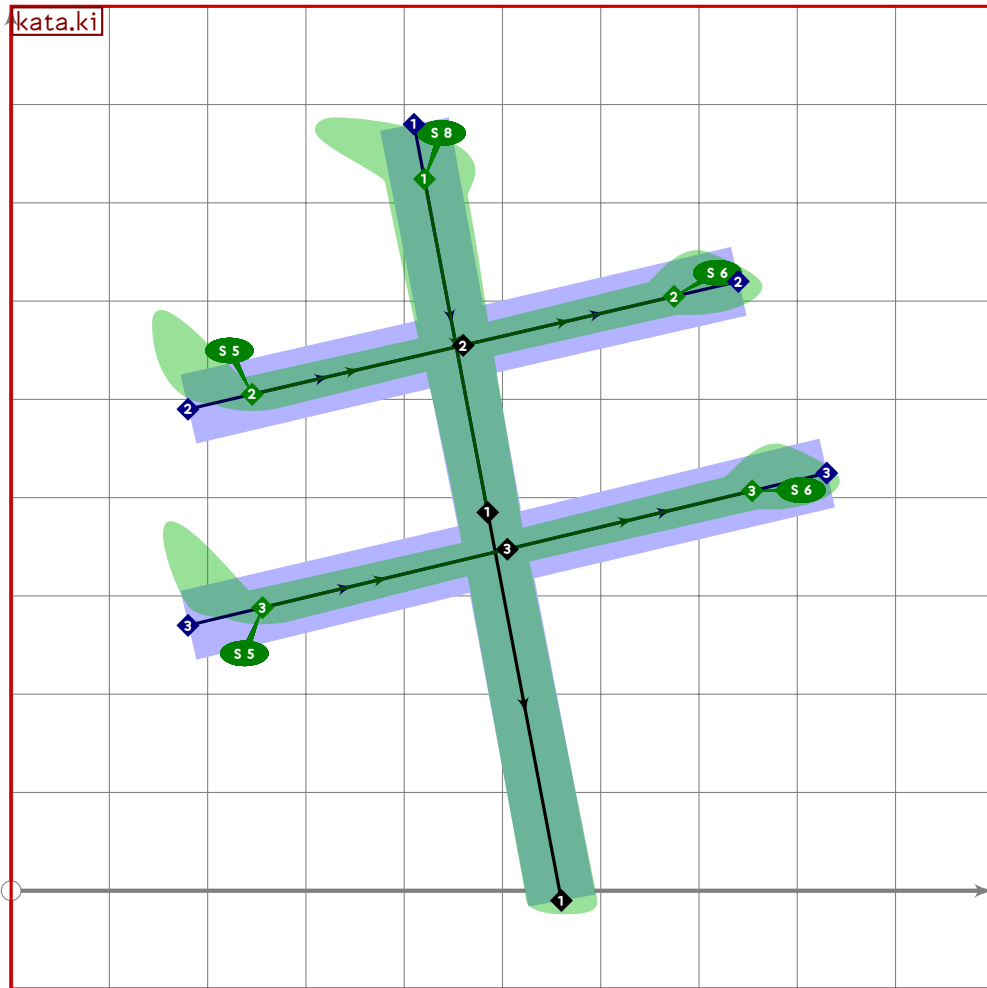




```

101
102 vardef tsu_curve.kata.ka =
103   add_proof_box("kata.ka");
104   tsu_curve.kata.ho_centre(sp)((750,550),(700,20));
105   bp[sp]:=(130,530)-bp[sp];
106   bq[sp]:=(1,8,1,8)-bq[sp];
107   bo_tip[sp][1]:=1;
108   bo_tip[sp][2]:=whatever;
109   bo_tip[sp][3]:=0;
110   bo_serif[sp][0]:=5;
111   bo_serif[sp][1]:=4;
112   tsu_curve.kata.no_stroke(sp*1)((460,790),(130,20));
113   sp:=sp*2;
114 enddef;

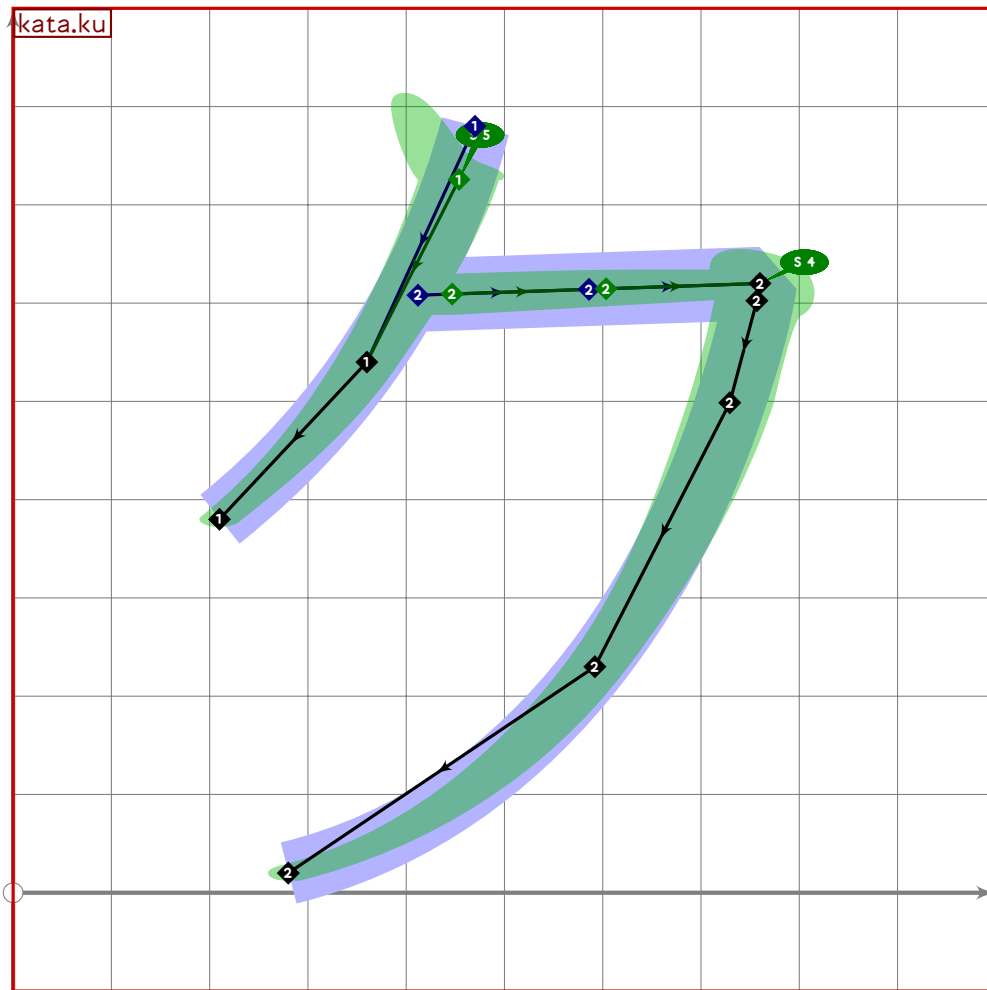
```



```

115
116 vardef tsu_curve.kata.ki =
117   add_proof_box("kata.ki");
118   bp[sp]:=(410,780)-(560,-10);
119   bp[sp]:=insert__nodes(bp[sp])(0.5);
120   bq[sp]:=(0.74,2.55)-(1.4,1.4)-(1.5,1.5);
121   bo_serif[sp][0]:=8;
122
123   bp[sp*1]:=(180,490)-(740,620);
124   bp[sp*1]:=insert__nodes(bp[sp*1])(0.5);
125   bq[sp*1]:=(0.6,3)-(1.6,1.6)-(0.6,3);
126   bo_serif[sp*1][0]:=5;
127   bo_serif[sp*1][2]:=6;
128
129   bp[sp*2]:=(180,270)-(830,425);
130   bp[sp*2]:=insert__nodes(bp[sp*2])(0.5);
131   bq[sp*2]:=(0.6,3)-(1.6,1.6)-(0.6,3);
132   bo_serif[sp*2][0]:=5;
133   bo_serif[sp*2][2]:=6;
134   sp:=sp*3;
135 enddef;

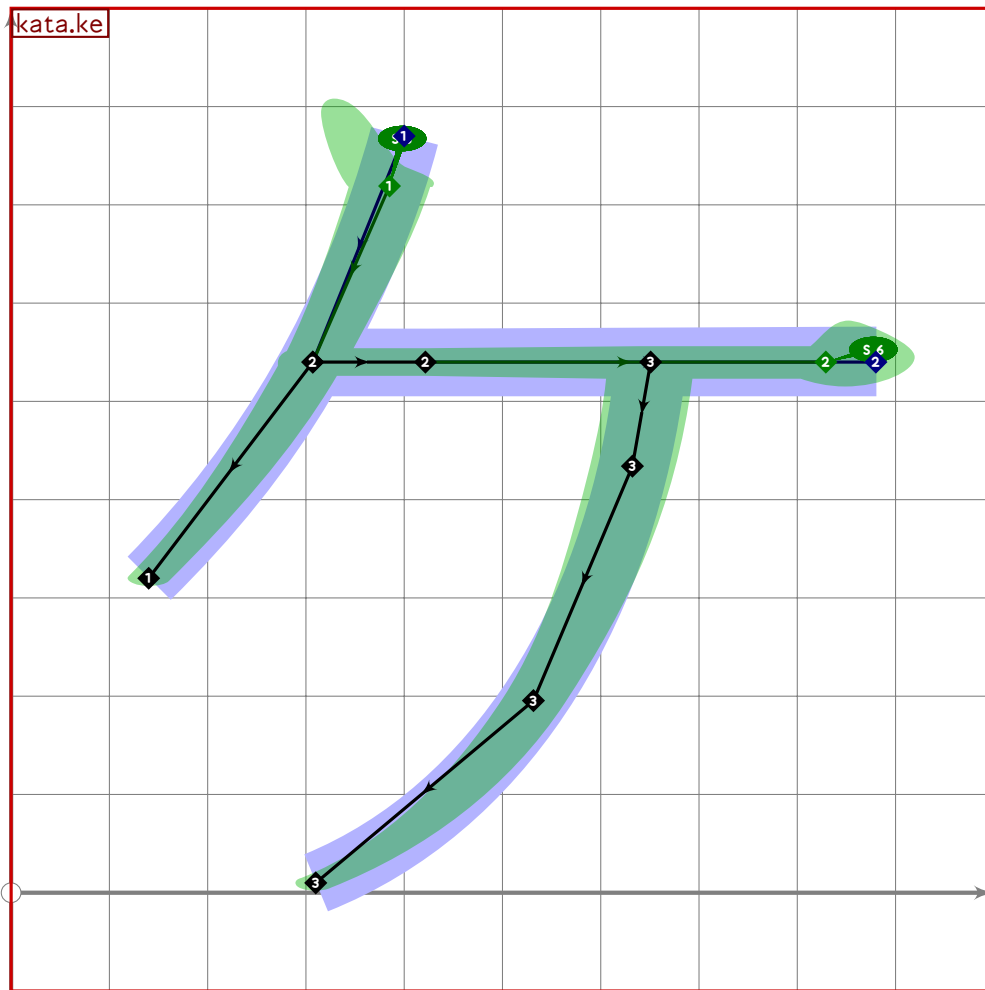
```



```

136
137 vardef tsu_curve.kata.ku =
138   add_proof_box("kata.ku");
139   bp[sp]:=(470,780)..(360,540)..(210,380);
140   bq[sp]:=(0.68,2.7)-(1.4,1.4)-(1.1,1.1);
141   bo_serif[sp][0]:=5;
142   z1=(bp[sp] intersectionpoint ((0,600)-(1000,620)))*10*right;
143   tsu_curve.kata.fu_stroke(sp+1)(z1,(760,620),(280,20));
144   bo_serif[sp+1][0]:=whatever;
145   sp:=sp+2;
146 enddef;

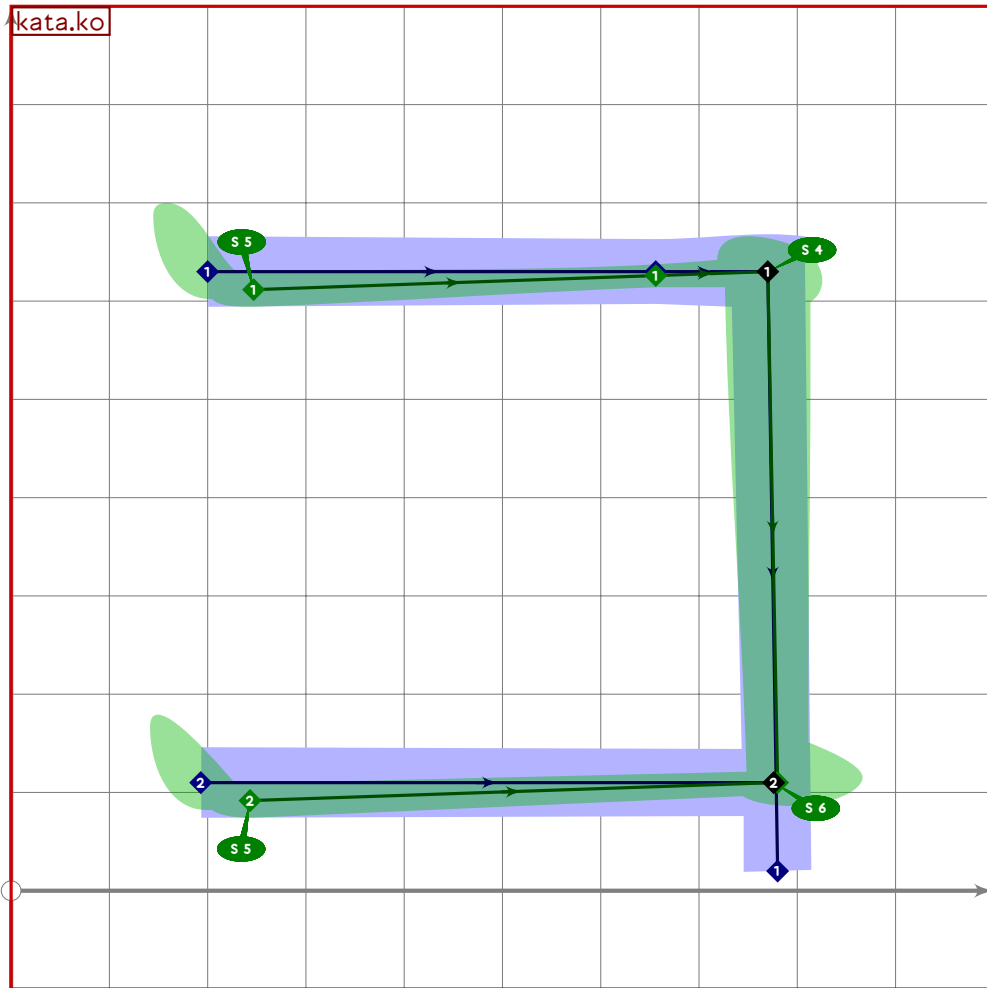
```



```

147
148 vardef tsu_curve.kata.ke =
149   add_proof_box("kata.ke");
150   bp[sp]:=(400,770)..(307,540)..(140,320);
151   bq[sp]:=(0.68,2.7)-(1.4,1.4)-(1.1,1.1);
152   bo_serif[sp][0]:=5;
153   z1=(bp[sp] intersectionpoint ((0,540)-(1000,540)));
154   bp[sp*1]:=z1-(880,540);
155   tsu_curve.kata.no_stroke(sp*2)(point 0.6 of bp[sp*1],(310,10));
156   bp[sp*1]:=insert_nodes(bp[sp*1])(0.2);
157   bq[sp*1]:=(1.5,1.5)-(1.5,1.5)-(0.75,2.85);
158   bo_serif[sp*1][2]:=6;
159   sp:=sp*3;
160 enddef;

```



```

161
162 vardef tsu_curve.kata.ko =
163   add_proof_box("kata.ko");
164   bp[sp]:=(200,630-20*mincho)-(770,630)-(780,mincho[20,110]);
165   bp[sp]:=insert__nodes(bp[sp])(0.8);
166   bq[sp]:=(0.78,2.83)-(1.3,1.3)-(1.7,1.7)-(1.4,1.4);
167   bo_tip[sp][2]:=1;
168   bo_serif[sp][0]:=5;
169   bo_serif[sp][2]:=4;
170   bp[sp*1]:=(193,110-20*mincho)-(776,110);
171   bq[sp*1]:=(0.78,2.83)-(1.4,1.4);
172   bo_serif[sp*1][0]:=5;
173   bo_serif[sp*1][1]:=6;
174   sp:=sp*2;
175 enddef;
176

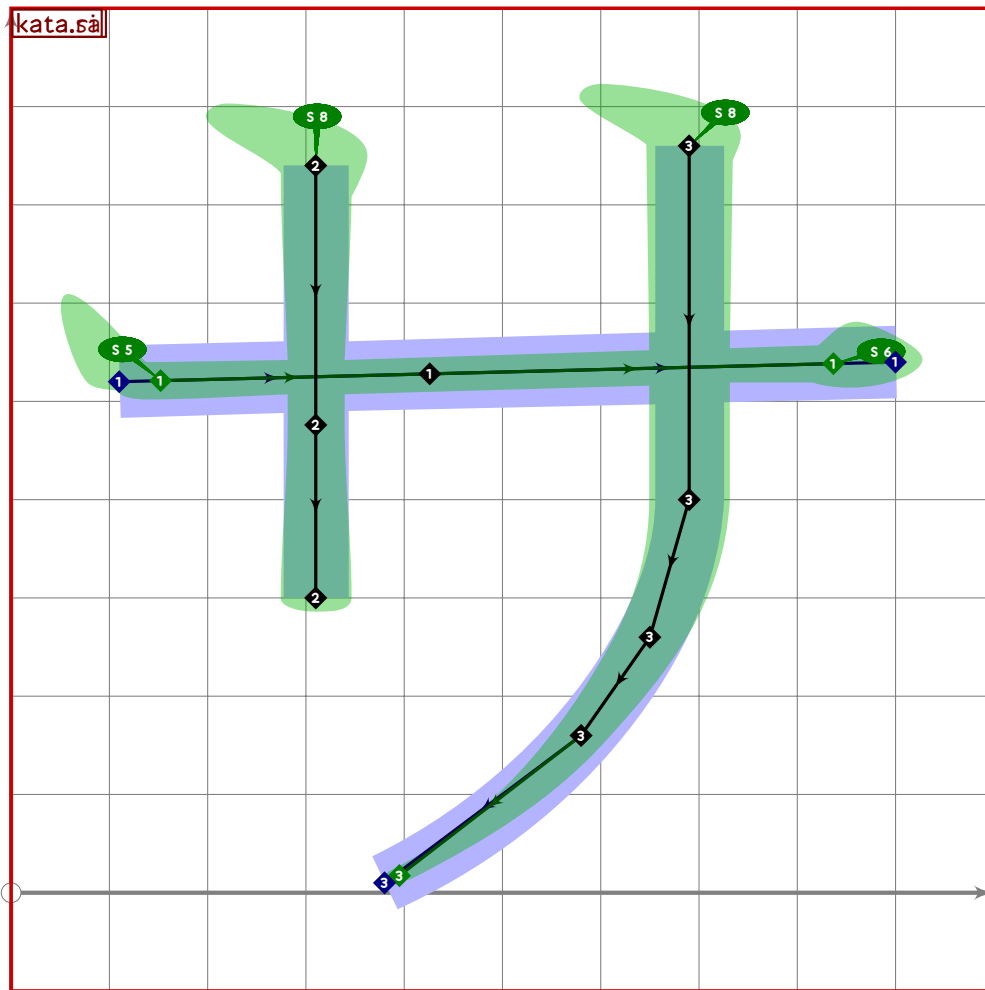
```

### Katakana Sashisuseso/Zajizuzezo

```

177 %%% KATAKANA SASHISUSES0/ZAJIZUZEZO

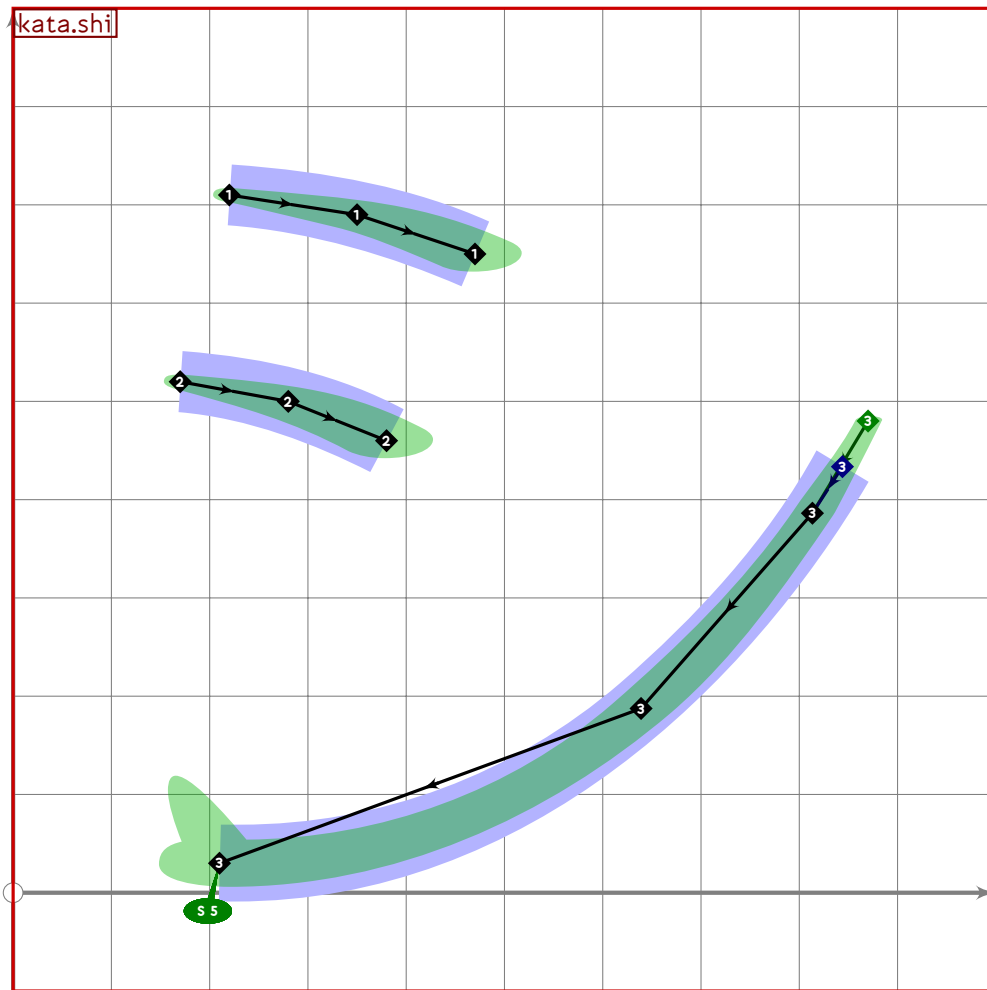
```



```

178
179 vardef tsu_curve.kata.sa =
180   add_proof_box("kata.sa");
181   bp[sp]:=(110,520)-(900,540);
182   bp[sp]:=insert_nodes(bp[sp])(0.4);
183   bq[sp]:=(0.7,3)-(1.7,1.7)-(0.7,3);
184   bo_serif[sp][0]:=5;
185   bo_serif[sp][2]:=6;
186   sp:=sp*1;
187   tsu_curve.kata.ri;
188 enddef;

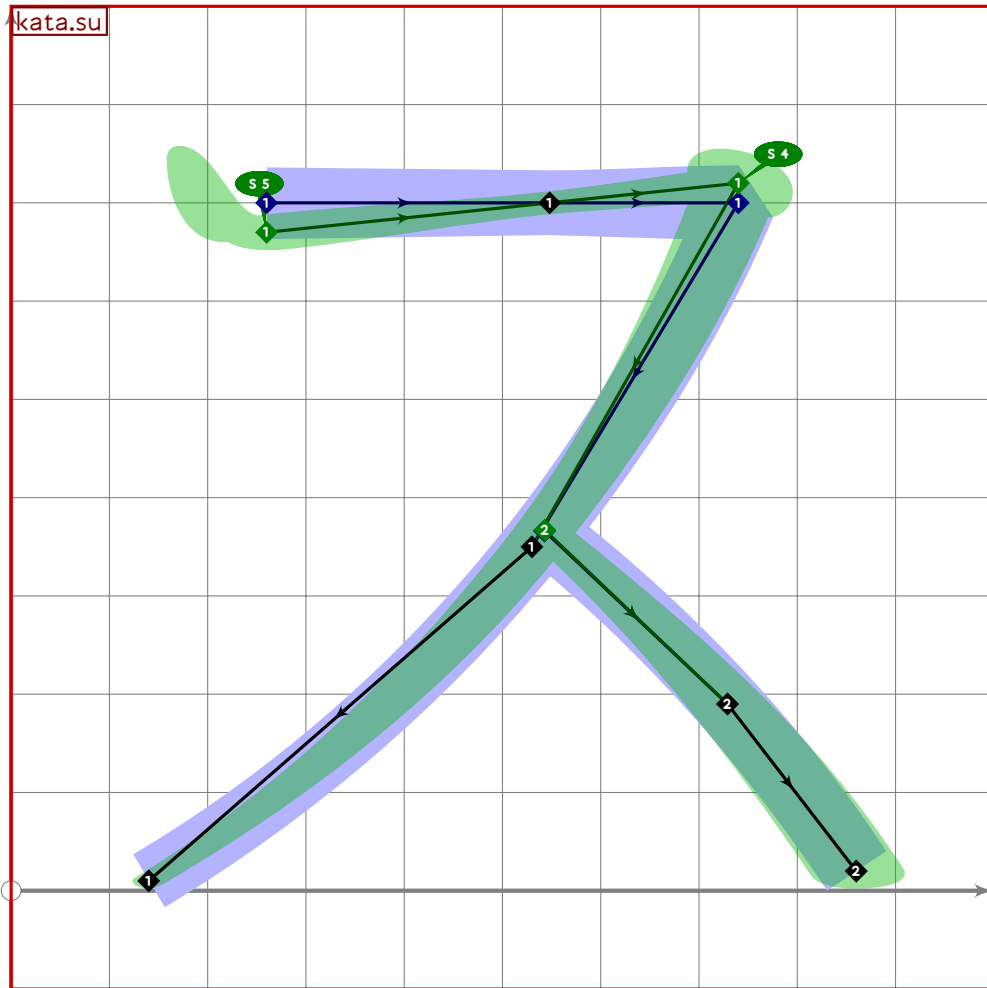
```



```

189
190 vardef tsu_curve.kata.shi =
191   add_proof_box("kata.shi");
192   bp[sp]:=(220,710)..(350,690)..(470,650);
193   bq[sp]:=(1,1)..(1.6,1.6)..(1.8,1.8);
194   bp[sp*1]:=(170,520)..(280,500)..(380,460);
195   bq[sp*1]:=(1,1)..(1.6,1.6)..(1.8,1.8);
196   tsu_curve.kata.no_stroke(sp*2)((870,480),(210,30));
197   bq[sp*2]:=(0.9,0.9)-(1.1,1.1)-(1.4,1.4)-(2.2,2.2);
198   bo_serif[sp*2][length bp[sp*2]]:=5;
199   sp:=sp*3;
200 enddef;

```

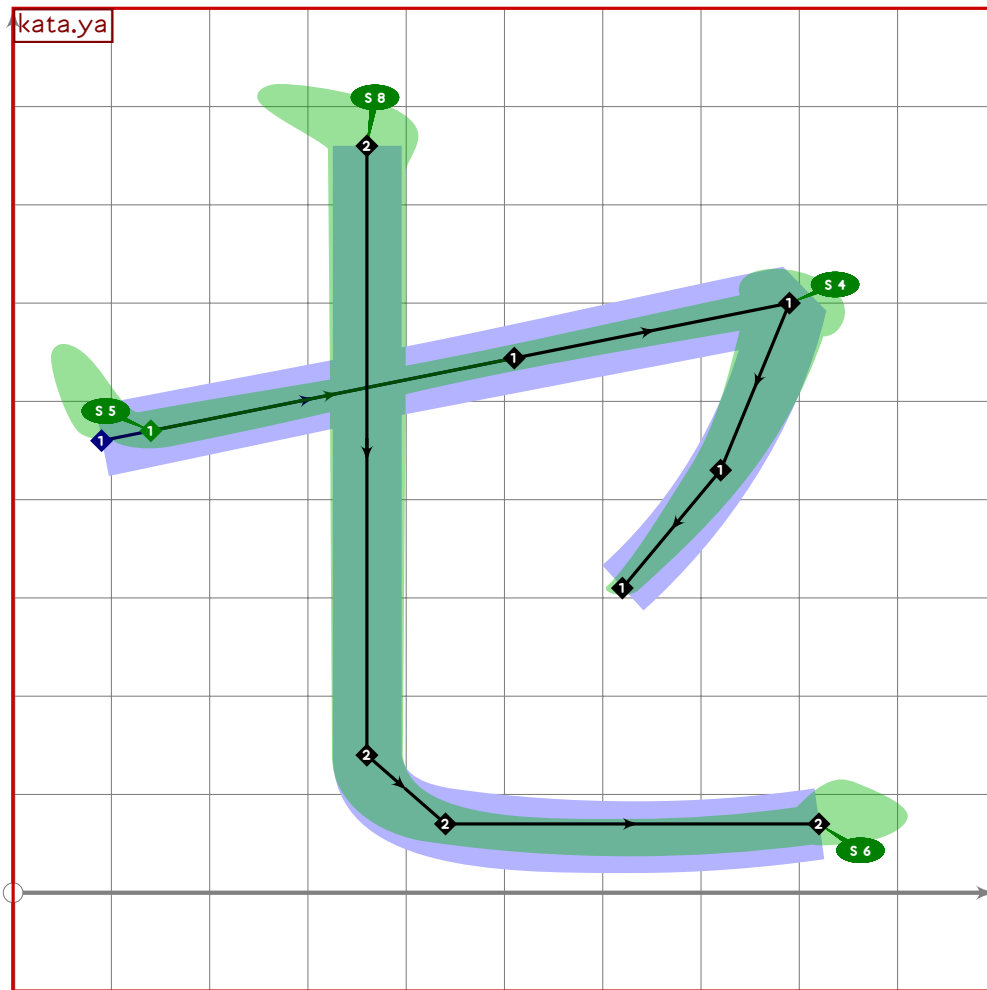


```

201
202 vardef tsu_curve.kata.su =
203   add_proof_box("kata.su");
204   bp[sp]:=(260,700-30*mincho)-(740,700+20*mincho)..(530,350)..(140,10);
205   bp[sp]:=insert__nodes(bp[sp])(0.6);
206   bq[sp]:=(1.8,1.8)-(1.3,1.3)-(1.7,1.7)-(1.4,1.4)-(1,1);
207   bo_tip[sp][2]:=0;
208   bo_serif[sp][0]:=5;
209   bo_serif[sp][2]:=4;
210   bp[sp*1]:=(point 2.95 of bp[sp])..(729,190)..(860,20);
211   bq[sp*1]:=(1.2,1.2)-(1.6,1.6)-(1.8,1.8);
212   sp:=sp*2;
213 enddef;

```

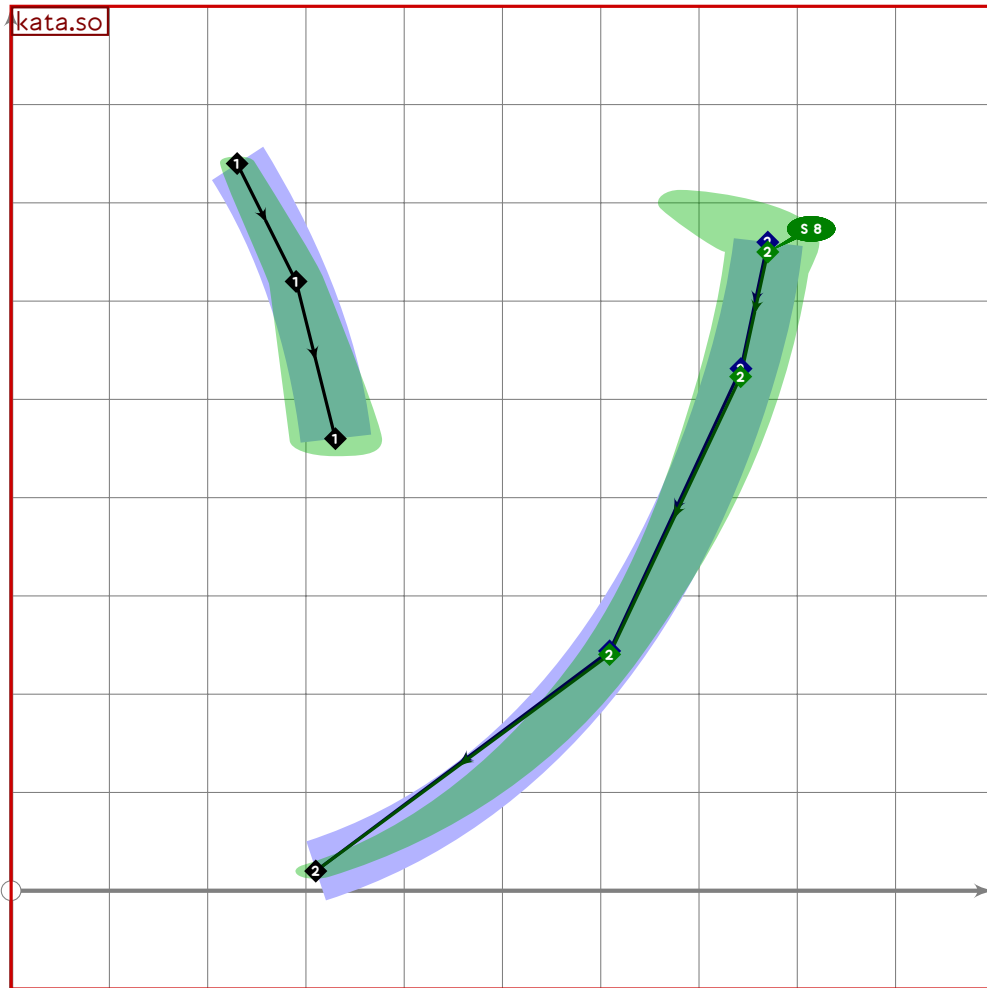




```

214
215 vardef tsu_curve.kata.se =
216   add_proof_box("kata.se");
217   tsu_curve.kata.ya;
218   sp:=sp-2;
219   bp[sp]:=bp[sp] shifted (30*left);
220   bp[sp*1]:=(360,760)-(360,140){dir 274}..(440,70)..tension 21..(820,70);
221   bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1.9,1.9)-(1.8,1.8);
222   bo_serif[sp*1][0]:=8;
223   bo_serif[sp*1][3]:=6;
224   sp:=sp+2;
225 enddef;

```



```

226
227 vardef tsu_curve.kata.so =
228   add_proof_box("kata.so");
229   bp[sp]:=(230,740)..(290,620)..(330,460);
230   bq[sp]:=(1,1)..(1.3,1.3)..(1.8,1.8);
231   tsu_curve.kata.no_stroke(sp*1)((770,660-10*mincho),(310,20));
232   bo_serif[sp*1][0]:=8;
233   sp:=sp*2;
234 enddef;
235

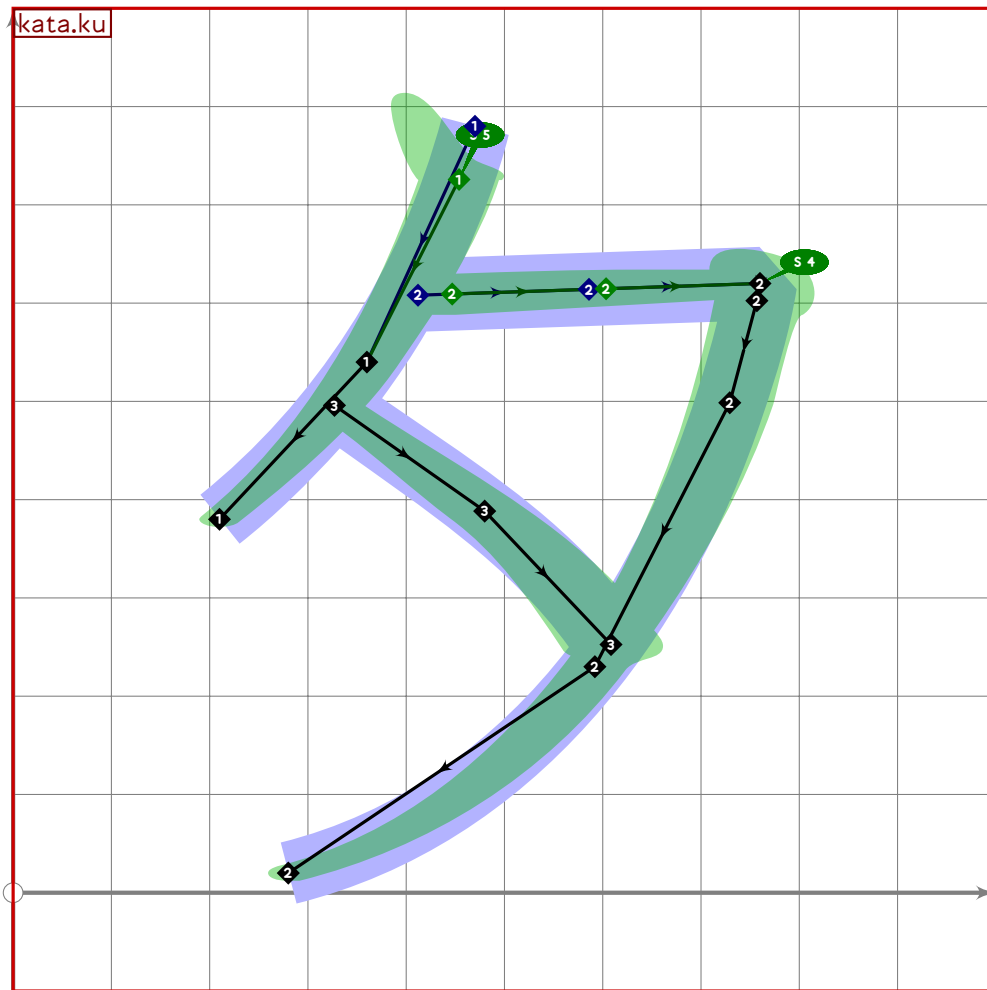
```

## Katakana Tachitsuteto/Dajizudedo

```

236 %%% KATAKANA TACHITSUTETO/DAJIZUDED0

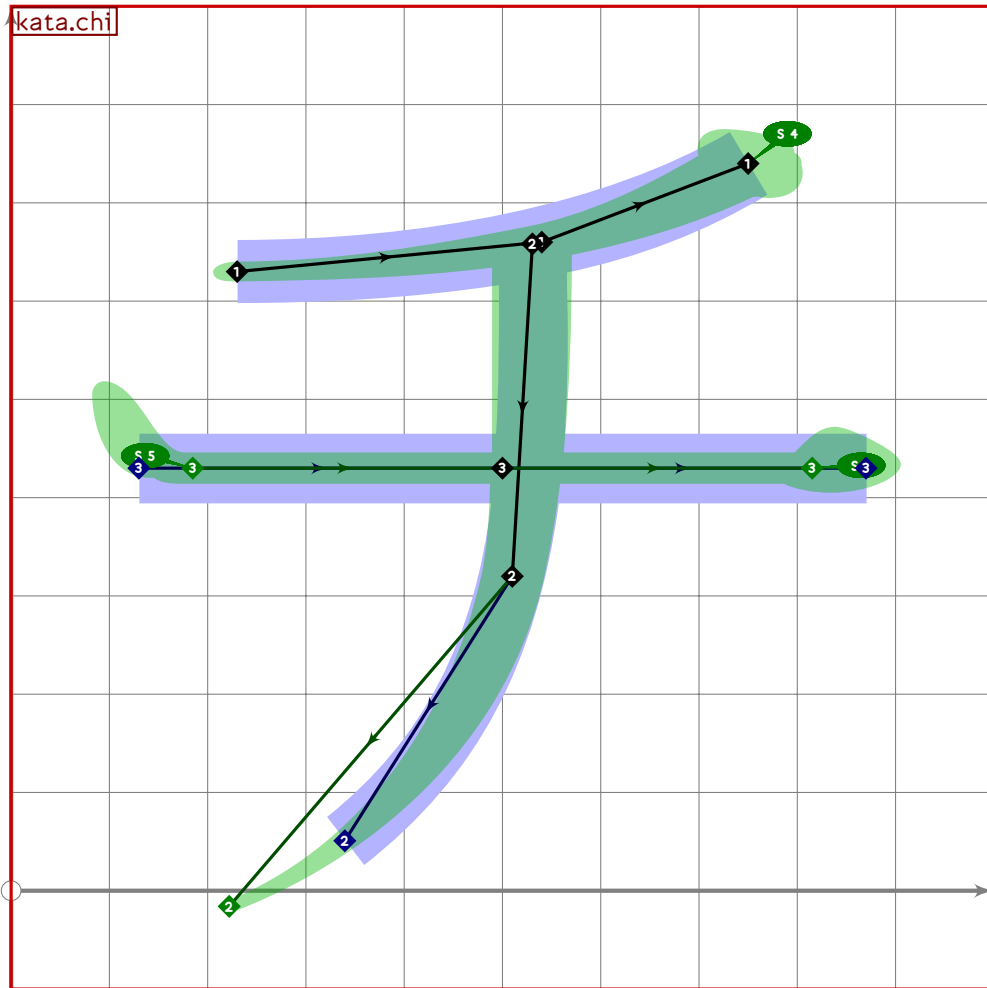
```



```

237
238 vardef tsu_curve.kata.ta =
239   add_proof_box("kata.ta");
240   tsu_curve.kata.ku;
241   numeric x[],y[];
242   z1=point 1.25 of bp[sp-2];
243   z3=point 4.9 of bp[sp-1];
244   z2=(0.5[z1,z3])+0.05*((z3-z1) rotated 90);
245   bp[sp]:=z1..tension 2..z2..z3;
246   bq[sp]:=(1.2,1.2)-(1.6,1.6)-(1.9,1.9);
247   sp:=sp+1;
248 enddef;

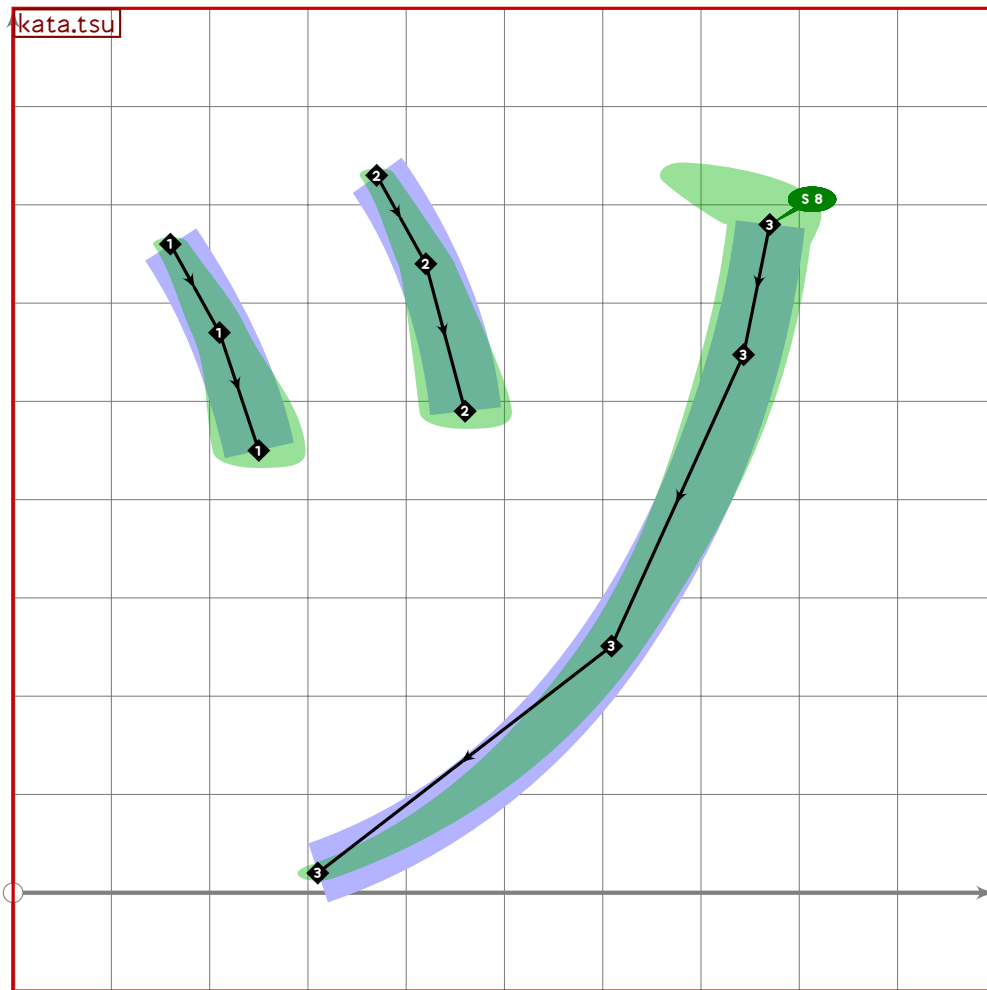
```



```

249
250 vardef tsu_curve.kata.chi =
251   add_proof_box("kata.chi");
252   bp[sp]:= (230,630)..tension 1.3..(540,660)..(750,740);
253   bq[sp]:= (1.2,1.2)-(1.7,1.7)-(2,2);
254   bo_serif[sp][2]:=4;
255   tsu_curve.kata.na_centre(sp*1);
256   bp[sp*1]:=subpath (xpart (bp[sp*1] intersectiontimes bp[sp]),infinity) of bp[sp*1];
257   bp[sp*2]:= (130,430)-(870,430);
258   bp[sp*2]:=insert_nodes(bp[sp*2])(0.5);
259   bq[sp*2]:= (0.7,2.7)-(1.6,1.6)-(0.7,2.7);
260   bo_serif[sp*2][0]:=5;
261   bo_serif[sp*2][2]:=6;
262   sp:=sp*3;
263 enddef;

```



```

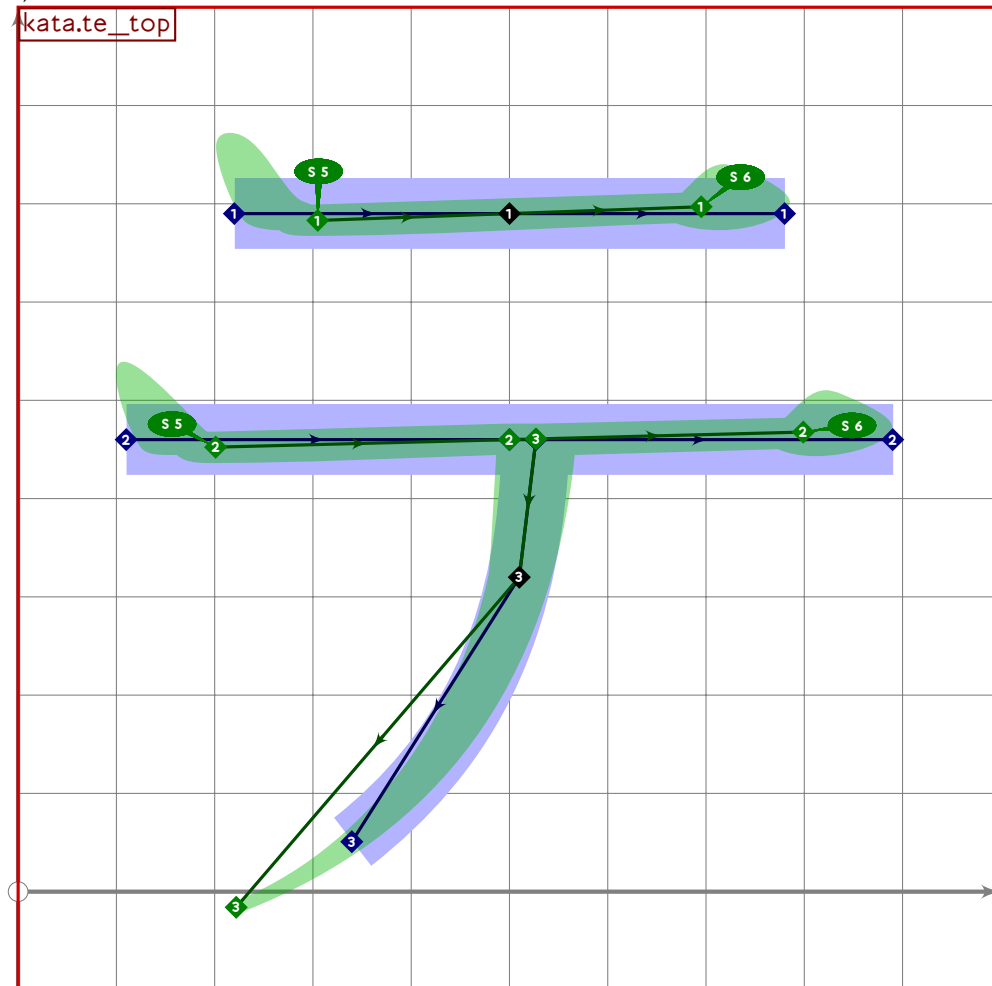
264
265 vardef tsu_curve.kata.tsu =
266   add_proof_box("kata.tsu");
267   bp[sp]:=(160,660)..(210,570)..(250,450);
268   bq[sp]:=(1,1)..(1.3,1.3)..(1.8,1.8);
269   bp[sp*1]:=(370,730)..(420,640)..(460,490);
270   bq[sp*1]:=(1,1)..(1.3,1.3)..(1.8,1.8);
271   tsu_curve.kata.no_stroke(sp*2)((770,680),(310,20));
272   bo_serif[sp*2][0]:=8;
273   sp:=sp*3;
274 enddef;
275
276 vardef tsu_curve.kata.te_top =
277   add_proof_box("kata.te_top");
278   bp[sp]:=(220,690-10*mincho)-(780,690+10*mincho);
279   bp[sp]:=insert_nodes(bp[sp])(0.5);
280   bq[sp]:=(0.5,2.9)-(1.6,1.6)-(0.5,2.9);
281   bo_serif[sp][0]:=5;
282   bo_serif[sp][2]:=6;
283   bp[sp*1]:=(110,460-10*mincho)-(890,460+10*mincho);
284   bp[sp*1]:=insert_nodes(bp[sp*1])(0.5);

```

```

285 bq[sp+1]:=(0.6,2.8)-(1.6,1.6)-(0.6,2.8);
286 bo_serif[sp+1][0]:=5;
287 bo_serif[sp+1][2]:=6;
288 sp:=sp+2;
289 enddef;

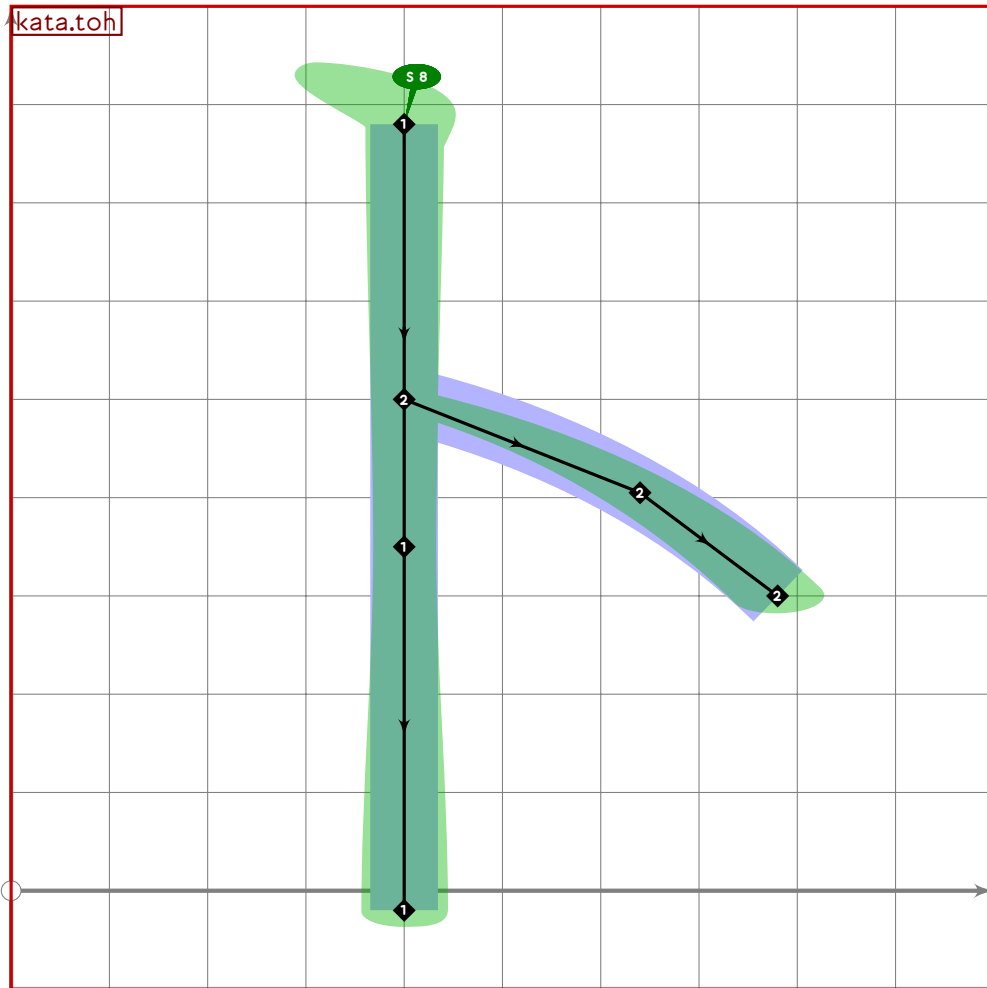
```



```

290
291 vardef tsu_curve.kata.te =
292   add_proof_box("kata.te");
293   tsu_curve.kata.te_top;
294   tsu_curve.kata.na_centre(sp);
295   bp[sp]:=subpath (xpart (bp[sp] intersectiontimes bp[sp-1]),infinity) of bp[sp];
296   sp:=sp+1;
297 enddef;

```



```

298
299 vardef tsu_curve.kata.toh =
300   add_proof_box("kata.toh");
301   bp[sp]:=(400,780)-(400,350)-(400,-20);
302   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.7,1.7);
303   bo_serif[sp][0]:=8;
304   bp[sp*1]:=(400,500)..tension 1.1..(640,405)..(780,300);
305   bq[sp*1]:=(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
306   sp:=sp*2;
307 enddef;
308

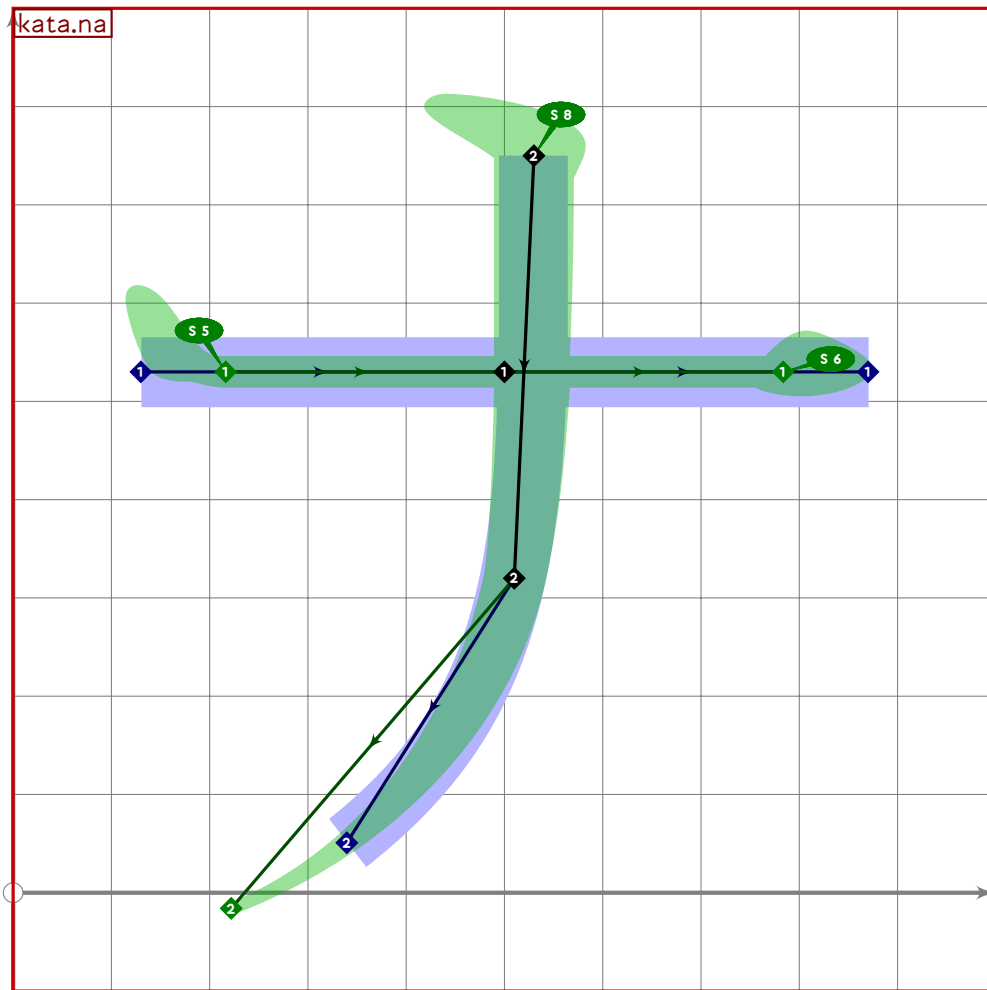
```

## Katakana Naninuneno

```

309 %%% KATAKANA NANINUNENO
310
311 vardef tsu_curve.kata.na_centre(expr a) =
312   bp[a]:=(530,750){down}..tension 1.2..(510,320)..(180,-30);
313   bq[a]:=(1.6,1.6)-(1.4,1.4)-(0.78,0.78);
314 enddef;

```

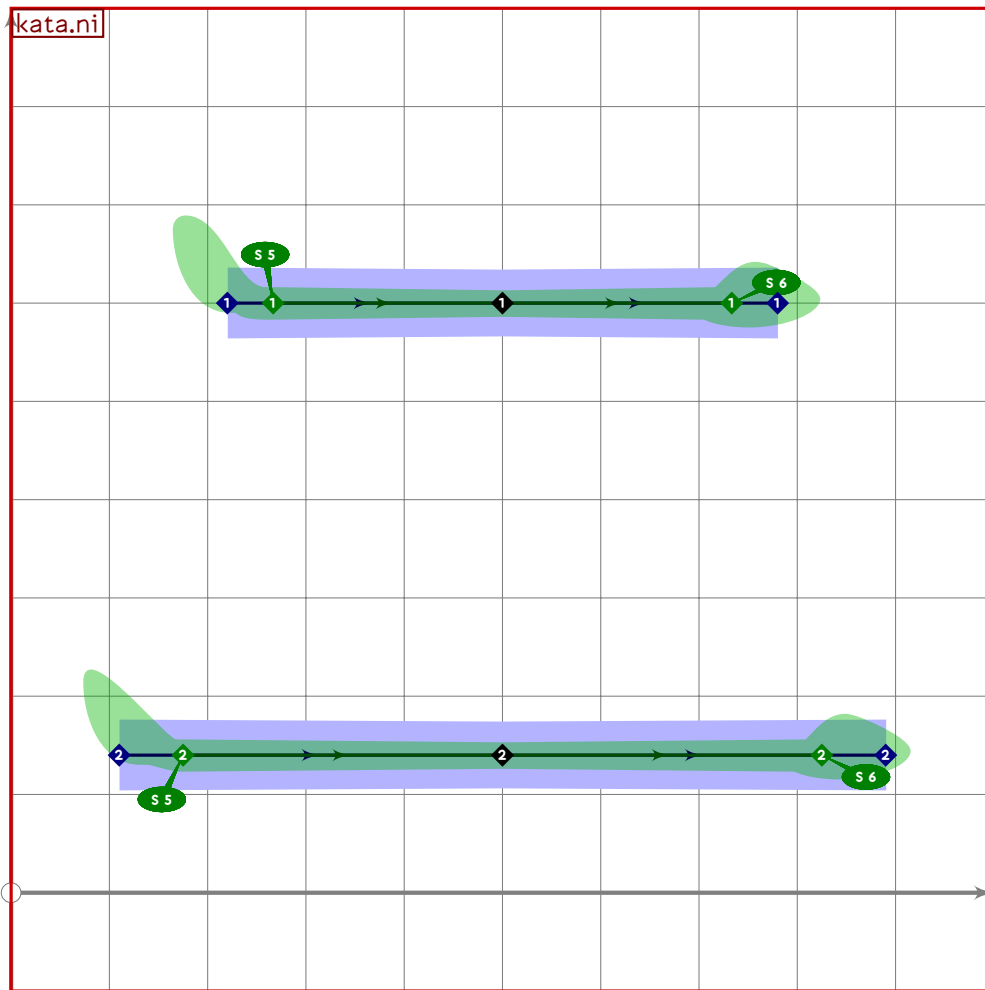


```

315
316 vardef tsu_curve.kata.na =
317   add_proof_box("kata.na");
318   bp[sp]:=(130,530)-(870,530);
319   bp[sp]:=insert__nodes(bp[sp])(0.5);
320   bq[sp]:=(0.6,2.8)-(1.6,1.6)-(0.6,2.8);
321   bo_serif[sp][0]:=5;
322   bo_serif[sp][2]:=6;
323   tsu_curve.kata.na__centre(sp*1);
324   bo_serif[sp*1][0]:=8;
325   sp:=sp*2;
326 enddef;

```

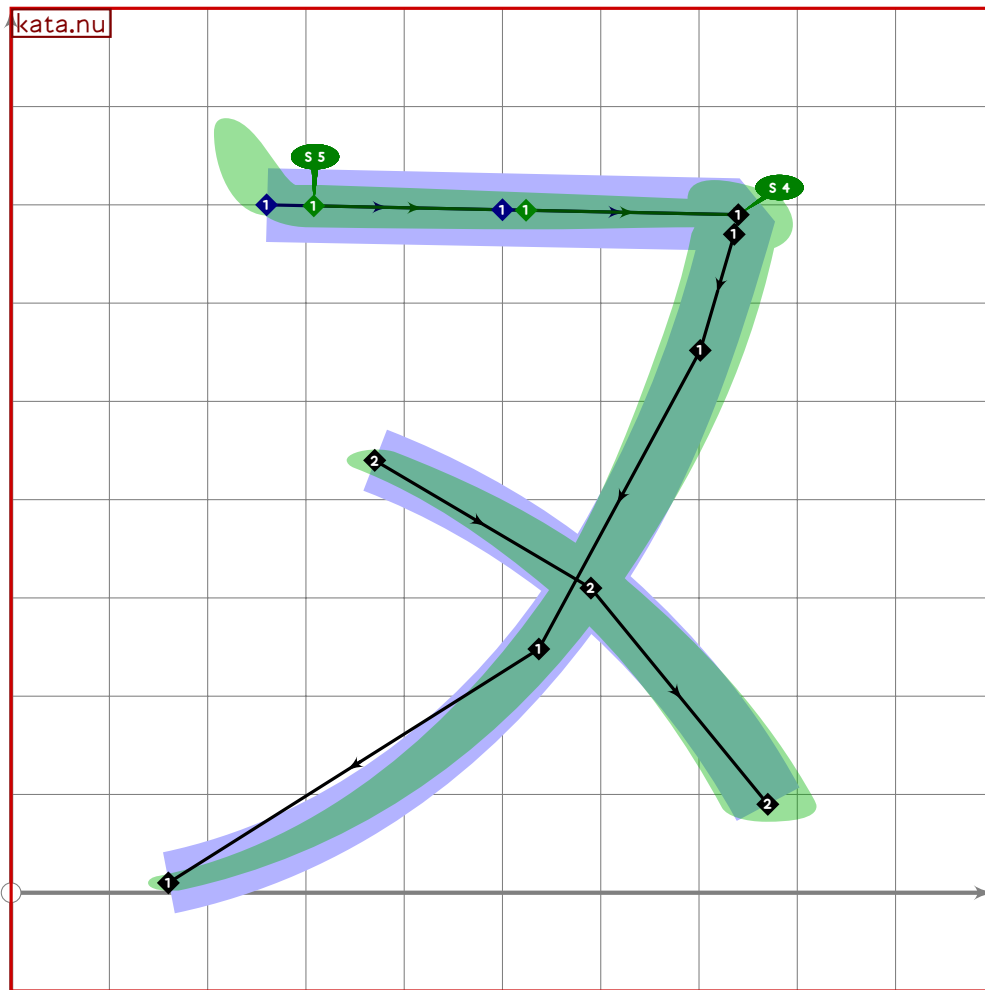




```

327
328 vardef tsu_curve.kata.ni =
329   add_proof_box("kata.ni");
330   bp[sp]:=(220,600)-(500,600)-(780,600);
331   bq[sp]:=(0.7,2.7)-(1.5,1.5)-(0.7,2.9);
332   bo_serif[sp][0]:=5;
333   bo_serif[sp][2]:=6;
334   bp[sp*1]:=(110,140)-(500,140)-(890,140);
335   bq[sp*1]:=(0.7,2.7)-(1.5,1.5)-(0.7,2.9);
336   bo_serif[sp*1][0]:=5;
337   bo_serif[sp*1][2]:=6;
338   sp:=sp*2;
339 enddef;

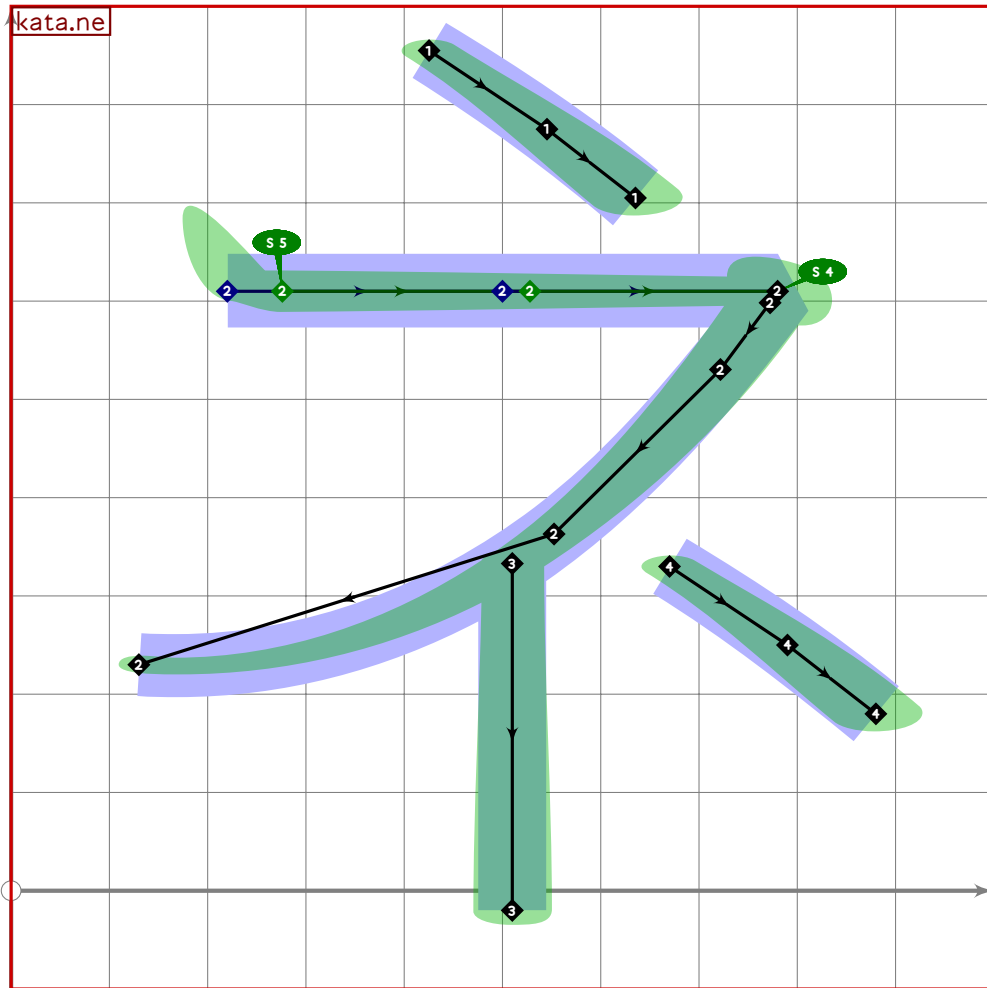
```



```

340
341 vardef tsu_curve.kata.nu =
342   add_proof_box("kata.nu");
343   tsu_curve.kata.fu_stroke(sp)((260,700),(740,690),(160,10));
344   bp[sp*1]:=(370,440)..(590,310)..(770,90);
345   bq[sp*1]:=(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
346   sp:=sp*2;
347 enddef;

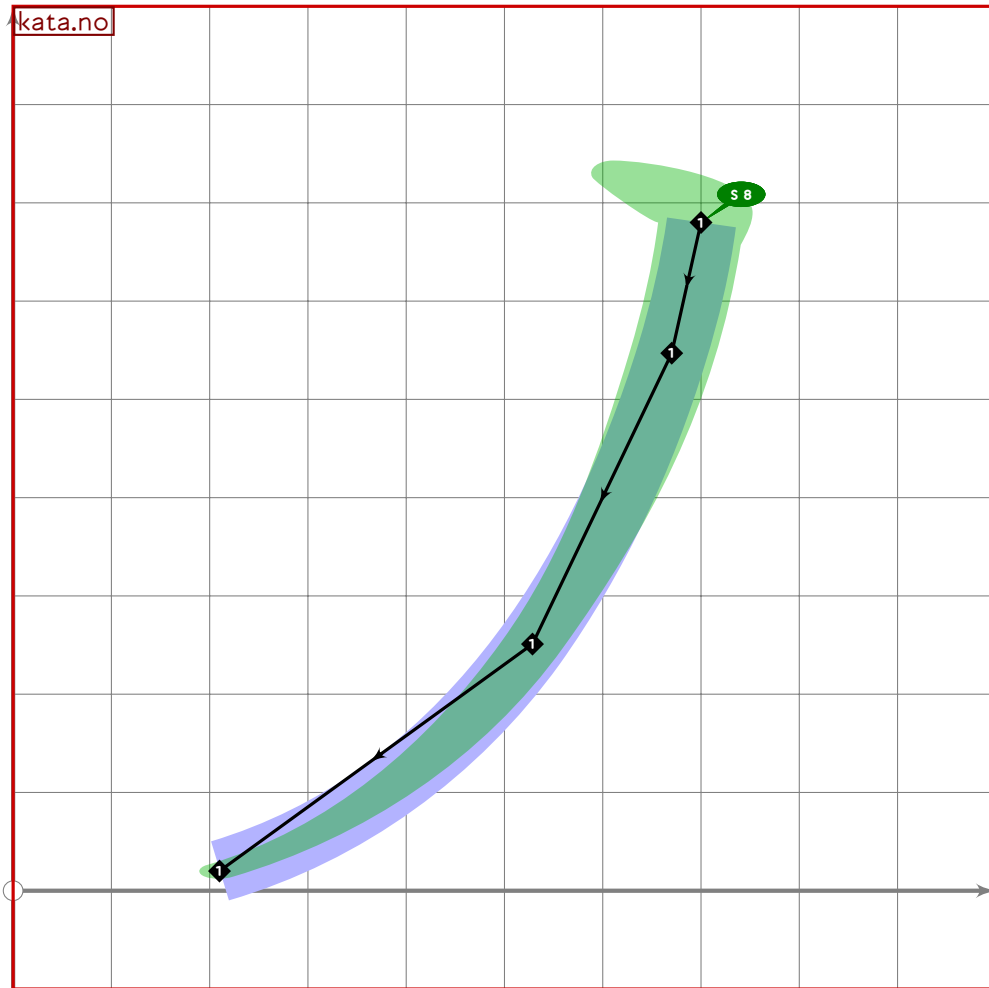
```



```

348
349 vardef tsu_curve.kata.ne =
350   add_proof_box("kata.ne");
351   tsu_curve.kata.fu_stroke(sp*1)((220,610),(780,610),(130,230));
352   bp[sp*2]:=((510,0)-(510,1000)) intersectionpoint reverse bp[sp*1]-(510,-20);
353   bq[sp*2]:=(1.4,1.4)-(1.6,1.6);
354   bp[sp*3]:=(670,330)..(790,250)..(880,180);
355   bq[sp*3]:=(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
356   bp[sp]:=bp[sp*3] shifted ((510,800)-point 0.7 of bp[sp*3]);
357   bq[sp]:=bq[sp*3];
358   sp:=sp*4;
359 enddef;
360
361 vardef tsu_curve.kata.no_stroke(expr a,ur,ll) =
362   bp[a]:=ur..tension 1..
363     (0.65[xpart ll,xpart ur],0.35[ypart ll,ypart ur]).{curl 1.2}ll;
364   bp[a]:=insert_nodes(bp[a])(0.3);
365   bq[a]:=(1.7,1.7)-(1.7,1.7)-(1.4,1.4)-(1.1,1.1);
366 enddef;

```



```

367
368 vardef tsu_curve.kata.no =
369   add_proof_box("kata.no");
370   tsu_curve.kata.no_stroke(sp)((700,680),(210,20));
371   bo_serif[sp][0]:=8;
372   sp:=sp*1;
373 enddef;
374

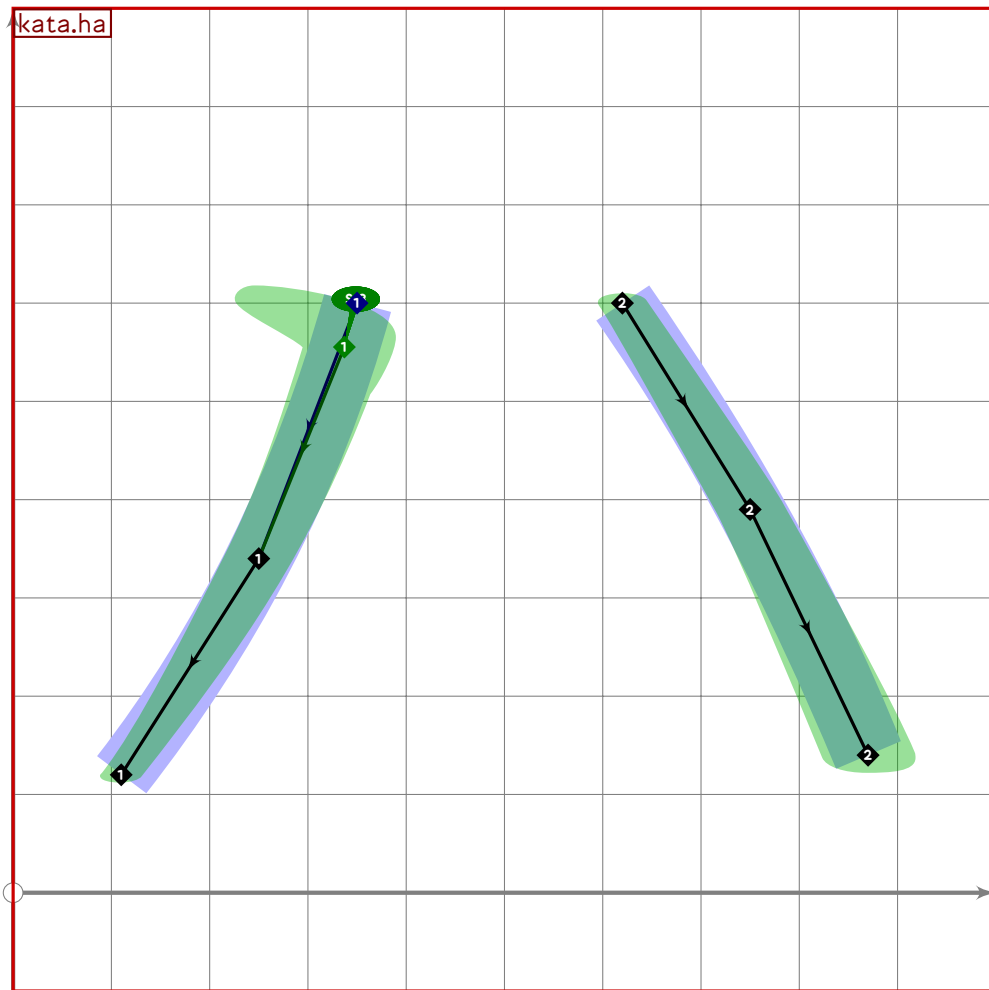
```

## Katakana Hahifuheho/Babibubebo/Papipupepo

```

375 %%% KATAKANA HAHIFUHEHO/BABIBUBEBO/PAPIPUPEPO

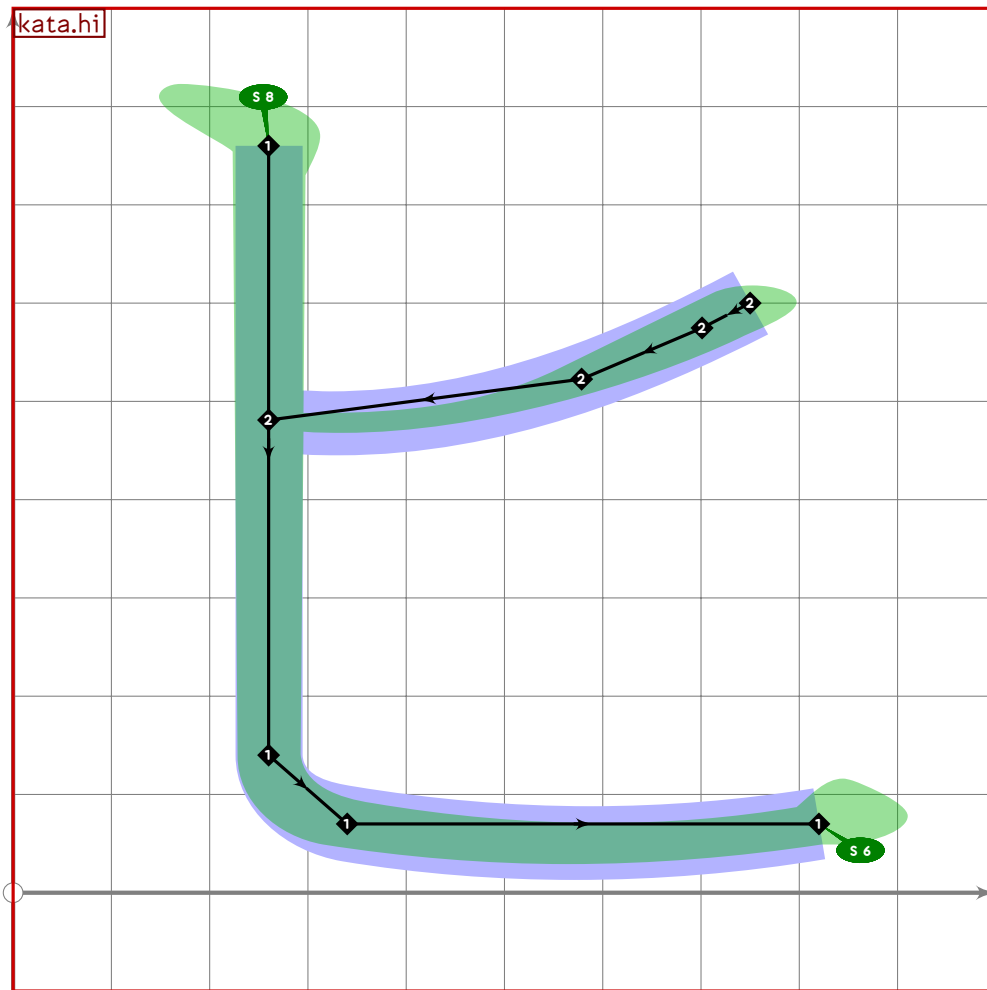
```



```

376
377 vardef tsu_curve.kata.ha =
378   add_proof_box("kata.ha");
379   bp[sp]:=(350,600)..(250,340)..(110,120);
380   bq[sp]:=(0.7,2.7)-(1.5,1.5)-(1.1,1.1);
381   bo_serif[sp][0]:=8;
382   bp[sp*1]:=(620,600)..(750,390)..(870,140);
383   bq[sp*1]:=(1.2,1.2)-(1.5,1.5)-(1.8,1.8);
384   sp:=sp*2;
385 enddef;

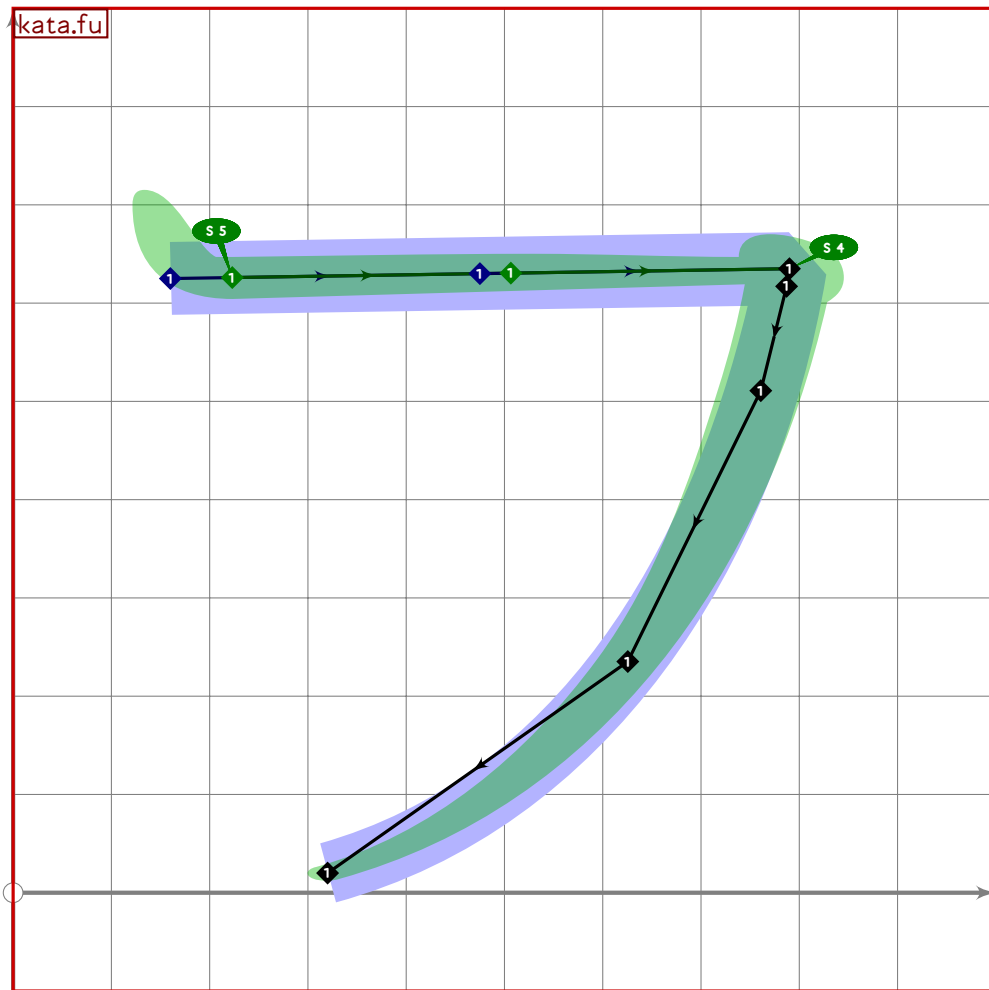
```



```

386
387 vardef tsu_curve.kata.hi =
388   add_proof_box("kata.hi");
389   bp[sp]:=(260,760)-(260,140){dir 274}..(340,70)..tension 21..(820,70);
390   bq[sp]:=(0.84,2.18)-(1.4,1.4)-(2.1,2.1)-(1.9,1.9);
391   bo_serif[sp][0]:=8;
392   bo_serif[sp][3]:=6;
393   tsu_curve.kata.no_stroke(sp*1)((750,600),point 0.45 of bp[sp]);
394   bq[sp*1]:=bq[sp*1] shifted (0.1,0.1);
395   sp:=sp*2;
396 enddef;
397
398 vardef tsu_curve.kata.fu_stroke(expr a,ul,ur,ll) =
399   tsu_curve.kata.no_stroke(a)(ur,ll);
400   bp[a]:=((mincho*0.1)[ul,ur])-bp[a];
401   bp[a]:=insert_nodes(bp[a])(0.5,1.15);
402   bq[a]:=(2,2)-(1.9,1.9)-(1.5,1.5)-bq[a];
403   bo_tip[a][2]:=0;
404   bo_serif[a][0]:=5;
405   bo_serif[a][2]:=4;
406 enddef;

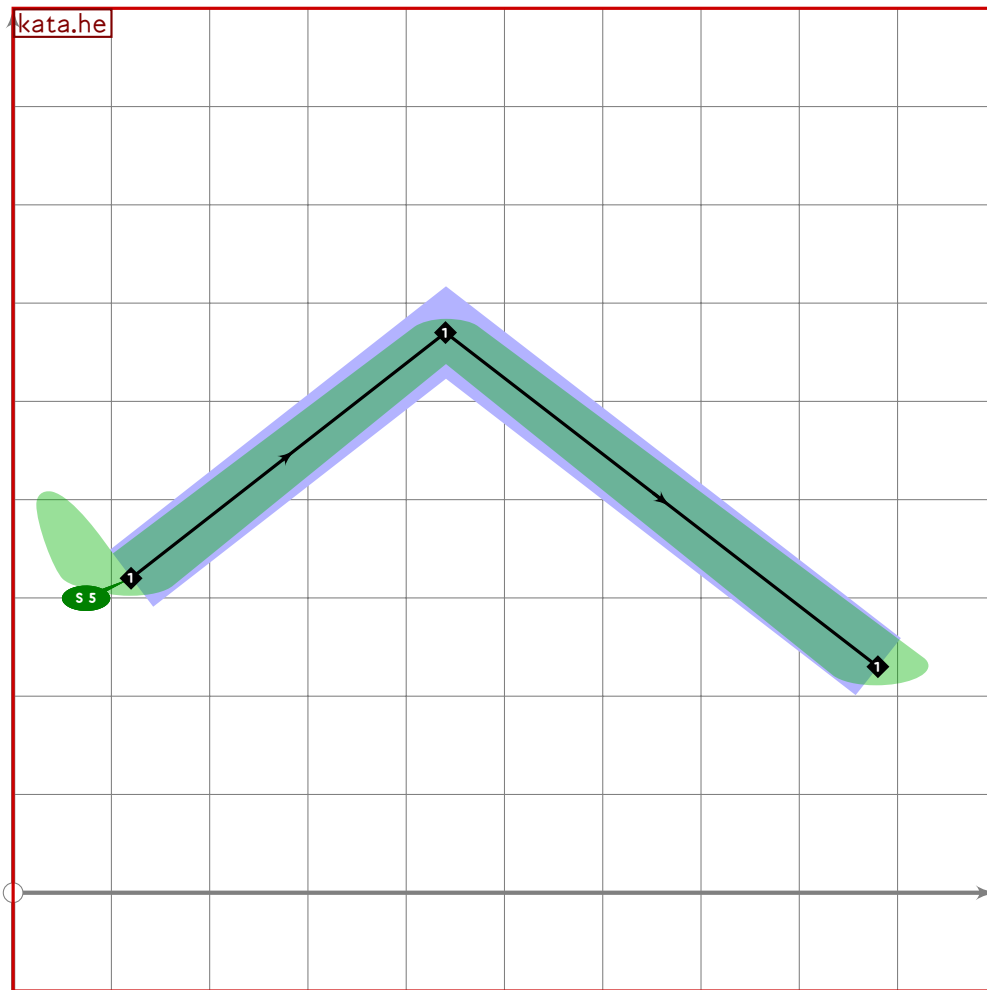
```



```

407
408 vardef tsu_curve.kata.fu =
409   add_proof_box("kata.fu");
410   tsu_curve.kata.fu_stroke(sp)((160,625),(790,635),(320,20));
411   sp:=sp*1;
412 enddef;

```



```

413
414 vardef tsu_curve.kata.he =
415   add_proof_box("kata.he");
416   bp[sp]:=(120,320)-(440,570)-(880,230);
417   bq[sp]:=(1.8,1.8)-(1.5,1.5)-(1.9,1.9);
418   bo_tip[sp][1]:=1;
419   bo_serif[sp][0]:=5;
420   sp:=sp*1;
421 enddef;
422
423 vardef tsu_curve.kata.ho_centre(expr a,pta,ptb) =
424   bp[a]:=begingroup
425     numeric x[],y[];
426     path mycirc,ripx,ripy;
427     mycirc:=fullcircle scaled 100 shifted ptb;
428     z1=(pta-ptb) intersectionpoint mycirc;
429     z2=ptb+(-200,40);
430     z3=0.85[z2,z1];
431     ripx:=pta{down}..tension 1.6..z3..{curl 0}z2;
432     ripx:=insert_nodes(ripx)(0.95);
433     z4=1.5[z1,ptb];

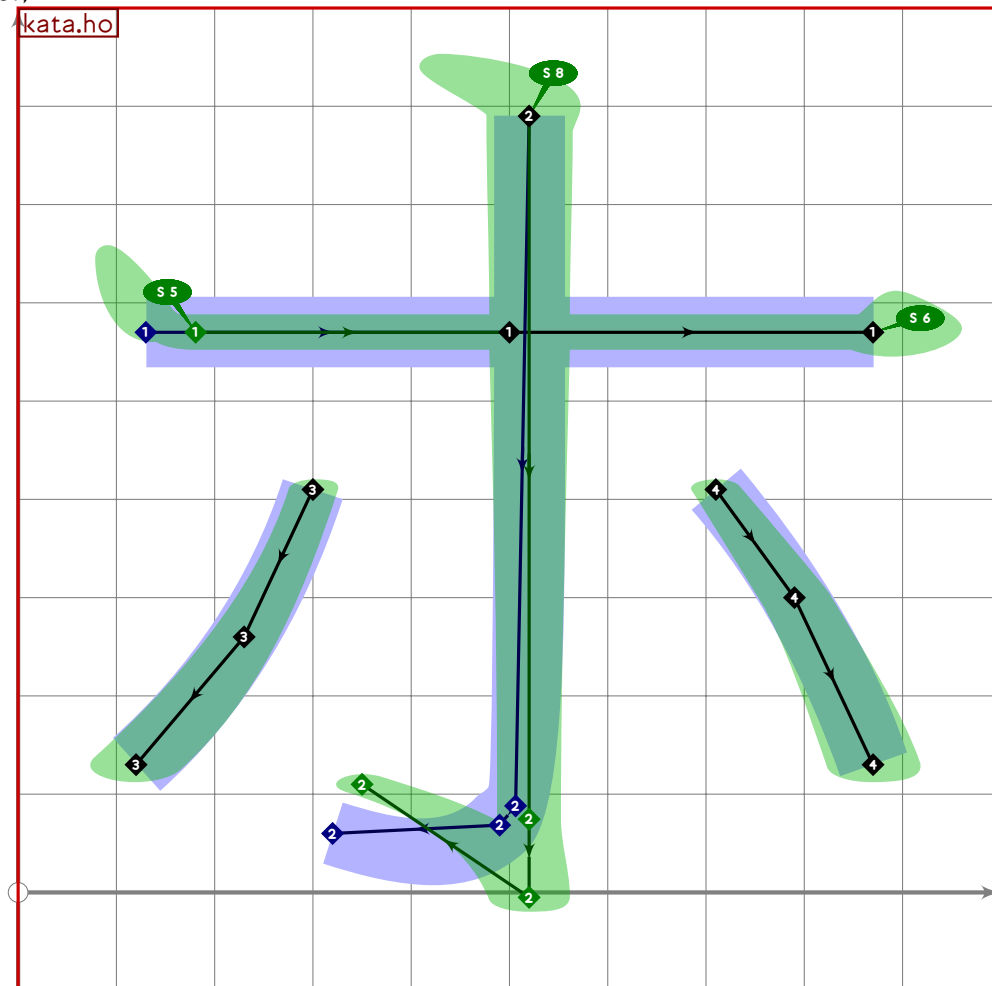
```



```

434 z5=ptb*(-170,90);
435 ripy:=pta-z4{z3-z4}..{curl 0}z5;
436 ripy:=insert_nodes(ripy)(0.90);
437 interpath(mincho,ripx,ripy)
438 endgroup;
439 bq[a]=(1.7,1.7)-(1.4,1.4)-(1.6,1.6)-(0.9,1.6);
440 bo_tip[a][2]:=0;
441 bo_serif[a][0]:=8;
442 enddef;

```



```

443
444 vardef tsu_curve.kata.ho =
445   add_proof_box("kata.ho");
446   bp[sp]:=(130,570)-(500,570)-(870,570);
447   bq[sp]:=(0.68,2.92)-(1.8,1.8)-(1.9,1.9);
448   bo_serif[sp][0]:=5;
449   bo_serif[sp][2]:=6;
450   tsu_curve.kata.ho_centre(sp*1)((520,790),(520,20));
451   bp[sp*2]:=(300,410)..(230,260)..(120,130);
452   bq[sp*2]:=(1.2,1.2)-(1.5,1.5)-(1.8,1.8);
453   bp[sp*3]:=(710,410)..(790,300)..(870,130);
454   bq[sp*3]:=(1.2,1.2)-(1.5,1.5)-(1.8,1.8);

```

```

455 sp:=sp*4;
456 enddef;
457

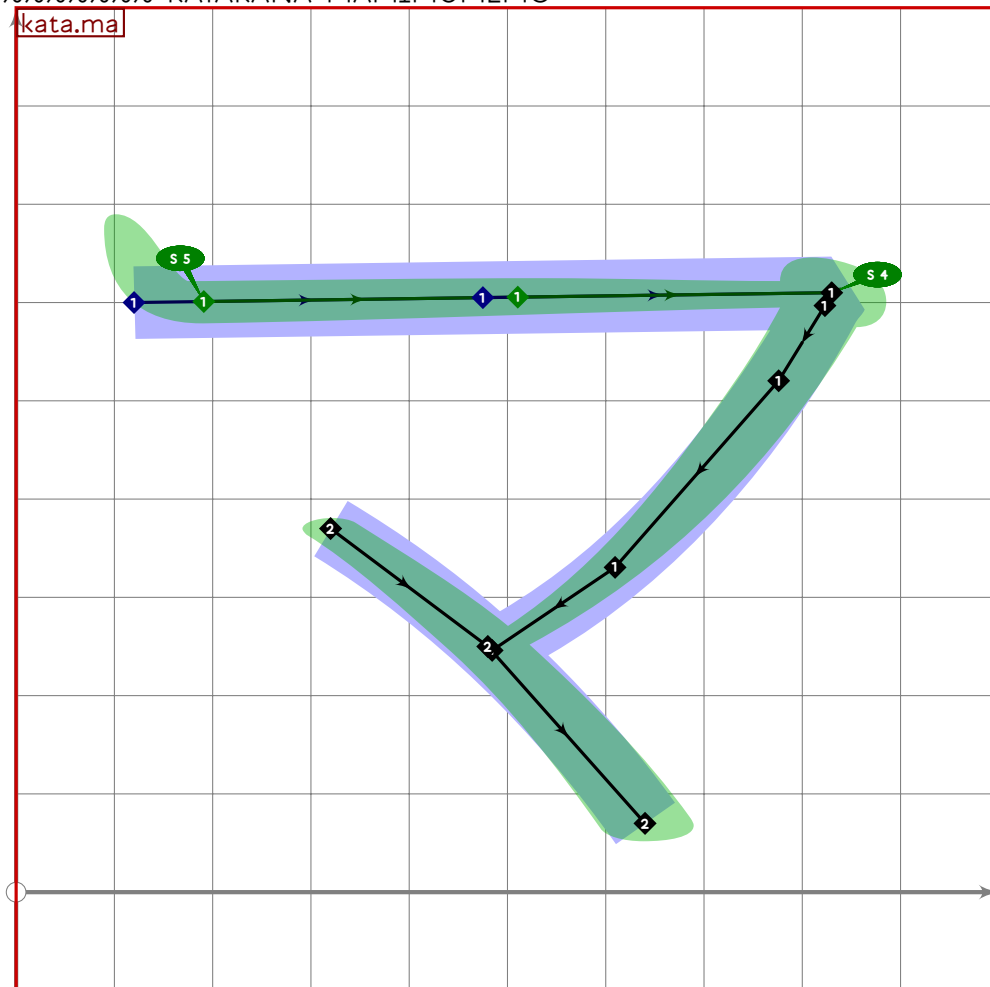
```

## Katakana Mamimumemo

```

458 %%%%%%%%% KATAKANA MAMIMUMEMO

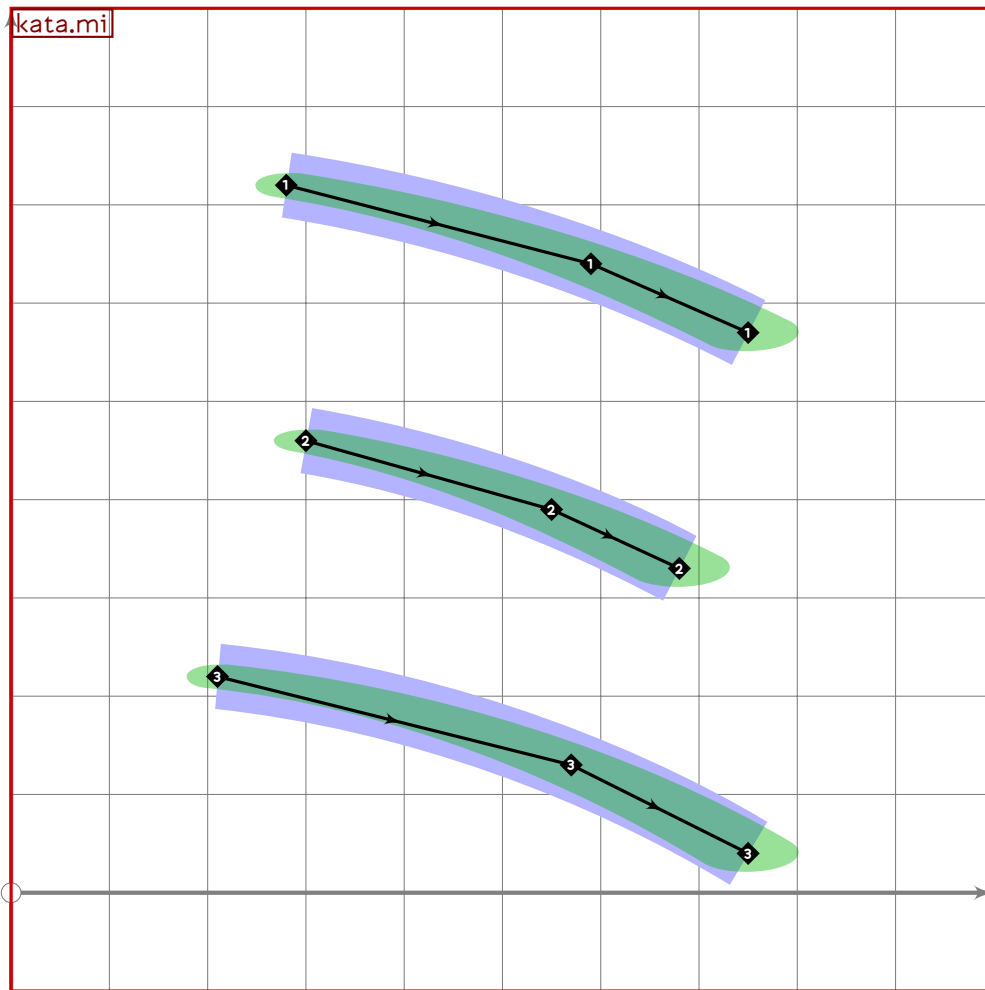
```



```

459
460 vardef tsu_curve.kata.ma =
461   add_proof_box("kata.ma");
462   tsu_curve.kata.fu_stroke(sp)((120,600),(830,610),(200,180));
463   bp[sp*1]:=(320,370)..(480,250)..(640,70);
464   bq[sp*1]:=(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
465   bp[sp]:=subpath (0,xpart (bp[sp] intersectiontimes bq[sp*1])) of bp[sp];
466   sp:=sp*2;
467 enddef;

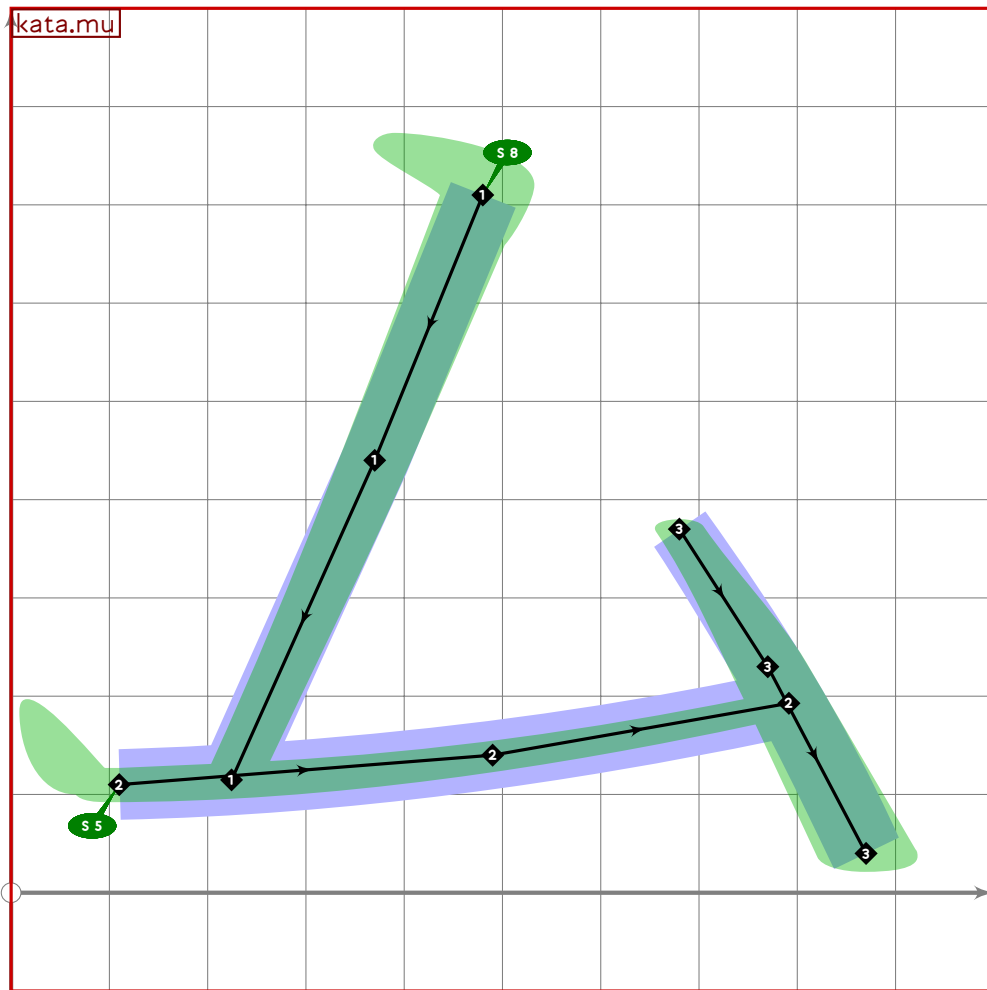
```



```

468
469 vardef tsu_curve.kata.mi =
470   add_proof_box("kata.mi");
471   bp[sp]:=(280,720)..(590,640)..(750,570);
472   bq[sp]:=(1.4,1.4)-(1.7,1.7)-(1.9,1.9);
473   bp[sp*1]:=(300,460)..(550,390)..(680,330);
474   bq[sp*1]:=(1.4,1.4)-(1.7,1.7)-(1.9,1.9);
475   bp[sp*2]:=(210,220)..(570,130)..(750,40);
476   bq[sp*2]:=(1.4,1.4)-(1.7,1.7)-(1.9,1.9);
477   sp:=sp*3;
478 enddef;

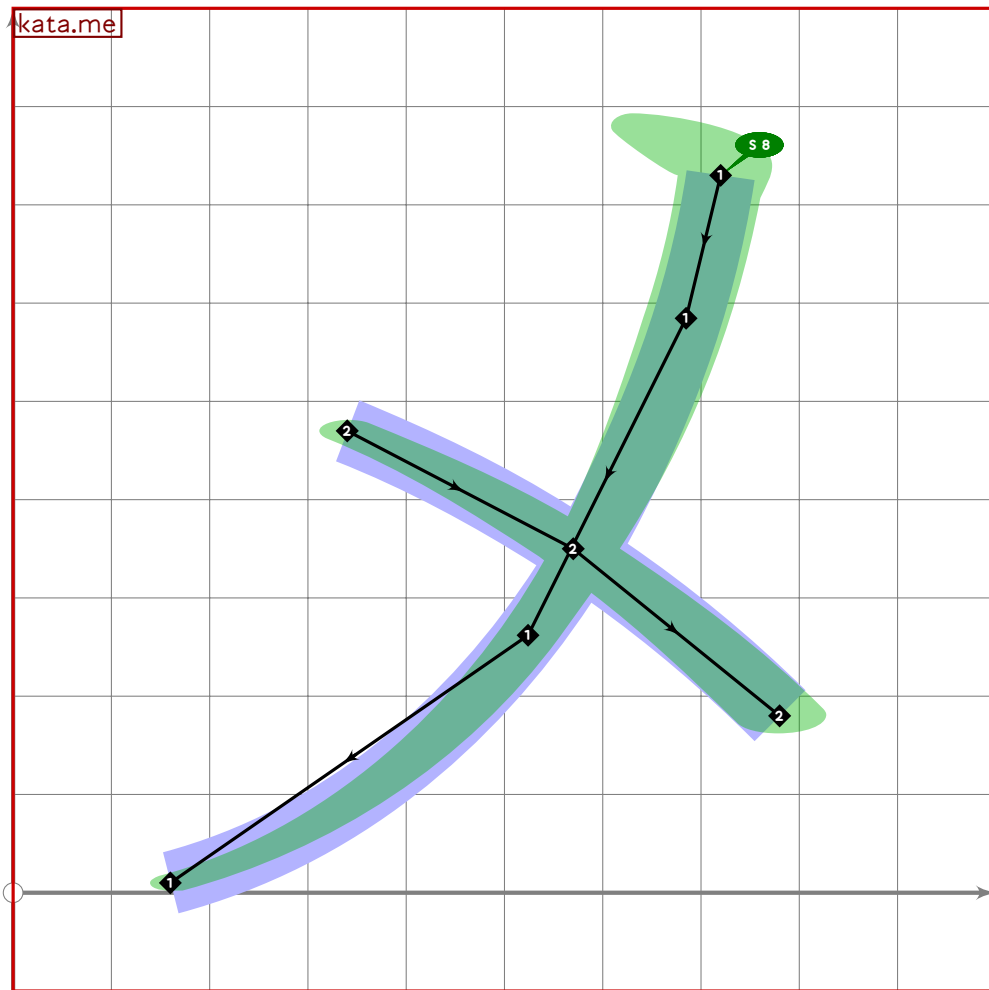
```



```

479
480 vardef tsu_curve.kata.mu =
481   add_proof_box("kata.mu");
482   bp[sp*2]:= (680,370)..(770,230)..(870,40);
483   bq[sp*2]:= (1.2,1.2)-(1.6,1.6)-(1.9,1.9);
484   bp[sp*1]:= (110,110)..(490,140)..(point 1.2 of bp[sp*2]);
485   bq[sp*1]:= (1.8,1.8)-(1.6,1.6)-(1.4,1.4);
486   bo_serif[sp*1][0]:=5;
487   bp[sp]:= (480,710)..(370,440)..(point 0.3 of bp[sp*1]);
488   bq[sp]:= (1.7,1.7)-(1.5,1.5)-(1.3,1.3);
489   bo_serif[sp][0]:=8;
490   sp:=sp*3;
491 enddef;

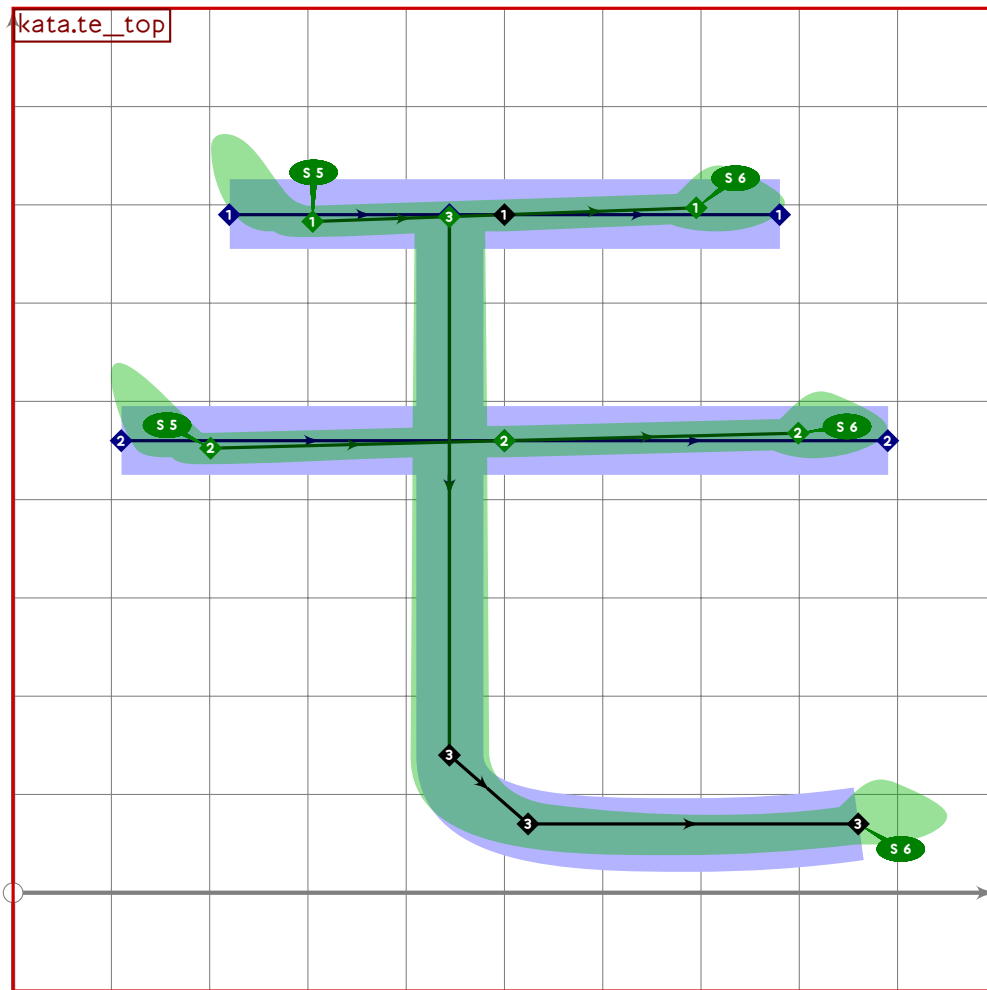
```



```

492
493 vardef tsu_curve.kata.me =
494   add_proof_box("kata.me");
495   tsu_curve.kata.no_stroke(sp)((720,730),(160,10));
496   bo_serif[sp][0]:=8;
497   bp[sp*1]:=(340,470)..(570,350)..(780,180);
498   bq[sp*1]:=(1.3,1.3)-(1.6,1.6)-(1.8,1.8);
499   sp:=sp*2;
500 enddef;

```



```

501
502 vardef tsu_curve.kata.mo =
503   add_proof_box("kata.mo");
504   tsu_curve.kata.te_top;
505   sp:=sp-2;
506   bp[sp*2]:=(point 0.8 of bp[sp])–
507     (xpart point 0.8 of bp[sp],140){dir 274}..
508     (80*xpart point 0.8 of bp[sp],70)..tension 21..(860,70);
509   bq[sp*2]:=(1.5,1.5)–(1.6,1.6)–(2,2)–(1.9,1.9);
510   bo_serif[sp*2][3]:=6;
511   sp:=sp+3;
512 enddef;
513

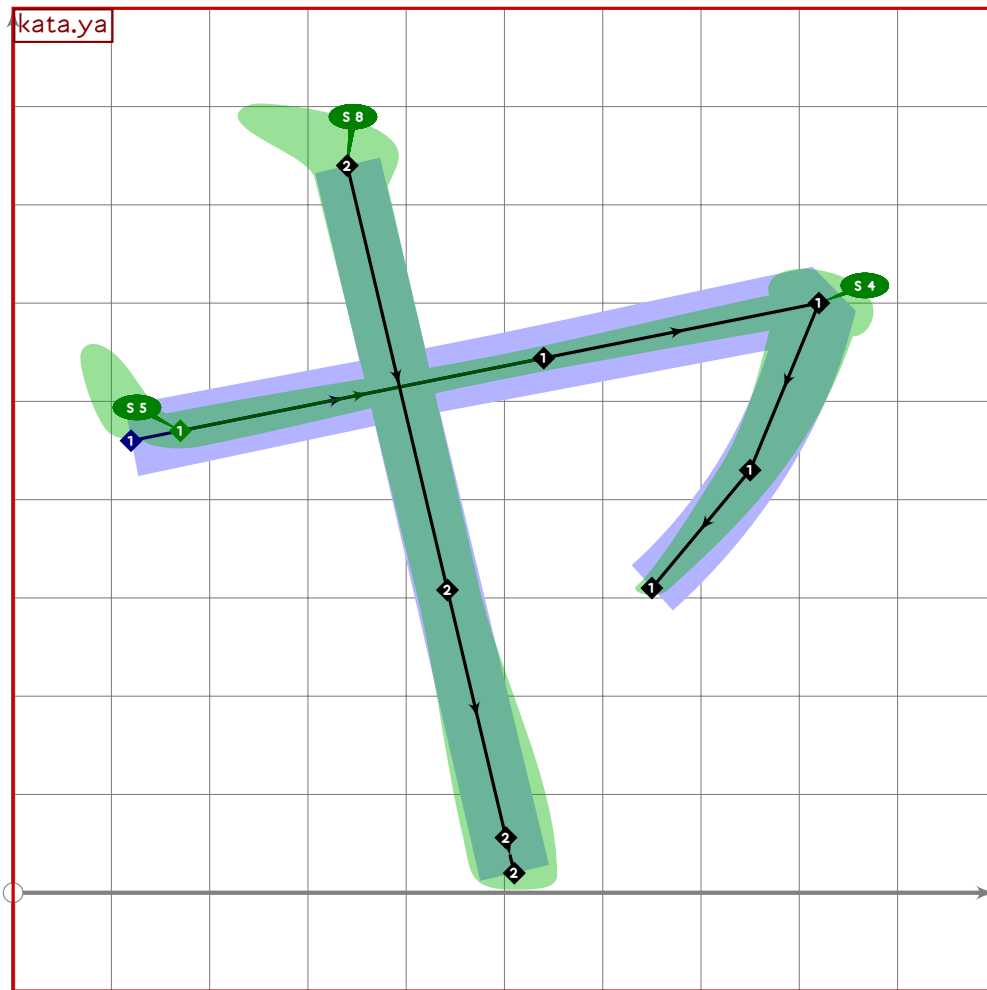
```

## Katakana Yayuyo

```

514 %%%%%%%%% KATAKANA YAYUYO

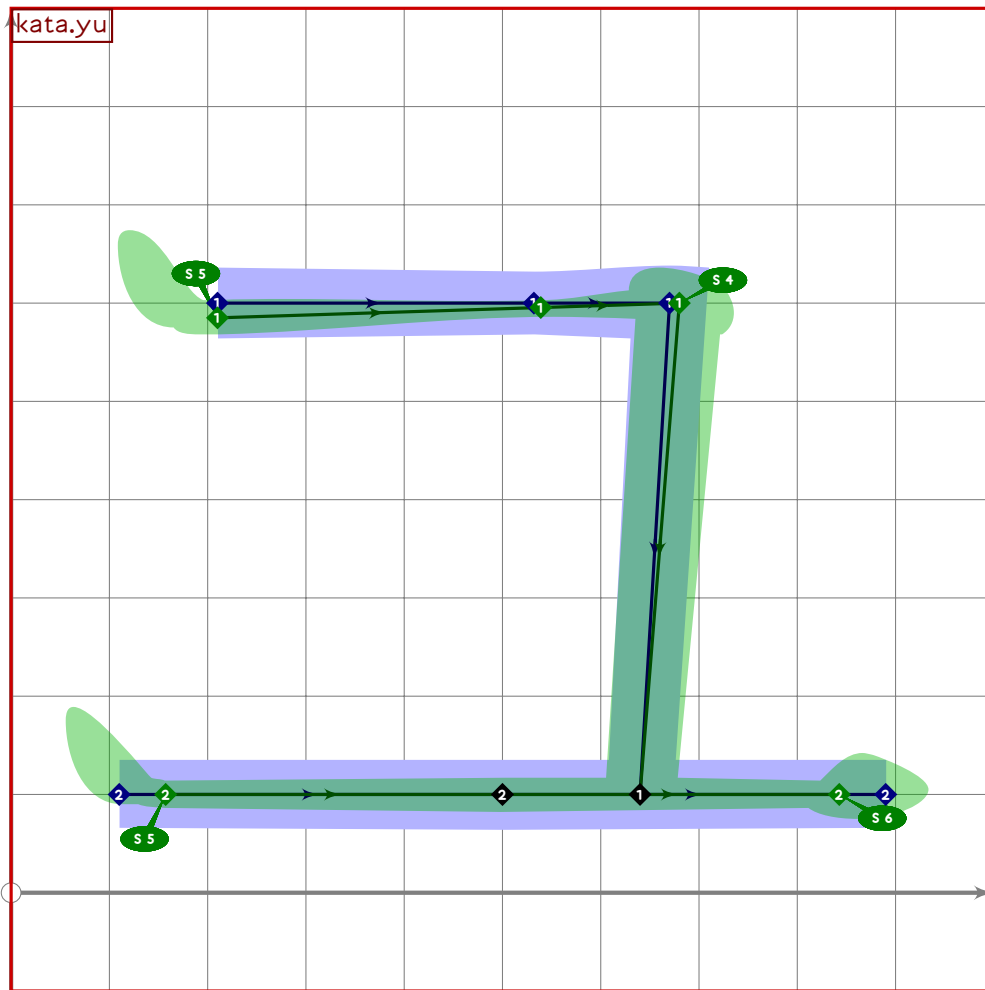
```



```

515
516 vardef tsu_curve.kata.ya =
517   add_proof_box("kata.ya");
518   bp[sp]:=(120,460)-(820,600)..(750,430)..(650,310);
519   bp[sp]:=insert__nodes(bp[sp])(0.6);
520   bq[sp]:=(0.77,2.9)-(1.3,1.3)-(1.7,1.7)-(1.4,1.4)-(1,1);
521   bo_tip[sp][2]:=0;
522   bo_serif[sp][0]:=5;
523   bo_serif[sp][2]:=4;
524   bp[sp*1]:=(340,740)-(510,20);
525   bp[sp*1]:=insert__nodes(bp[sp*1])(0.6,0.95);
526   bq[sp*1]:=(1.5,1.5)-(1.4,1.4)-(1.7,1.7)-(1.7,1.7);
527   bo_serif[sp*1][0]:=8;
528   sp:=sp*2;
529 enddef;

```

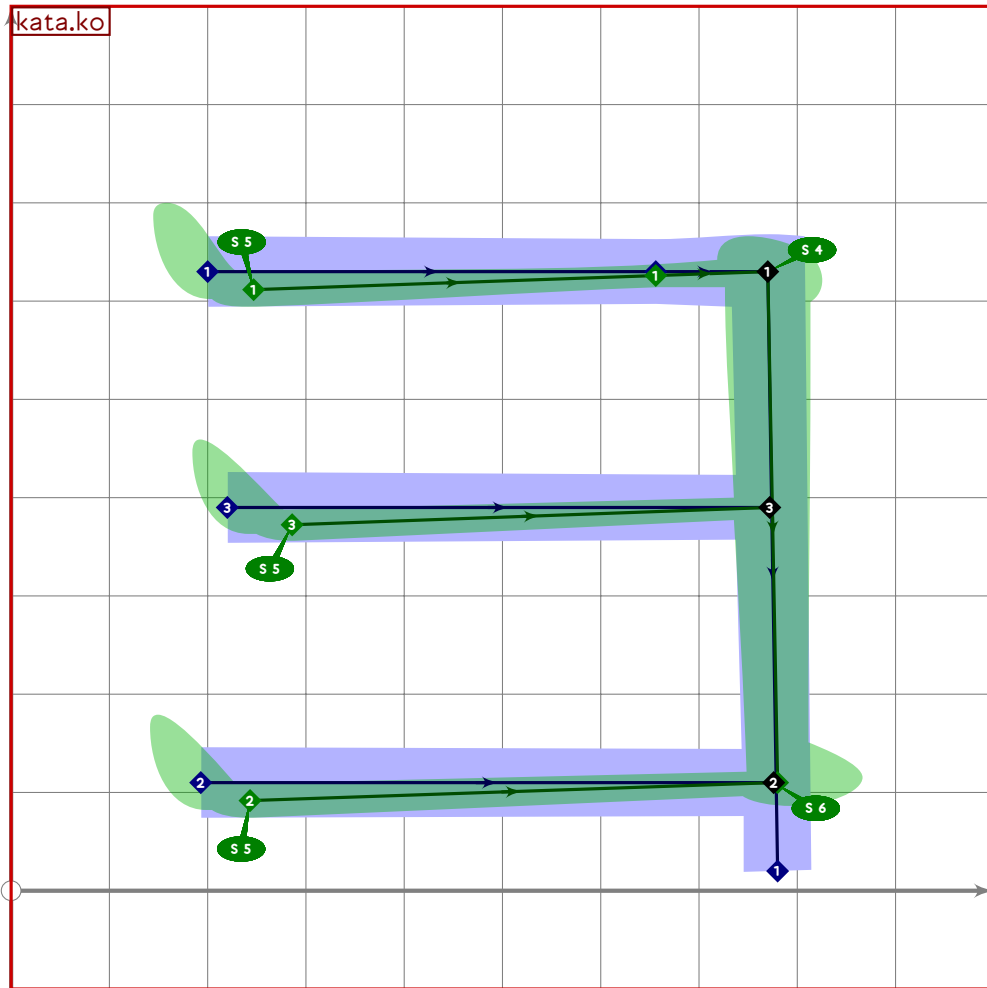


```

530
531 vardef tsu_curve.kata.yu =
532   add_proof_box("kata.yu");
533   bp[sp]:=(210,600-15*mincho)-(670*10*mincho,600)-(640,100);
534   bp[sp]:=insert__nodes(bp[sp])(0.7);
535   bq[sp]:=(1.8,1.8)-(1.2,1.2)-(1.7,1.7)-(1.5,1.5);
536   bo_tip[sp][2]:=1;
537   bo_serif[sp][0]:=5;
538   bo_serif[sp][2]:=4;
539   bp[sp*1]:=(110,100)-(500,100)-(890,100);
540   bq[sp*1]:=(0.7,2.2)-(1.8,1.8)-(0.7,2.2);
541   bo_serif[sp*1][0]:=5;
542   bo_serif[sp*1][2]:=6;
543   sp:=sp*2;
544 enddef;

```





```

545
546 vardef tsu_curve.kata.yo =
547   add_proof_box("kata.yo");
548   tsu_curve.kata.ko;
549   bp[sp]:=(220,390-20*mincho)-(772,390);
550   bq[sp]:=(0.77,2.7)-(1.3,1.3);
551   bo_serif[sp][0]:=5;
552   sp:=sp*1;
553 enddef;
554

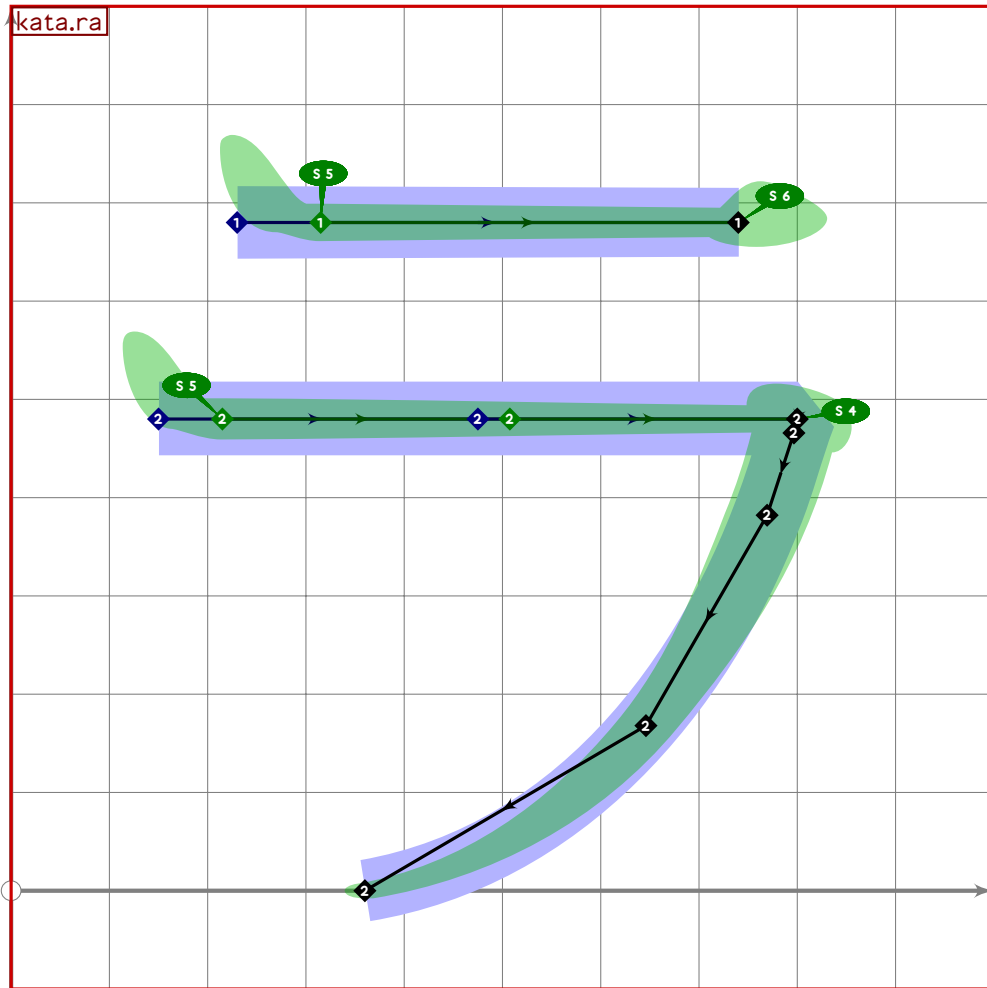
```

## Katakana Rarirurero

```

555 %%% KATAKANA RARIRURERO

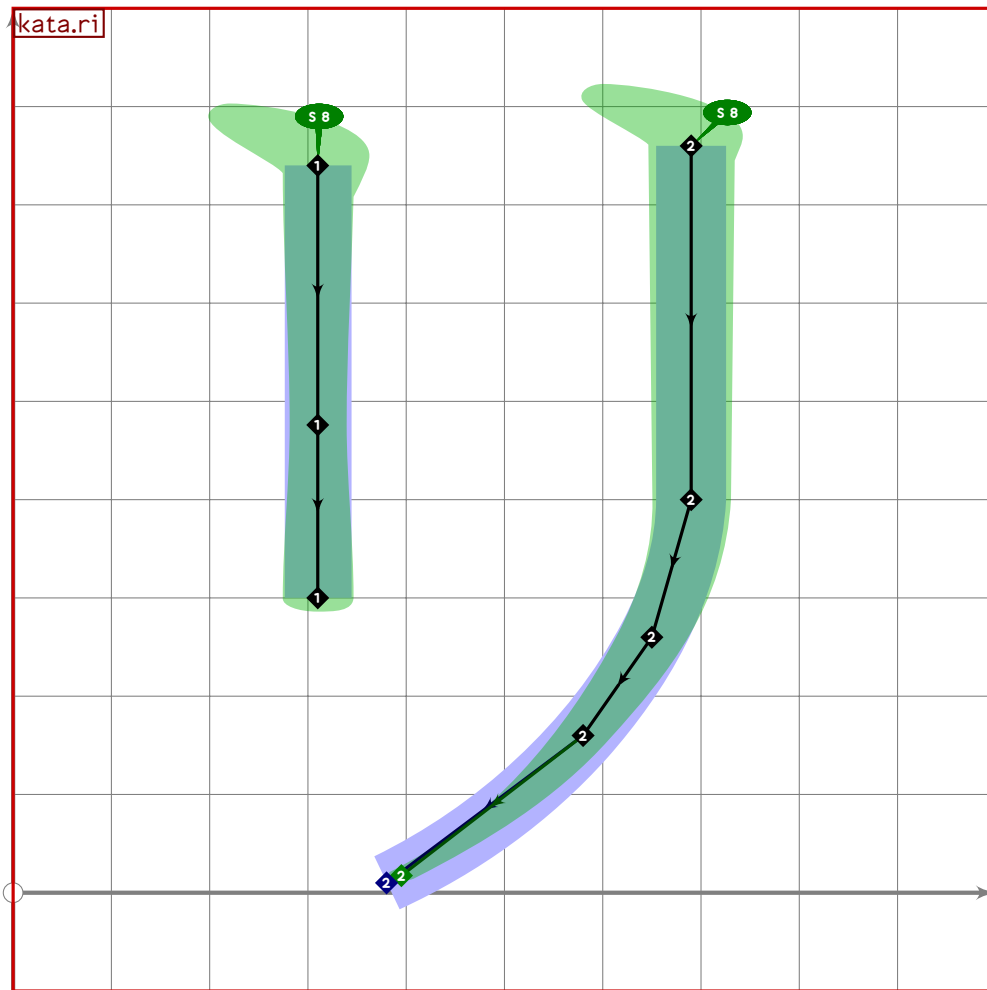
```



```

556
557 vardef tsu_curve.kata.ra =
558   add_proof_box("kata.ra");
559   bp[sp]:=(230,680)-(740,680);
560   bq[sp]:=(0.68,3.12)-(1.6,1.6);
561   bo_serif[sp][0]:=5;
562   bo_serif[sp][1]:=6;
563   tsu_curve.kata.fu_stroke(sp+1)((150,480),(800,480),(360,0));
564   sp:=sp+2;
565 enddef;

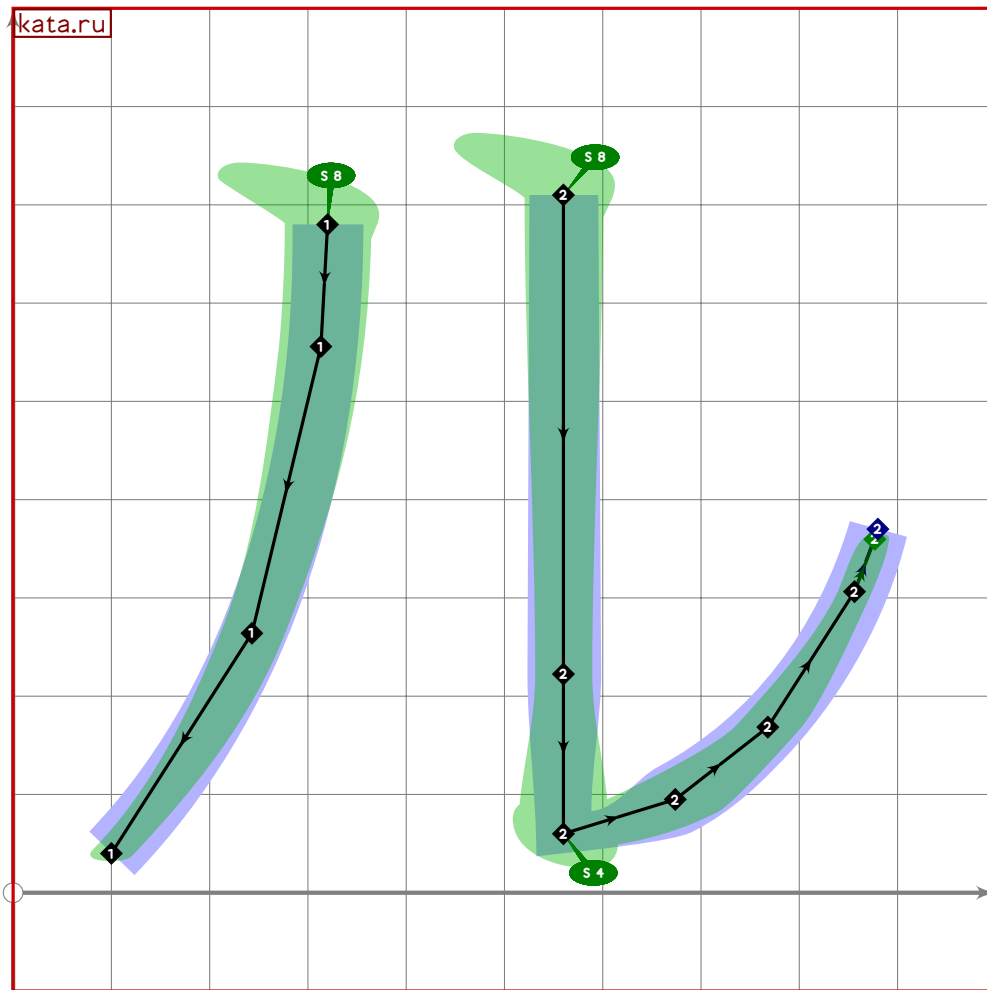
```



```

566
567 vardef tsu_curve.kata.ri =
568   add_proof_box("kata.ri");
569   bp[sp]:=(310,740)-(310,300);
570   bp[sp]:=insert__nodes(bp[sp])(0.6);
571   bq[sp]:=(1.5,1.5)-(1.3,1.3)-(1.5,1.5);
572   bo_serif[sp][0]:=8;
573   bp[sp*1]:=(690,760)-(690,400){dir 267}..(650,260)..(580,160)..(380,10);
574   bq[sp*1]:=(1.7,1.7)-(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.8,1);
575   bo_serif[sp*1][0]:=8;
576   sp:=sp*2;
577 enddef;

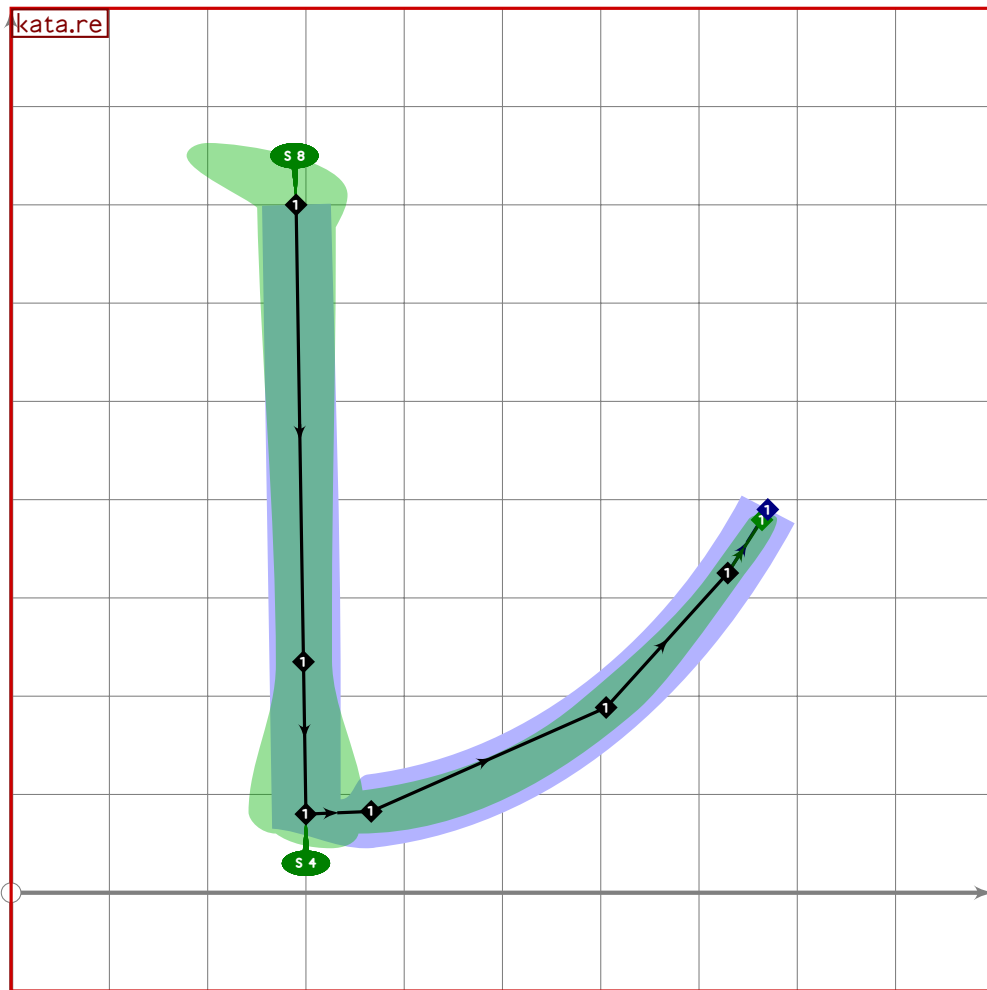
```



```

578
579 vardef tsu_curve.kata.ru =
580   add_proof_box("kata.ru");
581   tsu_curve.kata.no_stroke(sp)((320,680),(100,40));
582   bo_serif[sp][0]:=8;
583   tsu_curve.kata.no_stroke(sp*1)((880,370),(560,60));
584   bp[sp*1]:=(560,710)-reverse bp[sp*1];
585   bp[sp*1]:=insert_nodes(bp[sp*1])(0.75,1.5);
586   bq[sp*1]:=(1.6,1.6)-(1.3,1.3)-(1.8,1.8)-
587     (2,2)-(1.4,1.4)-(1,1)-(0.8,1);
588   bo_tip[sp*1][1]:=0;
589   bo_serif[sp*1][0]:=8;
590   bo_serif[sp*1][2]:=4;
591   sp:=sp*2;
592 enddef;

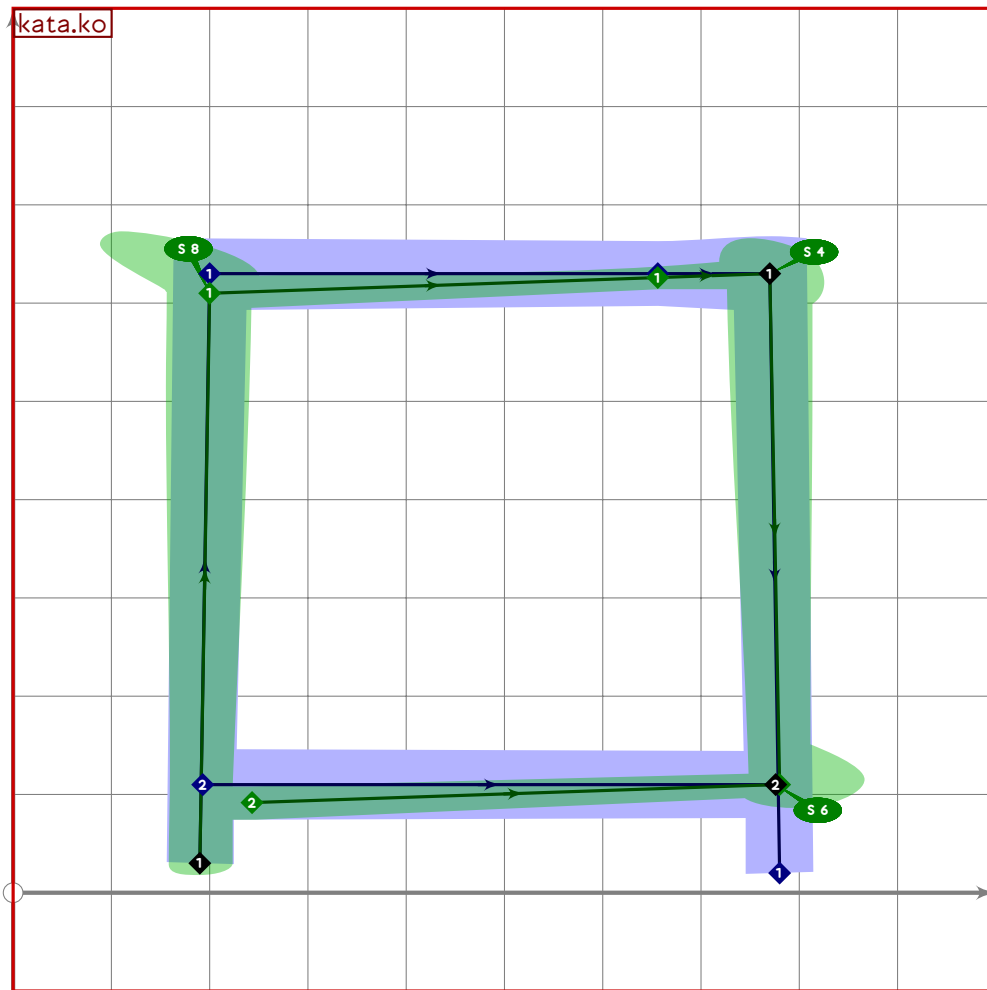
```



```

593
594 vardef tsu_curve.kata.re =
595   add_proof_box("kata.re");
596   tsu_curve.kata.no_stroke(sp)((770,390),(300,80));
597   bp[sp]:=(290,700)-reverse bp[sp];
598   bp[sp]:=insert_nodes(bp[sp])(0.75,1.2);
599   bq[sp]:=(1.6,1.6)-(1.3,1.3)-(2.1,2.1)-
600     (2,2)-(1.4,1.4)-(1,1)-(0.8,1);
601   bo_tip[sp][1]:=0;
602   bo_serif[sp][0]:=8;
603   bo_serif[sp][2]:=4;
604   sp:=sp*1;
605 enddef;

```



```

606
607 vardef tsu_curve.kata.ro =
608   add_proof_box("kata.ro");
609   tsu_curve.kata.ko;
610   sp:=sp-2;
611   bp[sp]:=(190,30)-bp[sp];
612   bq[sp]:=(1.4,1.4)-(1.7,1.7)-(subpath (1,infinity) of bq[sp]);
613   bo_tip[sp][1]:=1;
614   bo_tip[sp][2]:=whatever;
615   bo_tip[sp][3]:=1;
616   bo_serif[sp][0]:=whatever;
617   bo_serif[sp][1]:=8;
618   bo_serif[sp][2]:=whatever;
619   bo_serif[sp][3]:=4;
620   bo_serif[sp+1][0]:=whatever;
621   sp:=sp+2;
622 enddef;
623

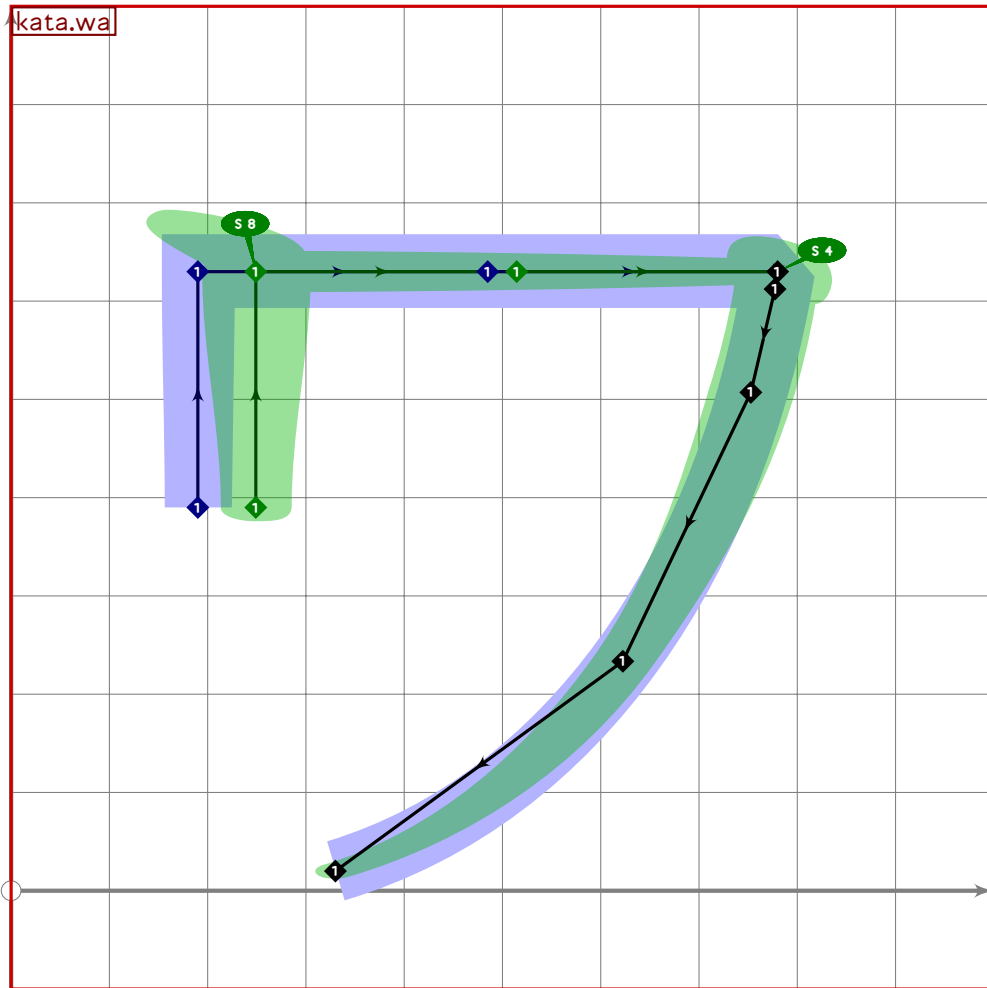
```

## Katakana Wawiwewo/N/Iteration

```

624 %%% KATAKANA WAWIWEWO/N/ITERATION

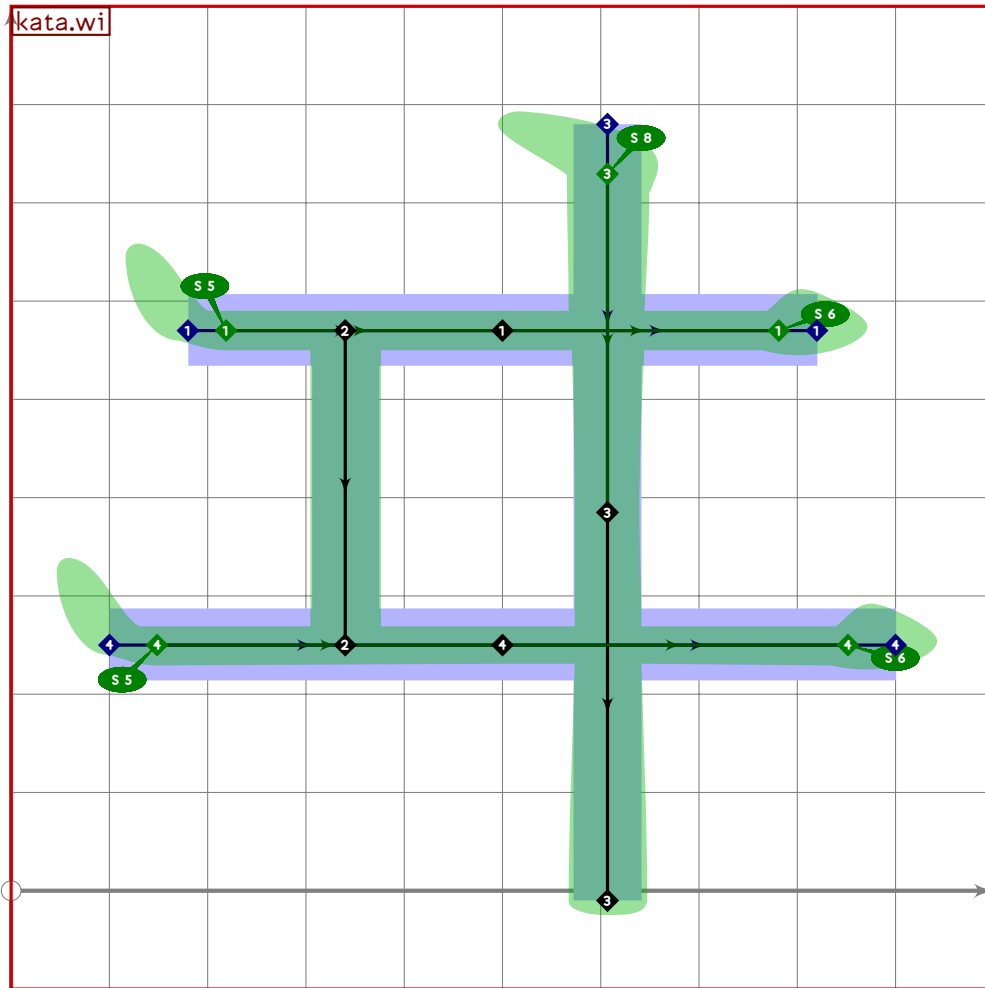
```



```

625
626 vardef tsu_curve.kata.wa =
627   add_proof_box("kata.wa");
628   tsu_curve.kata.fu_stroke(sp)((190,630),(780,630),(330,20));
629   bp[sp]:=(xpart point 0 of bp[sp],390)-bp[sp];
630   bq[sp]:=(1.5,1.5)-bq[sp];
631   bo_tip[sp][1]:=1;
632   bo_tip[sp][3]:=0;
633   bo_serif[sp][0]:=whatever;
634   bo_serif[sp][1]:=8;
635   bo_serif[sp][2]:=whatever;
636   bo_serif[sp][3]:=4;
637   sp:=sp*1;
638 enddef;

```



```

639
640 vardef tsu_curve.kata.wi =
641   add_proof_box("kata.wi");
642   x1=100;
643   x2=180;
644   x3=0.25[x2,x5];
645   x4=0.667[x2,x5];
646   (x5+x2)/2=(x1+x6)/2=500;
647   y1=-10;
648   y2=250;
649   y3=570;
650   y4=780;
651   bp[sp]:=(x2,y3)-(x5,y3);
652   bp[sp]:=insert__nodes(bp[sp])(0.5);
653   bq[sp]:=(0.7,3.3)-(1.8,1.8)-(0.7,3.3);
654   bo_serif[sp][0]:=5;
655   bo_serif[sp][2]:=6;
656   bp[sp*1]:=(x3,y3)-(x3,y2);
657   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
658   bp[sp*2]:=(x4,y4)-(x4,0.5[y4,y1])-(x4,y1);
659   bq[sp*2]:=(0.75,2.65)-(1.4,1.4)-(1.6,1.6);

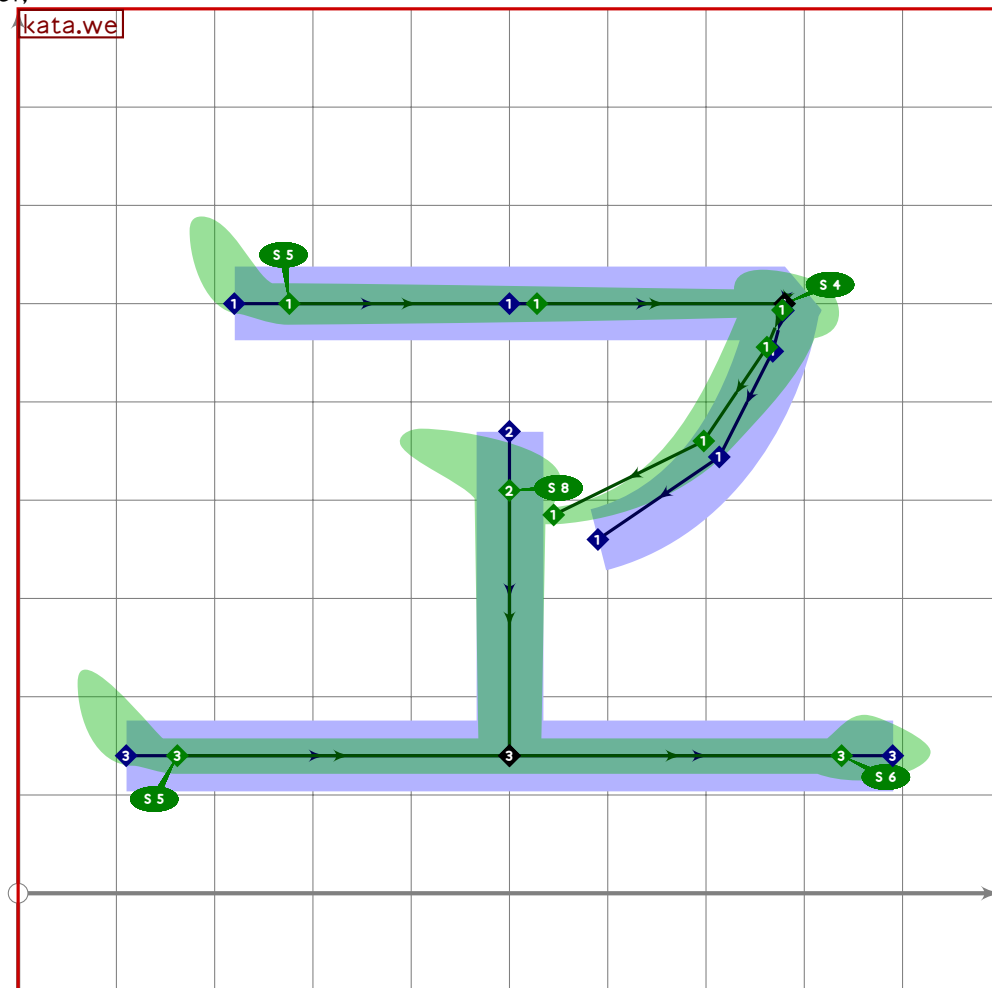
```



```

660 bo_serif[sp*2][0]:=8;
661 bp[sp*3]:=(x1,y2)-(x6,y2);
662 bp[sp*3]:=insert__nodes(bp[sp*3])(0.5);
663 bq[sp*3]:=(0.7,3.3)-(1.8,1.8)-(0.7,3.3);
664 bo_serif[sp*3][0]:=5;
665 bo_serif[sp*3][2]:=6;
666 sp:=sp*4;
667 enddef;

```

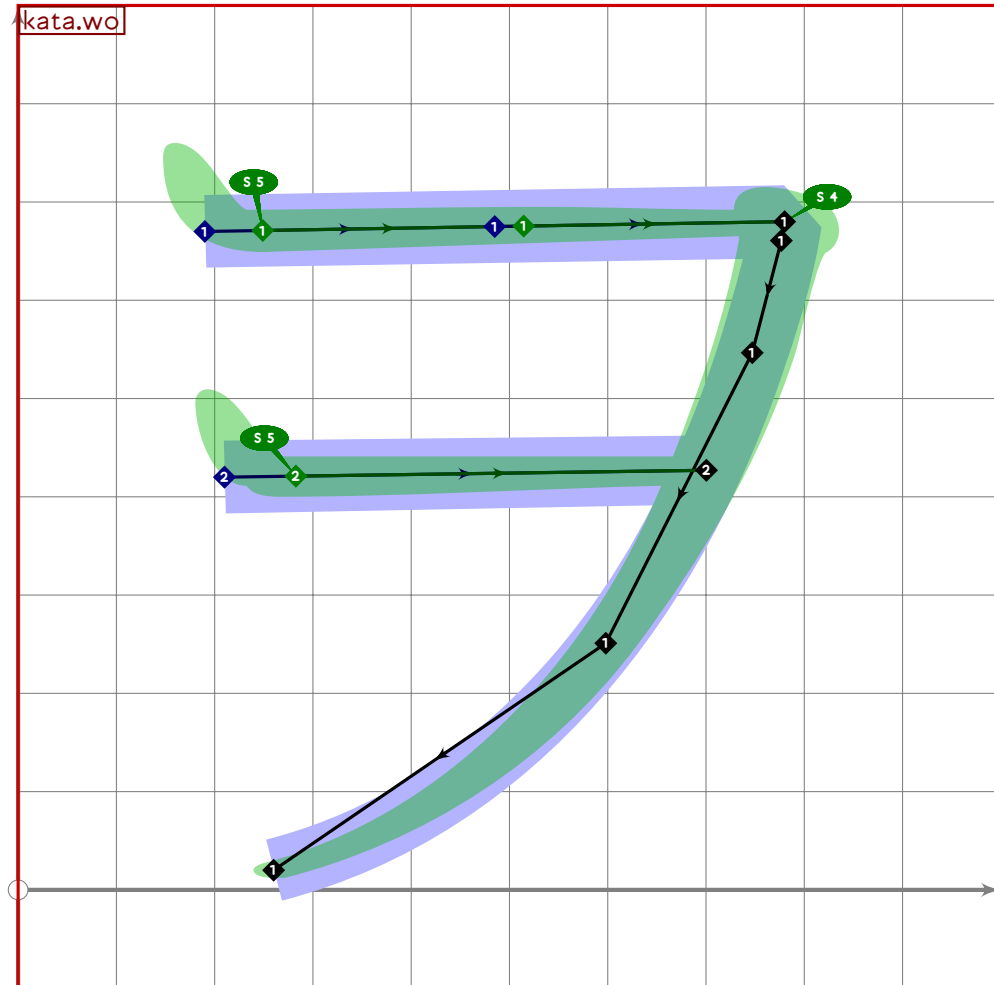


```

668
669 vardef tsu_curve.kata.we =
670   add__proof__box("kata.we");
671   bp[sp*1]:=(500,470-60*mincho)-(500,140);
672   bq[sp*1]:=(1.5,1.5)-(1.4,1.4);
673   bo_serif[sp*1][0]:=8;
674   tsu_curve.kata.fu_stroke(sp)((220,600),(780,600),
675     (0.5*mincho)[(590,360),point 0 of bp[sp*1]]);
676   bp[sp*2]:=(110,140)-(500,140)-(890,140);
677   bq[sp*2]:=(0.7,2.9)-(1.7,1.7)-(0.7,2.9);
678   bo_serif[sp*2][0]:=5;
679   bo_serif[sp*2][2]:=6;
680   sp:=sp*3;

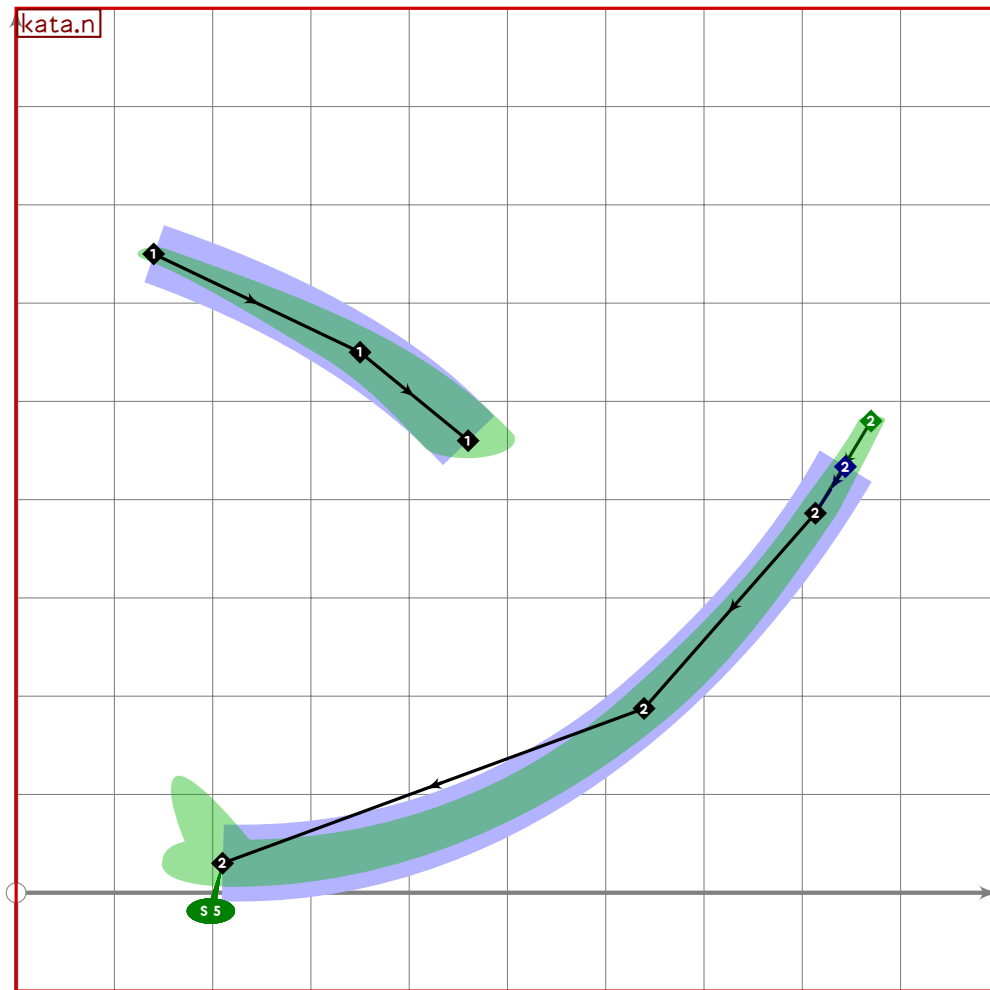
```

681 enddef;



682

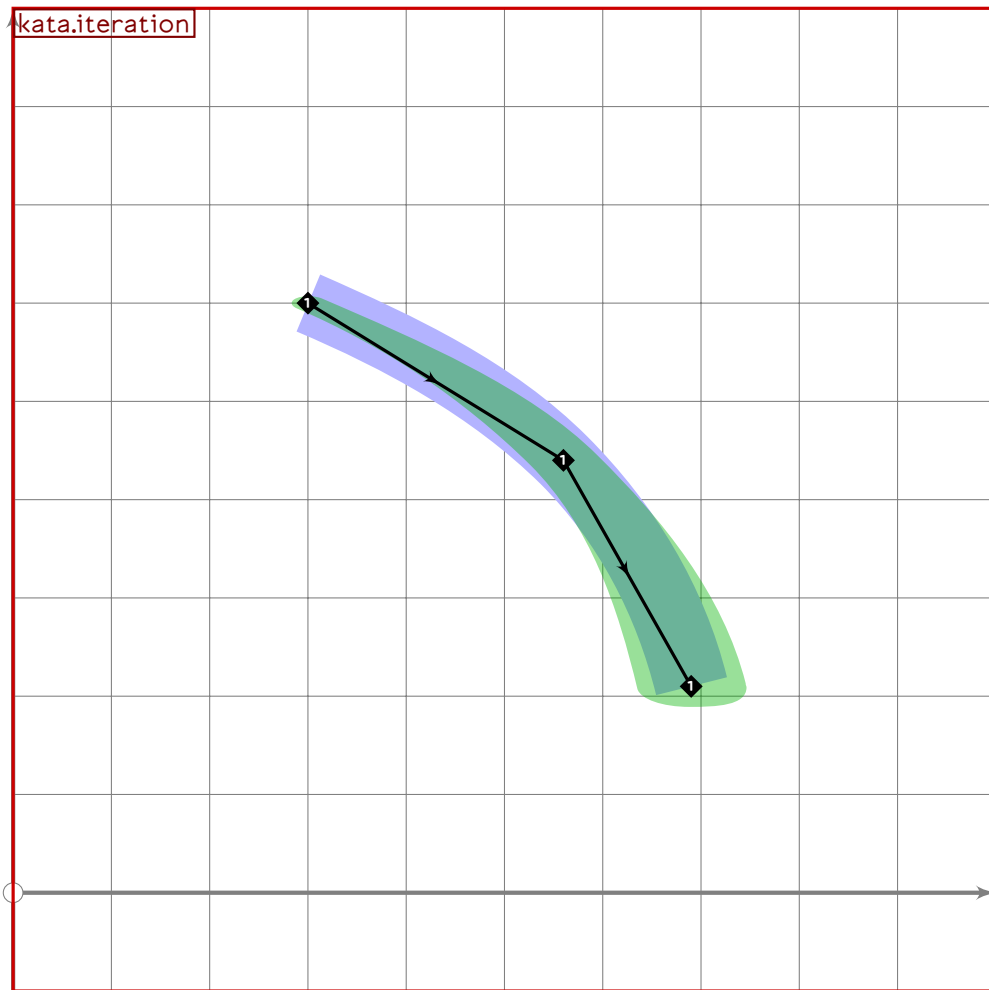
```
683 vardef tsu_curve.kata.wo =  
684   add_proof_box("kata.wo");  
685   tsu_curve.kata.fu_stroke(sp)((190,670),(780,680),(260,20));  
686   z1=bp[sp] intersectionpoint ((0,420)-(1000,430));  
687   bp[sp*1]:=(210,420)-z1;  
688   bq[sp*1]:=(0.7,3.3)-(1.6,1.6);  
689   bo_serif[sp*1][0]:=5;  
690   sp:=sp*2;  
691 enddef;
```



```

692
693 vardef tsu_curve.kata.n =
694   add_proof_box("kata.n");
695   bp[sp]:=(140,650)..tension 1.2..(350,550)..(460,460);
696   bq[sp]:=(1,1)..(1.6,1.6)..(1.8,1.8);
697   tsu_curve.kata.no_stroke(sp*1)((870,480),(210,30));
698   bq[sp*1]:=(0.9,0.9)-(1.1,1.1)-(1.4,1.4)-(2.2,2.2);
699   bo_serif[sp*1][length bp[sp*1]]:=5;
700   sp:=sp*2;
701 enddef;

```



```

702
703 vardef tsu_curve.kata.iteration =
704   add_proof_box("kata.iteration");
705   bp[sp]:=(300,600){curl 0.2}..(560,440)..(690,210);
706   bq[sp]:=(1,1)-(1.5,1.5)-(2,2);
707   sp:=sp*1;
708 enddef;

```

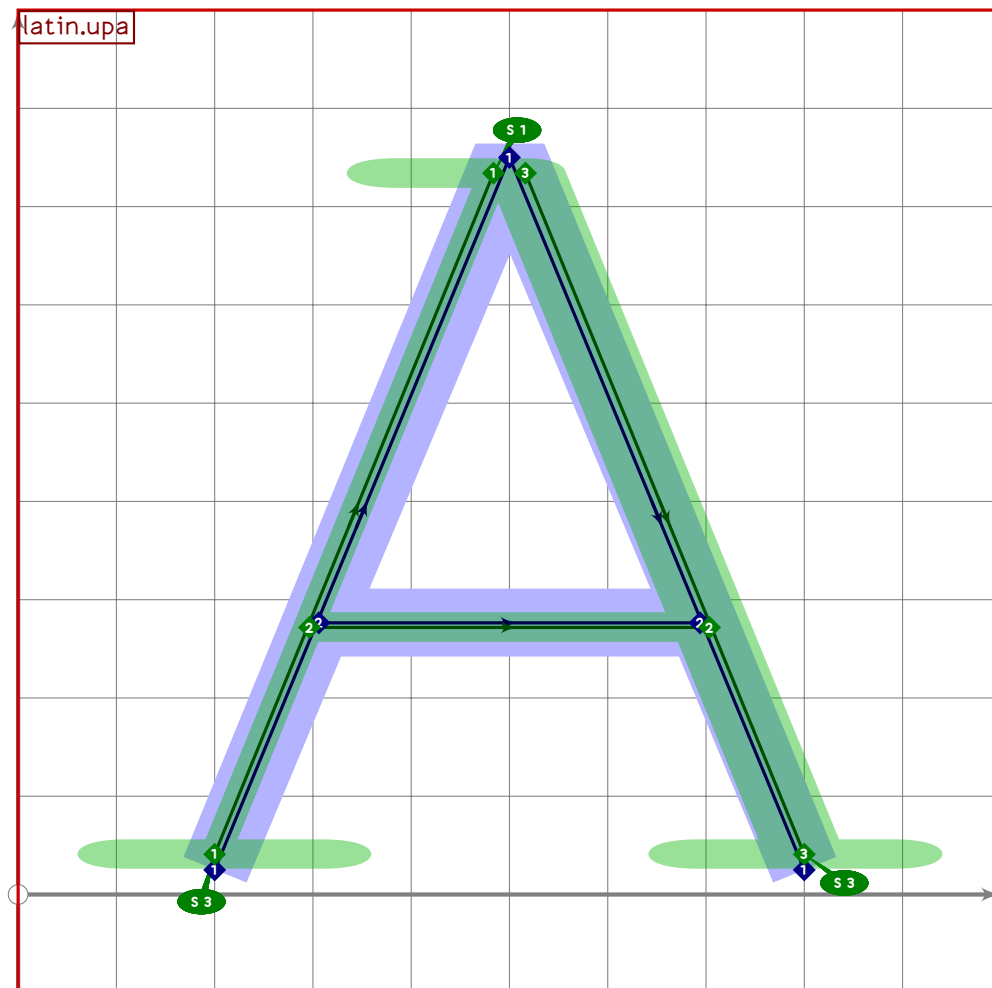
# latin.mp

```
1 %  
2 % Latin and related letters for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```



```
32
```

```
33 vardef tsu_curve.latin.upa =
```

```
34   add_proof_box("latin.upa");
```

```
35   z1=(200,latin_wide_low_v);
```

```
36   z2=(500,latin_wide_high_v);
```

```
37   z3=(800,latin_wide_low_v);
```

```
38
```

```
39   if do_alteration:
```

```
40     z4=whatever[z1,(z2+alternate_adjust*left/2)]+(2,0);
```

```
41     z5=whatever[(z2+alternate_adjust*right/2),z3]-(2,0);
```

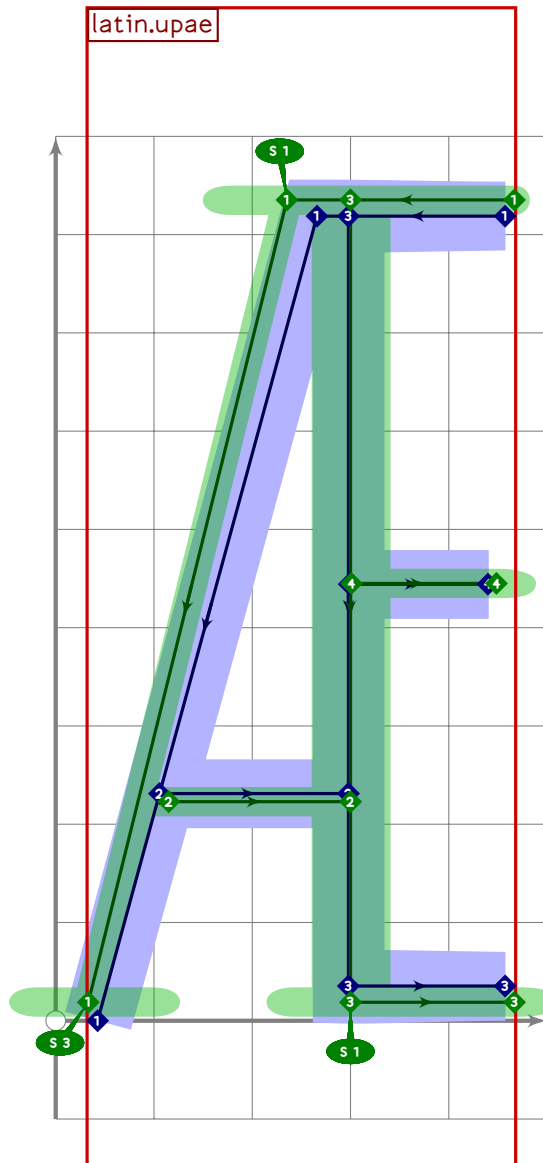
```
42     y4=y5=vmetric(0.333);
```

```
43
```

```

44     bp[sp]:=z1-(z2*alternate_adjust*left/2);
45     bq[sp]:=(1.6,1.6)-(1.6,1.6);
46     bo_alternate[sp]:=true;
47     bo_tip[sp][1]:=0;
48     bo_serif[sp][0]:=3;
49     bo_serif[sp][1]:=1;
50
51     bp[sp*1]:=z4-z5;
52     bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
53     bo_alternate[sp*1]:=true;
54
55     bp[sp*2]:=(z2*alternate_adjust*right/2)-z3;
56     bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
57     bo_serif[sp*2][1]:=3;
58
59     sp:=sp*3;
60 else:
61     z4=whatever[z1,z2]*(2,0);
62     z5=whatever[z2,z3]-(2,0);
63     y4=y5=vmetric(0.333);
64
65     bp[sp]:=z1-z2-z3;
66     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
67
68     bo_tip[sp][1]:=0;
69     bo_serif[sp][0]:=3;
70     bo_serif[sp][1]:=1;
71     bo_serif[sp][2]:=3;
72
73     bp[sp*1]:=z4-z5;
74     bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
75
76     sp:=sp*2;
77 fi;
78 enddef;

```



```

79
80 vardef tsu_curve.latin.upae =
81   add_proof_box("latin.upae");
82   y1=y2=latin_wide_high_h;
83   y3=y4=latin_wide_low_h;
84   y5=y6=vmetric(0.522);
85
86   (x1+x7)/2=500;
87   x2=x3;
88   x1=x4;
89   x5=x2*2;
90   x6=0.89[x2,x1];
91   (x1-x2)=(y2-y3)*0.55;
92
93   y7=latin_wide_low_v;
94   x7=(-1.6)[x2,x1];

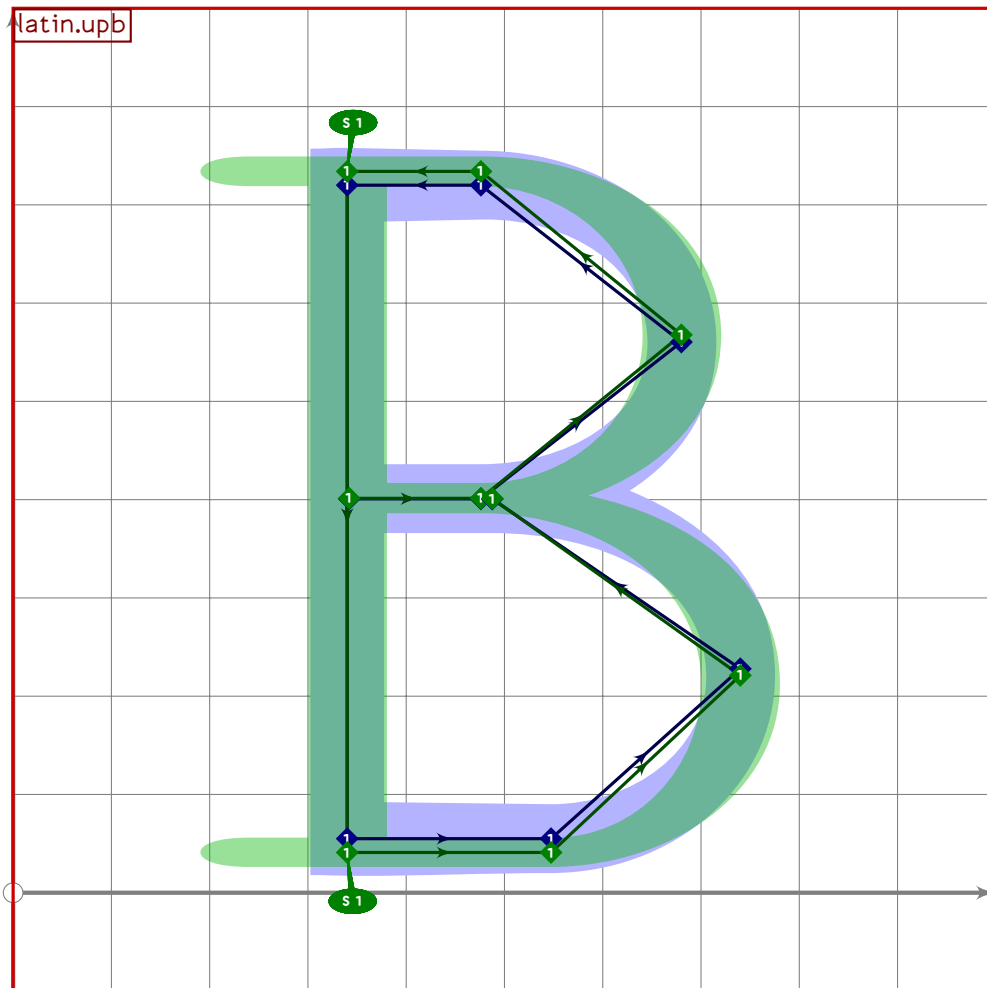
```

```

95 z10=(-0.2)[z2,z1]*2.2*alternate_adjust*left;
96 z8=whatever[z7,z10]*2.2*alternate_adjust*right;
97 z9=whatever[z2,z3];
98 y8=y9=vmetric(0.250);
99
100 bp[sp]:=z1-z10-z7;
101 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
102 bo_tip[sp][1]:=1;
103 bo_serif[sp][1]:=1;
104 bo_serif[sp][2]:=3;
105 bo_alternate[sp]:=true;
106
107 bp[sp*1]:=z8-z9;
108 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
109
110 bp[sp*2]:=z2-z3-z4;
111 bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
112 bo_tip[sp*2][1]:=1;
113 bo_serif[sp*2][1]:=1;
114
115 bp[sp*3]:=z5-z6;
116 bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
117
118 sp:=sp*4;
119 enddef;

```





```

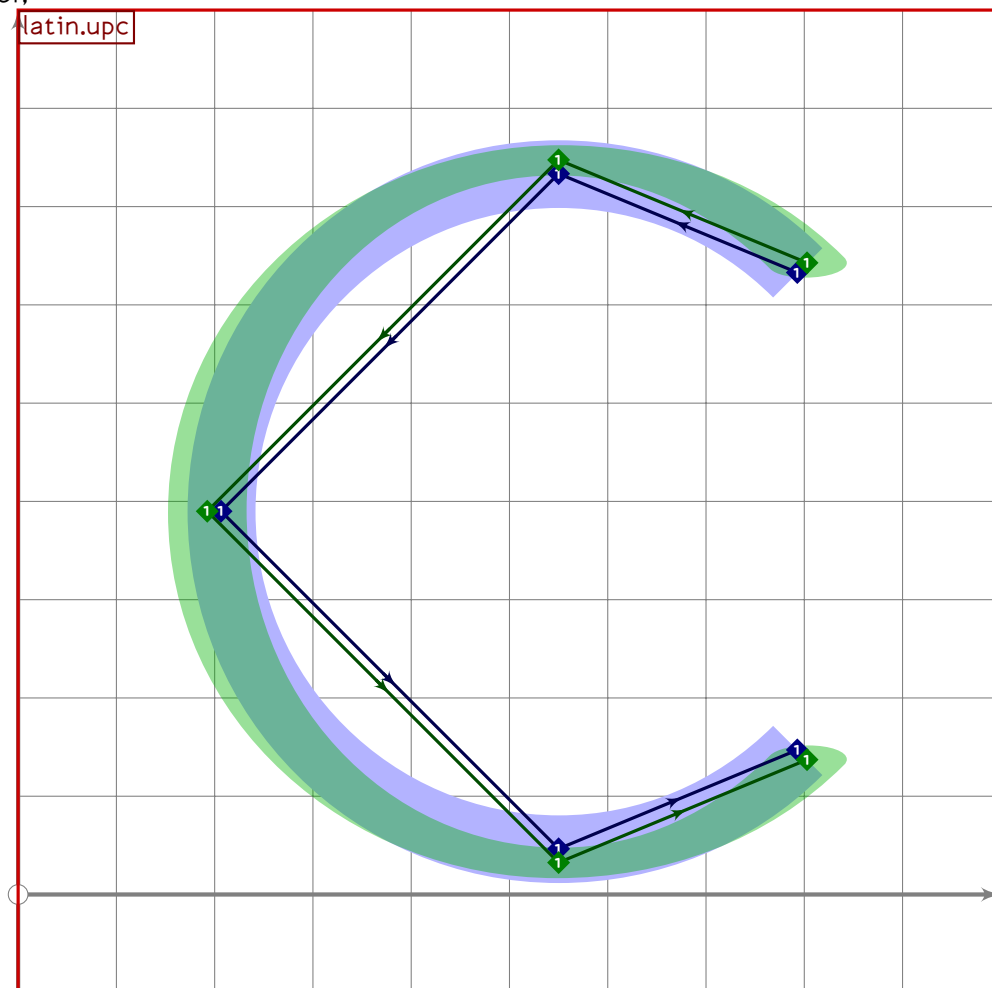
120
121 vardef tsu_curve.latin.upb =
122   add_proof_box("latin.upb");
123   tsu_curve.latin.upp_base(a,340);
124
125   x6=x5;
126   x7=0.61[x5,x3];
127   x8=x5+400;
128
129   y6=y7=latin_wide_low_h;
130   y8=0.5[y6,y1];
131
132   z9=z2;
133
134   bp[sp]:=bp[sp]-z6-z7{right}..z8..{left}z9;
135   bp[sp]:=subpath (0,797) of bp[sp];
136   bq[sp]:=bq[sp]-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
137
138   bo_tip[sp][4]:=1;
139   bo_tip[sp][5]:=1;
140   bo_serif[sp][4]:=1;

```

```

141 bo_serif[sp][5]:=1;
142
143 sp:=sp*1;
144 enddef;

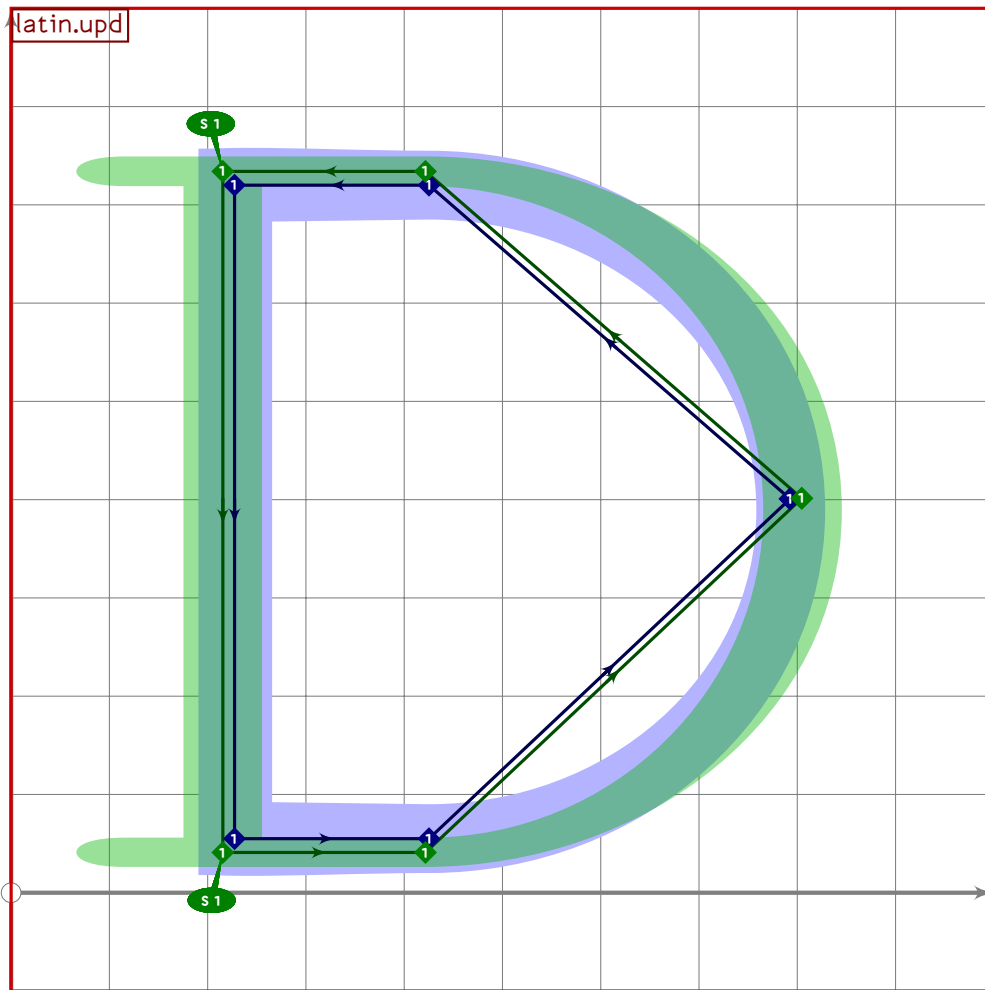
```



```

145
146 vardef tsu_curve.latin.upc =
147   add_proof_box("latin.upc");
148   bp[sp]:=(subpath (0,5,3,5) of ((1,0)..(0,1)..(-1,0)..(0,-1)..cycle))
149     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
150     shifted (centre_pt*(50,0));
151   bq[sp]:=(1,6,1,6)-(1,6,1,6)-(1,6,1,6)-(1,6,1,6)-(1,6,1,6);
152
153   sp:=sp*1;
154 enddef;

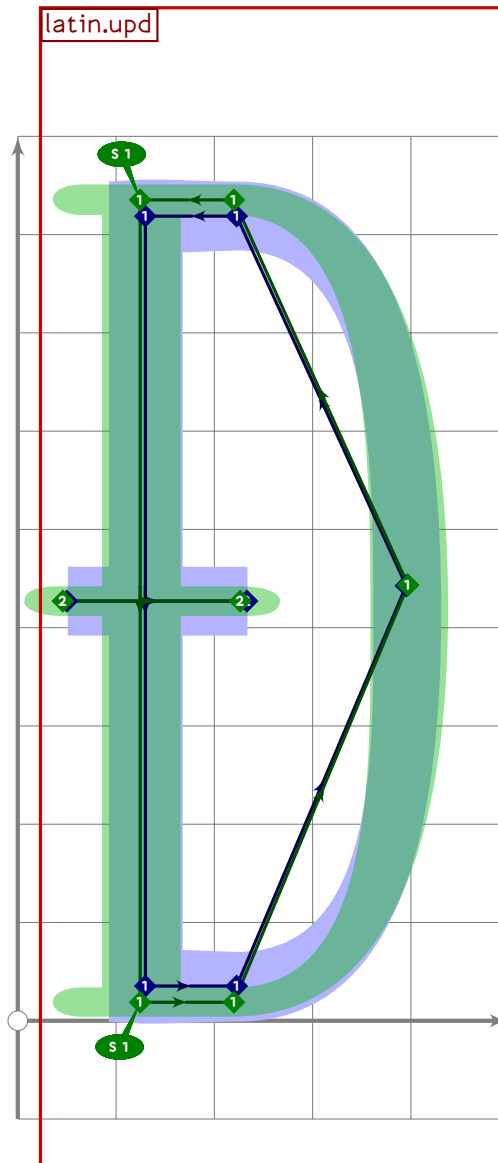
```



```

155
156 vardef tsu_curve.latin.upd =
157   add_proof_box("latin.upd");
158   y1=y5=latin_wide_high_h;
159   y2=y3=latin_wide_low_h;
160   y4=0.52[y2,y1];
161
162   (x1+x4)/2=510;
163   (x4-x1)=0.85*(y1-y2);
164   x1=x2;
165   x3=x5=0.35[x1,x4];
166
167   bp[sp]:=z4..{left}z5-z1-z2-z3{right}..cycle;
168   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
169   bo_tip[sp][2]:=1;
170   bo_tip[sp][3]:=1;
171   bo_serif[sp][2]:=1;
172   bo_serif[sp][3]:=1;
173
174   sp:=sp*1;
175 enddef;

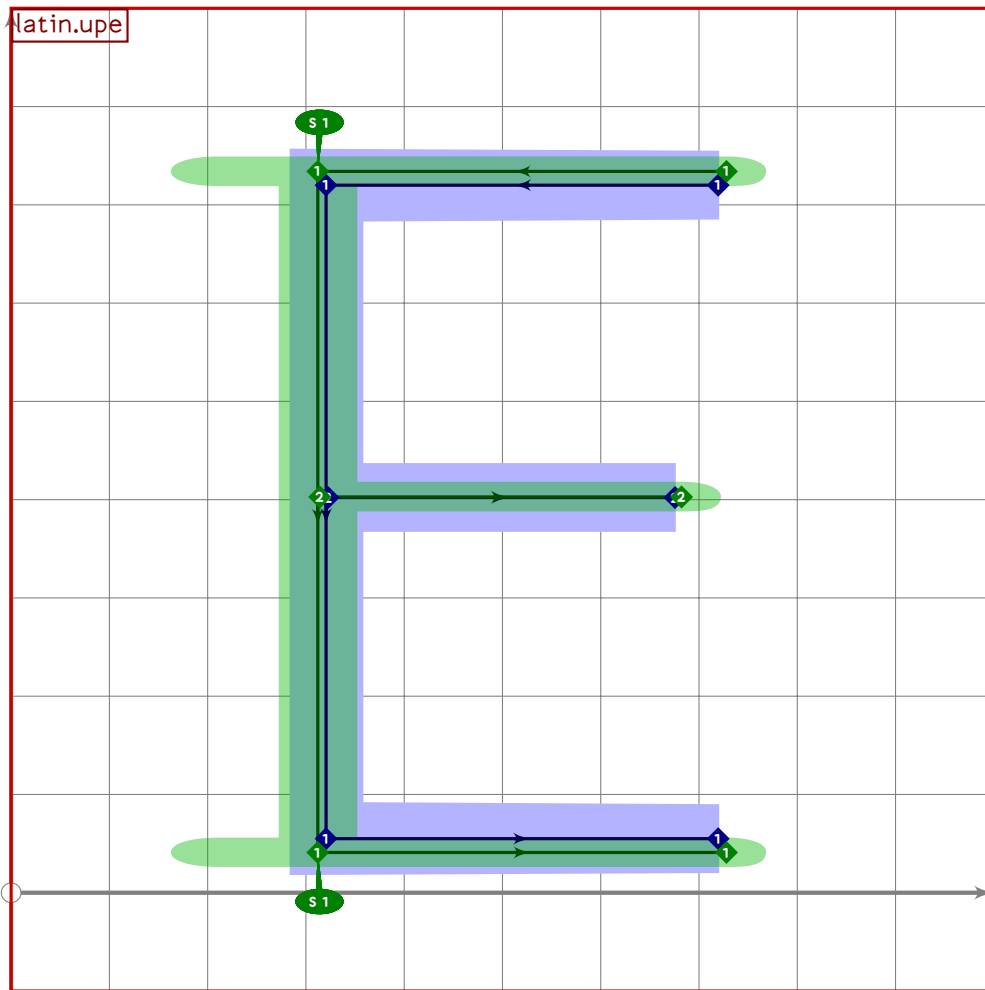
```



```

176
177 vardef tsu_curve.latin.upeth =
178   add_proof_box("latin.upeth");
179   tsu_curve.latin.upd;
180   bp[sp]:=(0.5[z1,z2]*(-170,0))-(0.5[z1,z2]*(220,0));
181   bq[sp]:=(1.6,1.6)-(1.6,1.6);
182   sp:=sp*1;
183 enddef;

```



```

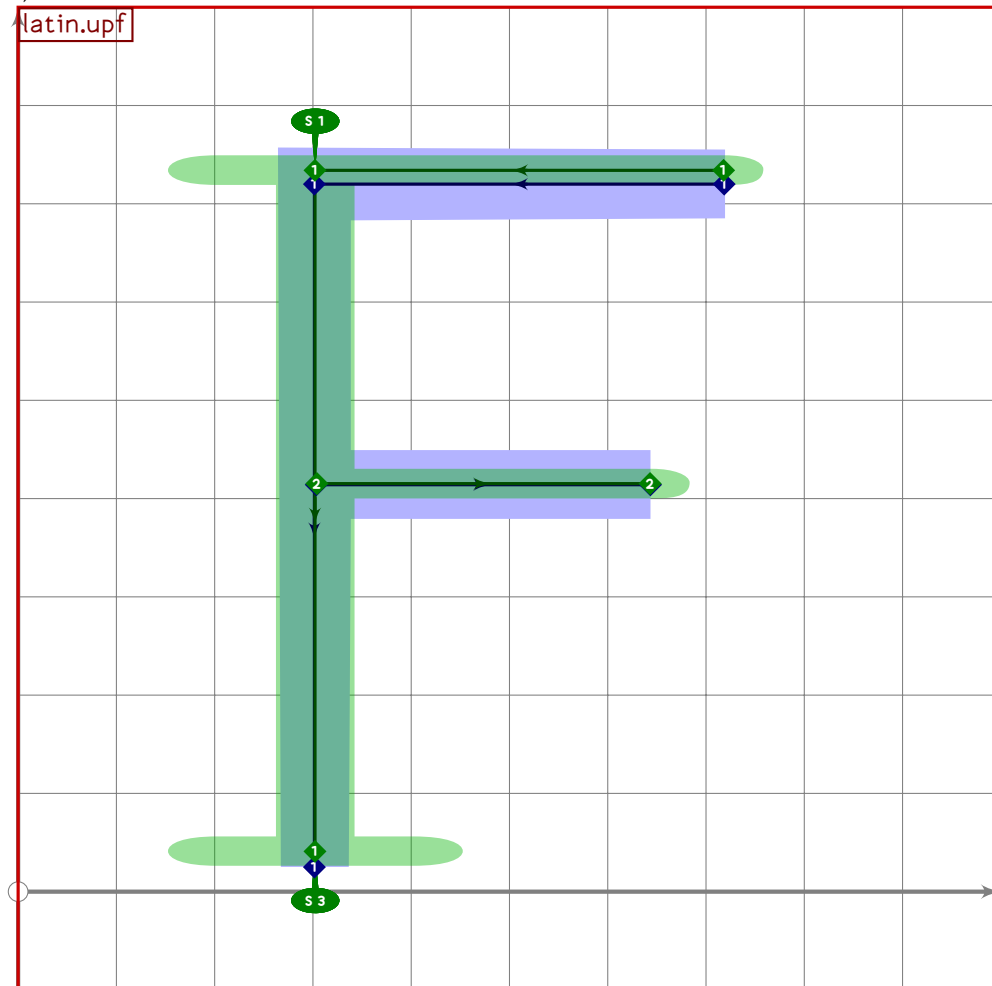
184
185 vardef tsu_curve.latin.upe =
186   add_proof_box("latin.upe");
187   y1=y2=latin_wide_high_h;
188   y3=y4=latin_wide_low_h;
189   y5=y6=vmetric(0.522);
190
191   (x1+x2)/2=520;
192   x2=x3;
193   x1=x4;
194   x5=x2*2;
195   x6=0.89[x2,x1];
196   (x1-x2)=(y2-y3)*0.6;
197
198   bp[sp]:=z1-z2-z3-z4;
199   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
200   bo_tip[sp][1]:=1;
201   bo_tip[sp][2]:=1;
202   bo_serif[sp][1]:=1;
203   bo_serif[sp][2]:=1;
204

```

```

205 bp[sp*1]:=z5-z6;
206 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
207
208 sp:=sp*2;
209 enddef;

```



```

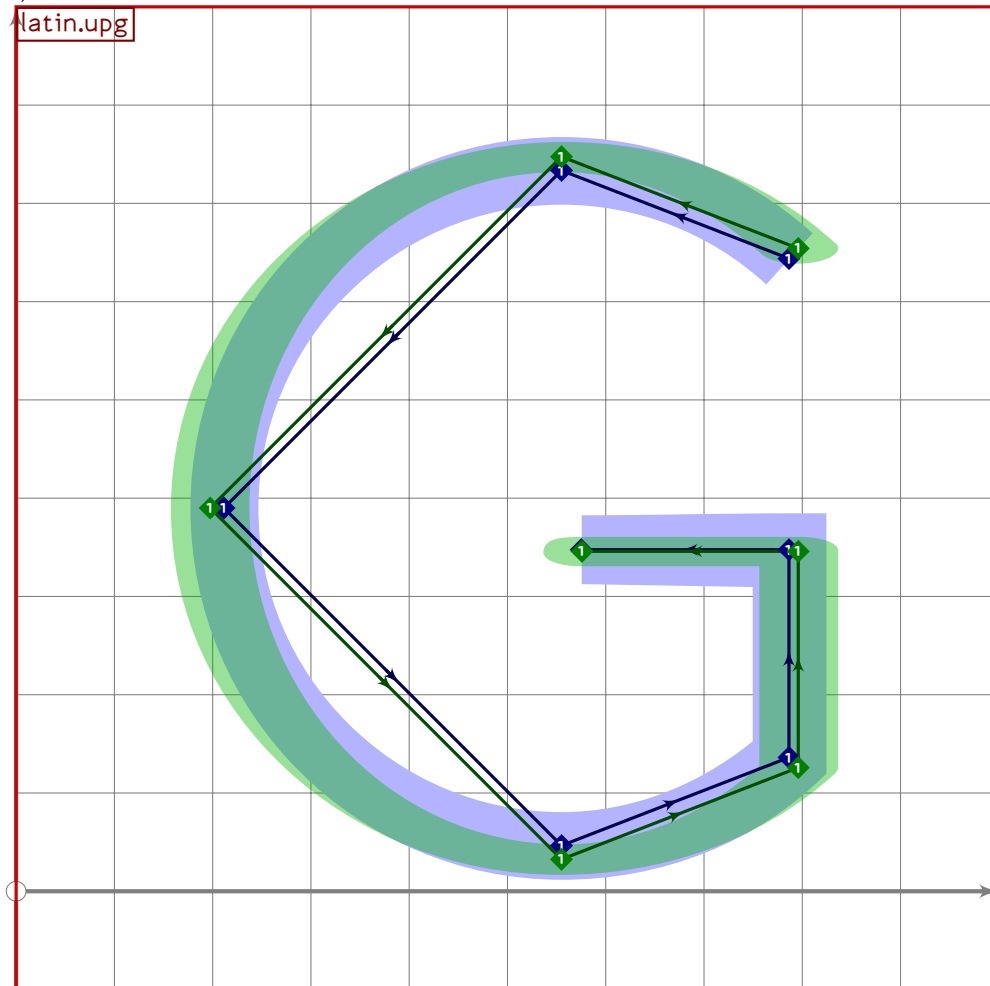
210
211 vardef tsu_curve.latin.upf =
212   add_proof_box("latin.upf");
213   y1=y2=latin_wide_high_h;
214   y3=latin_wide_low_v;
215   y4=y5=vmetric(0.54);
216
217   (x1+x2)/2=510;
218   x3=x2;
219   x4=x2+2;
220   x5=0.82[x2,x1];
221   (x1-x2)=(y2-y3)*0.6;
222
223   bp[sp]:=z1-z2-z3;
224   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
225   bo_tip[sp][1]=1;

```

```

226 bo_serif[sp][1]:=1;
227 bo_serif[sp][2]:=3;
228
229 bp[sp*1]:=z4-z5;
230 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
231
232 sp:=sp*2;
233 enddef;

```



```

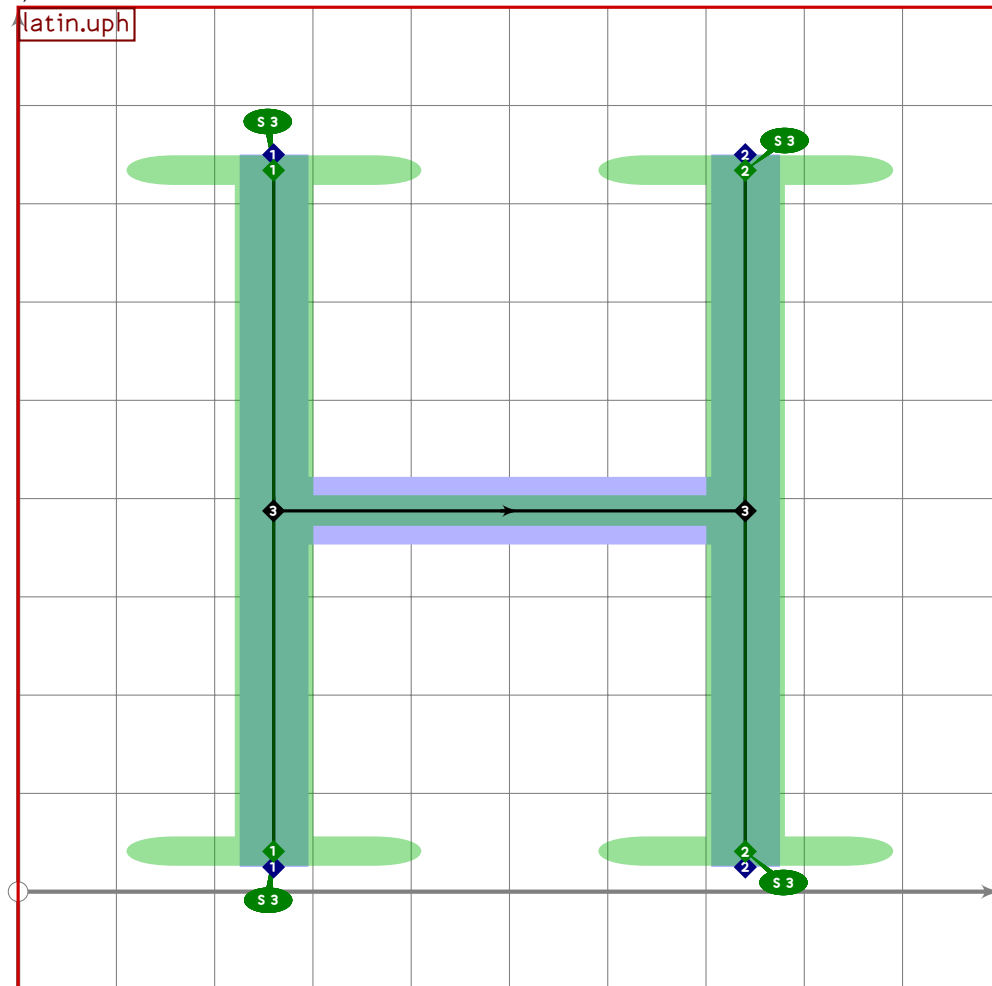
234
235 vardef tsu_curve.latin.upg =
236   add_proof_box("latin.upg");
237   bp[sp]:=(subpath (0.53,3.47) of ((1,0)..(0,1)..(-1,0)..(0,-1)..cycle))
238     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
239     shifted (centre_pt*(55,0));
240
241   x1=xpart point 4 of bp[sp];
242   y1=y2=vmetric(0.44);
243   x1-x2=y1-(ypart point 4 of bp[sp])*1.0;
244
245   bp[sp]:=bp[sp]-z1-z2;
246   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);

```

```

247 bo_tip[sp][4]:=1;
248 bo_tip[sp][5]:=1;
249
250 sp:=sp*1;
251 enddef;

```



```

252
253 vardef tsu_curve.latin.uph =
254   add_proof_box("latin.uph");
255   z1=(260,latin_wide_high_v);
256   z2=(740,latin_wide_high_v);
257   z3=(260,latin_wide_low_v);
258   z4=(740,latin_wide_low_v);
259
260   z5=whatever[z1,z3];
261   z6=whatever[z2,z4];
262   y5=y6=vmetric(0.5);
263
264   bp[sp]:=z1-z3;
265   bq[sp]:=(1.6,1.6)-(1.6,1.6);
266   bo_serif[sp][0]:=3;
267   bo_serif[sp][1]:=3;

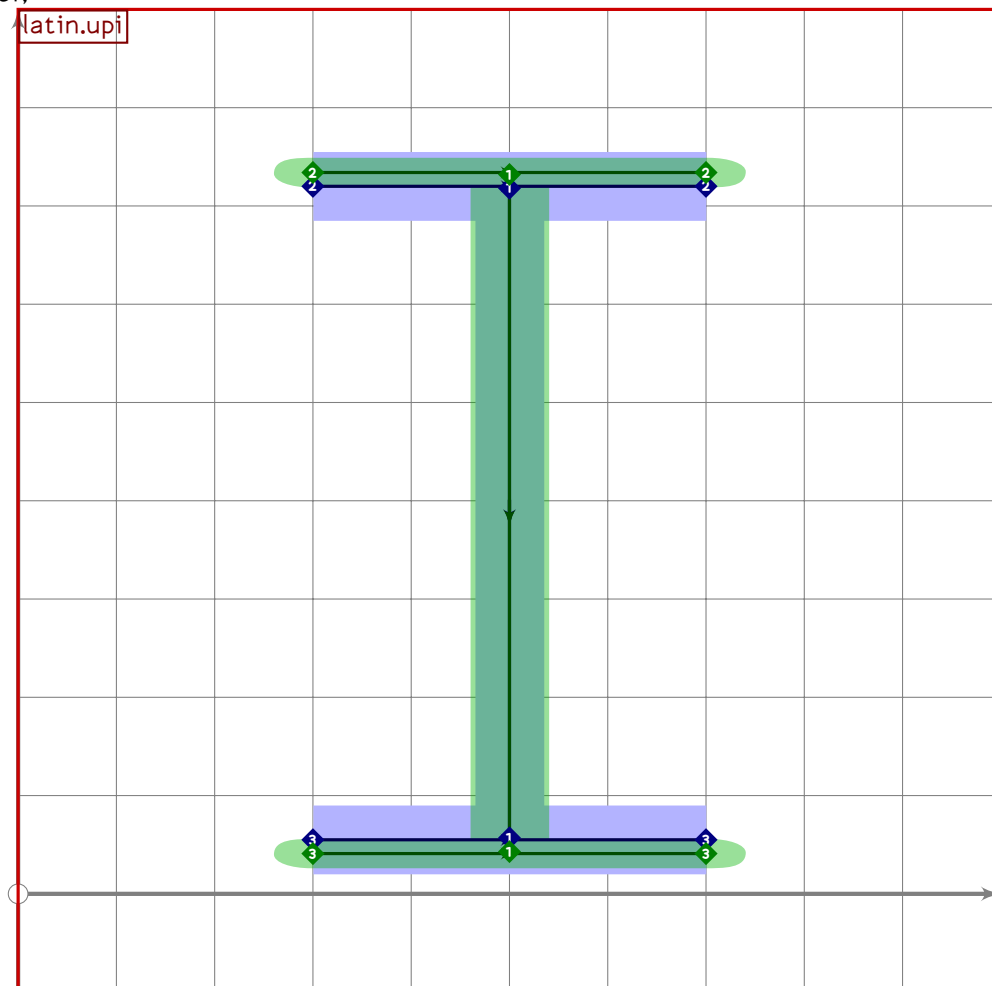
```



```

268
269 bp[sp*1]:=z2-z4;
270 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
271 bo_serif[sp*1][0]:=3;
272 bo_serif[sp*1][1]:=3;
273
274 bp[sp*2]:=z5-z6;
275 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
276
277 sp:=sp*3;
278 enddef;

```



```

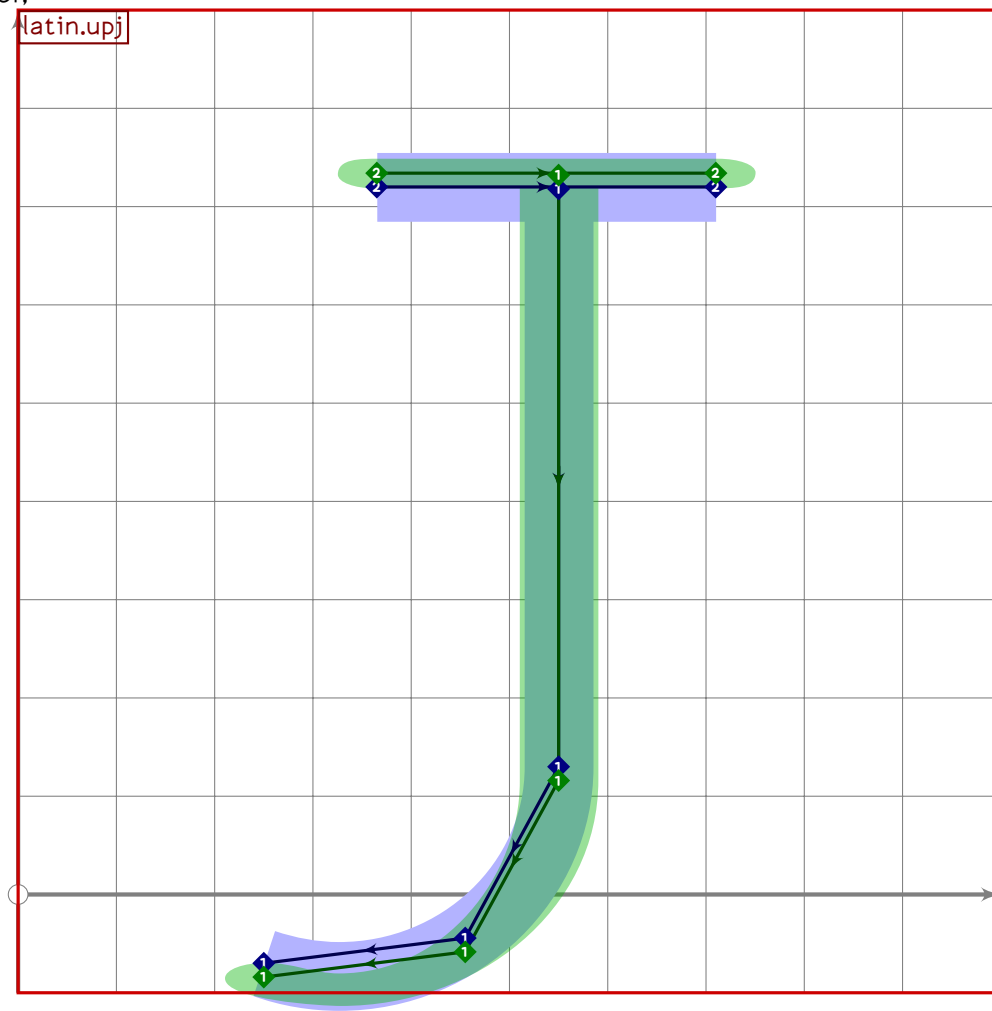
279
280 vardef tsu_curve.latin.upi =
281   add_proof_box("latin.upi");
282   bp[sp]:=(500,latin_wide_high_h-2)-(500,latin_wide_low_h+2);
283   bq[sp]:=(1.6,1.6)-(1.6,1.6);
284
285   bp[sp*1]:=(300,latin_wide_high_h)-(700,latin_wide_high_h);
286   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
287
288   bp[sp*2]:=(300,latin_wide_low_h)-(700,latin_wide_low_h);

```

```

289 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
290
291 sp:=sp*3;
292 enddef;

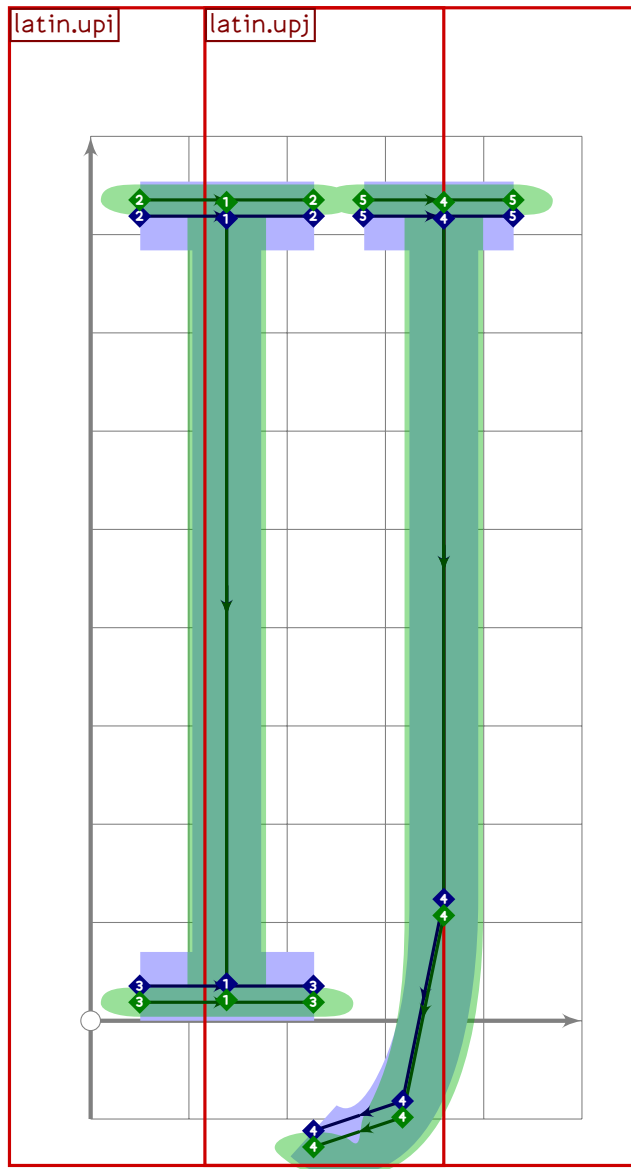
```



```

293
294 vardef tsu_curve.latin.upj =
295   add_proof_box("latin.upj");
296   z1=(550,latin_wide_high_h-2);
297   z2=(550,latin_wide_low_h*75);
298   z3=z2*(-300,-200);
299
300   bp[sp]:=(z1-z2)..{curl 0.8}z3;
301   bp[sp]:=insert_nodes(bp[sp])(1.5);
302   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
303
304   bp[sp*1]:=(365,latin_wide_high_h)-(710,latin_wide_high_h);
305   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
306
307   sp:=sp*2;
308 enddef;

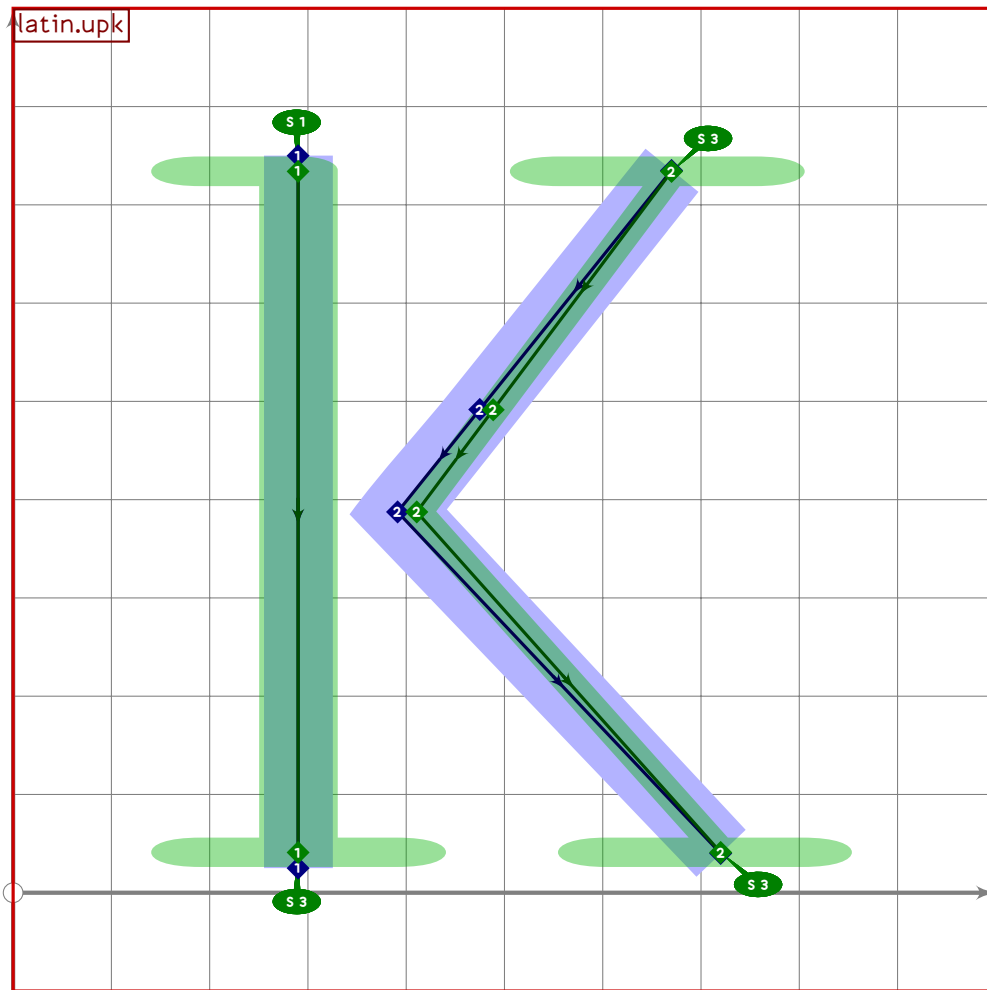
```



```

309
310 vardef tsu_curve.latin.upij =
311   add_proof_box("latin.upij");
312   tsu_xform(identity shifted (-250,0))(tsu_curve.latin.upi);
313   tsu_xform(identity shifted (200,0))(tsu_curve.latin.upj);
314 enddef;

```



```

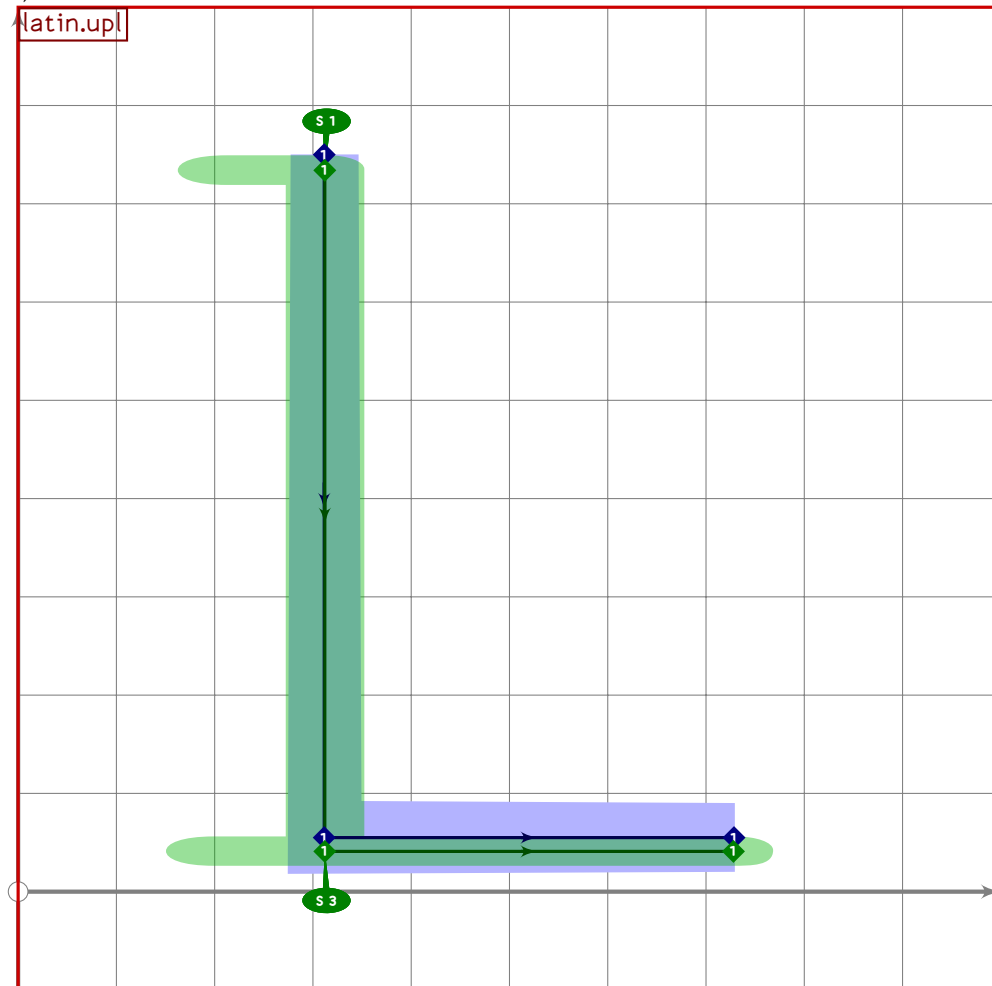
315
316 vardef tsu_curve.latin.upk =
317   add_proof_box("latin.upk");
318   z1=(290,latin_wide_high_v);
319   z2=(290,latin_wide_low_v);
320   z3=(670,0.5[latin_wide_high_h,latin_wide_high_v]);
321   x4=290+mbrush_width*if sharp_corners: 2.7 else: 2.3 fi;
322   y4=vmetric(0.5);
323   z5=(720,0.5[latin_wide_low_h,latin_wide_low_v]);
324
325   bp[sp]:=z1-z2;
326   bq[sp]:=(1.6,1.6)-(1.6,1.6);
327   bo_serif[sp][0]:=1;
328   bo_serif[sp][1]:=3;
329
330   bp[sp*1]:=z3-(0.7[z3,z4])-z4-z5;
331   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
332   bo_tip[sp*1][2]:=1;
333   if do_alteration:
334     bo_alterate[sp*1]:=true;
335     bo_serif[sp*1][0]:=3;

```

```

336 bo_serif[sp*1][3]:=3;
337 fi;
338
339 sp:=sp*2;
340 enddef;

```

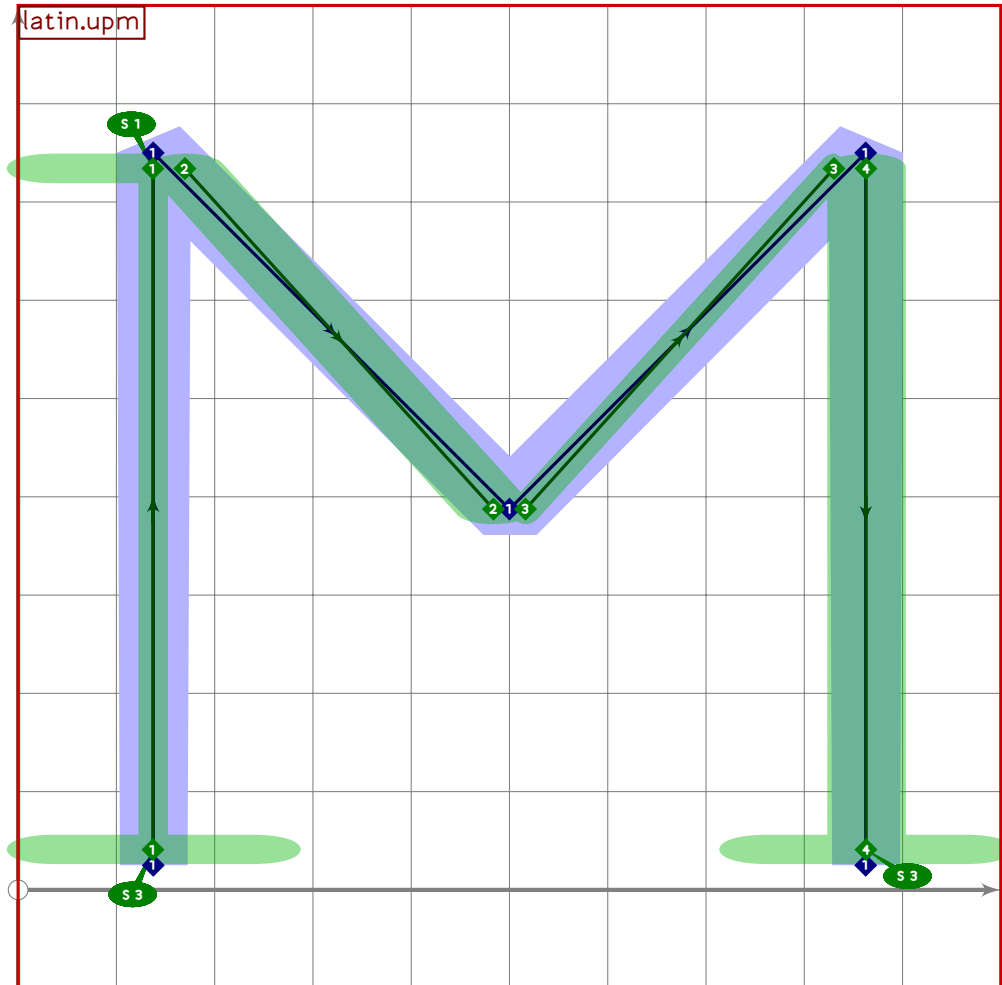


```

341
342 vardef tsu_curve.latin.upl =
343   add_proof_box("latin.upl");
344   y1=latin_wide_high_v;
345   y2=y3=latin_wide_low_h;
346   x1=x2;
347   (x1+x3)/2=520;
348   (x3-x1)=(y1-y2)*0.6;
349
350   bp[sp]:=z1-z2-z3;
351   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
352   bo_tip[sp][1]:=1;
353   bo_serif[sp][0]:=1;
354   bo_serif[sp][1]:=3;
355
356   sp:=sp*1;

```

357 endif;



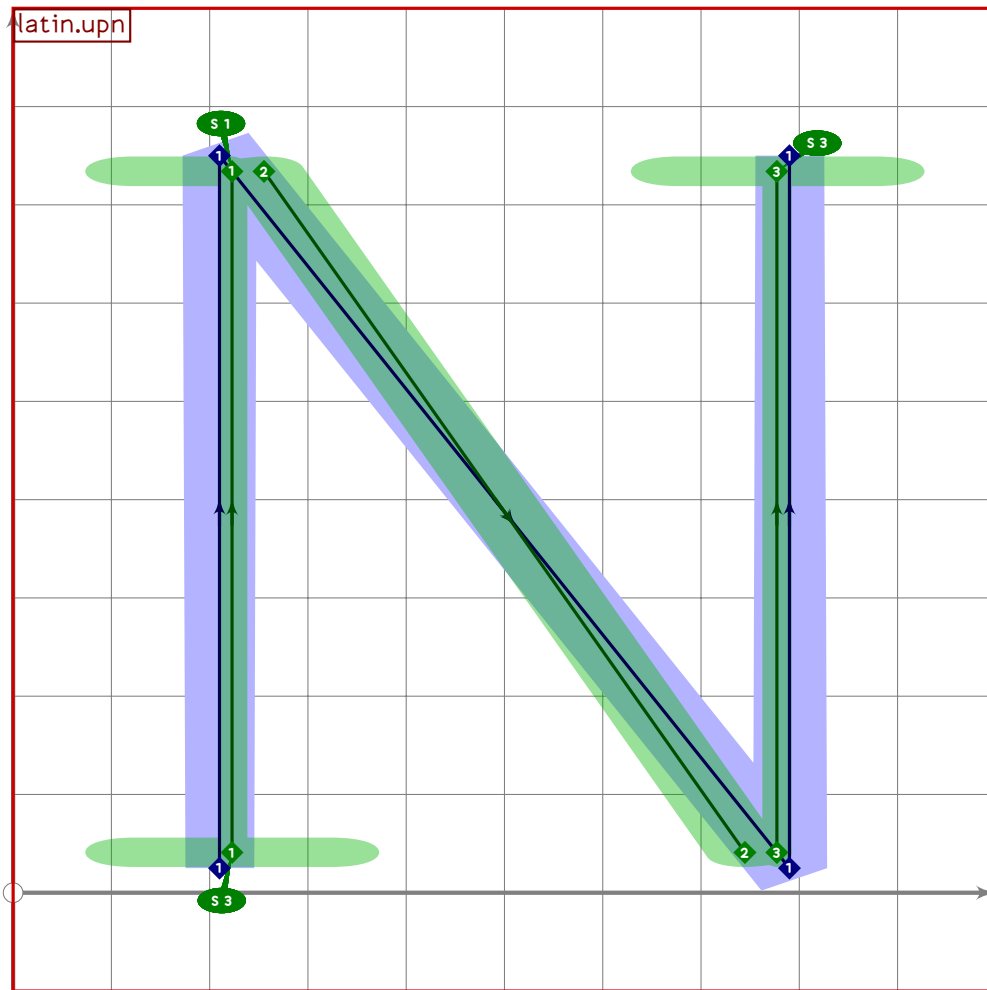
358

```
359 vardef tsu_curve.latin.upm =  
360   add_proof_box("latin.upm");  
361   y1=y5=latin_wide_low_v;  
362   y2=y4=latin_wide_high_v;  
363   y3=(y1+y2)/2;  
364  
365   if do_alteration:  
366     x1=x2;  
367     x3=500*alternate_adjust/2;  
368     x4=x5;  
369     (x3-x1)=(x5-x3);  
370  
371     (x5-x1)=(y2-y1);  
372  
373     bp[sp]:=(z1-z2) shifted (alternate_adjust*left);  
374     bq[sp]:=(1.6,1.6)-(1.6,1.6);  
375     bo_serif[sp][0]:=3;  
376     bo_serif[sp][1]:=1;  
377     bo_alterate[sp]:=true;
```

```

378
379 bp[sp*1]:=z2-(z3*alternate_adjust*left);
380 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
381
382 bp[sp*2]:=z3-(z4*alternate_adjust*left);
383 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
384 bo_alternate[sp*2]:=true;
385
386 bp[sp*3]:=z4-z5;
387 bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
388 bo_serif[sp*3][1]:=3;
389
390 sp:=sp+4;
391 else:
392 x1=x2;
393 x3=500;
394 x4=x5;
395 (x3-x1)=(x5-x3);
396
397 (x5-x1)=(y2-y1);
398
399 bp[sp]:=z1-z2-z3-z4-z5;
400 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
401 bo_tip[sp][1]:=0;
402 bo_tip[sp][2]:=0;
403 bo_tip[sp][3]:=0;
404 bo_serif[sp][0]:=3;
405 bo_serif[sp][1]:=1;
406 bo_serif[sp][4]:=3;
407
408 sp:=sp+1;
409 fi;
410 enddef;

```



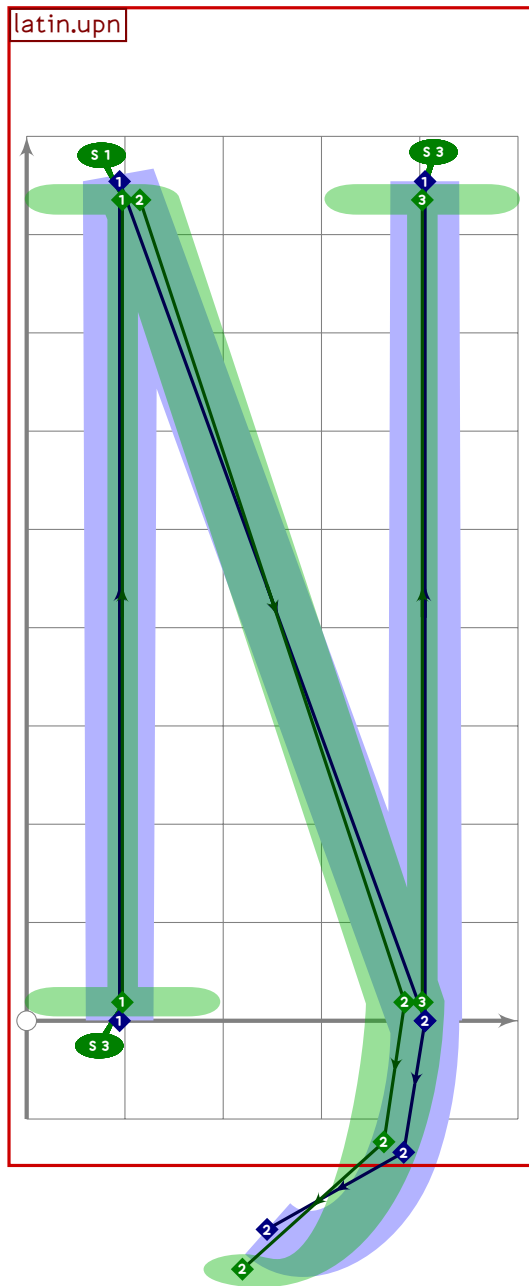
```

411
412 vardef tsu_curve.latin.upn =
413   add_proof_box("latin.upn");
414   y1=y3=latin_wide_low_v;
415   y2=y4=latin_wide_high_v;
416
417   x1=x2;
418   x3=x4;
419   (x1+x3)/2=500;
420   (x3-x1)=(y2-y1)*4/5;
421
422   if do_alteration:
423     bp[sp]:=z1-z2;
424     bq[sp]:=(1.6,1.6)-(1.6,1.6);
425     bo_serif[sp][0]:=3;
426     bo_serif[sp][1]:=1;
427     bo_alterate[sp]:=true;
428
429     bp[sp*1]:=(z2*alternate_adjust*right)-(z3*alternate_adjust*left);
430     bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
431

```



```
432     bp[sp*2]:=z3-z4;
433     bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
434     bo_serif[sp*2][1]:=3;
435     bo_alternate[sp*2]:=true;
436
437     sp:=sp*3;
438 else:
439     bp[sp]:=z1-z2-z3-z4;
440     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
441     bo_tip[sp][1]:=0;
442     bo_tip[sp][2]:=0;
443     bo_serif[sp][0]:=3;
444     bo_serif[sp][1]:=1;
445     bo_serif[sp][3]:=3;
446
447     sp:=sp*1;
448 fi;
449 endif;
```



```

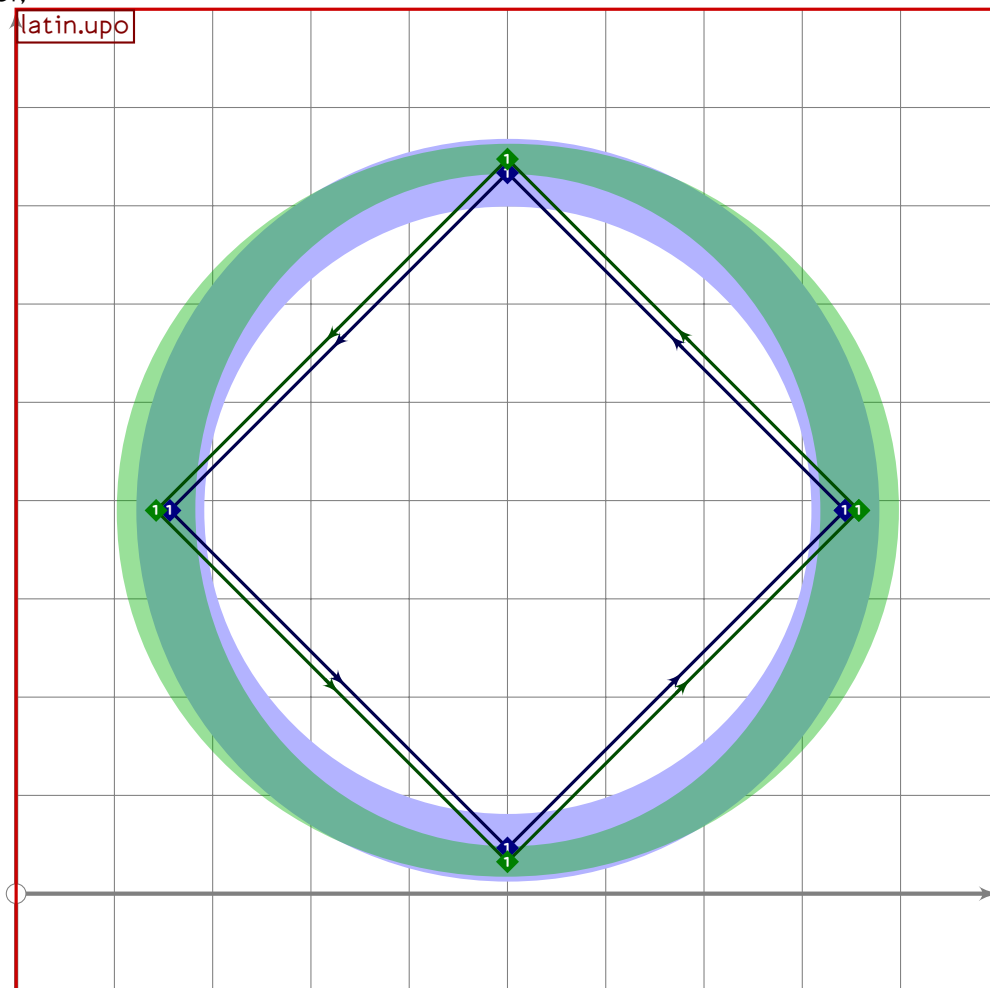
450
451 vardef tsu_curve.latin.upeng =
452   add_proof_box("latin.upeng");
453   tsu_curve.latin.upn;
454   y5=latin_wide_desc_h;
455   if do_alteration:
456     x5=x3-alternate_adjust-300;
457     bp[sp-2]:=bp[sp-2]{dir 268}..{curl 0.8}z5;
458     bp[sp-2]:=insert_nodes(bp[sp-2])(1.3);
459     bq[sp-2]:=bq[sp-2]-(1.6,1.6)-(1.6,1.6);
460   else:
461     x5=x3-300;
462     bp[sp]:=z3{dir 268}..{curl 0.8}z5;

```

```

463 bp[sp]:=insert_nodes(bp[sp])(0.3);
464 bq[sp]:=(1.6,1.6)-(1.6,1.6);
465 sp:=sp+1;
466 fi;
467 enddef;

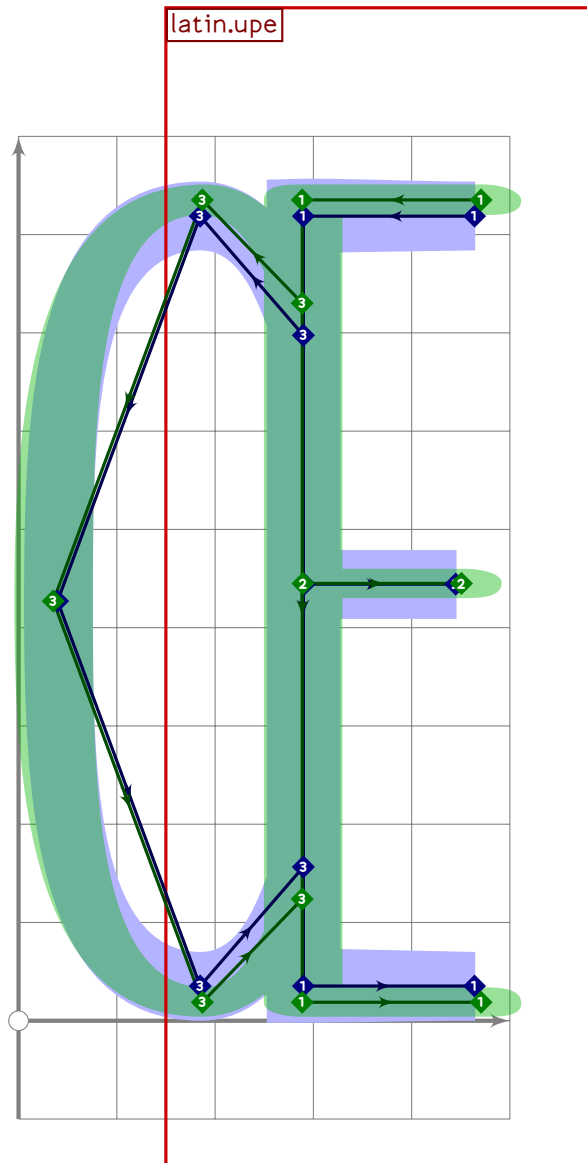
```



```

468
469 vardef tsu_curve.latin.upo =
470   add_proof_box("latin.upo");
471   bp[sp]:=((1,0)..(0,1)..(-1,0)..(0,-1)..cycle)
472     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
473     shifted centre_pt;
474   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
475
476   sp:=sp+1;
477 enddef;

```



```

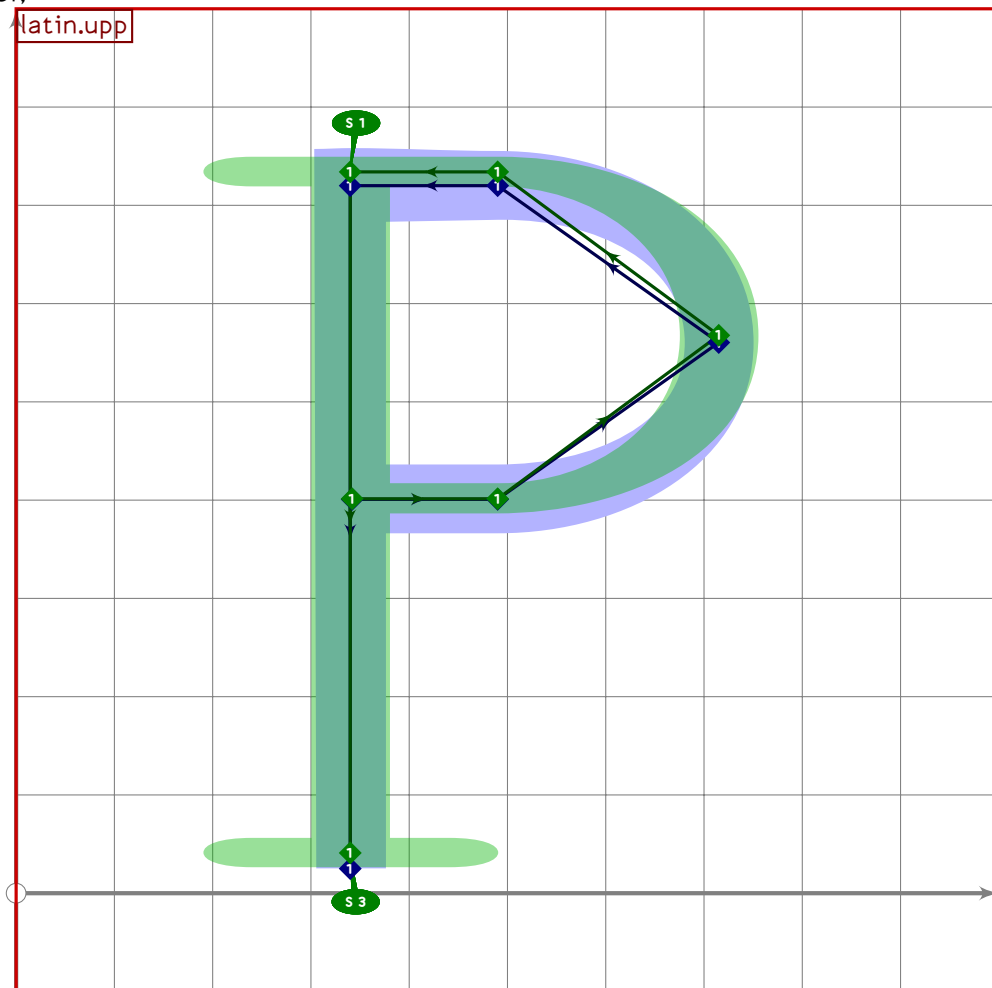
478
479 vardef tsu_curve.latin.upoe =
480   add_proof_box("latin.upoe");
481   tsu_xform(identity shifted (280,0))(tsu_curve.latin.upe);
482   bo_serif[sp-2][1]:=whatever;
483   bo_serif[sp-2][2]:=whatever;
484   bp[sp]:=((1,0)..(0,1)..(-1,0)..(0,-1)..(1,0))
485     scaled ((latin_wide_high_h-latin_wide_low_h)/2)
486     shifted (360,0.5[latin_wide_high_h,latin_wide_low_h]);
487   bp[sp]:=subpath (xpart (bp[sp] intersectiontimes bp[sp-2]),
488     4-xpart ((reverse bp[sp]) intersectiontimes bp[sp-2]))
489     of bp[sp];
490   bq[sp]:=(1.2,1.2)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.2,1.2);
491   sp:=sp*1;
492 enddef;
493

```

```

494 vardef tsu_curve.latin.upp_base(suffix a)(expr b) =
495   x1=x5*2;
496   x5=340;
497   x2=x4=x5*b*0.4;
498   x3=x5*b;
499
500   y1=y2=vmetric(0.52);
501   y3=(y2*y4)/2;
502   y4=y5=latin_wide_high_h;
503
504   bp[sp]:=z1-z2{right}..z3..{left}z4-z5;
505   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
506 enddef;

```



```

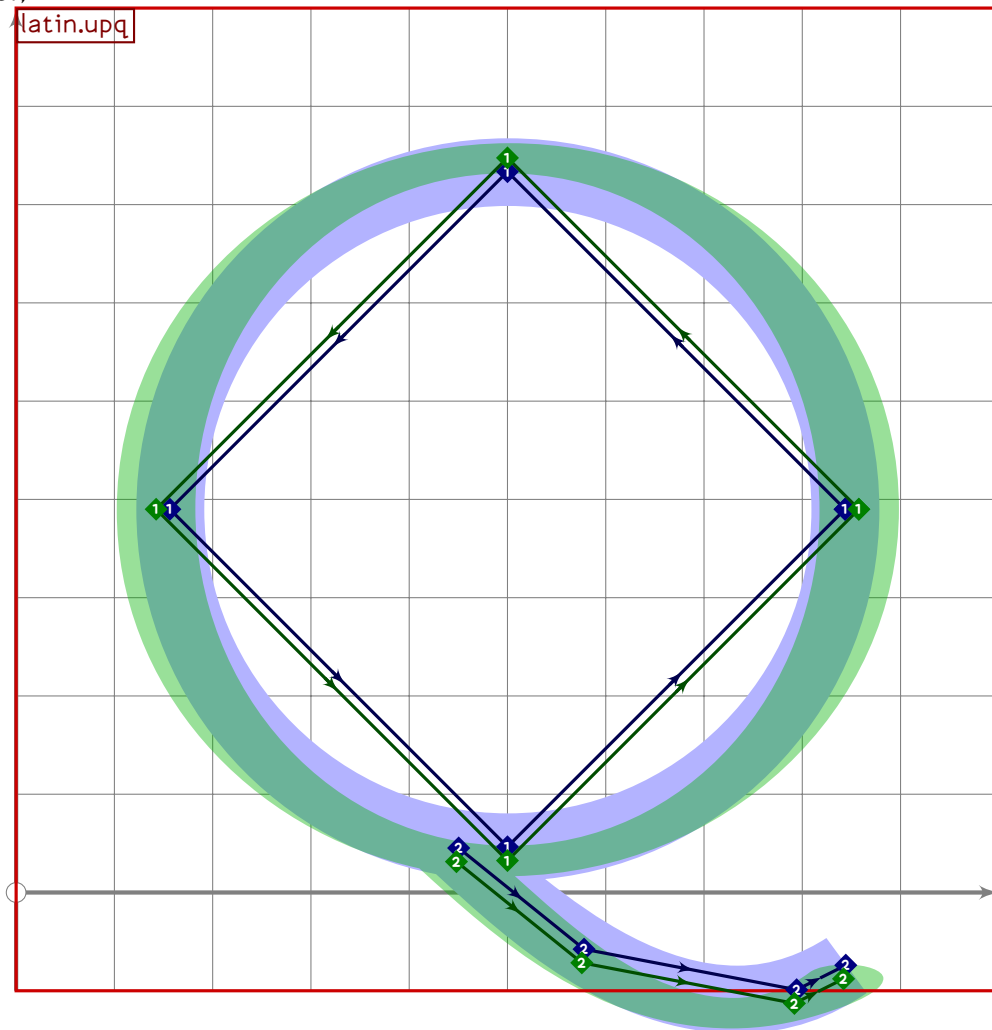
507
508 vardef tsu_curve.latin.upp =
509   add_proof_box("latin.upp");
510   tsu_curve.latin.upp_base(a,375);
511   bp[sp]:=bp[sp]-(xpart point infinity of bp[sp],latin_wide_low_v);
512   bq[sp]:=bq[sp]-(1.6,1.6);
513   bo_tip[sp][4]:=1;
514   bo_serif[sp][4]:=1;

```

```

515 bo_serif[sp][5]:=3;
516
517 sp:=sp*1;
518 enddef;

```

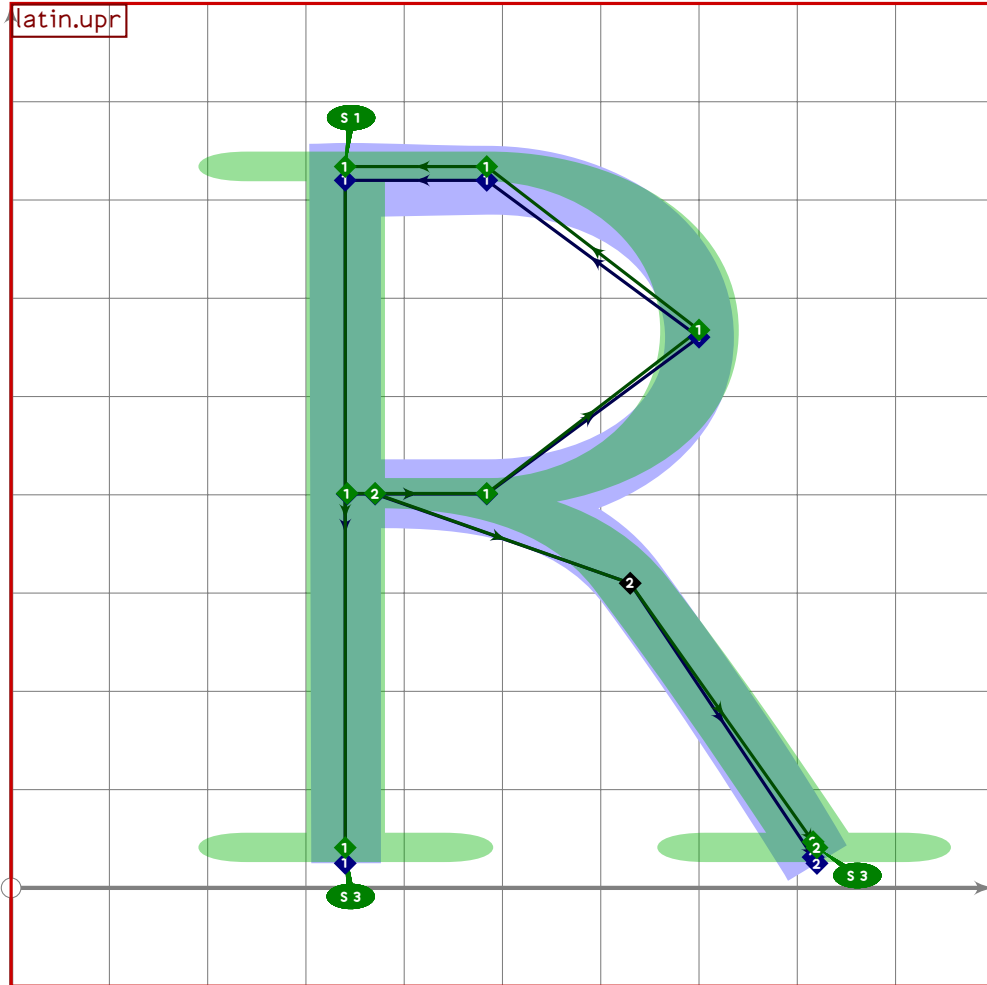


```

519
520 vardef tsu_curve.latin.upq =
521   add_proof_box("latin.upq");
522   bp[sp]:=((1,0)..(0,1)..(-1,0)..(0,-1)..cycle)
523     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
524     shifted centre_pt;
525   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
526
527   z1=point 2.9 of bp[sp];
528   z2=z1*(350,-150);
529   z3=z2*(50,25);
530   bp[sp*1]:=subpath (0.02,2) of (z1{curl 0}..z2..z3);
531   bp[sp*1]:=insert_nodes(bp[sp*1])(0.4);
532   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
533
534   sp:=sp*2;

```

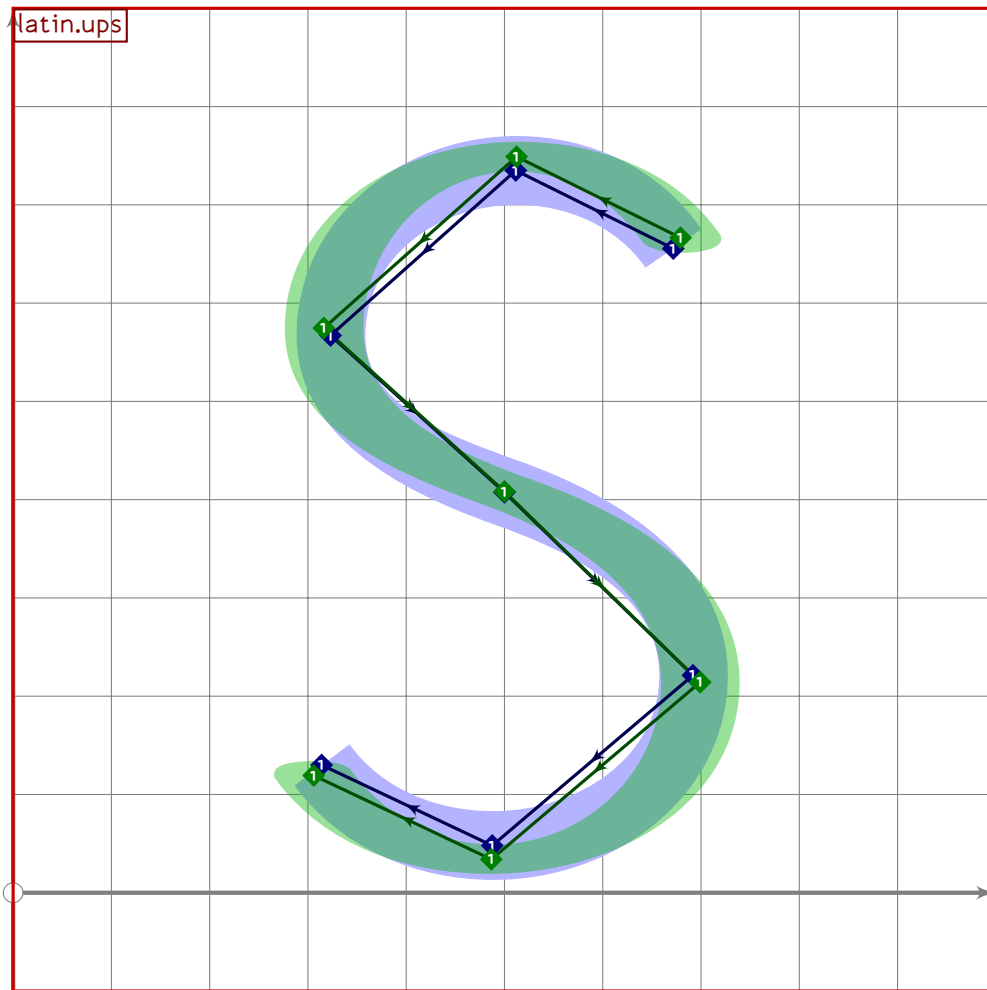
535 enddef;



536

```

537 vardef tsu_curve.latin.upr =
538   add_proof_box("latin.upr");
539   tsu_curve.latin.upp_base(a,360);
540   bp[sp]:= (bp[sp]-(xpart point infinity of bp[sp],latin_wide_low_v));
541   bq[sp]:= bq[sp]-(1.6,1.6);
542   bo_tip[sp][4]:=1;
543   bo_serif[sp][4]:=1;
544   bo_serif[sp][5]:=3;
545
546   bp[sp*1]:= (point 0.2 of bp[sp])\{right}\.(630,310)..
547     tension 3..(820,latin_wide_low_v);
548   bp[sp*1]:= insert_nodes(bp[sp*1])(1.95);
549   bq[sp*1]:= (1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
550   bo_serif[sp*1][3]:=3;
551
552   sp:=sp*2;
553 enddef;
```



```

554
555 vardef tsu_curve.latin.ups =
556   add_proof_box("latin.ups");
557   transform ta,tb;
558   path mycurve;
559
560   mycurve=(1,0)..(0,1)..(-1,0);
561
562   y2=latin_wide_high_r;
563   y0=y3=vmetric(0.77);
564   y4=vmetric(0.53);
565   y5=y8=vmetric(0.25);
566   y6=latin_wide_low_r;
567
568   0.48[x1,x7]=0.48[x2,x6]=0.48[x3,x5]=x4=500;
569   x5-x1=20;
570   x5-x7=(y2-y6)*0.55;
571
572   (point 0 of mycurve) transformed ta=z0;
573   (point 0.35 of mycurve) transformed ta=z1;
574   (point 1 of mycurve) transformed ta=z2;

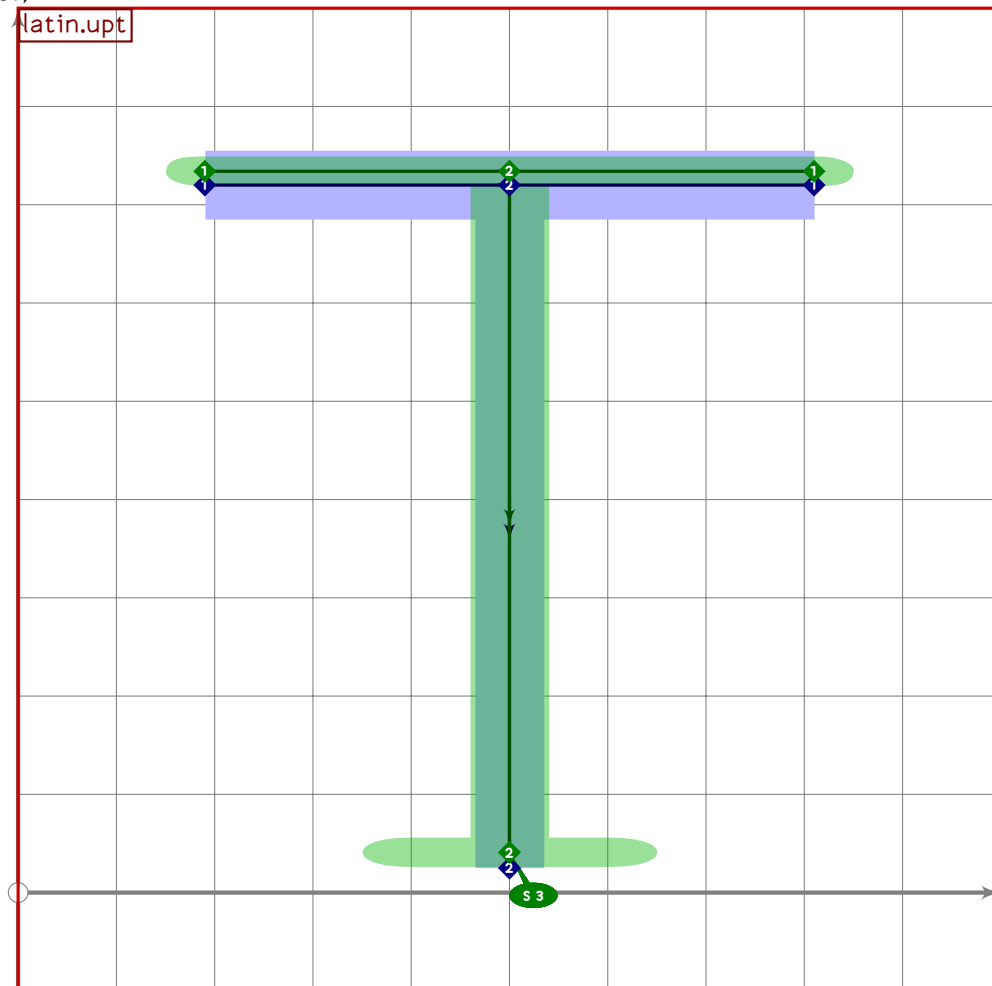
```



```

575 (point 2 of mycurve) transformed ta=z3;
576 xypart ta=0;
577
578 (point 0 of mycurve) transformed tb=z8;
579 (point 0.35 of mycurve) transformed tb=z7;
580 (point 1 of mycurve) transformed tb=z6;
581 (point 2 of mycurve) transformed tb=z5;
582
583 mycurve:=subpath (0.35,2) of mycurve;
584
585 bp[sp]:=(mycurve transformed ta)..z4..(reverse mycurve transformed tb);
586 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
587
588 sp:=sp*1;
589 enddef;

```



```

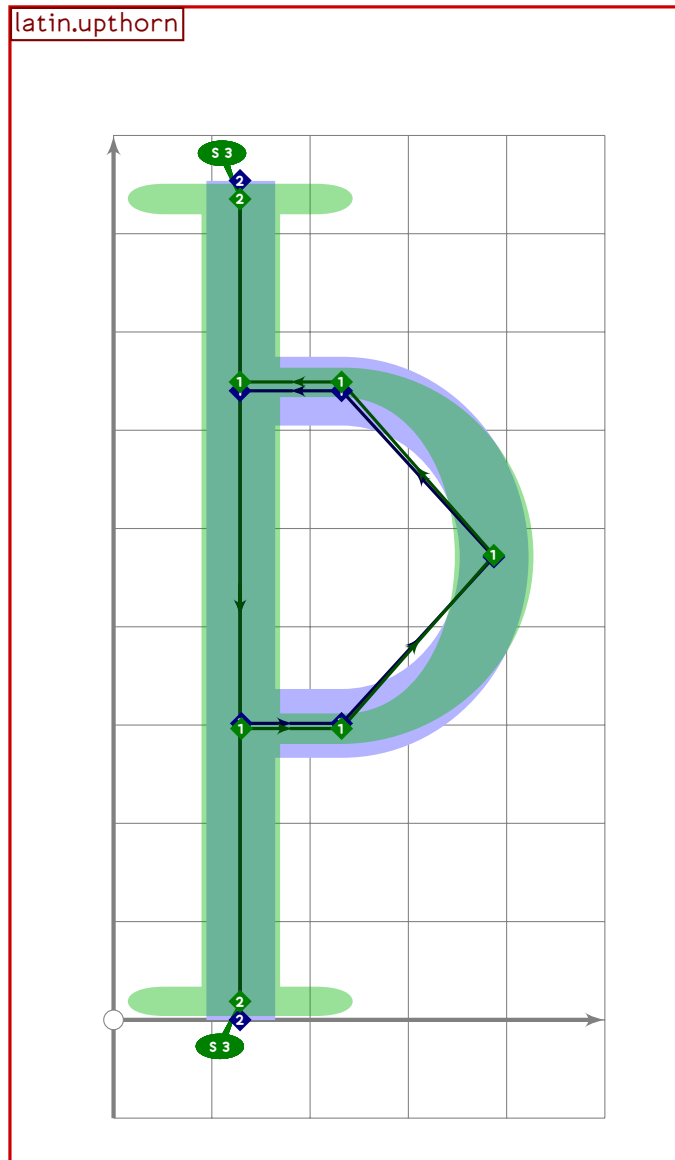
590
591 vardef tsu_curve.latin.upt =
592   add_proof_box("latin.upt");
593   z1=(190,latin_wide_high_h);
594   z2=(500,latin_wide_high_h);
595   z3=(810,latin_wide_high_h);

```

```

596 z4=(500,latin_wide_low_v);
597
598 bp[sp]:=z1-z3;
599 bq[sp]:=(1.6,1.6)-(1.6,1.6);
600
601 bp[sp*1]:=z2-z4;
602 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
603 bo_serif[sp*1][1]:=3;
604
605 sp:=sp*2;
606 enddef;

```



```

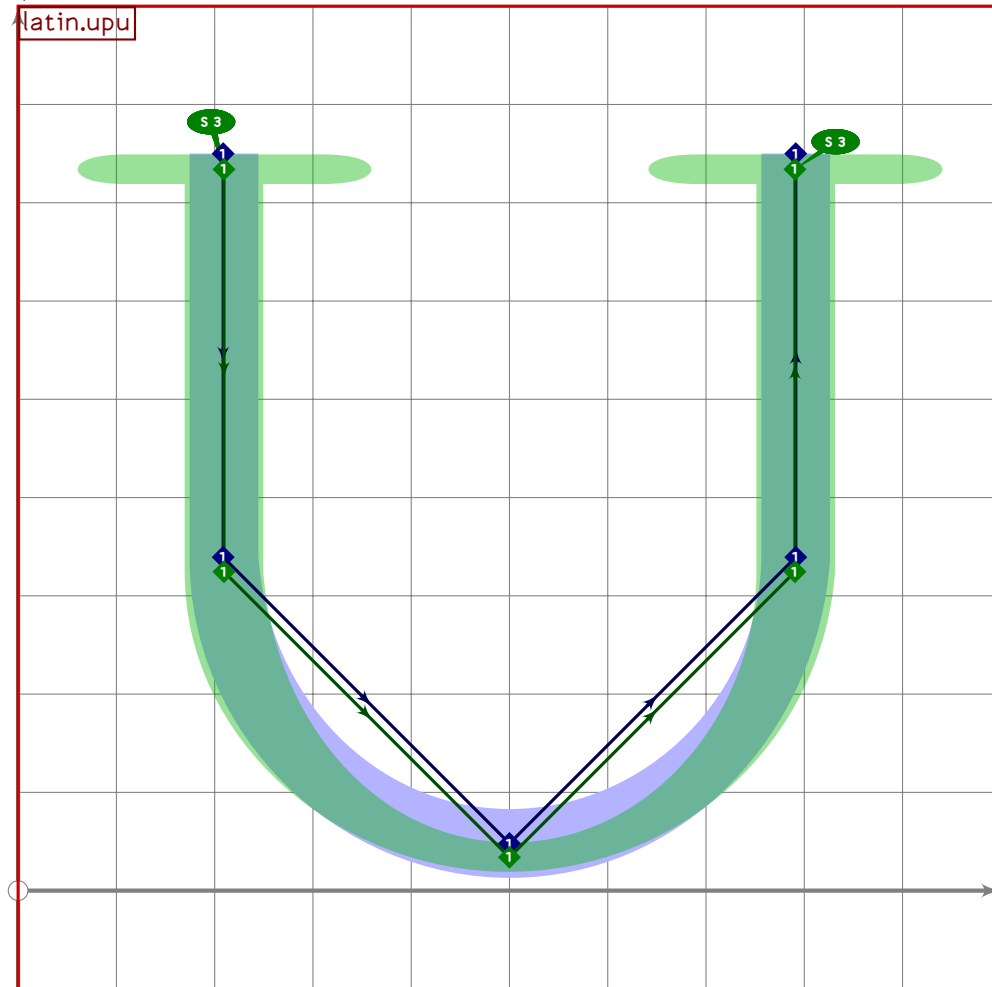
607
608 vardef tsu_curve.latin.upthorn =
609   add_proof_box("latin.upthorn");
610   tsu_curve.latin.upp_base(a,375);
611   bp[sp]:=bp[sp]

```

```

612   shifted (-llcorner bp[sp]) yscaled 0.9
613   shifted ((llcorner bp[sp])*(0,vmetric(0)-vmetric(0.18)));
614   bp[sp*1]:=xpart point infinity of bp[sp],latin_wide_high_v)
615   -(xpart point infinity of bp[sp],latin_wide_low_v);
616   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
617   bo_serif[sp*1][0]:=3;
618   bo_serif[sp*1][1]:=3;
619
620   sp:=sp*2;
621   enddef;

```



```

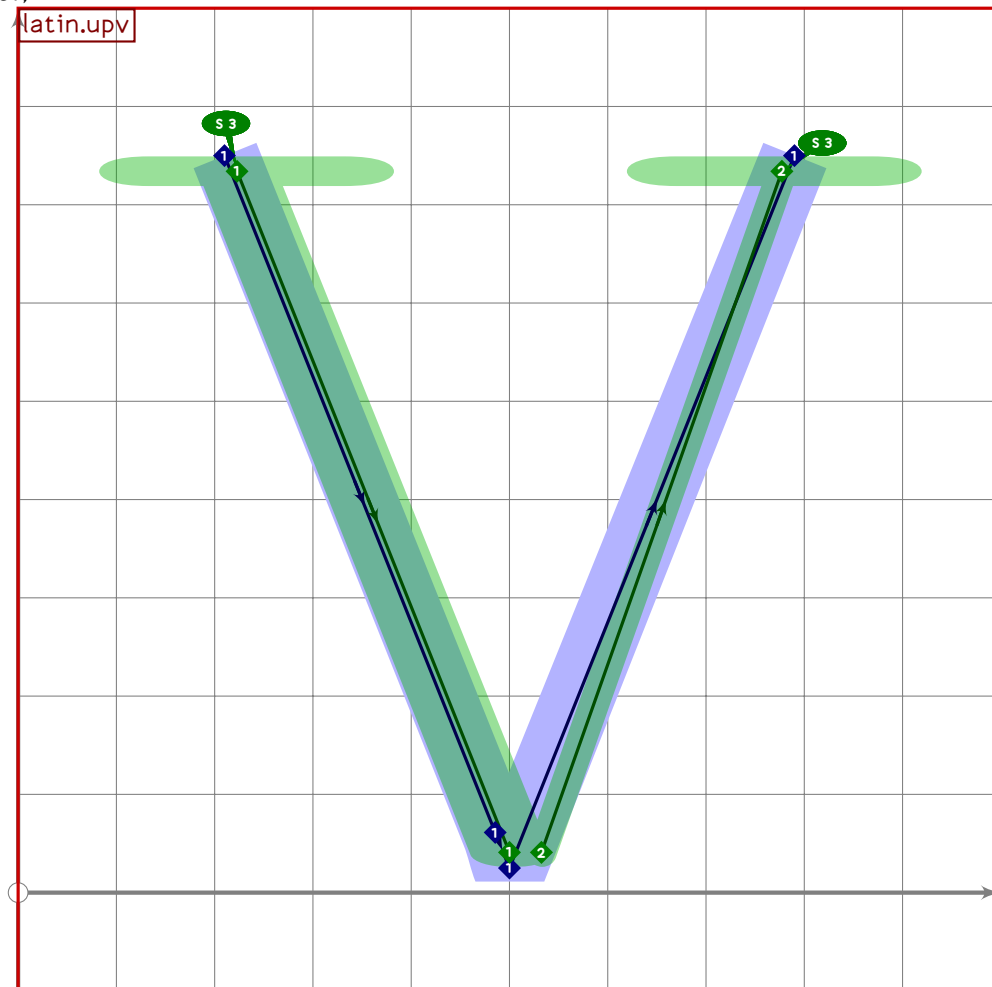
622
623   vardef tsu_curve.latin.upu =
624     add_proof_box("latin.upu");
625     x1=x2;
626     x3=500;
627     x4=x5;
628     (x1+x5)/2=x3;
629     (x5-x1)=(y1-y3)*0.83;
630
631     y1=y5=latin_wide_high_v;
632     y2=y4;

```

```

633 y2-y3=x3-x2;
634 y3=latin_wide_low_r;
635
636 bp[sp]:=z1-z2{dir 274}..z3..{dir 86}z4-z5;
637 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
638 bo_serif[sp][0]:=3;
639 bo_serif[sp][4]:=3;
640
641 sp:=sp*1;
642 enddef;

```



```

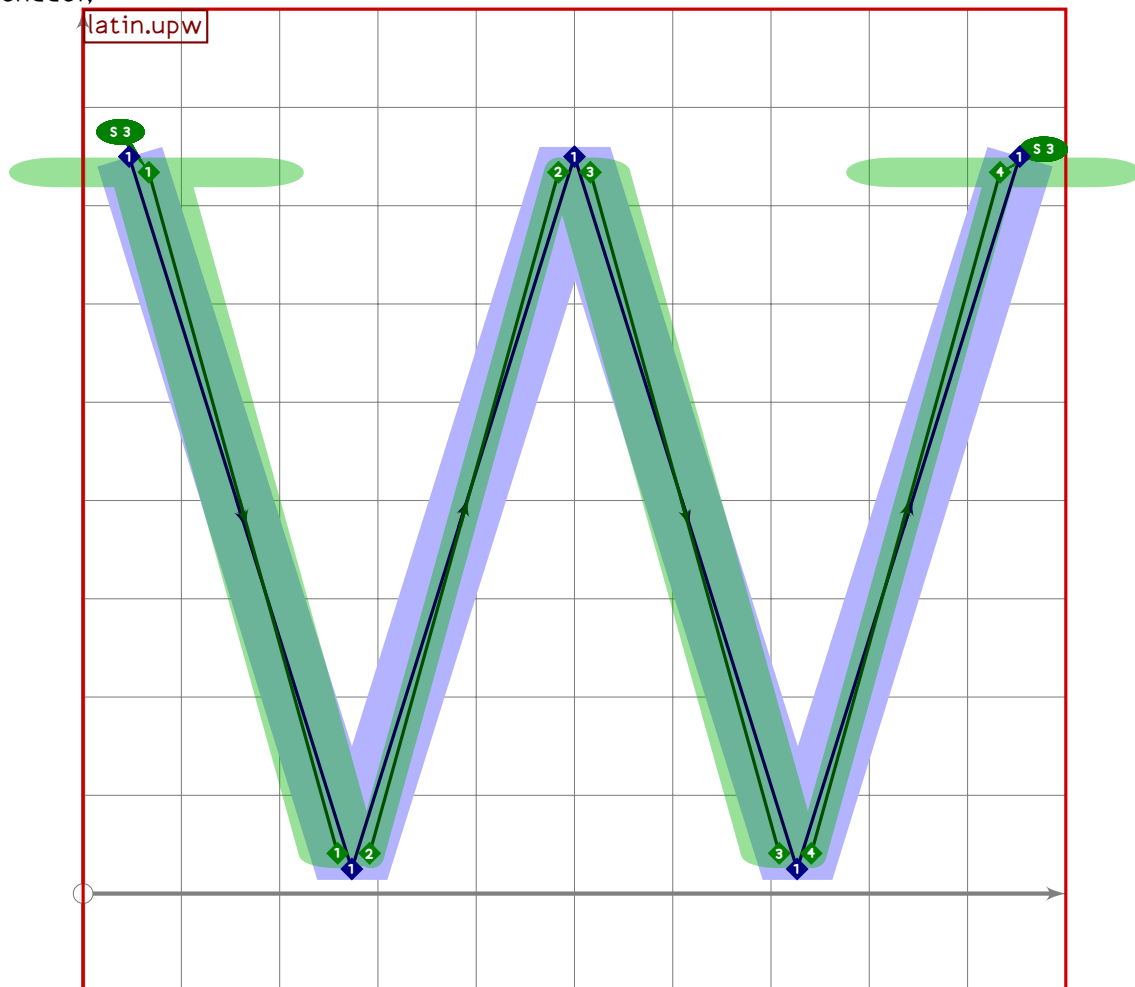
643
644 vardef tsu_curve.latin.upv =
645   add_proof_box("latin.upv");
646   (x1+x3)/2=x2=500;
647
648   y1=y3=latin_wide_high_v;
649   y2=latin_wide_low_v;
650
651   (x3-x1)=(y1-y2)*0.8;
652
653   if do_alteration:

```

```

654 bp[sp]:=z1-z2;
655 bq[sp]:=(1.6,1.6)-(1.6,1.6);
656 bo_serif[sp][0]:=3;
657
658 bp[sp*1]:=(z2*alternate_adjust*right)-z3;
659 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
660 bo_serif[sp*1][1]:=3;
661 bo_alternate[sp*1]:=true;
662
663 sp:=sp*2;
664 else:
665 bp[sp]:=z1-(0.95[z1,z2])-z2-z3;
666 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
667 bo_tip[sp][2]:=0;
668 bo_serif[sp][0]:=3;
669 bo_serif[sp][3]:=3;
670
671 sp:=sp*1;
672 fi;
673 enddef;

```

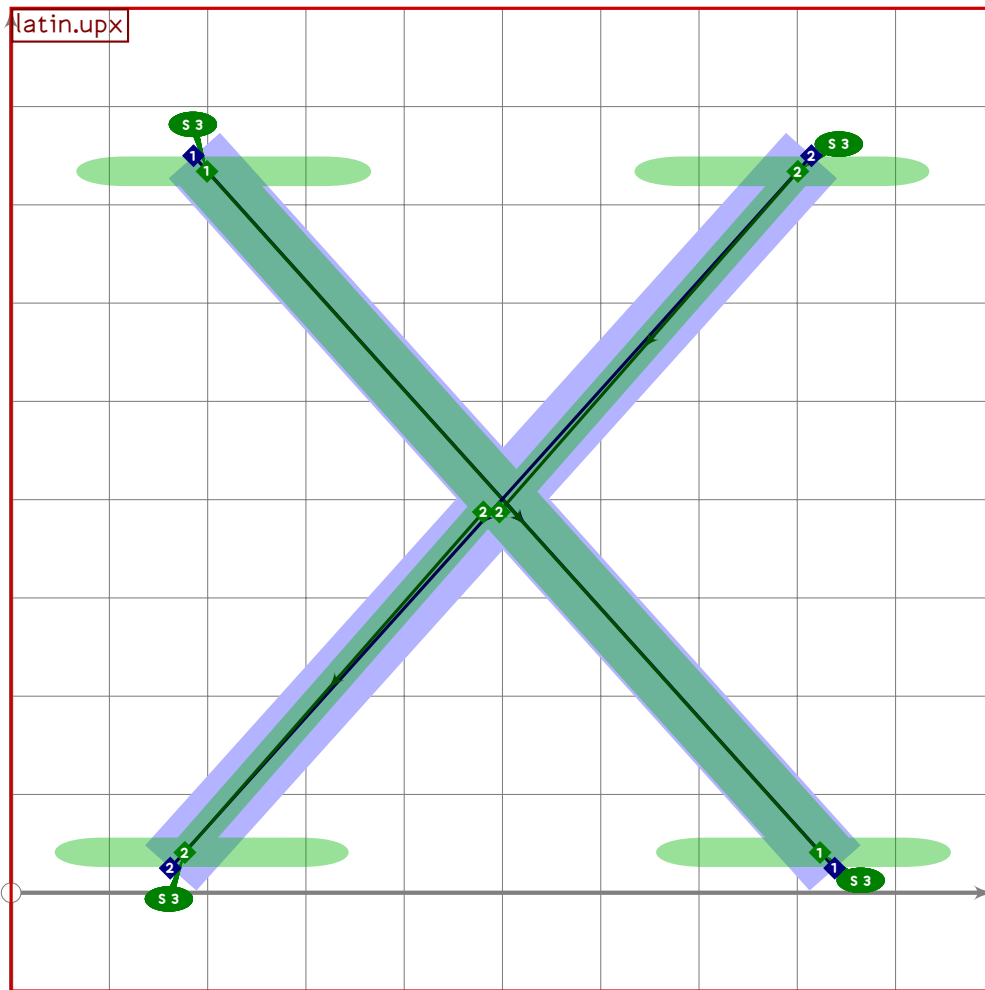


674

```

675 vardef tsu_curve.latin.upw =
676   add_proof_box("latin.upw");
677   if do_alteration:
678      $(x1 \cdot x5) / 2 = (x2 \cdot x4) / 2 = x3 = 500 - \text{alternate\_adjust} / 2;$ 
679      $(x3 - x2) = (x2 - x1);$ 
680
681      $y1 = y3 = y5 = \text{latin\_wide\_high\_v};$ 
682      $y2 = y4 = \text{latin\_wide\_low\_v};$ 
683
684      $(x5 - x1) = (y1 - y2) \cdot 1.25 - (3 \cdot \text{alternate\_adjust});$ 
685
686     bp[sp] := (z1 - z2) shifted (alternate_adjust * left);
687     bq[sp] := (1.6, 1.6) - (1.6, 1.6);
688     bo_serif[sp][0] := 3;
689
690     bp[sp+1] := z2 - z3;
691     bq[sp+1] := (1.6, 1.6) - (1.6, 1.6);
692     bo_alterate[sp+1] := true;
693
694     bp[sp+2] := (z3 - z4) shifted (alternate_adjust * right);
695     bq[sp+2] := (1.6, 1.6) - (1.6, 1.6);
696
697     bp[sp+3] := (z4 - z5) shifted (alternate_adjust * right * 2);
698     bq[sp+3] := (1.6, 1.6) - (1.6, 1.6);
699     bo_serif[sp+3][1] := 3;
700     bo_alterate[sp+3] := true;
701
702     sp := sp + 4;
703   else:
704      $(x1 \cdot x5) / 2 = (x2 \cdot x4) / 2 = x3 = 500;$ 
705      $(x3 - x2) = (x2 - x1);$ 
706
707      $y1 = y3 = y5 = \text{latin\_wide\_high\_v};$ 
708      $y2 = y4 = \text{latin\_wide\_low\_v};$ 
709
710      $(x5 - x1) = (y1 - y2) \cdot 1.25;$ 
711
712     bp[sp] := z1 - z2 - z3 - z4 - z5;
713     bq[sp] := (1.6, 1.6) - (1.6, 1.6) - (1.6, 1.6) - (1.6, 1.6) - (1.6, 1.6);
714     bo_tip[sp][1] := 0;
715     bo_tip[sp][2] := 0;
716     bo_tip[sp][3] := 0;
717     bo_serif[sp][0] := 3;
718     bo_serif[sp][4] := 3;
719
720     sp := sp + 1;
721   fi;
722 enddef;

```



```

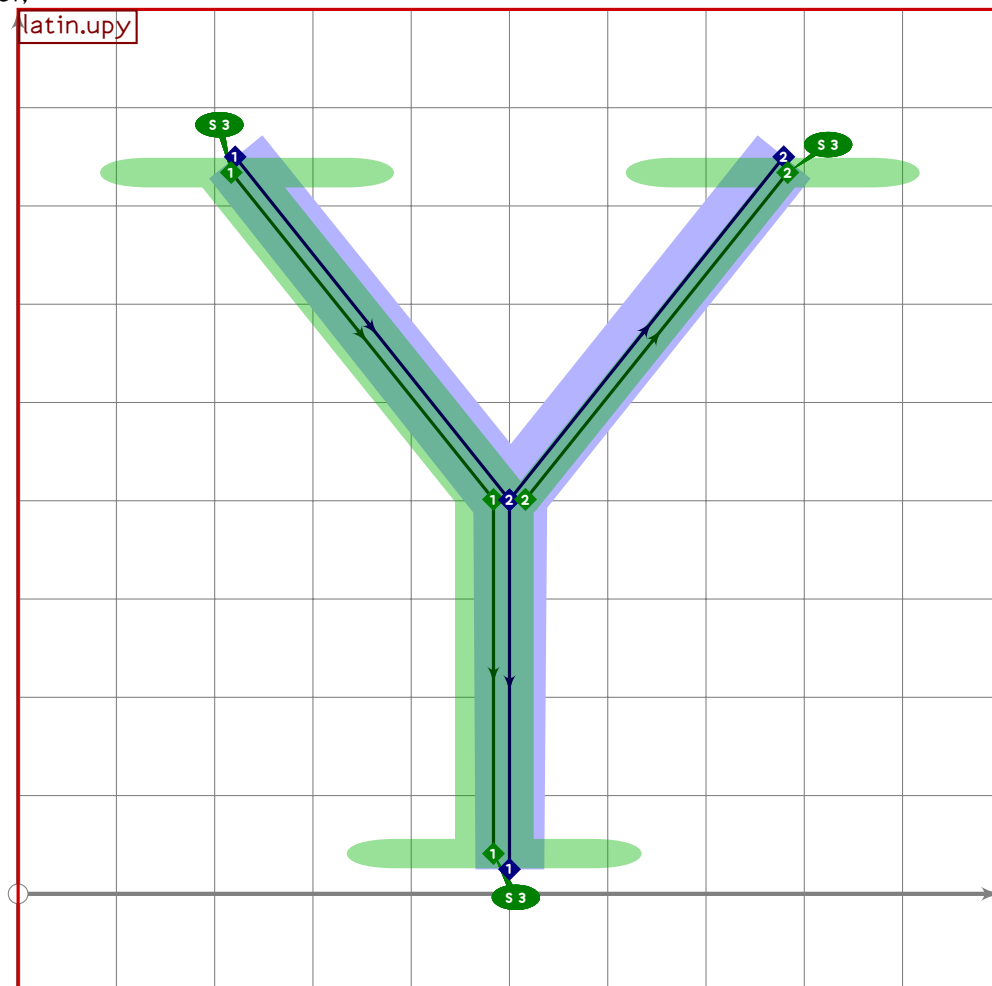
723
724 vardef tsu_curve.latin.upx =
725   add_proof_box("latin.upx");
726   (x1*x3)/2=500;
727   (x2*x4)/2=500;
728   (x2*x3-x1*x4)=((y1-y2)*0.9)*2;
729   (x3-x1)=(x2-x4)*0.93;
730
731   y1=y3=latin_wide_high_v;
732   y2=y4=latin_wide_low_v;
733
734   bp[sp]:=z1-z2;
735   bq[sp]:=(1.6,1.6)-(1.6,1.6);
736   bo_serif[sp][0]:=3;
737   bo_serif[sp][1]:=3;
738
739   if do_alteration:
740     bp[sp*1]:=z3-(0.5[z3,z4]*alternate_adjust*right/4)
741       -(0.5[z3,z4]*alternate_adjust*left/4)-z4;
742     bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
743     bo_serif[sp*1][0]:=3;

```

```

744 bo_serif[sp*1][3]:=3;
745 else:
746 bp[sp*1]:=z3-z4;
747 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
748 bo_serif[sp*1][0]:=3;
749 bo_serif[sp*1][1]:=3;
750 fi;
751 bo_alternate[sp*1]:=true;
752
753 sp:=sp*2;
754 enddef;

```



```

755
756 vardef tsu_curve.latin.upy =
757   add_proof_box("latin.upy");
758   (x3*x1)/2=x2=x4=if do_alteration: 500-alternate_adjust/2 else: 500 fi;
759   (x3-x1)=0.77*(y1-y4);
760
761   y1=y3=latin_wide_high_v;
762   y2=vmetric(0.52);
763   y4=latin_wide_low_v;
764

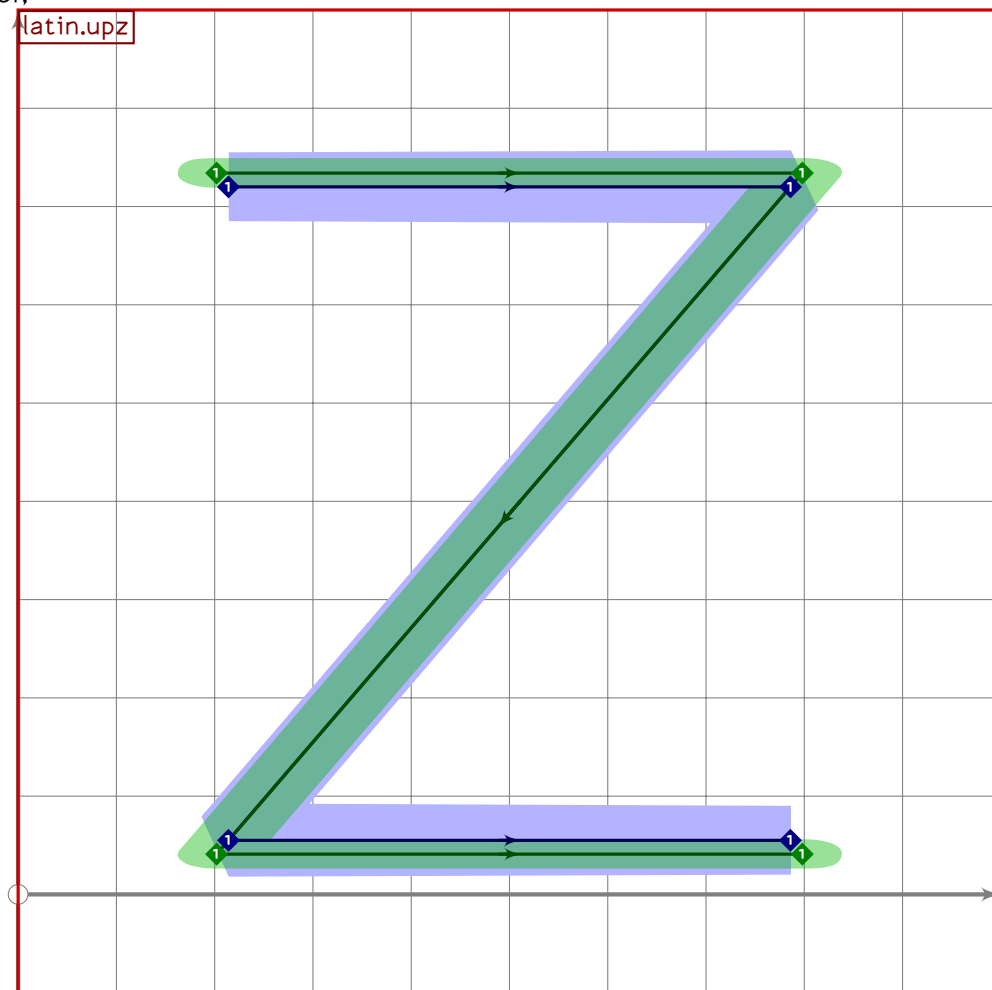
```



```

765 bp[sp]:=z1-z2-z4;
766 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
767 bo_tip[sp][1]:=0;
768 bo_serif[sp][0]:=3;
769 bo_serif[sp][2]:=3;
770
771 bp[sp*1]:=z2-z3;
772 if do_alteration: bp[sp*1]:=bp[sp*1] shifted (alternate_adjust*right); fi;
773 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
774 bo_serif[sp*1][1]:=3;
775 bo_alterate[sp*1]:=true;
776
777 sp:=sp*2;
778 enddef;

```



```

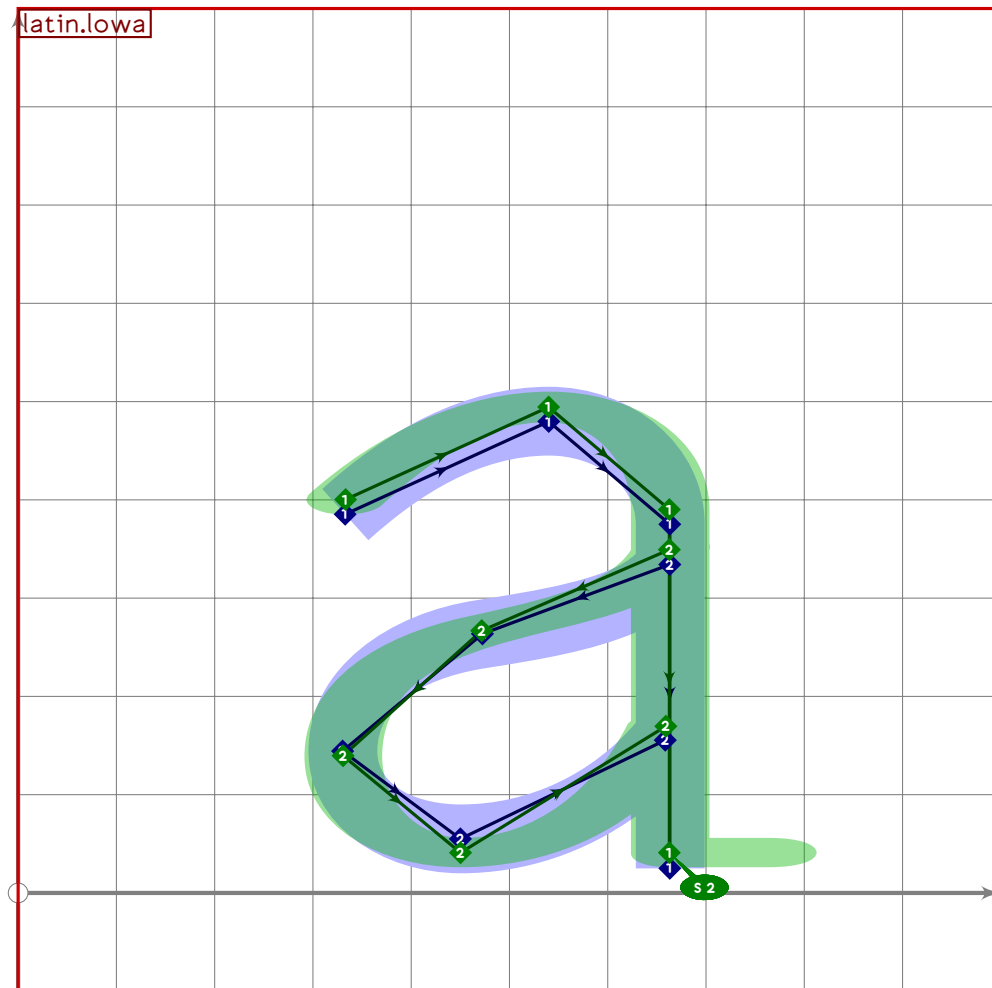
779
780 vardef tsu_curve.latin.upz =
781   add_proof_box("latin.upz");
782   y1=y2=latin_wide_high_h;
783   y3=y4=latin_wide_low_h;
784
785   x1=x3;

```

```

786 x2=x4;
787 (x1*x2)/2=500;
788 (x2-x1)=(y1-y3)*0.86;
789
790 bp[sp]:=z1-z2-z3-z4;
791 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
792 bo_tip[sp][1]:=0;
793 bo_tip[sp][2]:=0;
794
795 sp:=sp*1;
796 enddef;
797
798

```



```

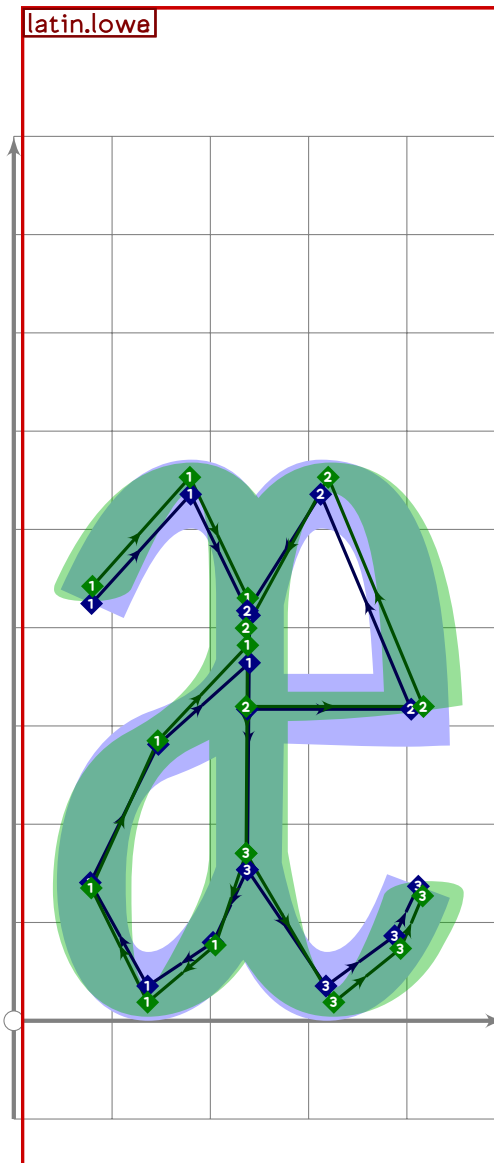
799
800 vardef tsu_curve.latin.low a =
801   add_proof_box("latin.low a");
802   x1=(-0.12)[x6,x3];
803   x3=x4=x5=x8;
804   0.51[x6,x3]=500;
805   x3-x1=0.82*(y2-y4);
806   x2=0.63[x6,x3];

```

```

807 x7=0.36[x6,x3];
808
809 y1=0.7[y4,y2];
810 y3=0.77[y4,y2];
811 y2=latin_wide_xheight_r;
812 y4=latin_wide_low_v;
813 y5=0.68[y4,y2];
814 y6=0.32[y7,y5];
815 y7=latin_wide_low_h;
816 y8=0.3[y4,y2];
817
818 bp[sp]:=z1{curl 0.2}..z2{right}..z3{down}..z4;
819 bp[sp]:=subpath (0,2,3) of bp[sp];
820 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
821 bo_serif[sp][3]:=2;
822
823 bp[sp*1]:=z5{dir 240}..z6{down}..z7{right}..z8;
824 bp[sp*1]:=subpath (0,2,97) of bp[sp*1];
825 bp[sp*1]:=insert_nodes(bp[sp*1])(0.5);
826 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
827
828 sp:=sp*2;
829 enddef;

```



```

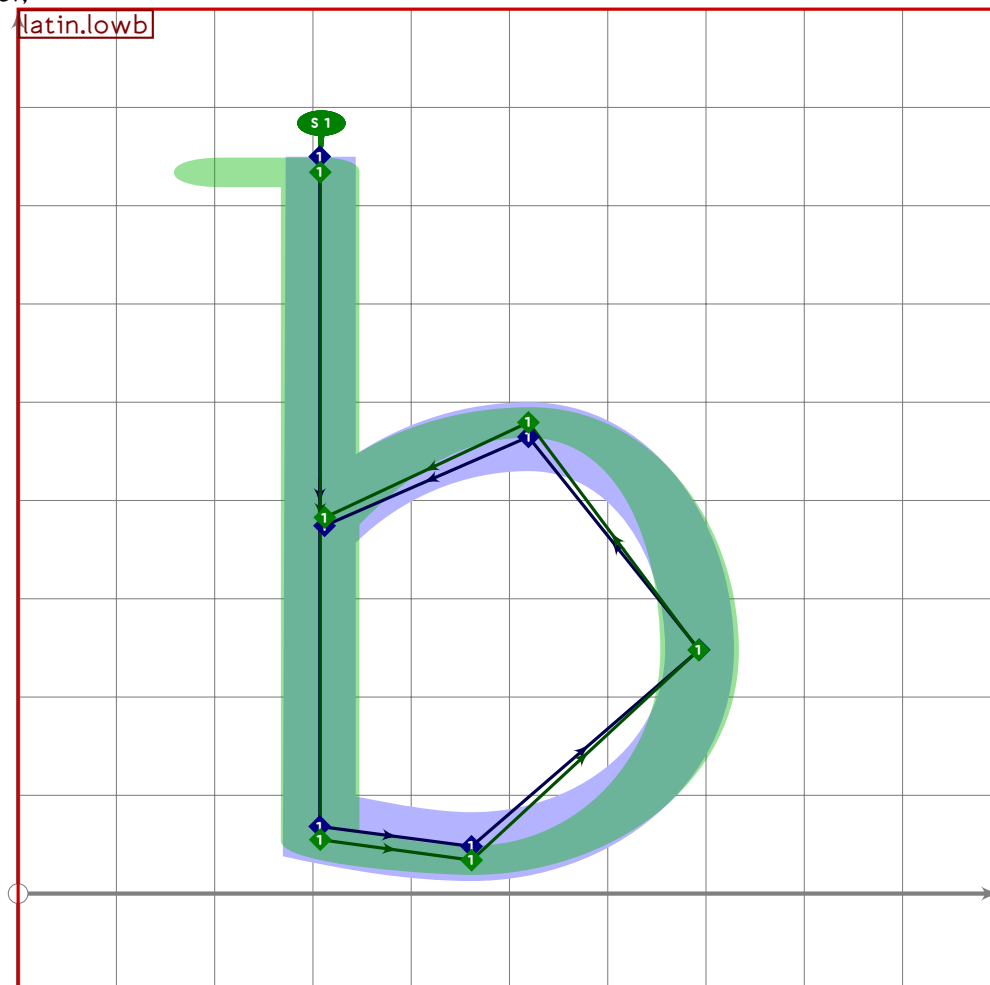
830
831 vardef tsu_curve.latin.lowae =
832   add_proof_box("latin.lowae");
833   tsu_curve.latin.lowae;
834   bo_serif[sp-2][3]:=whatever;
835   bp[sp-2]:=(subpath (0,2) of bp[sp-2])--reverse bp[sp-1];
836   numeric x[],y[];
837   sp:=sp-1;
838   tsu_curve.latin.lowae;
839   sp:=sp-2;
840   numeric x[],y[];
841   z1=point 3 of bp[sp];
842   path xbp;
843   xbp=bp[sp+1] shifted (0,ypart ((llcorner bp[sp])-(llcorner bp[sp+1])));
844   x2=xpart (xbp intersectionpoint ((470,y1)-(0,y1)));
845   bp[sp]:=bp[sp] shifted (470-x1,0);

```

```

846 bp[sp*1]:=bp[sp*1] shifted (470-x*2,0);
847 xbp:=xbp shifted (470-x*2,0);
848
849 bp[sp*2]:=subpath (xpart (xbp intersectiontimes ((500,y1)-(0,y1))),
850             infinity) of xbp;
851 bp[sp*2]:=insert__nodes(bp[sp*2])((length bp[sp*2])-0.3);
852
853 bp[sp*1]:=subpath (ypart (((470,1000)-(470,0))
854             intersectiontimes (subpath (0,1) of bp[sp*1])),
855             1*ypart (((470,1000)-(470,0))
856             intersectiontimes (subpath (1,infinity) of bp[sp*1])))
857             of bp[sp*1];
858
859 bp[sp]:=insert__nodes(bp[sp])(3,4);
860 bq[sp]:=(1,6,1,6) for i=1 upto length bp[sp]: -(1,6,1,6) endfor;
861 bq[sp*1]:=(1,6,1,6) for i=1 upto length bp[sp*1]: -(1,6,1,6) endfor;
862 bq[sp*2]:=(1,6,1,6) for i=1 upto length bp[sp*2]: -(1,6,1,6) endfor;
863
864 sp:=sp*3;
865 enddef;

```

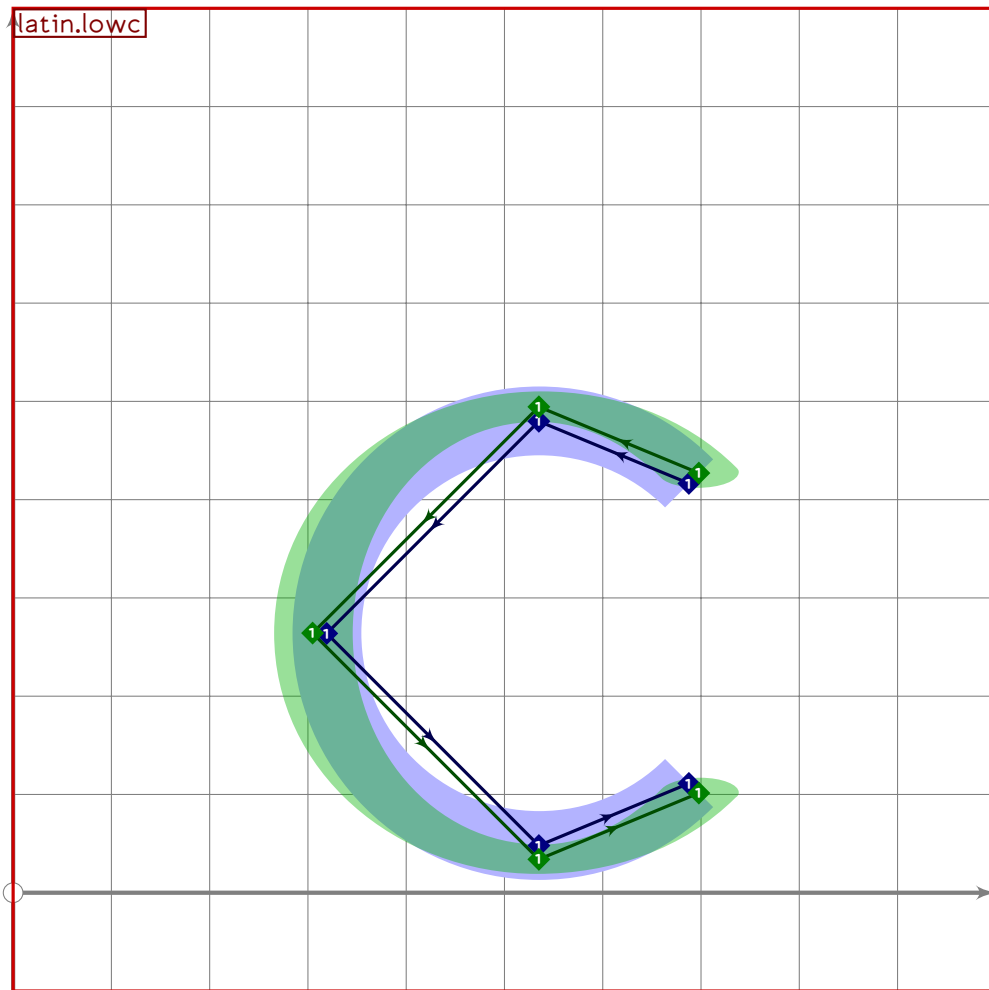


866

```

867 vardef tsu_curve.latin.lowb =
868   add_proof_box("latin.lowb");
869   (x1*x4)/2=500;
870   (x4-x1)=(y1-y3)*0.55;
871   x2=x1-x6;
872   x3=0.4[x2,x4];
873   x5=0.55[x2,x4];
874
875   y1=latin_wide_high_v;
876   y2=latin_wide_lc_baselif;
877   y3=latin_wide_low_r;
878   y4=0.48[y3,y5];
879   y5=latin_wide_xheight_h;
880   y6=0.77[y3,y5];
881
882   bp[sp]:=z1-z2{curl 0.05}{right}z3..{up}z4..{left}z5..z6;
883   bp[sp]:=subpath (0,4.97) of bp[sp];
884   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
885   bo_tip[sp][1]:=1;
886   bo_serif[sp][0]:=1;
887
888   sp:=sp*1;
889 enddef;

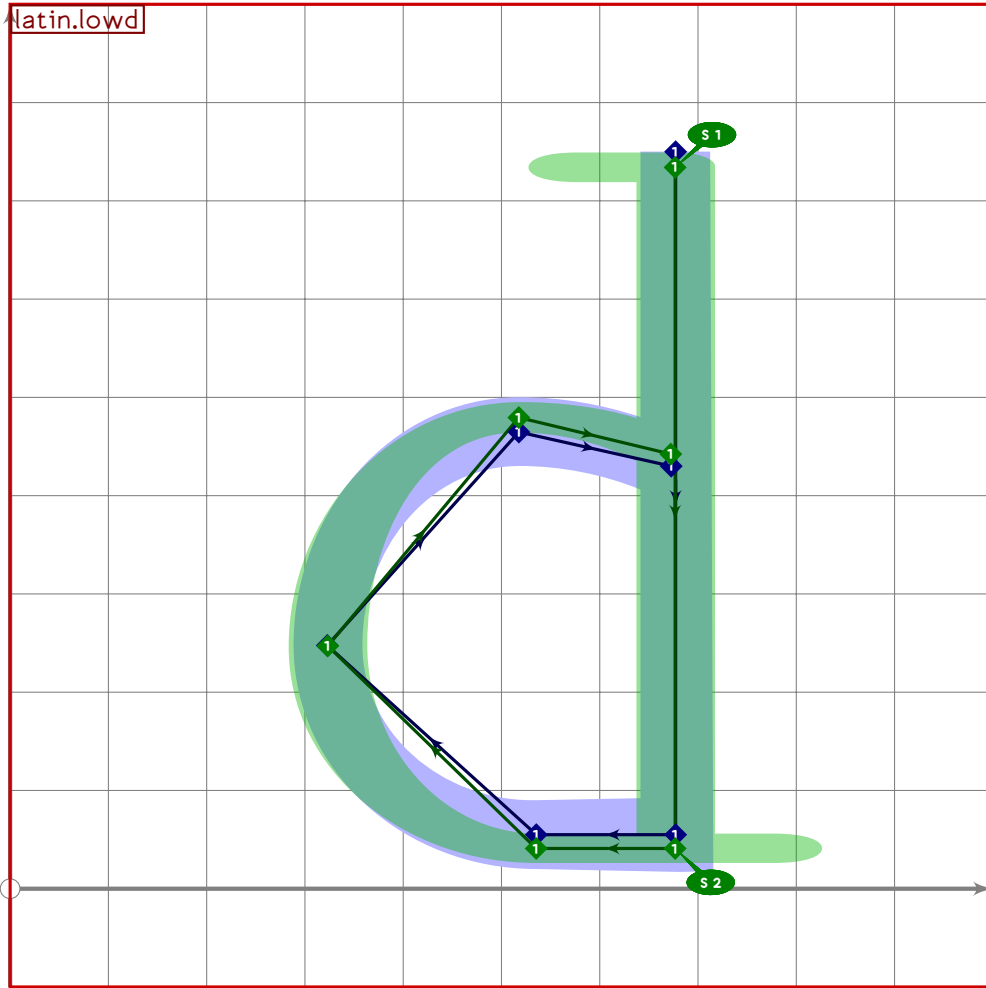
```



```

890
891 vardef tsu_curve.latin.lowc =
892   add_proof_box("latin.lowc");
893   bp[sp]:=(subpath (0.5,3.5) of ((1,0)..(0,1)..(-1,0)..(0,-1)..cycle))
894     scaled ((latin_wide_xheight_r-latin_wide_low_r)/2)
895     shifted ((xpart centre_pt,(latin_wide_xheight_r*latin_wide_low_r)/2)
896       *(35,0));
897   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
898
899   sp:=sp*1;
900 enddef;

```



```

901
902 vardef tsu_curve.latin.lowd =
903   add_proof_box("latin.lowd");
904   (x1*x4)/2=500;
905   (x1-x4)=(y1-y3)*0.51;
906   x2=x1-x6;
907   x3=0.4[x2,x4];
908   x5=0.45[x2,x4];
909
910   y1=latin_wide_high_v;
911   y2=y3=latin_wide_low_h;
912   y4=0.47[y3,y5];
913   y5=latin_wide_xheight_h;
914   y6=0.91[y3,y5];
915
916   bp[sp]:=z1-z2{left}..{left}z3..{up}z4..{right}z5..z6;
917   bp[sp]:=subpath (0,4.97) of bp[sp];
918   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
919   bo_tip[sp][1]=1;
920   bo_serif[sp][0]=1;
921   bo_serif[sp][1]=2;

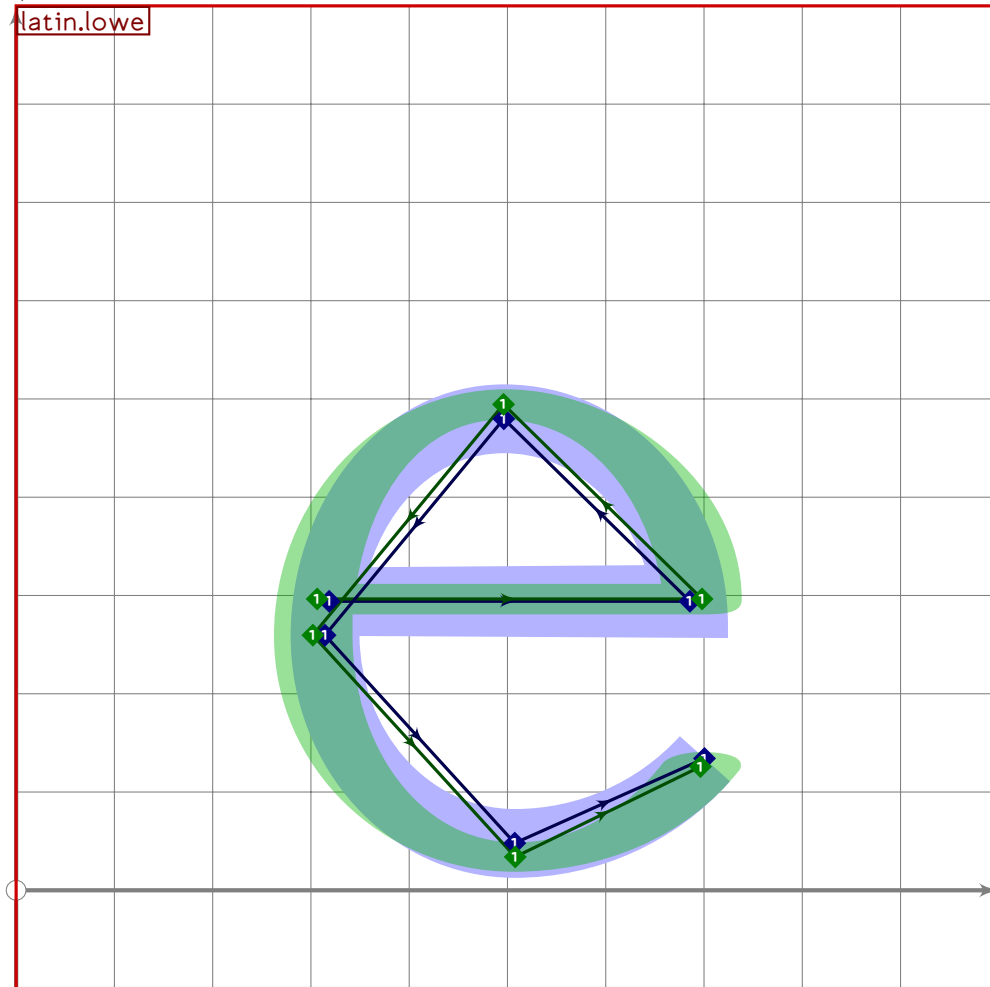
```



```

922
923 sp:=sp*1;
924 enddef;

```



```

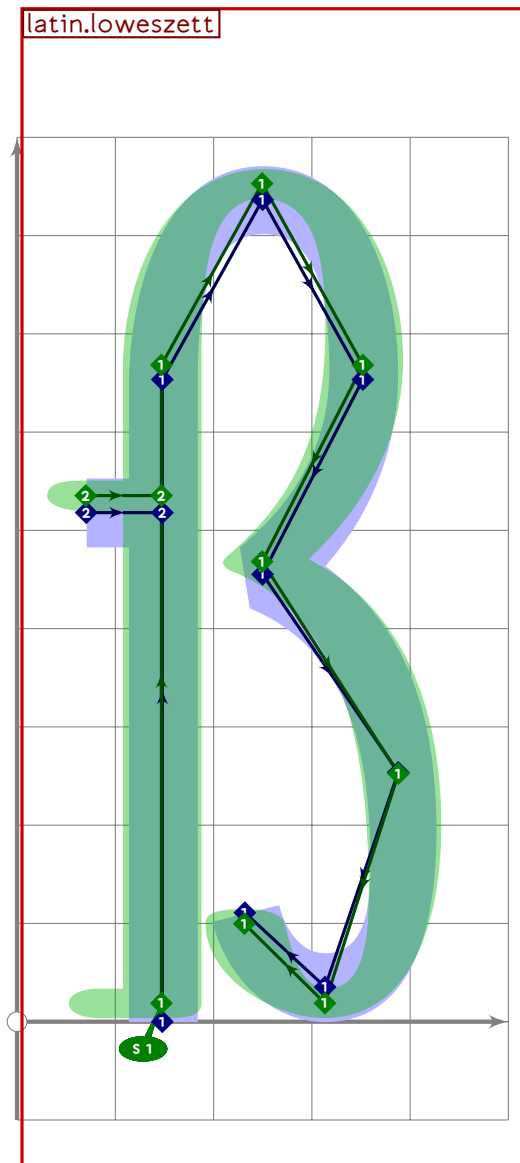
925
926 vardef tsu_curve.latin.lowe =
927   add_proof_box("latin.lowe");
928   y2=0.57[y5,y3];
929   y3=latin_wide_xheight_r;
930   y4=0.49[y5,y3];
931   y5=latin_wide_low_r;
932   y6=0.35[y5,y2];
933
934   (x2*x4)/2=500;
935   (x2-x4)=0.86*(y3-y5);
936   x3=0.49[x4,x2];
937   x5=0.52[x4,x2];
938   x6=1.04[x4,x2]-(if sharp_corners: 0 else: (mbrush_width/3) fi);
939
940   bp[sp]:=z2{curl 0.7}..z3{left}..z4{down}..z5{right}..z6;
941   z1=bp[sp] intersectionpoint ((z2*(-1000,0))-z2*(-10,0));
942   bp[sp]:=(z1*2*right)-bp[sp];

```

```

943 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
944 bo_tip[sp][1]:=1;
945
946 sp:=sp*1;
947 enddef;

```



```

948
949 vardef tsu_curve.latin.loweszett =
950   add_proof_box("latin.loweszett");
951   (x1*x6)/2=510;
952   (x6-x1)=3*(y3-y2);
953   x2=x1;
954   x3=x5=(x1+x4)/2;
955   x4=0.85[x1,x6];
956   x7=0.69[x1,x6];
957   x8=0.35[x1,x6];
958

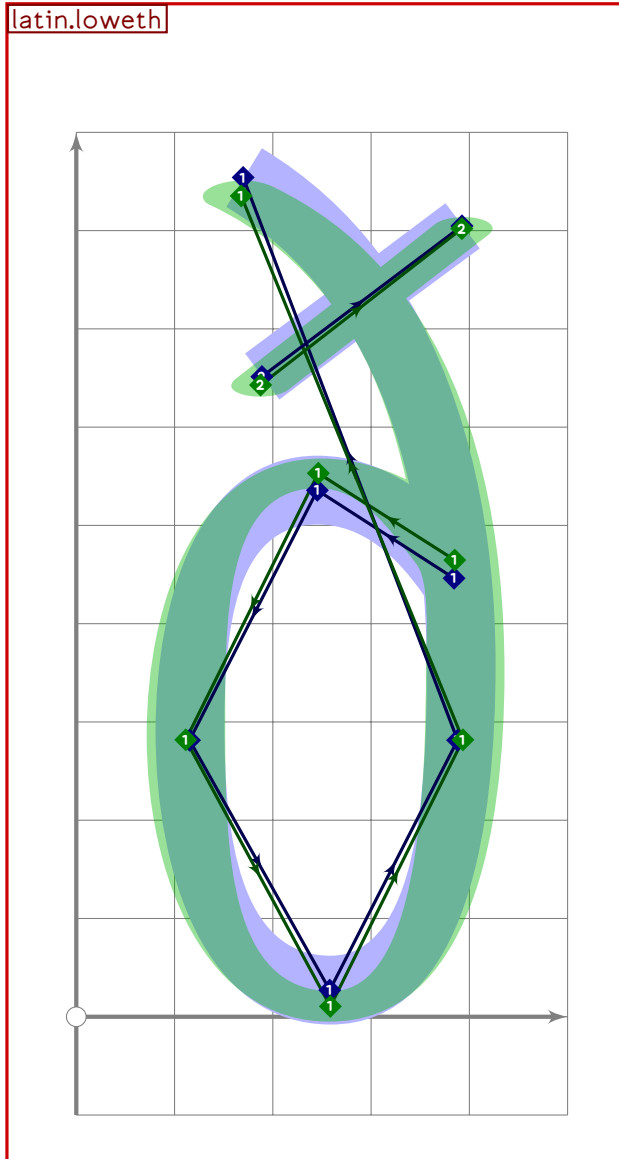
```

```

959 y1=latin_wide_low_v;
960 y2=y4=0.52[y5,y3];
961 y3=latin_wide_high_r;
962 y5=0.87[y7,latin_wide_xheight_h];
963 y6=0.52[y7,y5];
964 y7=latin_wide_low_h;
965 y8=0.18[y7,y5];
966
967 bp[sp]:=z1-z2{dir 88}..z3{right}..z4..{dir 200}z5{dir 350}..
968   z6..z7{left}..z8{dir 120};
969 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
970 bo_tip[sp][4]:=0;
971 bo_serif[sp][0]:=1;
972
973 bp[sp*1]:=(x1-150,latin_wide_xheight_h)-(x1,latin_wide_xheight_h);
974 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
975
976 sp:=sp*2;
977 enddef;

```

latin.loweth

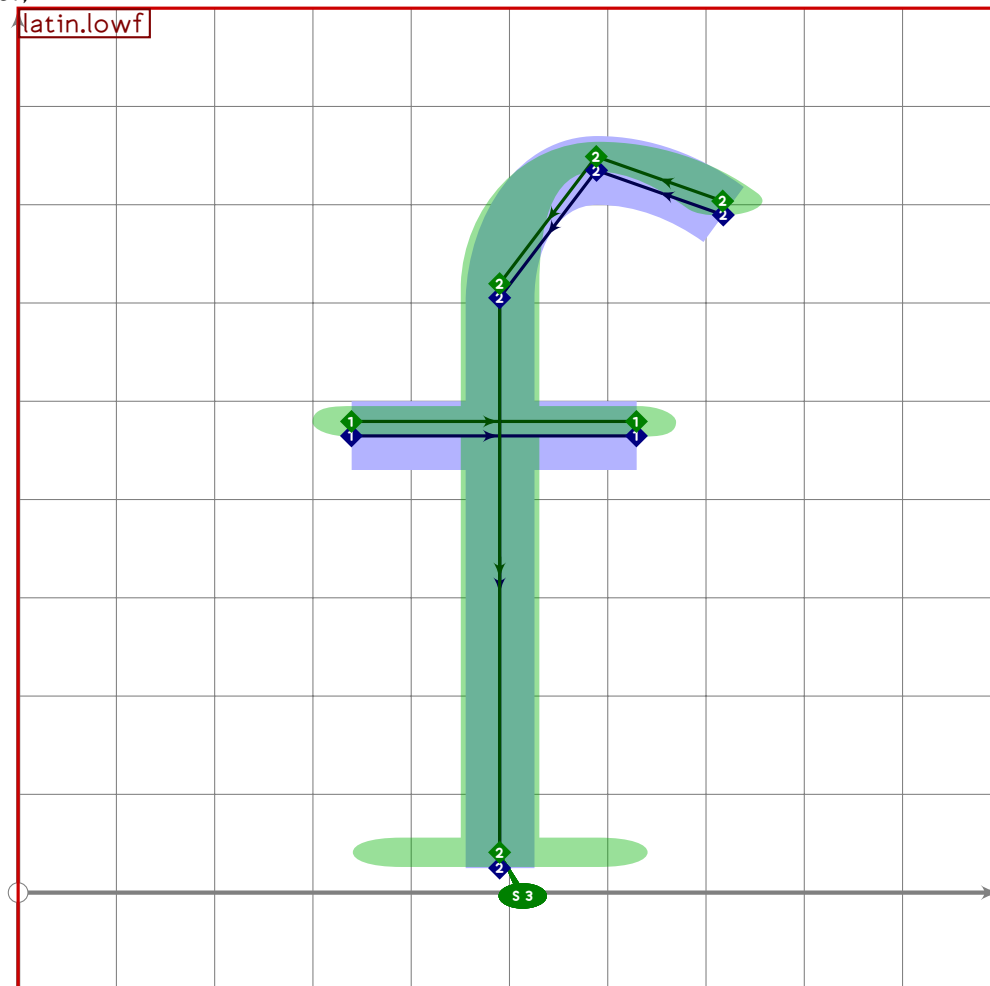


```
978
979 vardef tsu_curve.latin.loweth =
980   add_proof_box("latin.loweth");
981   (x3*x5)/2=(x2*x4)/2=510;
982   x4-x2=20;
983   (x5-x3)=(y2-y4);
984   x1=1.3[x3,x5];
985   x6=0.2[x3,x5];
986
987   y1=0.25[y4,y2];
988   y3=y5=0.5[y4,y2];
989   y2=latin_wide_xheight_r;
990   y4=latin_wide_low_r;
991   y6=latin_wide_high_v;
992
993   bp[sp]:=z1..z2{left}..z3..z4{right}..z5..{curl 0.6}z6;
```

```

994 bp[sp]:=subpath (xpart ((subpath (0,1) of bp[sp]) intersectiontimes
995 (subpath (2,infinity) of bp[sp])),infinity) of bp[sp];
996 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
997
998 z7=point 4.67 of bp[sp];
999 z8=z7*whatever*dir 202;
1000 x8=0.27[x3,x5];
1001 z9=2[z8,z7];
1002
1003 bp[sp*1]:=z8-z9;
1004 bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
1005 bo_size[sp*1]:=85;
1006
1007 sp:=sp*2;
1008 enddef;

```



```

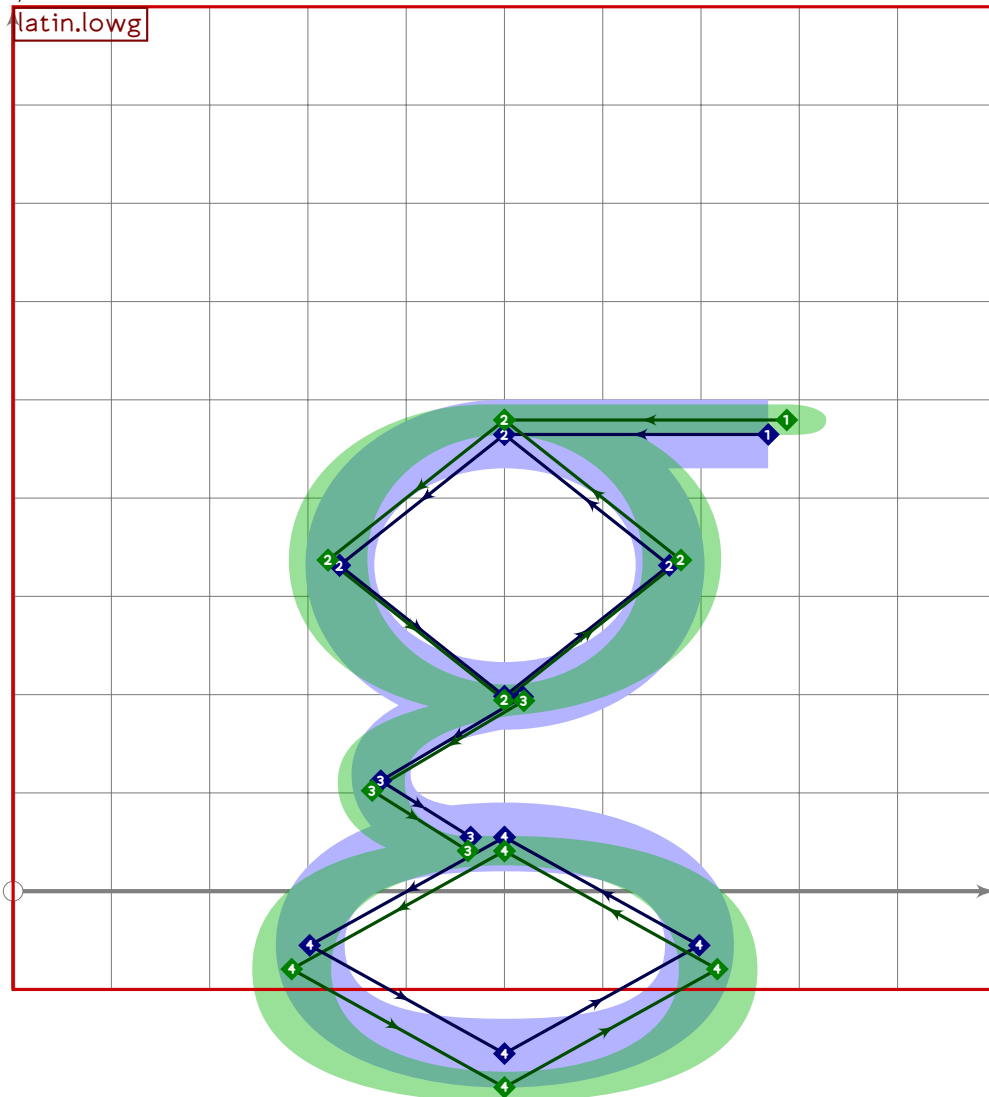
1009
1010 vardef tsu_curve.latin.lowf =
1011   add_proof_box("latin.lowf");
1012   (x2-x1)=290;
1013   x5=x6=490=0.52[x1,x2];
1014   x3-x5=2*(y4-y5);

```

```

1015  x4=0.38[x5,x3];
1016
1017  y1=y2=latin_wide_xheight_h;
1018  y5=0.52[y2,y4];
1019  y3=0.73[y2,y4];
1020  y4=latin_wide_high_r;
1021  y6=latin_wide_low_v;
1022
1023  bp[sp]:=z1-z2;
1024  bq[sp]:=(1.6,1.6)-(1.6,1.6);
1025
1026  bp[sp*1]:=z3{curl 0.6}..z4{left}..{dir 268}z5{down}-z6;
1027  bp[sp*1]:=subpath (0.23,3) of bp[sp*1];
1028  bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1029  bo_serif[sp*1][3]:=3;
1030
1031  sp:=sp*2;
1032 enddef;

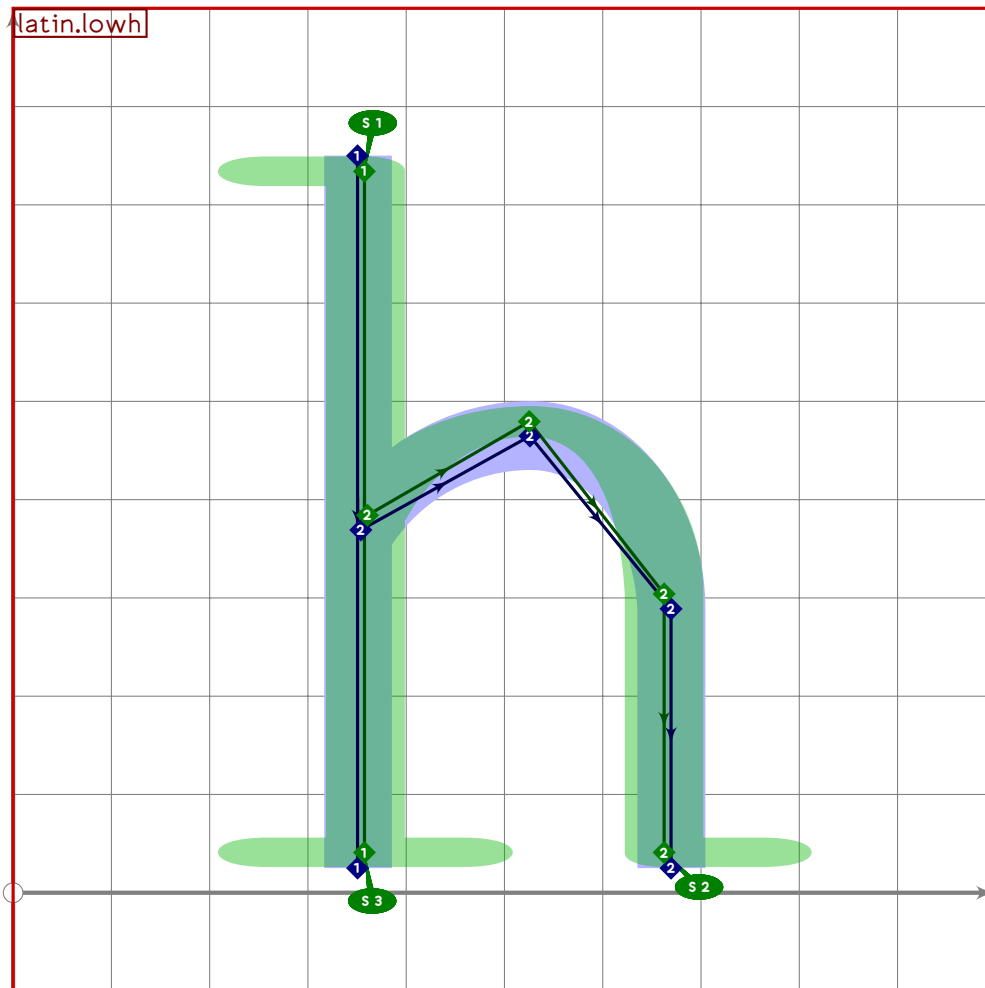
```



```

1033
1034 vardef tsu_curve.latin.lowg =
1035   add_proof_box("latin.lowg");
1036   x2=x4=x7=x9=500;
1037   x1=1.6[x2,x5];
1038   x5-x2=x2-x3;
1039   x5-x3=1.26*(y2-y4);
1040   x6=0.25[x3,x2];
1041   x10-x7=x7-x8;
1042   x10-x8=1.8*(y7-y9);
1043
1044   y1=y2=latin_wide_xheight_h;
1045   y3=y5=0.5[y4,y2];
1046   y4=0.35[y7,y2];
1047   y6=0.4[y7,y4];
1048   y7=latin_wide_low_h;
1049   y8=y10=0.5[y9,y7];
1050   y9=latin_wide_desc_r;
1051
1052   bp[sp]:=z1-z2;
1053   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1054
1055   bp[sp*1]:=z3..z4..z5..z2..cycle;
1056   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
1057
1058   bp[sp*3]:=z7..z8..z9..z10..cycle;
1059   bq[sp*3]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
1060
1061   bp[sp*2]:=(point 1.2 of bp[sp*1]){direction 1.2 of bp[sp*1]}..z6..
1062     (point 0.05 of bp[sp*3]){direction 0.05 of bp[sp*3]};
1063   bp[sp*2]:=subpath (0.13,1.87) of bp[sp*2];
1064   bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1065   bo_size[sp*2]:=85;
1066
1067   sp:=sp*4;
1068 enddef;

```



```

1069
1070 vardef tsu_curve.latin.lowh =
1071   add_proof_box("latin.lowh");
1072   (x1+x5)/2=510;
1073   (x5-x1)=(y1-y2)*0.44;
1074   x2=x1=x3;
1075   x4=0.55[x3,x5];
1076   x6=x5;
1077
1078   y1=latin_wide_high_v;
1079   y2=y6=latin_wide_low_v;
1080   y3=0.77[y2,y4];
1081   y4=latin_wide_xheight_h;
1082   y5=0.60[y2,y4];
1083
1084   bp[sp]:=z1-z2;
1085   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1086   bo_serif[sp][0]:=1;
1087   bo_serif[sp][1]:=3;
1088
1089   bp[sp*1]:=z3..z4{right}..z5{dir 273}-z6;

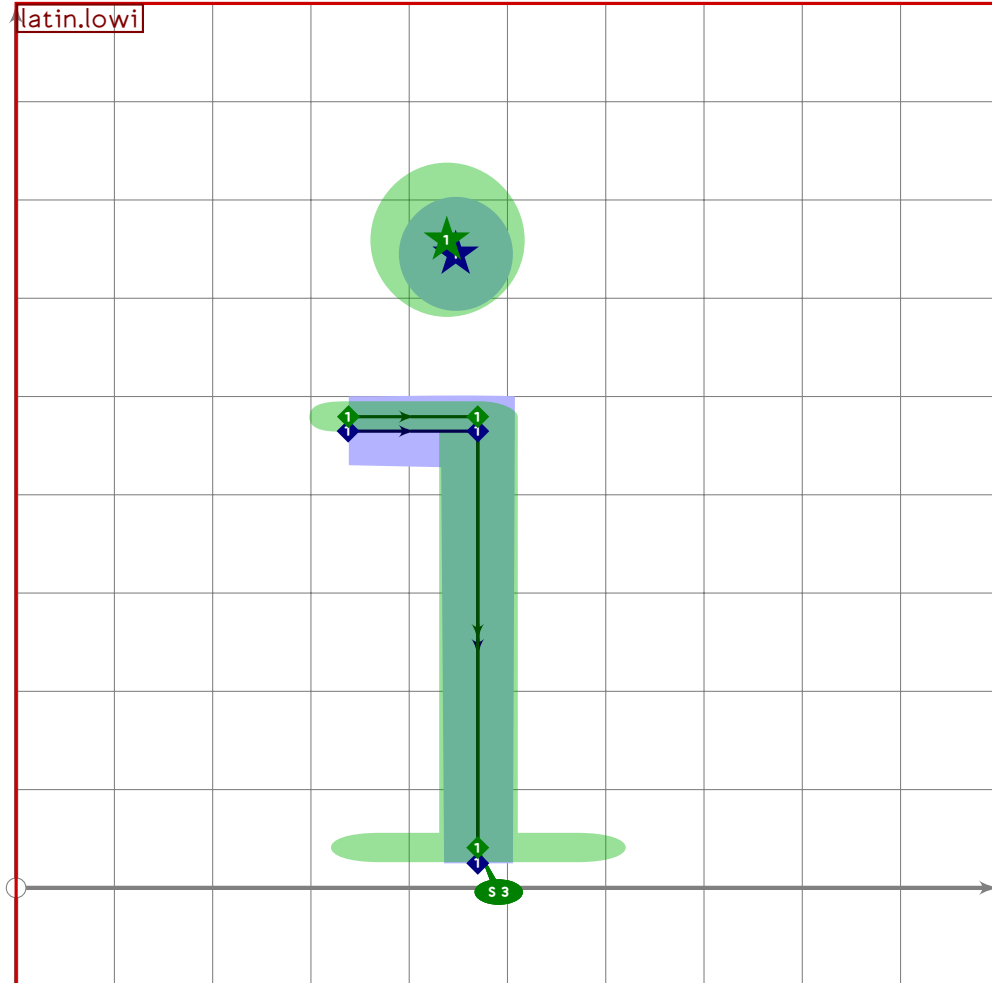
```



```

1090 bp[sp*1]:=subpath (0.03,3) of bp[sp*1];
1091 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1092 bo_serif[sp*1][3]:=2;
1093
1094 sp:=sp*2;
1095 enddef;

```



```

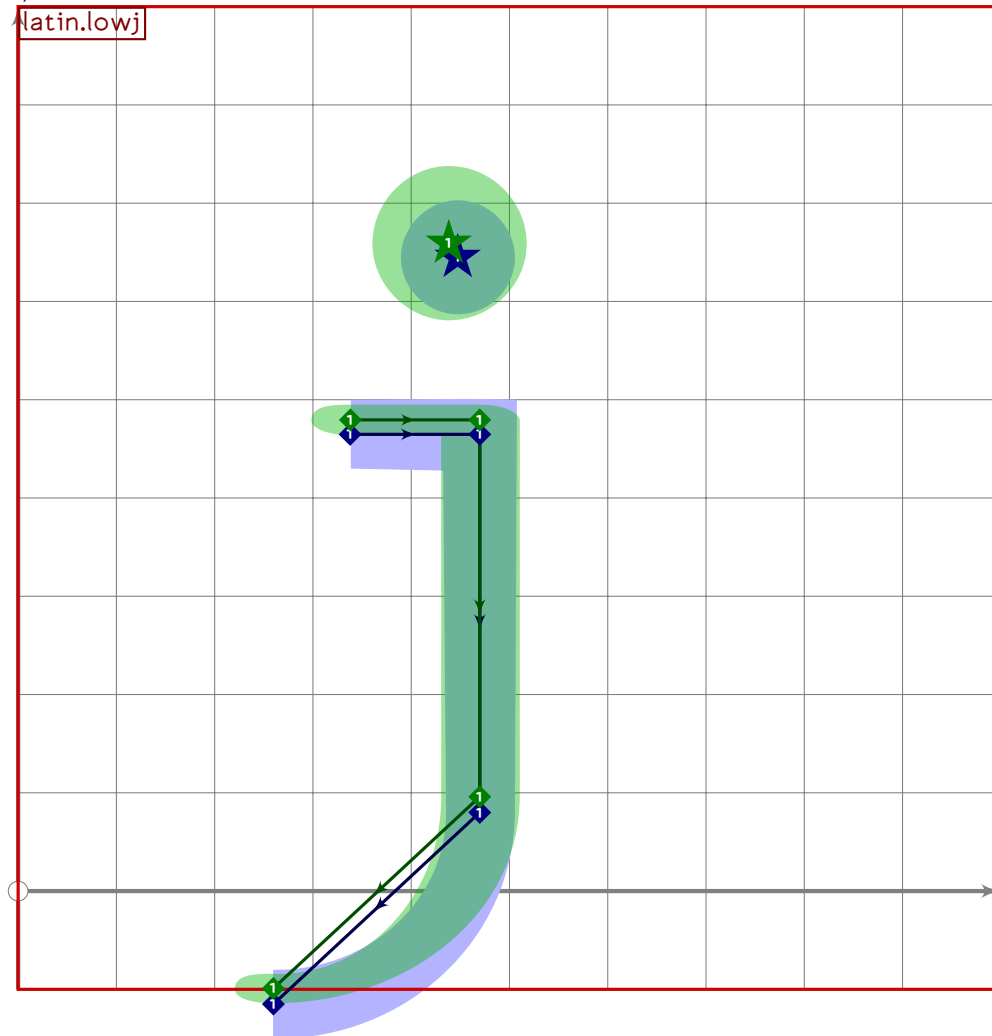
1096
1097 vardef tsu_curve.latin.lowi =
1098   add_proof_box("latin.lowi");
1099   x2=x3;
1100   0.85[x1,x2]=450;
1101   (x2-x1)=0.3(y2-y3);
1102   x4=x2-mbrush_width*0.6;
1103
1104   y1=y2=latin_wide_xheight_h;
1105   y3=latin_wide_low_v;
1106   y4=0.5[y2,latin_wide_high_v]*mbrush_width;
1107
1108   bp[sp]:=z1-z2-z3;
1109   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1110   bo_tip[sp][1]:=1;

```

```

1111 bo_serif[sp][2]:=3;
1112
1113 sp:=sp*1;
1114 lcblob1:=fullcircle rotated 45 scaled (mbrush_width*2.7*15)
1115   shifted (z4 transformed tsu_rescale_xform)
1116   transformed inverse tsu_rescale_xform;
1117 enddef;

```



```

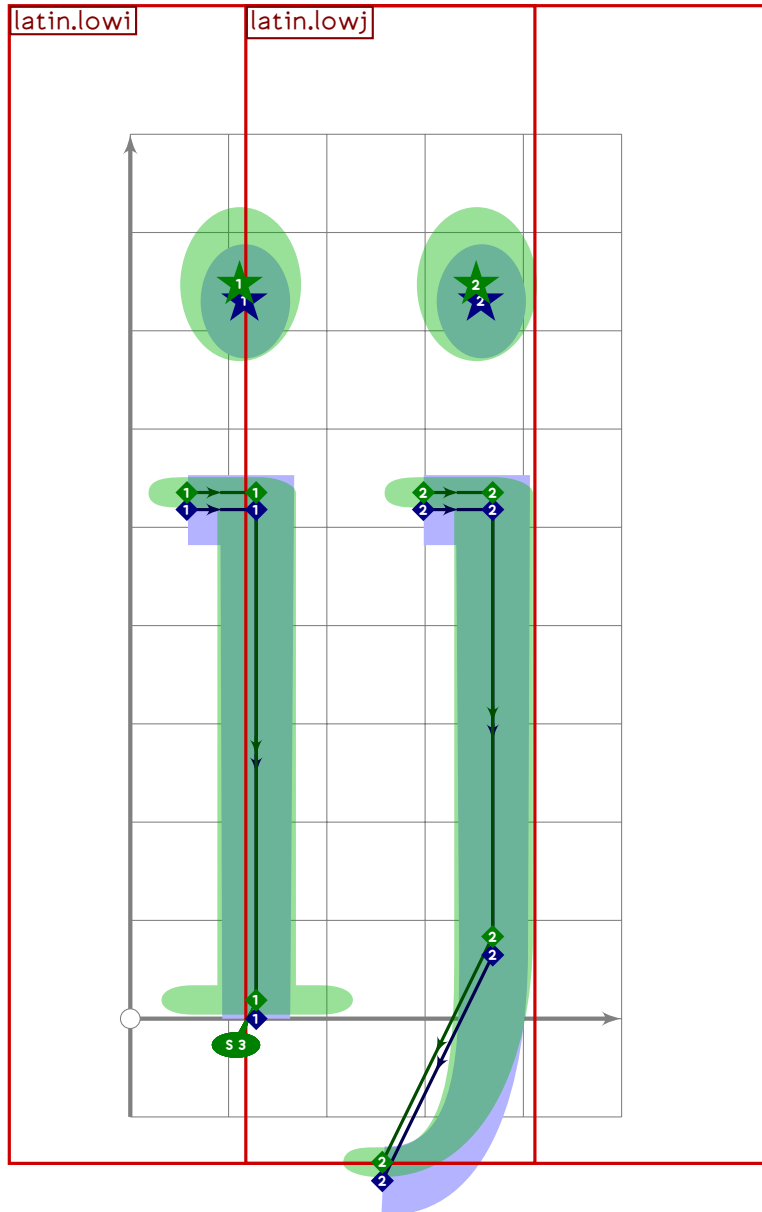
1118
1119 vardef tsu_curve.latin.lowj =
1120   add_proof_box("latin.lowj");
1121   x2=x3;
1122   0.85[x1,x2]=450;
1123   (x2-x1)=0.3(y2-y3);
1124   x5=x2-mbrush_width*0.6;
1125
1126   y1=y2=latin_wide_xheight_h;
1127   y3=latin_wide_low_v;
1128   y5=0.5[y2,latin_wide_high_v]*mbrush_width;
1129
1130   z4=z3*(-210,140);

```

```

1131
1132 bp[sp]:=(z1-z2-(z3*(0,55)))..{curl 0.8}z4;
1133 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1134 bo_tip[sp][1]:=1;
1135
1136 sp:=sp*1;
1137 lcblob1:=fullcircle scaled (mbrush_width*2.7*15)
1138   shifted (z5 transformed tsu_rescale_xform)
1139   transformed inverse tsu_rescale_xform;
1140 endif;

```



```

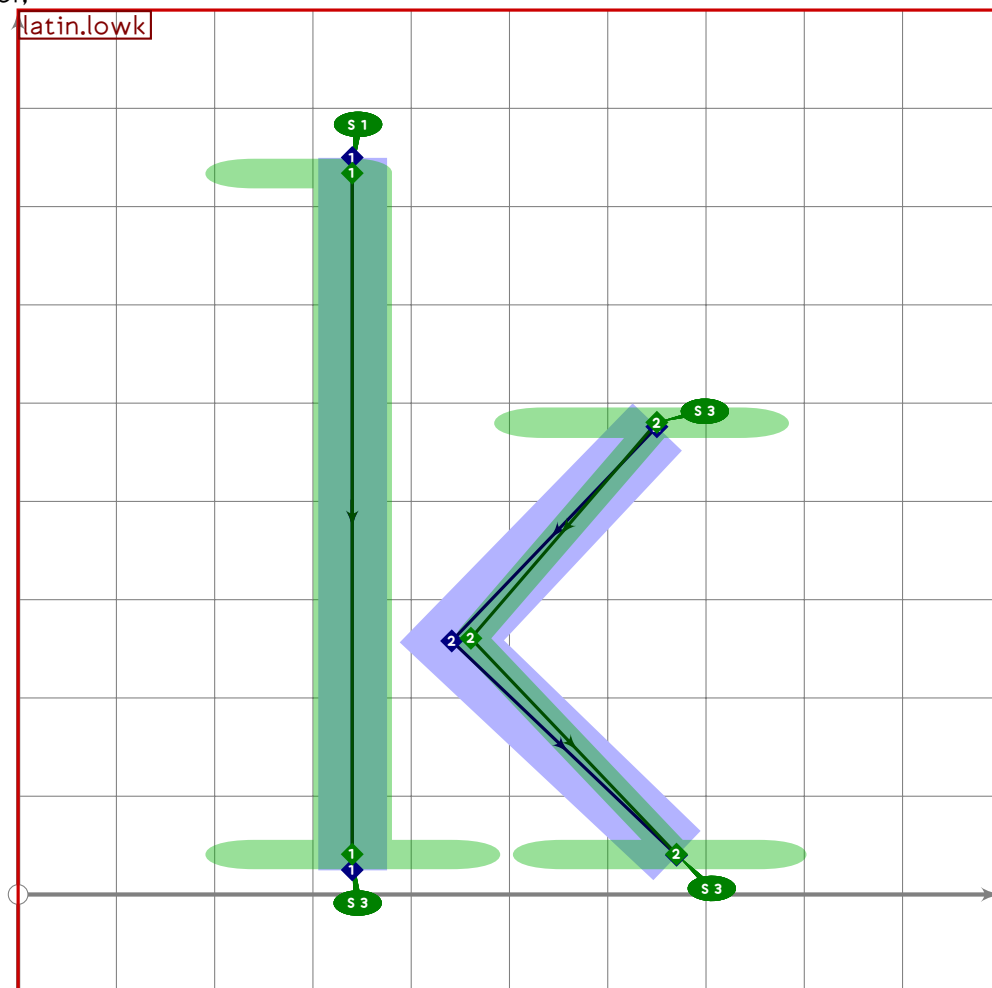
1141
1142 vardef tsu_curve.latin.lowij =
1143   add_proof_box("latin.lowij");
1144   tsu_xform(identity shifted (-250,0))(tsu_curve.latin.lowi);
1145   numeric x[],y[];

```

```

1146 tsu_xform(identity shifted (200,0))(tsu_curve.latin.lowj);
1147 lcblob2:=lcblob1;
1148 lcblob1:=lcblob1 shifted (-450,0);
1149 enddef;

```



```

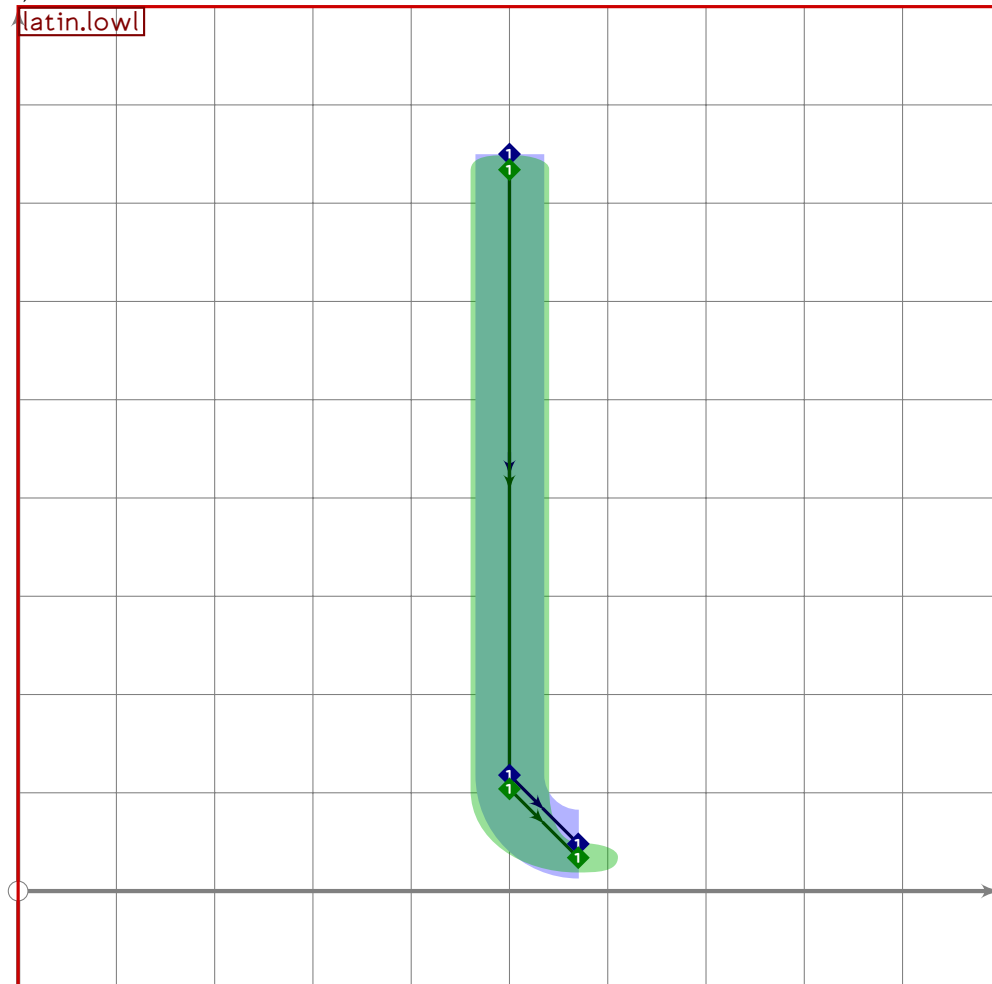
1150
1151 vardef tsu_curve.latin.lowk =
1152   add_proof_box("latin.lowk");
1153   z1=(340,latin_wide_high_v);
1154   z2=(340,latin_wide_low_v);
1155   z3=(650,(latin_wide_xheight_v*latin_wide_xheight_h)/2);
1156   x4=340*mbrush_width*if sharp_corners: 2.7 else: 2.3 fi;
1157   y4=(y3*y5)/2;
1158   z5=(670,0.5[latin_wide_low_h,latin_wide_low_v]);
1159
1160   bp[sp]:=z1-z2;
1161   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1162   bo_serif[sp][0]:=1;
1163   bo_serif[sp][1]:=3;
1164
1165   bp[sp*1]:=z3-z4-z5;
1166   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);

```

```

1167 bo_tip[sp+1][1]:=1;
1168 bo_serif[sp+1][0]:=3;
1169 bo_serif[sp+1][2]:=3;
1170 bo_alterate[sp+1]:=true;
1171
1172 sp:=sp*2;
1173 enddef;

```

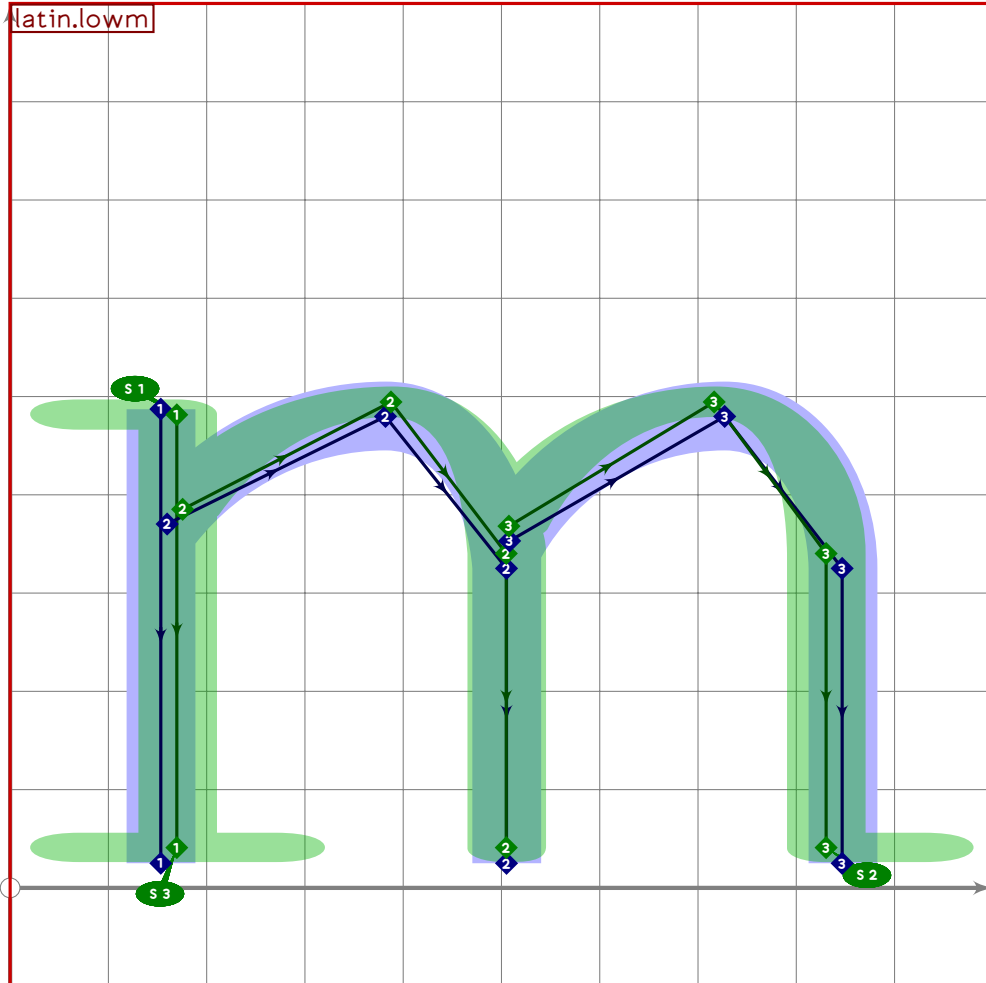


```

1174
1175 vardef tsu_curve.latin.lowl =
1176   add_proof_box("latin.lowl");
1177   x1=x2=500;
1178   x3=570;
1179
1180   y1=latin_wide_high_v;
1181   y2=y3+(x3-x2);
1182   y3=latin_wide_low_r;
1183
1184   bp[sp]:=z1-z2{down}..{right}z3;
1185   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1186
1187   sp:=sp*1;

```

1188 enddef;



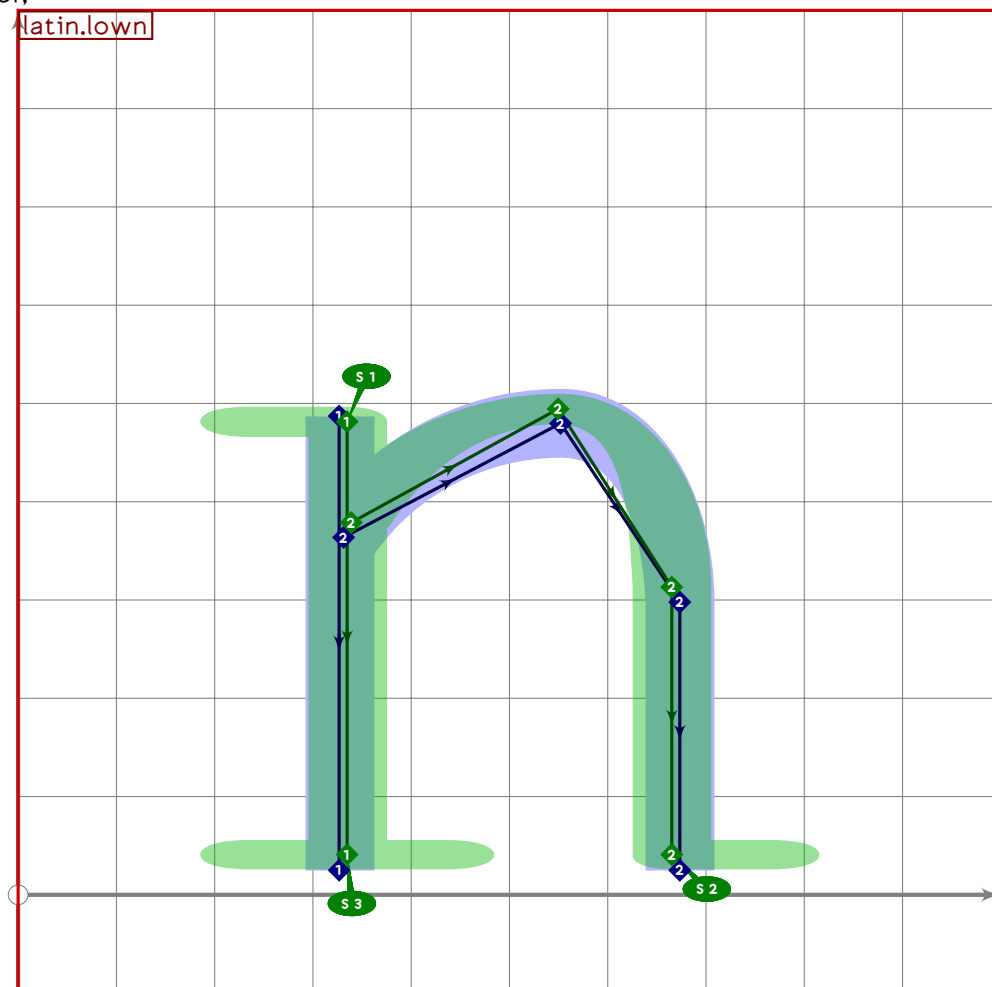
1189

```
1190 vardef tsu_curve.latin.lowm =  
1191   add_proof_box("latin.lowm");  
1192   (x1+x9)/2=500;  
1193   (x9-x1)*2=(y1-y2)*3;  
1194   (x5-x1)=(x9-x5)*1.03;  
1195   x2=x1+x3;  
1196   x4=0.65[x3,x5];  
1197   x6=x5;  
1198   x8=0.65[x6,x9];  
1199   x9=x10;  
1200  
1201   y1=latin_wide_xheight_v;  
1202   y2=y6=y10=latin_wide_low_v;  
1203   y3=0.74[y2,y4];  
1204   y4=y8=latin_wide_xheight_r;  
1205   y5=y9=0.66[y2,y4];  
1206  
1207   bp[sp]:=z1-z2;  
1208   bq[sp]:=(1.6,1.6)-(1.6,1.6);
```

```

1209 bo_serif[sp][0]:=1;
1210 bo_serif[sp][1]:=3;
1211
1212 bp[sp*1]:=z3..z4{right}..z5{dir 275}-z6;
1213 bp[sp*1]:=subpath (0.04,3) of bp[sp*1];
1214 bq[sp*1]:= (1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1215
1216 z7=bp[sp*1] intersectionpoint (z3-z9);
1217
1218 bp[sp*2]:=z7..z8{right}..z9{dir 271}-z10;
1219 bp[sp*2]:=subpath (0.04,3) of bp[sp*2];
1220 bq[sp*2]:= (1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1221 bo_serif[sp*2][3]:=2;
1222
1223 sp:=sp*3;
1224 enddef;

```



```

1225
1226 vardef tsu_curve.latin.lown =
1227   add_proof_box("latin.lown");
1228   (x1*x5)/2=500;
1229   (x5-x1)=(y1-y2)*0.75;

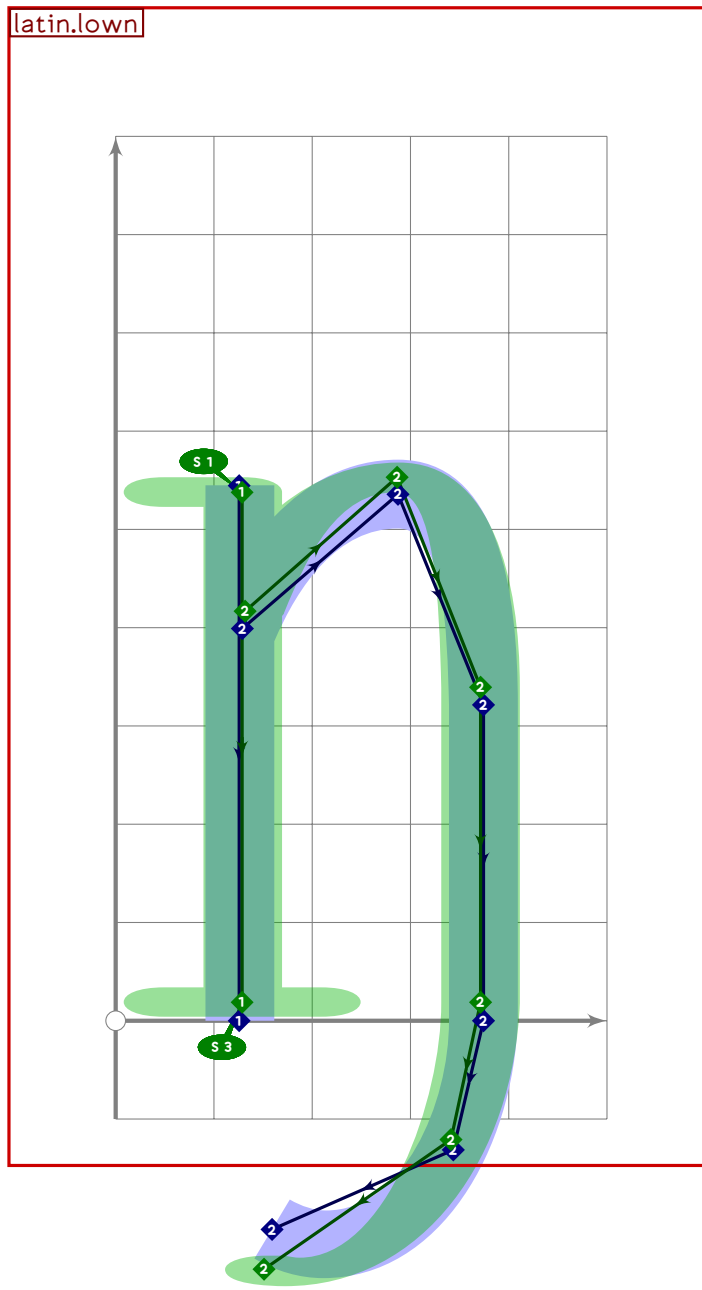
```

```

1230 x2=x1=x3;
1231 x4=0.65[x3,x5];
1232 x6=x5;
1233
1234 y1=latin__wide__xheight__v;
1235 y2=y6=latin__wide__low__v;
1236 y3=0.73[y2,y4];
1237 y4=latin__wide__xheight__r;
1238 y5=0.60[y2,y4];
1239
1240 bp[sp]:=z1-z2;
1241 bq[sp]:=(1.6,1.6)-(1.6,1.6);
1242 bo_serif[sp][0]:=1;
1243 bo_serif[sp][1]:=3;
1244
1245 bp[sp*1]:=z3..z4{right}..z5{dir 273}-z6;
1246 bp[sp*1]:=subpath (0.03,3) of bp[sp*1];
1247 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1248 bo_serif[sp*1][3]:=2;
1249
1250 sp:=sp*2;
1251 enddef;

```

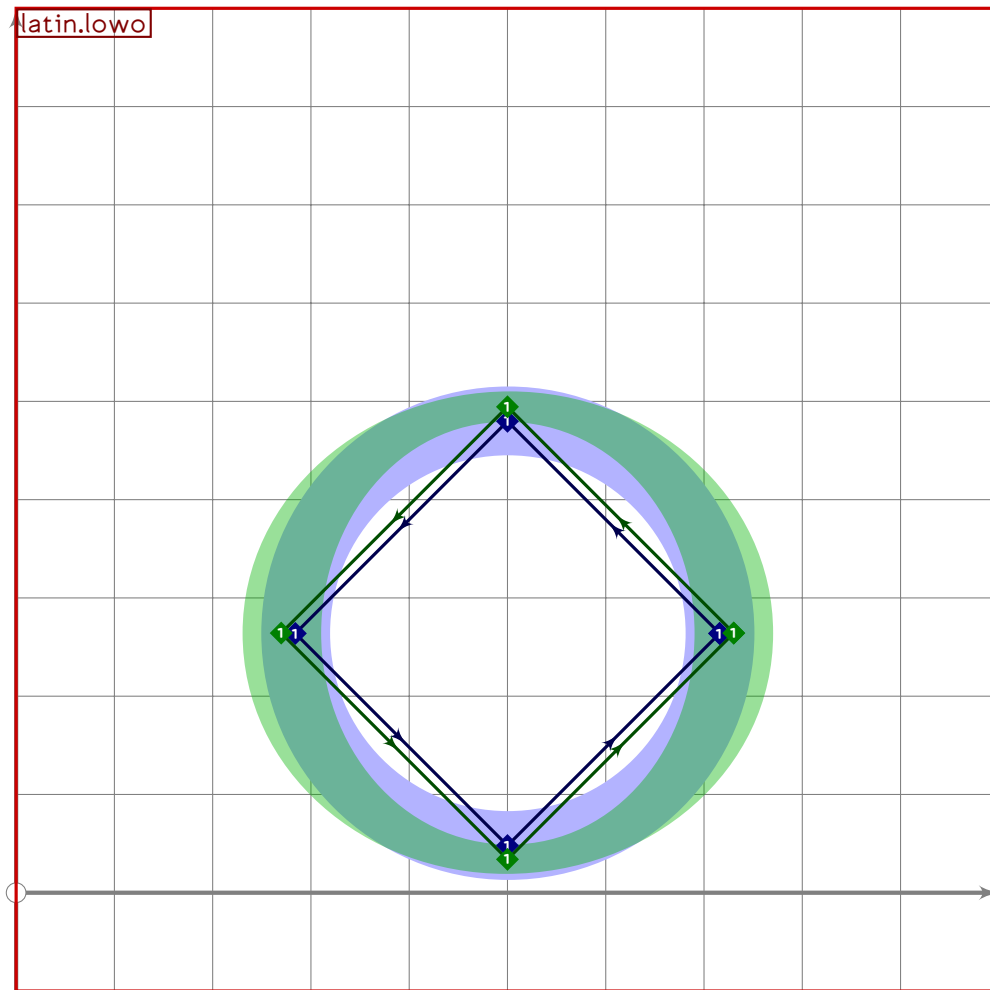




```

1252
1253 vardef tsu_curve.latin.loweng =
1254   add_proof_box("latin.loweng");
1255   tsu_curve.latin.lown;
1256   x7=x6-300;
1257   y7=latin_wide_desc_h;
1258   bp[sp-1]:=bp[sp-1]{dir 266}{curl 0.8}z7;
1259   bp[sp-1]:=insert_nodes(bp[sp-1])(3.3);
1260   bq[sp-1]:=bq[sp-1]-(1.6,1.6)-(1.6,1.6);
1261   bo_serif[sp-1][3]:=whatever;
1262 enddef;

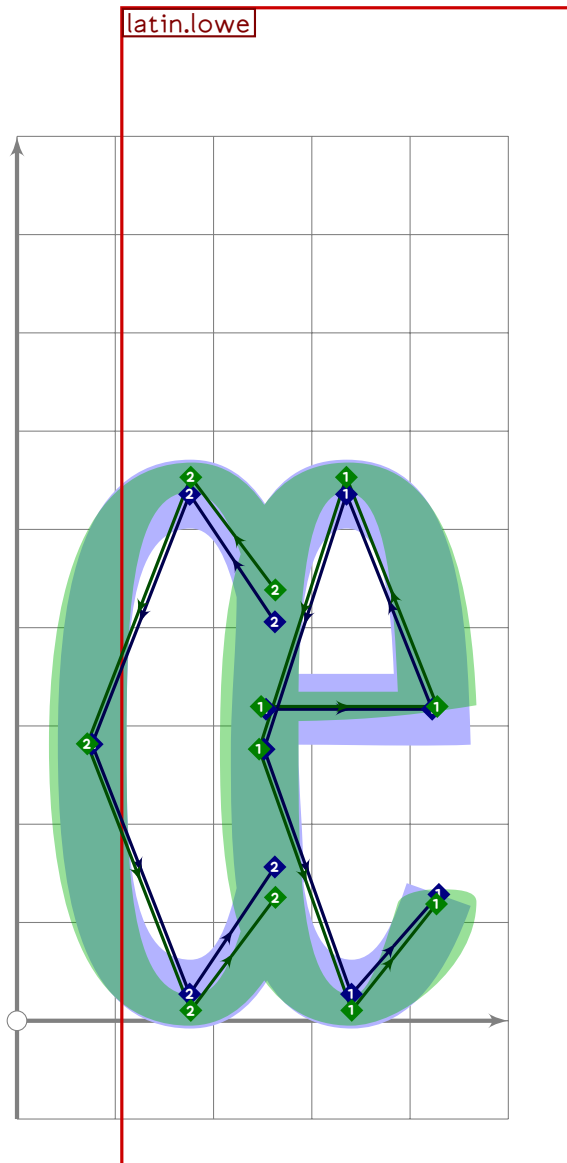
```



```

1263
1264 vardef tsu_curve.latin.lowo =
1265   add_proof_box("latin.lowo");
1266   bp[sp]:=((1,0)..(0,1)..(-1,0)..(0,-1)..cycle)
1267     scaled ((latin_wide_xheight_r-latin_wide_low_r)/2)
1268     shifted (xpart centre_pt,(latin_wide_xheight_r*latin_wide_low_r)/2);
1269   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
1270
1271   sp:=sp*1;
1272 enddef;

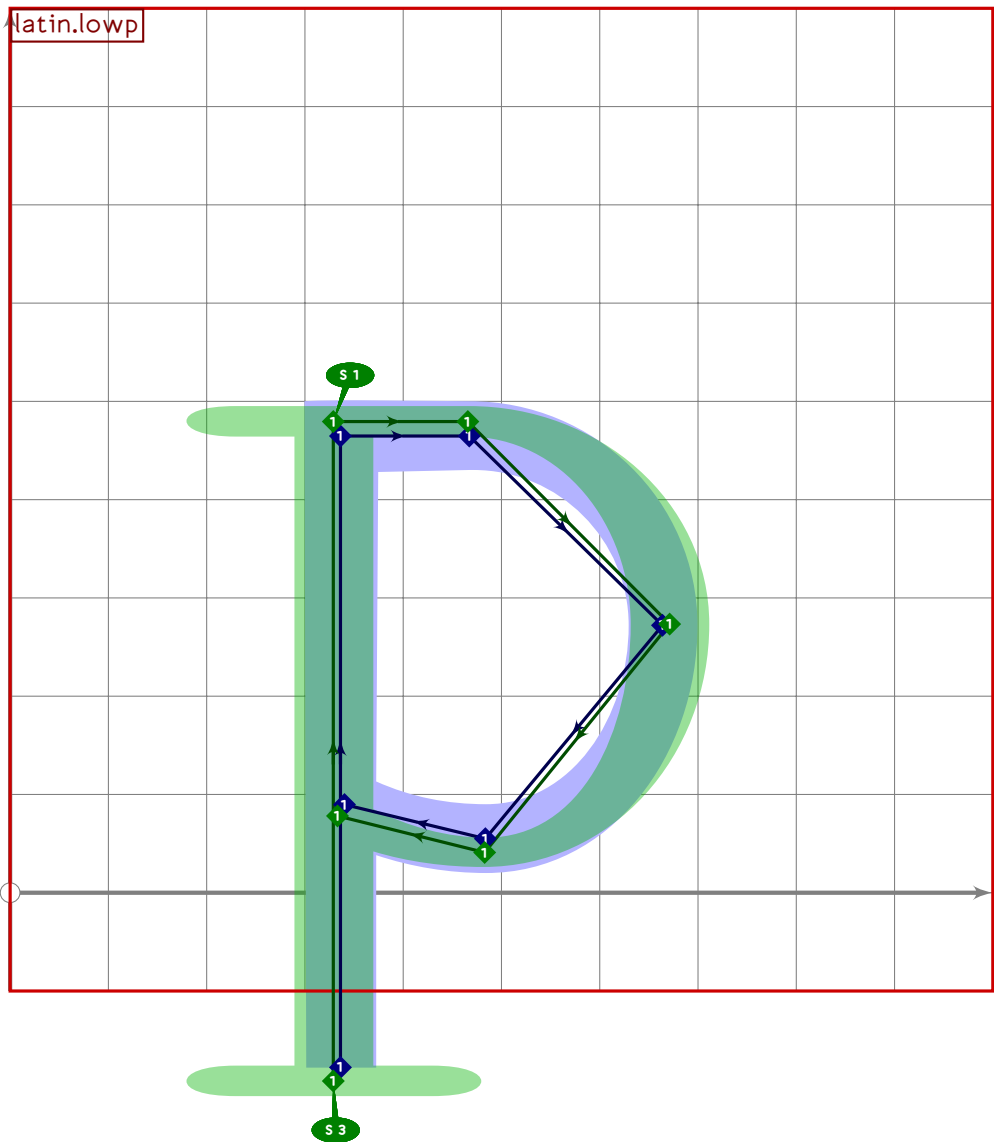
```



```

1273
1274 vardef tsu_curve.latin.lowoe =
1275   add_proof_box("latin.lowoe");
1276   tsu_xform(identity shifted (190,0))(tsu_curve.latin.lowoe);
1277   bp[sp]:=((1,0)..(0,1)..(-1,0)..(0,-1)..(1,0))
1278     scaled ((latin_wide_xheight_r-latin_wide_low_r)/2)
1279     shifted (340,0.5[latin_wide_xheight_r,latin_wide_low_r]);
1280   bp[sp]:=subpath (xpart (bp[sp] intersectiontimes
1281     (subpath (2,infinity) of bp[sp-1])),
1282     4-xpart ((reverse bp[sp]) intersectiontimes bp[sp-1]))
1283     of bp[sp];
1284   bq[sp]:=(1.2,1.2)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.2,1.2);
1285   sp:=sp+1;
1286 enddef;

```



```

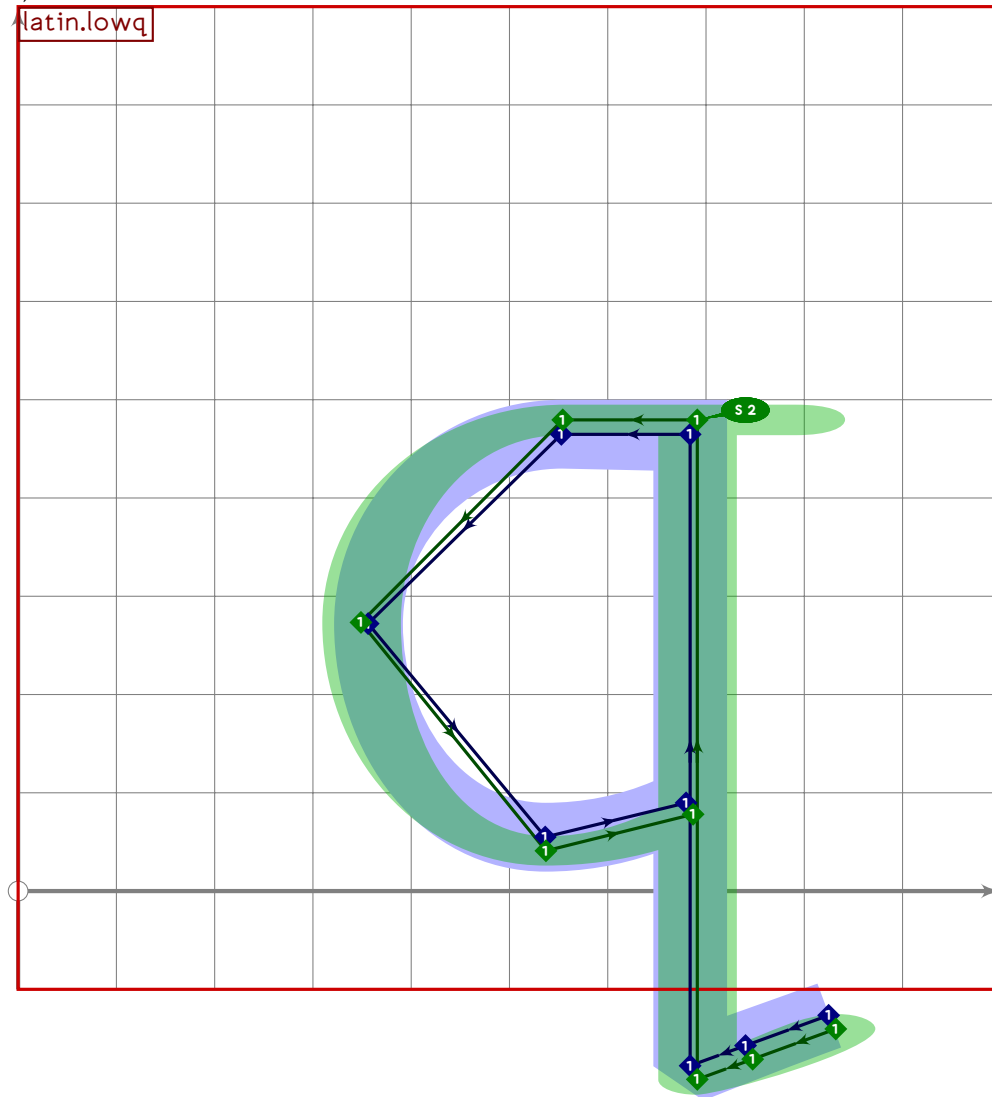
1287
1288 vardef tsu_curve.latin.lowp =
1289   add_proof_box("latin.lowp");
1290   (x1+x4)/2=500;
1291   (x4-x1)=(y2-y1)*0.51;
1292   x2=x1=x6;
1293   x3=0.4[x2,x4];
1294   x5=0.45[x2,x4];
1295
1296   y1=latin_wide_desc_v;
1297   y2=y3=latin_wide_xheight_h;
1298   y4=0.47[y3,y5];
1299   y5=latin_wide_low_h;
1300   y6=0.91[y3,y5];
1301
1302   bp[sp]:=z1--z2{right}z3..{down}z4..{left}z5..z6;
1303   bp[sp]:=subpath (0,4.97) of bp[sp];

```

```

1304 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1305 bo_tip[sp][1]:=1;
1306 bo_serif[sp][0]:=3;
1307 bo_serif[sp][1]:=1;
1308
1309 sp:=sp*1;
1310 enddef;

```



```

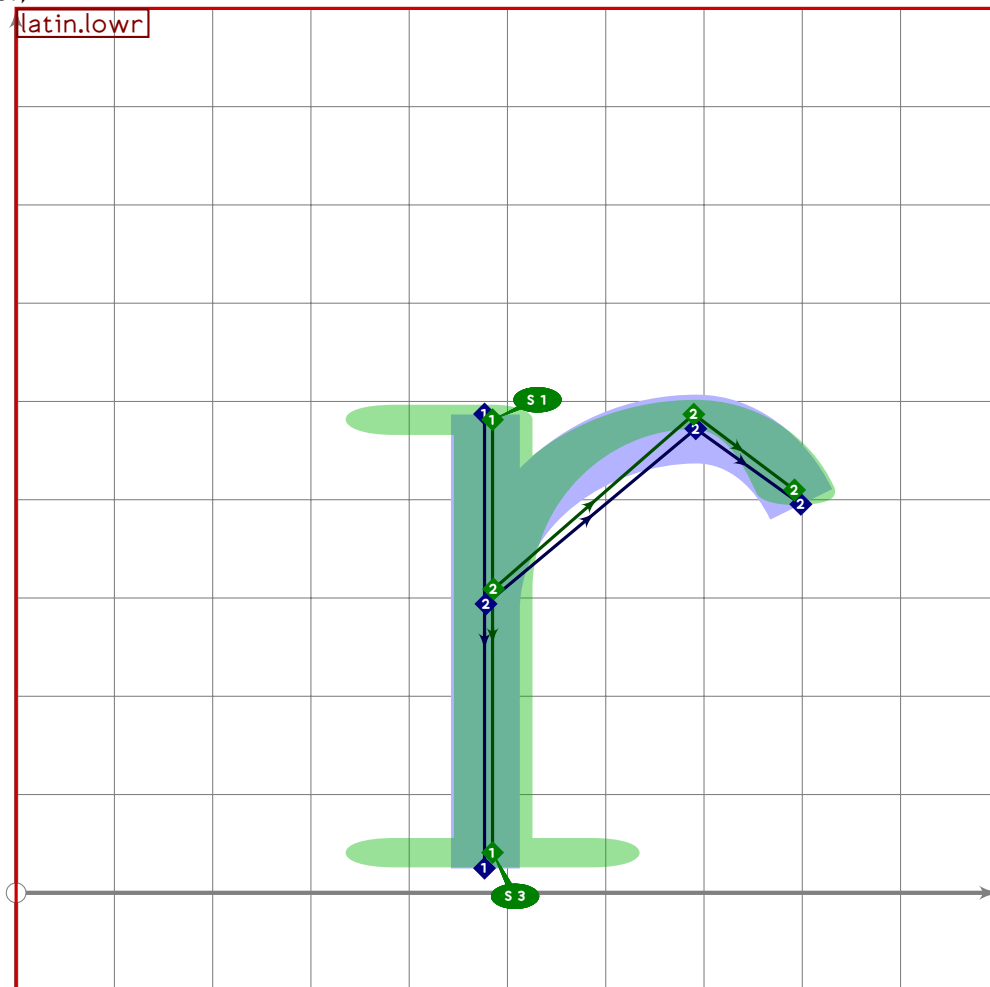
1311
1312 vardef tsu_curve.latin.lowq =
1313   add_proof_box("latin.lowq");
1314   (x1+x4)/2=520;
1315   (x1-x4)=(y2-y1)*0.51;
1316   x2=x1=x6;
1317   x3=0.4[x2,x4];
1318   x5=0.45[x2,x4];
1319
1320   y1=latin_wide_desc_v;
1321   y2=y3=latin_wide_xheight_h;

```

```

1322 y4=0.47[y3,y5];
1323 y5=latin_wide_low_h;
1324 y6=0.91[y3,y5];
1325
1326 z0=z1*150*(dir 20);
1327
1328 bp[sp]:=z0-(0.6[z0,z1])-z1-z2{left}..
1329   {left}z3..{down}z4..{right}z5..z6;
1330 bp[sp]:=subpath (0,6.97) of bp[sp];
1331 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1332 bo_tip[sp][2]:=0;
1333 bo_tip[sp][3]:=1;
1334 bo_serif[sp][3]:=2;
1335
1336 sp:=sp*1;
1337 enddef;

```



```

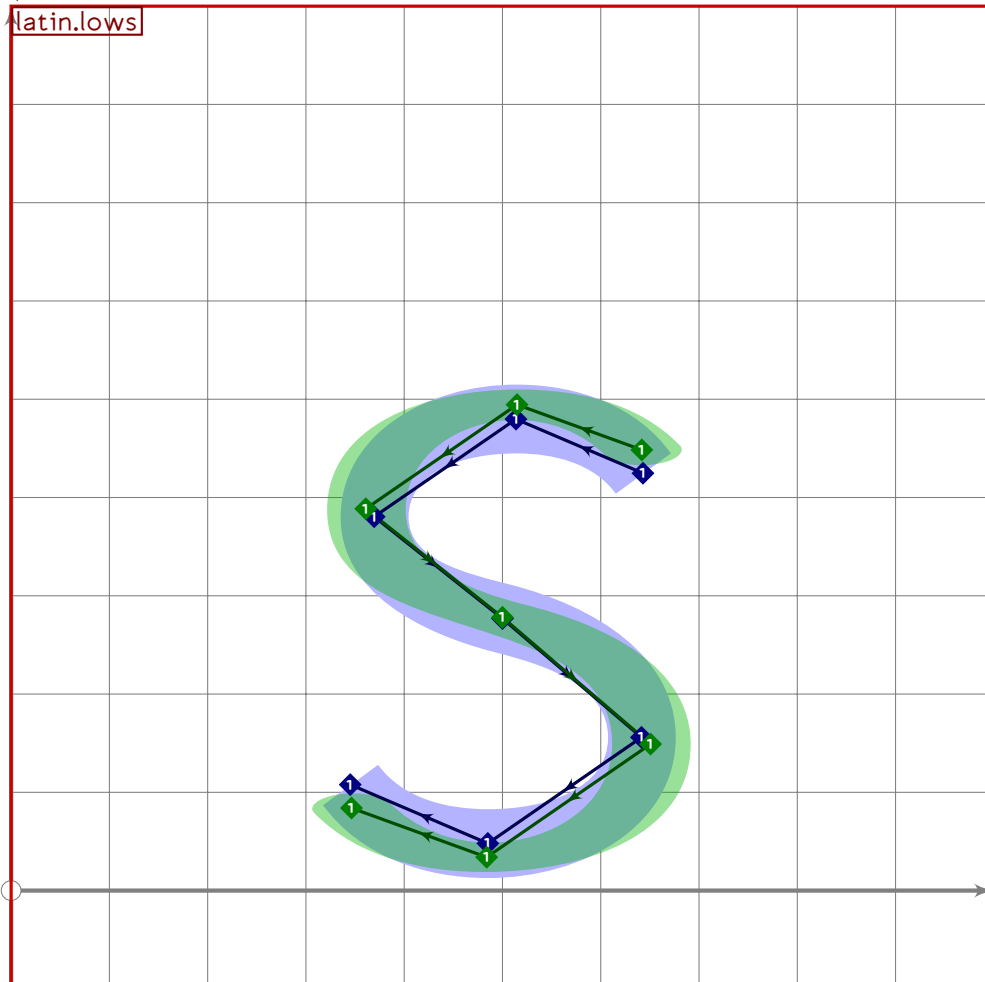
1338
1339 vardef tsu_curve.latin.lowr =
1340   add_proof_box("latin.lowr");
1341   (x1*x5)/2=650;
1342   (x5-x1)=(y1-y2)*0.75;

```

```

1343 x2=x1=x3;
1344 x4=0.62[x3,x5];
1345
1346 y1=latin__wide__xheight__v;
1347 y2=latin__wide__low__v;
1348 y3=0.58[y2,y4];
1349 y4=0.5[latin__wide__xheight__h,latin__wide__xheight__r];
1350 y5=0.60[y2,y4];
1351
1352 bp[sp]:=z1-z2;
1353 bq[sp]:=(1.6,1.6)-(1.6,1.6);
1354 bo_serif[sp][0]:=1;
1355 bo_serif[sp][1]:=3;
1356
1357 bp[sp*1]:=z3..z4{right}..{dir 273}z5;
1358 bp[sp*1]:=subpath (0.03,1.6) of bp[sp*1];
1359 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1360
1361 sp:=sp*2;
1362 enddef;

```



1363

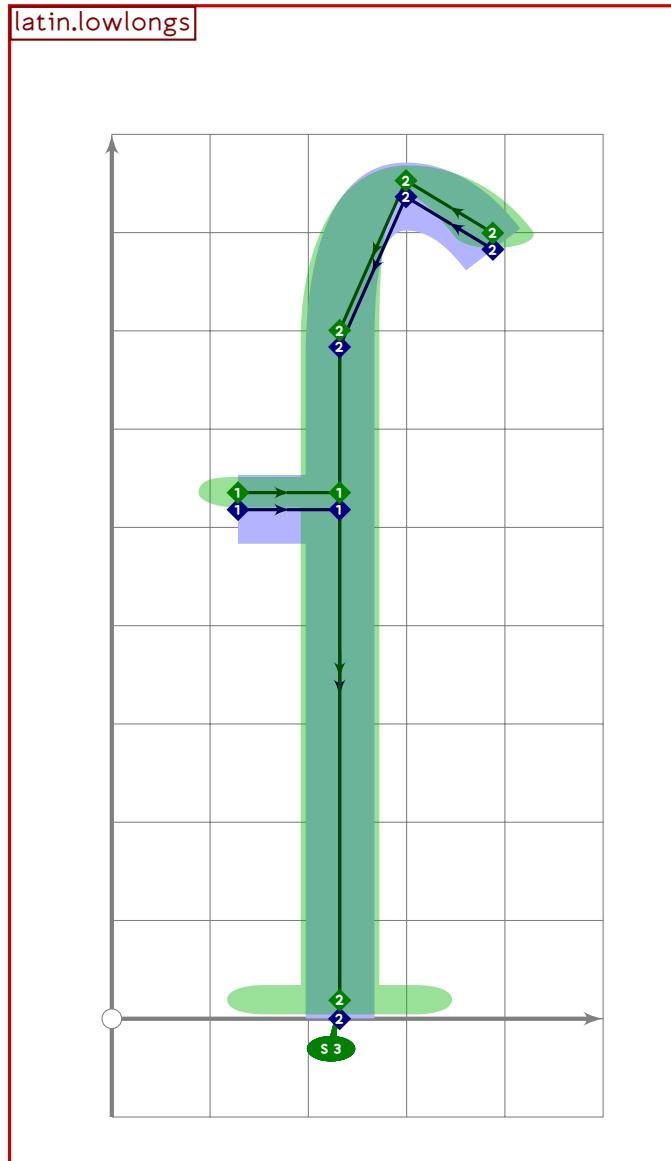
```

1364 vardef tsu_curve.latin.lows =
1365   add_proof_box("latin.lows");
1366   transform ta,tb;
1367   path mycurve;
1368
1369   mycurve:=(1,0)..(0,1)..(-1,0);
1370
1371   y2=latin_wide_xheight_r;
1372   y0=y3=0.77[y6,y2];
1373   y4=0.53[y6,y2];
1374   y5=y8=0.25[y6,y2];
1375   y6=latin_wide_low_r;
1376
1377   0.48[x1,x7]=0.48[x2,x6]=0.48[x3,x5]=x4=500;
1378   x5-x1=5;
1379   x5-x7=(y2-y6)*0.67;
1380
1381   (point 0 of mycurve) transformed ta=z0;
1382   (point 0.35 of mycurve) transformed ta=z1;
1383   (point 1 of mycurve) transformed ta=z2;
1384   (point 2 of mycurve) transformed ta=z3;
1385   xypart ta=0;
1386
1387   (point 0 of mycurve) transformed tb=z8;
1388   (point 0.35 of mycurve) transformed tb=z7;
1389   (point 1 of mycurve) transformed tb=z6;
1390   (point 2 of mycurve) transformed tb=z5;
1391
1392   if sharp_corners:
1393     mycurve:=subpath (0.29,2) of mycurve;
1394   else:
1395     mycurve:=subpath (0.38,2) of mycurve;
1396   fi;
1397
1398   bp[sp]:=(mycurve transformed ta)..z4..(reverse mycurve transformed tb);
1399   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1400
1401   sp:=sp*1;
1402 enddef;

```



latin.lowlongs

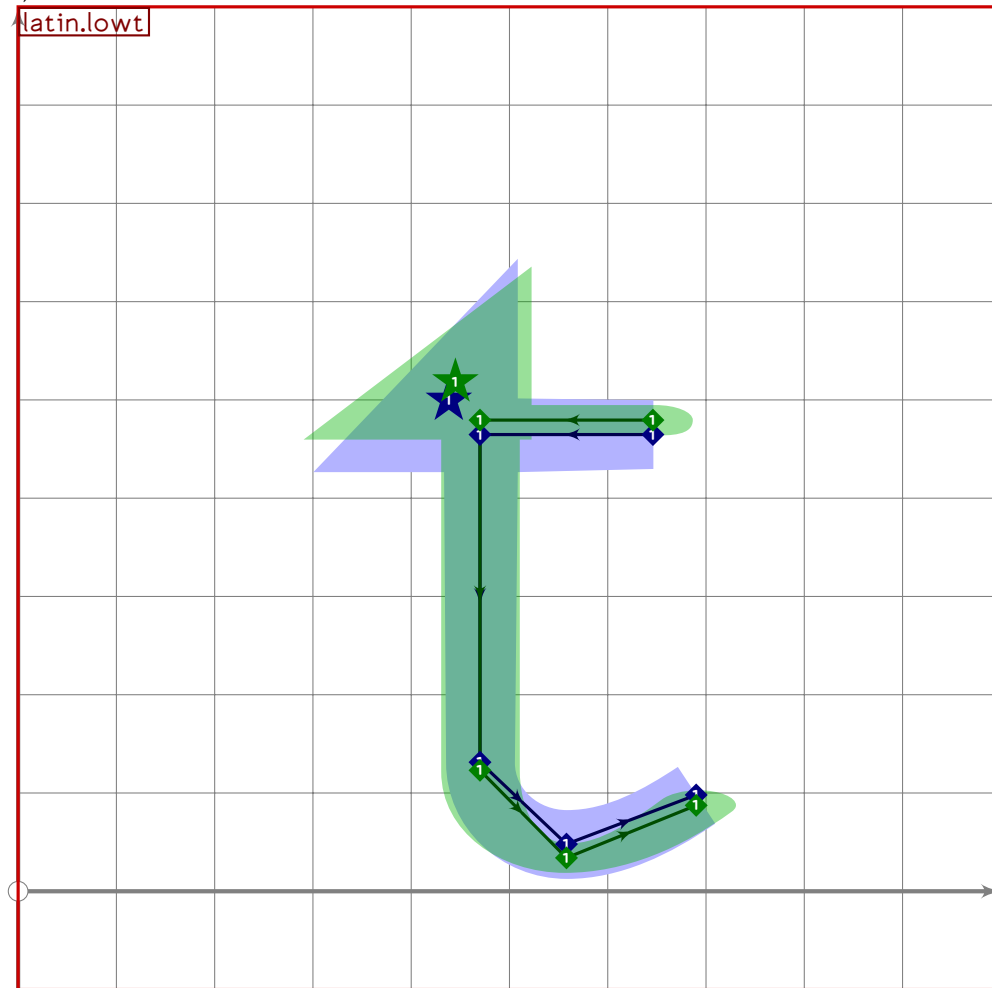


```
1403
1404 vardef tsu_curve.latin.lowlongs =
1405   add_proof_box("latin.lowlongs");
1406   (x2-x1)=290;
1407   x5=x6=490=0.52[x1,x2];
1408   x3-x5=2*(y4-y5);
1409   x4=0.38[x5,x3];
1410
1411   y1=y2=latin_wide_xheight_h;
1412   y5=0.52[y2,y4];
1413   y3=0.73[y2,y4];
1414   y4=latin_wide_high_r;
1415   y6=latin_wide_low_v;
1416
1417   bp[sp]:=z1-(x5,y1);
1418   bq[sp]:=(1.6,1.6)-(1.6,1.6);
```

```

1419
1420 bp[sp*1]:=z3{curl 0.6}..z4{left}..{dir 268}z5{down}-z6;
1421 bp[sp*1]:=subpath (0.23,3) of bp[sp*1];
1422 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1423 bo_serif[sp*1][3]:=3;
1424
1425 sp:=sp*2;
1426 enddef;

```



```

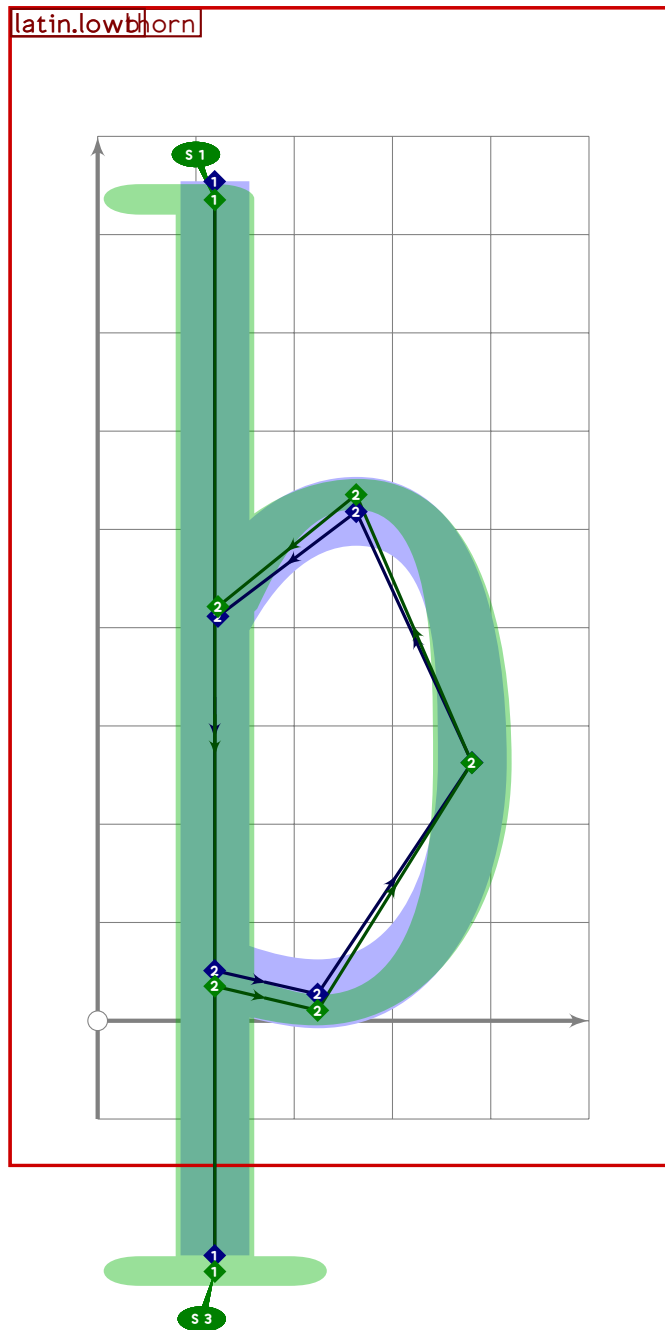
1427
1428 vardef tsu_curve.latin.lowt =
1429   add_proof_box("latin.lowt");
1430   x2=x3=x10=470;
1431   x1=0.2[x5,x2];
1432   x4=0.6[x5,x2];
1433   x5-x2=220;
1434
1435   y1=y2=y6=latin_wide_xheight_h;
1436   y3=0.2[y4,y1];
1437   y4=latin_wide_low_r;
1438   y5=0.12[y4,y1];
1439   y10=vmetric(0.83);

```

```

1440
1441 if is_proportional:
1442     z10-z6=whatever*dir 58;
1443 else:
1444     z10-z6=whatever*dir 47;
1445 fi;
1446
1447 if tsu_pbrush_size<30:
1448     bp[sp]:=z1-z6-z10-z3{down}..z4{right}..{curl 0.2}z5;
1449     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1450     bo_tip[sp][1]:=1;
1451     bo_tip[sp][2]:=1;
1452 else:
1453     bp[sp]:=z1-z2-z3{down}..z4{right}..{curl 0.2}z5;
1454     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1455     bo_tip[sp][1]:=0;
1456 fi;
1457
1458 bp[sp*1]:=z6-z1;
1459 bq[sp*1]:=(0,0)-(0,0);
1460
1461 x7=x8=x2;
1462 x9=x6;
1463
1464 y7=y9=y2;
1465
1466 if is_proportional:
1467     z8-z9=whatever*dir 58;
1468 else:
1469     z8-z9=whatever*dir 47;
1470 fi;
1471
1472 sp:=sp*2;
1473 if tsu_pbrush_size>=30:
1474     begingroup
1475         save t; transform t;
1476         t:=tsu_rescale_xform;
1477         lcblob1:=((z7 transformed t)*(mbrush_width,mbrush_height))-
1478                 ((z8 transformed t)*(mbrush_width,mbrush_height))-
1479                 ((z9 transformed t)*(mbrush_width,mbrush_height))-cycle;
1480         lcblob1:=lcblob1 transformed inverse t;
1481     endgroup;
1482 fi;
1483 enddef;

```



```

1484
1485 vardef tsu_curve.latin.lowthorn =
1486   add_proof_box("latin.lowthorn");
1487   sp:=sp*1;
1488   tsu_curve.latin.lowb;
1489   sp:=sp*2;
1490   bp[sp]:=(point 0 of bp[sp*1])-(xpart point 0 of bp[sp*1],latin_wide_desc_v);
1491   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1492   bo_serif[sp][0]:=1;
1493   bo_serif[sp][1]:=3;
1494   bp[sp*1]:=subpath (1,infinity) of bp[sp*1];
1495   bq[sp*1]:=subpath (1,infinity) of bq[sp*1];

```

```

1496 bo_tip[sp+1][1]:=whatever;
1497 bo_serif[sp+1][0]:=whatever;
1498
1499 sp:=sp+2;
1500 enddef;

```



```

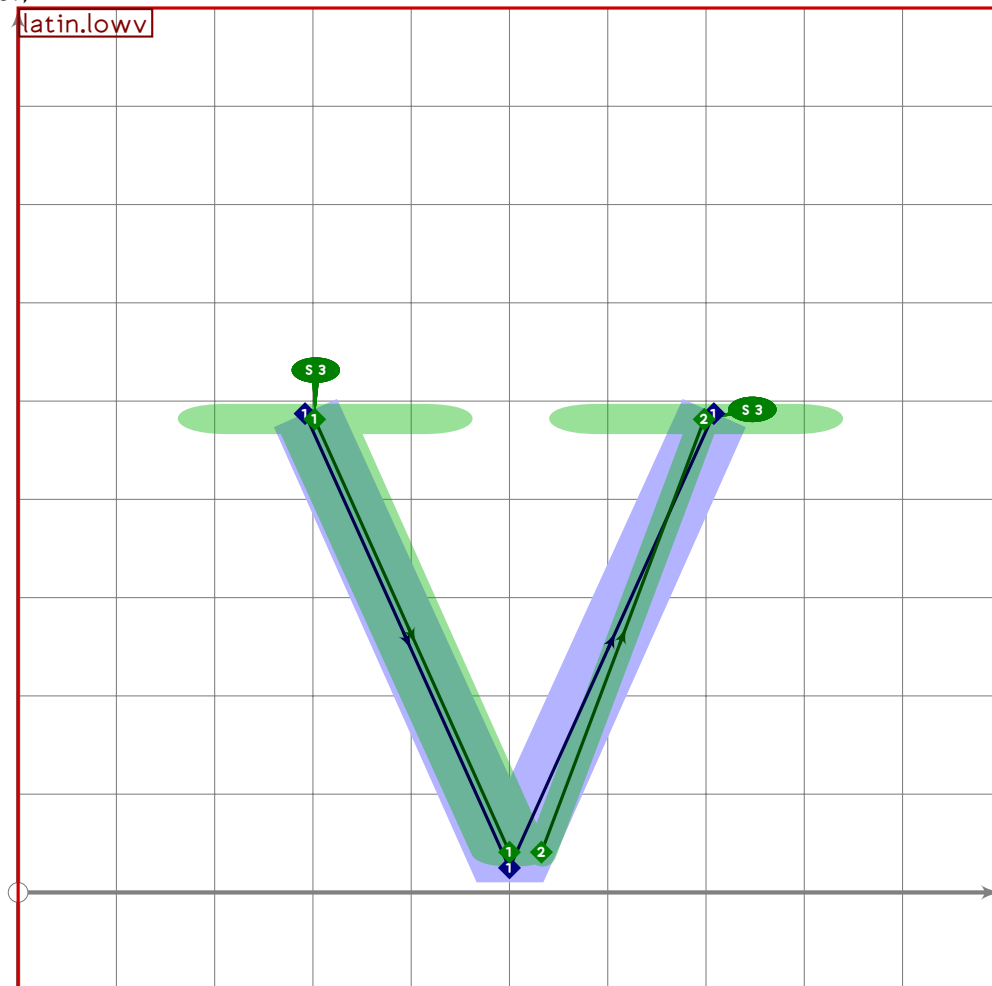
1501
1502 vardef tsu_curve.latin.lowu =
1503   add_proof_box("latin.lowu");
1504   (x1-x5)/2=450;
1505   (x1-x5)=(y2-y1)*0.75;
1506   x2=x1-x3;
1507   x4=0.65[x3,x5];
1508   x6=x5;
1509
1510   y1=latin_wide_low_v;
1511   y2=y6=latin_wide_xheight_v;
1512   y3=0.73[y2,y4];
1513   y4=latin_wide_low_h;
1514   y5=0.60[y2,y4];
1515
1516   bp[sp]:=z1-z2;

```

```

1517 bq[sp]:=(1.6,1.6)-(1.6,1.6);
1518 bo_serif[sp][0]:=2;
1519
1520 bp[sp*1]:=z3..z4{left}..z5{dir 93}-z6;
1521 bp[sp*1]:=subpath (0.03,3) of bp[sp*1];
1522 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1523
1524 sp:=sp*2;
1525 enddef;

```



```

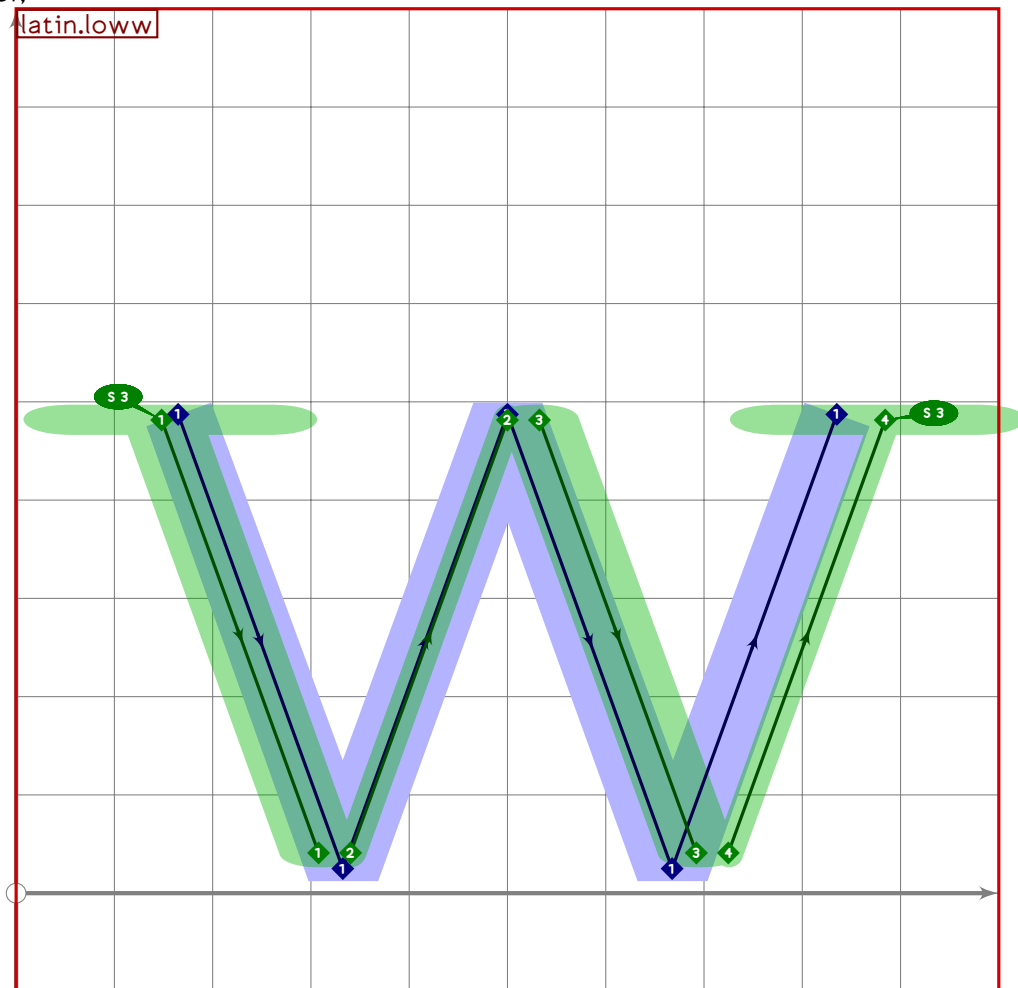
1526
1527 vardef tsu_curve.latin.lowv =
1528   add_proof_box("latin.lowv");
1529   (x1+x3)/2=x2=500;
1530
1531   y1=y3=latin_wide_xheight_v;
1532   y2=latin_wide_low_v;
1533
1534   (x3-x1)=(y1-y2)*0.9;
1535
1536   if do_alteration:
1537     bp[sp]:=z1-z2;

```

```

1538 bq[sp]:=(1.6,1.6)-(1.6,1.6);
1539 bo_serif[sp][0]:=3;
1540
1541 bp[sp+1]:=(z2+alternate_adjust*right)-z3;
1542 bq[sp+1]:=(1.6,1.6)-(1.6,1.6);
1543 bo_serif[sp+1][1]:=3;
1544 bo_alterate[sp+1]:=true;
1545
1546 sp:=sp+2;
1547 else:
1548 bp[sp]:=z1-z2-z3;
1549 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1550 bo_tip[sp][1]:=0;
1551 bo_serif[sp][0]:=1;
1552
1553 sp:=sp+1;
1554 fi;
1555 enddef;

```



```

1556
1557 vardef tsu_curve.latin.loww =
1558   add_proof_box("latin.loww");

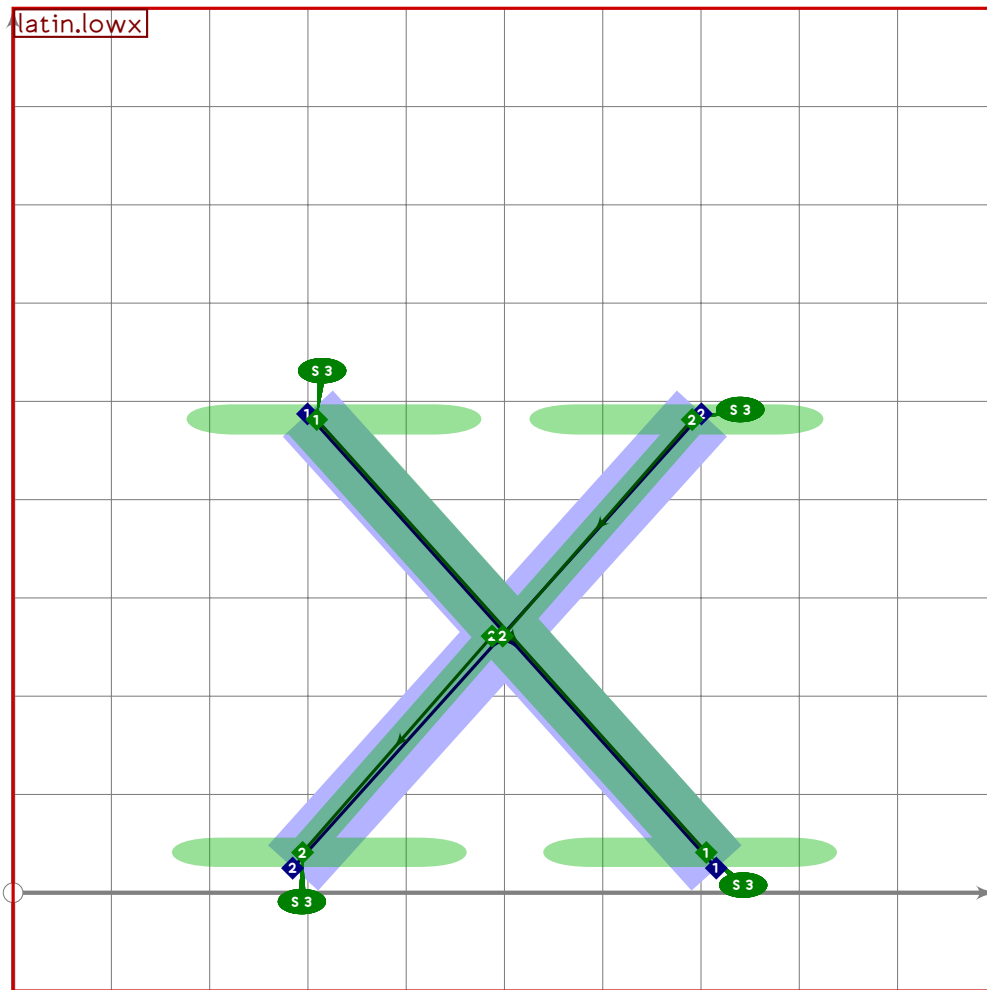
```

```

1559 (x1+x5)/2=(x2+x4)/2=x3=500;
1560 (x3-x2)=(x2-x1);
1561
1562 y1=y3=y5=latin_wide_xheight_v;
1563 y2=y4=latin_wide_low_v;
1564
1565 (x5-x1)=(y1-y2)*1.45;
1566
1567 if do_alteration:
1568   bp[sp]:=(z1-z2) shifted (alternate_adjust*left);
1569   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1570   bo_serif[sp][0]:=3;
1571
1572   bp[sp*1]:=z2-z3;
1573   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
1574   bo_alterate[sp*1]:=true;
1575
1576   bp[sp*2]:=(z3-z4) shifted (alternate_adjust*right);
1577   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
1578
1579   bp[sp*3]:=(z4-z5) shifted (alternate_adjust*right*2);
1580   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
1581   bo_serif[sp*3][1]:=3;
1582   bo_alterate[sp*3]:=true;
1583
1584   sp:=sp*4;
1585 else:
1586   bp[sp]:=z1-z2-z3-z4-z5;
1587   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1588   bo_tip[sp][1]:=0;
1589   bo_tip[sp][2]:=0;
1590   bo_tip[sp][3]:=0;
1591   bo_serif[sp][0]:=1;
1592
1593   sp:=sp*1;
1594 fi;
1595 endif;

```





```

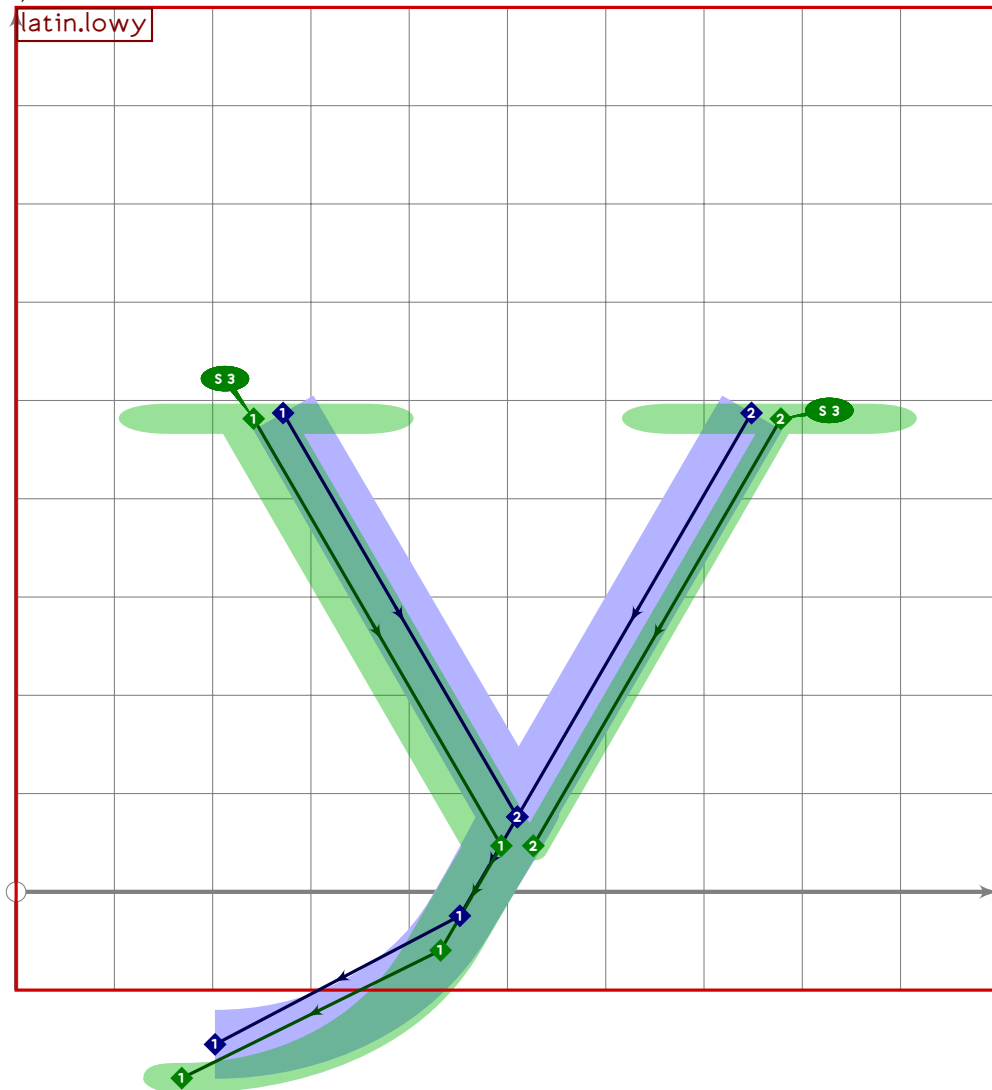
1596
1597 vardef tsu_curve.latin.lowx =
1598   add_proof_box("latin.lowx");
1599   (x1*x3)/2=500;
1600   (x2*x4)/2=500;
1601   (x2*x3-x1*x4)=((y1-y2)*0.9)*2;
1602   (x3-x1)=(x2-x4)*0.93;
1603
1604   y1=y3=latin_wide_xheight_v;
1605   y2=y4=latin_wide_low_v;
1606
1607   bp[sp]:=z1-z2;
1608   bq[sp]:=(1.6,1.6)-(1.6,1.6);
1609   bo_serif[sp][0]:=3;
1610   bo_serif[sp][1]:=3;
1611
1612   if do_alteration:
1613     bp[sp*1]:=z3-(0.5[z3,z4]*alternate_adjust*right/6)
1614       -(0.5[z3,z4]*alternate_adjust*left/6)-z4;
1615     bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1616     bo_serif[sp*1][0]:=3;

```

```

1617 bo_serif[sp*1][3]:=3;
1618 else:
1619 bp[sp*1]:=z3-z4;
1620 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
1621 bo_serif[sp*1][0]:=3;
1622 bo_serif[sp*1][1]:=3;
1623 fi;
1624 bo_alternate[sp*1]:=true;
1625
1626 sp:=sp*2;
1627 enddef;

```



```

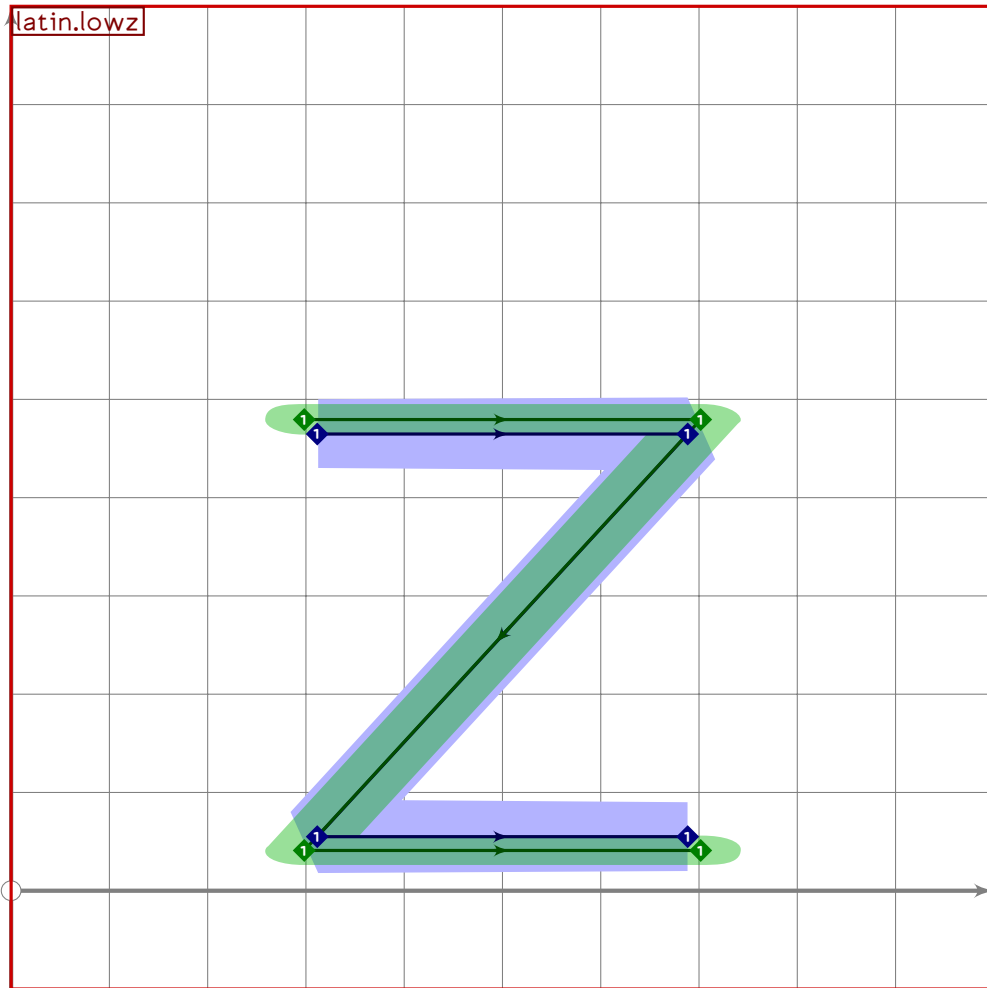
1628
1629 vardef tsu_curve.latin.lowy =
1630 add_proof_box("latin.lowy");
1631 (x1*x3)/2=(x2*x4)/2=510;
1632 (x2*x3-x1-x4)=((y1-y2)*0.58)*2;
1633 (x3-x1)=(x2-x4)*0.93;
1634 x5=x4-0.1*(x2-x4);

```

```

1635
1636 y1=y3=latin__wide__xheight__v;
1637 y2=y4;
1638 y5=0.5[y4,latin__wide__low__h]=latin__wide__desc__h;
1639
1640 bp[sp]:=z1-z2;
1641 bq[sp]:=(1.6,1.6)-(1.6,1.6);
1642
1643 bp[sp*1]:=z3..tension 10..(0.6[z3,z4])..tension 0.8 and 3..{left}z5;
1644 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1645
1646 numeric xchgtime;
1647 xchgtime:=ypart (bp[sp] intersectiontimes bp[sp*1]);
1648
1649 bp[sp]:=z1-subpath (xchgtime,infinity) of bp[sp*1];
1650 bq[sp]:=(1.6,1.6)-subpath (xchgtime,infinity) of bq[sp*1];
1651 bp[sp*1]:=subpath (0,xchgtime) of bp[sp*1];
1652 bq[sp*1]:=subpath (0,xchgtime) of bq[sp*1];
1653
1654 bo__serif[sp][0]:=3;
1655 bo__serif[sp*1][0]:=3;
1656 bo__tip[sp][1]:=1;
1657 bo__alternate[sp*1]:=true;
1658
1659 if do__alternation:
1660   bp[sp]:=bp[sp] shifted (alternate__adjust*left/2);
1661   bp[sp*1]:=bp[sp*1] shifted (alternate__adjust*right/2);
1662 fi;
1663
1664 sp:=sp*2;
1665 enddef;

```



```

1666
1667 vardef tsu_curve.latin.lowz =
1668   add_proof_box("latin.lowz");
1669   y1=y2=latin_wide_xheight_h;
1670   y3=y4=latin_wide_low_h;
1671
1672   x1=x3;
1673   x2=x4;
1674   (x1+x2)/2=500;
1675   (x2-x1)=(y1-y3)*0.92;
1676
1677   bp[sp]:=z1-z2-z3-z4;
1678   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
1679   bo_tip[sp][1]:=0;
1680   bo_tip[sp][2]:=0;
1681
1682   sp:=sp*1;
1683 enddef;

```

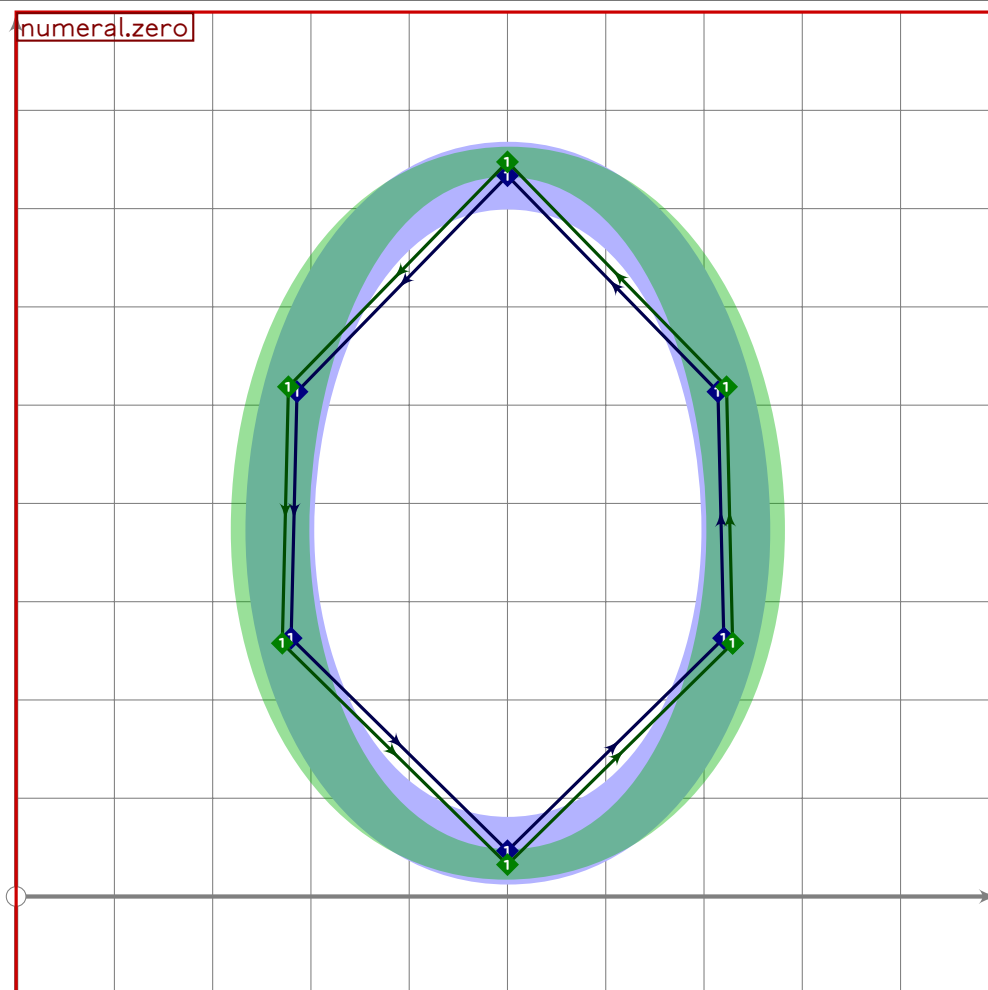
# numerals.mp

```

1 %
2 % Hindu/Arabic numerals for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]

```

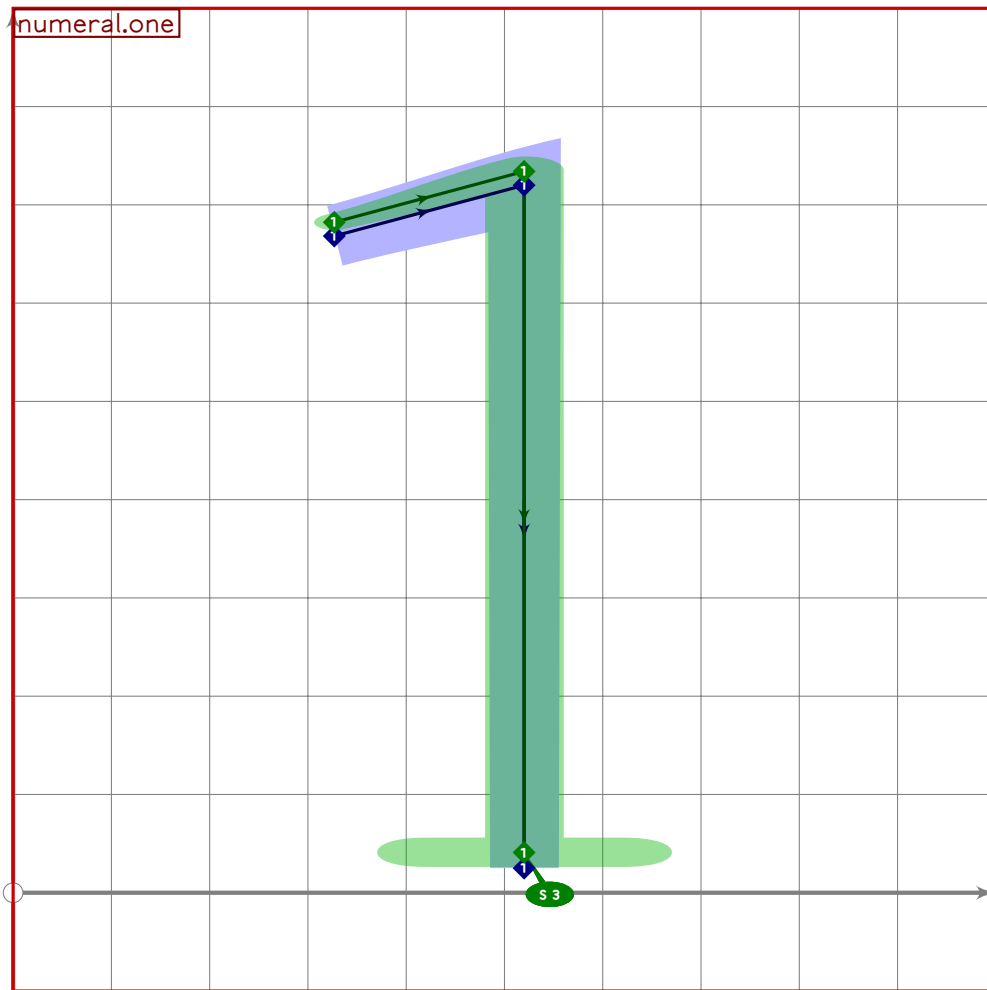
30  
31



```

32
33 vardef tsu_curve.numeral.zero =
34   add_proof_box("numeral.zero");
35   bp[sp]:=((0.74*dir 330)..(0.72*dir 30)..(up)..
36           (0.72*dir 150)..(0.74*dir 210)..(down)..cycle)
37   scaled ((latin_wide_high_r-latin_wide_low_r)/2)
38   shifted centre_pt;
39   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
40   sp:=sp*1;
41 enddef;

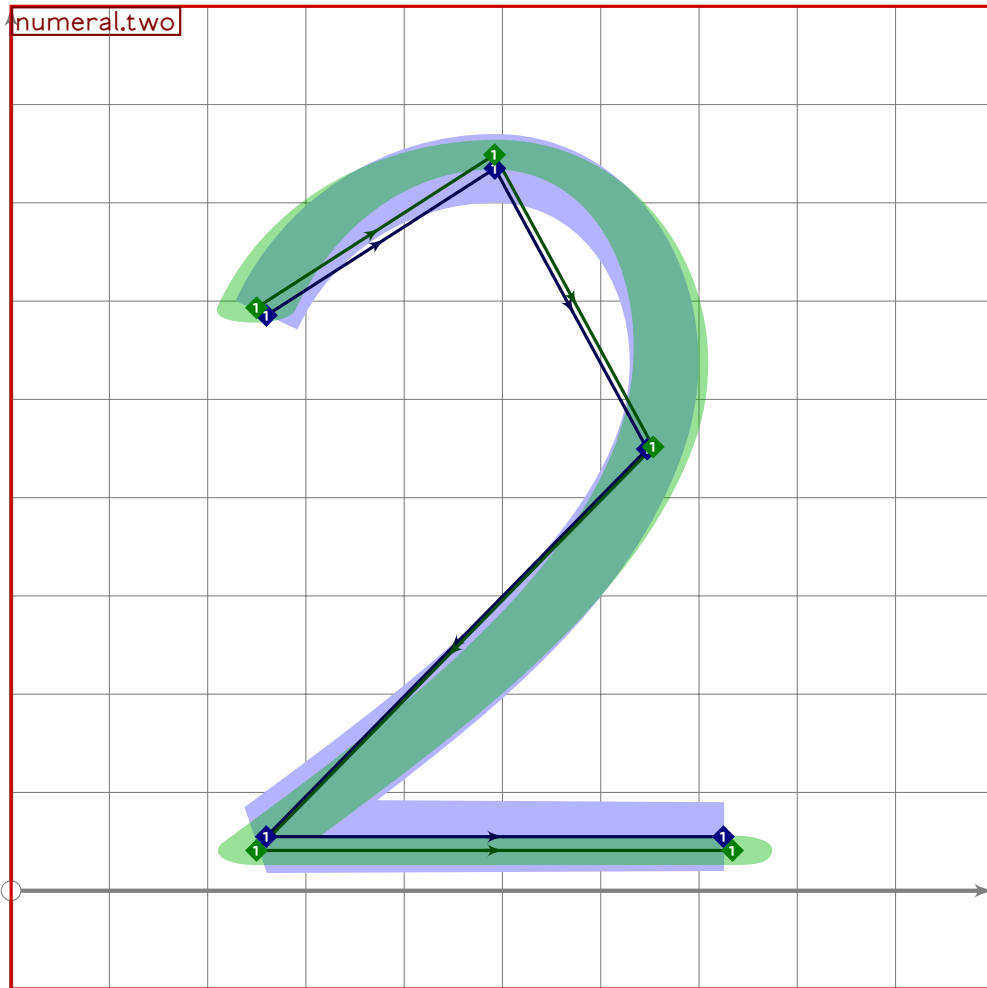
```



```

42
43 vardef tsu_curve.numeral.one =
44   add_proof_box("numeral.one");
45   x3=x2+520;
46
47   y2=latin_wide_high_h;
48   y3=latin_wide_low_v;
49
50   z1=z2+200*dir 195;
51
52   bp[sp]:=z1-z2-z3;
53   bq[sp]:=(1.1,1.1)-(1.6,1.6)-(1.6,1.6);
54   bo_tip[sp][1]:=1;
55   bo_serif[sp][2]:=3;
56   sp:=sp*1;
57 enddef;

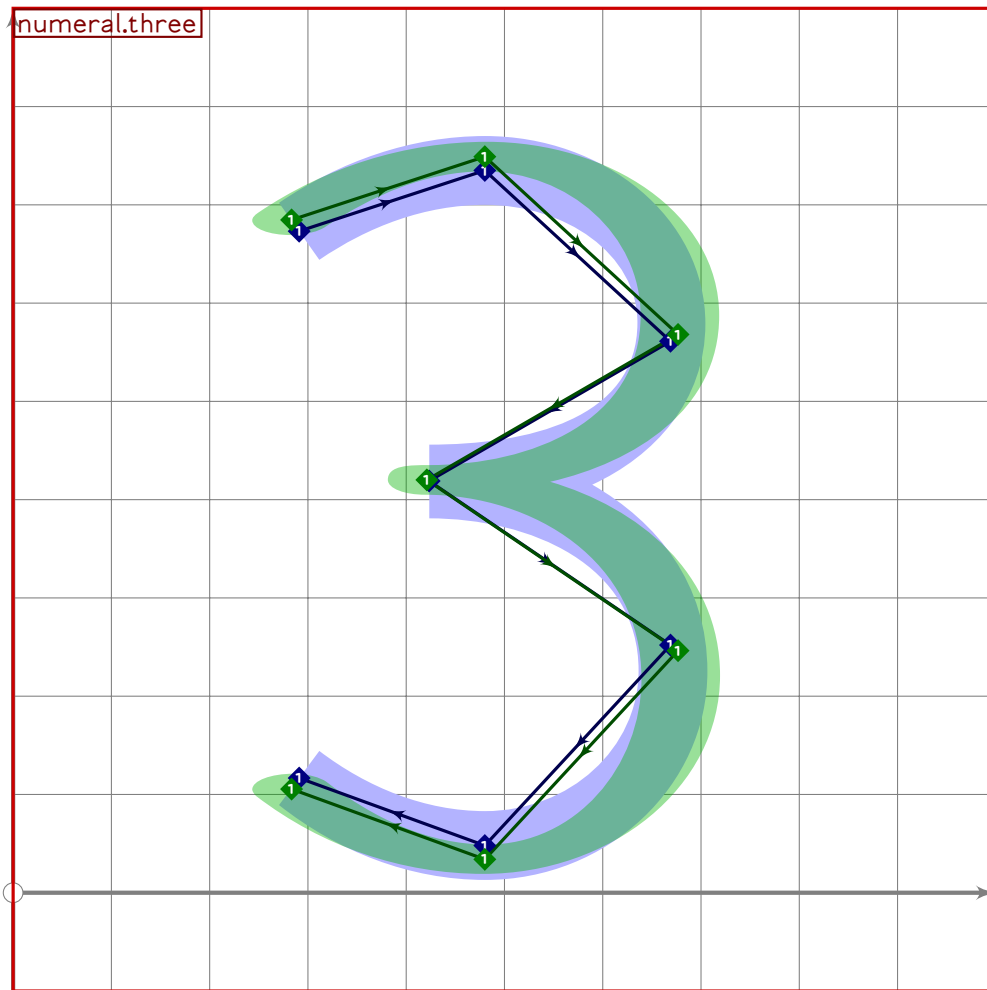
```



```

58
59 vardef tsu_curve.numeral.two =
60   add_proof_box("numeral.two");
61   x1=x4;
62   0.62[x1,x3]=500;
63   x2=0.6[x1,x3];
64   x5=1.2[x1,x3];
65   x3-x1=0.57*(y2-y4);
66
67   y1=0.78[y4,y2];
68   y2=latin_wide_high_r;
69   y3=0.58[y4,y2];
70   y4=y5=latin_wide_low_h;
71
72   bp[sp]:=z1..z2{right}..z3..tension 1.2..{curl 0}z4-z5;
73   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
74   bo_tip[sp][3]:=0;
75   sp:=sp*1;
76 enddef;

```



```

77
78 vardef tsu_curve.numeral.three =
79   add_proof_box("numeral.three");
80   x1=x7;
81   x2=x6=0.5[x1,x3];
82   x3=x5;
83   x4=0.35[x1,x3];
84   (x1+x3)/2=480;
85   (x3-x1)=0.55*(y2-y6);
86
87   y1=0.91[y6,y2];
88   y2=latin_wide_high_r;
89   y3=0.45[y4,y2];
90   y4=0.54[y6,y2];
91   y5=0.45[y4,y6];
92   y6=latin_wide_low_r;
93   y7=0.1[y6,y2];
94
95   bp[sp]:=z1{curl 0.7}..z2{right}..z3..{left}z4{right}..
96     z5..z6{left}..{curl 0.7}z7;
97   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);

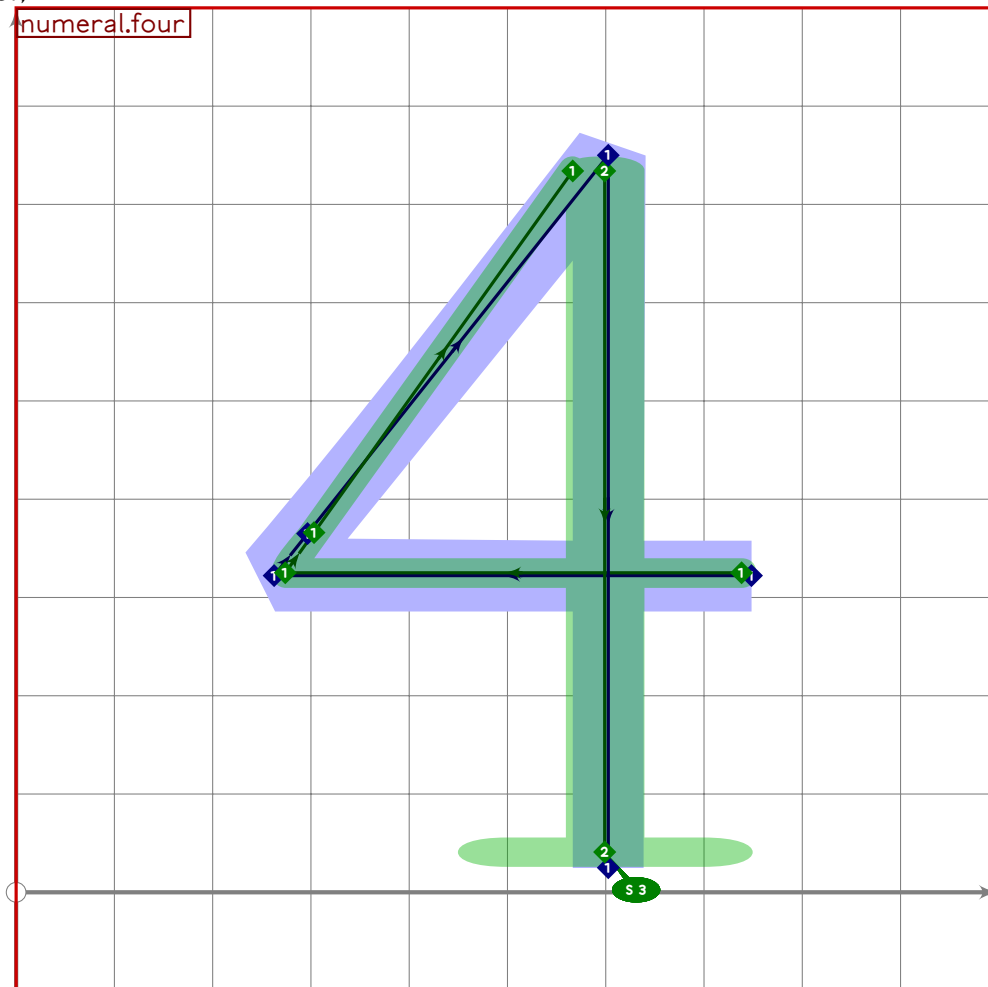
```



```

98 bo_tip[sp][3]:=0;
99 sp:=sp*1;
100 enddef;

```



```

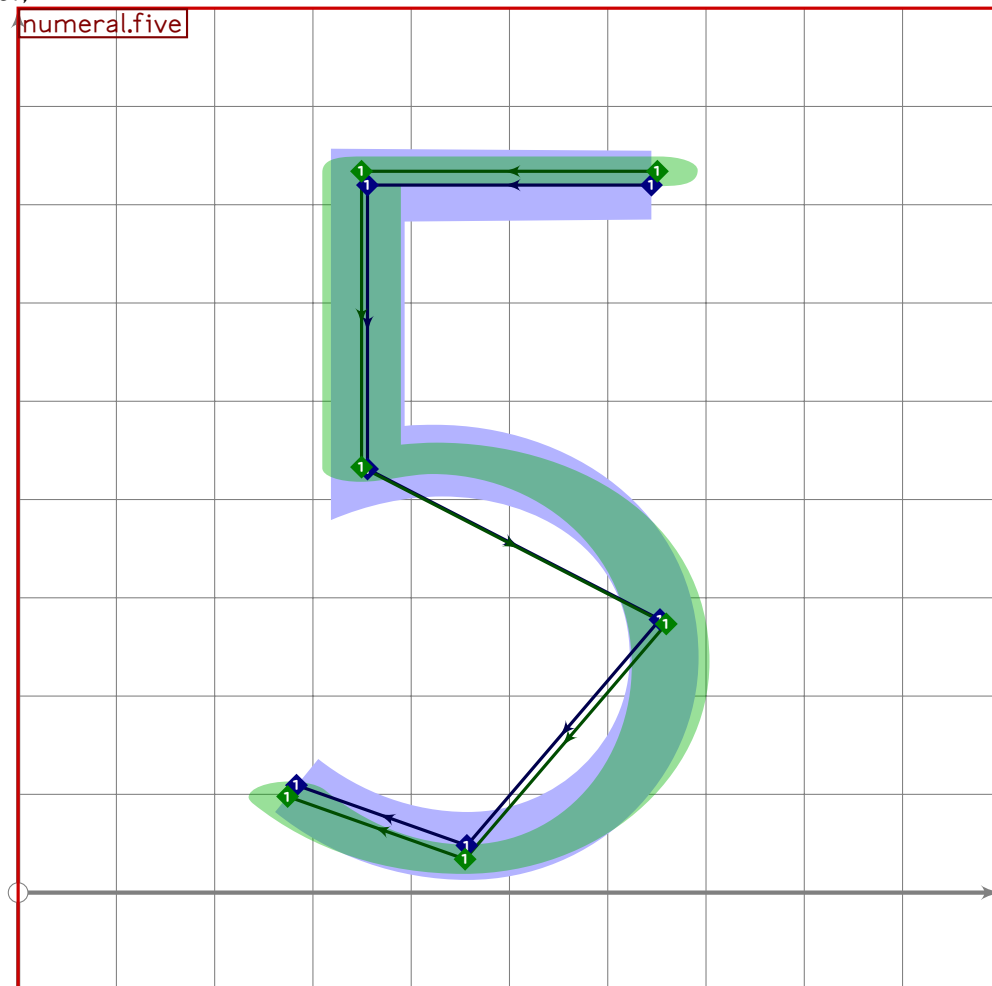
101
102 vardef tsu_curve.numeral.four =
103   add_proof_box("numeral.four");
104   x3=x4=0.7[x2,x1];
105   0.53[x2,x1]=520;
106   (x1-x2)=0.67(y3-y4);
107
108   y1=y2=0.41[y4,y3];
109   y3=latin_wide_high_v;
110   y4=latin_wide_low_v;
111
112   if do_alteration:
113     bp[sp]:=z1-z2-(0.1[z2,(z3+alternate_adjust*left)])-
114       (z3+alternate_adjust*left);
115     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
116     bo_tip[sp][1]:=0;
117     bo_tip[sp][2]:=0;
118     bo_alterate[sp]:=true;

```

```

119
120   bp[sp*1]:=z3-z4;
121   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
122   bo_tip[sp*1][0]:=0;
123   bo_serif[sp*1][1]:=3;
124   sp:=sp*2;
125   else:
126     bp[sp]:=z1-z2-(0.1[z2,z3])-z3-z4;
127     bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
128     bo_tip[sp][1]:=0;
129     bo_tip[sp][3]:=0;
130     bo_serif[sp][4]:=3;
131     sp:=sp*1;
132   fi;
133 enddef;

```



```

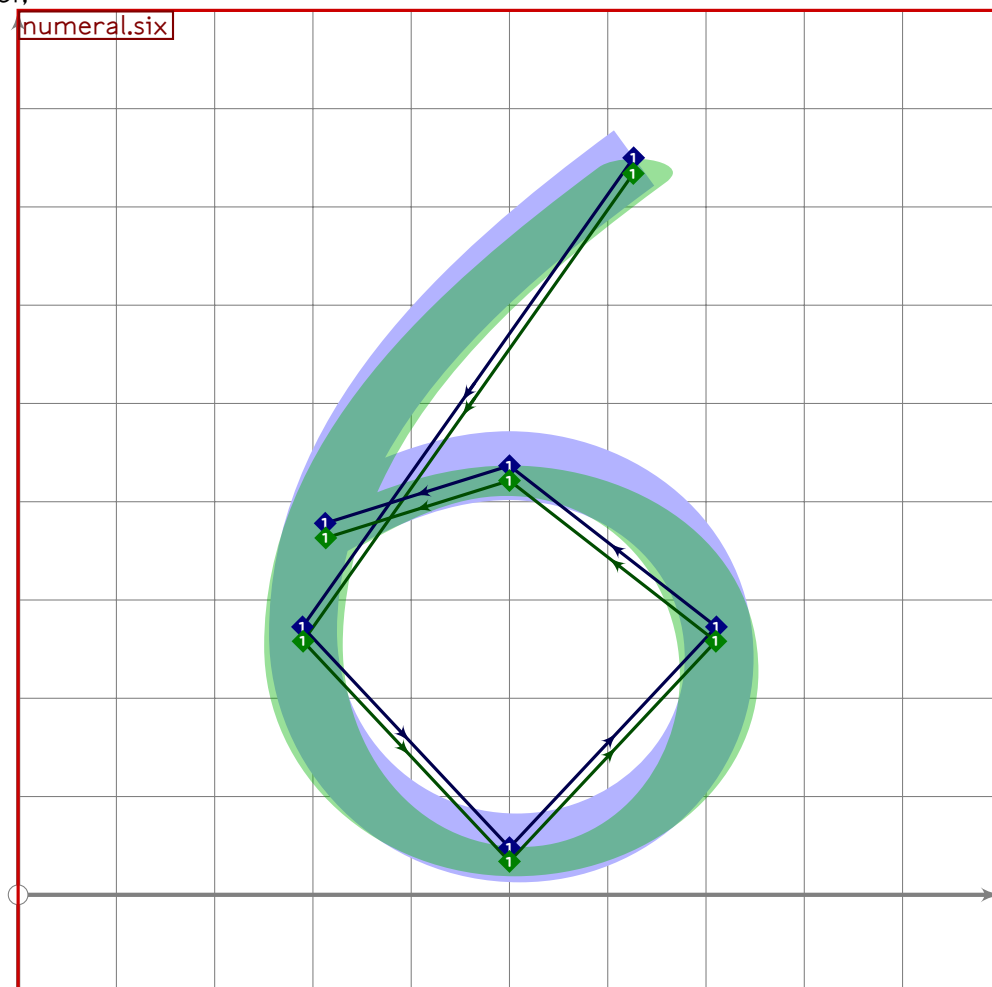
134
135 vardef tsu_curve.numeral.five =
136   add_proof_box("numeral.five");
137   (x1*x2)/2=500;
138   (x1-x2)=(y2-y3);
139   x2=x3;

```

```

140 x4=1.03[x2,x1];
141 x5=0.35[x2,x1];
142 x6=(-0.25)[x2,x1];
143
144 y1=y2=latin_wide_high_h;
145 y3=0.57[y5,y1];
146 y4=0.6[y5,y3];
147 y5=latin_wide_low_r;
148 y6=0.16[y5,y3];
149
150 bp[sp]:=z1-z2-z3{curl 0.5}..z4..z5{left}..z6;
151 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
152 bo_tip[sp][1]:=1;
153 bo_tip[sp][2]:=1;
154 sp:=sp*1;
155 enddef;

```



```

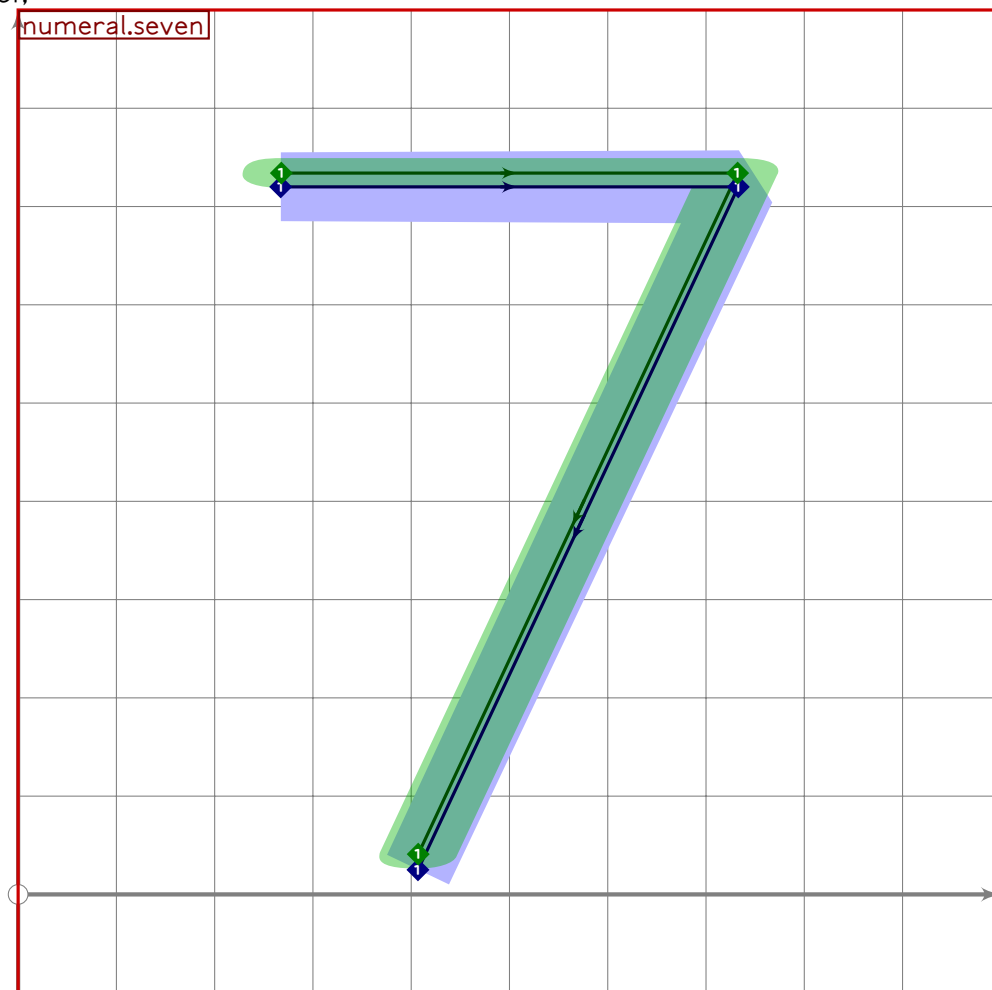
156
157 vardef tsu_curve.numeral.six =
158   add_proof_box("numeral.six");
159   x1=0.8[x2,x4];
160   (x2*x4)/2=x3=500;

```

```

161 (x4-x2)=0.6(y1-y3);
162 x5=x3;
163
164 y1=latin_wide_high_v;
165 y2=y4=0.32[y3,y1];
166 y3=latin_wide_low_r;
167 y5-y4=0.73*(y4-y3);
168
169 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 100};
170 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 100}..
171 z5..{curl 0.2}(point 0.8 of bp[sp]);
172 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
173 sp:=sp*1;
174 enddef;

```



```

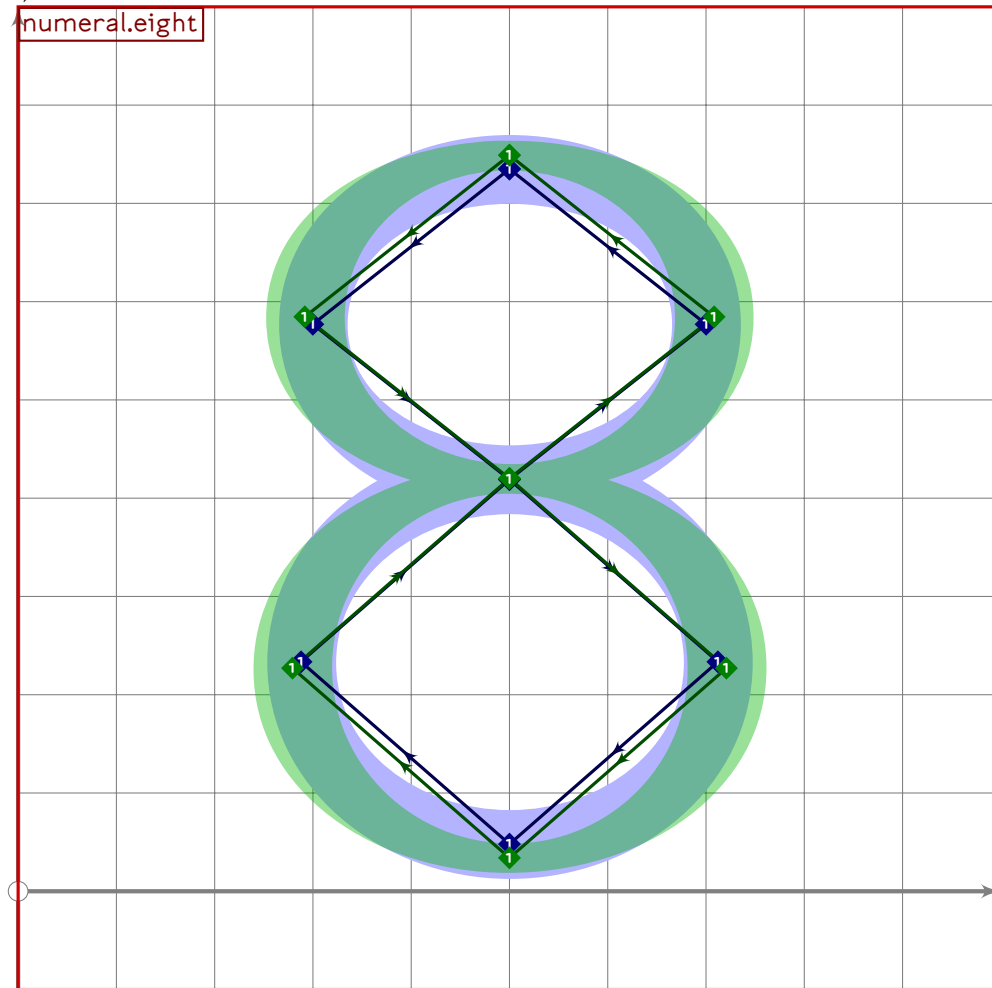
175
176 vardef tsu_curve.numeral.seven =
177   add_proof_box("numeral.seven");
178   (x1*x2)/2=500;
179   x3=0.3[x1,x2];
180   (x2-x1)=0.67*(y1-y3);
181

```

```

182 y1=y2=latin_wide_high_h;
183 y3=latin_wide_low_v;
184
185 bp[sp]:=z1-z2-z3;
186 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
187 bo_tip[sp][1]:=0;
188 sp:=sp+1;
189 enddef;

```



```

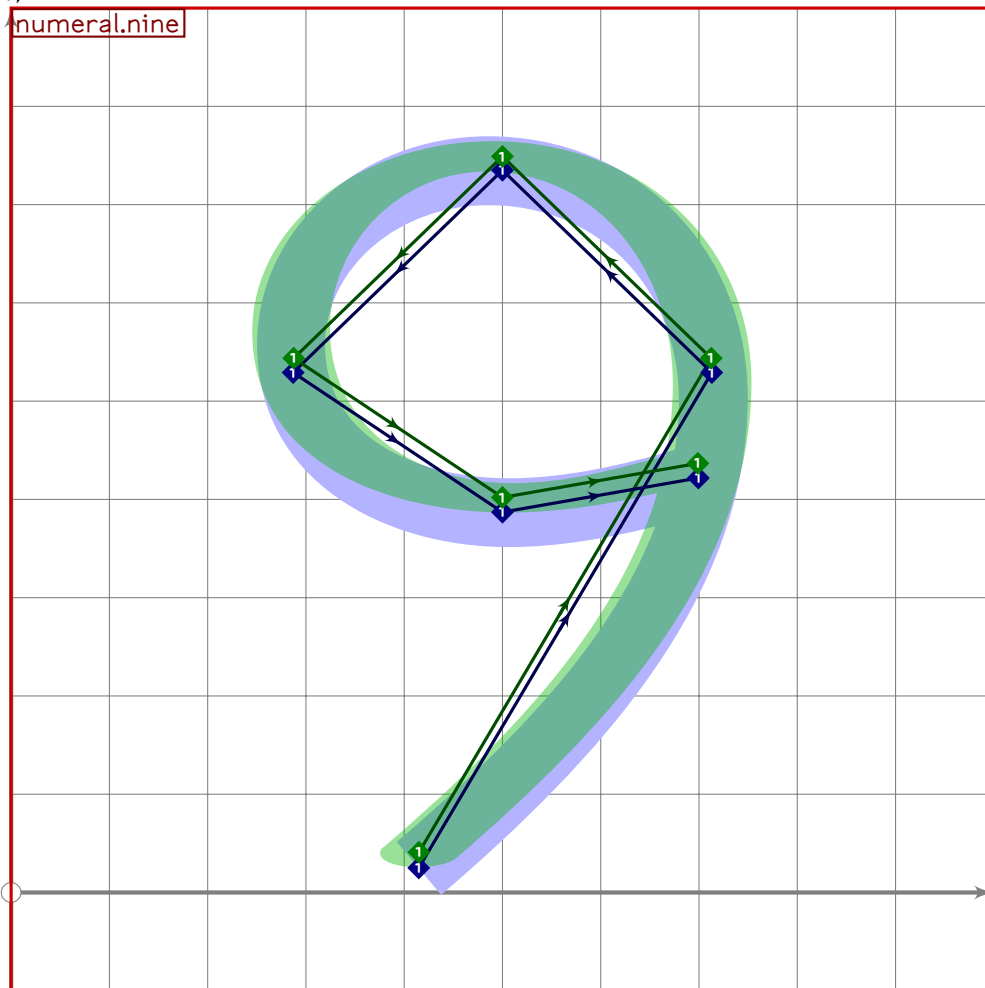
190
191 vardef tsu_curve.numeral.eight =
192   add_proof_box("numeral.eight");
193   x1=x3=x5=x7=(x2*x8)/2=(x4*x6)/2=500;
194   (x4-x6)=1.06*(x8-x2);
195   (x4*x8-x6-x2)/2=0.6*(y1-y5);
196
197   y1=latin_wide_high_r;
198   y2=y8=0.5[y3,y1];
199   y3=y7=0.54[y5,y1];
200   y4=y6=0.5[y5,y3];
201   y5=latin_wide_low_r;
202

```

```

203 bp[sp]:=z1..z2..z3{right}..z4..z5..z6..z7{right}..z8..cycle;
204 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
205 sp:=sp*1;
206 enddef;

```



```

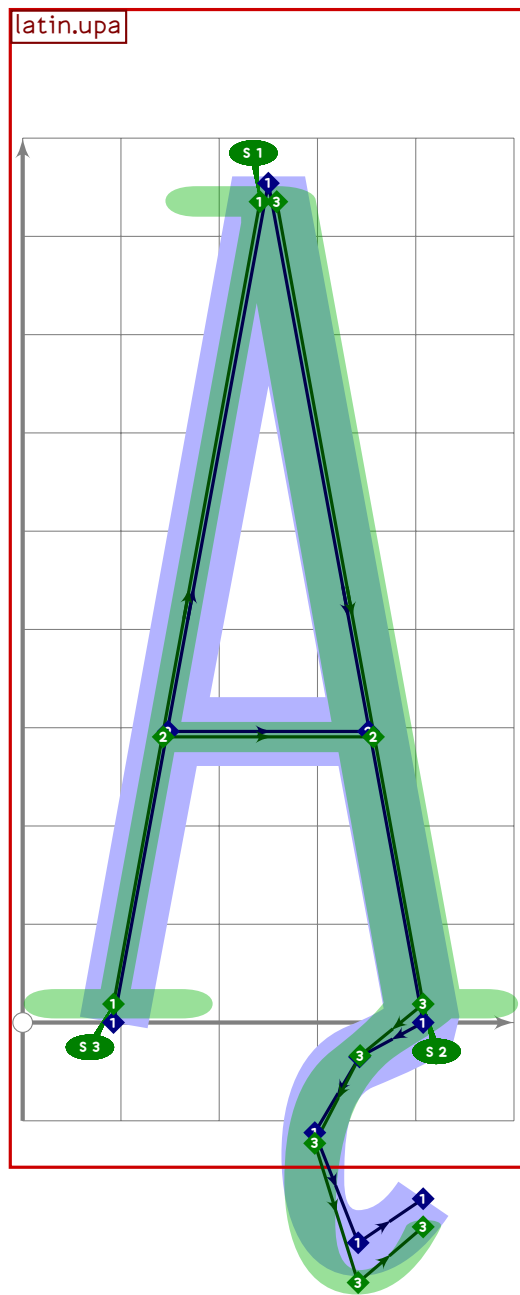
207
208 vardef tsu_curve.numeral.nine =
209   add_proof_box("numeral.nine");
210   x1=0.3[x4,x2];
211   (x2+x4)/2=x3=500;
212   (x2-x4)=0.6(y3-y1);
213   x5=x3;
214
215   y1=latin_wide_low_v;
216   y2=y4=0.29[y3,y1];
217   y3=latin_wide_high_r;
218   y5-y4=0.69*(y4-y3);
219
220   bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280};
221   bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280}..
222     z5..{curl 0.2}(point 0.8 of bp[sp]);
223   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);

```

```
224 sp:=sp*1;  
225 enddef;
```

# ogonek.mp

```
1 %  
2 % Ogonek letters for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31
```



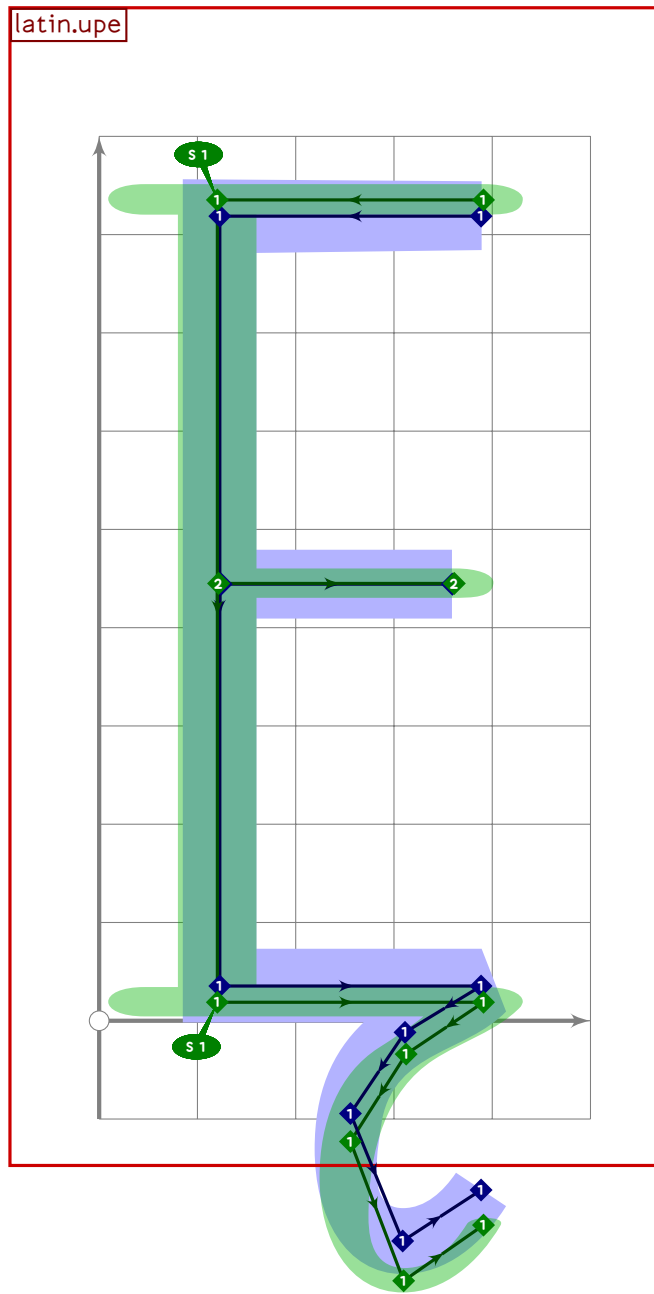
```
32  
33 vardef tsu_curve.latin.upaogonek =  
34   add_proof_box("latin.upaogonek");  
35   tsu_curve.latin.upa;
```



```

36
37 x6=0.3[x2,x3];
38 x7=0.4[x6,x8];
39 x8=x3;
40
41 y6=0.5[y7,y3];
42 y7=latin_wide_desc_r;
43 y8=0.2[y7,y3];
44
45 if do_alteration:
46   bp[sp-1]:=bp[sp-1]{dir 210}..z6..z7{right}..z8;
47   bp[sp-1]:=insert__nodes(bp[sp-1])(length(bp[sp-1])-2.5);
48   bq[sp-1]:=bq[sp-1]-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
49   bo_serif[sp-1][1]:=2;
50   bo_tip[sp-1][length(bp[sp-1])-4]:=1;
51 else:
52   bp[sp-2]:=bp[sp-2]{dir 210}..z6..z7{right}..z8;
53   bp[sp-2]:=insert__nodes(bp[sp-2])(length(bp[sp-2])-2.5);
54   bq[sp-2]:=bq[sp-2]-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
55   bo_serif[sp-2][1]:=2;
56   bo_tip[sp-2][length(bp[sp-2])-4]:=1;
57 fi;
58 enddef;

```



```

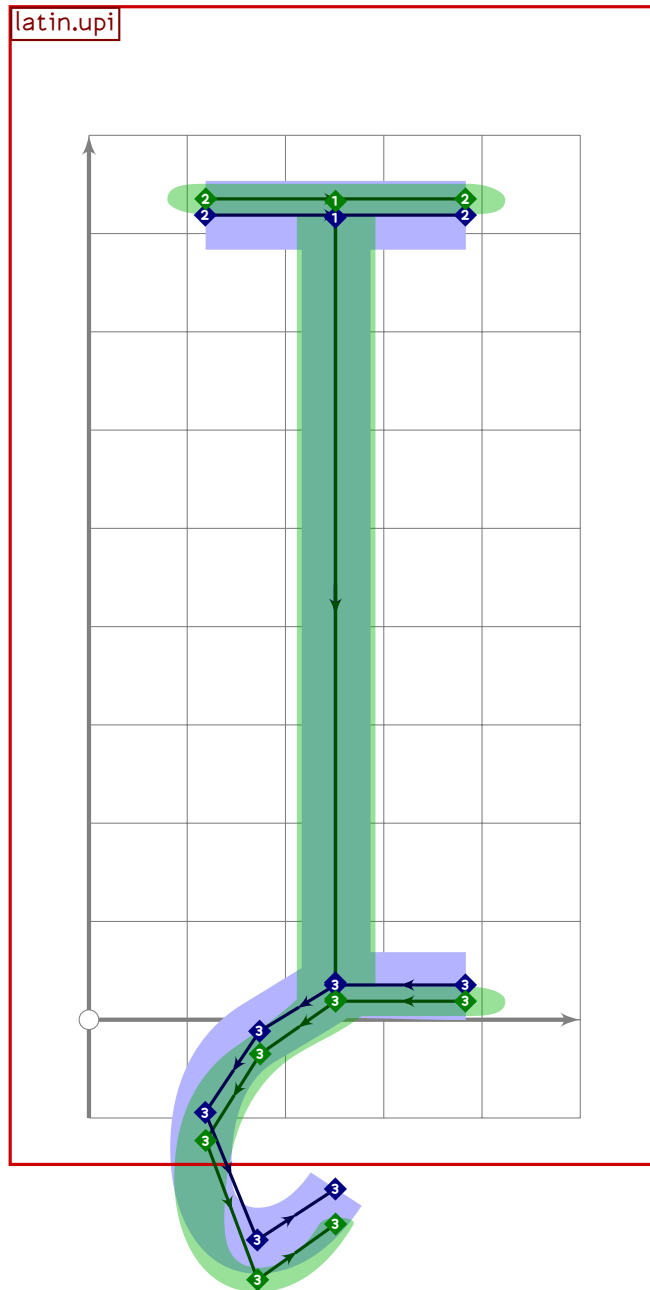
59
60 vardef tsu_curve.latin.upeogonek =
61   add_proof_box("latin.upeogonek");
62   tsu_curve.latin.upe;
63
64   x7=0.5[x3,x4];
65   x8=0.4[x7,x9];
66   x9=x4;
67
68   y7=0.5[y8,y4];
69   y8=latin_wide_desc_r;
70   y9=0.2[y8,y4];
71

```

```

72 bp[sp-2]:=bp[sp-2]{dir 210}.z7..z8{right}.z9;
73 bp[sp-2]:=insert_nodes(bp[sp-2])(length(bp[sp-2])-2.5);
74 bq[sp-2]:=bq[sp-2]-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
75 bo_tip[sp-2][length(bp[sp-2])-4]:=0;
76 enddef;

```



```

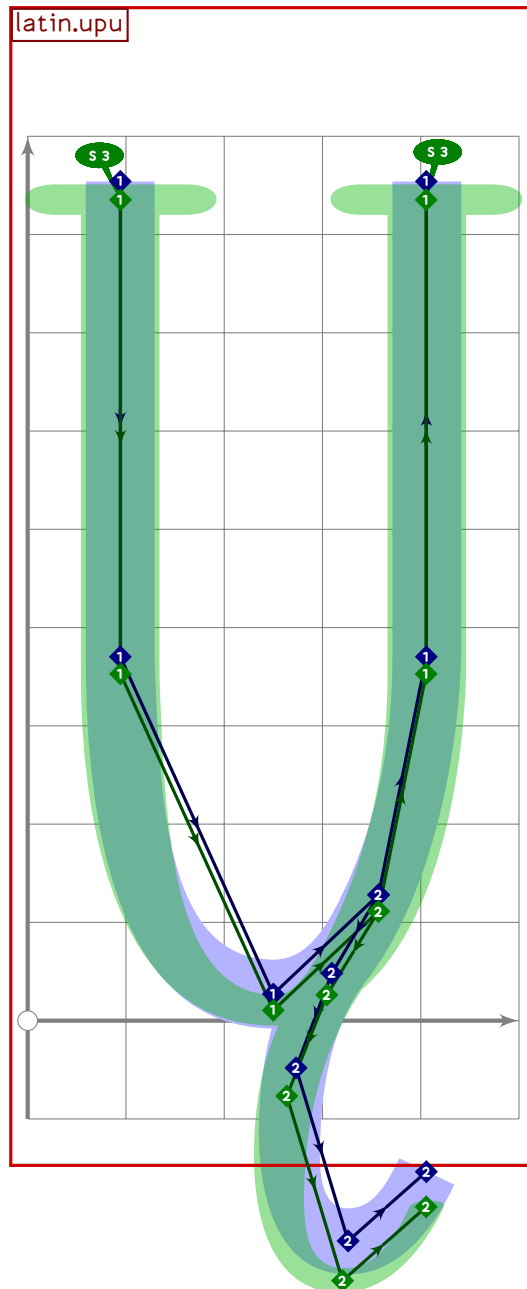
77
78 vardef tsu_curve.latin.upiogonek =
79   add_proof_box("latin.upiogonek");
80   tsu_curve.latin.upi;
81
82   x1=x4=500;
83   x2=300;
84   x3=0.4[x2,x4];

```

```

85
86 y1=latin__wide__low__h;
87 y2=0.5[y3,y1];
88 y3=latin__wide__desc__r;
89 y4=0.2[y3,y1];
90
91 bp[sp-1]:=(700,latin__wide__low__h)-z1{dir 210}..z2..z3{right}..z4;
92 bp[sp-1]:=insert__nodes(bp[sp-1])(1,5);
93 bq[sp-1]:=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
94 enddef;

```



```

95
96 vardef tsu__curve.latin.upuogonek =
97   add__proof__box("latin.upuogonek");

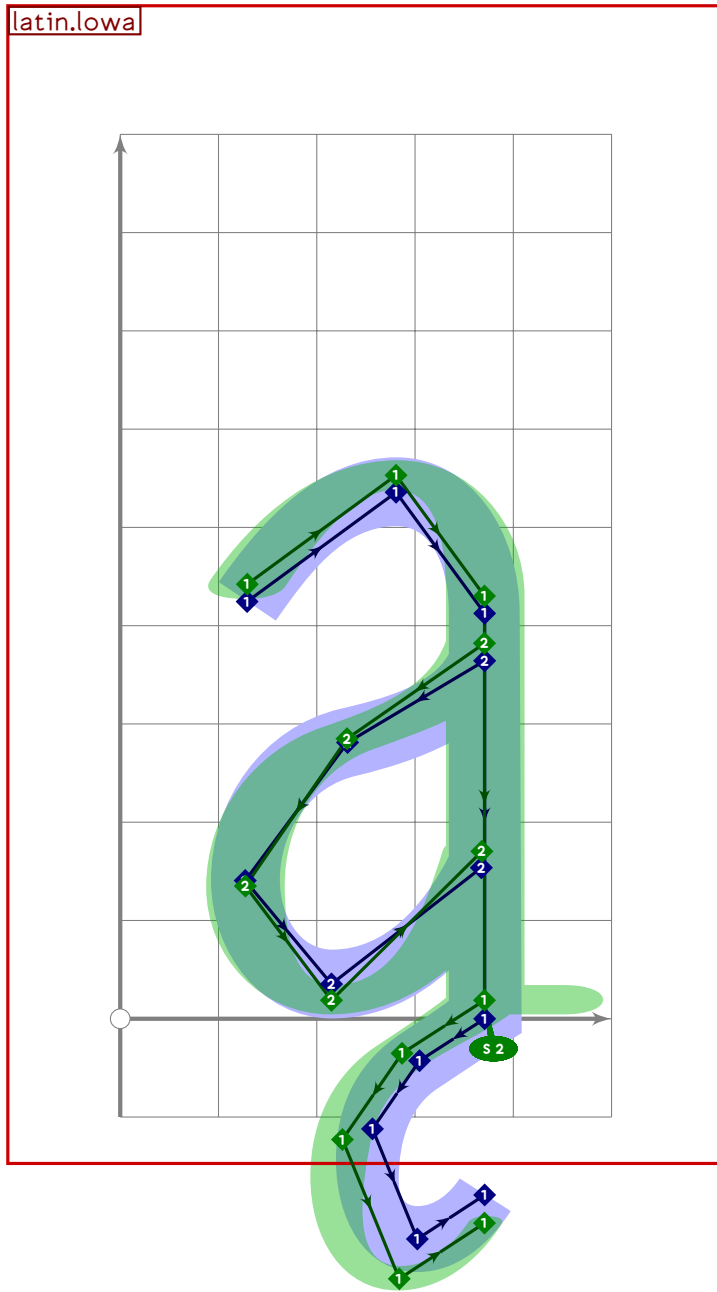
```

```

98  tsu_curve.latin.upu;
99
100 bp[sp-1]:=insert__nodes(bp[sp-1])(2.5);
101 bq[sp-1]:=insert__nodes(bq[sp-1])(2.5);
102 bo_serif[sp-1][5]:=bo_serif[sp-1][4];
103 bo_serif[sp-1][4]:=whatever;
104
105 z6=point 3 of bp[sp-1];
106
107 y7=0.5[y8,y6];
108 y8=latin__wide__desc__r;
109 y9=0.2[y8,y6];
110
111 x9-x7=(x4-x2)*((y6-y8)/(y1-y3));
112 x8=0.4[x7,x9];
113 x9=x4;
114
115 bp[sp]:=z6{direction 3 of bp[sp-1]}..z7..z8{right}..z9;
116 bp[sp]:=insert__nodes(bp[sp])(length(bp[sp])-2.5);
117 bq[sp]:=(1,1,1)-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
118
119 sp:=sp+1;
120 enddef;

```

latin.low

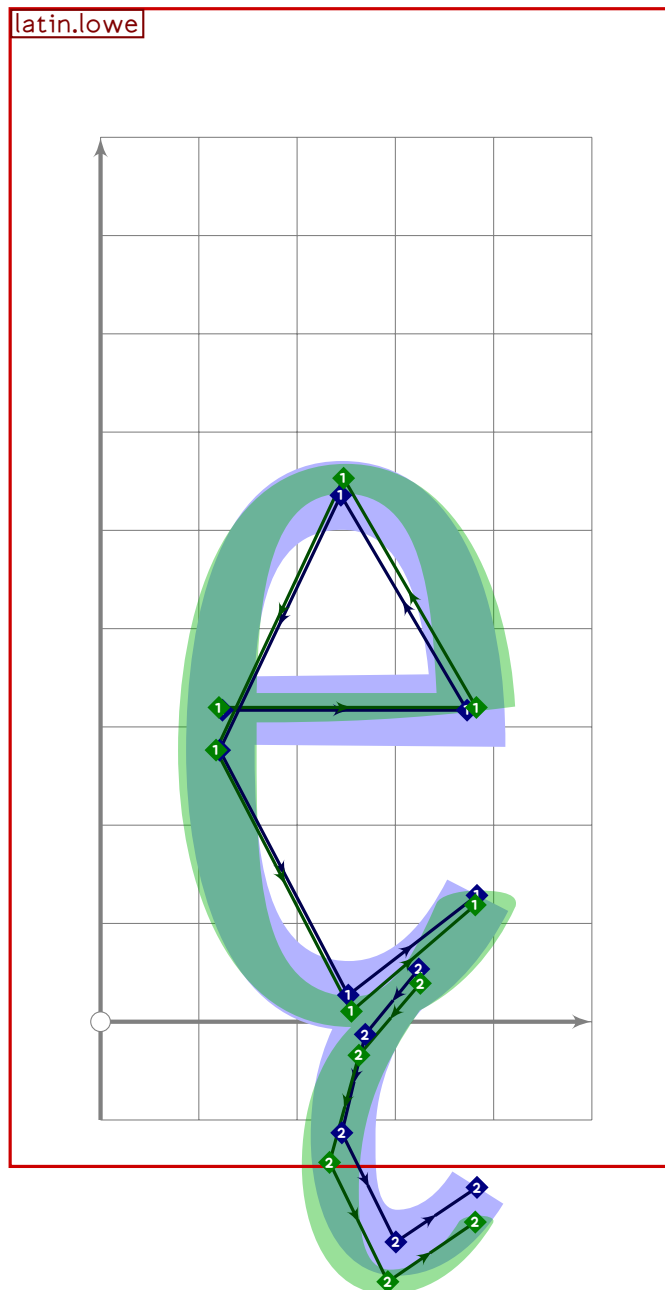


```
121
122 vardef tsu_curve.latin.lowagonek =
123   add_proof_box("latin.lowagonek");
124   tsu_curve.latin.low;
125
126   y9=0.5[y10,y4];
127   y10=latin_wide_desc_r;
128   y11=0.2[y10,y4];
129
130   x11-x9=(x4-x1)*((y4-y10)/(y2-y4));
131   x10=0.4[x9,x11];
132   x11=x4;
133
```

```

134 bp[sp-2]:=bp[sp-2]{dir 210}..z9..z10{right}..z11;
135 bp[sp-2]:=insert_nodes(bp[sp-2])(length(bp[sp-2])-2.5);
136 bq[sp-2]:=bq[sp-2]-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
137 bo_tip[sp-2][length(bp[sp-2])-4]:=1;
138 enddef;

```



```

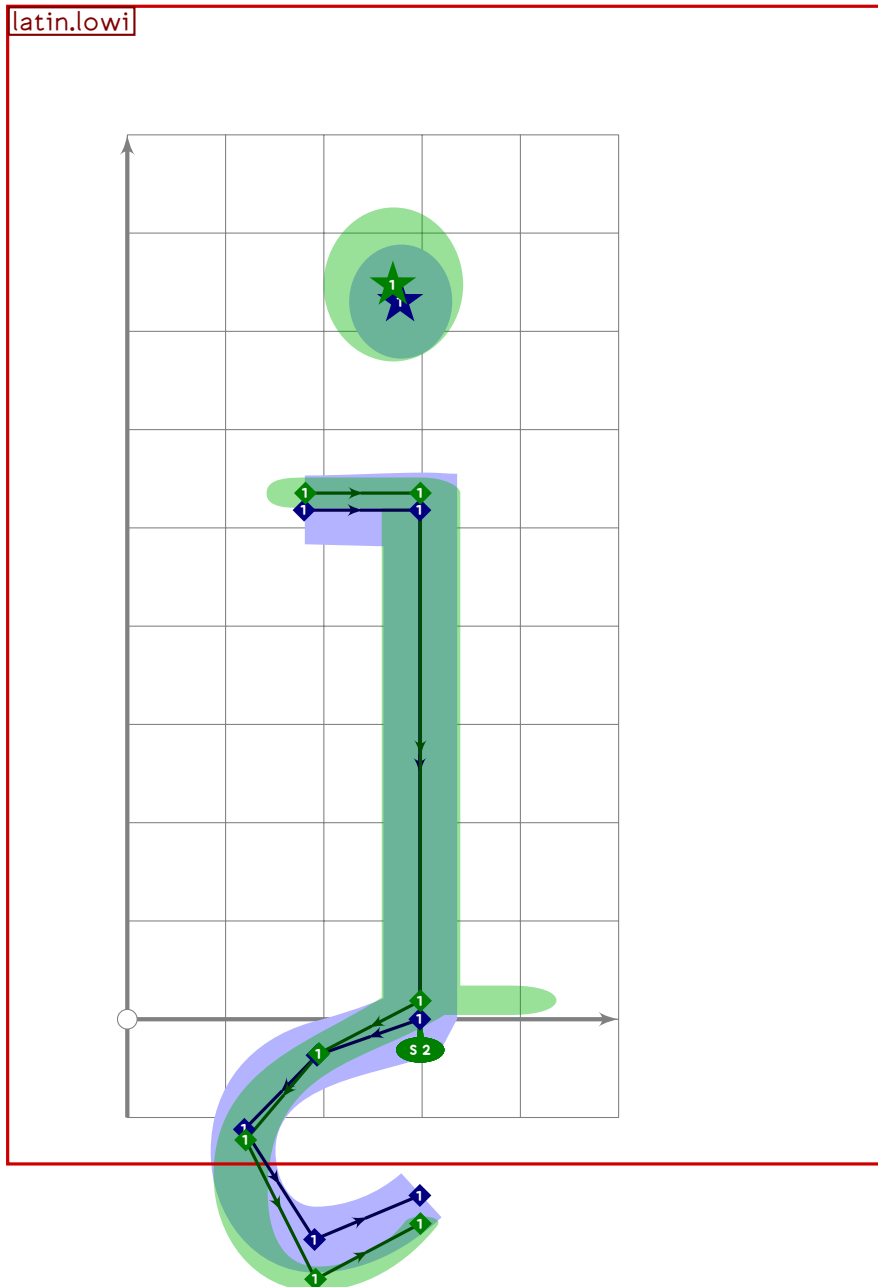
139
140 vardef tsu_curve.latin.loweogonek =
141   add_proof_box("latin.loweogonek");
142   tsu_curve.latin.lowe;
143
144   z7=point 4.5 of bp[sp-1];
145
146   y8=0.4[y9,y7];

```

```

147 y9=latin_wide_desc_r;
148 y10=0.2[y9,y7];
149
150 x10-x8=(x2-x4)*((y7-y9)/(y3-y5));
151 x9=0.4[x8,x10];
152 x10=x6;
153
154 bp[sp]:=z7{direction 4.5 of bp[sp-1]}..z8..z9{right}..z10;
155 bp[sp]:=insert_nodes(bp[sp])(length(bp[sp])-2.5);
156 bq[sp]:=(1.1,1.1)-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
157
158 sp:=sp*1;
159 enddef;

```

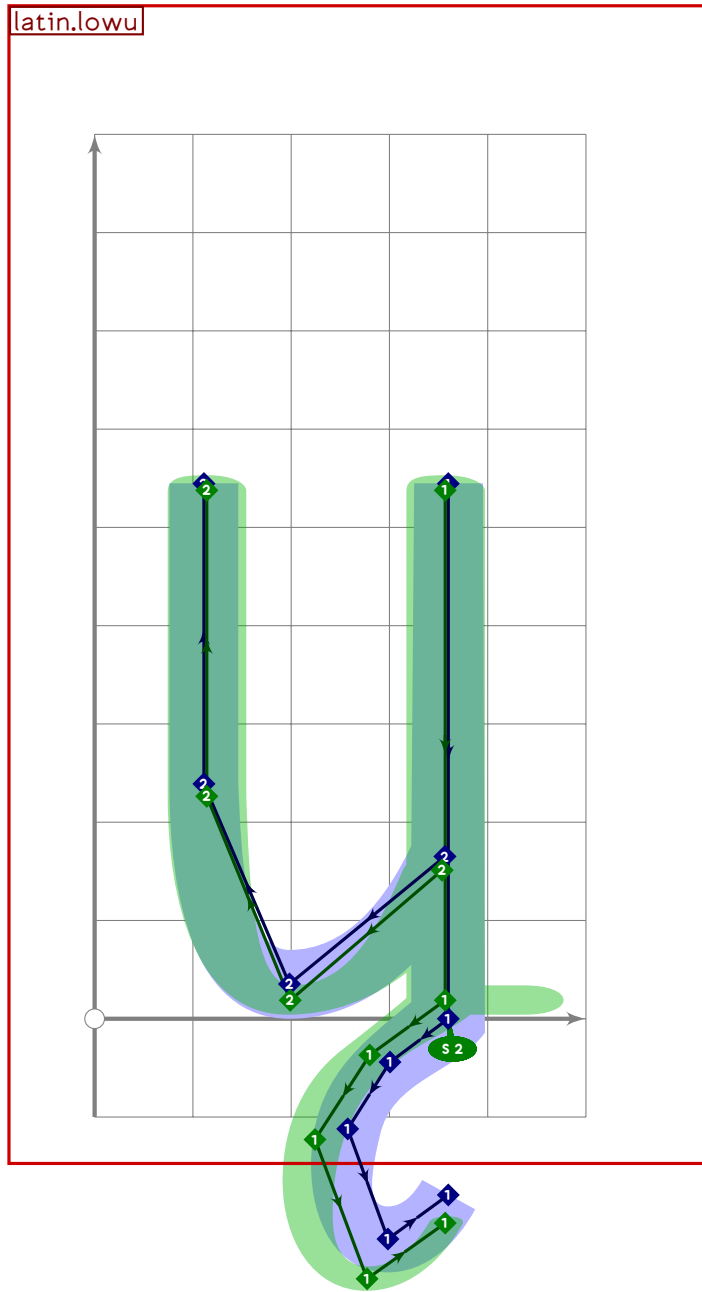




```

160
161 vardef tsu_curve.latin.lowiogonek =
162   add_proof_box("latin.lowiogonek");
163   tsu_curve.latin.lowi;
164
165   x5=x7-200;
166   x6=0.4[x5,x7];
167   x7=x3;
168
169   y5=0.5[y6,y3];
170   y6=latin_wide_desc_r;
171   y7=0.2[y6,y3];
172
173   bp[sp-1]:=bp[sp-1]{dir 210}..z5..z6{right}..z7;
174   bp[sp-1]:=insert_nodes(bp[sp-1])(2.5);
175   bq[sp-1]:=bq[sp-1]-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
176   bo_serif[sp-1][2]:=2;
177   bo_tip[sp-1][2]:=1;
178 enddef;

```



```

179
180 vardef tsu_curve.latin.lowuogonek =
181   add_proof_box("latin.lowuogonek");
182   tsu_curve.latin.lowu;
183
184   y7=0.5[y8,y1];
185   y8=latin_wide_desc_r;
186   y9=0.2[y8,y1];
187
188   x9-x7=(x1-x6)*((y1-y8)/(y2-y1));
189   x8=0.4[x7,x9];
190   x9=x1;
191

```

```
192 bp[sp-2]:=z2-z1{dir 210}..z7..z8{right}..z9;
193 bp[sp-2]:=insert_nodes(bp[sp-2])(length(bp[sp-2])-2.5);
194 bq[sp-2]:=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.3,1.3)-(1.4,1.4)-(1,1);
195 bo_tip[sp-2][1]:=1;
196 bo_serif[sp-2][0]:=whatever;
197 bo_serif[sp-2][1]:=2;
198 enddef;
```

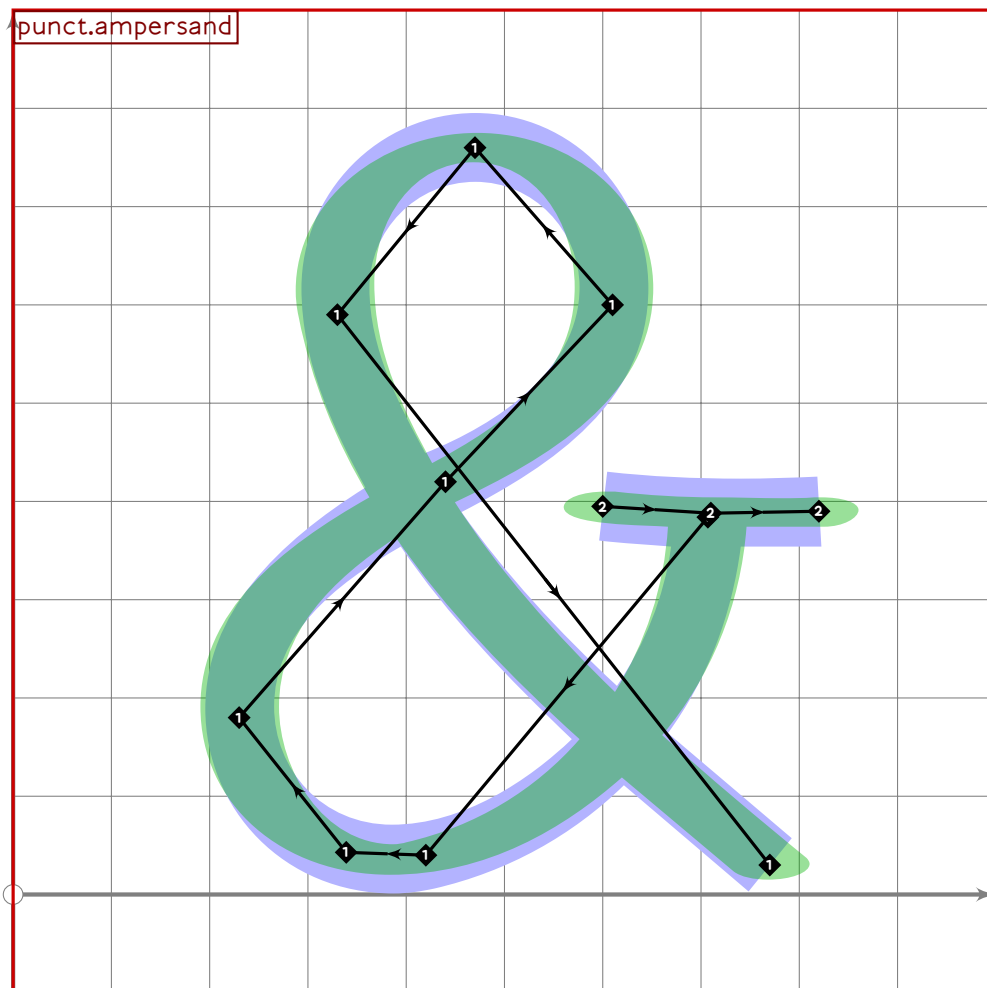
# punct.mp

```

1 %
2 % Punctuation for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]

```

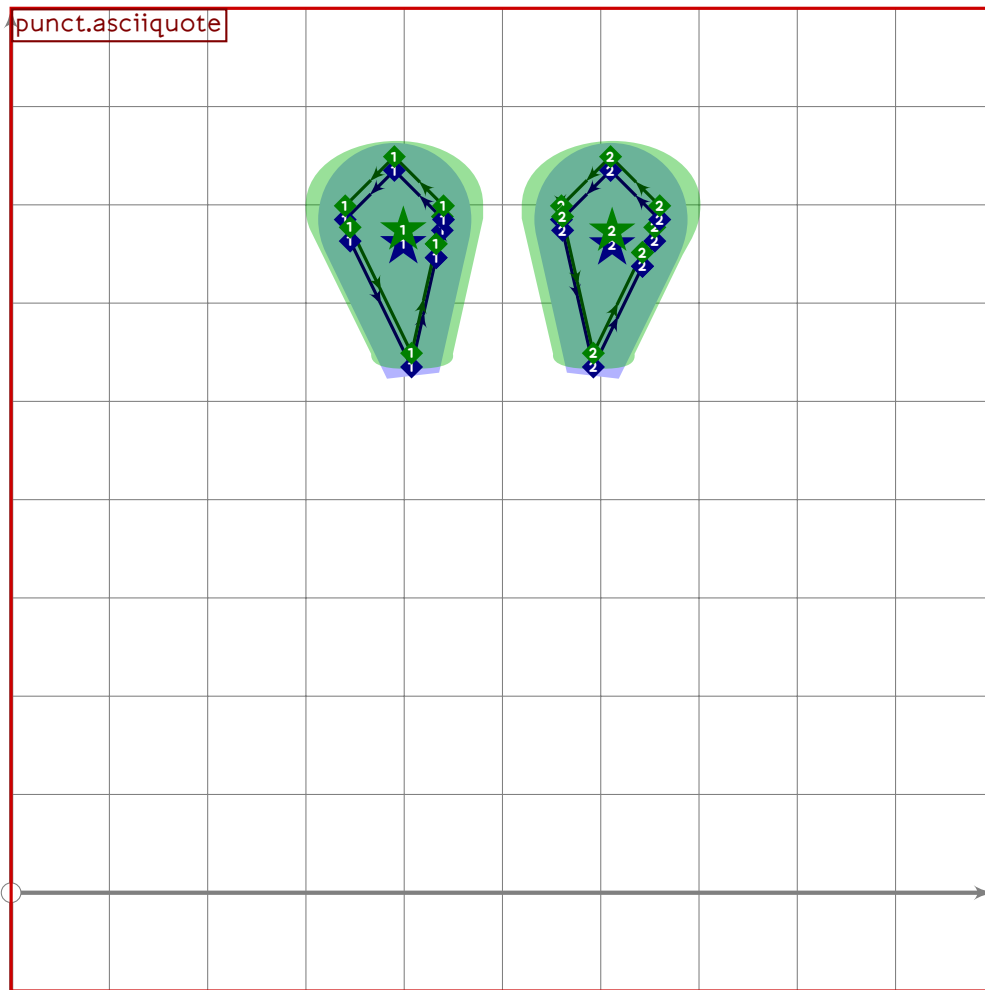
30  
31



```

32
33 vardef tsu_curve.punct.ampersand =
34   add_proof_box("punct.ampersand");
35   bp[sp]:=(707,384)..tension 1.3..(420,40)..(230,180)..(440,420)..
36     (610,600)..(470,760)..(330,590)..tension 1.5 and 4..(770,30);
37   bp[sp]:=insert_nodes(bp[sp])(1.3);
38   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
39
40   bp[sp*1]:=(600,395)..(710,388)..(820,390);
41   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
42   sp:=sp*2;
43 enddef;

```



```

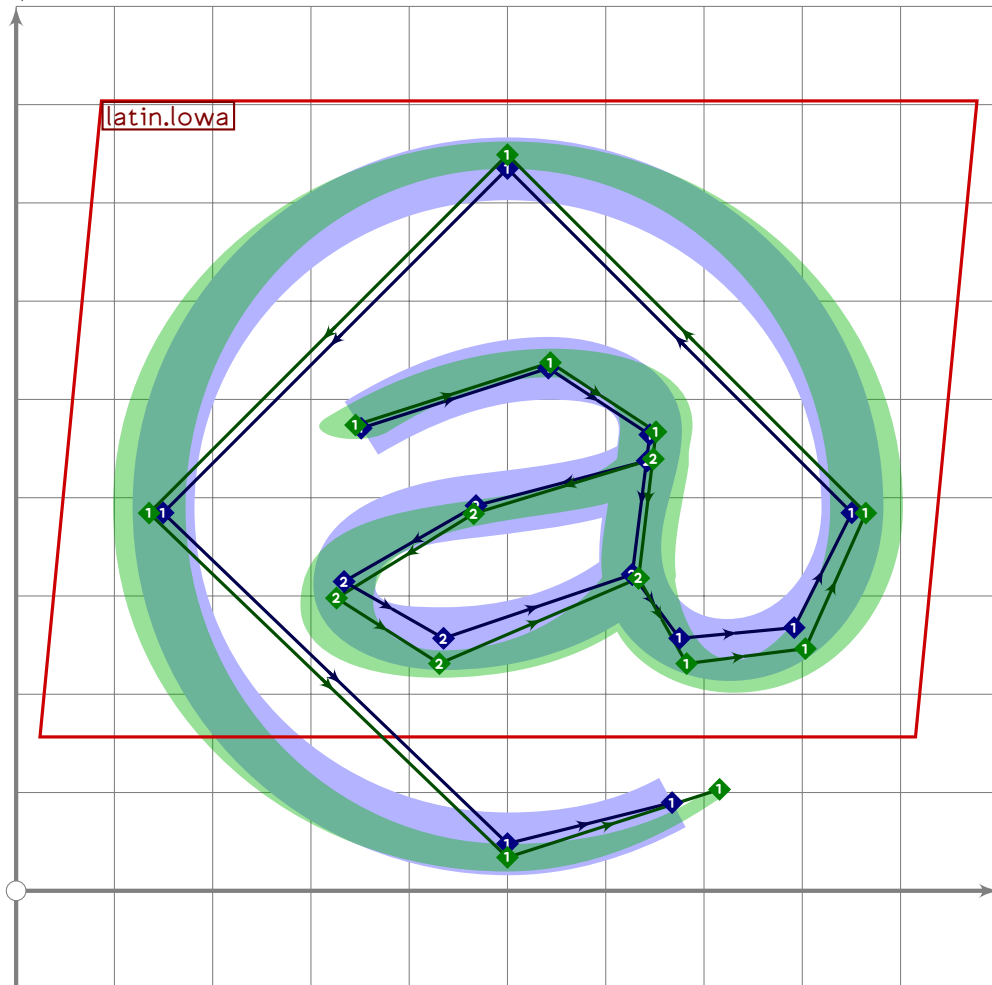
44
45 vardef tsu_curve.punct.asciiquote =
46   add_proof_box("punct.asciiquote");
47   numeric dx;
48   dx=tsu_punct_size;
49
50   (x1*x2)/2=(x3*x4)/2=500;
51   x2-x1=1.2*dx*tsu_punct_size;
52   x4-x3=tsu_punct_size*1.85;
53
54   y1=y2=latin_wide_high_r-dx/2;
55   y3=y4=y1-1.5*dx;
56
57   path ptmp;
58   ptmp:=(down..right..up..left..cycle)
59     scaled (abs(z3-z1)+*(dx/2));
60
61   bp[sp]:=(down..right..up..left..cycle) scaled (dx/2) shifted z1;
62   bp[sp]:=z3-(subpath ((xpart (bp[sp] intersectiontimes (ptmp shifted z3))),
63     (4-xpart ((reverse bp[sp]) intersectiontimes (ptmp shifted z3))))
64     of bp[sp])-cycle;

```

```

65 bp[sp]:=(subpath (0.8,6) of bp[sp])–cycle;
66 bq[sp]:=(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–cycle;
67 bo_size[sp]:=75;
68 bo_tip.[sp][6]:=0;
69
70 bp[sp*1]:=(down..right..up..left..cycle) scaled (dx/2) shifted z2;
71 bp[sp*1]:=z4–(subpath ((xpart (bp[sp*1] intersectiontimes (ptmp shifted z4))),
72   (4–xpart ((reverse bp[sp*1]) intersectiontimes (ptmp shifted z4))))
73   of bp[sp*1])–cycle;
74 bp[sp*1]:=(subpath (0.8,6) of bp[sp*1])–cycle;
75 bq[sp*1]:=(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–(2,2)–cycle;
76 bo_size[sp*1]:=75;
77 bo_tip[sp*1][6]:=0;
78
79 if tsu_pbrush_size>=30:
80   lcblob1:=bp[sp];
81   lcblob2:=bp[sp*1];
82   fi;
83
84   sp:=sp*2;
85 endif;

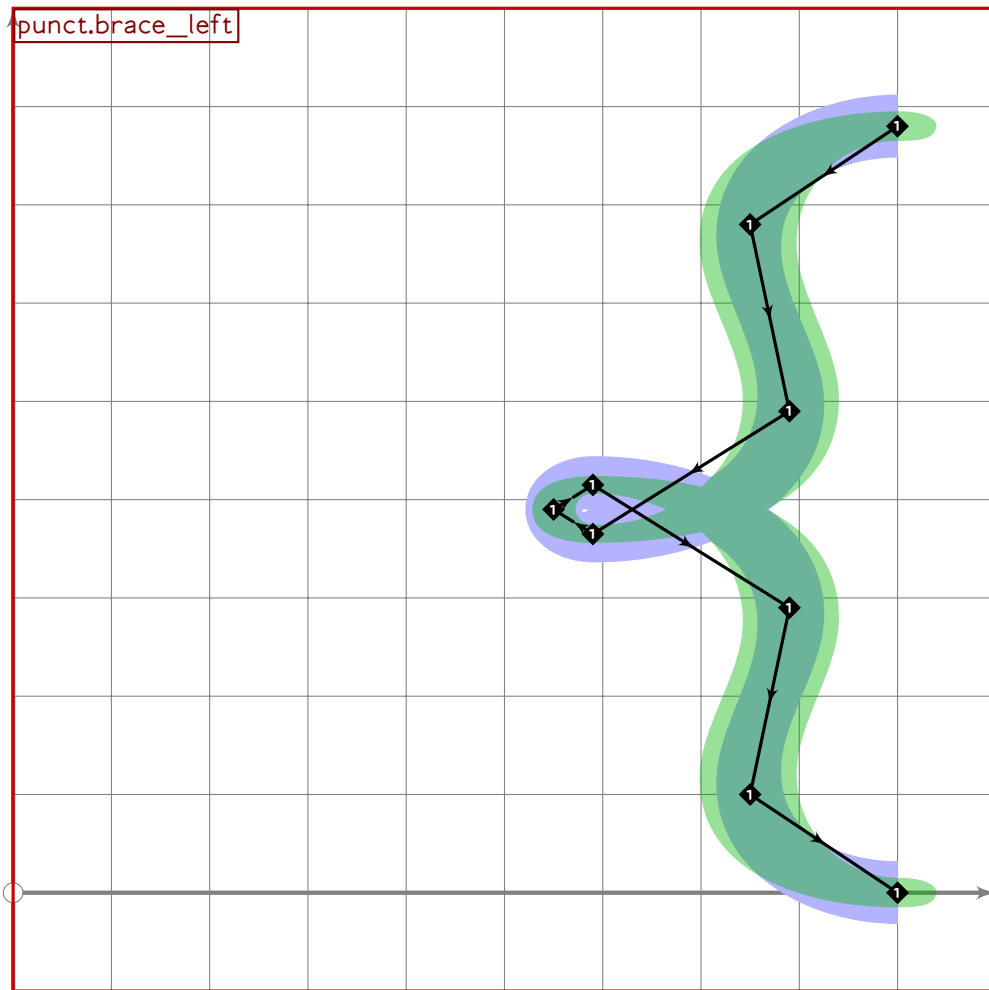
```



```

86
87 vardef tsu_curve.punct.atsign =
88   add_proof_box("punct.atsign");
89   tsu_curve.latin.lowa;
90   sp:=sp-2;
91
92   numeric x[],y[];
93   x1-x2=x2-x3=y2-y1;
94   x2=x4=500;
95   y1=y3=0.49[y4,y2];
96   y2=latin_wide_high_r;
97   y4=latin_wide_low_r;
98
99   transform shrinka;
100  (0.5[lcorner bp[sp],urcorner bp[sp]]) transformed shrinka=0.5[z3,z1];
101  (0.5[lrcorner bp[sp],urcorner bp[sp]]) transformed shrinka=0.71[z3,z1];
102  (0.5[ulcorner bp[sp],urcorner bp[sp]]) transformed shrinka=
103    z2*(0.07-1)*0.29*(x1-x3);
104  tsu_xform(shrinka shifted (-10,0))(sp:=sp+2);
105  numeric bo_serif[][];
106  sp:=sp-2;
107
108  z5=point infinity of bp[sp+1];
109  y6=ypart lrcorner bp[sp+1];
110  x6=0.5[x2,x1];
111  bp[sp]:=(subpath (0,length(bp[sp])-1) of bp[sp])..z5..z6..
112    (subpath (0,3.85) of (z1..z2..z3..z4..cycle));
113  bp[sp]:=insert_nodes(bp[sp])((length bp[sp]-4.5));
114  bq[sp]:=bq[sp]-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(0,0);
115  sp:=sp+2;
116 enddef;
117
118 vardef tsu_curve.punct.brace_intro =
119   add_proof_box("punct.brace_intro");
120   bracket1:=(900,780){left}..
121     (900-1.5*tsu_punct_size,680)..
122     (900-1.1*tsu_punct_size,490)..
123     (900-3.1*tsu_punct_size,390-0.25*tsu_punct_size){left}..
124     (900-3.5*tsu_punct_size,390)..
125     (900-3.1*tsu_punct_size,390+0.25*tsu_punct_size){right}..
126     (900-1.1*tsu_punct_size,290)..
127     (900-1.5*tsu_punct_size,100)..
128     (900,0){right};
129 enddef;

```

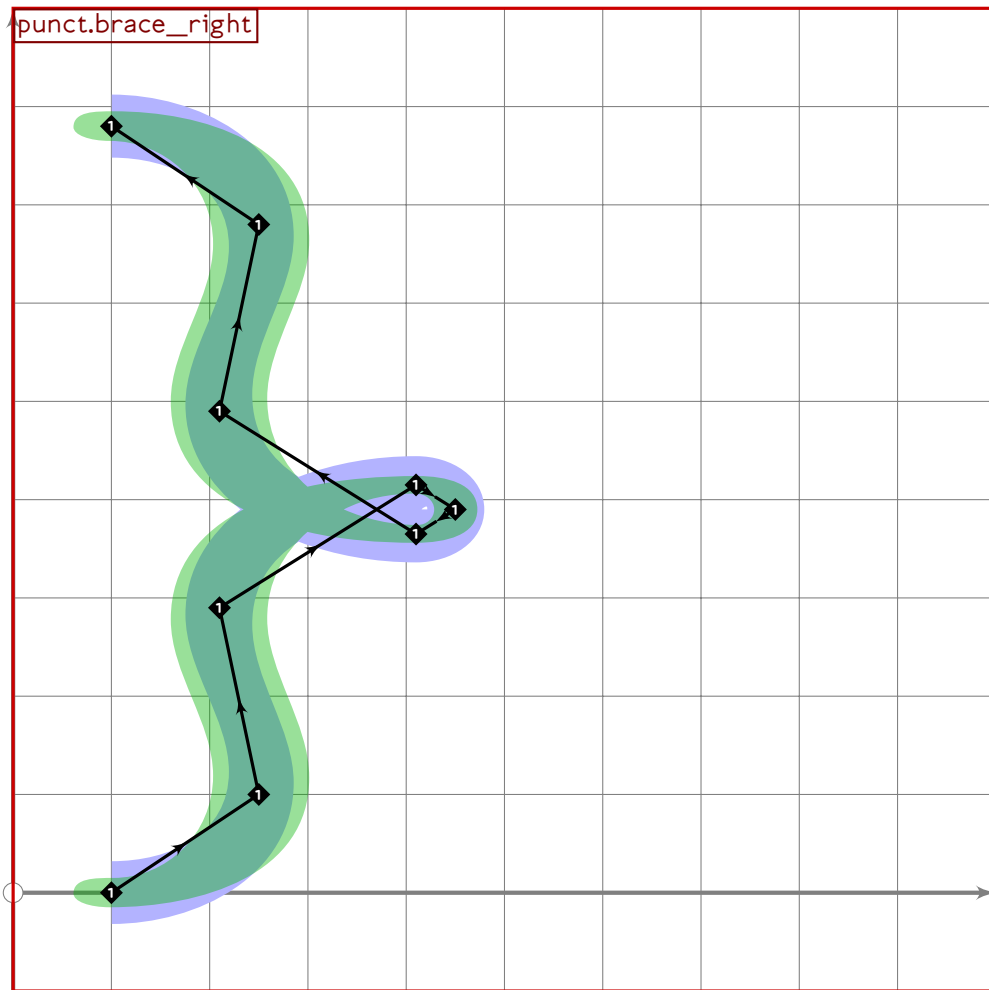


```

130 vardef tsu_curve.punct.brace_left =
131   add_proof_box("punct.brace_left");
132   bp[sp]:=bracket1;
133   bq[sp]:=(1.7,1.7)-(2,2)-(2,2)-
134     (1.2,1.2)-(1.2,1.2)-(1.2,1.2)-
135     (2,2)-(2,2)-(1.7,1.7);
136   bo_size[sp]:=90;
137   sp:=sp*1;
138 enddef;

```

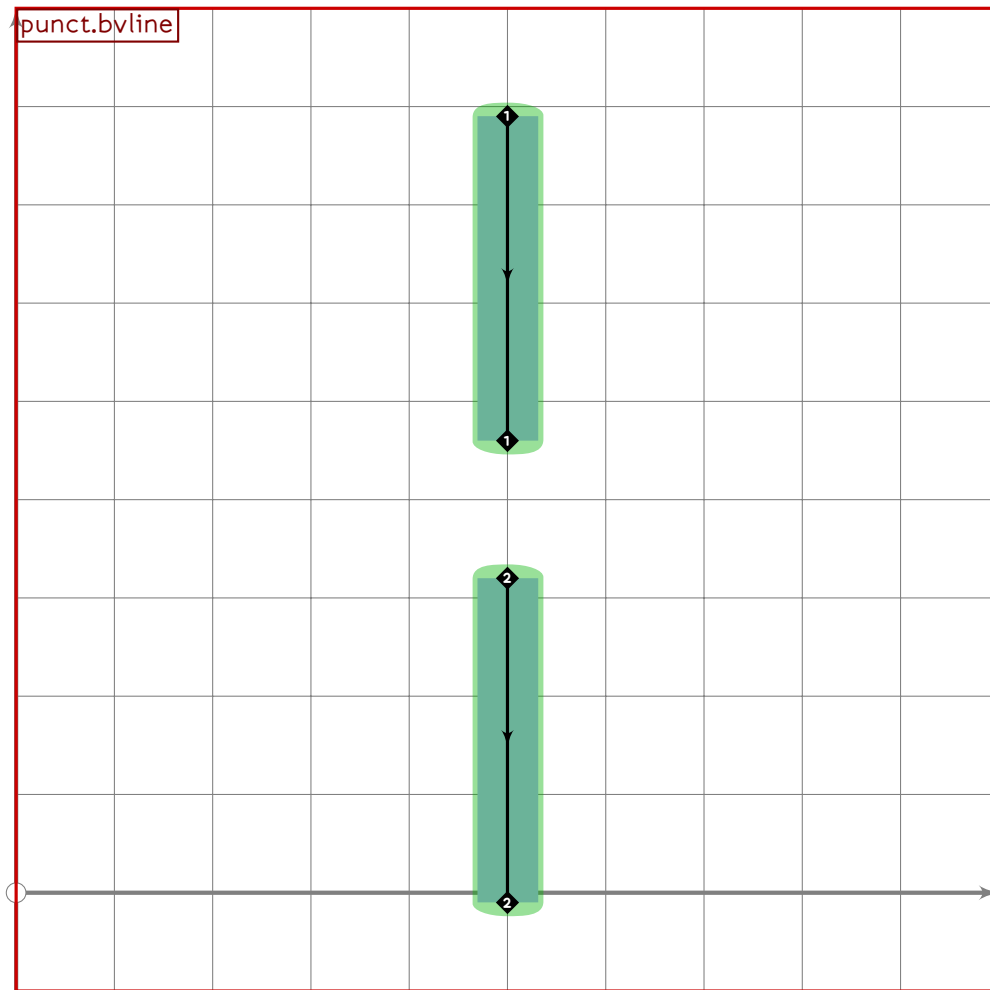




```

139 vardef tsu_curve.punct.brace_right =
140   add_proof_box("punct.brace_right");
141   bp[sp]:=bracket1 rotatedaround (centre_pt,180);
142   bq[sp]:=(1.7,1.7)-(2,2)-(2,2)-
143     (1.2,1.2)-(1.2,1.2)-(1.2,1.2)-
144     (2,2)-(2,2)-(1.7,1.7);
145   bo_size[sp]:=90;
146   sp:=sp*1;
147 enddef;

```



```

148
149 vardef tsu_curve.punct.bvline =
150   add_proof_box("punct.bvline");
151   bp[sp]:=(500,690*tsu_punct_size)-(500,390+0.7*tsu_punct_size);
152   bq[sp]:=(1.6,1.6)-(1.6,1.6);
153   bo_size[sp]:=90;
154   bp[sp*1]:=(500,390-0.7*tsu_punct_size)-(500,90-tsu_punct_size);
155   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
156   bo_size[sp*1]:=90;
157   sp:=sp*2;
158 enddef;
159
160 vardef tsu_curve.punct.make_comma(expr cpos,cang) =
161   begingroup
162     save x,y,t,u,xsp;
163     numeric x[],y[];
164     transform t,u;
165     xsp:=sp;
166     sp:=1;
167     t:=tsu_rescale_xform;
168     sp:=xsp;

```

```

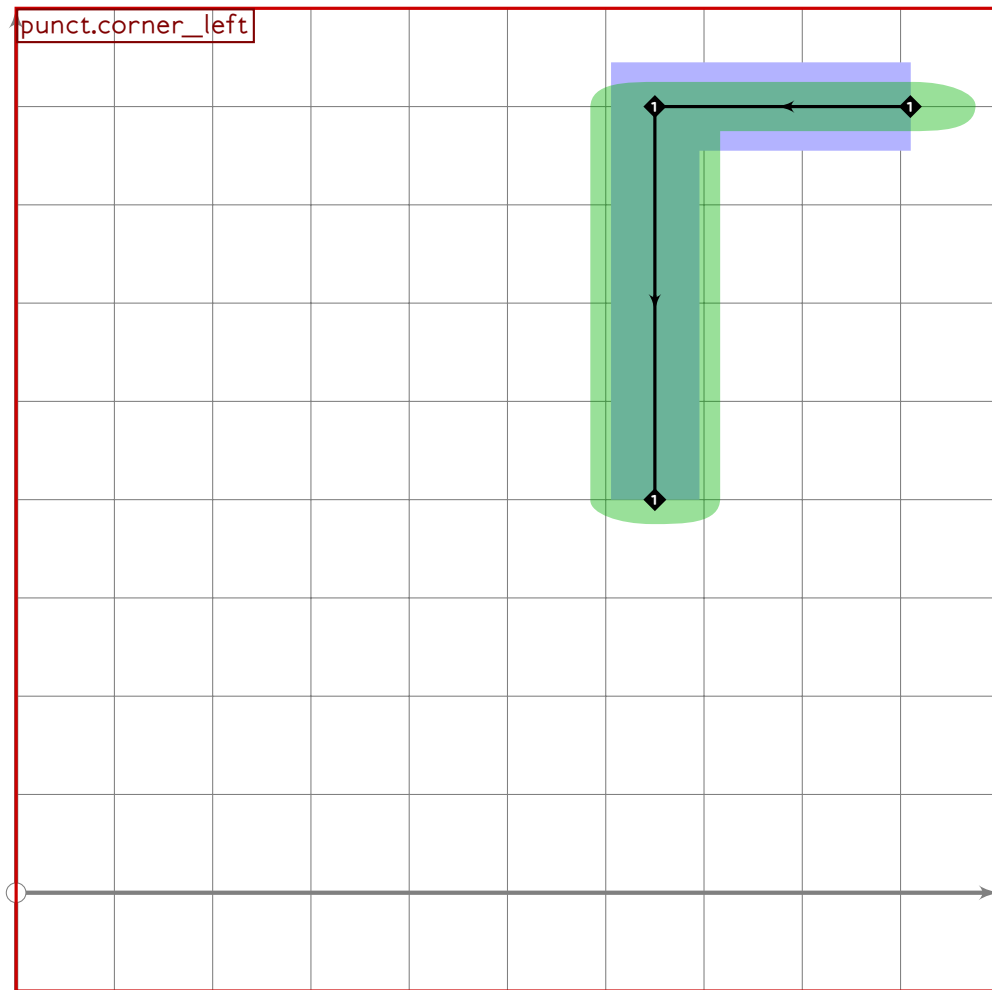
169
170 x1=0.8[x2,x4];
171 (x2*x4)/2=x3=0;
172 (x2-x4)=0.45*(y3-y1)=tsu_punct_size;
173 x5=x3;
174
175 y2=y4=0.32[y3,y1]=0;
176 y5-y4=0.73*(y4-y3);
177
178 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280};
179 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280}..
180 z5..{curl 0.2}(point 0.8 of bp[sp]);
181 bp[sp]:=(point 4.2 of bp[sp])-bp[sp];
182 (0,0) transformed u=llcorner bp[sp];
183 (1,0) transformed u=lrcorner bp[sp];
184 (0,1) transformed u=ulcorner bp[sp];
185 bp[sp]:=bp[sp] rotated (cang-6) shifted (cpos transformed t)
186 transformed inverse t;
187 u:=u scaled 1.3 rotated (cang-6) shifted (cpo transformed t)
188 transformed inverse t;
189 bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2);
190 bp_tip[sp][1]:=0;
191
192 if tsu_pbrush_size>=30:
193 bp[sp]:=subpath (0.03,5.75) of bp[sp];
194 bo_size[sp]:=40;
195 save i;
196 i:=1; forever: exitif unknown lcblob[i]; i:=i+1; endfor;
197 lcblob[i]:=(subpath (1.6,4.9) of bp[sp])-cycle;
198 else:
199 bp[sp]:=subpath (0,5.2) of bp[sp];
200 bo_size[sp]:=80;
201 fi;
202 prf_box[sp]:=u;
203 prf_box_name[sp]:="punct.make__comma";
204 endgroup;
205 sp:=sp*1;
206 enddef;
207
208 vardef tsu_curve.punct.make_revcomma(expr cpos,cang) =
209 begingroup
210 save x,y,t,u,xsp;
211 numeric x[],y[];
212 transform t,u;
213 xsp:=sp;
214 sp:=1;
215 t:=tsu_rescale_xform;
216 sp:=xsp;

```

```

217
218 x1=0.8[x2,x4];
219 (x2*x4)/2=x3=0;
220 (x2-x4)=0.45*(y3-y1)=tsu_punct_size;
221 x5=x3;
222
223 y2=y4=0.32[y3,y1]=0;
224 y5-y4=0.73*(y4-y3);
225
226 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280};
227 bp[sp]:=z1{curl 0.2}..tension 1.2..z2..z3..z4{dir 280}..
228 z5..{curl 0.2}(point 0.8 of bp[sp]);
229 bp[sp]:=(point 4.2 of bp[sp])-bp[sp];
230 (0,0) transformed u=llcorner bp[sp];
231 (1,0) transformed u=lrcorner bp[sp];
232 (0,1) transformed u=ulcorner bp[sp];
233 bp[sp]:=reverse (bp[sp] rotated -6 reflectedabout(up,down));
234 bp[sp]:=bp[sp] rotated cang shifted (cpos transformed t)
235 transformed inverse t;
236 u:=u scaled 1.3 rotated (cang-6) shifted (cpo transformed t)
237 transformed inverse t;
238 bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2);
239 bp_tip[sp][1]:=0;
240
241 if tsu_pbrush_size>=30:
242 bp[sp]:=subpath (0.25,5.97) of bp[sp];
243 bo_size[sp]:=40;
244 save i;
245 i:=1; forever: exitif unknown lcblob[i]; i:=i+1; endfor;
246 lcblob[i]:=(subpath (1.1,4.4) of bp[sp])-cycle;
247 else:
248 bp[sp]:=subpath (0.8,6) of bp[sp];
249 bo_size[sp]:=80;
250 fi;
251 prf_box[sp]:=u;
252 prf_box_name[sp]:="punct.make_revcomma";
253 endgroup;
254 sp:=sp+1;
255 enddef;
256
257 vardef tsu_curve.punct.corner_intro =
258 add_proof_box("punct.corner_intro");
259 bracket1:=(910,800)-(650,800)-(650,400);
260 enddef;

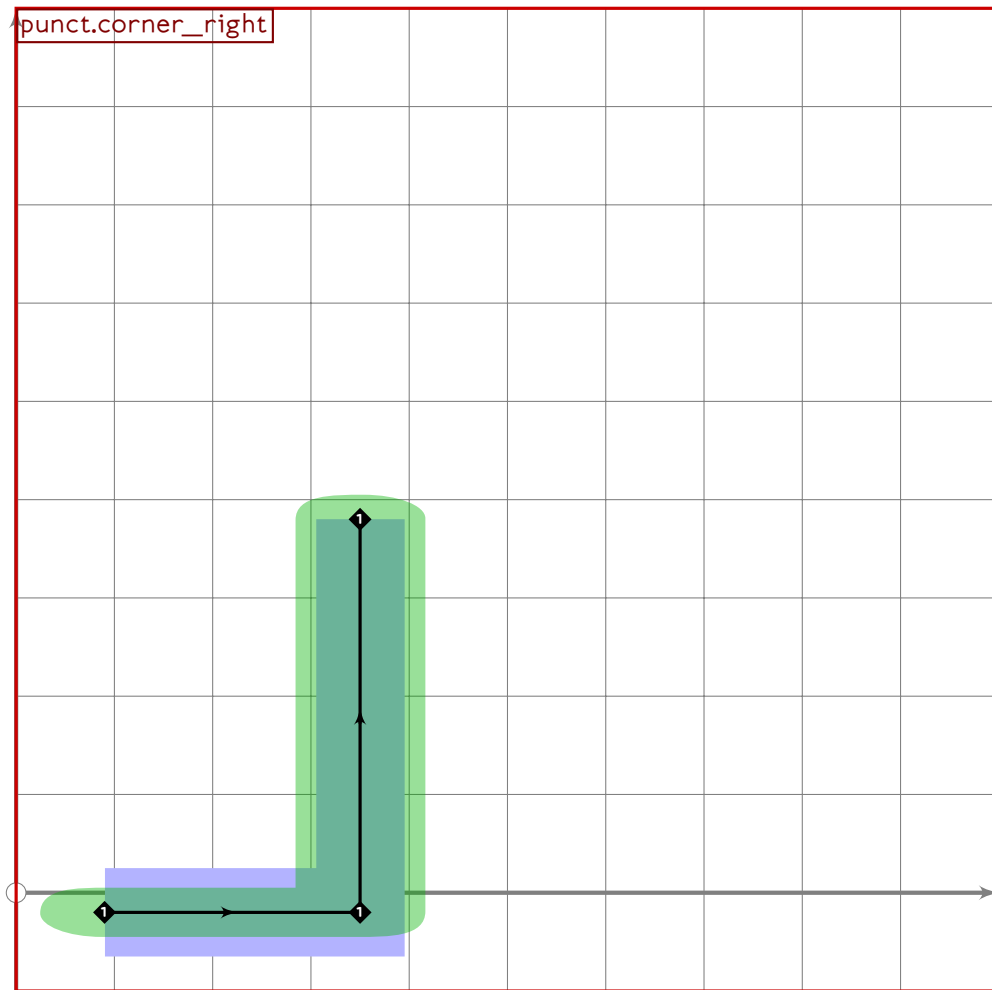
```



```

261 vardef tsu_curve.punct.corner_left =
262   add_proof_box("punct.corner_left");
263   bp[sp]:=bracket1;
264   bq[sp]:=(2,2)-(2,2)-(2,2);
265   bo_size[sp]:=120;
266   bo_tip[sp]1:=1;
267   sp:=sp*1;
268 enddef;

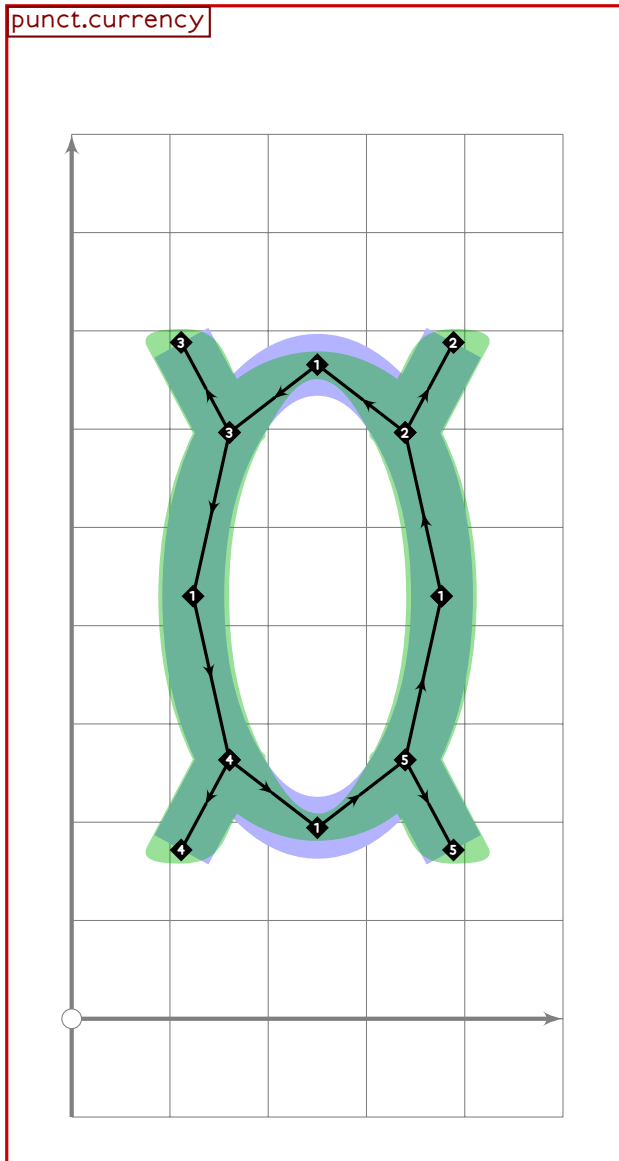
```



```

269 vardef tsu_curve.punct.corner_right =
270   add_proof_box("punct.corner_right");
271   bp[sp]:=bracket1 rotatedaround (centre_pt,180);
272   bq[sp]:=(2,2)-(2,2)-(2,2);
273   bo_size[sp]:=120;
274   bo_tip[sp]l:=1;
275   sp:=sp*1;
276 enddef;

```



```

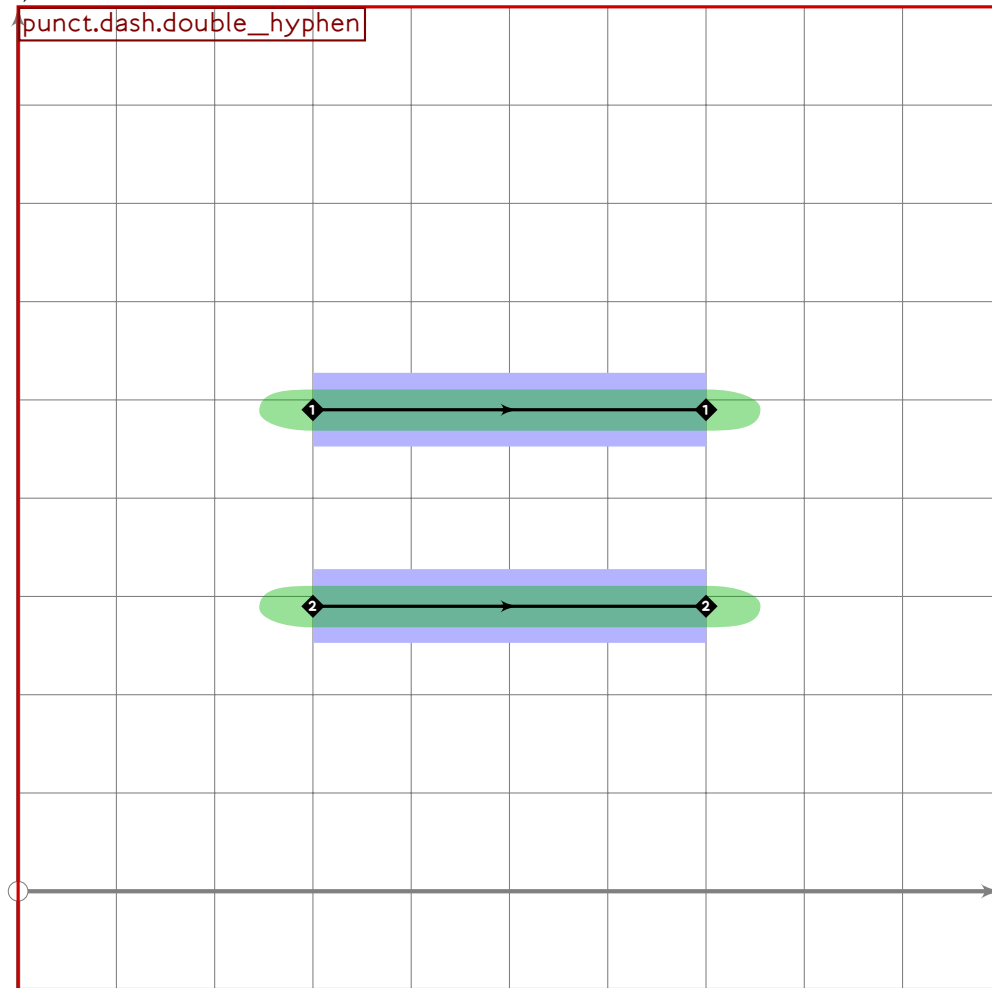
277
278 vardef tsu_curve.punct.currency =
279   add_proof_box("punct.currency");
280   bp[sp]:=fullcircle scaled (4*tsu_punct_size) shifted centre_pt;
281   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
282   bo_size[sp]:=90;
283   bp[sp*1]:=((1,0)-(1.55,0)) rotated 45
284     scaled (2*tsu_punct_size) shifted centre_pt;
285   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
286   bo_size[sp*1]:=90;
287   bp[sp*2]:=((1,0)-(1.55,0)) rotated 135
288     scaled (2*tsu_punct_size) shifted centre_pt;
289   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
290   bo_size[sp*2]:=90;
291   bp[sp*3]:=((1,0)-(1.55,0)) rotated 225
292     scaled (2*tsu_punct_size) shifted centre_pt;

```

```

293 bq[sp+3]:=(1.6,1.6)-(1.6,1.6);
294 bo_size[sp+3]:=90;
295 bp[sp+4]:=((1,0)-(1.55,0)) rotated 315
296   scaled (2*tsu_punct_size) shifted centre_pt;
297 bq[sp+4]:=(1.6,1.6)-(1.6,1.6);
298 bo_size[sp+4]:=90;
299 sp:=sp+5;
300 endif;

```



```

301
302 vardef tsu_curve.punct.dash.double_hyphen =
303   add_proof_box("punct.dash.double_hyphen");
304   (z1+z4)/2=centre_pt;
305   x2-x1=400;
306   y1-y3=200;
307   y1=y2;
308   y3=y4;
309   x1=x3;
310   x2=x4;
311   bp[sp]:=z1-z2;
312   bq[sp]:=(2,2)-(2,2);
313   bp[sp+1]:=z3-z4;

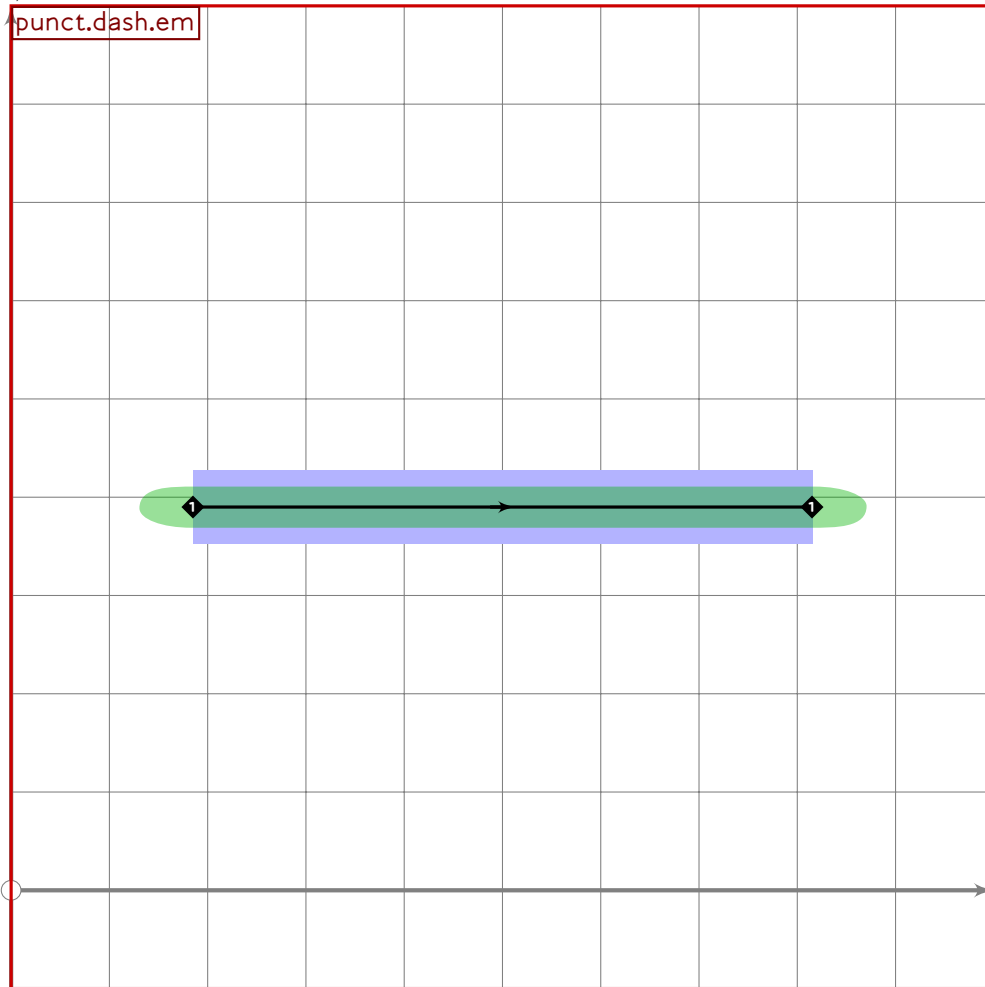
```



```

314 bq[sp*1]:=(2,2)-(2,2);
315 sp:=sp*2;
316 enddef;

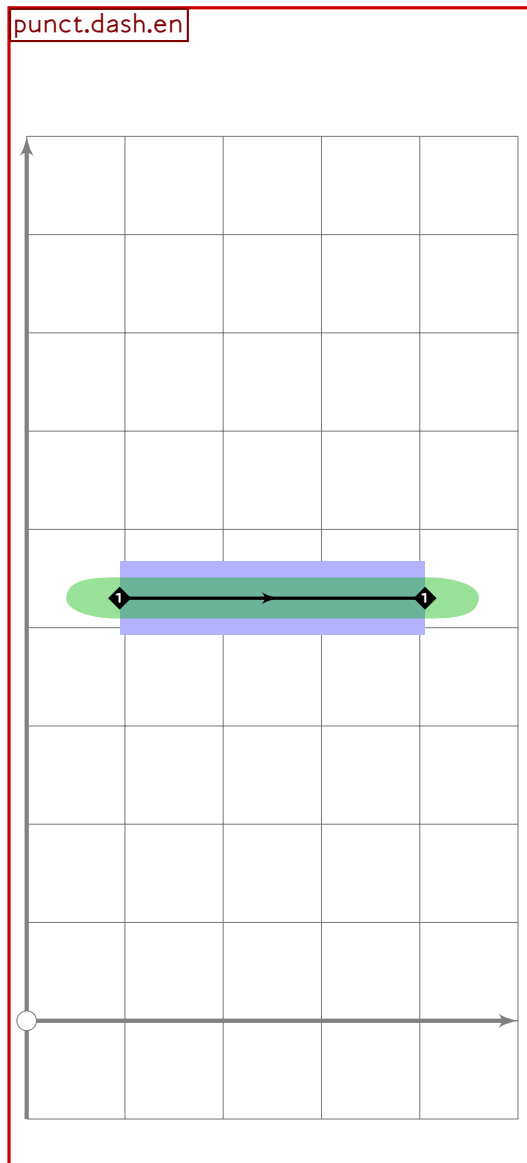
```



```

317
318 vardef tsu_curve.punct.dash.em =
319   add_proof_box("punct.dash.em");
320   (z1+z2)/2=centre_pt;
321   x2-x1=630;
322   y1=y2;
323   bp[sp]:=z1-z2;
324   bq[sp]:=(2,2)-(2,2);
325   sp:=sp*1;
326 enddef;

```

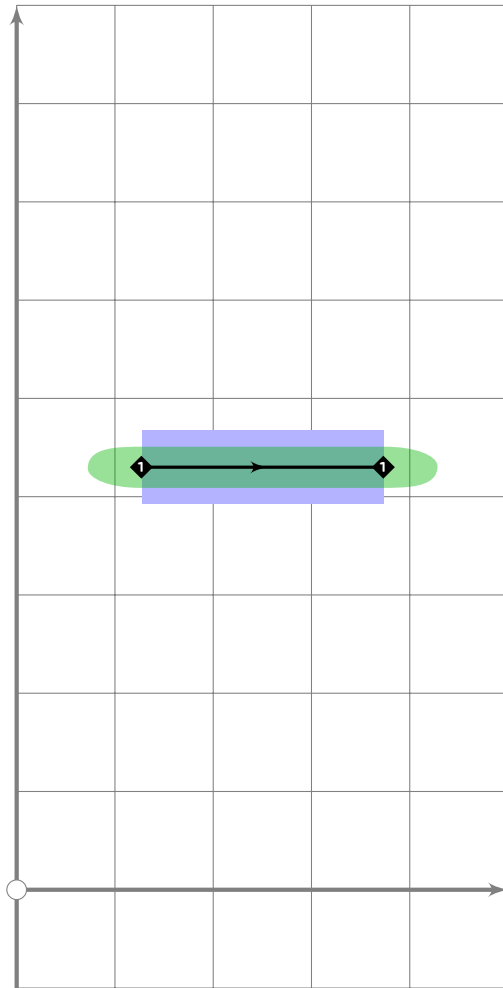


```

327
328 vardef tsu_curve.punct.dash.en =
329   add_proof_box("punct.dash.en");
330   (z1+z2)/2=centre_pt;
331   x2-x1=580;
332   y1=y2;
333   bp[sp]:=z1-z2;
334   bq[sp]:=(2,2)-(2,2);
335   sp:=sp*1;
336 enddef;

```

punct.dash.hyphen

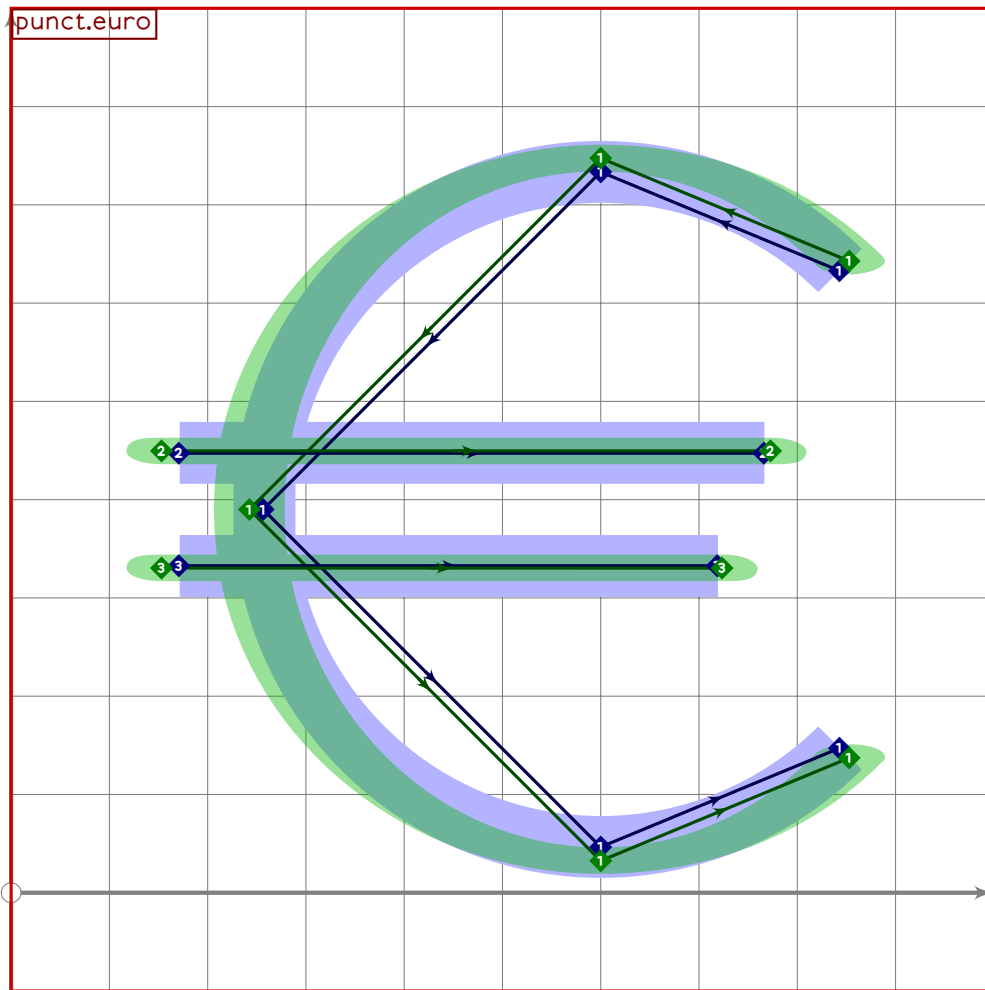


```
337
338 vardef tsu_curve.punct.dash.hyphen =
339   add_proof_box("punct.dash.hyphen");
340   (z1+z2)/2=centre_pt;
341   x2-x1=340;
342   y1=y2;
343   bp[sp]:=z1-z2;
344   bq[sp]:=(2,2)-(2,2);
345   sp:=sp*1;
346 enddef;
347
348 vardef tsu_curve.punct.dash.long =
349   add_proof_box("punct.dash.long");
350   (z1+z2)/2=centre_pt;
351   x2-x1=340;
352   y1=y2;
```

```

353 bp[sp]:=z1-z2;
354 bq[sp]:=(2,2)-(2,2);
355 sp:=sp*1;
356 enddef;
357
358 vardef tsu_curve.punct.dividedby(expr t) =
359 bp[sp]:=((-1,0)-(1,0)) transformed t;
360 bq[sp]:=(2,2)-(2,2);
361 bo_size[sp]:=90;
362 lcblob1:=fullcircle scaled (0.65*tsu_punct_size/xxpart t)
363   shifted (0,0.9) transformed t;
364 lcblob2:=fullcircle scaled (0.65*tsu_punct_size/xxpart t)
365   shifted (0,0.9) transformed t;
366 prf_box[sp]:=identity shifted (-0.5,-0.5) scaled 2.4 transformed t;
367 prf_box_name[sp]:="punct.dividedby";
368 sp:=sp*1;
369 enddef;
370
371 vardef tsu_curve.punct.equals(expr t) =
372 bp[sp]:=((-1,0.667)-(1,0.667)) transformed t;
373 bq[sp]:=(2,2)-(2,2);
374 bo_size[sp]:=90;
375 bp[sp*1]:=((-1,-0.667)-(1,-0.667)) transformed t;
376 bq[sp*1]:=(2,2)-(2,2);
377 bo_size[sp*1]:=90;
378 prf_box[sp]:=identity shifted (-0.5,-0.5) xyscaled (2.4,1.8) transformed t;
379 prf_box_name[sp]:="punct.equals";
380 sp:=sp*2;
381 enddef;

```



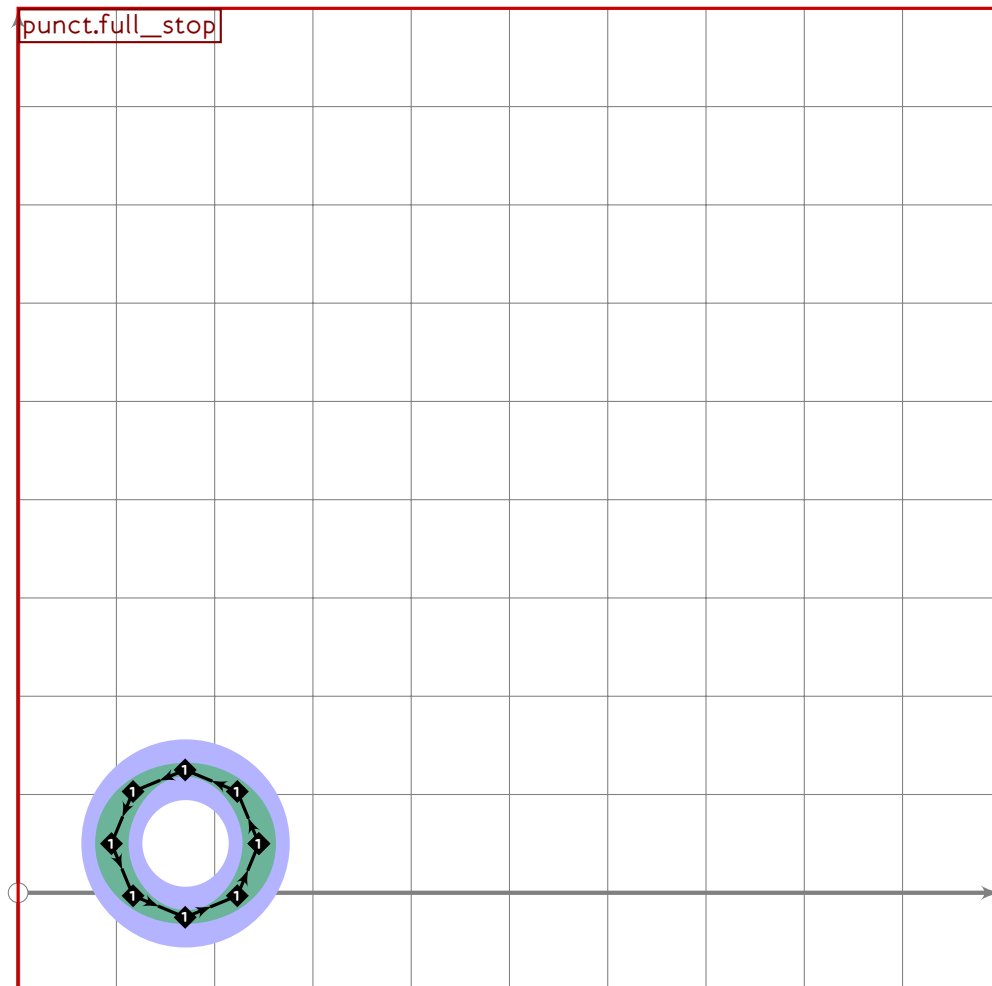
```

382
383 vardef tsu_curve.punct.euro =
384   add_proof_box("punct.euro");
385   bp[sp]:=(subpath (0.5,3.5) of ((1,0)..(0,1)..(-1,0)..(0,-1)..cycle))
386     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
387     shifted (centre_pt*(100,0));
388   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
389   bo_size[sp]:=90;
390   bp[sp*1]:=(-1.25,0.1667)-
391     (((0,0.1667)-(1,0.1667)) intersectionpoint ((0.707,0.707)-(0,-1))))
392     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
393     shifted (centre_pt*(100,0));
394   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
395   bo_size[sp*1]:=90;
396   bp[sp*2]:=(-1.25,-0.1667)-
397     (((0,-0.1667)-(1,-0.1667)) intersectionpoint ((0.707,0.707)-(0,-1))))
398     scaled ((latin_wide_high_r-latin_wide_low_r)/2)
399     shifted (centre_pt*(100,0));
400   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
401   bo_size[sp*2]:=90;
402   sp:=sp*3;

```

```
403 enddef;
```

```
404
```



```
405 % this is *ideographic* full stop, not Latin period
```

```
406 vardef tsu_curve.punct.full_stop =
```

```
407   add_proof_box("punct.full_stop");
```

```
408   if tsu_pbrush_size>=tsu_punct_size:
```

```
409     i:=1; forever: exitif unknown lcblob[i]; i:=i+1; endfor;
```

```
410     lcblob[i]:=fullcircle
```

```
411       xscaled (1.5*tsu_punct_size*tsu_pbrush_size)
```

```
412       yscaled (1.5*tsu_punct_size*tsu_pbrush_size*tsu_pbrush_shape)
```

```
413       rotated tsu_pbrush_angle
```

```
414       shifted (170,50);
```

```
415   else:
```

```
416     bp[sp]:=fullcircle scaled (1.5*tsu_punct_size) shifted (170,50);
```

```
417     bq[sp]:=(1,1)-(1,1)-(1,1)-(1,1)-cycle;
```

```
418     fi;
```

```
419     sp:=sp+1;
```

```
420   enddef;
```

```
421
```

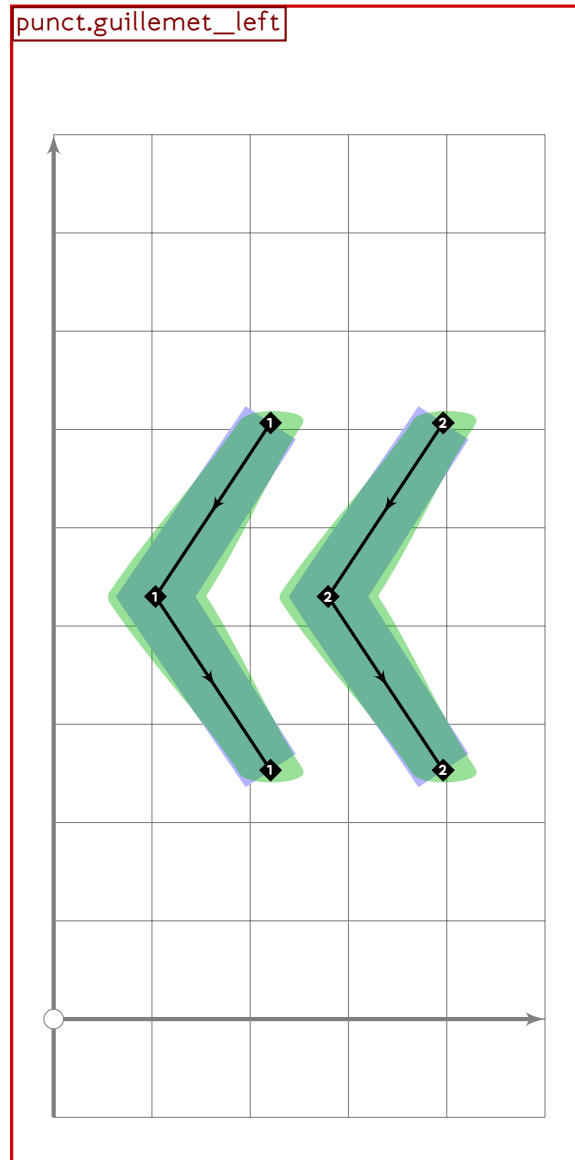
```
422 vardef tsu_curve.punct.greater_than(expr t) =
```

```
423   bp[sp]:=((-1,1)-(1,0)-(-1,-1)) transformed t;
```

```

424 bq[sp]:=(2,2)-(2,2)-(2,2);
425 bo_size[sp]:=90;
426 bo_tip[sp]1:=1;
427 prf_box[sp]:=identity shifted (-0.5;0.5) scaled 2.4 transformed t;
428 prf_box_name[sp]:="punct.guillemet_left";
429 sp:=sp*1;
430 enddef;

```



```

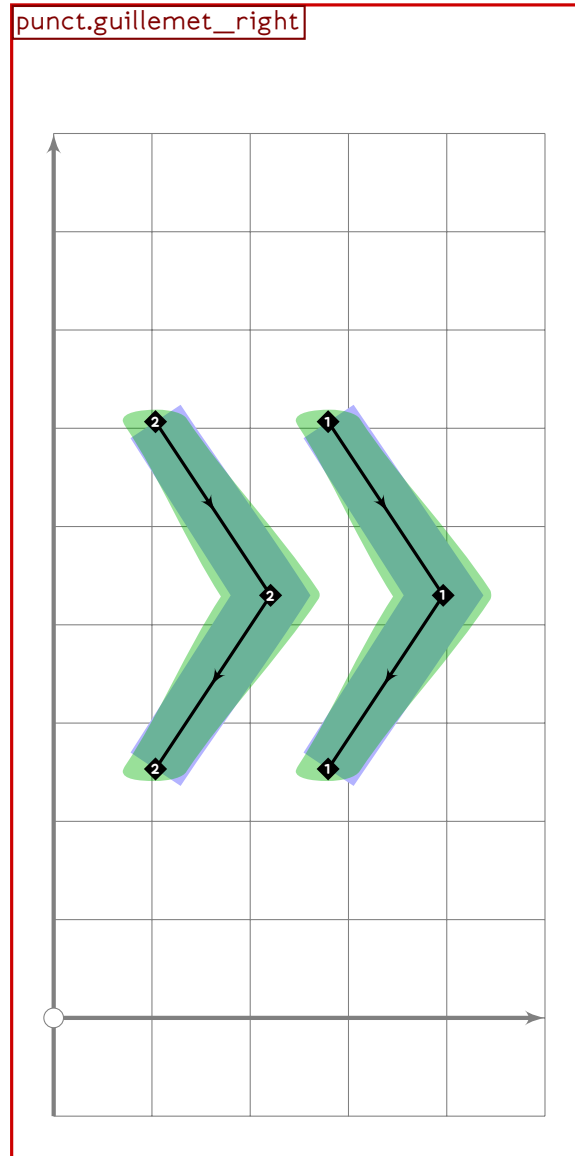
431
432 vardef tsu_curve.punct.guillemet_left =
433   add_proof_box("punct.guillemet_left");
434   bp[sp]:=((-0.5,1.5)-(-2.5,0)-(-0.5,1.5))
435     scaled tsu_punct_size shifted centre_pt;
436   bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
437   bo_size[sp]:=90;
438   bo_tip[sp]1:=1;
439   bp[sp*1]:=((2.5,1.5)-(0.5,0)-(2.5,-1.5))

```

```

440   scaled tsu_punct_size shifted centre_pt;
441   bq[sp*1]:=(1.5,1.5)-(2,2)-(1.5,1.5);
442   bo_size[sp*1]:=90;
443   bo_tip[sp*1]1:=1;
444   sp:=sp*2;
445   enddef;

```



```

446
447   vardef tsu_curve.punct.guillemet_right =
448     add_proof_box("punct.guillemet_right");
449     bp[sp]:=((0.5,1.5)-(2.5,0)-(0.5,-1.5))
450     scaled tsu_punct_size shifted centre_pt;
451     bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
452     bo_size[sp]:=90;
453     bo_tip[sp]1:=1;
454     bp[sp*1]:((-2.5,1.5)-(-0.5,0)-(-2.5,-1.5))
455     scaled tsu_punct_size shifted centre_pt;

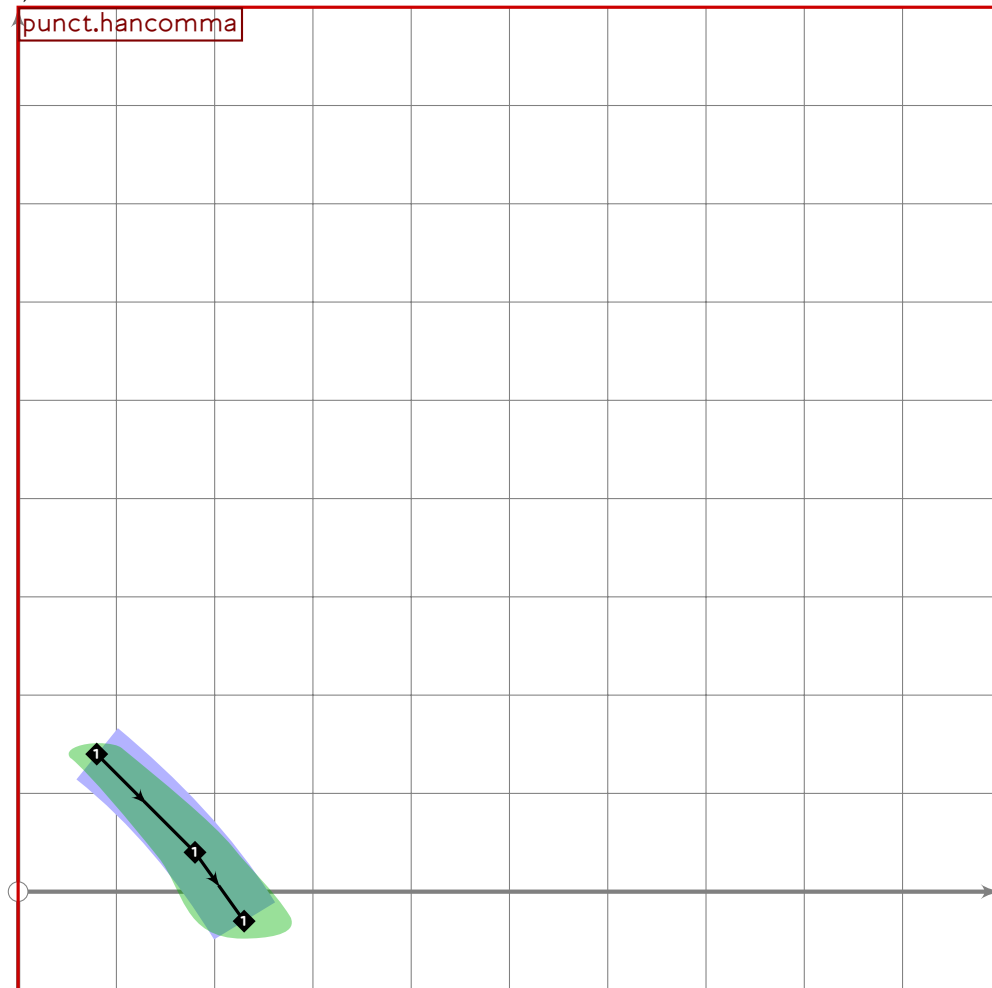
```



```

456 bq[sp*1]:=(1.5,1.5)-(2,2)-(1.5,1.5);
457 bo_size[sp*1]:=90;
458 bo_tip[sp*1]1:=1;
459 sp:=sp*2;
460 enddef;

```



```

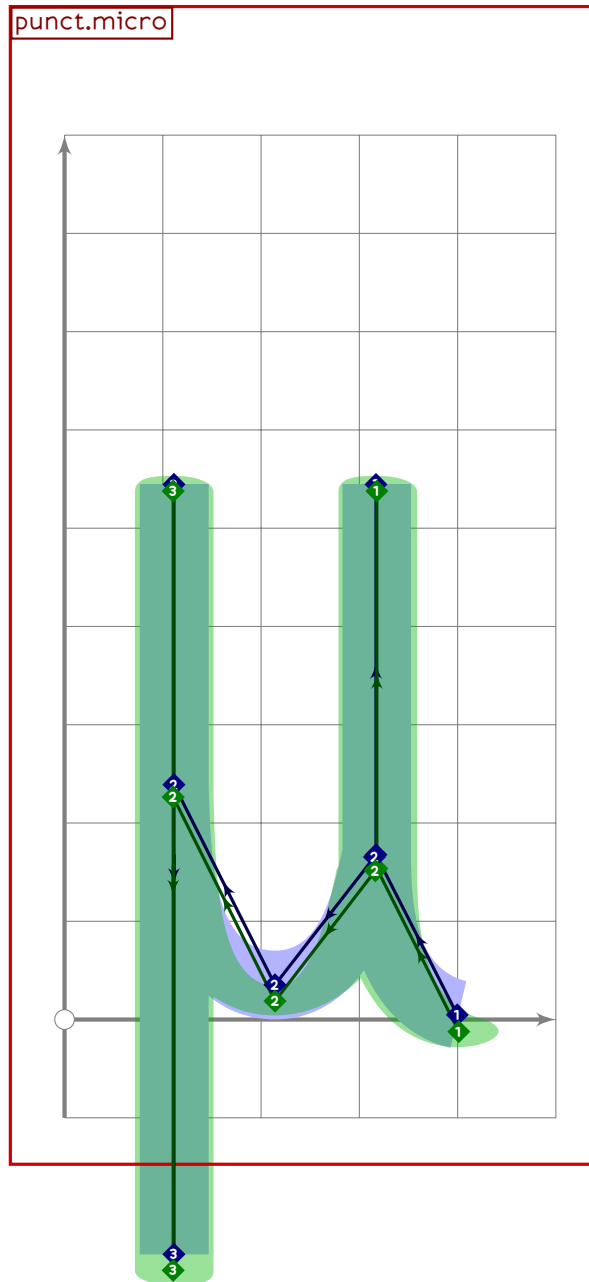
461
462 vardef tsu_curve.punct.hancomma =
463   add_proof_box("punct.hancomma");
464   bp[sp]:=(80,140)..(180,40)..(230,-30);
465   bq[sp]:=(1.3,1.3)..(1.6,1.6)..(1.8,1.8);
466   sp:=sp*1;
467 enddef;
468
469 vardef tsu_curve.punct.hminus(expr t) =
470   bp[sp]:=((-1,0)-(1,0)) transformed t;
471   bq[sp]:=(2,2)-(2,2);
472   bo_size[sp]:=90;
473   prf_box[sp]:=identity shifted (-0.5,-0.5) xyscaled (2.4,0.6) transformed t;
474   prf_box_name[sp]:="punct.hminus";
475   sp:=sp*1;
476 enddef;

```

```

477
478 vardef tsu_curve.punct.less_than(expr t) =
479   bp[sp]:=((1,1)-(-1,0)-(-1,1)) transformed t;
480   bq[sp]:=(2,2)-(2,2)-(2,2);
481   bo_size[sp]:=90;
482   bo_tip[sp]1:=1;
483   prf_box[sp]:=identity shifted (-0.5;0.5) scaled 2.4 transformed t;
484   prf_box_name[sp]:="punct.less_than";
485   sp:=sp*1;
486 enddef;
487

```



```

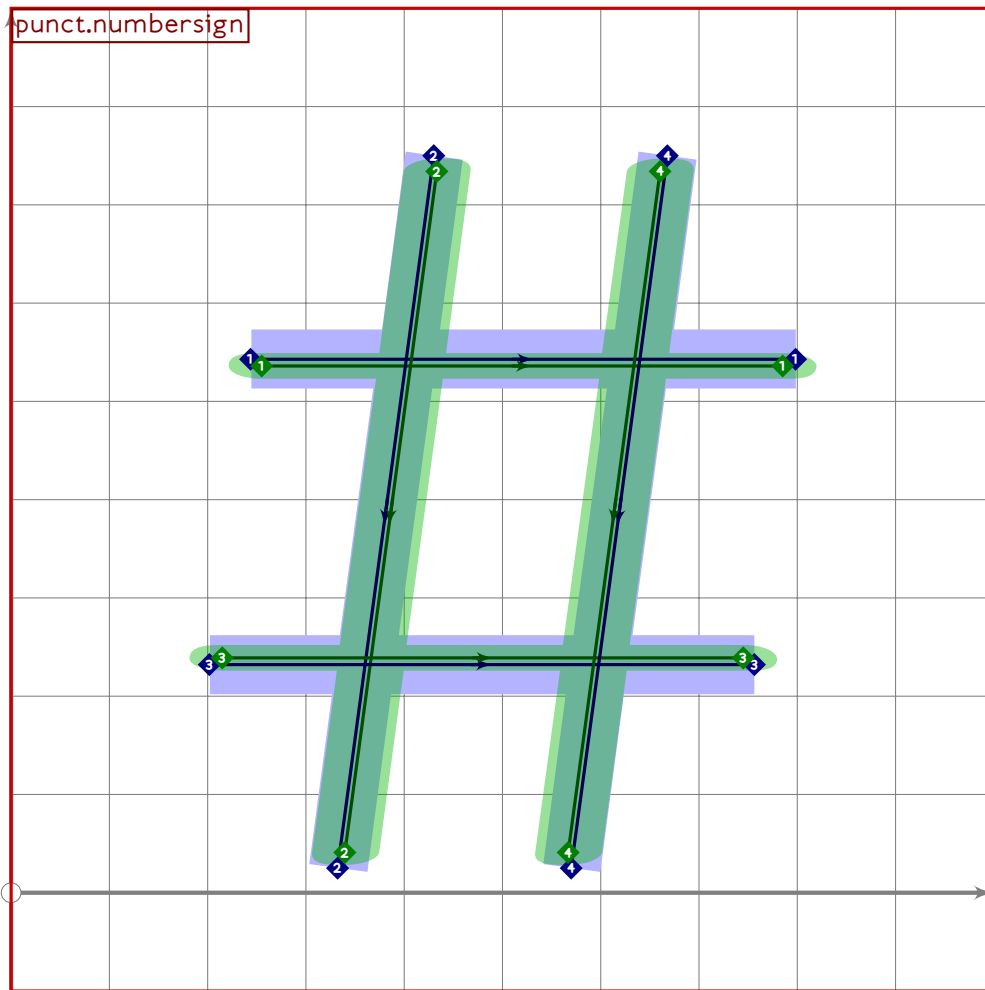
488 % in the future, this will probably become tsu_curve.greek.lowmu
489 vardef tsu_curve.punct.micro =

```

```

490 add_proof_box("punct.micro");
491 x1-x2=y2-y1;
492 (x2*x6)/2=450;
493 (x2-x6)=(y3-y1)*0.75;
494 x3=x2=x4;
495 x5=0.5[x4,x6];
496 x7=x8=x6;
497
498 y1=(-0.06)[y5,y3];
499 y2=0.26[y5,y3];
500 y3=y7=latin_wide_xheight_v;
501 y4=0.73[y3,y5];
502 y5=latin_wide_low_h;
503 y6=0.60[y3,y5];
504 y8=latin_wide_desc_v;
505
506 bp[sp]:=z1{dir 173}..{up}z2-z3;
507 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
508
509 bp[sp*1]:=z4..z5{left}..z6{dir 93};
510 bp[sp*1]:=subpath (0.03,2) of bp[sp*1];
511 bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
512
513 bp[sp*2]:=z7-z8;
514 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
515 sp:=sp*3;
516 enddef;
517
518 vardef tsu_curve.punct.otsign(expr t) =
519 bp[sp]:=((-1,0)-(1,0)-(1,-1)) transformed t;
520 bq[sp]:=(2,2)-(2,2)-(2,2);
521 bo_size[sp]:=90;
522 bo_tip[sp]1:=1;
523 prf_box[sp]:=identity shifted (-0.5,-0.5) scaled 2.4 transformed t;
524 prf_box_name[sp]:="punct.otsign";
525 sp:=sp*1;
526 enddef;

```



```

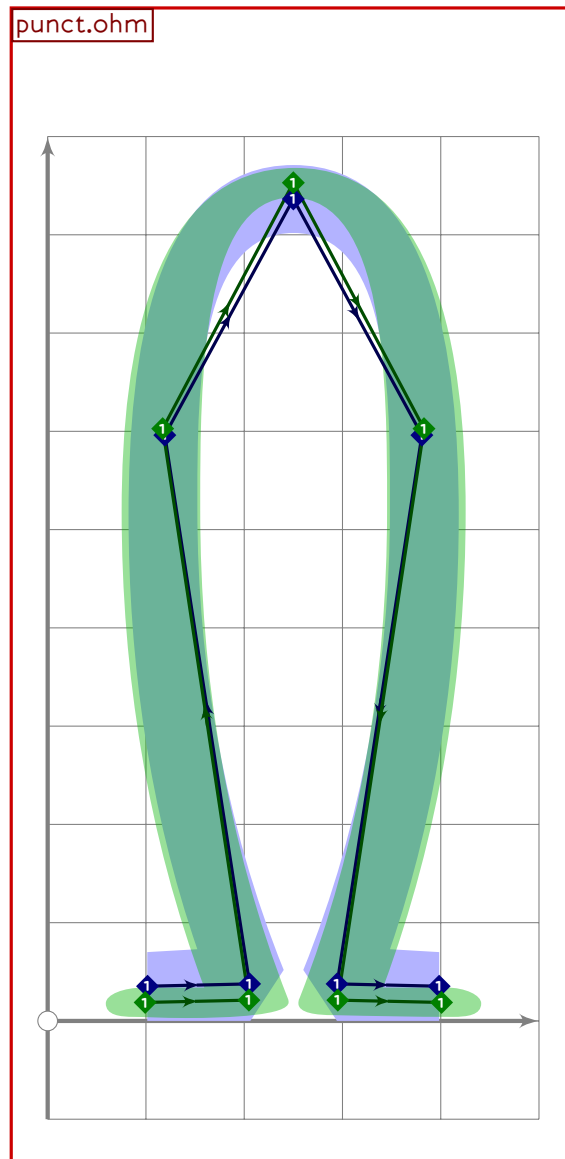
527
528 vardef tsu_curve.punct.numbersign =
529   add_proof_box("punct.numbersign");
530   (x1+x2)/2=500;
531   (x2-x1)=0.9*(y2-y1);
532   x3=0.15[x1,x2];
533
534   y1=latin_wide_low_v;
535   y2=y3=latin_wide_high_v;
536
537   transform xf_num;
538   (0,0) transformed xf_num = z1;
539   (3.5,3.5) transformed xf_num = z2;
540   (0,3.5) transformed xf_num = z3;
541
542   bp[sp]:=((0,2.5)-(3.5,2.5)) transformed xf_num;
543   bq[sp]:=(1.6,1.6)-(1.6,1.6);
544   bo_size[sp]:=85;
545
546   bp[sp*1]:=((1,3.5)-(1,0)) transformed xf_num;
547   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);

```

```

548 bo_size[sp*1]:=85;
549
550 bp[sp*2]:=((0,1)-(3.5,1)) transformed xf_num;
551 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
552 bo_size[sp*2]:=85;
553
554 bp[sp*3]:=((2.5,3.5)-(2.5,0)) transformed xf_num;
555 bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
556 bo_size[sp*3]:=85;
557
558 sp:=sp*4;
559 enddef;
560

```



```

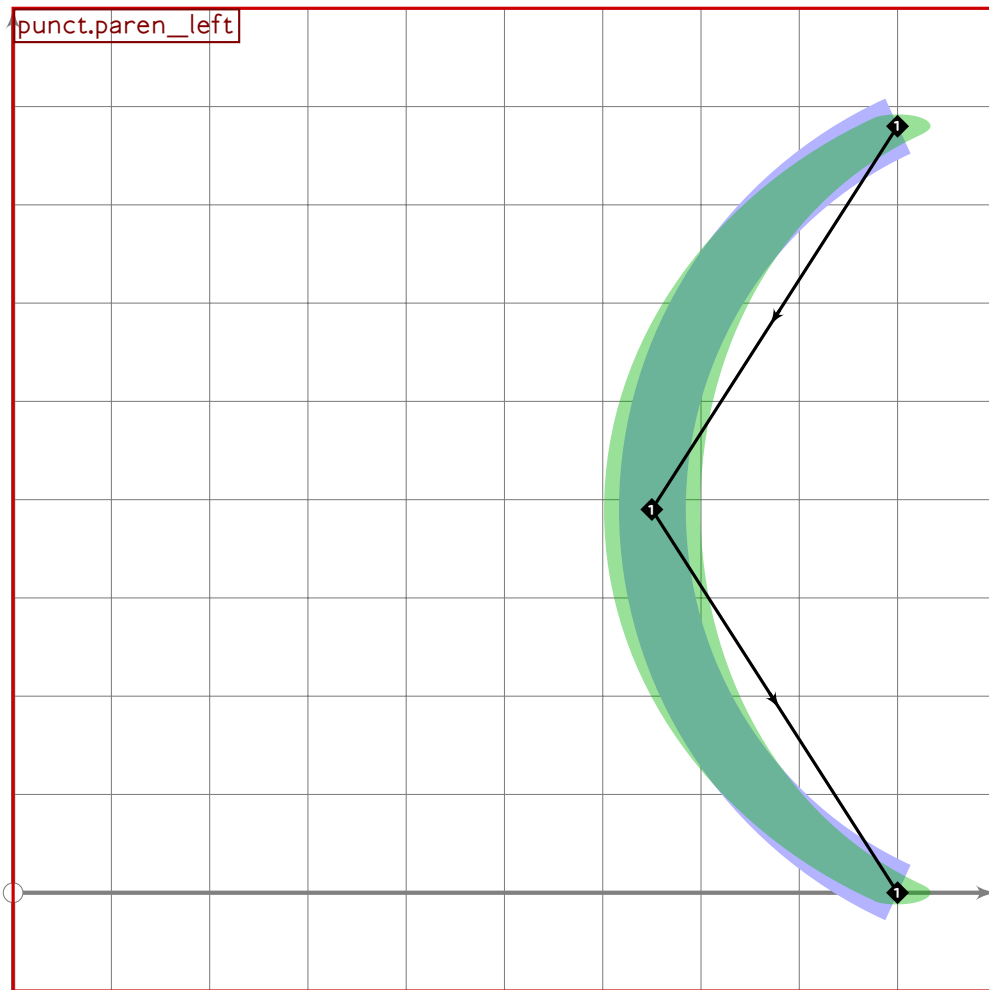
561 % in the future, this will probably become tsu_curve.greek.upomega
562 vardef tsu_curve.punct.ohm =
563   add_proof_box("punct.ohm");

```

```

564 (x5+x3)/2=(x6+x2)/2=(x7+x1)/2=x4=500;
565 x2=0.7[x1,x4];
566 x7-x1=0.76*(y4-y1);
567 x5-x3=0.67*(y4-y1);
568
569 y1=y7=latin_wide_low_h;
570 y2=y6=y1+2;
571 y3=y5=0.7[y1,y4];
572 y4=latin_wide_high_r;
573
574 bp[sp]:=z1-z2..tension 1.5 and 1.3..z3..z4..
575 z5..tension 1.3 and 1.5..z6-z7;
576 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-
577 (1.6,1.6)-(1.6,1.6);
578 bo_tip[sp][1]:=0;
579 bo_tip[sp][5]:=0;
580
581 sp:=sp+1;
582 enddef;
583
584 vardef tsu_curve.punct.paren_intro =
585   add_proof_box("punct.paren_intro");
586   bracket1:=(900,780)..(900-2.5*tsu_punct_size,390)..(900,0);
587 enddef;

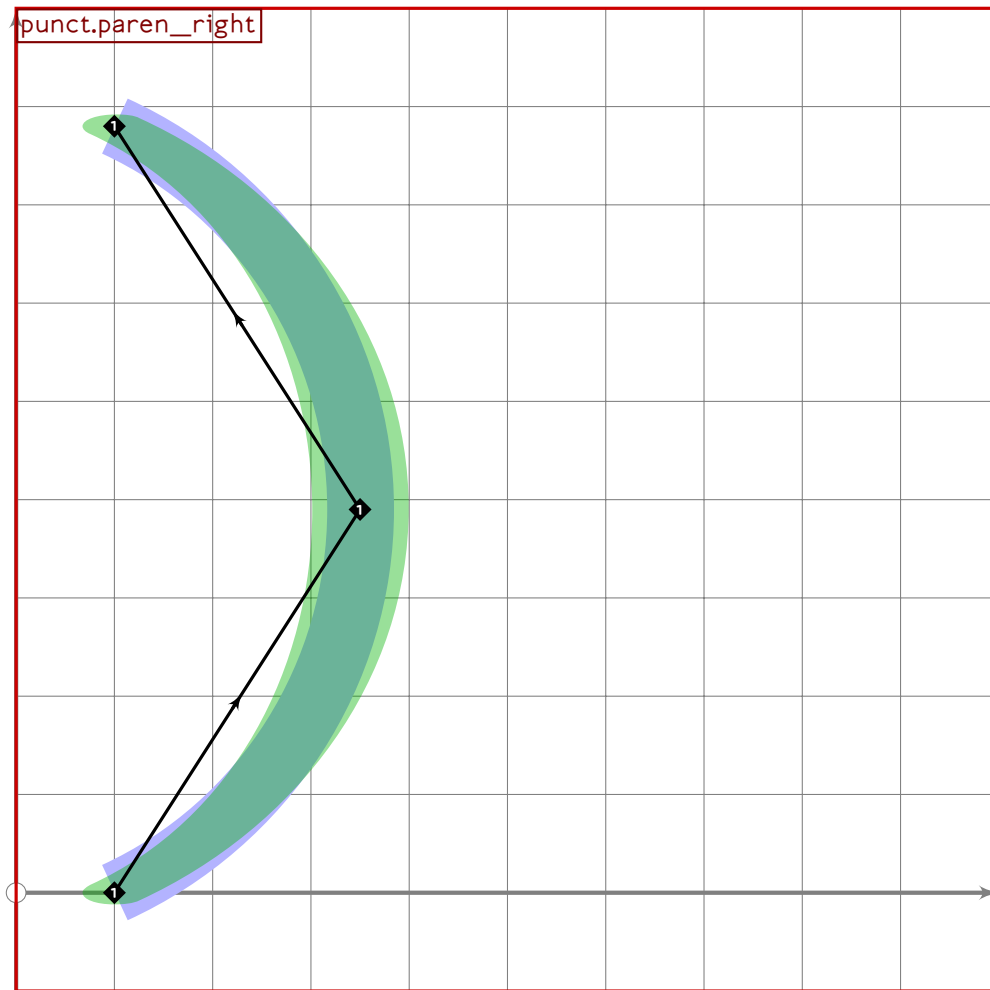
```



```

588 vardef tsu_curve.punct.paren_left =
589   add_proof_box("punct.paren_left");
590   bp[sp]:=bracket1;
591   bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
592   bo_size[sp]:=90;
593   sp:=sp*1;
594 enddef;

```

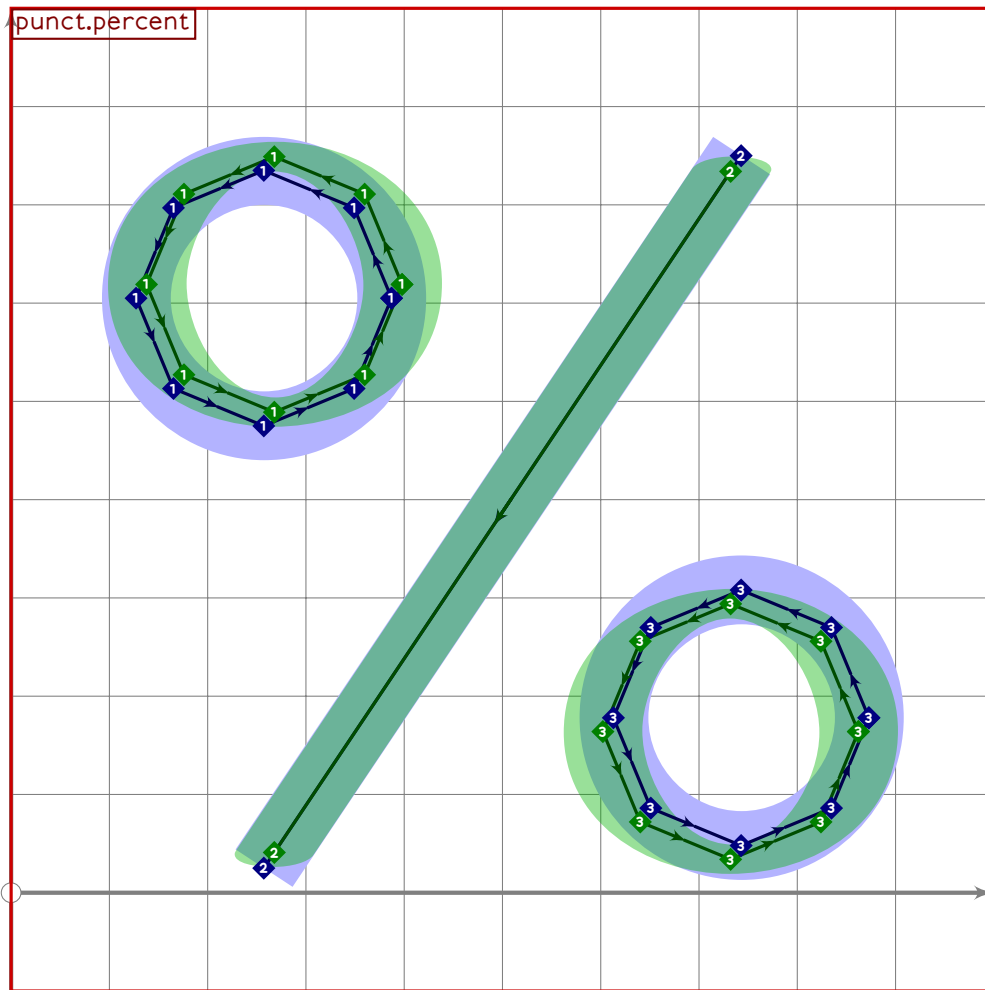


```

595 vardef tsu_curve.punct.paren_right =
596   add_proof_box("punct.paren_right");
597   bp[sp]:=bracket1 rotatedaround (centre_pt,180);
598   bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
599   bo_size[sp]:=90;
600   sp:=sp*1;
601 enddef;

```

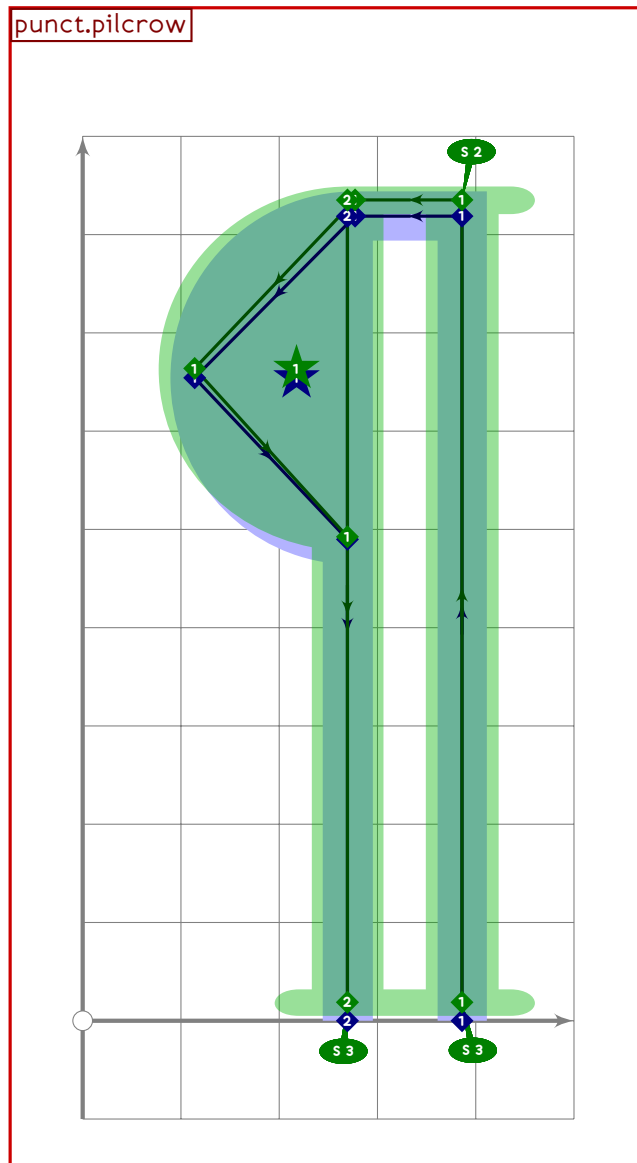




```

602
603 vardef tsu_curve.punct.percent =
604   add_proof_box("punct.percent");
605   (x1+x2)/2=500;
606   (x1-x2)=0.67(y1-y2);
607
608   y1=latin_wide_high_v;
609   y2=latin_wide_low_v;
610
611   bp[sp]:=fullcircle scaled 260 shifted (x2,latin_wide_high_r-130);
612   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
613
614   bp[sp*1]:=(z1-z2)
615     shifted -centre_pt scaled (tsu_punct_size/100) shifted centre_pt;
616   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
617
618   bp[sp*2]:=fullcircle scaled 260 shifted (x1,latin_wide_low_r+130);
619   bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
620   sp:=sp*3;
621 enddef;

```



```

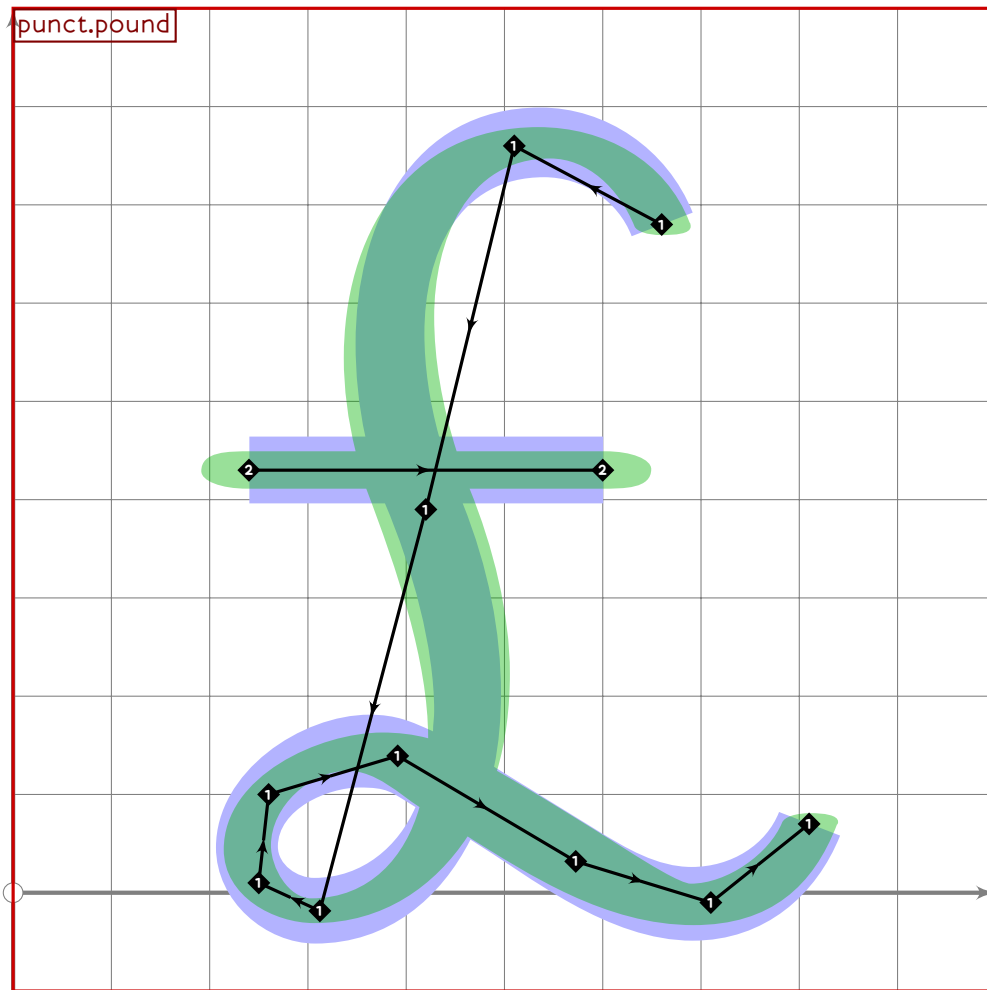
622
623 vardef tsu_curve.punct.pilcrow =
624   add_proof_box("punct.pilcrow");
625   x1=x2=x6=710;
626   x3=x5=x1-420*0.4;
627   x4=x1-420;
628
629   y1=latin_wide_low_v;
630   y2=y3=latin_wide_high_h;
631   y4=(y3+y5)/2;
632   y5=y6=vmetric(0.58);
633
634   x7=x8=x9=x1-1.8*tsu_punct_size;
635   y7=y2+50;
636   y8=y4;
637   y9=y1;

```

```

638
639 bp[sp]:=z1-z2-z3{left}..z4..{right}z5-z6;
640 bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2);
641 bq[sp]:=subpath (0,xpart (bp[sp] intersectiontimes (z8-z9))) of bq[sp];
642 bp[sp]:=subpath (0,xpart (bp[sp] intersectiontimes (z8-z9))) of bp[sp];
643 bo_size[sp]:=67;
644 bo_tip[sp]1:=1;
645 bo_serif[sp]0:=3;
646 bo_serif[sp]1:=2;
647
648 bp[sp*1]:=((z7-z8) intersectionpoint bp[sp])-z9;
649 bq[sp*1]:=(2,2)-(2,2);
650 bo_size[sp*1]:=67;
651 bo_serif[sp*1]1:=3;
652
653 if tsu_pbrush_size>=30:
654   lcblob1:=(subpath (xpart (bp[sp] intersectiontimes (z7-z8)),infinity)
655     of bp[sp])-cycle;
656   fi;
657   sp:=sp*2;
658 enddef;
659
660 vardef tsu_curve.punct.plus(expr t) =
661   bp[sp]:=(-1,0)-(1,0) transformed t;
662   bq[sp]:=(2,2)-(2,2);
663   bo_size[sp]:=90;
664   bp[sp*1]:=((0,1)-(0,-1)) transformed t;
665   bq[sp*1]:=(2,2)-(2,2);
666   bo_size[sp*1]:=90;
667   prf_box[sp]:=identity shifted (-0.5,-0.5) scaled 2.4 transformed t;
668   prf_box_name[sp]:="punct.plus";
669   sp:=sp*2;
670 enddef;
671
672 vardef tsu_curve.punct.plusminus(expr t) =
673   bp[sp]:=(-1,0.25)-(1,0.25) transformed t;
674   bq[sp]:=(2,2)-(2,2);
675   bo_size[sp]:=90;
676   bp[sp*1]:=((0,1.25)-(0,-0.75)) transformed t;
677   bq[sp*1]:=(2,2)-(2,2);
678   bo_size[sp*1]:=90;
679   bp[sp*2]:=(-1,-1.25)-(1,-1.25) transformed t;
680   bq[sp*2]:=(2,2)-(2,2);
681   bo_size[sp*2]:=90;
682   prf_box[sp]:=identity shifted (-0.5,-0.5) xyscaled (2.4,3.2) transformed t;
683   prf_box_name[sp]:="punct.plusminus";
684   sp:=sp*3;
685 enddef;

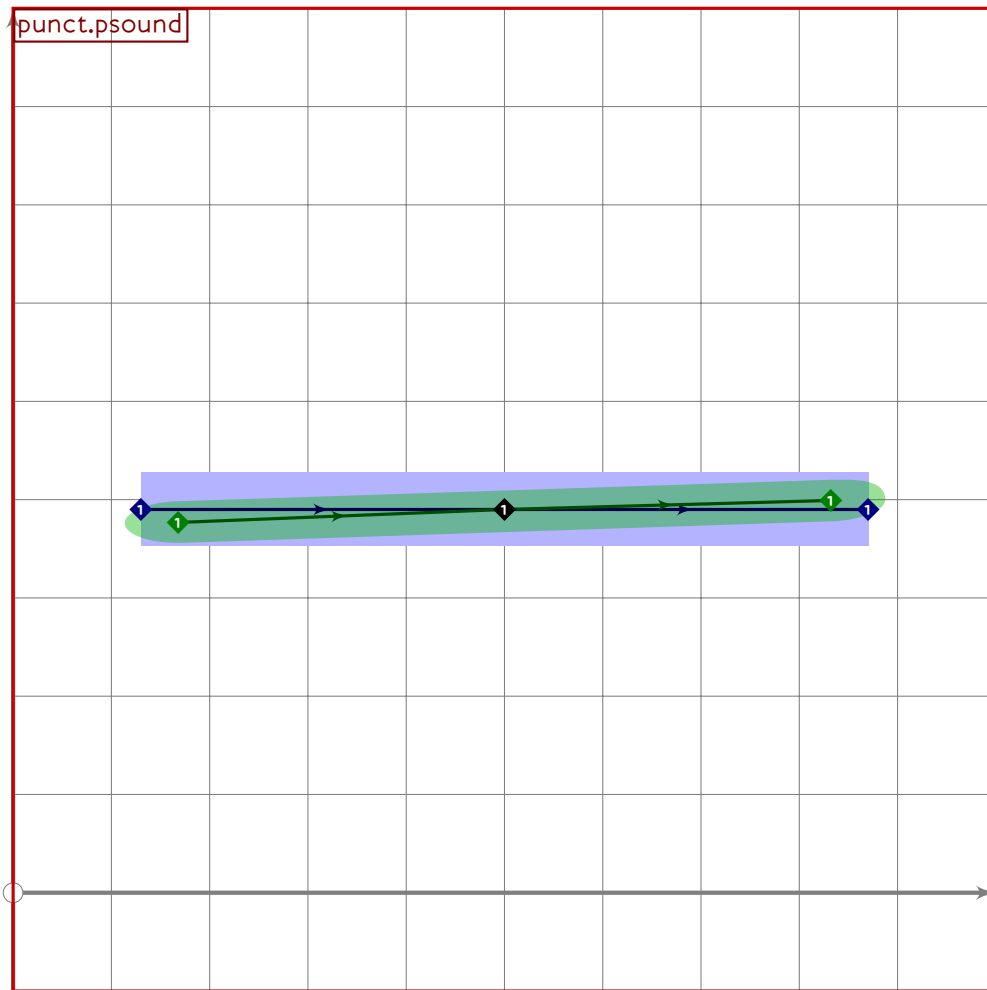
```



```

686
687 vardef tsu_curve.punct.pound =
688   add_proof_box("punct.pound");
689   bp[sp]:=(660,680)..(510,760)..(420,390)..tension 1.1..(250,10)..
690     (260,100)..(710,-10)..(810,70);
691   bp[sp]:=insert_nodes(bp[sp])(2.8,4.3,4.7);
692   bq[sp]:=(1.3,1.3)-(1.7,1.7)-(1.9,1.9)-(1.4,1.4)-(1.2,1.2)-
693     (1.1,1.2)-(2,2)-(2.1,2.1)-(2,2)-(1.3,1.3);
694   bp[sp*1]:=(240,430)-(600,430);
695   bq[sp*1]:=(2,2)-(2,2);
696   bo_size[sp*1]:=90;
697   sp:=sp*2;
698 enddef;

```



```

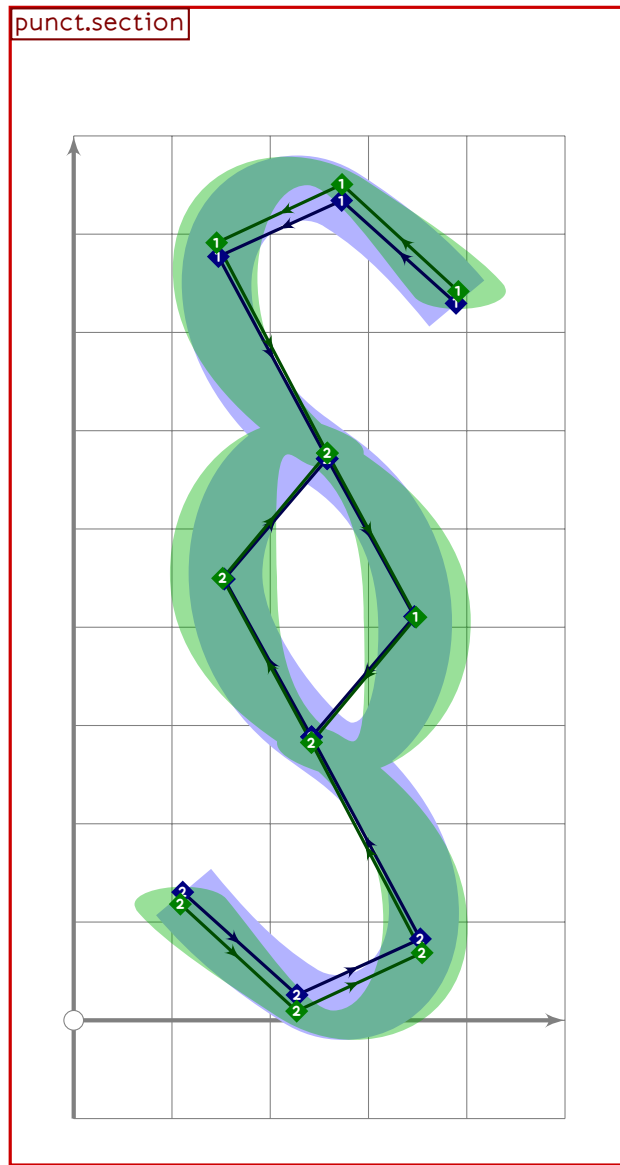
699
700 vardef tsu_curve.punct.psound =
701   add_proof_box("punct.psound");
702   bp[sp]:=(130,390-15*mincho)..(500,390)..(870,390+10*mincho);
703   bq[sp]:=(0.7,3.3)-(2,2)-(0.7,3.3);
704   sp:=sp*1;
705 enddef;
706
707 vardef tsu_curve.punct.make_period(expr cpos) =
708   bp[sp]:=fullcircle scaled (tsu_punct_size*1.15) shifted cpos;
709   bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-cycle;
710
711   if tsu_pbrush_size>=30:
712     bo_size[sp]:=40;
713     i:=1; forever; exitif unknown lcblob[i]; i:=i+1; endfor;
714     lcblob[i]:=bp[sp];
715   else:
716     bo_size[sp]:=80;
717   fi;
718   prf_box[sp]:=identity shifted (-0.5,-0.5)
719     scaled (tsu_punct_size*1.5) shifted cpos;

```

```

720 prf_box_name[sp]:="punct.make_period";
721 sp:=sp*1;
722 endif;

```



```

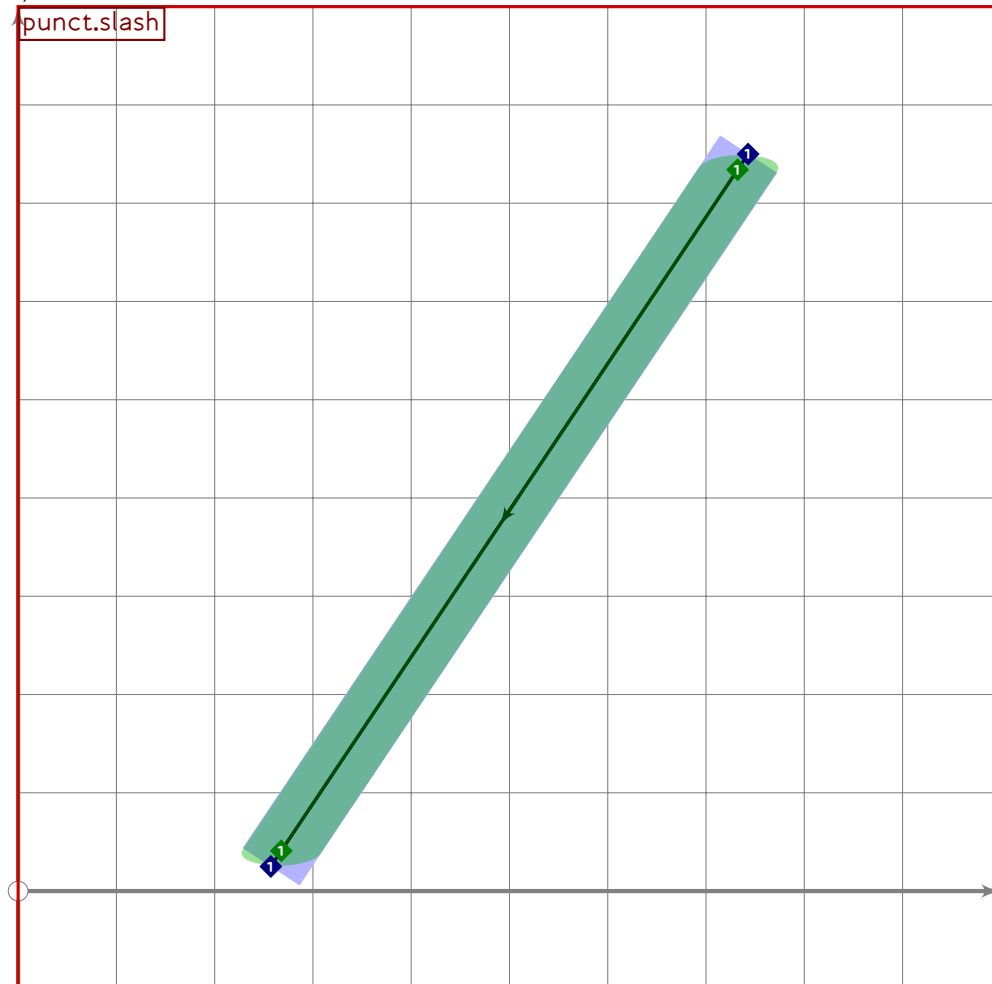
723
724 vardef tsu_curve.punct.section =
725   add_proof_box("punct.section");
726   (x1*x3)/2=x2=x4=x6=500;
727   x5=0.8[x2,x1];
728   2*(x5-x2)=0.45*(latin_wide_high_r-latin_wide_low_r);
729
730   y1=y3=0.8[ypart centre_pt,latin_wide_high_r];
731   y2=latin_wide_high_r;
732   y4=0.35[ypart centre_pt,latin_wide_high_r];
733   y5=ypart centre_pt;
734   y4-y5=y5-y6;
735

```

```

736 bp[sp]:=(z1..z2..z3..z4..z5..z6) rotatedaround (centre_pt,6);
737 bq[sp]:=(1.8,1.8)-(1.2,1.2)-(1.7,1.7)-(1.3,1.3)-(2,2)-(1.5,1.5);
738
739 bp[sp*1]:=bp[sp] rotatedaround (centre_pt,180);
740 bq[sp*1]:=bq[sp];
741 sp:=sp*2;
742 enddef;

```



```

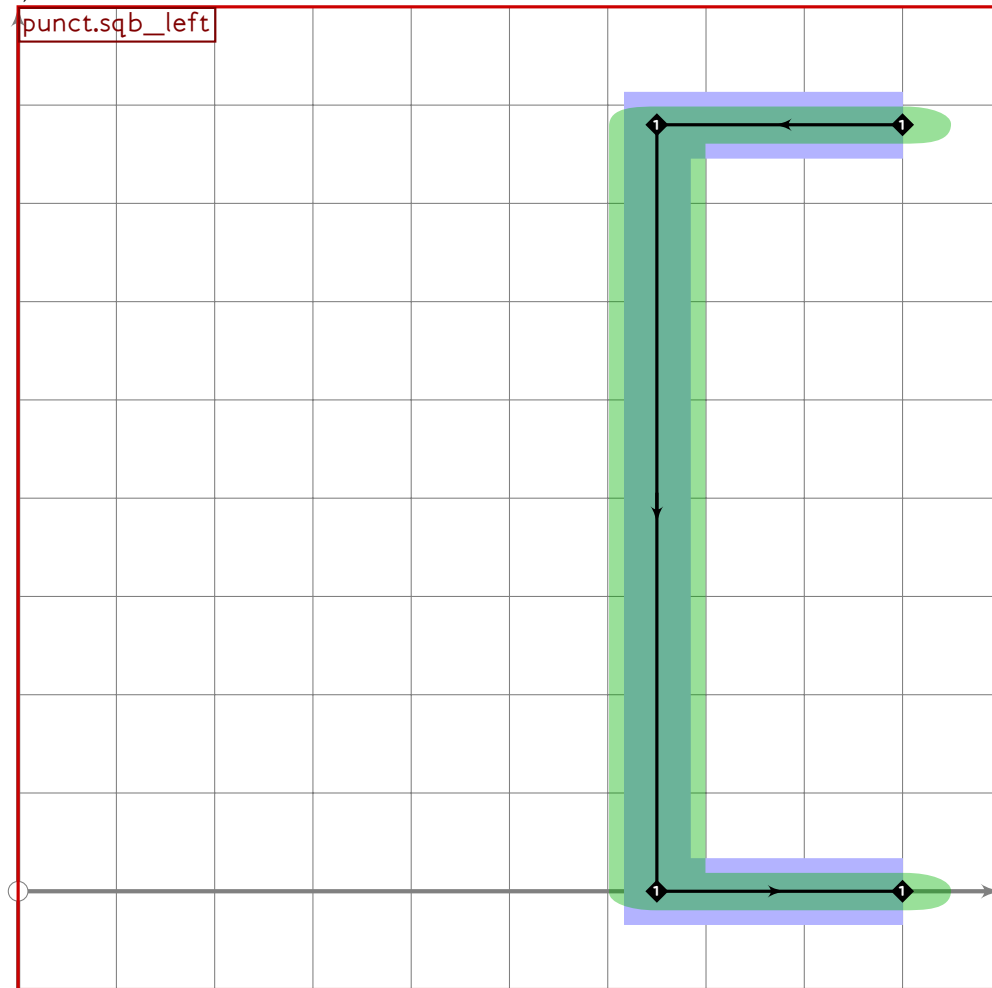
743
744 vardef tsu_curve.punct.slash =
745   add_proof_box("punct.slash");
746   (x1*x2)/2=500;
747   (x1-x2)=0.67(y1-y2);
748
749   y1=latin_wide_high_v;
750   y2=latin_wide_low_v;
751
752   bp[sp]:=(z1-z2)
753     shifted -centre_pt scaled (tsu_punct_size/100) shifted centre_pt;
754   bq[sp]:=(1.6,1.6)-(1.6,1.6);
755   sp:=sp*1;
756 enddef;

```

```

757
758 vardef tsu_curve.punct.sqb_intro =
759   add_proof_box("punct.sqb_intro");
760   bracket1:=(900,780)-
761     (900-2.5*tsu_punct_size,780)-
762     (900-2.5*tsu_punct_size,0)-
763     (900,0);
764 enddef;

```

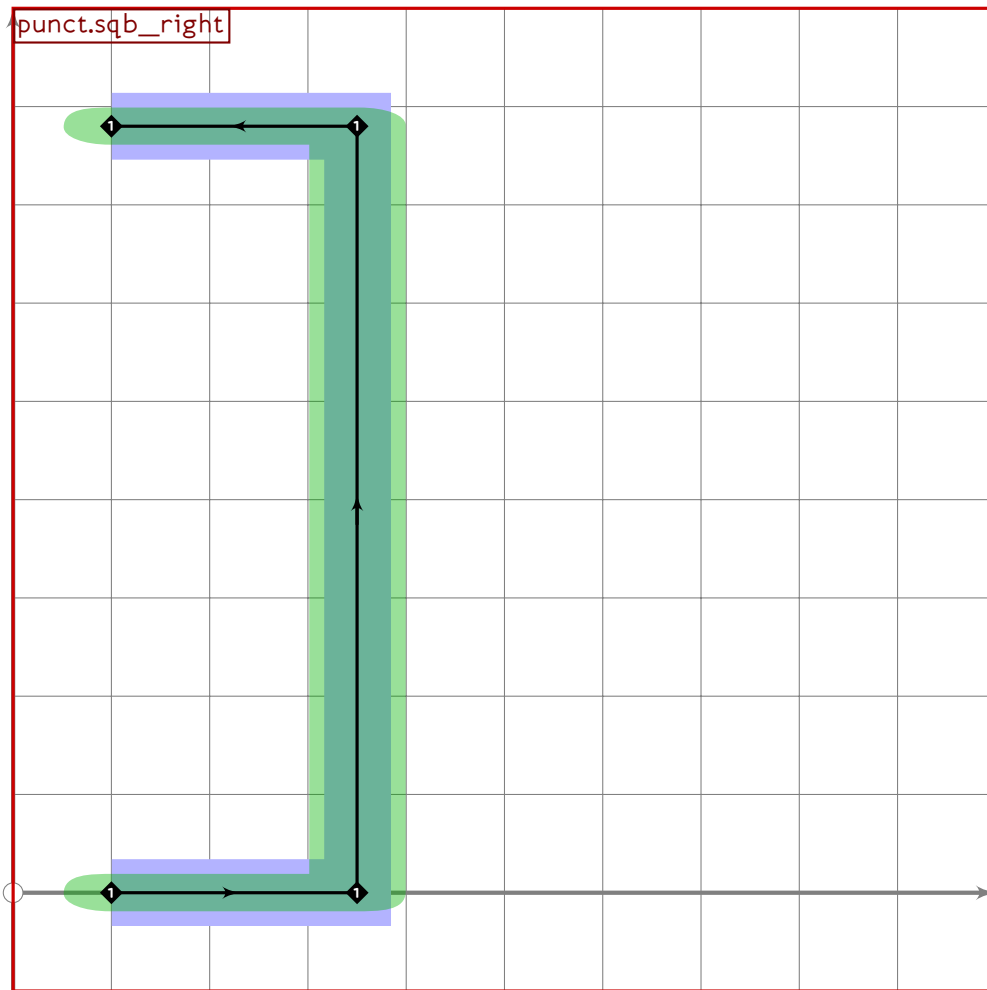


```

765 vardef tsu_curve.punct.sqb_left =
766   add_proof_box("punct.sqb_left");
767   bp[sp]:=bracket1;
768   bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2);
769   bo_size[sp]:=90;
770   bo_tip[sp]1:=1;
771   bo_tip[sp]2:=1;
772   sp:=sp*1;
773 enddef;

```

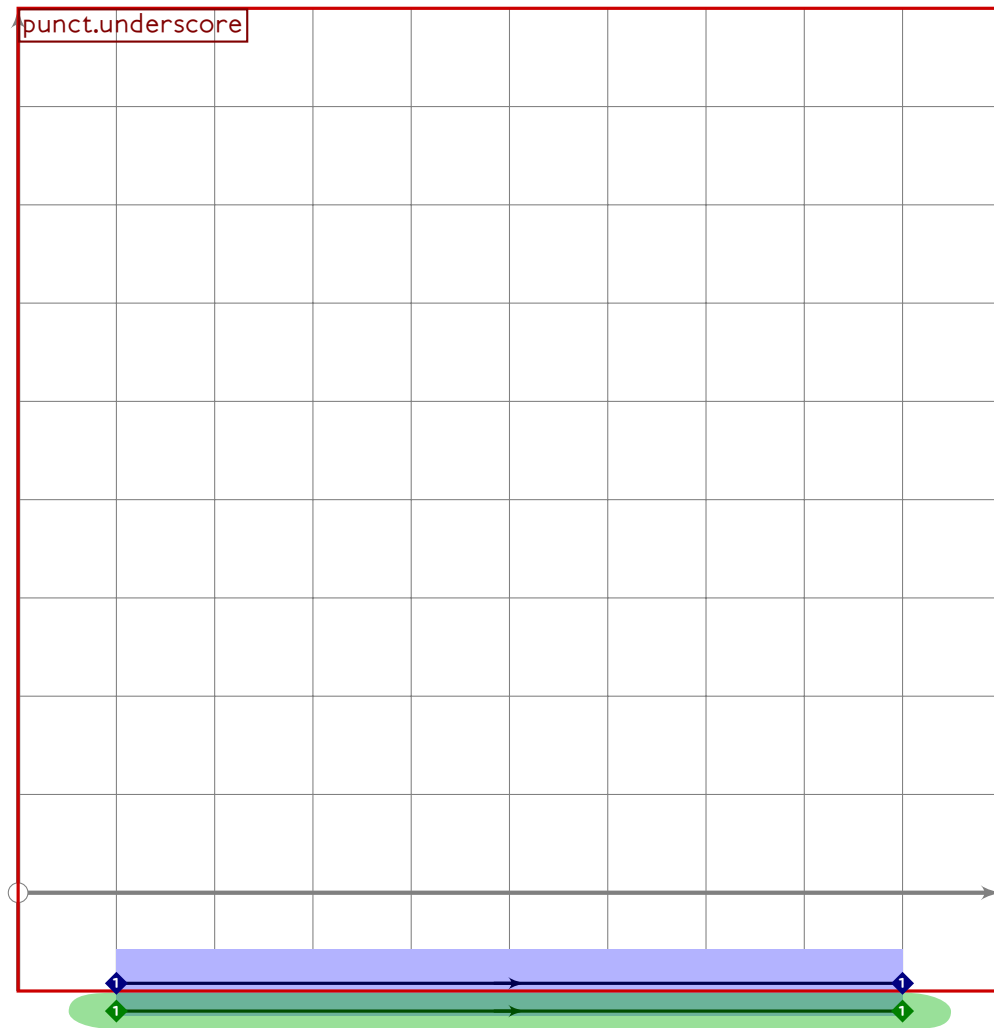




```

774 vardef tsu_curve.punct.sqb_right =
775   add_proof_box("punct.sqb_right");
776   bp[sp]:=bracket1 rotatedaround (centre_pt,180);
777   bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2);
778   bo_size[sp]:=90;
779   bo_tip[sp]1:=1;
780   bo_tip[sp]2:=1;
781   sp:=sp*1;
782 enddef;
783
784 vardef tsu_curve.punct.times(expr t) =
785   bp[sp]:=((-1,-1)-(1,1)) transformed t;
786   bq[sp]:=(2,2)-(2,2);
787   bo_size[sp]:=90;
788   bp[sp*1]:=((-1,1)-(1,-1)) transformed t;
789   bq[sp*1]:=(2,2)-(2,2);
790   bo_size[sp*1]:=90;
791   prf_box[sp]:=identity shifted (-0.5,-0.5) scaled 2.4 transformed t;
792   prf_box_name[sp]:="punct.times";
793   sp:=sp*2;
794 enddef;

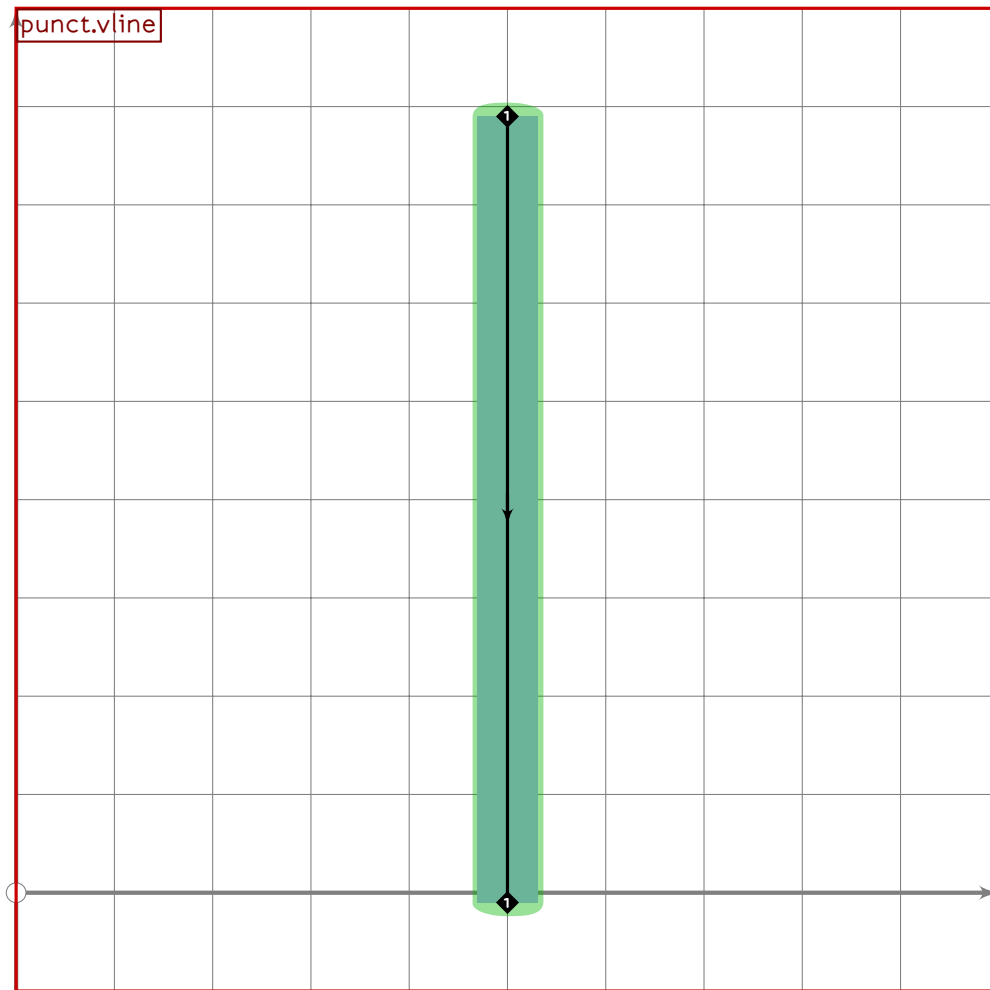
```



```

795
796 vardef tsu_curve.punct.underscore =
797   add_proof_box("punct.underscore");
798   bp[sp]:=(100,0.3[latin_wide_desc_h,latin_wide_low_h])-
799     (900,0.3[latin_wide_desc_h,latin_wide_low_h]);
800   bq[sp]:=(2,2)-(2,2);
801   bo_size[sp]:=90;
802   sp:=sp*1;
803 enddef;

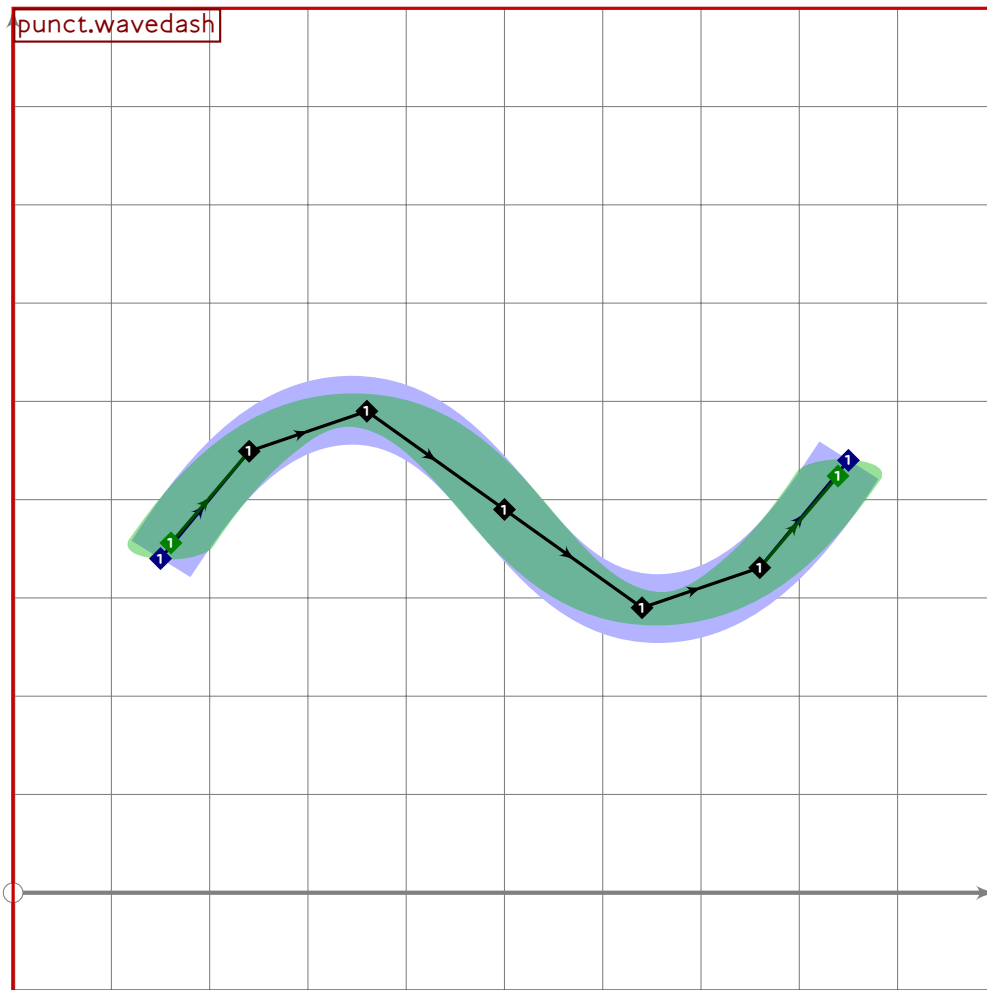
```



```

804
805 vardef tsu_curve.punct.vline =
806   add_proof_box("punct.vline");
807   bp[sp]:=(500,690*tsu_punct_size)-(500,90-tsu_punct_size);
808   bq[sp]:=(1.6,1.6)-(1.6,1.6);
809   bo_size[sp]:=90;
810   sp:=sp*1;
811 enddef;

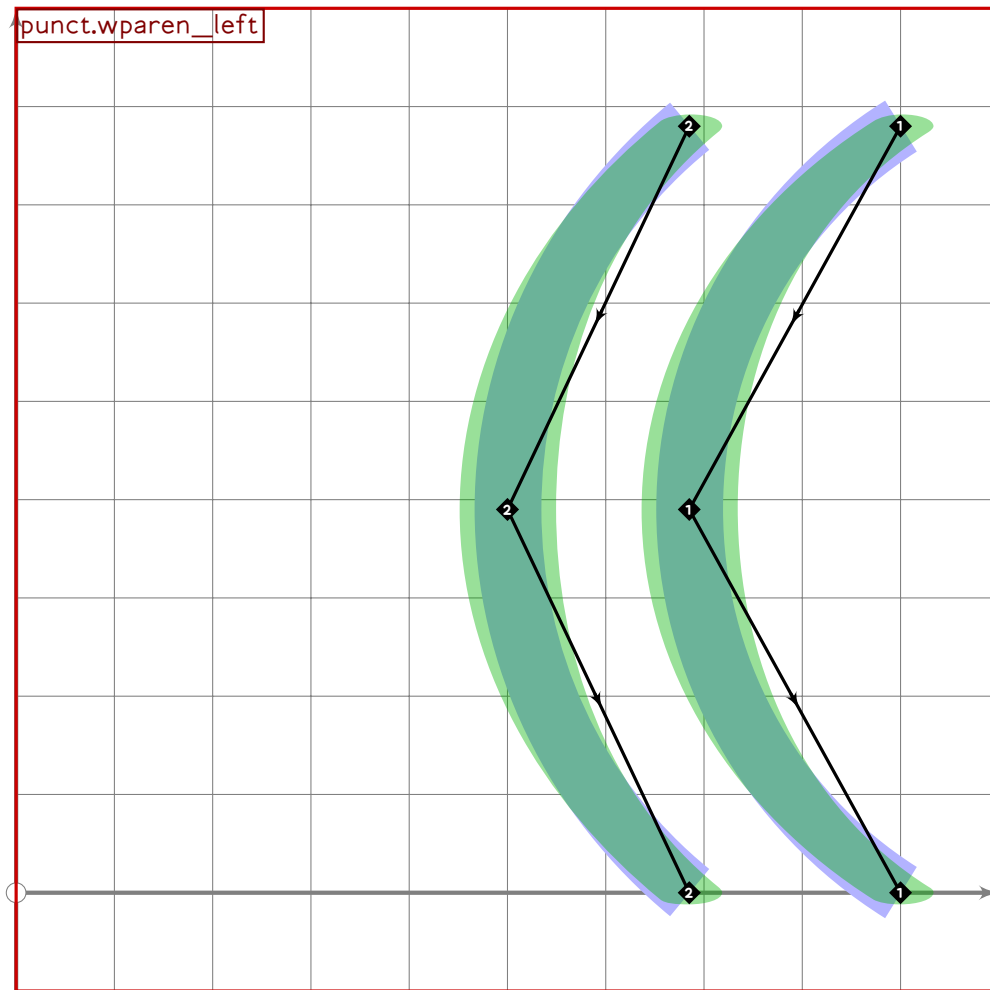
```



```

812
813 vardef tsu_curve.punct.wavedash =
814   add_proof_box("punct.wavedash");
815   bp[sp]:=(-3.5,-0.5){curl 0}..(-1.4,1)..(0,0)..(1.4,-1)..{curl 0}(3.5,0.5)
816   scaled tsu_punct_size shifted centre_pt;
817   bp[sp]:=insert_nodes(bp[sp])(0.5,3.5);
818   bq[sp]:=(0.7,2.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
819     (1.7,1.7)-(0.7,2.7);
820   sp:=sp*1;
821 enddef;
822
823 vardef tsu_curve.punct.wparen_intro =
824   add_proof_box("punct.wparen_intro");
825   bracket1:=(900,780)..(900-2.15*tsu_punct_size,390)..(900,0);
826   bracket2:=(900-2.15*tsu_punct_size,780)..
827     (900-4*tsu_punct_size,390)..
828     (900-2.15*tsu_punct_size,0);
829 enddef;

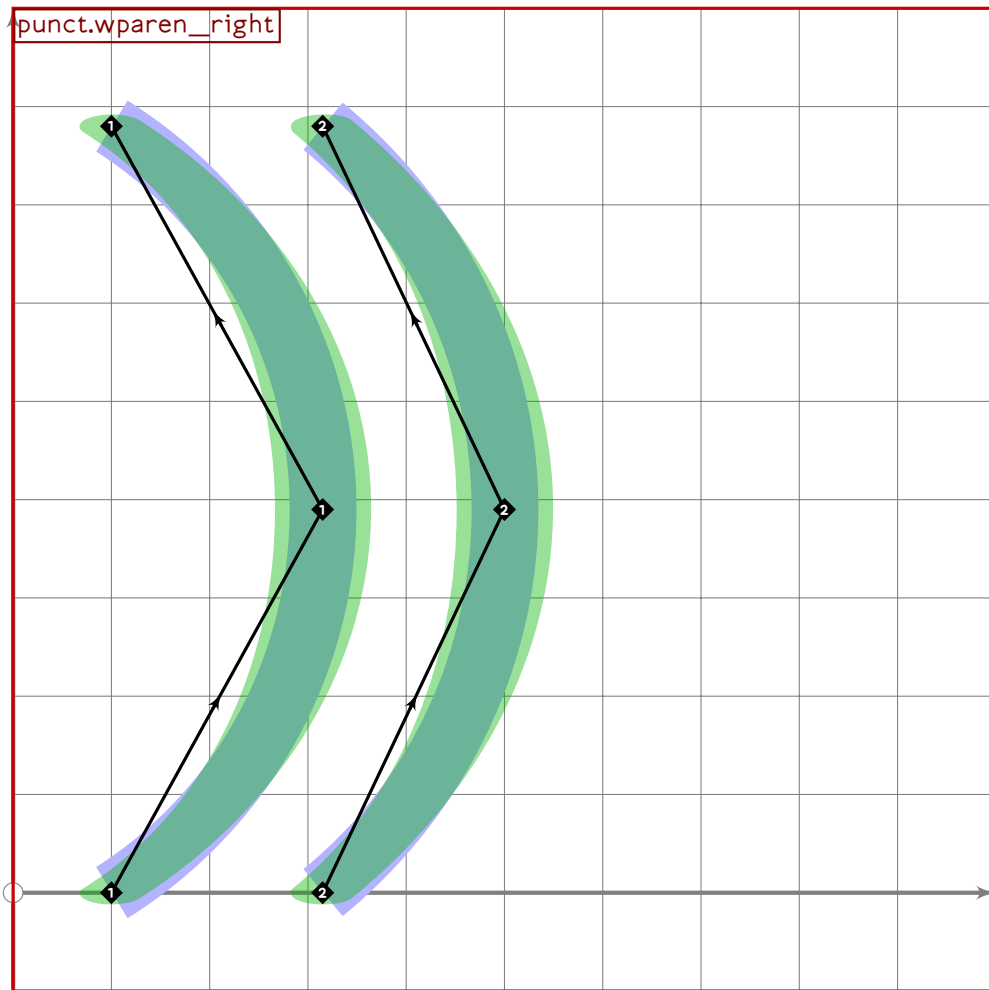
```



```

830 vardef tsu_curve.punct.wparen_left =
831   add_proof_box("punct.wparen_left");
832   bp[sp]:=bracket1;
833   bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
834   bo_size[sp]:=90;
835   bp[sp*1]:=bracket2;
836   bq[sp*1]:=(1.5,1.5)-(2,2)-(1.5,1.5);
837   bo_size[sp*1]:=90;
838   sp:=sp*2;
839 enddef;

```



```

840 vardef tsu_curve.punct.wparen_right =
841   add_proof_box("punct.wparen_right");
842   bp[sp]:=bracket1 rotatedaround (centre_pt,180);
843   bq[sp]:=(1.5,1.5)-(2,2)-(1.5,1.5);
844   bo_size[sp]:=90;
845   bp[sp*1]:=bracket2 rotatedaround (centre_pt,180);
846   bq[sp*1]:=(1.5,1.5)-(2,2)-(1.5,1.5);
847   bo_size[sp*1]:=90;
848   sp:=sp*2;
849 enddef;

```

## serif.mp

```
1 %
2 % Serifs for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 % figure out size of brush
34 (sbrush_width,sbrush_height)=urcorner (
35   fullcircle yscaled tsu_brush_shape
36   rotated tsu_brush_angle
37 );
38 if sbrush_width>sbrush_height:
39   sbrush_long:=sbrush_width;
40   sbrush_short:=sbrush_height;
41 else:
42   sbrush_short:=sbrush_width;
43   sbrush_long:=sbrush_height;
44 fi;
45
46 

---


47
48 vardef tsu_serif.latin.lrcore(expr bst,plp,dlp,l,bts,bos) =
49   serif:=serif xscaled sbrush_long yscaled sbrush_short;
50   serif:=serif xscaled ((1+3*xxpart tsu_rescaling_xf)/4)
51   yscaled bos scaled bts;
52   glstk[ncls]:=regenerate(serif shifted plp);
53   ncls:=ncls+1;
54 enddef;
55
56 vardef tsu_serif.latin.left(expr bst,plp,dlp,l,bts,bos) =
57   begingroup
58     save serif;
59     path serif;
60     if sharp_corners:
61       serif:=(-serif_size,1)-(-serif_size,-1)-
62         (0,1)-(0,1)-cycle;
63     else:
64       serif:=(-serif_size,1){left}..{right}{-serif_size,-1)-
65         (0,1)-(0,1)-cycle;
66     fi;
67     tsu_serif.latin.lrcore(bst,plp,dlp,l,bts,bos);
68   endgroup;
69 enddef;
70
```

```

71 vardef tsu_serif.latin.right(expr bst,plp,dlp,l,bts,bos) =
72   begingroup
73     save serif;
74     path serif;
75     if sharp_corners:
76       serif:=(0,1)-(0,-1)-
77         (serif_size,1)-(serif_size,1)-cycle;
78     else:
79       serif:=(0,1)-(0,-1)-
80         (serif_size,1){right}..{left}(serif_size,1)-cycle;
81     fi;
82     tsu_serif.latin.lrcore(bst,plp,dlp,l,bts,bos);
83   endgroup;
84 enddef;
85
86 vardef tsu_serif.latin.leftright(expr bst,plp,dlp,l,bts,bos) =
87   begingroup
88     save serif,xoffs;
89     path serif;
90     if sharp_corners:
91       serif:=(serif_size,1)-(serif_size,-1)-
92         (serif_size,1)-(serif_size,1)-cycle;
93     else:
94       serif:=(serif_size,1){left}..{right}(serif_size,1)-
95         (serif_size,1){right}..{left}(serif_size,1)-cycle; fi;
96     numeric xoffs;
97     xoffs=xpart (dlp/abs(dlp));
98     tsu_serif.latin.lrcore(bst,
99       plp*if l=0: right else: left fi*50*sbrush_long*xoffs,
100     dlp,l,bts,bos);
101   endgroup;
102 enddef;
103
104
105
106 vardef tsu_serif.mincho.corner(expr bst,plp,dlp,l,bts,bos) =
107   begingroup
108     save serif;
109     path serif;
110     serif:=(1,-0.3)..(0.25,-1.3)..(1,-1.2)..tension 1.2..
111       (1,0.6)..(-0.25,1.3)..(-1,1.2)..tension 1.2..cycle;
112     serif:=serif yscaled sqrt(tsu_brush_shape) rotated tsu_brush_angle
113       scaled (bts*0.43);
114     glstk[ngls]:=regenerate(serif shifted plp);
115     ngls:=ngls*1;
116   endgroup;
117 enddef;
118

```



```

119 vardef tsu_serif.mincho.ulpoint(expr bst,plp,dlp,l,bts,bos) =
120   begingroup
121     save serif;
122     path serif;
123     serif=(-1.5,2.7)..tension 2..(-1,0)..(-0.4,-0.3)..tension 1.5..
124       (0.707,0)..(0.2,0.6)..(-0.1,1.1)..tension 2..(-1.2,2.9)..cycle;
125     serif:=serif yscaled sqrt(tsu_brush_shape) rotated tsu_brush_angle
126       scaled (bts*0.5);
127     glstk[ngls]:=regenerate(serif shifted
128       (plp*(-1,0)*0.25*bts*(xpart dlp/abs(dlp))));
129     ngls:=ngls+1;
130   endgroup;
131 enddef;
132
133 vardef tsu_serif.mincho.triangle(expr bst,plp,dlp,l,bts,bos) =
134   begingroup
135     save serif;
136     path serif;
137     serif=(-1.2,0)..(0,-0.8)..(1.2,0.4)..tension 2..(0.2,1.3)..
138       (-0.2,1.3)..tension 2..cycle;
139     serif:=serif yscaled sqrt(tsu_brush_shape) rotated tsu_brush_angle
140       scaled (bts*0.5);
141     glstk[ngls]:=regenerate(serif shifted (plp*0.25*bts*dlp/abs(dlp)));
142     ngls:=ngls+1;
143   endgroup;
144 enddef;
145
146 vardef tsu_serif.mincho.llpoint(expr bst,plp,dlp,l,bts,bos) =
147   begingroup
148     save serif;
149     path serif;
150     serif=(-2.1,-1.9)..(-1.8,-2.1)..tension 2..(-0.1,-1.2)..(0.2,-1.1)..
151       (0.707,0.707)..(-1,-0.3)..tension 2..cycle;
152     serif:=serif yscaled sqrt(tsu_brush_shape) rotated tsu_brush_angle
153       scaled (bts*0.5);
154     glstk[ngls]:=regenerate(serif shifted plp);
155     ngls:=ngls+1;
156   endgroup;
157 enddef;
158
159 vardef tsu_serif.mincho.lpoint(expr bst,plp,dlp,l,bts,bos) =
160   begingroup
161     save serif;
162     path serif;
163     serif=(-1.5,1.7)..tension 2..(-1,0)..(-0.4,-0.3)..tension 1.8..
164       (0.707,0.2)..(0.2,0.8)..(-0.4,1.1)..tension 2..(-1.2,2.0)..cycle;
165     serif:=reverse serif reflectedabout ((-1,1),(1,-1))
166       xyscaled (0.7,0.9) shifted (0.3,-0.3);

```

```

167 serif:=serif yscaled sqrt(tsu_brush_shape) rotated tsu_brush_angle
168 scaled bts;
169 glstk[ngls]:=regenerate(serif shifted plp);
170 ngls:=ngls+1;
171 endgroup;
172 enddef;
173
174 vardef tsu_serif.mincho.ktriangle(expr bst,plp,dlp,l,bts,bos) =
175 begingroup;
176 save serif,x,y,t,q;
177 path serif;
178 transform t;
179 (0,0) transformed t=(0,0);
180 right transformed t=(dlp/abs(dlp));
181 z1=(dlp/abs(dlp)) rotated 90;
182 if y1<-x1: x1:=-x1; y1:=-y1; fi;
183 up transformed t=z1;
184 q1:=2;
185 q2:=q1**0.5;
186 q3:=0.5*q2/q1;
187 q5:=0.5**q3;
188 z2=(0,q1);
189 z3=(-q3,q5);
190 z4=(q3,q5);
191 serif:=((0.1[z2,z4]){z2-z4}..{z3-z2}(0.1[z2,z3])
192 -z3-z4-cycle)
193 transformed t yscaled tsu_brush_shape
194 rotated tsu_brush_angle
195 scaled (bts*bos*0.98) shifted plp;
196 if (xxpart t)*(yypart t)<0: serif:=reverse serif; fi;
197 glstk[ngls]:=regenerate(serif);
198 ngls:=ngls+1;
199 endgroup;
200 enddef;
201
202 vardef tsu_serif.mincho.khellipse(expr bst,plp,dlp,l,bts,bos) =
203 begingroup;
204 save serif,x,y,t,q;
205 path serif;
206 transform t;
207 (0,0) transformed t=(0,0);
208 right transformed t=(dlp/abs(dlp));
209 z1=(dlp/abs(dlp)) rotated 90;
210 up transformed t=z1;
211 t:=t rotated -tsu_brush_angle yscaled tsu_brush_shape
212 rotated tsu_brush_angle scaled (bts*bos*0.99) shifted plp;
213 z2=(0.5[x3,x4],1);
214 if l=0:

```

```

215     z3=(-0.5,0);
216     z4=(1.3,0);
217     else:
218         z3=(-1.3,0);
219         z4=(0.5,0);
220     fi;
221     serif:=(z4{up}..z2..{down}z3-cycle) transformed t;
222     glstk[ngls]:=regenerate(serif);
223     ngls:=ngls*1;
224     endgroup;
225 enddef;
226
227 % standard serif codes:
228 % 1 - Latin left
229 % 2 - Latin right
230 % 3 - Latin left and right
231 % 4 - Mincho corner blob
232 % 5 - Mincho blob, pointy to ul
233 % 6 - Mincho blob, triangular
234 % 7 - Mincho blob, point to ll
235 % 8 - Mincho blob, point to l
236 % 9 - Mincho kanji triangle
237 % 10 - Mincho kanji half-ellipse
238
239 boolean tsu_do_serif[];
240
241 vardef tsu_serif.standard(expr bst,plp,dlp,l,bts,bos) =
242   if known tsu_do_serif[1]:
243     if tsu_do_serif[1] and (bst=1):
244       tsu_serif.latin.left(bst,plp,dlp,l,bts,bos);
245     fi;
246   fi;
247   if known tsu_do_serif[2]:
248     if tsu_do_serif[2] and (bst=2):
249       tsu_serif.latin.right(bst,plp,dlp,l,bts,bos);
250     fi;
251   fi;
252   if known tsu_do_serif[3]:
253     if tsu_do_serif[3] and (bst=3):
254       tsu_serif.latin.leftright(bst,plp,dlp,l,bts,bos);
255     fi;
256   fi;
257   if known tsu_do_serif[4]:
258     if tsu_do_serif[4] and (bst=4):
259       tsu_serif.mincho.corner(bst,plp,dlp,l,bts,bos);
260     fi;
261   fi;
262   if known tsu_do_serif[5]:

```

```

263     if tsu_do_serif[5] and (bst=5):
264         tsu_serif.mincho.ulpoint(bst,plp,dlp,l,bts,bos);
265     fi;
266 fi;
267 if known tsu_do_serif[6]:
268     if tsu_do_serif[6] and (bst=6):
269         tsu_serif.mincho.triangle(bst,plp,dlp,l,bts,bos);
270     fi;
271 fi;
272 if known tsu_do_serif[7]:
273     if tsu_do_serif[7] and (bst=7):
274         tsu_serif.mincho.llpoint(bst,plp,dlp,l,bts,bos);
275     fi;
276 fi;
277 if known tsu_do_serif[8]:
278     if tsu_do_serif[8] and (bst=8):
279         tsu_serif.mincho.lpoint(bst,plp,dlp,l,bts,bos);
280     fi;
281 fi;
282 if known tsu_do_serif[9]:
283     if tsu_do_serif[9] and (bst=9):
284         tsu_serif.mincho.ktriangle(bst,plp,dlp,l,bts,bos);
285     fi;
286 fi;
287 if known tsu_do_serif[10]:
288     if tsu_do_serif[10] and (bst=10):
289         tsu_serif.mincho.khellipse(bst,plp,dlp,l,bts,bos);
290     fi;
291 fi;
292 endif;
293
294 vardef tsu_serif.choose(expr bst,plp,dlp,l,bts,bos) =
295     tsu_serif.standard(bst,plp,dlp,l,bts,bos);
296 endif;

```

# buildkanji.mp

```
1 %
2 % Build a kanji character by assembling parts
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 % a beret is a tilted hat
34 vardef build_kanji.add_beret(text curves) =
35   begingroup
36     save osp;
37     numeric osp;
38     osp:=sp;
39     sp:=sp*1;
40     curves;
41     save lox,hix,toppt,myxf;
42     lox:=infinity;
43     hix:=-infinity;
44     pair toppt;
45     toppt:=(500,infinity);
46     for i=osp+1 upto sp-1:
47       if xpart llcorner bp[i]<lox: lox:=xpart llcorner bp[i]; fi;
48       if xpart urcorner bp[i]>hix: hix:=xpart urcorner bp[i]; fi;
49       if ypart point 0 of bp[i]>ypart toppt:
50         toppt:=point 0 of bp[i];
51       fi;
52       if ypart point infinity of bp[i]>ypart toppt:
53         toppt:=point infinity of bp[i];
54       fi;
55     endfor;
56     for i=osp+1 upto sp-1:
57       if point 0 of bp[i]=toppt: bo_serif[i][0]:=whatever; fi;
58       if point infinity of bp[i]=toppt:
59         bo_serif[i][length bp[i]]:=whatever;
60       fi;
61     endfor;
62     transform myxf;
63     (-500,810) transformed myxf=(lox,(ypart toppt)*30);
64     (500,900) transformed myxf=(hix,900);
65     (0,780) transformed myxf=toppt;
66     bp[osp]:=(-400,750)..(0,780)..tension 11..(360,840)) transformed myxf;
67     bq[osp]:=(1.1,1.1)-(1.6,1.6)-(2.0,2.0);
68   endgroup;
69 enddef;
70
```

```

71 vardef build_kanji.add_jtail(expr i) =
72   bp[i]:=bp[i]-(xpart point length bp[i] of bp[i],30){down}..
73   {curl 0.2}((xpart point length bp[i] of bp[i])-150,0);
74   bp[i]:=insert_nodes(bp[i])((length bp[i])-0.5);
75   bq[i]:=bq[i]-(1.5,1.5)-(1.4,1.4)-(1.2,1.2);
76 enddef;
77
78 vardef build_kanji.box(expr ul,lr) =
79   begingroup
80     save boxext;
81     if (ypart (ul-lr))>500:
82       boxext:=-100/(ypart (ul-lr));
83     else:
84       boxext:=-0.2;
85     fi;
86     bp[sp]:=(xpart ul,(boxext)[ypart lr,ypart ul])-ul-
87     (xpart lr,ypart ul)-(xpart lr,(boxext)[ypart lr,ypart ul]);
88   endgroup;
89   bq[sp]:=(1.5,1.5)-(1.7,1.7)-(1.7,1.7)-(1.5,1.5);
90   bo_tip[sp][1]:=1;
91   bo_tip[sp][2]:=1;
92   bo_serif[sp][1]:=4;
93   bo_serif[sp][2]:=4;
94   bp[sp*1]:=(xpart ul,ypart lr)-lr;
95   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
96   sp:=sp*2;
97 enddef;
98
99 vardef build_kanji.cup(expr ul,lr) =
100  bp[sp]:=ul-(xpart ul,(-0.2)[ypart lr,ypart ul]);
101  bq[sp]:=(1.6,1.6)-(1.4,1.4);
102  bo_serif[sp][0]:=10;
103  bp[sp*1]:=(xpart lr,ypart ul)-(xpart lr,(-0.2)[ypart lr,ypart ul]);
104  bq[sp*1]:=(1.6,1.6)-(1.4,1.4);
105  bo_serif[sp*1][0]:=10;
106  bp[sp*2]:=(xpart ul,ypart lr)-lr;
107  bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
108  sp:=sp*3;
109 enddef;
110
111 vardef build_kanji.gate_enclose(text contents) =
112   tsu_curve.kanji.grtwo.gate;
113   begingroup
114     transform xf;
115     (50,50) transformed xf=(220,40);
116     (950,850) transformed xf=(780,420);
117     xypart xf=yxpart xf=0;
118     tsu_xform(xf)(contents);

```

```

119 endgroup;
120 enddef;
121
122 vardef build_kanji.level(text curves) =
123   begingroup
124     save xsp;
125     xsp:=sp;
126     curves;
127     save lsum,denom;
128     lsum:=0;
129     denom:=0;
130     for i=xsp upto sp-1:
131       if unknown bo_size[i]:
132         bo_size[i]:=100;
133       fi;
134       if (bo_size[i]>0):
135         lsum:=lsum+mlog(bo_size[i]);
136         denom:=denom+1;
137       fi;
138     endfor;
139     for i=xsp upto sp-1:
140       if bo_size[i]>0:
141         bo_size[i]:=mexp(lsum/denom);
142       fi;
143     endfor;
144   endgroup;
145 enddef;
146
147 vardef build_kanji.lr(expr splitpoint,overlap)
148   (text leftstuff)(text rightstuff) =
149   begingroup
150     save t;
151     transform t[];
152     yypart t1=yypart t2=1;
153     ypart t1=yxpart t1=xy part t1=y part t2=yxpart t2=xy part t2=0;
154     (50,0) transformed t1=(50,0);
155     (950,0) transformed t1=(splitpoint*overlap/2,0);
156     (50,0) transformed t2=(splitpoint*overlap/2,0);
157     (950,0) transformed t2=(950,0);
158     tsu_xform(t1)(leftstuff);
159     tsu_xform(t2)(rightstuff);
160   endgroup;
161 enddef;
162
163 vardef build_kanji.sscale(text tran)(text curves) =
164   tsu_xform(identity shifted (-centre_pt) tran shifted centre_pt)(curves);
165 enddef;
166

```

```

167 vardef build_kanji.spread_legs(expr dist)(text curves) =
168   begingroup
169     save osp;
170     numeric osp;
171     osp:=sp;
172     curves;
173     save mytr;
174     transform mytr[];
175     (50,-50) transformed mytr1=(50,-50);
176     (500,-50) transformed mytr1=(500-dist/2,-50);
177     (500,850) transformed mytr1=(500-dist/2,850);
178     (950,-50) transformed mytr2=(950,-50);
179     (500,-50) transformed mytr2=(500*dist/2,-50);
180     (500,850) transformed mytr2=(500*dist/2,850);
181     for i=osp upto sp-1:
182       if xpart 0.75[llcorner bp[i],urcorner bp[i]]<475:
183         bp[i]:=bp[i] transformed mytr1;
184       elseif xpart 0.25[llcorner bp[i],urcorner bp[i]]>525:
185         bp[i]:=bp[i] transformed mytr2;
186       fi;
187     endfor;
188   endgroup;
189 enddef;
190
191 vardef build_kanji.tb(expr splitpoint,overlap)
192   (text topstuff)(text bottomstuff) =
193   begingroup
194     save t;
195     transform t[];
196     xxpart t1=xxpart t2=1;
197     xpart t1=xy part t1=yx part t1=x part t2=xy part t2=yx part t2=0;
198     (0,850) transformed t1=(0,850);
199     (0,-50) transformed t1=(0,splitpoint-overlap/2);
200     (0,850) transformed t2=(0,splitpoint+overlap/2);
201     (0,-50) transformed t2=(0,-50);
202     tsu_xform(t1)(topstuff);
203     tsu_xform(t2)(bottomstuff);
204   endgroup;
205 enddef;
206
207 vardef build_kanji.tricluster(expr topxscale)
208   (text topstuff)(text leftstuff)(text rightstuff) =
209   build_kanji.tb(500,0)
210     (build_kanji.sscale(xscaled topxscale)(topstuff))
211     (build_kanji.lr(480,0)
212       (leftstuff)
213       (rightstuff));
214 enddef;

```



# leftrad.mp

```
1 %
2 % Radicals for left side (often special forms of other radicals)
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

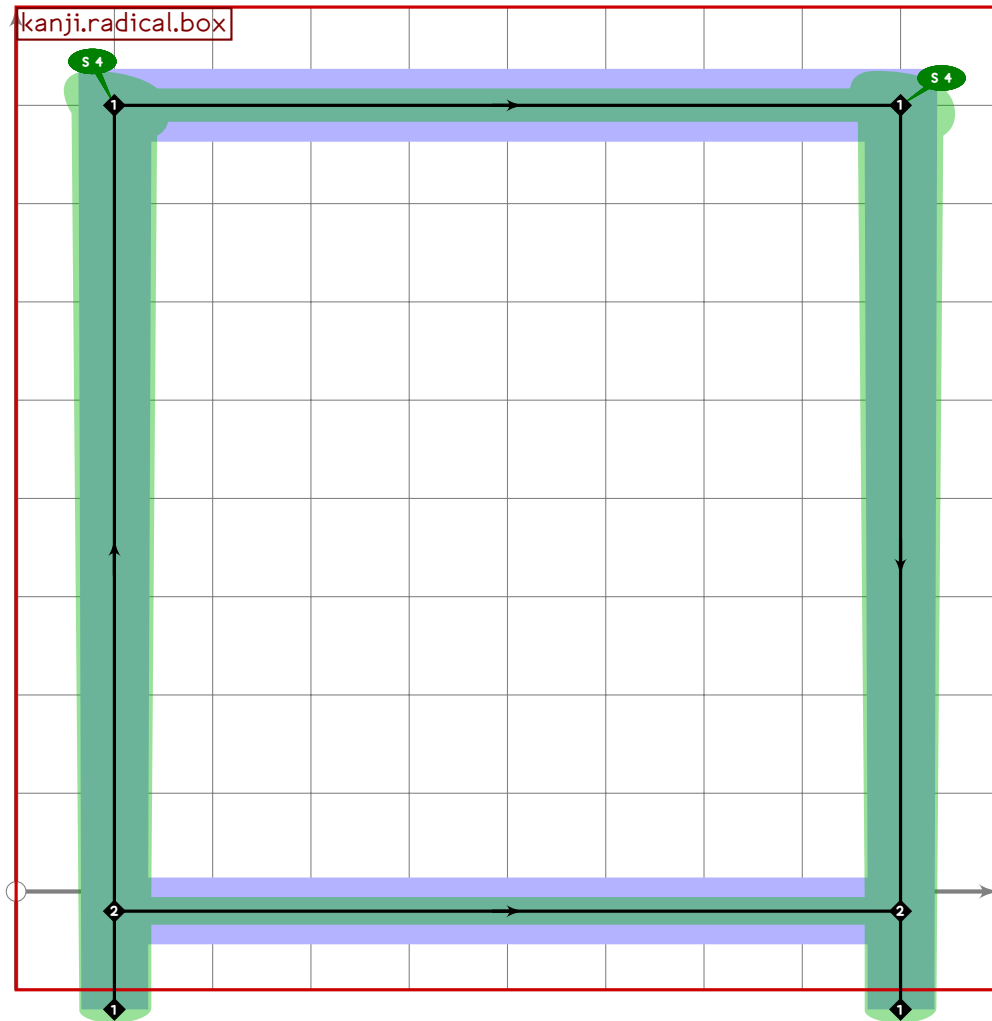
---


32
33 vardef tsu_curve.kanji.leftrad.day =
34   add_proof_box("kanji.leftrad.day");
35   tsu_xform(identity shifted (0,600) yscaled 0.62 shifted (0,600))
36   (tsu_curve.kanji.grone.day);
37 enddef;
38
39 vardef tsu_curve.kanji.leftrad.person =
40   add_proof_box("kanji.leftrad.person");
41   bp[sp]:=(900,800)..(500,520)..(0,330);
42   bq[sp]:=(1.6,1.6)..(1.4,1.4)..(0.8,0.8);
43   bo_size[sp]:=115;
44   bo_serif[sp][0]:=10;
45   bp[sp*1]:=(point 0.7 of bp[sp])..(xpart point 0.7 of bp[sp],-40);
46   bq[sp*1]:=(1.6,1.6)..(1.4,1.4);
47   bo_size[sp*1]:=115;
48   sp:=sp*2;
49 enddef;
50
51 vardef tsu_curve.kanji.leftrad.seven =
52   add_proof_box("kanji.leftrad.seven");
53   build_kanji.sscale(shifted (0,300) yscaled 0.7 shifted (0,300))
54   (tsu_curve.kanji.grone.seven);
55   bo_serif[sp-2][3]:=undef;
56 enddef;
57
58 vardef tsu_curve.kanji.leftrad.wood =
59   add_proof_box("kanji.leftrad.wood");
60   bp[sp]:=(500,780)-(500,0);
61   bq[sp]:=(1.6,1.6)-(1.6,1.6);
62   bo_serif[sp][0]:=10;
63   bp[sp*1]:=(100,580)-(830,580);
64   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
65   bo_serif[sp*1][1]:=9;
66   bp[sp*2]:=(500,580)..(250,200)..(80,70);
67   bq[sp*2]:=(1.6,1.6)..(1.3,1.3)..(0.9,0.9);
68   bp[sp*3]:=(500,470)..(680,320)..(800,210);
69   bq[sp*3]:=(1.1,1.1)..(1.5,1.5)..(1.7,1.7);
70   sp:=sp*4;
```

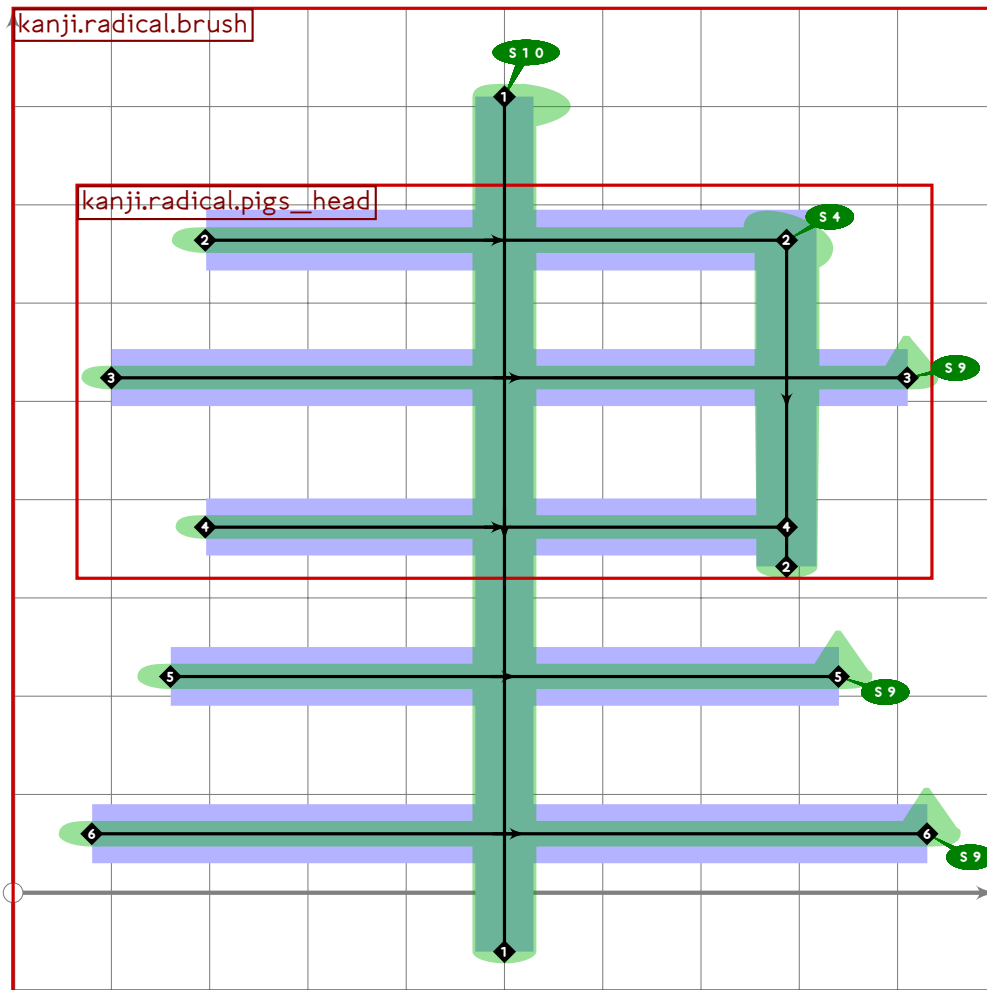
71 enddef;

# radical.mp

```
1 %  
2 % Radicals that are not common kanji in themselves  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31
```



```
32  
33 vardef tsu_curve.kanji.radical.box =  
34   add_proof_box("kanji.radical.box");  
35   build_kanji.box((100,800),(900,-20));  
36 enddef;
```



```

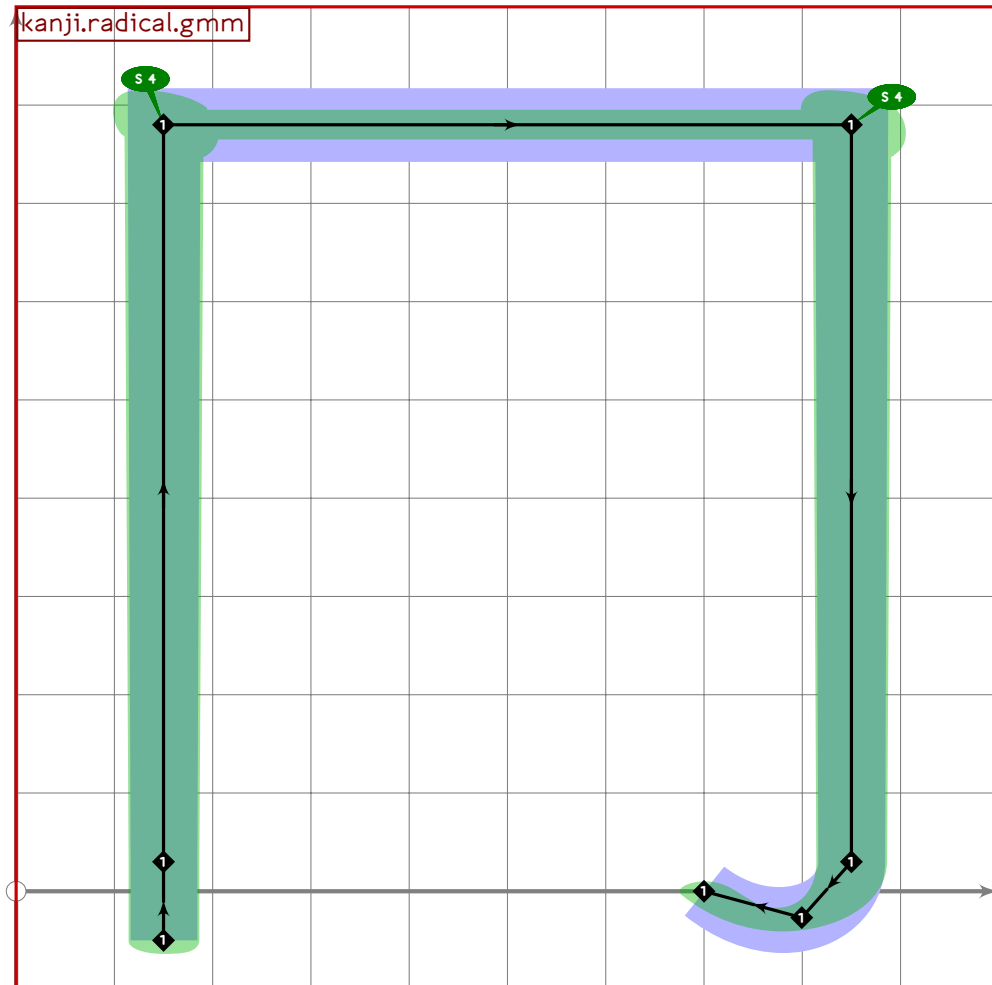
37
38 vardef tsu_curve.kanji.radical.brush =
39   add_proof_box("kanji.radical.brush");
40   bp[sp]:=(500,810)-(500,-60);
41   bq[sp]:=(1.6,1.6)-(1.5,1.5);
42   bo_serif[sp][0]:=10;
43   sp:=sp*1;
44   tsu_xform(identity yscaled 0.4 shifted (0,360))
45     (tsu_curve.kanji.radical.pigs_snout);
46   bp[sp]:=(160,220)-(840,220);
47   bq[sp]:=(1.6,1.6)-(1.6,1.6);
48   bo_serif[sp][1]:=9;
49   bp[sp*1]:=(80,60)-(930,60);
50   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
51   bo_serif[sp*1][1]:=9;
52   sp:=sp*2;
53   for i=sp*6 upto sp*1: bo_size[i]:=85; endfor;
54 enddef;
55
56 vardef tsu_curve.kanji.radical.cut_the_grass =
57   add_proof_box("kanji.radical.cut_the_grass");

```

```

58 bp[sp]:=(150,750)..(500,500)..(850,50);
59 bq[sp]:=(1.3,1.3)-(1.5,1.5)-(1.7,1.7);
60 bp[sp*1]:=(700,800)..(500,330)..(70,-30);
61 bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1,1);
62 bo_serif[sp*1][0]=10;
63 sp:=sp*2;
64 enddef;
65
66 vardef tsu_curve.kanji.radical.eight =
67   add_proof_box("kanji.radical.eight");
68   bp[sp]:=(610,760)..tension 1.3..(760,240)..(880,-10);
69   bq[sp]:=(1,1)-(1.4,1.4)-(1.8,1.8);
70   bo_size[sp]=110;
71   bp[sp*1]:=(350,740)..(280,360)..(160,80)..(40,-30);
72   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(1.3,1.3)-(0.88,0.88);
73   bo_size[sp*1]=110;
74   bo_serif[sp*1][0]=10;
75   sp:=sp*2;
76 enddef;
77

```

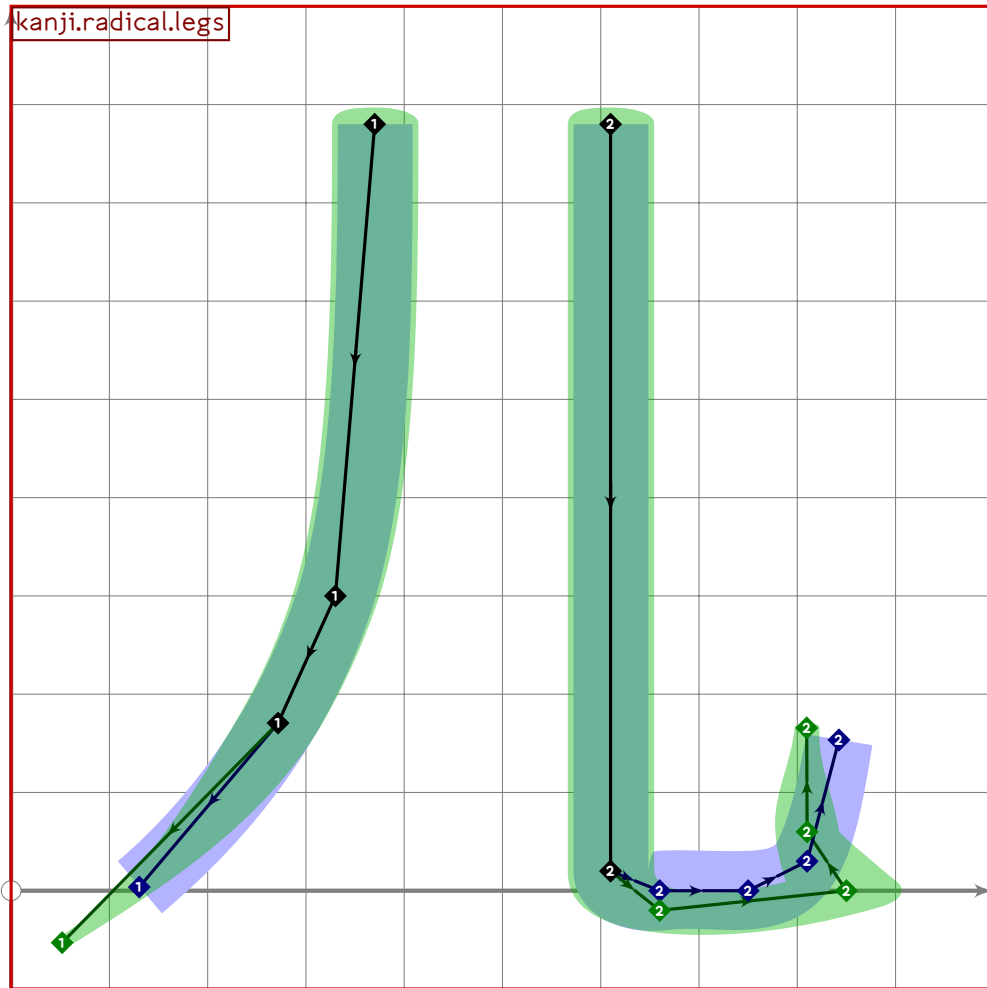


78 % "George Michael's Moustache" radical, according to Schultzzz

```

79 vardef tsu_curve.kanji.radical.gmm =
80   add_proof_box("kanji.radical.gmm");
81   bp[sp]:=(150,-50)-(150,30)-(150,780)-(850,780);
82   bq[sp]:=(1.5,1.5)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6);
83   build_kanji.add_jtail(sp);
84   bo_tip[sp][2]:=1;
85   bo_tip[sp][3]:=1;
86   bo_serif[sp][2]:=4;
87   bo_serif[sp][3]:=4;
88   sp:=sp*1;
89 enddef;
90
91 vardef tsu_curve.kanji.radical.kettle_lid =
92   add_proof_box("kanji.radical.kettle_lid");
93   bp[sp]:=(500,700)..(500,160);
94   bq[sp]:=(1.6,1.6)-(1.5,1.5);
95   bo_size[sp]:=125;
96   bo_serif[sp][0]:=10;
97   bp[sp*1]:=(100,160)-(900,160);
98   bq[sp*1]:=(1.7,1.7)-(1.7,1.7);
99   bo_size[sp*1]:=125;
100  bo_serif[sp*1][1]:=9;
101  sp:=sp*2;
102 enddef;

```



```

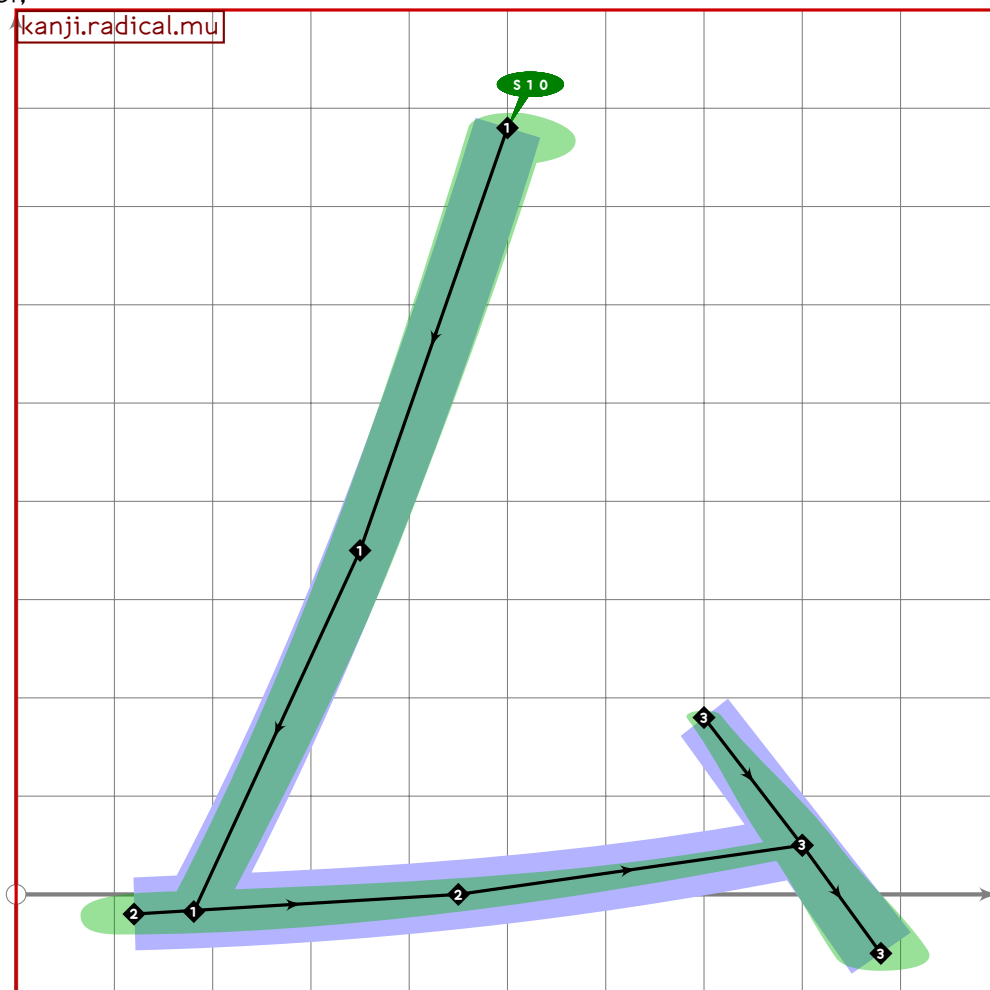
103
104 vardef tsu_curve.kanji.radical.legs =
105   add_proof_box("kanji.radical.legs");
106   bp[sp]:=(370,780){down}..(330,300)..(40,-60);
107   bp[sp]:=insert__nodes(bp[sp])(1.3);
108   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(0.8,0.7);
109   bo_size[sp]:=110;
110   bp[sp*1]:=interpath(mincho,
111     (610,780)-(610,20){down}..(660,0)..
112     (750,0)..(810,30)..tension 2..(850,230),
113     (610,780)-(610,20){down}..(660,-20)..
114     (850,0){curl 0.2}..(810,60)..tension 2..(810,170));
115   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.9,1.9)-
116     (1.9,1.9)-(1.3,1.3)-(0.8,0.8);
117   bo_size[sp*1]:=110;
118   sp:=sp*2;
119 enddef;
120
121 vardef tsu_curve.kanji.radical.life_minus =
122   add_proof_box("kanji.radical.life_minus");
123   bp[sp]:=(500,780)-(500,0);

```

```

124 bq[sp]:=(1.6,1.6)-(1.6,1.6);
125 bo_serif[sp][0]:=10;
126 bp[sp*1]:=(280,700)..(220,360)..(140,120);
127 bq[sp*1]:=(1.6,1.6)-(1.2,1.2)-(0.8,0.8);
128 bo_serif[sp*1]:=10;
129 bp[sp*2]:=(point 0.9 of bp[sp*1]-
130   (820,y part point 0.9 of bp[sp*1]));
131 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
132 bo_serif[sp*2][1]:=9;
133 bp[sp*3]:=(120,0)-(880,0);
134 bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
135 bo_serif[sp*3][1]:=9;
136 sp:=sp+4;
137 enddef;

```



```

138
139 vardef tsu_curve.kanji.radical.mu =
140   add_proof_box("kanji.radical.mu");
141   bp[sp*1]:=(120,-20)..tension 1.2..(450,0)..(800,50);
142   bq[sp*1]:=(2,2)-(1.7,1.7)-(1.2,1.2);
143   bp[sp]:=(500,780)..tension 1.2..(350,350)..(point 0.2 of bp[sp*1]);
144   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3);

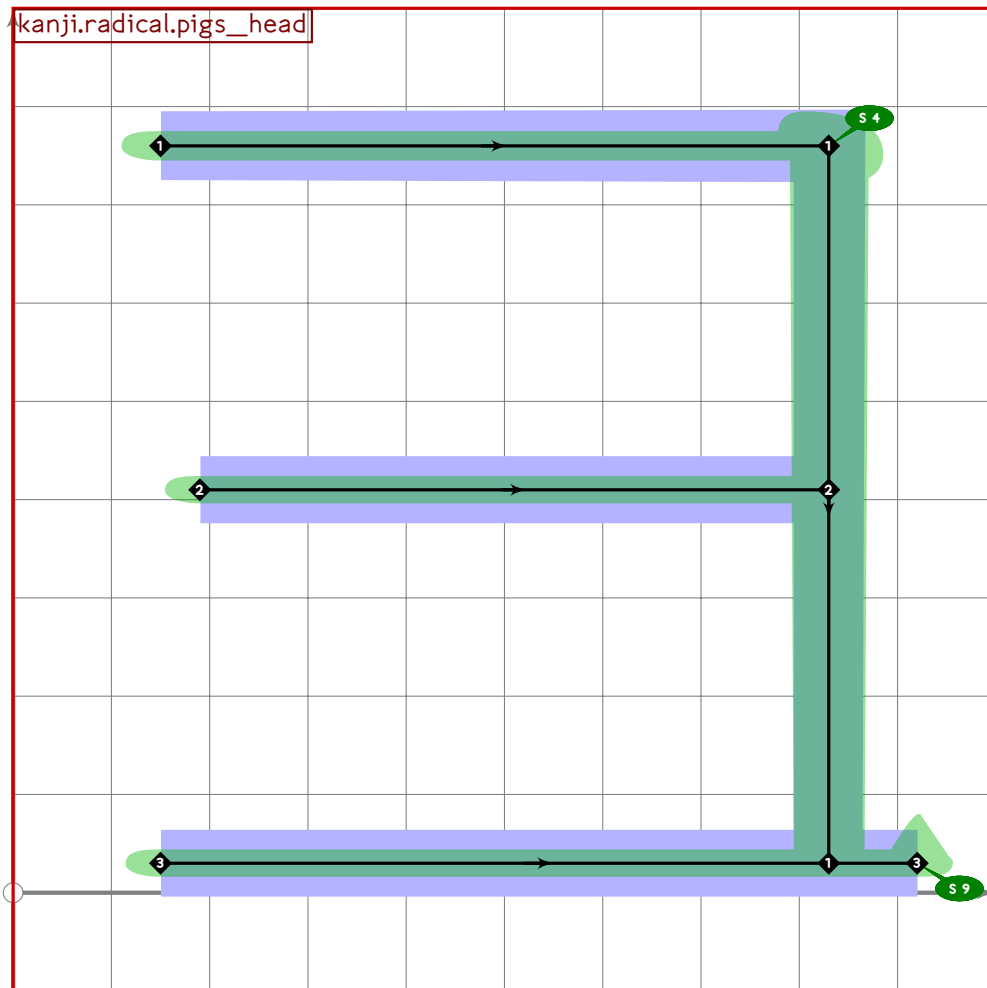
```



```

145 bo_serif[sp][0]:=10;
146 bp[sp*2]:=(700,180)..tension 1.3..(800,50)..(880,-60);
147 bq[sp*2]:=(1,1)-(1.5,1.5)-(1.8,1.8);
148 sp:=sp*3;
149 enddef;
150
151 vardef tsu_curve.kanji.radical.mu_bar =
152   add_proof_box("kanji.radical.mu_bar");
153   bp[sp]:=(140,780)-(860,780);
154   bq[sp]:=(1.6,1.6)-(1.6,1.6);
155   bo_serif[sp][1]:=9;
156   sp:=sp*1;
157   build_kanji.sscale(xscaled 0.92)(tsu_curve.kanji.radical.mu);
158   bo_serif[sp*3][0]:=whatever;
159   bp[sp*1]:=bp[sp*1] rotatedaround (point 1 of bp[sp*1],15);
160 enddef;
161
162 vardef tsu_curve.kanji.radical.pigs_head =
163   add_proof_box("kanji.radical.pigs_head");
164   bp[sp]:=(150,760)-(830,760)-(830,70);
165   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.5,1.5);
166   bo_tip[sp][1]:=1;
167   bo_serif[sp][1]:=4;
168   bp[sp*1]:=(190,410)-(830,410);
169   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
170   bp[sp*2]:=(150,30)-(830,30);
171   bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
172   sp:=sp*3;
173 enddef;
174
175 % name is mine - it has central horizontal line lengthened
176 vardef tsu_curve.kanji.radical.pigs_snout =
177   add_proof_box("kanji.radical.pigs_snout");
178   build_kanji.level(
179     build_kanji.sscale(xscaled 0.87)(tsu_curve.kanji.radical.pigs_head);
180     bp[sp*2]:=(100,410)-(910,410);
181     bo_serif[sp*2][1]:=9;
182   );
183 enddef;
184

```



```

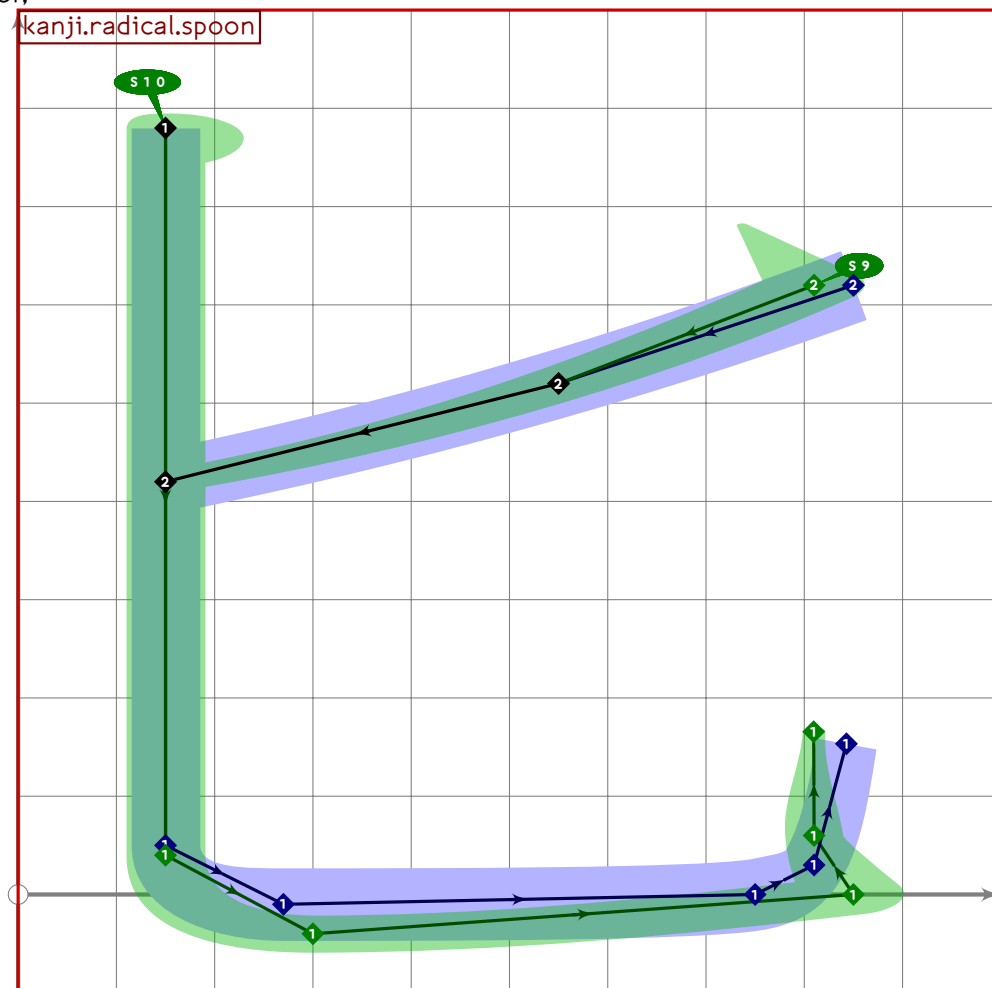
185 % name is mine - it has bottom horizontal line lengthened, vertical clipped
186 vardef tsu_curve.kanji.radical.pigs_tail =
187   add_proof_box("kanji.radical.pigs_tail");
188   tsu_curve.kanji.radical.pigs_head;
189   bp[sp-3]:=(150,760)-(830,760)-(830,30);
190   bp[sp-1]:=(150,30)-(920,30);
191   bo_serif[sp-1][1]:=9;
192 enddef;
193
194 vardef tsu_curve.kanji.radical.silly_hat =
195   add_proof_box("kanji.radical.silly_hat");
196   bp[sp]:=(500,800)..(500,500);
197   bq[sp]:=(1.6,1.6)-(1.5,1.5);
198   bo_size[sp]:=95;
199   bo_serif[sp][0]:=10;
200   bp[sp*1]:=(100,100)..(100+50*mincho,300)..(100+70*mincho,500)-
201     (900,500)..(900-40*mincho,200)..(900-70*mincho,100);
202   bq[sp*1]:=(1.7,1.7)-(1.6,1.6)-(1.4,1.4)-
203     (1.7,1.7)-(1.6,1.6)-(1.4,1.4);
204   bo_size[sp*1]:=95;
205   bo_tip[sp*1][2]:=1;

```

```

206 bo_tip[sp+1][3]:=1;
207 bo_serif[sp+1][3]:=4;
208 sp:=sp*2;
209 enddef;

```



```

210
211 vardef tsu_curve.kanji.radical.spoon =
212   add_proof_box("kanji.radical.spoon");
213   bp[sp]:=interpath(mincho,
214     (150,780)–(150,50){down}..{right}(270,-10)..
215     (750,0)..(810,30)..tension 2..(850,230),
216     (150,780)–(150,40){down}..{right}(300,-40)..
217     (850,0){curl 0.2}..(810,60)..tension 2..(810,170));
218   bq[sp]:=(1.6,1.6)–(1.6,1.6)–(1.9,1.9)–
219     (1.9,1.9)–(1.3,1.3)–(0.8,0.8);
220   bo_serif[sp][0]:=10;
221   bp[sp+1]:=(xpart point infinity of bp[sp],620)..(550,520)..(150,420);
222   bq[sp+1]:=(1.9,1.9)..(1.6,1.6)..(1.3,1.3);
223   bo_serif[sp+1][0]:=9;
224   sp:=sp*2;
225 enddef;
226

```

```

227 vardef tsu_curve.kanji.radical.tent =
228   add_proof_box("kanji.radical.tent");
229   bp[sp]:=(510,800)..(450,700)..(300,540)..(60,360);
230   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.9);
231   bo_serif[sp][0]:=10;
232   bp[sp*1]:=(point 0.2 of bp[sp])..tension 1.2..(640,620)..(920,400);
233   bq[sp*1]:=(1,1)-(1.3,1.3)-(2.25,0.95);
234   bp[sp*2]:=(330,470)-(660,470);
235   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
236   bo_serif[sp*2][1]:=9;
237   sp:=sp*3;
238 enddef;
239
240 vardef tsu_curve.kanji.radical.vline =
241   add_proof_box("kanji.radical.vline");
242   bp[sp]:=(500,780)-(500,-20);
243   bq[sp]:=(1.7,1.7)-(1.3,1.3);
244   bo_serif[sp][0]:=10;
245   sp:=sp*1;
246 enddef;

```

# toprad.mp

```
1 %
2 % Radicals for top (often special forms of other radicals)
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 vardef tsu_curve.kanji.toprad.blue =
34   add_proof_box("kanji.toprad.blue");
35   bp[sp]:=(120,560)-(880,560);
36   bq[sp]:=(1.6,1.6)-(1.6,1.6);
37   bo_serif[sp][1]:=9;
38   bp[sp*1]:=(500,780)-(500,40);
39   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
40   bo_serif[sp*1][0]:=10;
41   bp[sp*2]:=(160,310)-(840,310);
42   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
43   bo_serif[sp*2][1]:=9;
44   bp[sp*3]:=(80,40)-(920,40);
45   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
46   bo_serif[sp*3][1]:=9;
47   sp:=sp*4;
48 enddef;
49
50 vardef tsu_curve.kanji.toprad.cave =
51   add_proof_box("kanji.toprad.cave");
52   build_kanji.level(build_kanji.tb(550,340)
53     (tsu_curve.kanji.radical.silly_hat)
54     (tsu_curve.kanji.radical.legs));
55 enddef;
56
57 vardef tsu_curve.kanji.toprad.grass =
58   add_proof_box("kanji.toprad.grass");
59   bp[sp]:=(350,800)-(350,30);
60   bq[sp]:=(1.6,1.6)-(1.4,1.4);
61   bo_serif[sp][0]:=10;
62   bp[sp*1]:=(650,800)-(650,30);
63   bq[sp*1]:=(1.6,1.6)-(1.4,1.4);
64   bo_serif[sp*1][0]:=10;
65   bp[sp*2]:=(100,400)-(900,400);
66   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
67   bo_serif[sp*2][1]:=9;
68   sp:=sp*3;
69 enddef;
70
```

```
71 vardef tsu_curve.kanji.toprad.sparkle =
72   add_proof_box("kanji.toprad.sparkle");
73   bp[sp]:=(200,600)..tension 1.2..(250,440)..(320,160);
74   bq[sp]:=(1,1)-(1.3,1.3)-(1.9,1.9);
75   bp[sp*1]:=(500,780)-(500,-20);
76   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
77   bo_serif[sp*1][0]:=10;
78   bp[sp*2]:=(790,620)..tension 1.2..(730,370)..(670,170);
79   bq[sp*2]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3);
80   bo_serif[sp*2][0]:=10;
81   sp:=sp*3;
82 enddef;
```

# gradeone.mp

1 %

2 % Grade One kanji used on more than one page

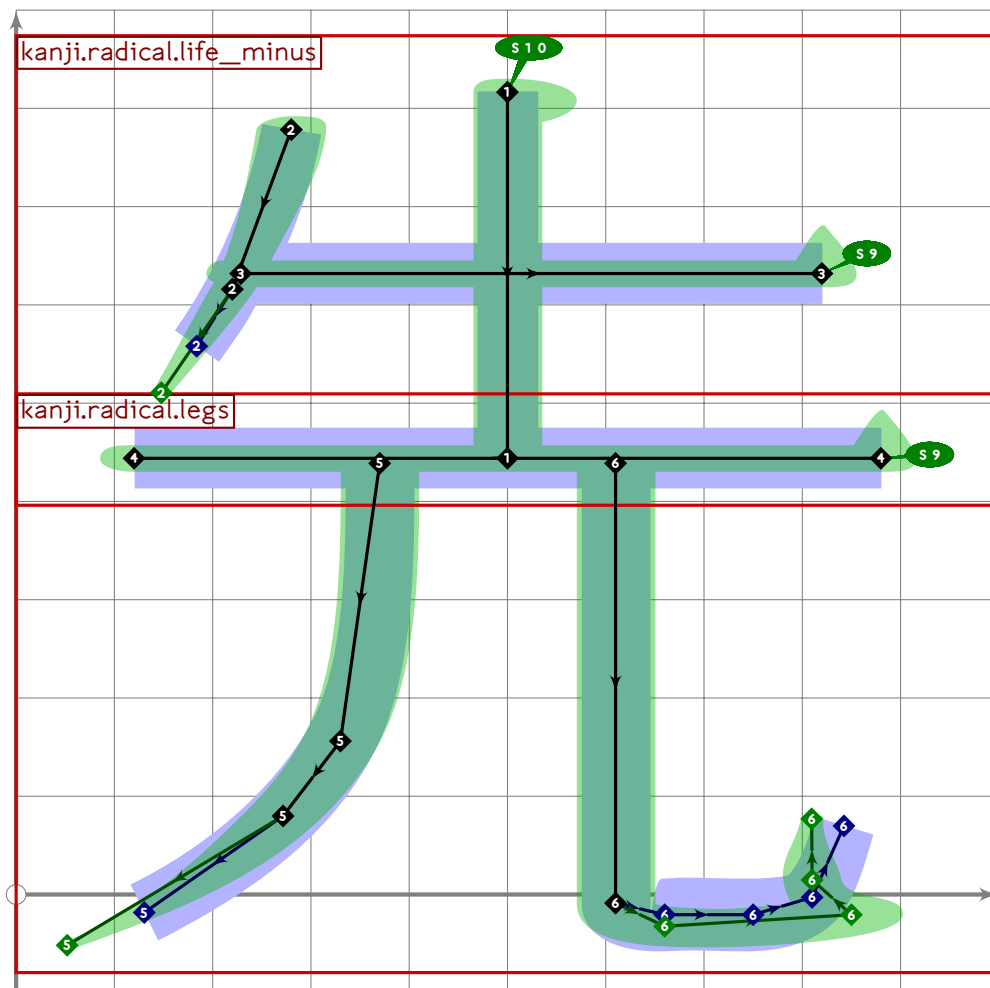
3 % Copyright (C) 2011 Matthew Skala

4 %

5-29 [Standard copyright notice]

30

31



32

```
33 vardef tsu_curve.kanji.grone.ahead =
```

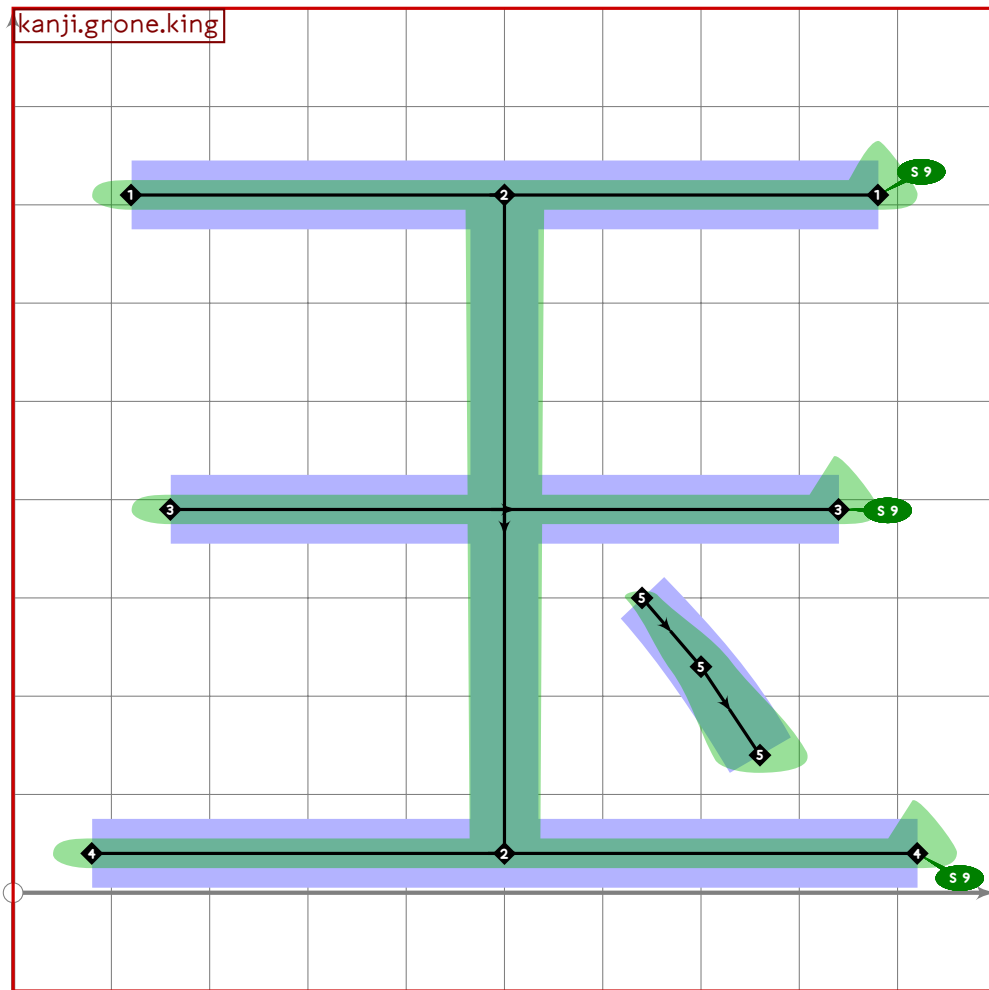
```
34   add_proof_box("kanji.grone.ahead");
```

```
35   build_kanji.tb(450,60)
```

```
36     (tsu_curve.kanji.radical.life_minus)
```

```
37     (tsu_curve.kanji.radical.legs);
```

```
38 enddef;
```

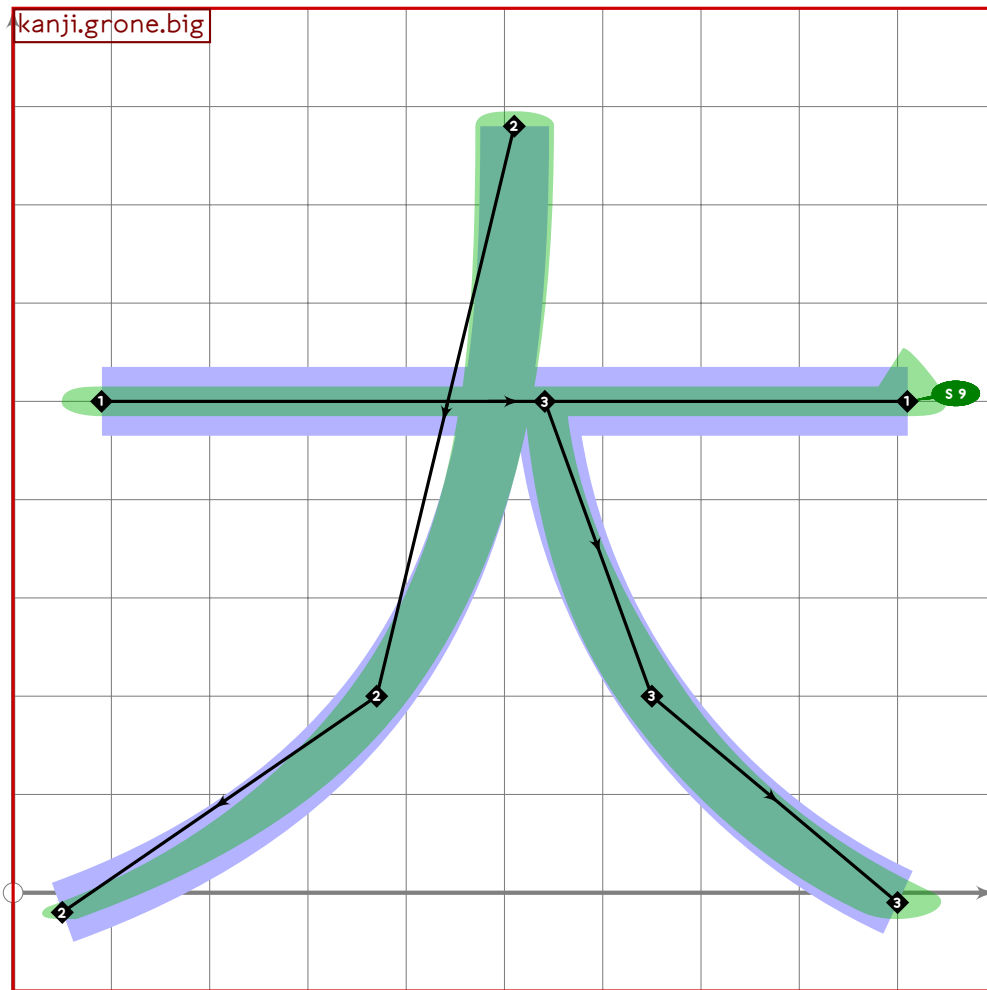


```

39
40 vardef tsu_curve.kanji.grone.ball =
41   add_proof_box("kanji.grone.ball");
42   tsu_curve.kanji.grone.king;
43   bp[sp]:=(640,300)..(700,230)..(760,140);
44   bq[sp]:=(1,1)-(1.4,1.4)-(1.8,1.8);
45   sp:=sp*1;
46 enddef;

```

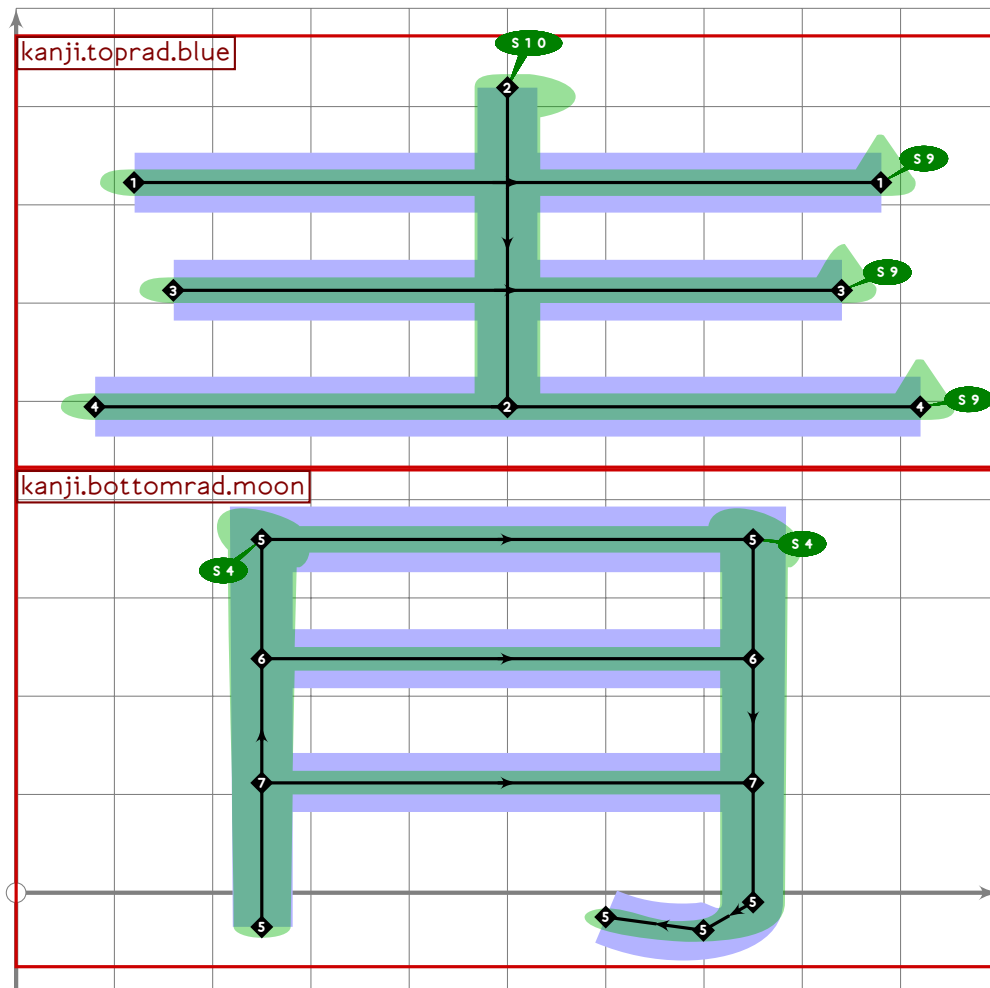




```

47
48 vardef tsu_curve.kanji.grone.big =
49   add_proof_box("kanji.grone.big");
50   bp[sp]:=(90,500)-(910,500);
51   bq[sp]:=(1.6,1.6)-(1.6,1.6);
52   bo_serif[sp][1]:=9;
53   bp[sp*1]:=(510,780){down}{..(370,200)..}{curl 0.5}{(50,-20);
54   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(1.1,1.1);
55   bp[sp*2]:=((bp[sp] intersectionpoint bp[sp*1])*(50,0))..
56     (650,200)..(900,-10);
57   bq[sp*2]:=(1.1,1.1)-(1.5,1.5)-(1.7,1.7);
58   sp:=sp*3;
59 enddef;

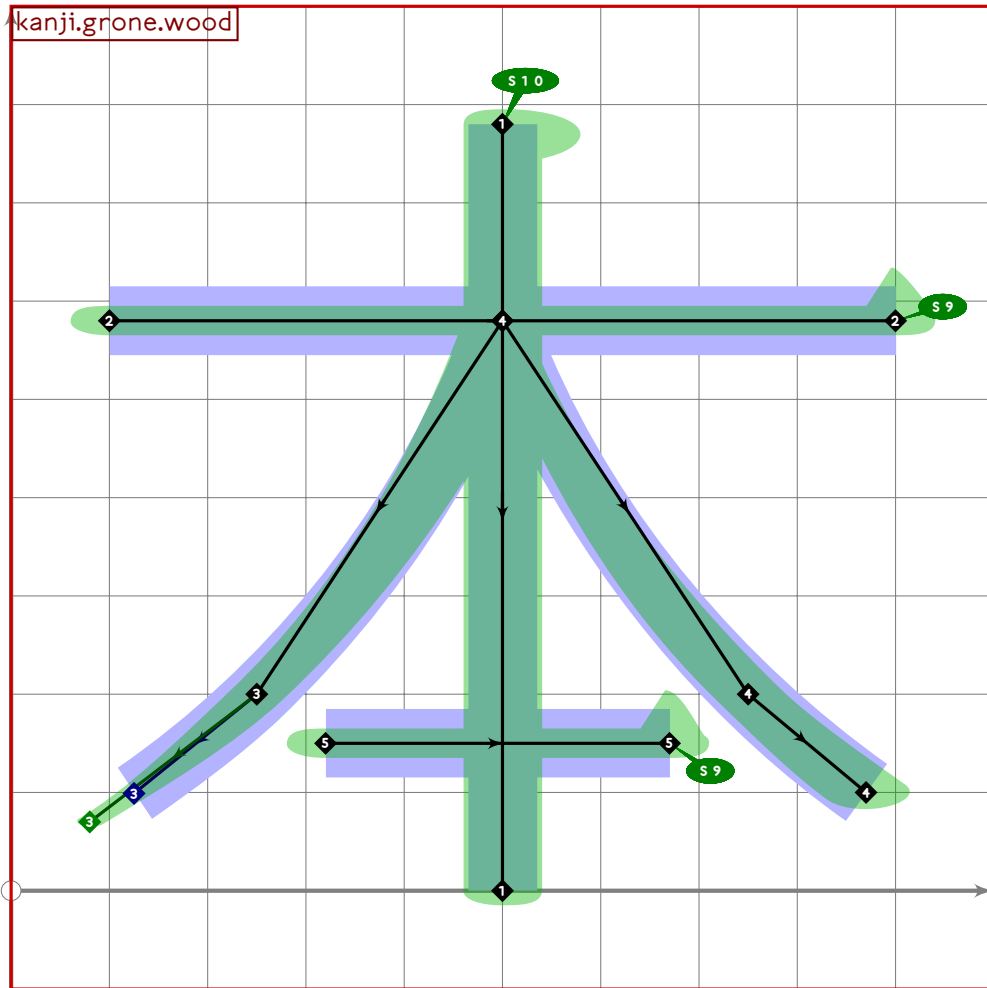
```



```

60
61 vardef tsu_curve.kanji.grone.blue =
62   add_proof_box("kanji.grone.blue");
63   build_kanji.level(build_kanji.tb(430,-50)
64     (tsu_curve.kanji.toprad.blue)
65     (tsu_curve.kanji.bottomrad.moon));
66 enddef;

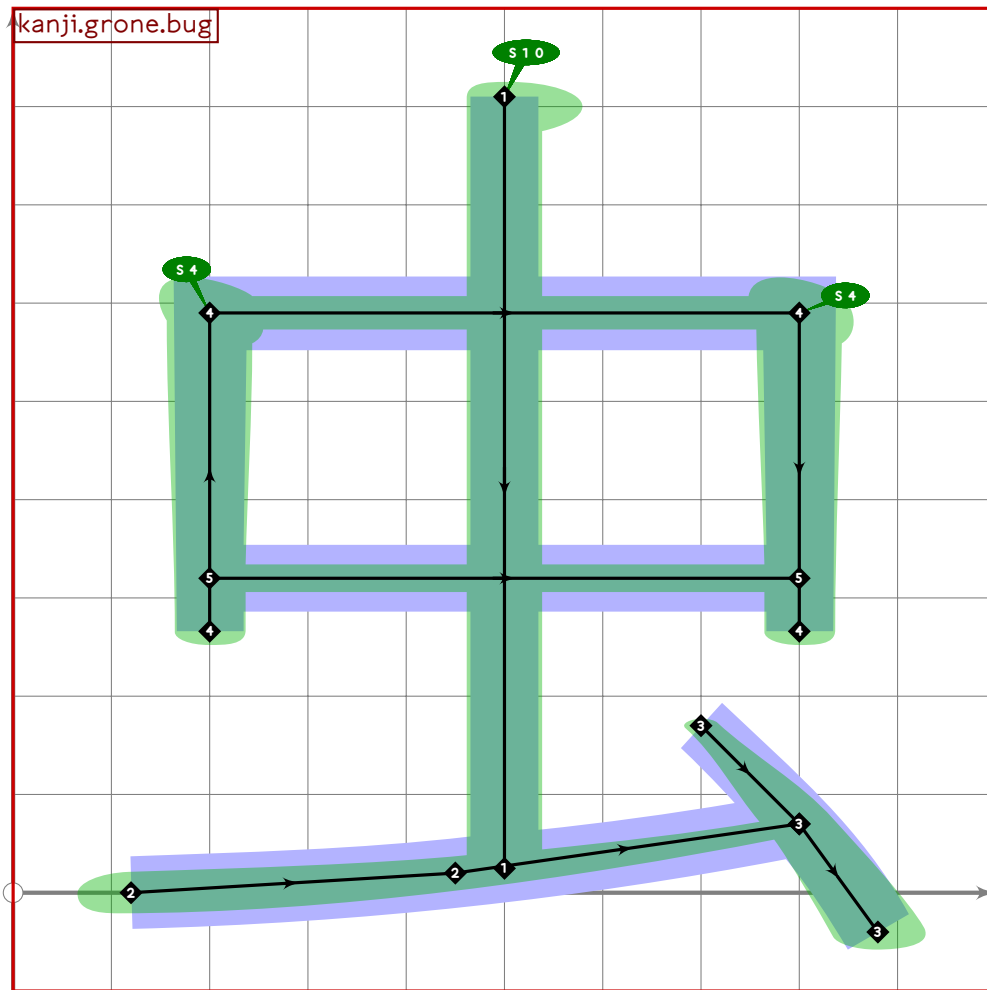
```



```

67
68 vardef tsu_curve.kanji.grone.book =
69   add_proof_box("kanji.grone.book");
70   tsu_curve.kanji.grone.wood;
71   bp[sp]:=(320,150)-(670,150);
72   bq[sp]:=(1.6,1.6)-(1.6,1.6);
73   bo_serif[sp][1]:=9;
74   sp:=sp*1;
75 enddef;

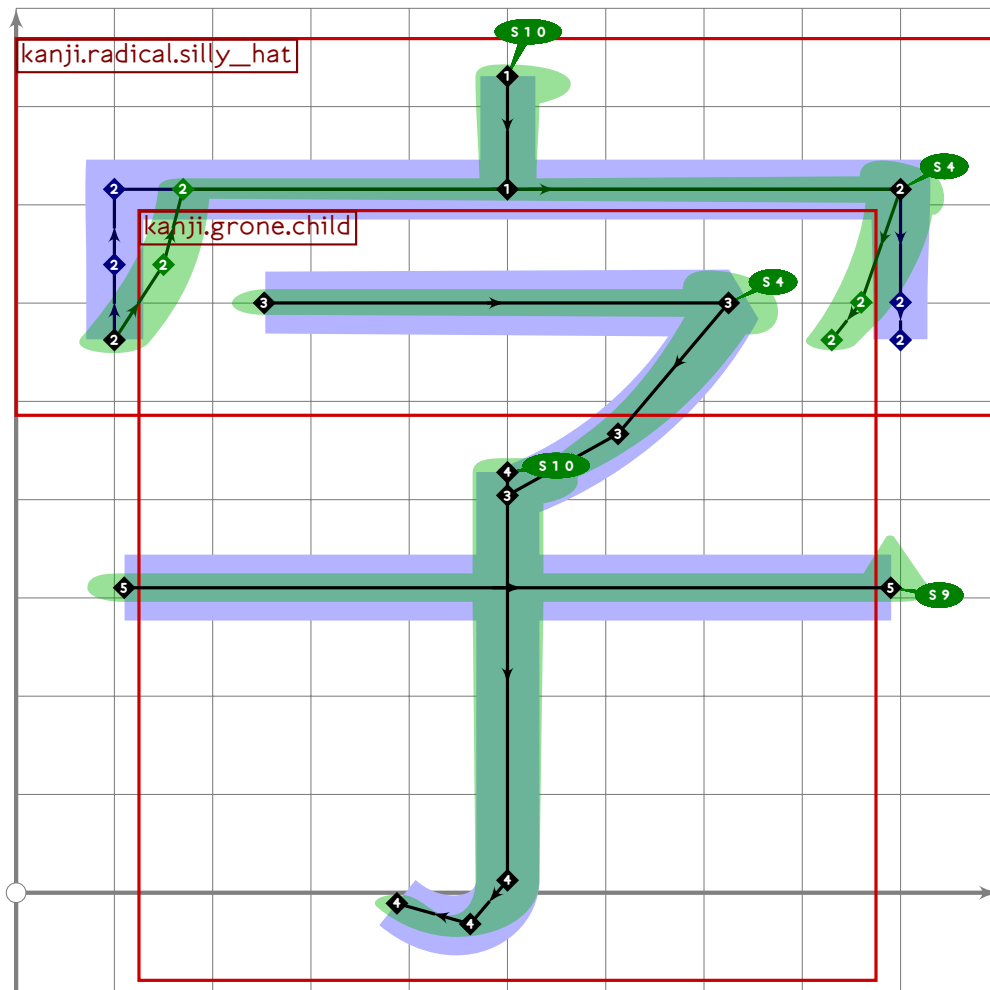
```



```

76
77 vardef tsu_curve.kanji.grone.bug =
78   add_proof_box("kanji.grone.bug");
79   bp[sp*1]:=(120,0)..tension 1.2..(450,20)..(800,70);
80   bq[sp*1]:=(2,2)-(1.7,1.7)-(1.2,1.2);
81   bp[sp]:=(500,810)-(bp[sp*1] intersectionpoint ((500,1000)-(500,0)));
82   bq[sp]:=(1.6,1.6)-(1.5,1.5);
83   bo_serif[sp][0]:=10;
84   bp[sp*2]:=(700,170)..tension 1.3..(800,70)..(880,-40);
85   bq[sp*2]:=(1,1)-(1.5,1.5)-(1.8,1.8);
86   sp:=sp*3;
87   build_kanji.box((200,590),(800,320));
88 enddef;

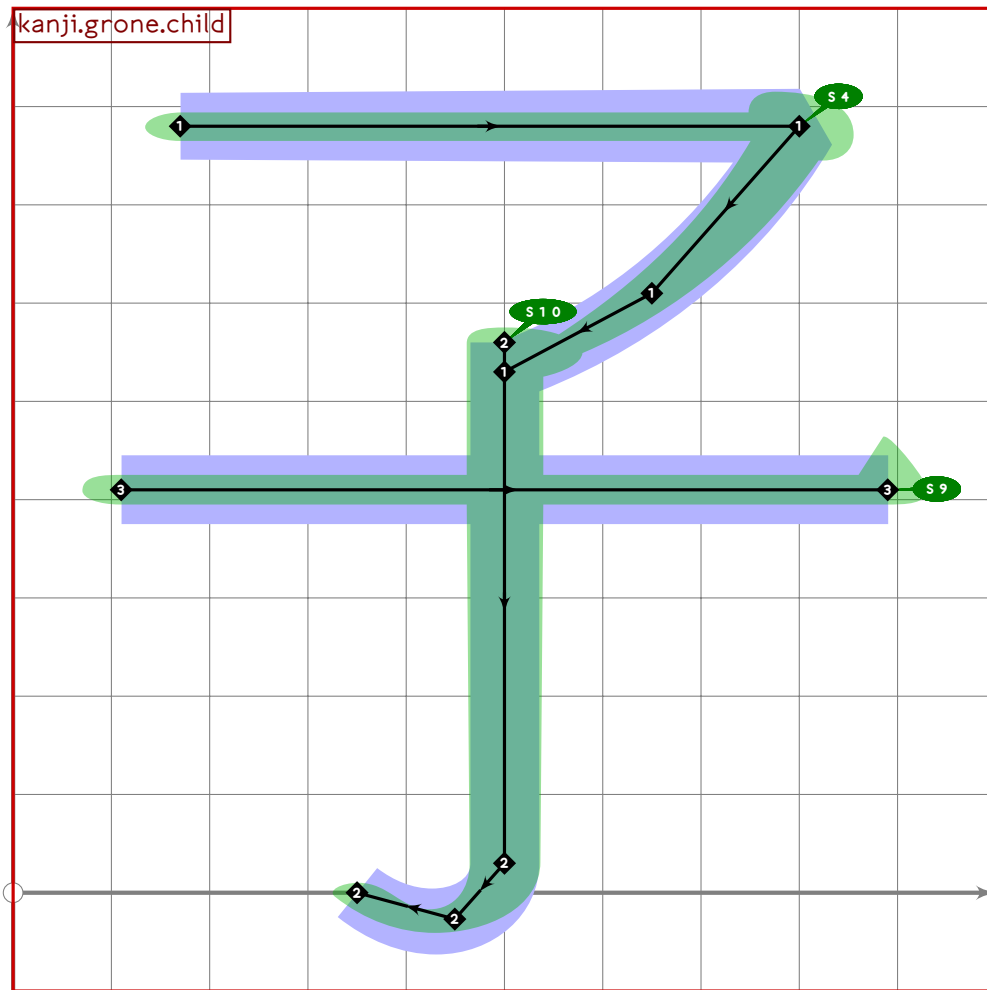
```



```

89
90 vardef tsu_curve.kanji.grone.character =
91   add_proof_box("kanji.grone.character");
92   build_kanji.tb(580,150)
93     (tsu_curve.kanji.radical.silly_hat)
94     (build_kanji.sscale(xscaled 0.75)
95       (tsu_curve.kanji.grone.child;sp:=sp*1);
96       sp:=sp*1);
97 enddef;

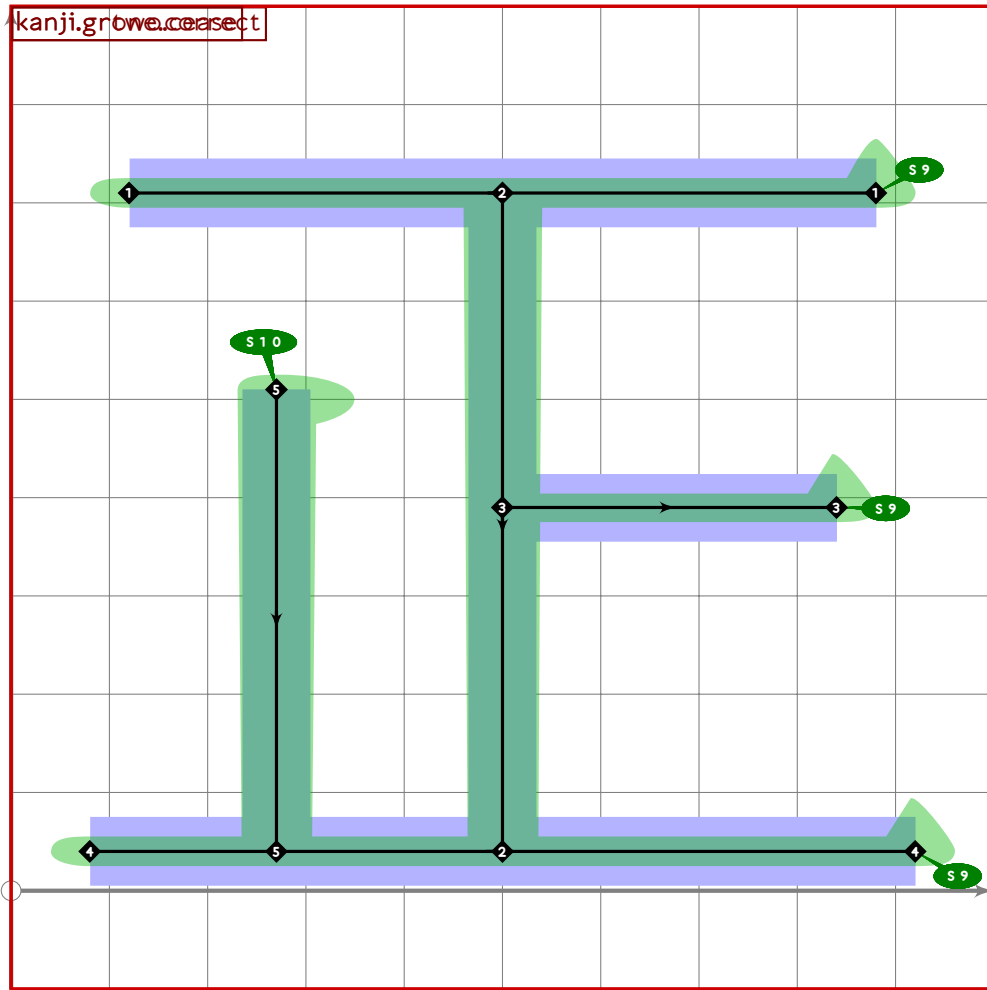
```



```

98
99 vardef tsu_curve.kanji.grone.child =
100   add_proof_box("kanji.grone.child");
101   bp[sp]:=(170,780)-(800,780)..(650,610)..(500,530);
102   bq[sp]:=(1.5,1.5)-(1.6,1.6)-(1.4,1.4)-(1,1);
103   bo_serif[sp][1]:=4;
104   bo_tip[sp][1]:=0;
105   bp[sp*1]:=(500,560);
106   bq[sp*1]:=(1.6,1.6);
107   build_kanji.add_jtail(sp*1);
108   bo_serif[sp*1][0]:=10;
109   bp[sp*2]:=(110,410)-(890,410);
110   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
111   bo_serif[sp*2][1]:=9;
112   sp:=sp*3;
113 enddef;

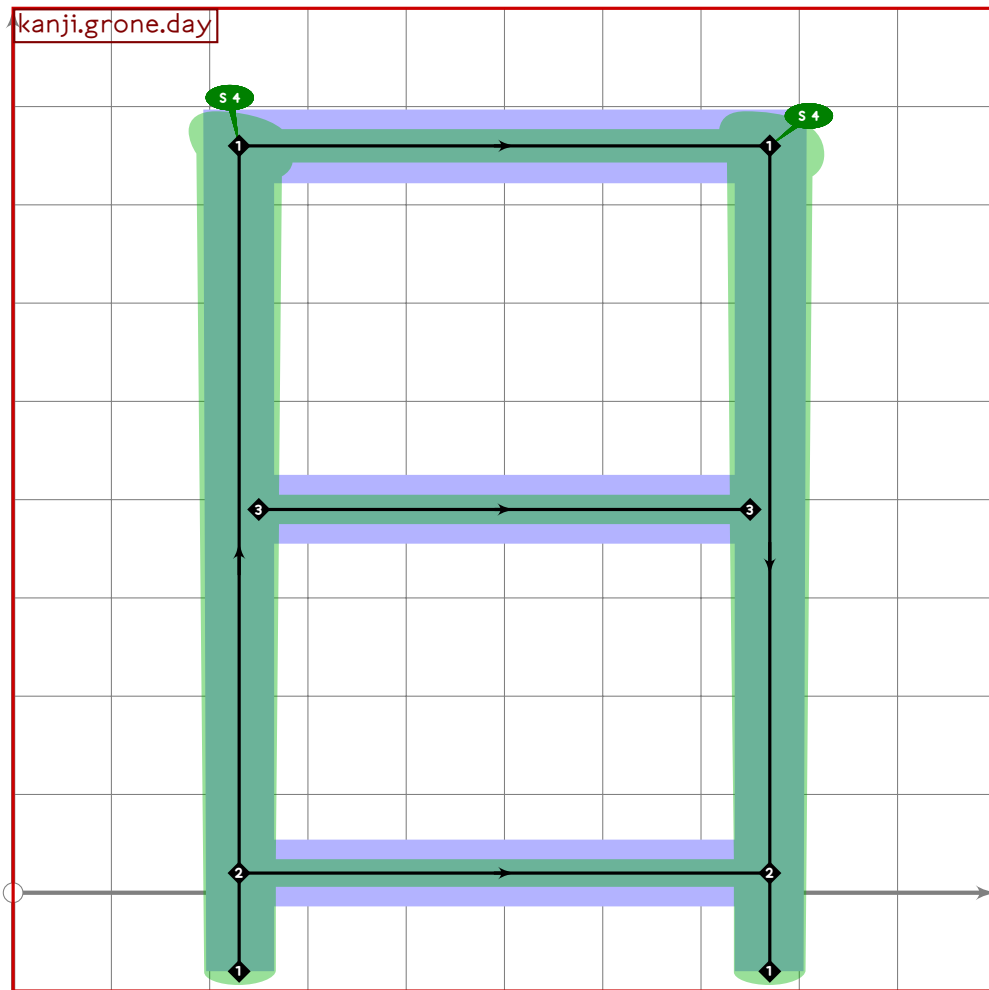
```



```

114
115 vardef tsu_curve.kanji.grone.correct =
116   add_proof_box("kanji.grone.correct");
117   bp[sp]:=(120,710)-(880,710);
118   bq[sp]:=(1.6,1.6)-(1.6,1.6);
119   bo_serif[sp][1]:=9;
120   sp:=sp*1;
121   tsu_curve.kanji.grtwo.cease;
122 enddef;

```

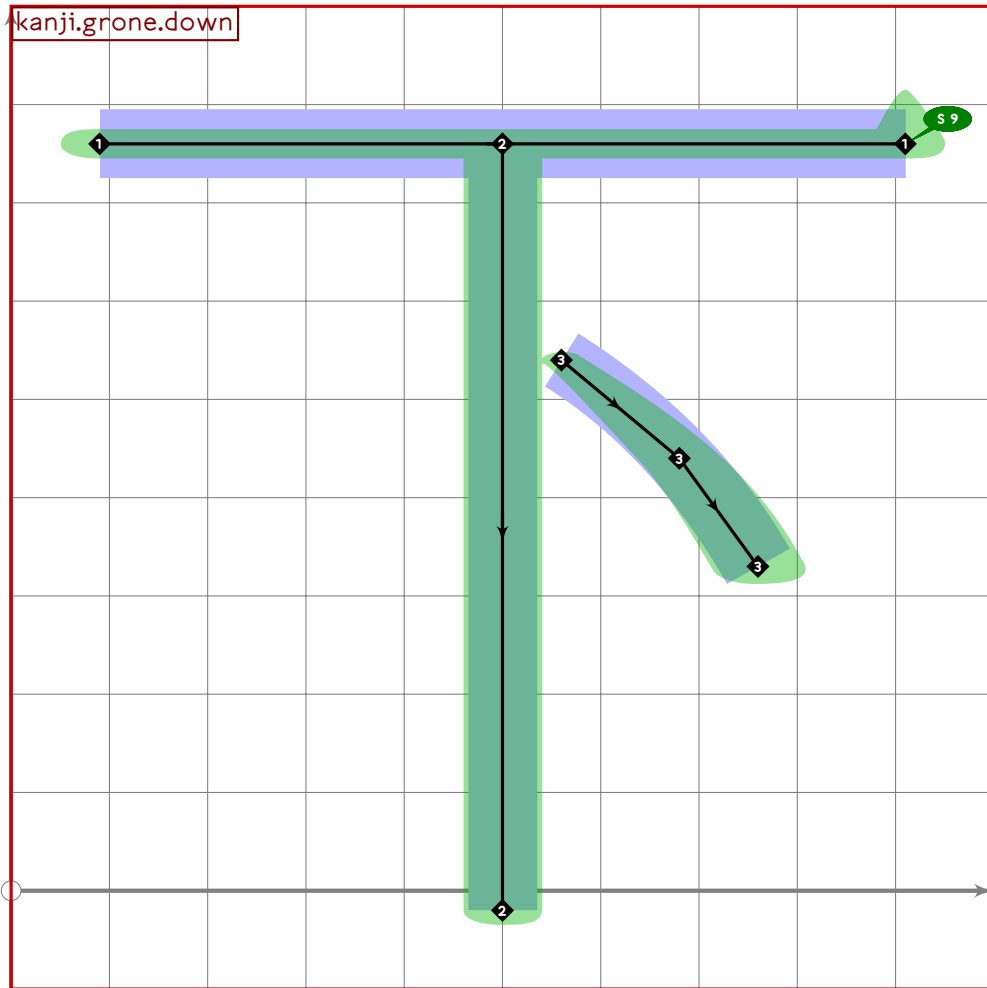


```

123
124 vardef tsu_curve.kanji.grone.day =
125   add_proof_box("kanji.grone.day");
126   build_kanji_box((230,760),(770,20));
127   bp[sp]:=(250,390)-(750,390);
128   bq[sp]:=(1.6,1.6)-(1.6,1.6);
129   sp:=sp*1;
130 enddef;

```

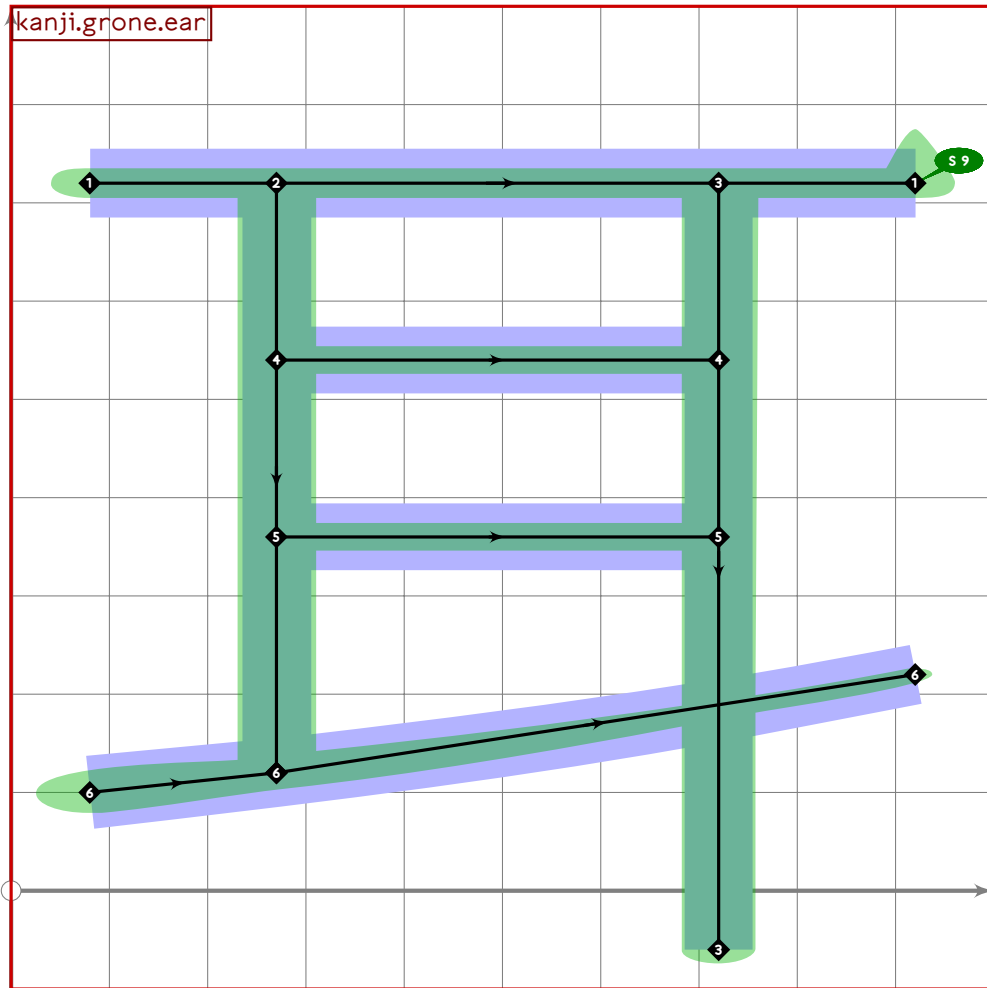




```

131
132 vardef tsu_curve.kanji.grone.down =
133   add_proof_box("kanji.grone.down");
134   bp[sp]:=(90,760)-(910,760);
135   bq[sp]:=(1.6,1.6)-(1.6,1.6);
136   bo_serif[sp][1]:=9;
137   bp[sp*1]:=(500,760)-(500,-20);
138   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
139   bp[sp*2]:=(560,540)..(680,440)..(760,330);
140   bq[sp*2]:=(1.1,1.1)-(1.6,1.6)-(1.8,1.8);
141   sp:=sp*3;
142 enddef;

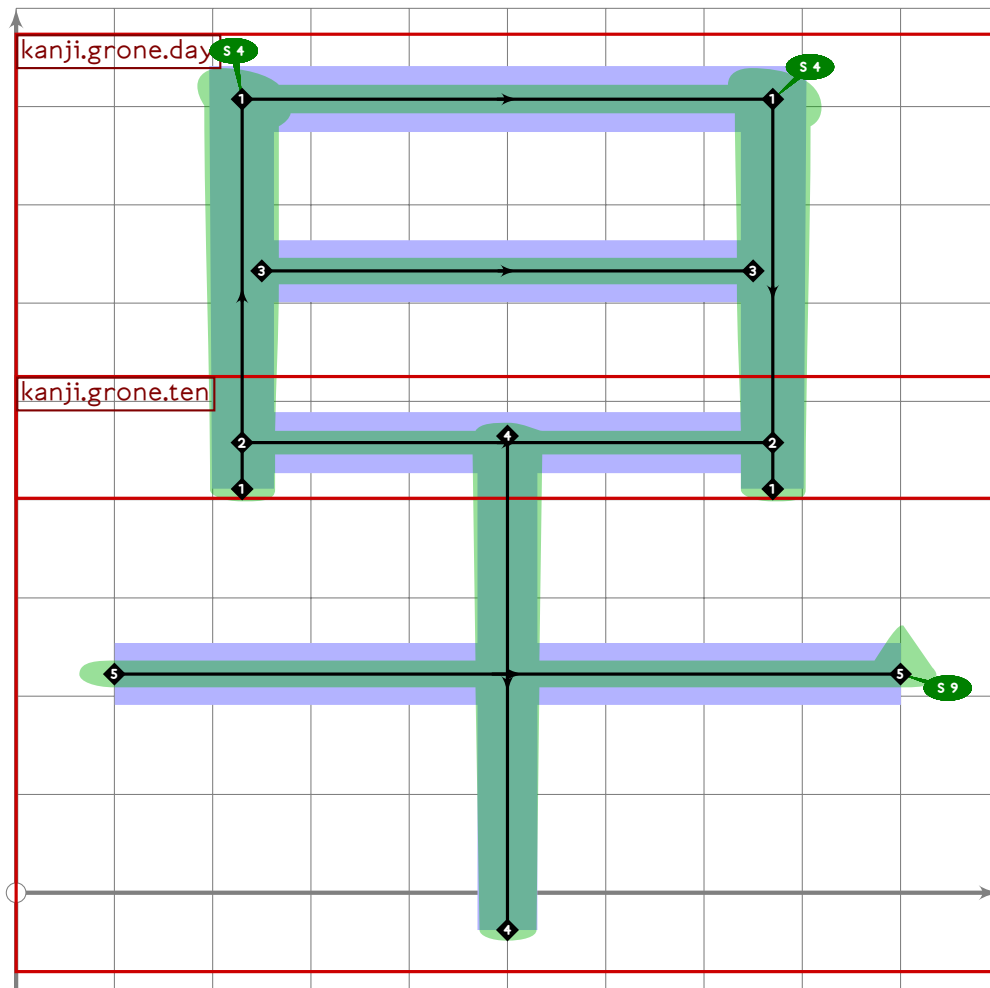
```



```

143
144 vardef tsu_curve.kanji.grone.ear =
145   add_proof_box("kanji.grone.ear");
146   bp[sp]:=(80,720)-(920,720);
147   bq[sp]:=(1.6,1.6)-(1.6,1.6);
148   bo_serif[sp][1]:=9;
149   bp[sp*1]:=(270,720)-(270,120);
150   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
151   bp[sp*2]:=(720,720)-(720,-60);
152   bq[sp*2]:=(1.6,1.6)-(1.5,1.5);
153   bp[sp*3]:=(270,540)-(720,540);
154   bq[sp*3]:=(1.5,1.5)-(1.5,1.5);
155   bp[sp*4]:=(270,360)-(720,360);
156   bq[sp*4]:=(1.5,1.5)-(1.5,1.5);
157   bp[sp*5]:=(80,100)..tension 1.3..(270,120)..(920,220);
158   bq[sp*5]:=(2,2)-(1.7,1.7)-(1,1);
159   sp:=sp*6;
160 enddef;

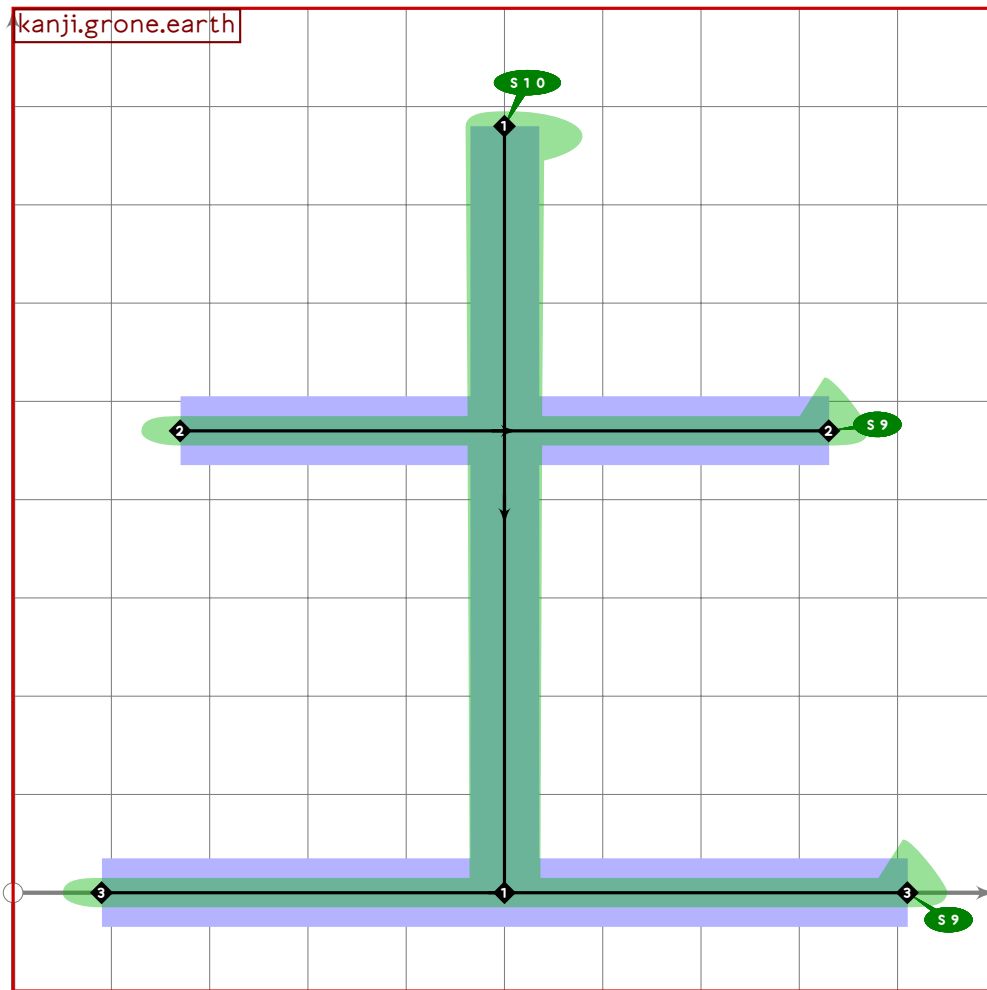
```



```

161
162 vardef tsu_curve.kanji.grone.early =
163   add_proof_box("kanji.grone.early");
164   build_kanji.level(build_kanji.tb(460,70)
165     (tsu_curve.kanji.grone.day)
166     (tsu_curve.kanji.grone.ten));
167   bo_serif[sp-2][0]:=whatever;
168 enddef;

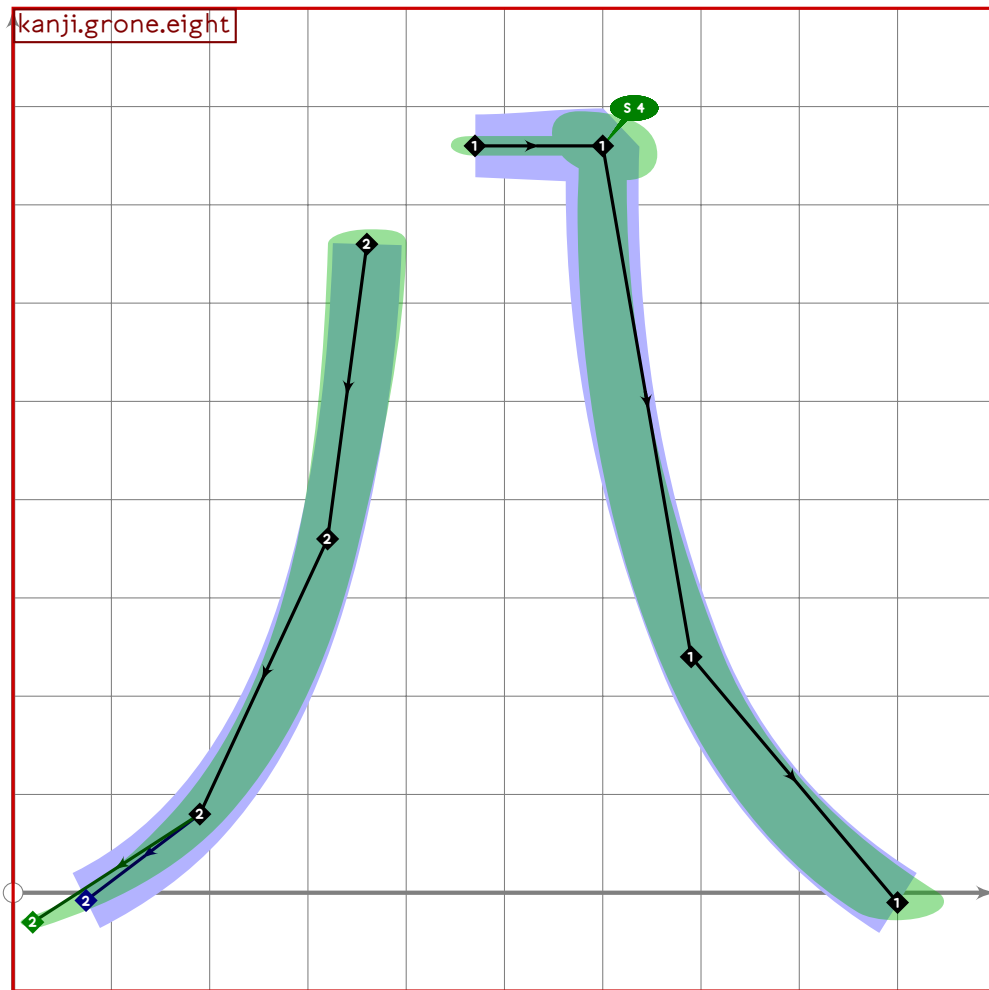
```



```

169
170 vardef tsu_curve.kanji.grone.earth =
171   add_proof_box("kanji.grone.earth");
172   bp[sp]:=(500,780)-(500,0);
173   bq[sp]:=(1.6,1.6)-(1.5,1.5);
174   bo_serif[sp][0]:=10;
175   bp[sp*1]:=(170,470)-(830,470);
176   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
177   bo_serif[sp*1][1]:=9;
178   bp[sp*2]:=(90,0)-(910,0);
179   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
180   bo_serif[sp*2][1]:=9;
181   sp:=sp*3;
182 enddef;

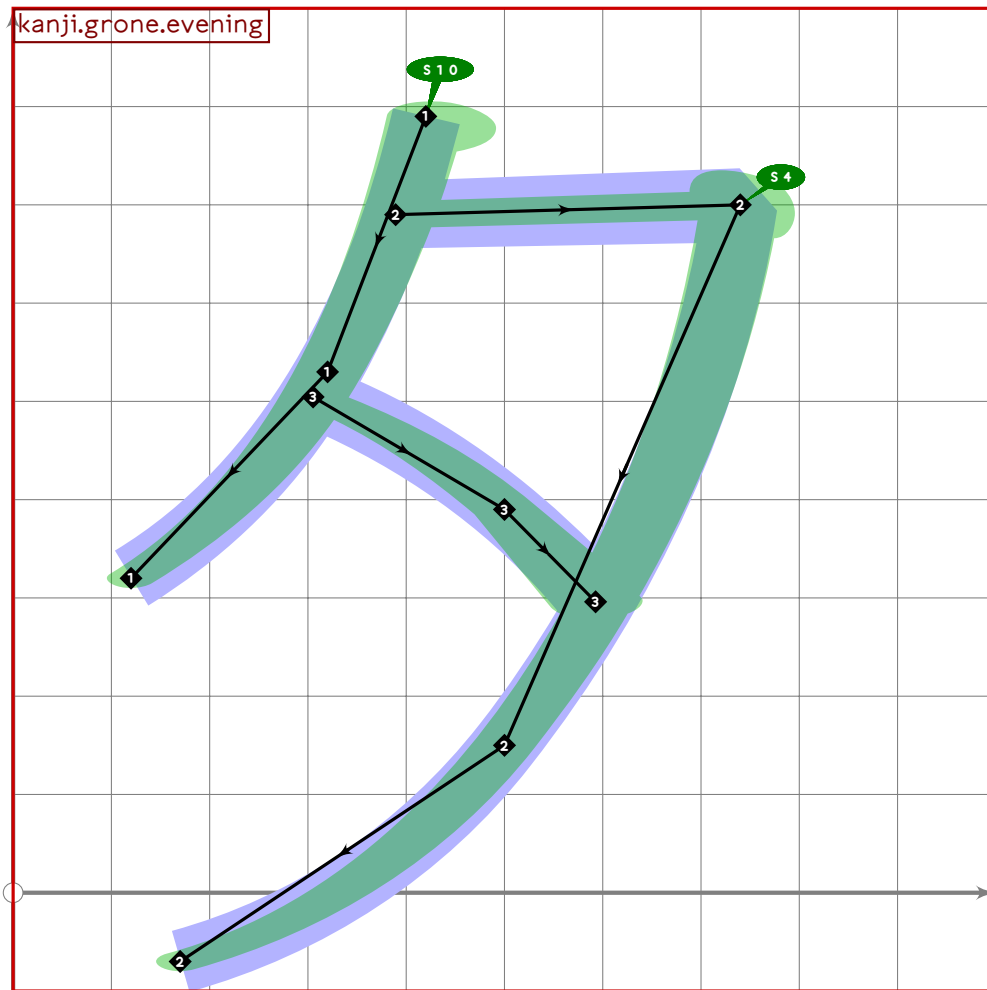
```



```

183
184 vardef tsu_curve.kanji.grone.eight =
185   add_proof_box("kanji.grone.eight");
186   bp[sp]:=(470,760)-(600,760)..tension 1.3..(690,240)..(900,-10);
187   bq[sp]:=(1.2,1.2)-(1.2,1.2)-(1.4,1.4)-(1.8,1.8);
188   bo_tip[sp][1]:=0;
189   bo_serif[sp][1]:=4;
190   bp[sp*1]:=(360,660)..(320,360)..(190,80)..(20,-30);
191   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(1.3,1.3)-(0.88,0.88);
192   sp:=sp*2;
193 enddef;

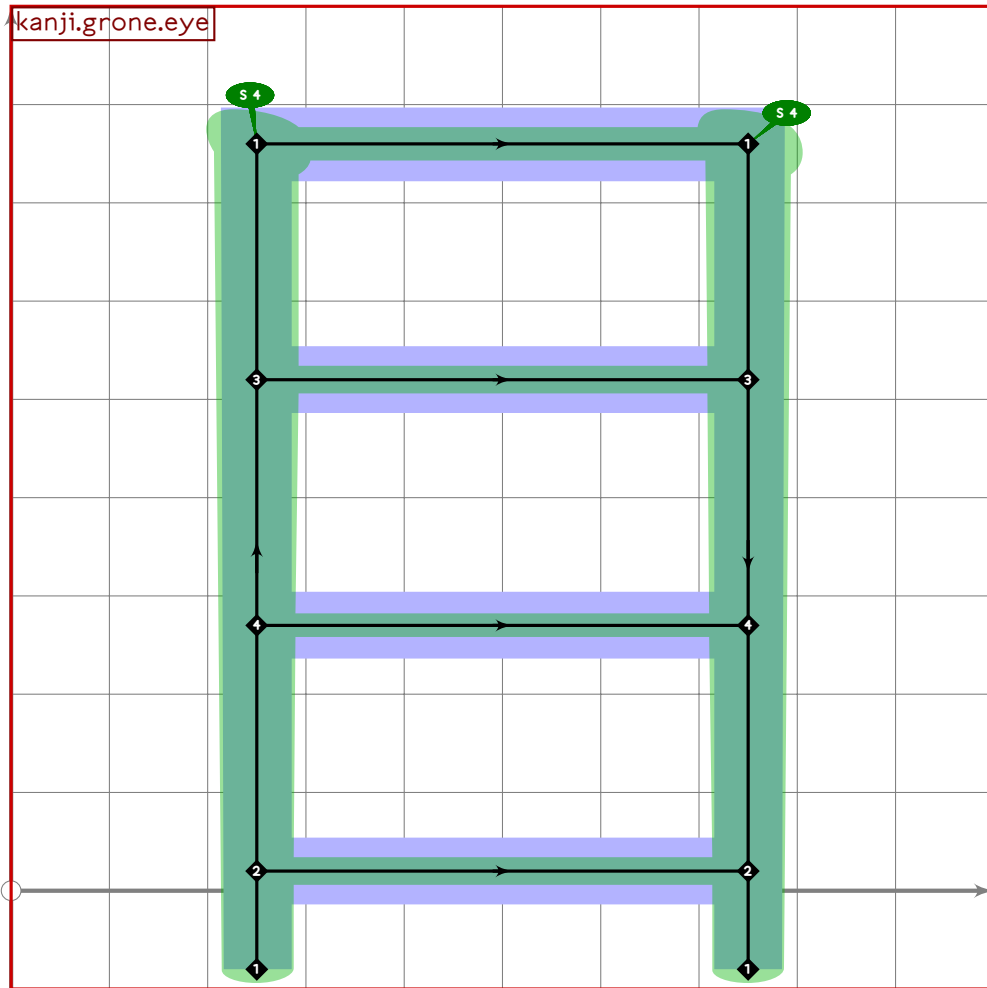
```



```

194
195 vardef tsu_curve.kanji.grone.evening =
196   add_proof_box("kanji.grone.evening");
197   bp[sp]:=(420,790)..tension 1.2..(320,530)..(120,320);
198   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.2,1.2);
199   bo_serif[sp][0]:=10;
200   bp[sp*1]:=(bp[sp] intersectionpoint ((-infinity,690)-(-infinity,690)))--
201     (740,700)..tension 1.2..(500,150)..(170,-70);
202   bq[sp*1]:=(1.5,1.5)-(1.6,1.6)-(1.4,1.4)-(1.2,1.2);
203   bo_tip[sp*1][1]:=0;
204   bo_serif[sp*1][1]:=4;
205   bp[sp*2]:=(point 1.1 of bp[sp])..(500,390)..(point 1.7 of bp[sp*1]);
206   bq[sp*2]:=(1.2,1.2)-(1.4,1.4)-(1.8,1.8);
207   sp:=sp*3;
208 enddef;

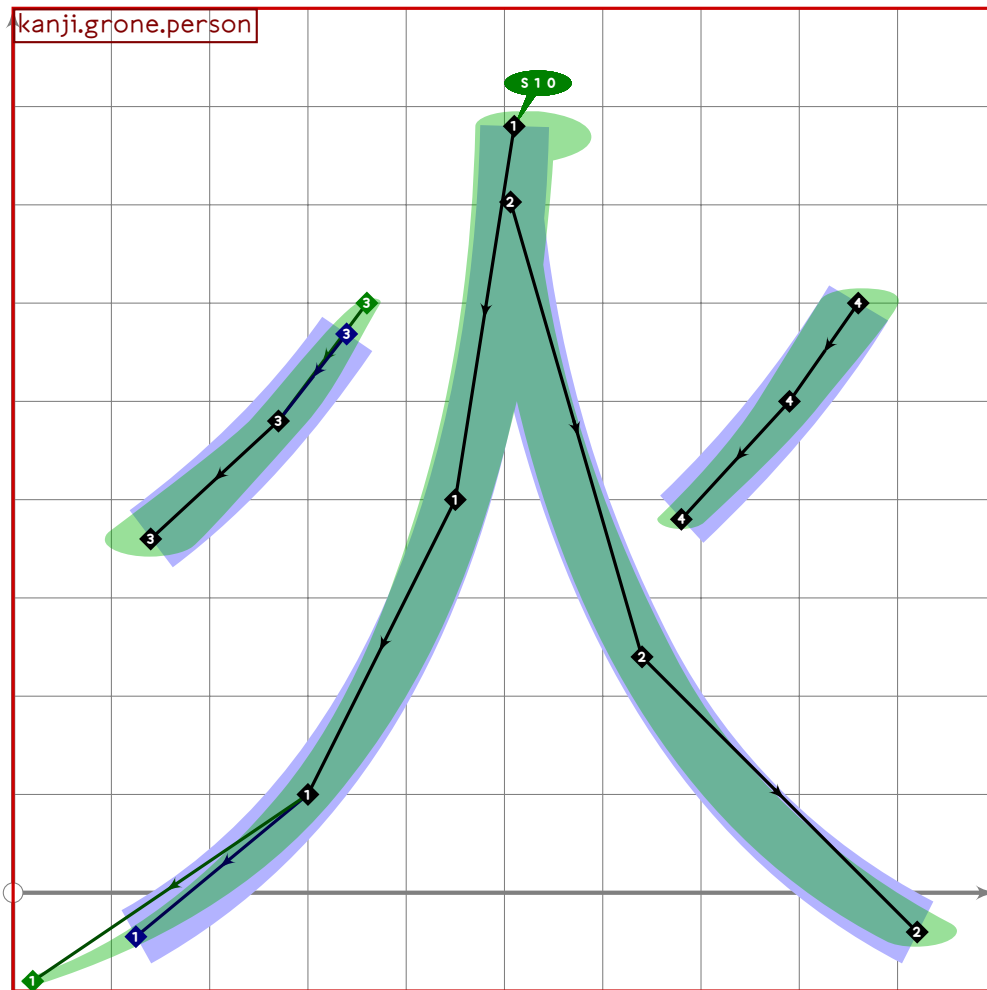
```



```

209
210 vardef tsu_curve.kanji.grone.eye =
211   add_proof_box("kanji.grone.eye");
212   build_kanji.box((250,760),(750,20));
213   bp[sp]:=(250,520)-(750,520);
214   bq[sp]:=(1.5,1.5)-(1.5,1.5);
215   bp[sp*1]:=(250,270)-(750,270);
216   bq[sp*1]:=(1.4,1.4)-(1.4,1.4);
217   sp:=sp*2;
218 enddef;

```

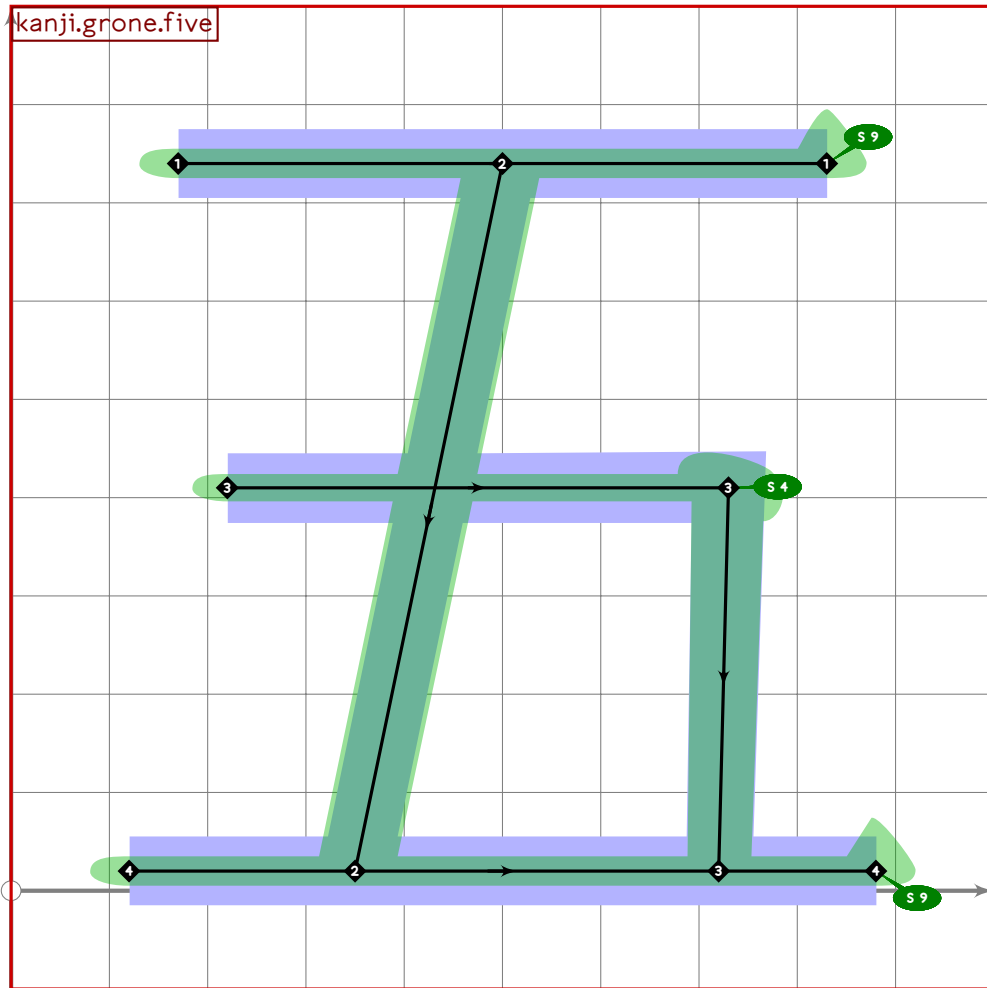


```

219
220 vardef tsu_curve.kanji.grone.fire =
221   add_proof_box("kanji.grone.fire");
222   tsu_curve.kanji.grone.person;
223   bp[sp]:=(360,600)..(270,480)..(140,360);
224   bq[sp]:=(0.9,0.9)-(1.3,1.3)-(1.8,1.8);
225   bp[sp*1]:=(860,600)..(790,500)..(680,380);
226   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(1.2,1.2);
227   bo_serif[sp*1]:=10;
228   sp:=sp*2;
229 enddef;

```

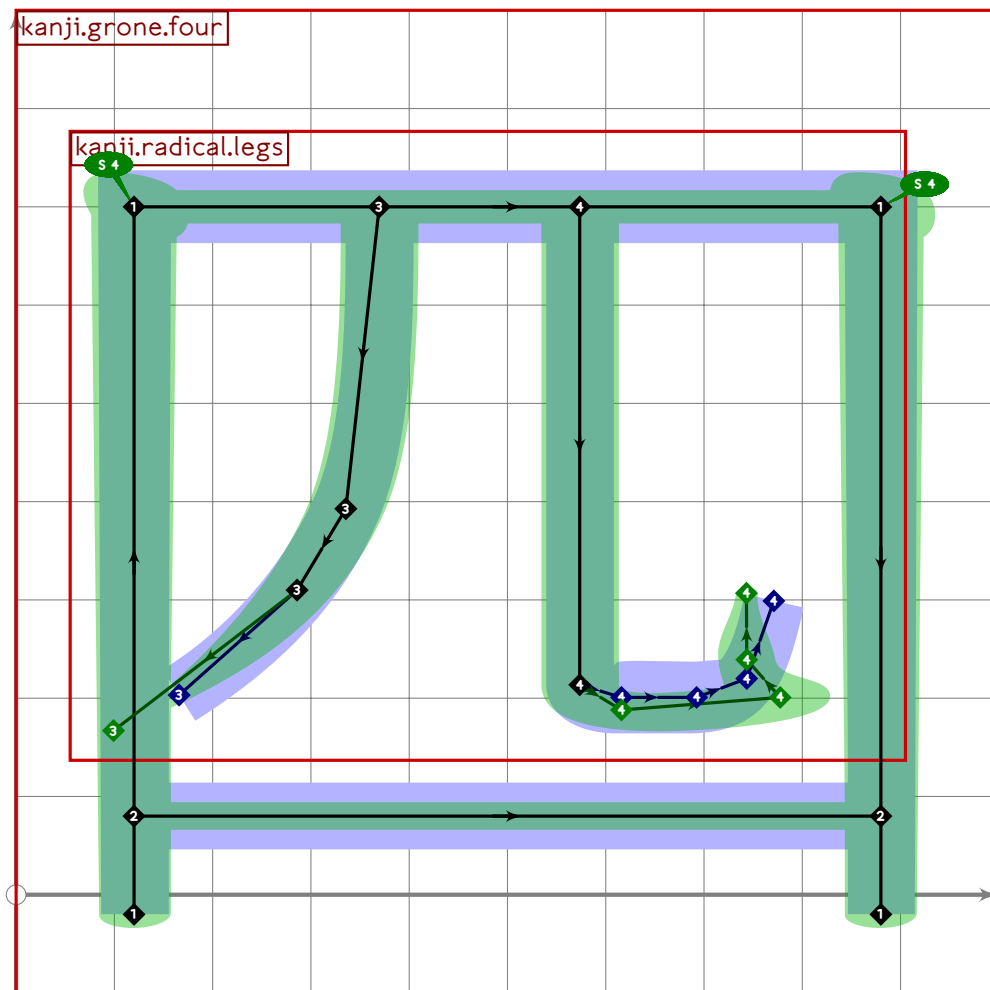




```

230
231 vardef tsu_curve.kanji.grone.five =
232   add_proof_box("kanji.grone.five");
233   bp[sp]:=(170,740)-(830,740);
234   bq[sp]:=(1.6,1.6)-(1.6,1.6);
235   bo_serif[sp][1]:=9;
236   bp[sp*1]:=(500,740)-(350,20);
237   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
238   bp[sp*2]:=(220,410)-(730,410)-(720,20);
239   bq[sp*2]:=(1.5,1.5)-(1.5,1.5)-(1.4,1.4);
240   bo_serif[sp*2][1]:=4;
241   bo_tip[sp*2][1]:=1;
242   bp[sp*3]:=(120,20)-(880,20);
243   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
244   bo_serif[sp*3][1]:=9;
245   sp:=sp*4;
246 enddef;

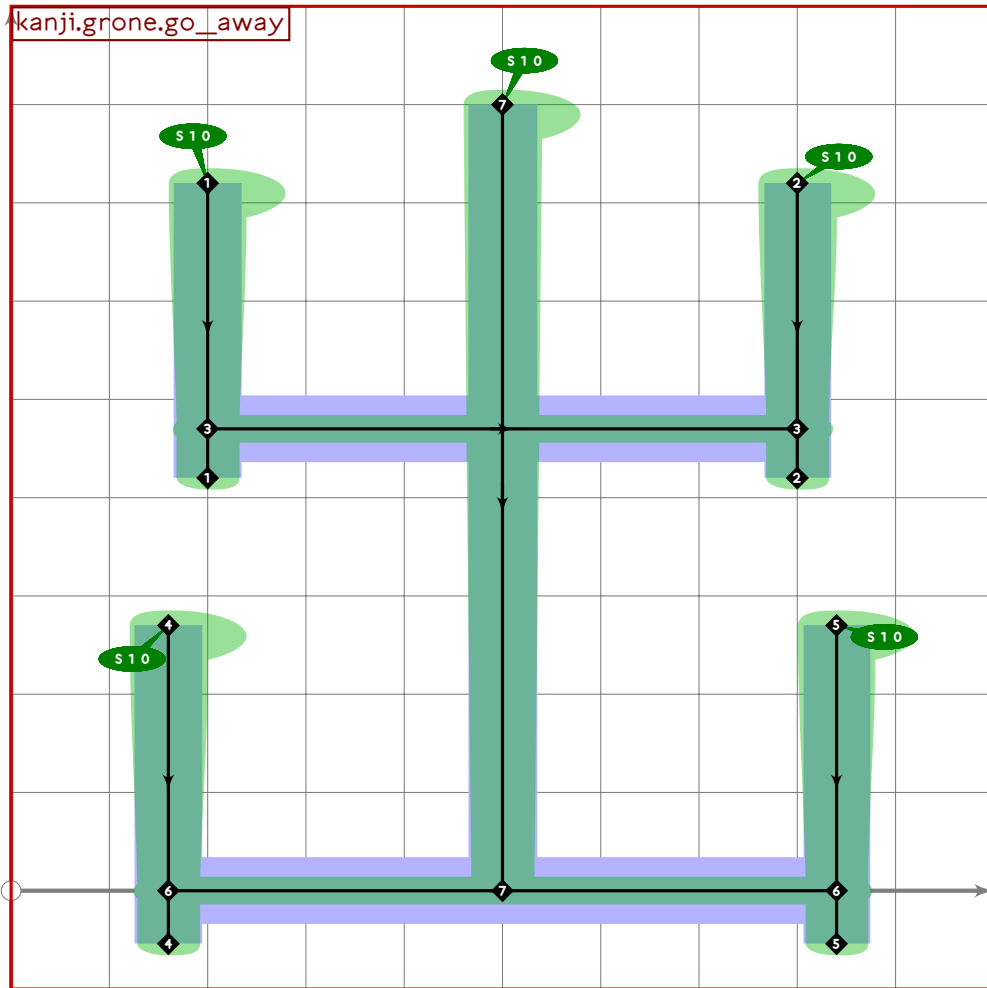
```



```

247
248 vardef tsu_curve.kanji.grone.four =
249   add_proof_box("kanji.grone.four");
250   build_kanji.box((120,700),(880,80));
251   tsu_xform
252     (identity shifted (-500,-780) xyscaled (0.85,0.64) shifted (480,700))
253     (tsu_curve.kanji.radical.legs);
254 enddef;

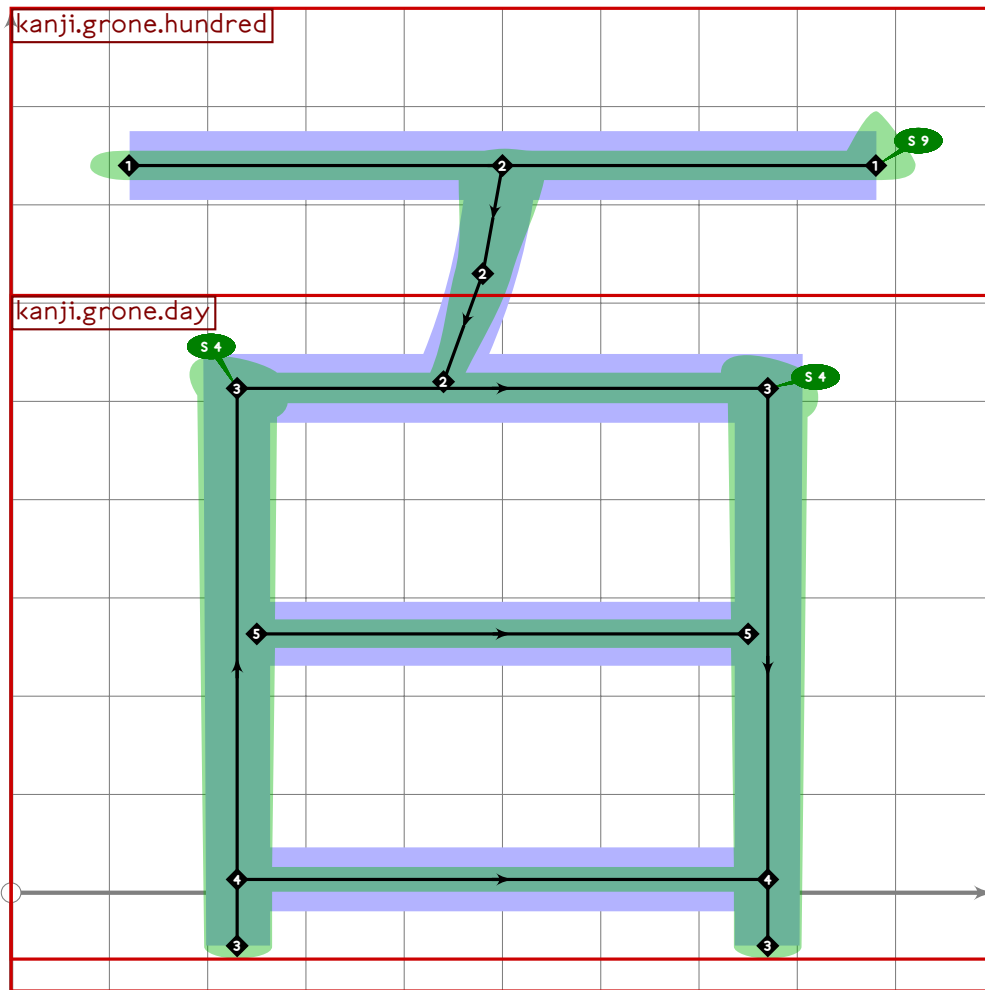
```



```

255
256 vardef tsu_curve.kanji.grone.go_away =
257   add_proof_box("kanji.grone.go_away");
258   build_kanji.cup((200,720),(800,470));
259   build_kanji.cup((160,270),(840,0));
260   bp[sp]:=(500,800)-(500,0);
261   bq[sp]:=(1.6,1.6)-(1.4,1.4);
262   bo_serif[sp][0]:=10;
263   sp:=sp*1;
264 enddef;

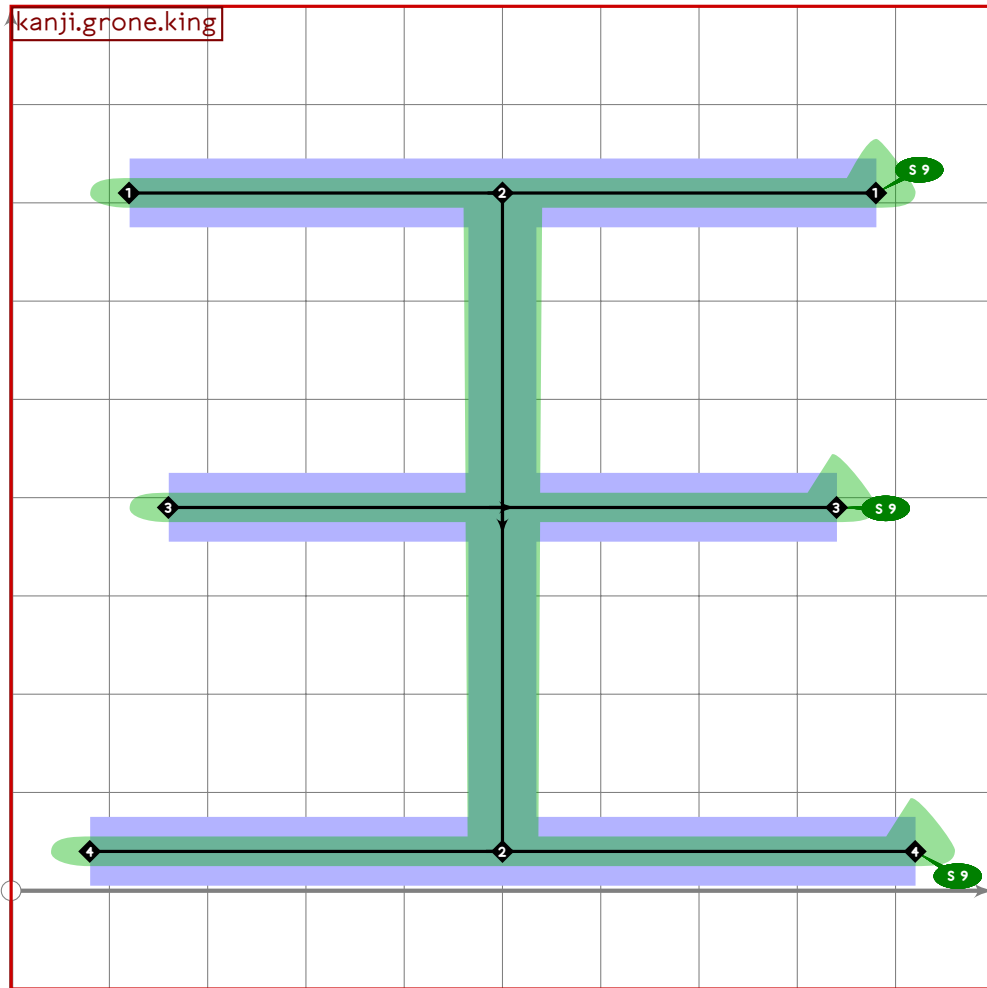
```



```

265
266 vardef tsu_curve.kanji.grone.hundred =
267   add_proof_box("kanji.grone.hundred");
268   bp[sp]:=(120,740)-(880,740);
269   bq[sp]:=(1.6,1.6)-(1.6,1.6);
270   bo_serif[sp][1]:=9;
271   bp[sp*1]:=(500,740)..(480,630)..(440,520);
272   bq[sp*1]:=(1.7,1.7)-(1.3,1.3)-(1,1);
273   sp:=sp*2;
274   tsu_xform(identity yscaled (520/770))(tsu_curve.kanji.grone.day);
275 enddef;

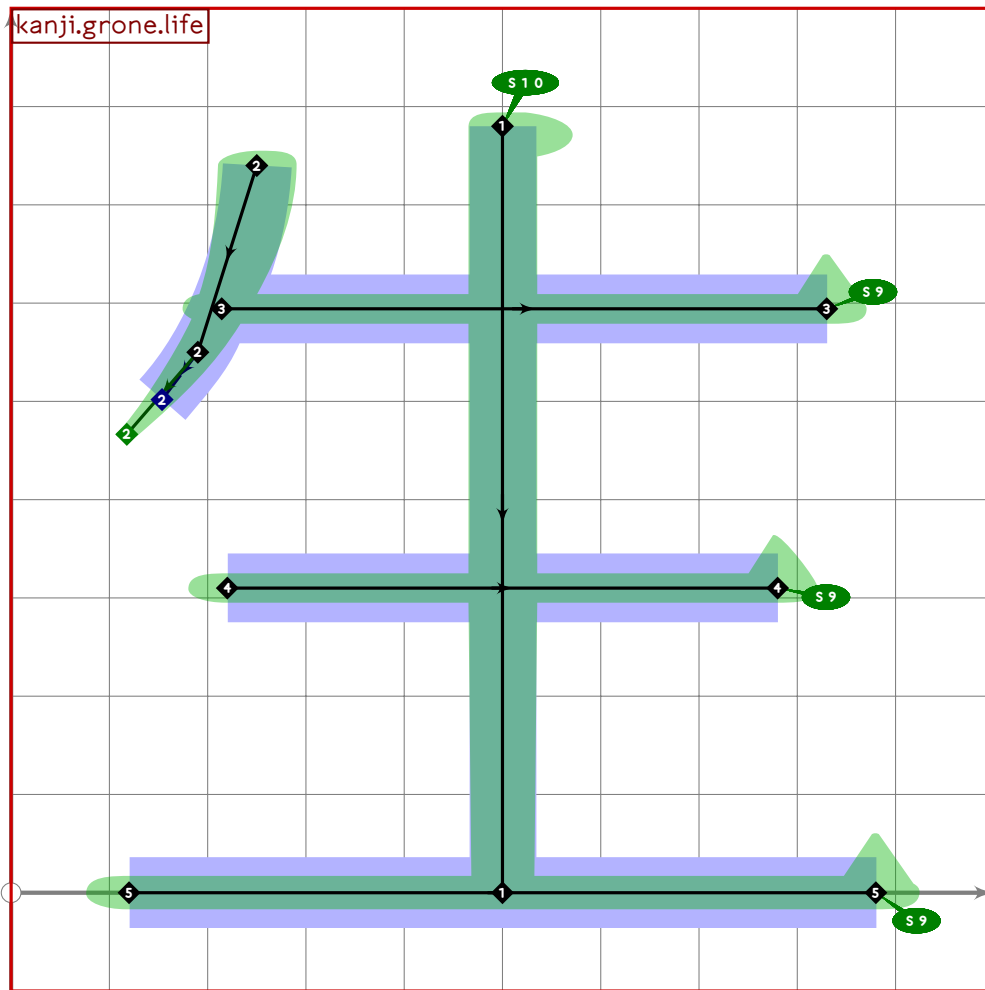
```



```

276
277 vardef tsu_curve.kanji.grone.king =
278   add_proof_box("kanji.grone.king");
279   bp[sp]:=(120,710)-(880,710);
280   bq[sp]:=(1.6,1.6)-(1.6,1.6);
281   bo_serif[sp][1]:=9;
282   bp[sp*1]:=(500,710)-(500,40);
283   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
284   bp[sp*2]:=(160,390)-(840,390);
285   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
286   bo_serif[sp*2][1]:=9;
287   bp[sp*3]:=(80,40)-(920,40);
288   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
289   bo_serif[sp*3][1]:=9;
290   sp:=sp*4;
291 enddef;

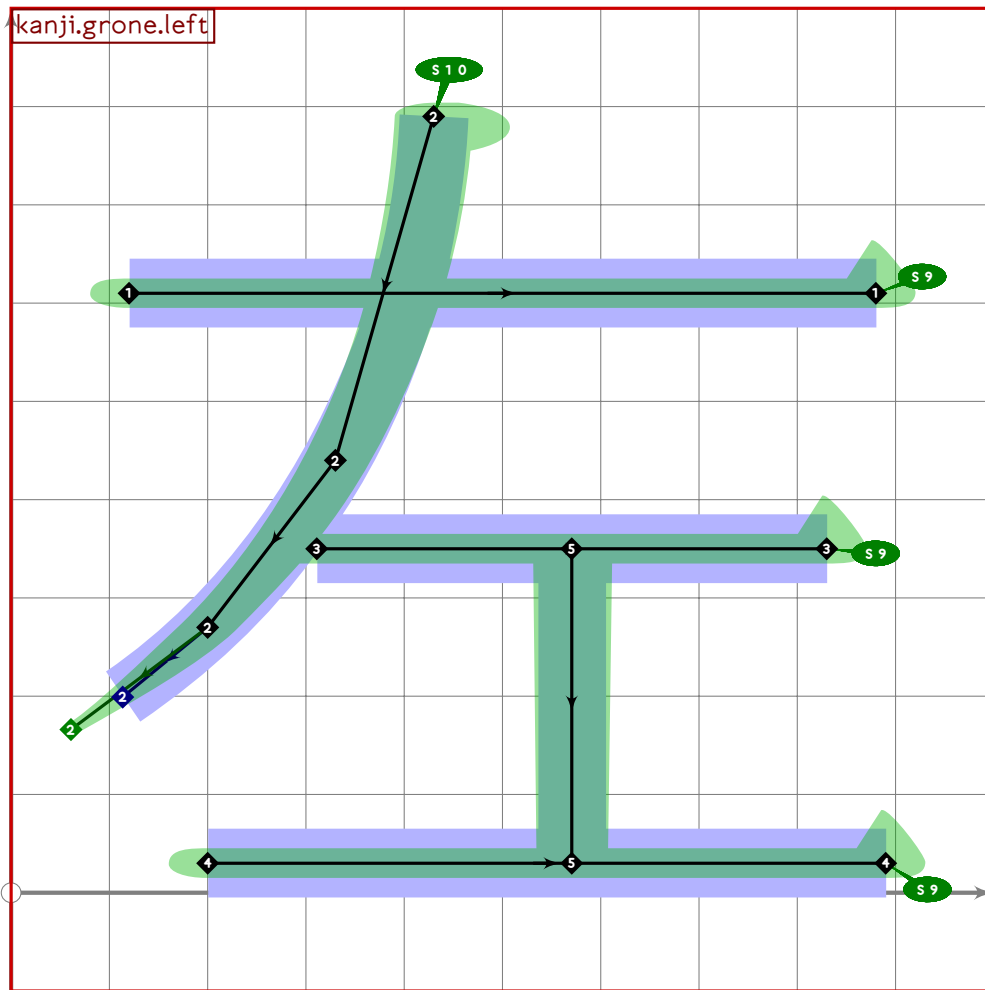
```



```

292
293 vardef tsu_curve.kanji.grone.life =
294   add_proof_box("kanji.grone.life");
295   bp[sp]:=(500,780)-(500,0);
296   bq[sp]:=(1.5,1.5)-(1.4,1.4);
297   bo_serif[sp][0]:=10;
298   bp[sp*1]:=(250,740)..(190,550)..(110,460);
299   bq[sp*1]:=(1.6,1.6)-(1.2,1.2)-(0.8,0.8);
300   bo_serif[sp*1]:=10;
301   bp[sp*2]:=(point 0.75 of bp[sp*1]-
302     (830,ypart point 0.75 of bp[sp*1]));
303   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
304   bo_serif[sp*2][1]:=9;
305   bp[sp*3]:=(220,310)-(780,310);
306   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
307   bo_serif[sp*3][1]:=9;
308   bp[sp*4]:=(120,0)-(880,0);
309   bq[sp*4]:=(1.7,1.7)-(1.7,1.7);
310   bo_serif[sp*4][1]:=9;
311   sp:=sp+5;
312 enddef;

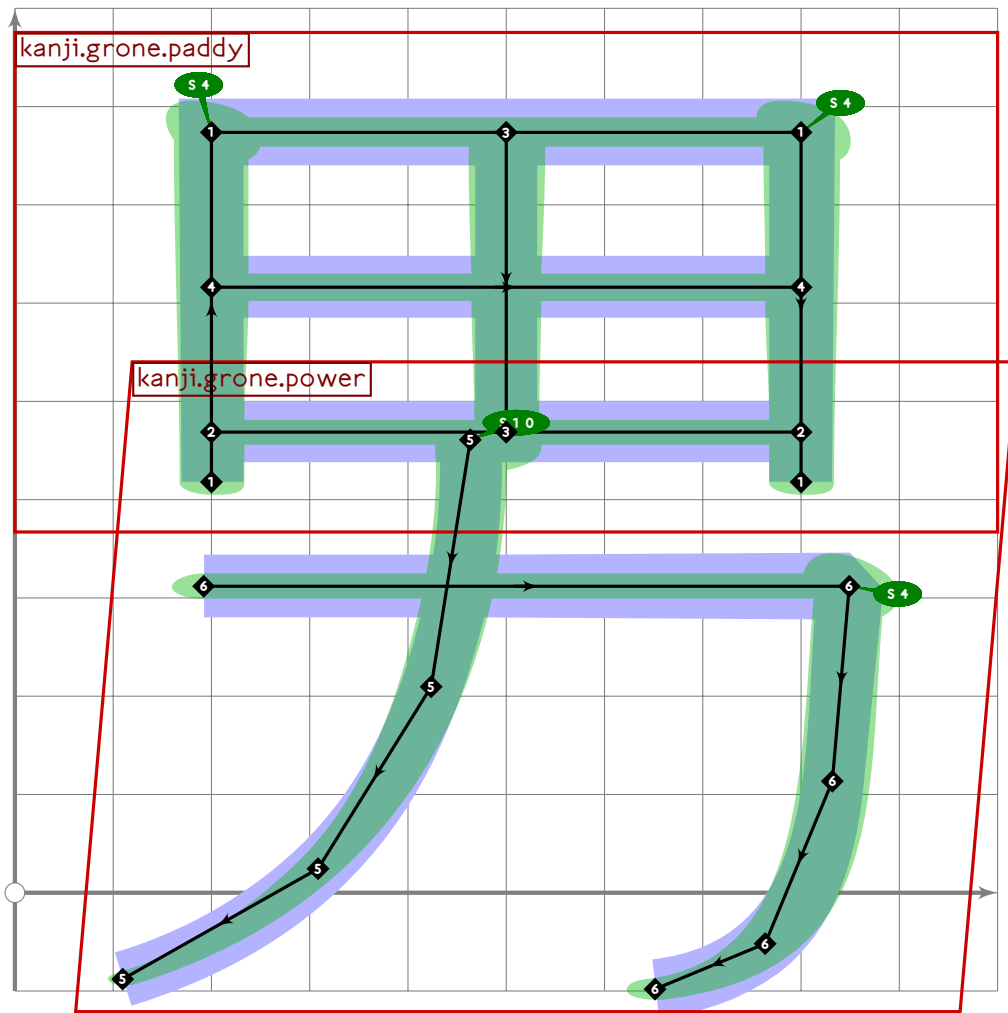
```



```

313
314 vardef tsu_curve.kanji.grone.left =
315   add_proof_box("kanji.grone.left");
316   bp[sp]:=(120,610)..(880,610);
317   bq[sp]:=(1.6,1.6)-(1.6,1.6);
318   bo_serif[sp][1]:=9;
319   bp[sp*1]:=(430,790)..(330,440)..(200,270)..(50,160);
320   bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.8,0.8);
321   bo_serif[sp*1][0]:=10;
322   bp[sp*2]:=(((0,350)-(1000,350)) intersectionpoint bp[sp*1]+(40,0))..
323     (830,350);
324   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
325   bo_serif[sp*2][1]:=9;
326   bp[sp*3]:=(200,30)..(890,30);
327   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
328   bo_serif[sp*3][1]:=9;
329   bp[sp*4]:=(point 0.5 of bp[sp*2])-(xpart point 0.5 of bp[sp*2],30);
330   bq[sp*4]:=(1.6,1.6)-(1.5,1.5);
331   sp:=sp*5;
332 enddef;

```

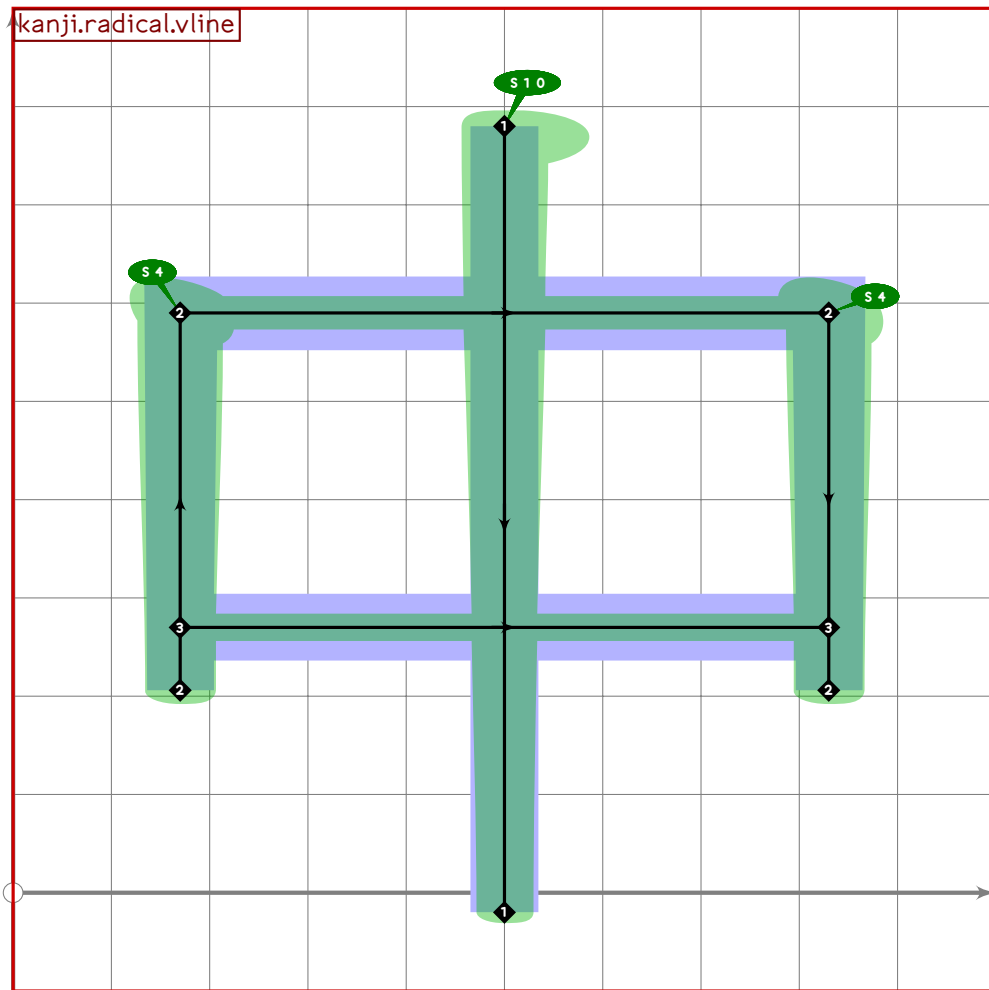


```

333
334 vardef tsu_curve.kanji.grone.man =
335   add_proof_box("kanji.grone.man");
336   build_kanji.level(build_kanji.tb(430,75)
337     (tsu_curve.kanji.grone.paddy)
338     (build_kanji.sscale(xyscaled (0.9,1.15) slanted 0.05 shifted (40,0))
339       (tsu_curve.kanji.grone.power)));
340   bp[sp-1]:=bp[sp-1] shifted (0,30);
341 enddef;

```

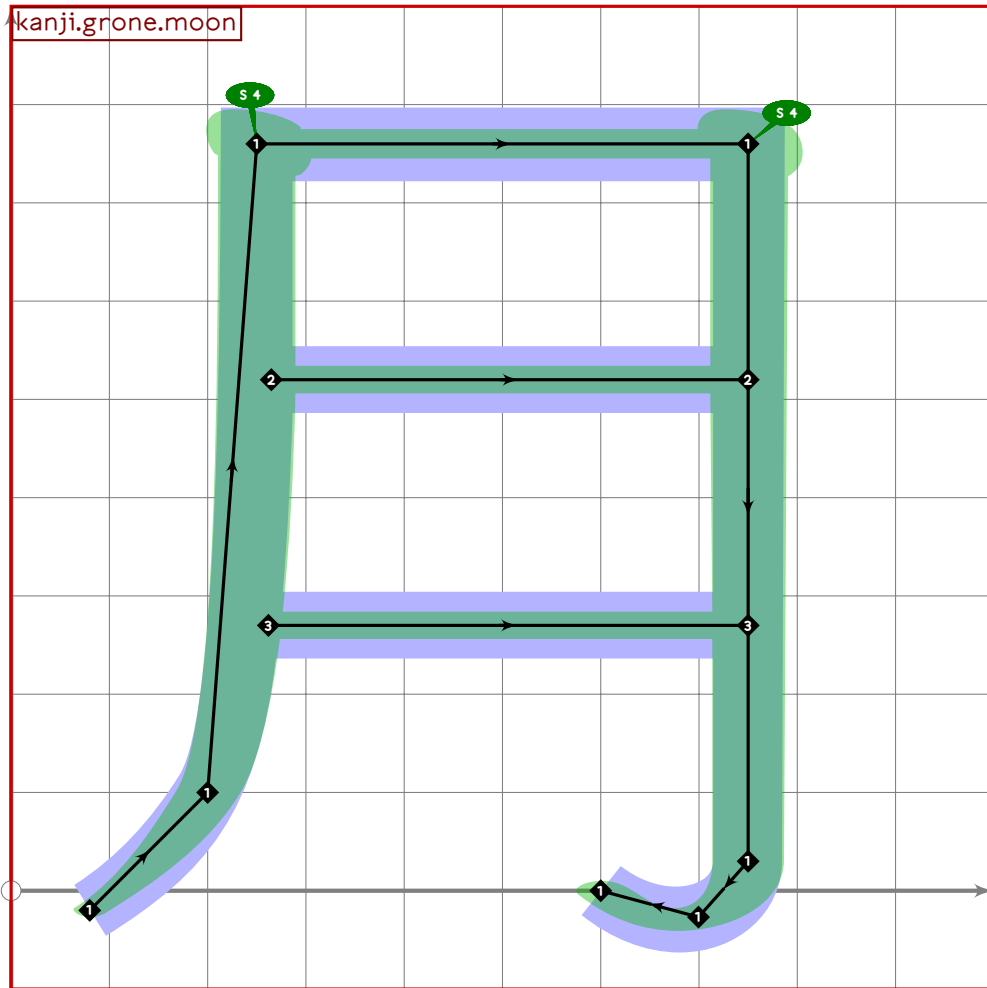




```

342
343 vardef tsu_curve.kanji.grone.middle =
344   add_proof_box("kanji.grone.middle");
345   tsu_curve.kanji.radical.vline;
346   build_kanji.box((170,590),(830,270));
347 enddef;

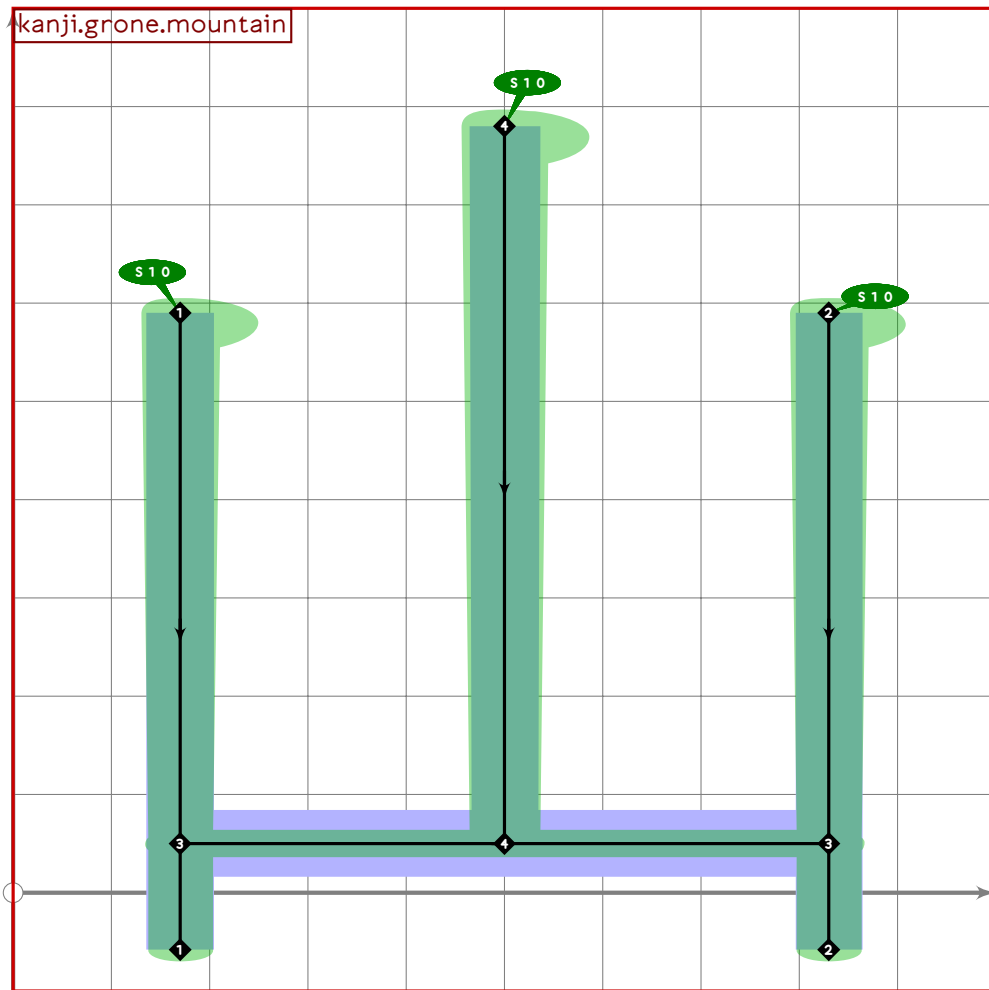
```



```

348
349 vardef tsu_curve.kanji.grone.moon =
350   add_proof_box("kanji.grone.moon");
351   bp[sp]:=(80,-20)..(200,100)..{up}(250,760)-(750,760);
352   bq[sp]:=(1,1)-(1.4,1.4)-(1.6,1.6)-(1.6,1.6);
353   build_kanji.add_jtail(sp);
354   bo_tip[sp][2]:=1;
355   bo_tip[sp][3]:=1;
356   bo_serif[sp][2]:=4;
357   bo_serif[sp][3]:=4;
358   bp[sp*1]:=(bp[sp] intersectionpoint ((0,520)-(1000,520)))-(750,520);
359   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
360   bp[sp*2]:=(bp[sp] intersectionpoint ((0,270)-(1000,270)))-(750,270);
361   bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
362   sp:=sp*3;
363 enddef;

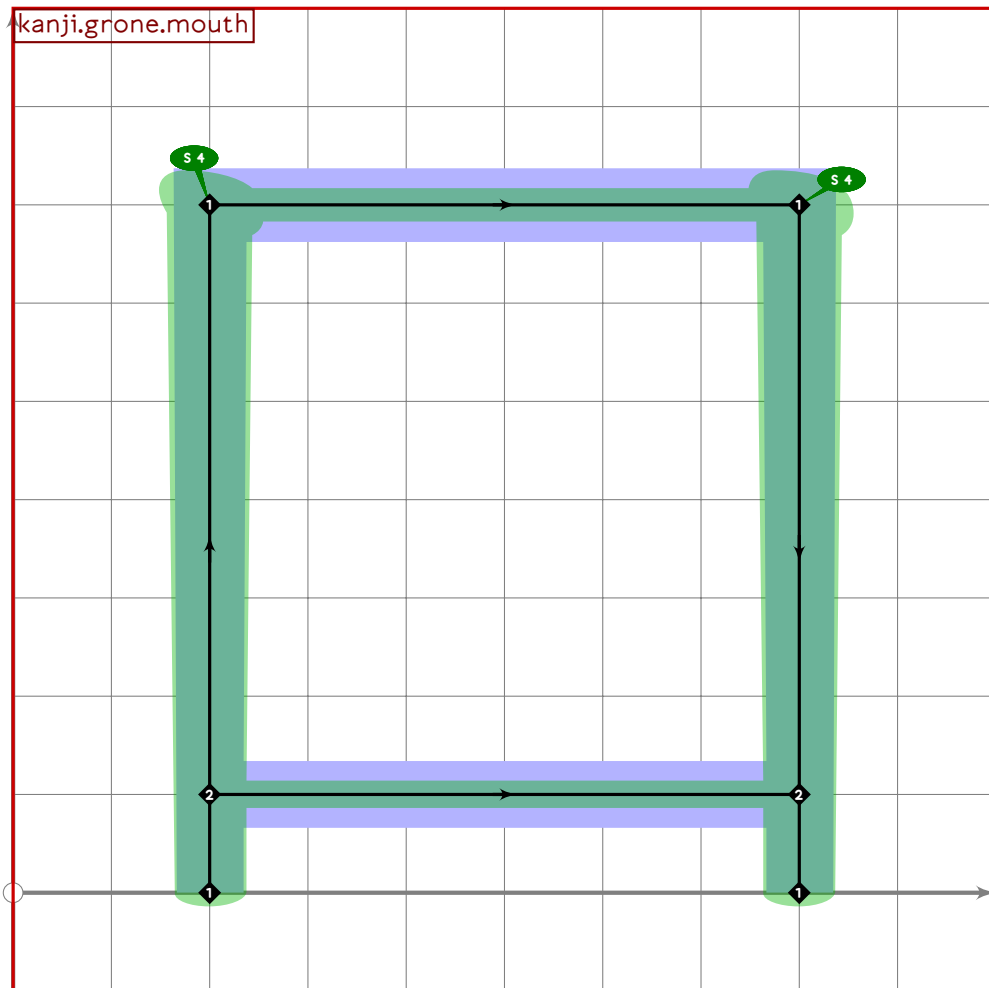
```



```

364
365 vardef tsu_curve.kanji.grone.mountain =
366   add_proof_box("kanji.grone.mountain");
367   build_kanji.cup((170,590),(830,50));
368   bp[sp]:=(500,780)-(500,50);
369   bq[sp]:=(1.7,1.7)-(1.5,1.5);
370   bo_serif[sp][0]:=10;
371   sp:=sp*1;
372 enddef;

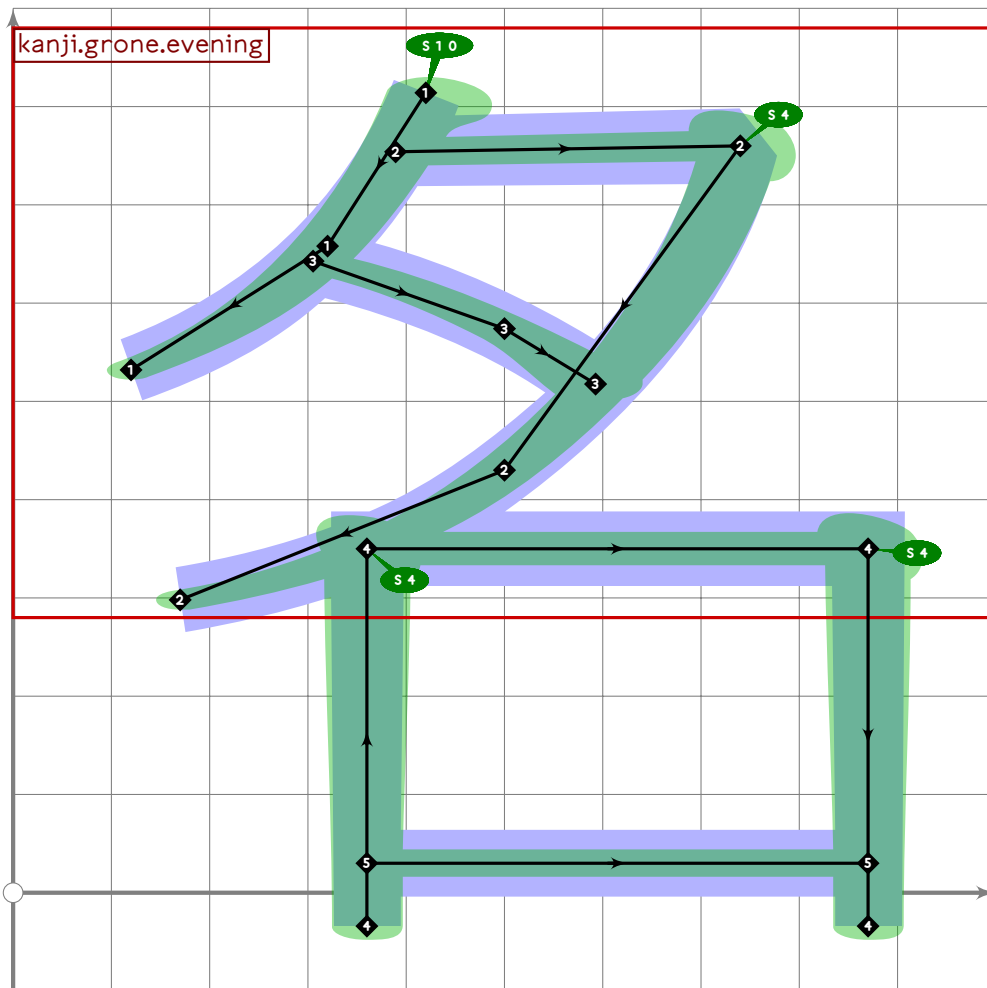
```



```

373
374 vardef tsu_curve.kanji.grone.mouth =
375   add_proof_box("kanji.grone.mouth");
376   build_kanji.box((200,700),(800,100));
377 enddef;

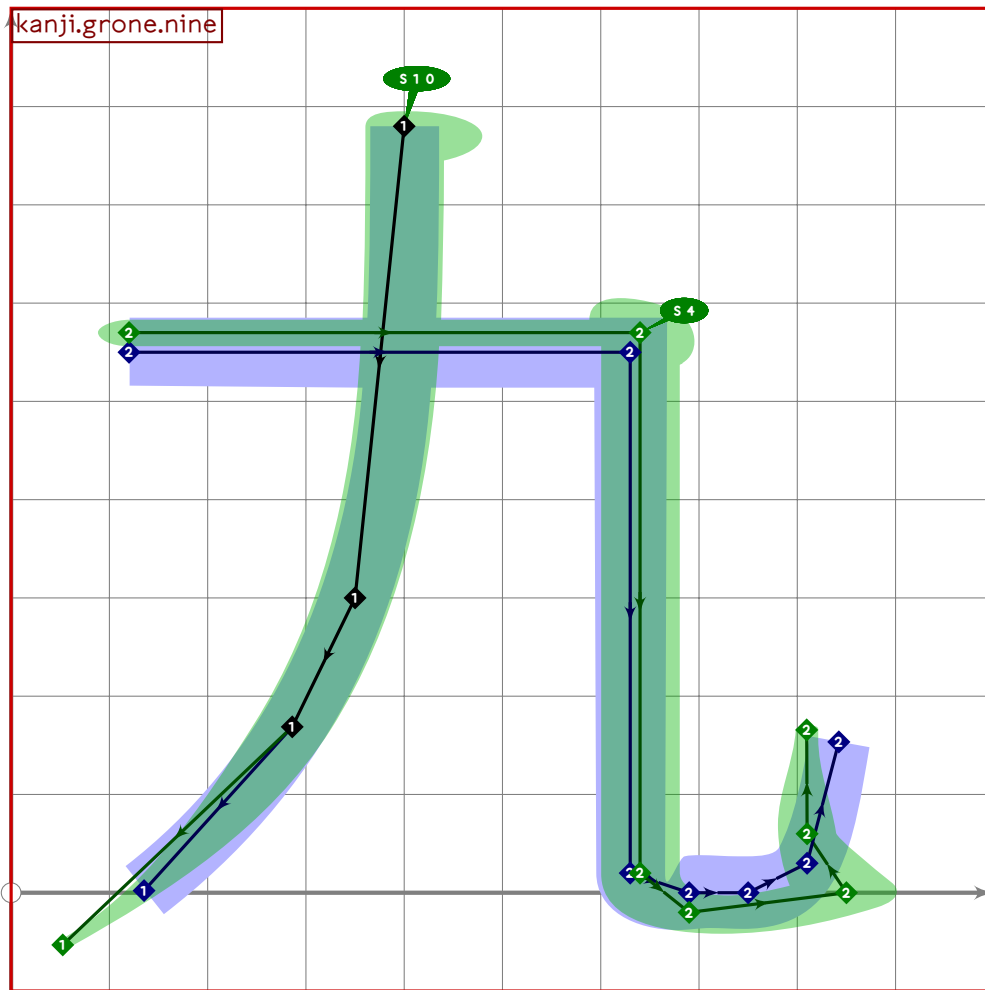
```



```

378
379 vardef tsu_curve.kanji.grone.name =
380   add_proof_box("kanji.grone.name");
381   tsu_xform(identity shifted (-50,-850) yscaled 0.6 shifted (50,850))
382     (tsu_curve.kanji.grone.evening);
383   bo_size[sp-3]:=102;
384   bo_size[sp-2]:=102;
385   bo_size[sp-1]:=102;
386   build_kanji.box((360,350),(870,30));
387 enddef;

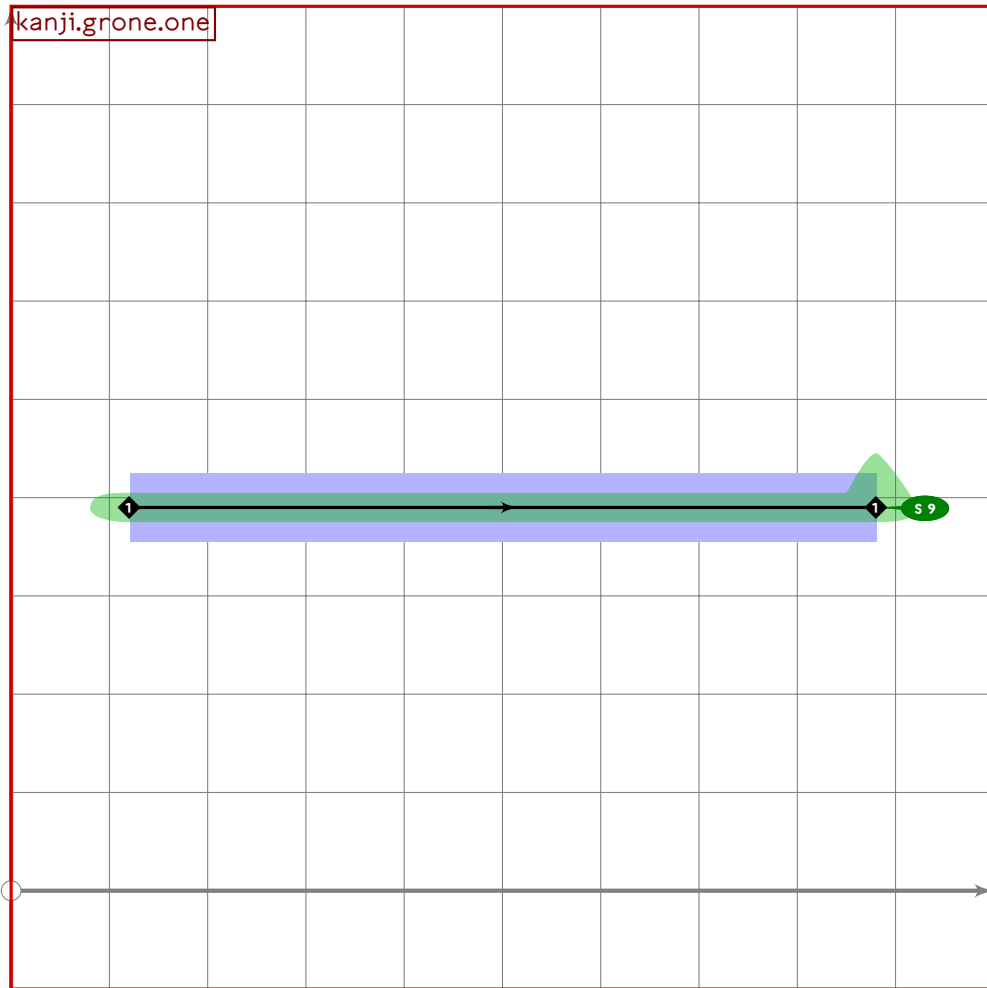
```



```

388
389 vardef tsu_curve.kanji.grone.nine =
390   add_proof_box("kanji.grone.nine");
391   bp[sp]:=(400,780){down}..(350,300)..(40,-60);
392   bp[sp]:=insert_nodes(bp[sp])(1.3);
393   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(0.8,0.7);
394   bo_serif[sp][0]:=10;
395   bp[sp*1]:=interpath(mincho,
396     (120,550)-(630,550)-(630,20){down}..(690,-0)..
397     (750,0)..(810,30)..tension 2..(850,230),
398     (120,570)-(640,570)-(640,20){down}..(690,-20)..
399     (850,0){curl 0.2}..(810,60)..tension 2..(810,170));
400   bq[sp*1]:=(1.4,1.4)-(1.6,1.6)-(1.6,1.6)-(1.9,1.9)-
401     (1.9,1.9)-(1.3,1.3)-(0.8,0.8);
402   bo_tip[sp*1][1]:=1;
403   bo_serif[sp*1][1]:=4;
404   sp:=sp*2;
405 enddef;

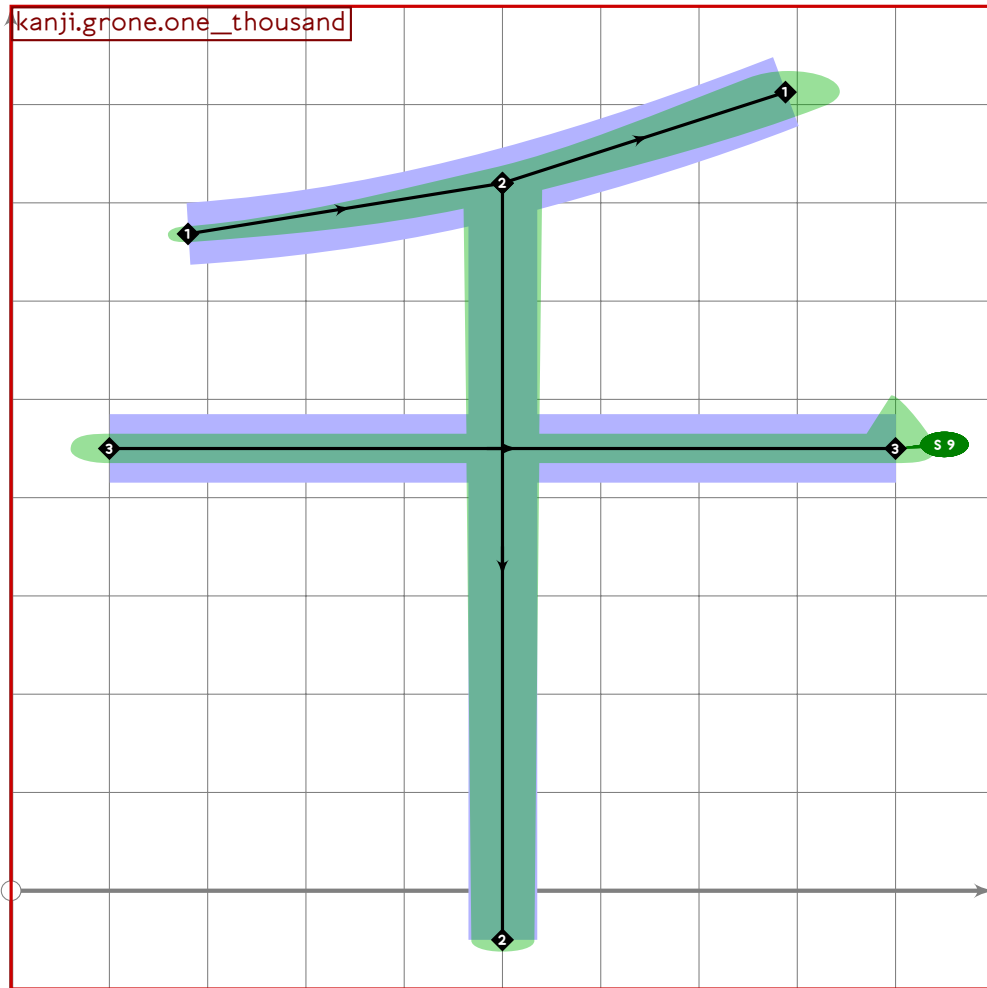
```



```

406
407 vardef tsu_curve.kanji.grone.one =
408   add_proof_box("kanji.grone.one");
409   bp[sp]:=(120,390)-(880,390);
410   bq[sp]:=(1.6,1.6)-(1.6,1.6);
411   bo_serif[sp][1]:=9;
412   sp:=sp*1;
413 enddef;

```

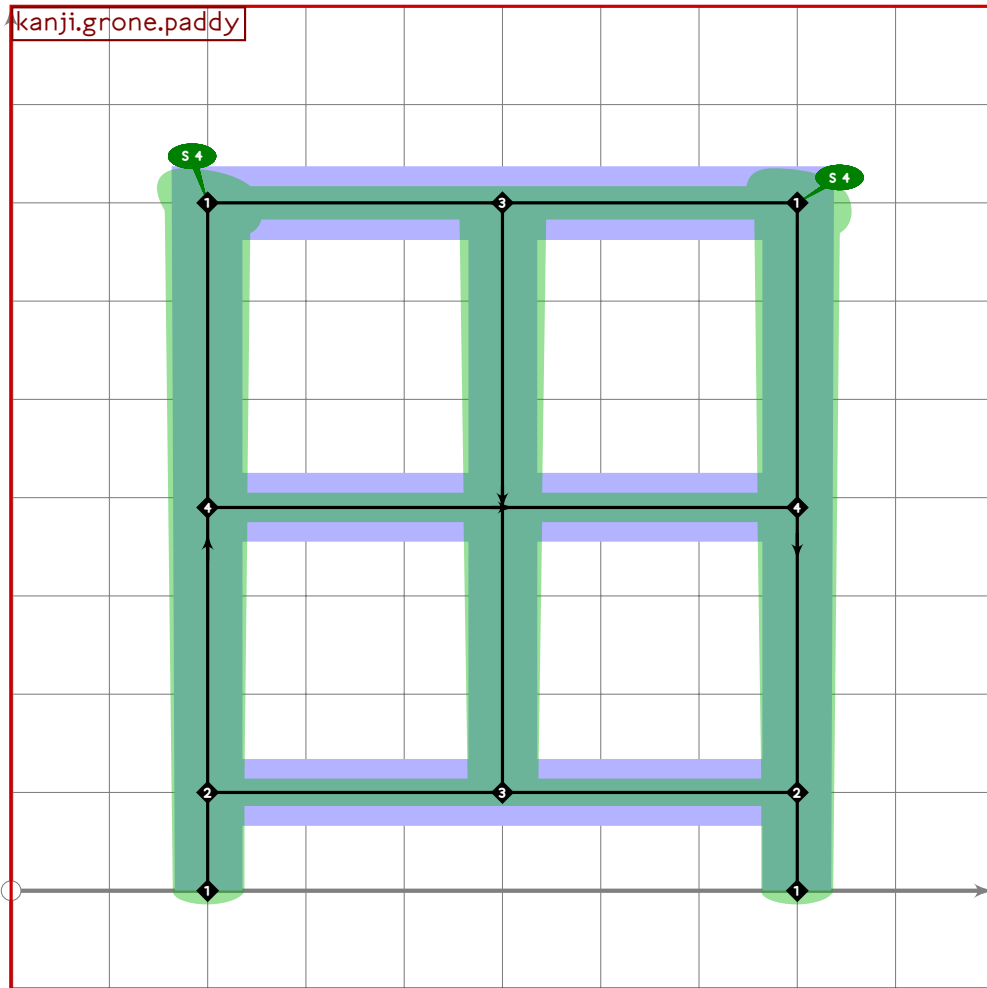


```

414
415 vardef tsu_curve.kanji.grone.one_thousand =
416   add_proof_box("kanji.grone.one_thousand");
417   build_kanji.add_beret(
418     bp[sp]:=(500,720)-(500,-50);
419     bq[sp]:=(1.6,1.6)-(1.4,1.4);
420     bp[sp*1]:=(100,450)-(900,450);
421     bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
422     bo_serif[sp*1][1]:=9;
423     sp:=sp*2;
424   );
425 enddef;

```

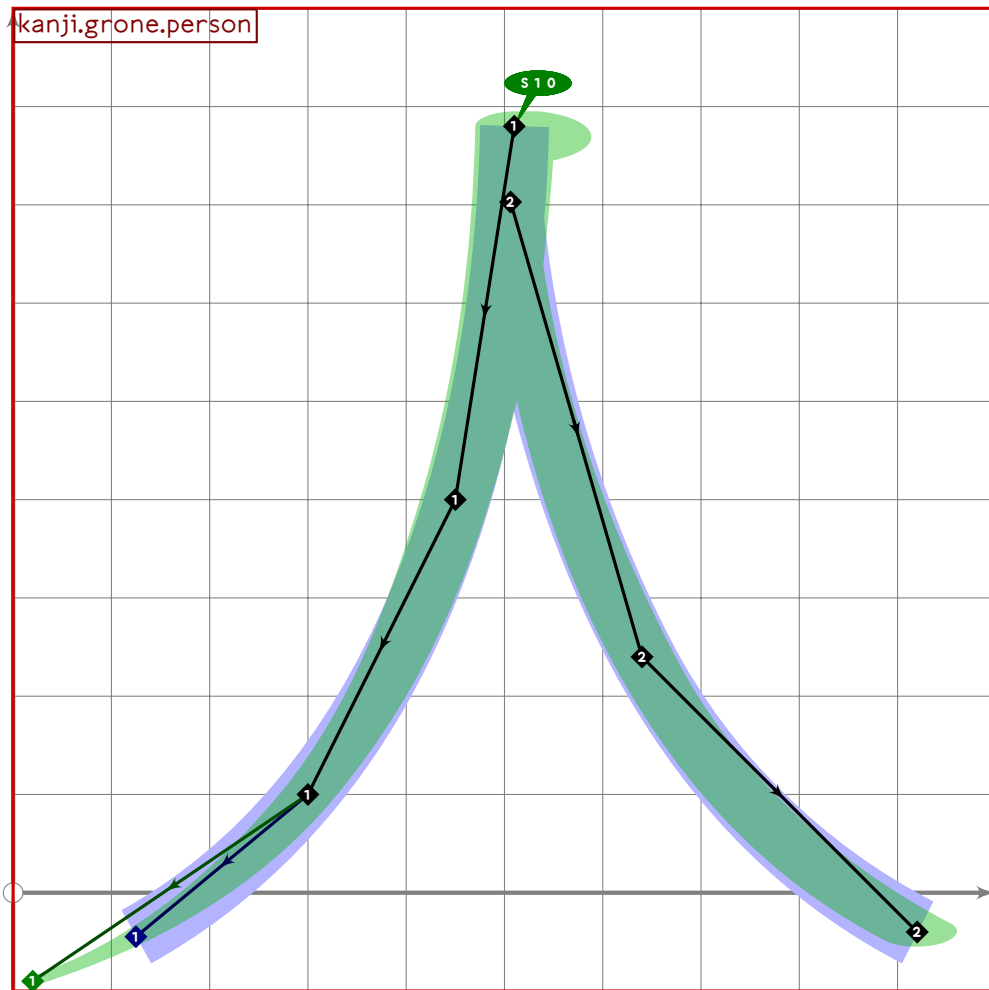




```

426
427 vardef tsu_curve.kanji.grone.paddy =
428   add_proof_box("kanji.grone.paddy");
429   build_kanji_box((200,700),(800,100));
430   bp[sp]:=(500,700)-(500,100);
431   bq[sp]:=(1.7,1.7)-(1.5,1.5);
432   bp[sp*1]:=(200,390)-(800,390);
433   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
434   sp:=sp*2;
435 enddef;

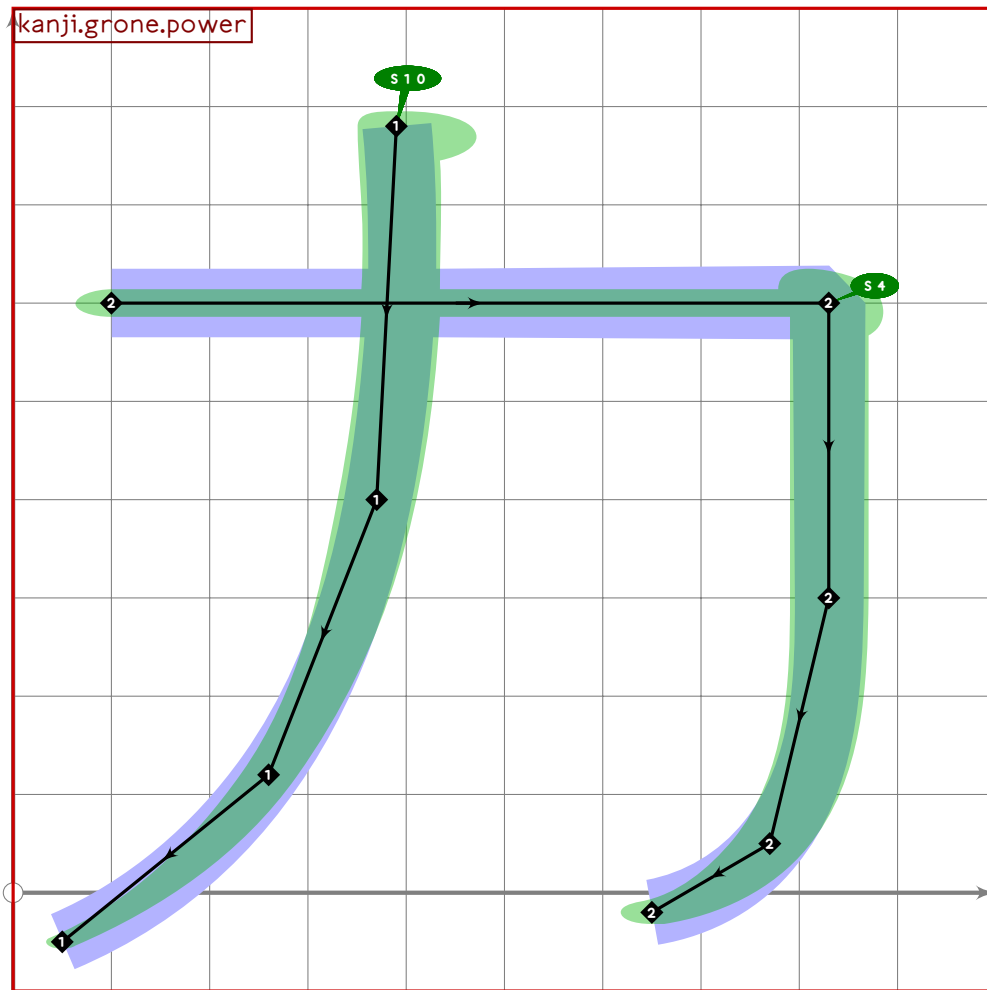
```



```

436
437 vardef tsu_curve.kanji.grone.person =
438   add_proof_box("kanji.grone.person");
439   bp[sp]:=(510,780)..(450,400)..(300,100)..(20,-90);
440   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.85);
441   bo_serif[sp][0]:=10;
442   bp[sp*1]:=(point 0.2 of bp[sp])..tension 1.2..(640,240)..(920,-40);
443   bq[sp*1]:=(1.2,1.2)-(1.4,1.4)-(1.6,1.6);
444   sp:=sp*2;
445 enddef;

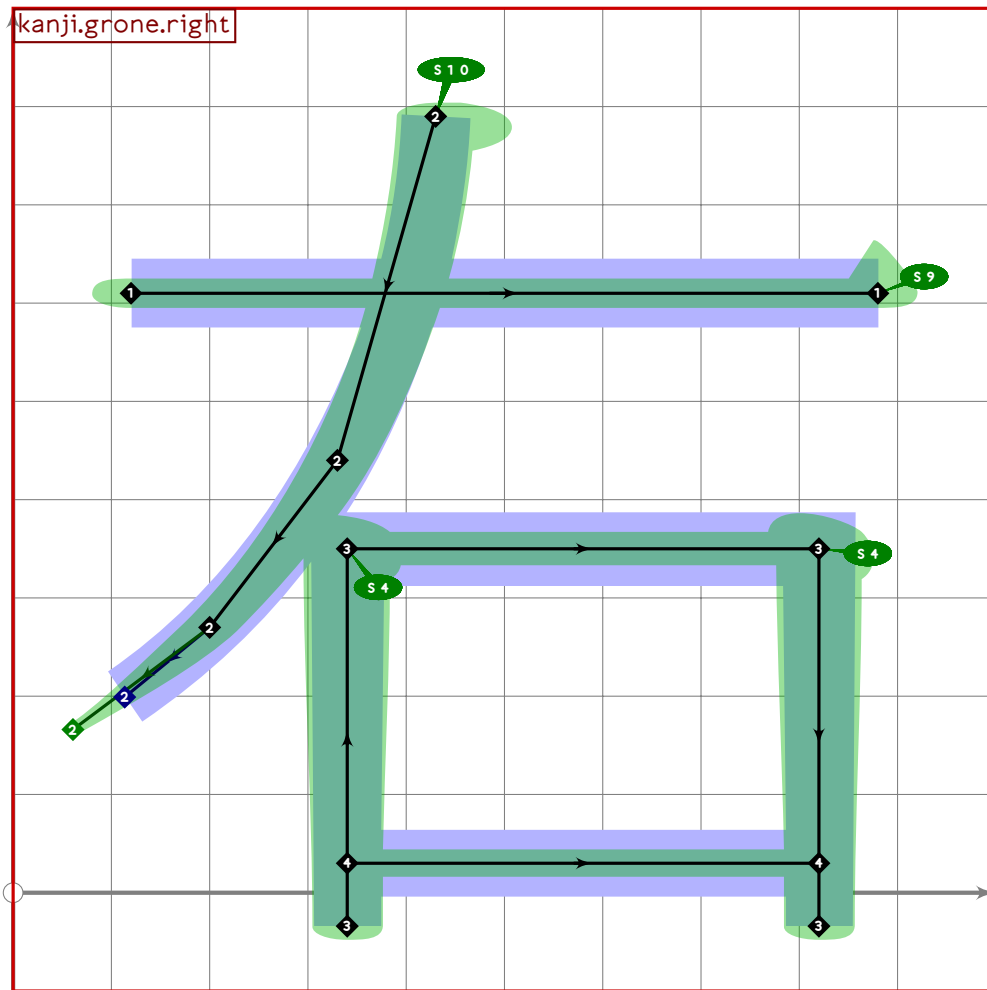
```



```

446
447 vardef tsu_curve.kanji.grone.power =
448   add_proof_box("kanji.grone.power");
449   bp[sp]:=(390,780)..(370,400)..(260,120)..(50,-50);
450   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.3,1.3)-(1,1);
451   bo_serif[sp][0]:=10;
452   bp[sp*1]:=(100,600)-(830,600)..tension 1.1..(830,300)..(770,50)..(650,-20);
453   bq[sp*1]:=(1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.4,1.4);
454   bo_tip[sp*1][1]:=0;
455   bo_serif[sp*1][1]:=4;
456   sp:=sp*2;
457 enddef;

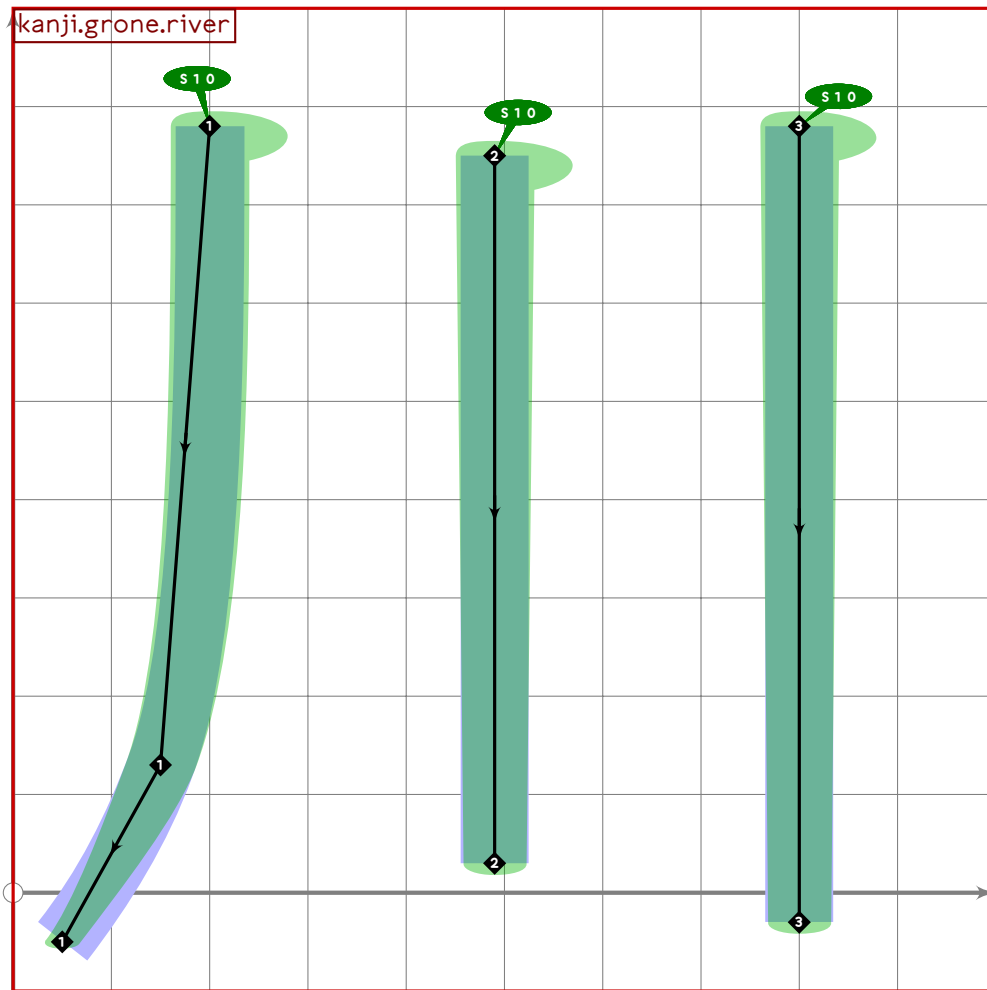
```



```

458
459 vardef tsu_curve.kanji.grone.right =
460   add_proof_box("kanji.grone.right");
461   bp[sp]:=(120,610)..(880,610);
462   bq[sp]:=(1.6,1.6)-(1.6,1.6);
463   bo_serif[sp][1]:=9;
464   bp[sp*1]:=(430,790)..(330,440)..(200,270)..(50,160);
465   bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.8,0.8);
466   bo_serif[sp*1][0]:=10;
467   sp:=sp*2;
468   build_kanji.box((340,350),(820,30));
469 enddef;

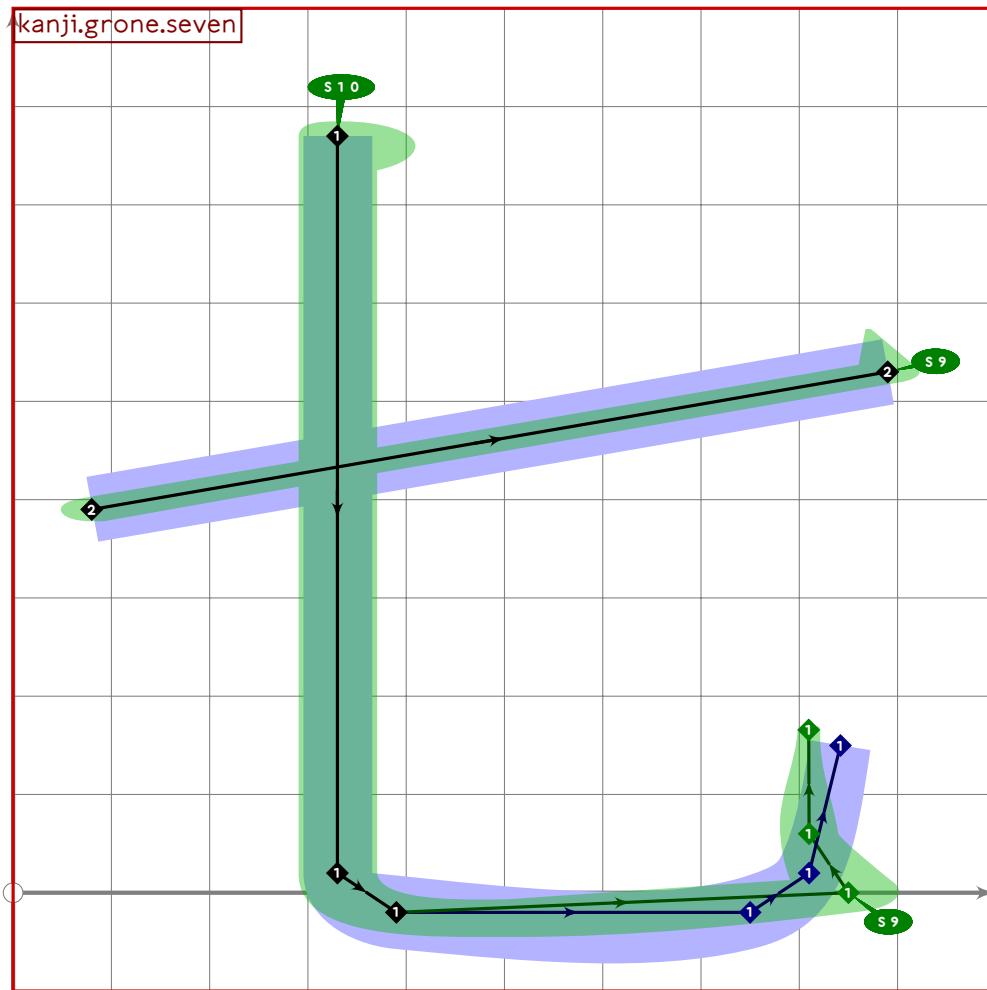
```



```

470
471 vardef tsu_curve.kanji.grone.river =
472   add_proof_box("kanji.grone.river");
473   bp[sp]:=(200,780){down}..(150,130)..(50,-50);
474   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1,1);
475   bo_serif[sp][0]:=10;
476   bp[sp*1]:=(490,750)-(490,30);
477   bq[sp*1]:=(1.6,1.6)-(1.4,1.4);
478   bo_serif[sp*1][0]:=10;
479   bp[sp*2]:=(800,780)-(800,-30);
480   bq[sp*2]:=(1.6,1.6)-(1.4,1.4);
481   bo_serif[sp*2][0]:=10;
482   sp:=sp*3;
483 enddef;

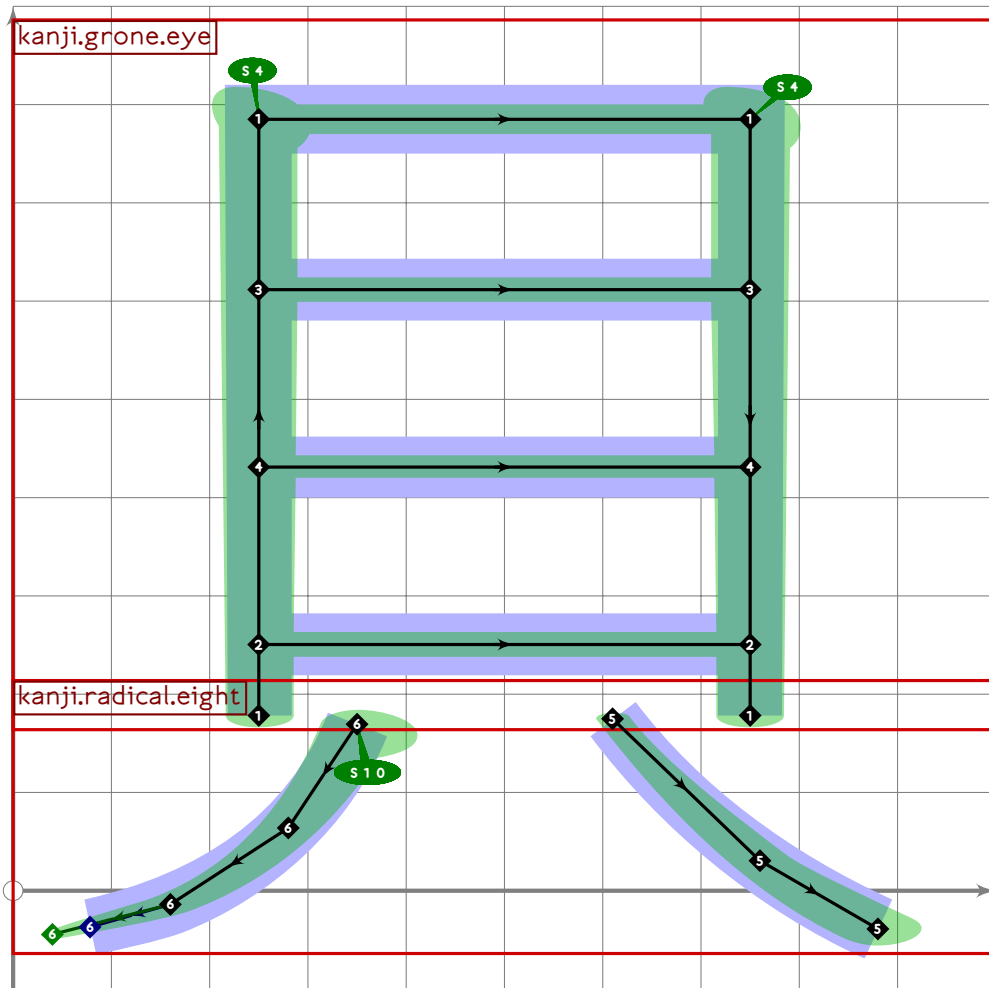
```



```

484
485 vardef tsu_curve.kanji.grone.seven =
486   add_proof_box("kanji.grone.seven");
487   bp[sp]:=interpath(mincho,
488     (330,770)–(330,20){down}..(390,-20)..
489     (750,-20)..(810,20)..tension 2..(850,230),
490     (330,770)–(330,20){down}..(390,-20)..
491     (850,0){curl 0.2}..(810,60)..tension 2..(810,170));
492   bq[sp]:=(1.6,1.6)–(1.6,1.6)–(1.9,1.9)–
493     (1.9,1.9)–(1.3,1.3)–(0.8,0.8);
494   bo_serif[sp][0]:=10;
495   bo_serif[sp][3]:=9;
496   bp[sp*1]:=(80,390)–(890,530);
497   bq[sp*1]:=(1.4,1.4)–(1.4,1.4);
498   bo_serif[sp*1][1]:=9;
499   sp:=sp*2;
500 enddef;

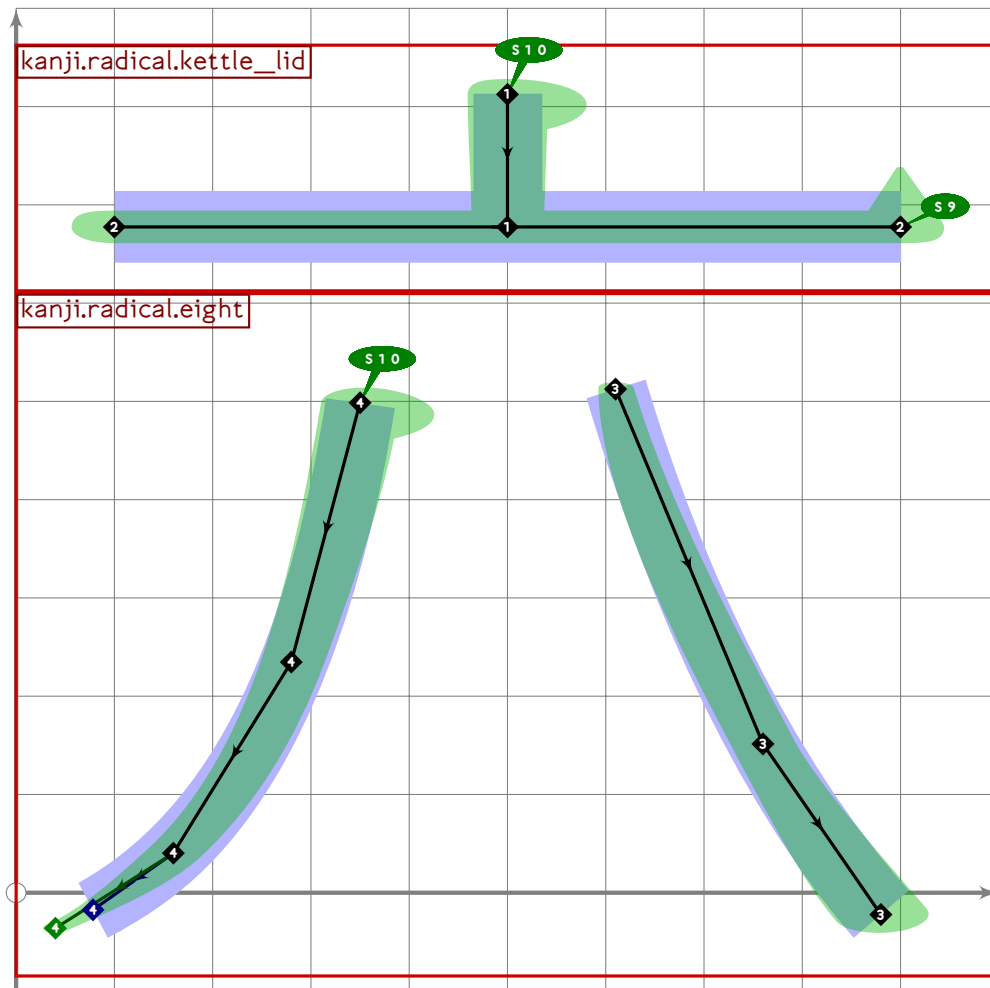
```



```

501
502 vardef tsu_curve.kanji.grone.shell =
503   add_proof_box("kanji.grone.shell");
504   build_kanji.level(build_kanji.tb(200,0)
505     (tsu_curve.kanji.grone.eye)
506     (tsu_curve.kanji.radical.eight));
507 enddef;

```

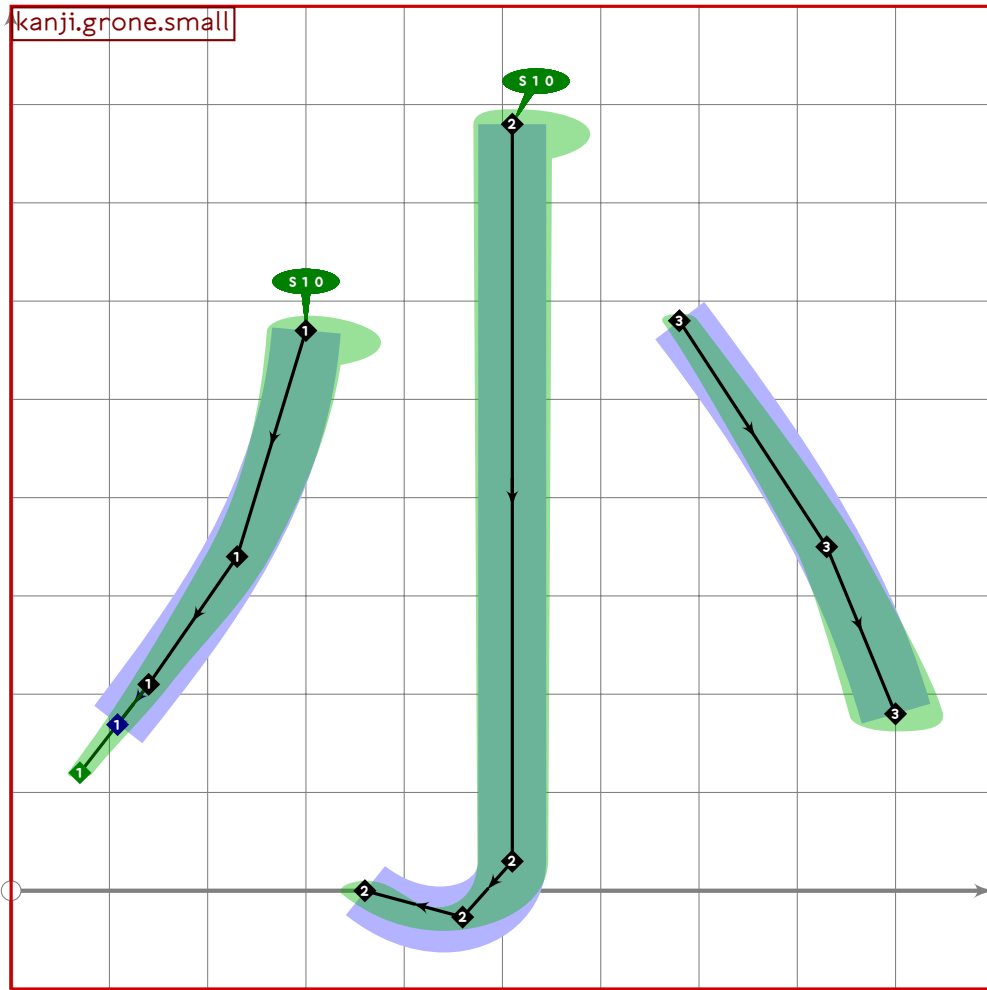


```

508
509 vardef tsu_curve.kanji.grone.six =
510   add_proof_box("kanji.grone.six");
511   build_kanji.level(build_kanji.tb(600,-50)
512     (tsu_curve.kanji.radical.kettle_lid)
513     (tsu_curve.kanji.radical.eight));
514 enddef;

```

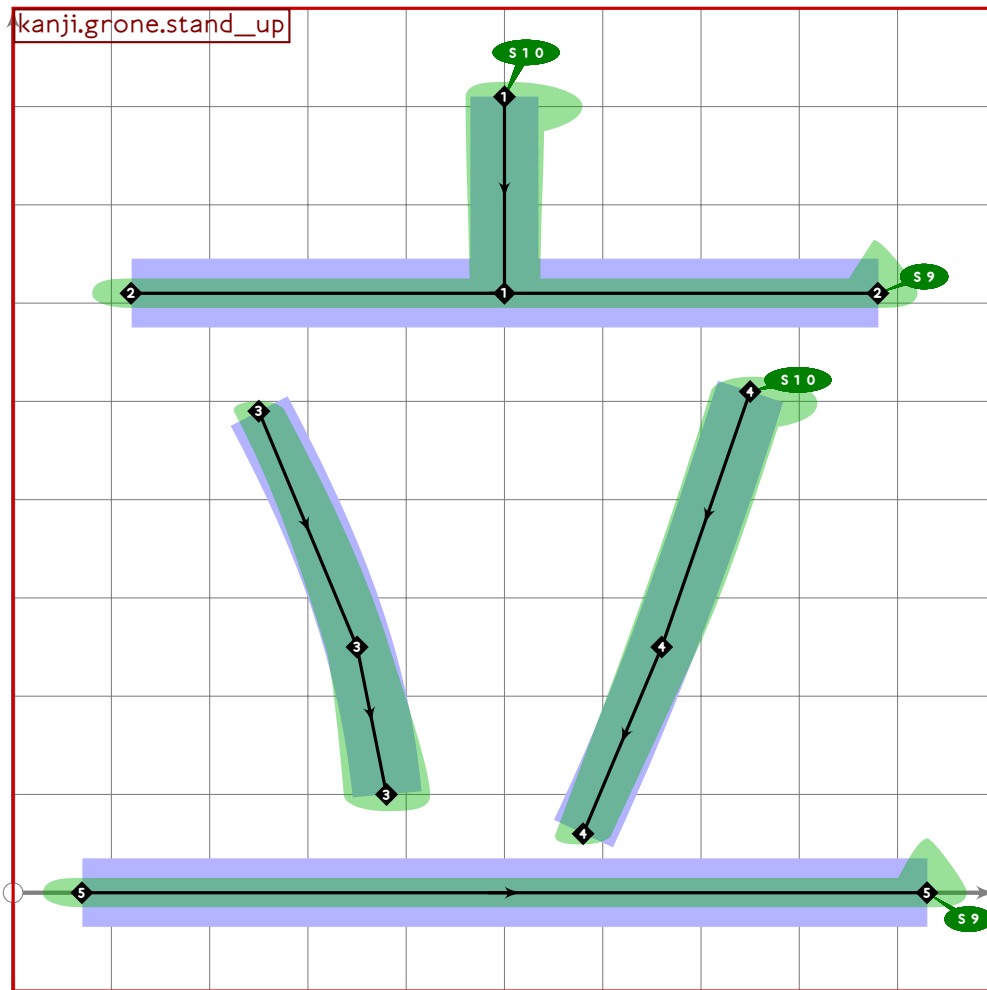




```

515
516 vardef tsu_curve.kanji.grone.small =
517   add_proof_box("kanji.grone.small");
518   bp[sp]:=(300,570)..(230,340)..(140,210)..(70,120);
519   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.1,1.1)-(0.88,0.88);
520   bo_serif[sp][0]:=10;
521   bp[sp*1]:=(510,780);
522   bq[sp*1]:=(1.6,1.6);
523   bo_serif[sp*1][0]:=10;
524   build_kanji.add_jtail(sp*1);
525   bp[sp*2]:=(680,580)..tension 1.3..(830,350)..(900,180);
526   bq[sp*2]:=(1,1)-(1.4,1.4)-(1.8,1.8);
527   sp:=sp*3;
528 enddef;

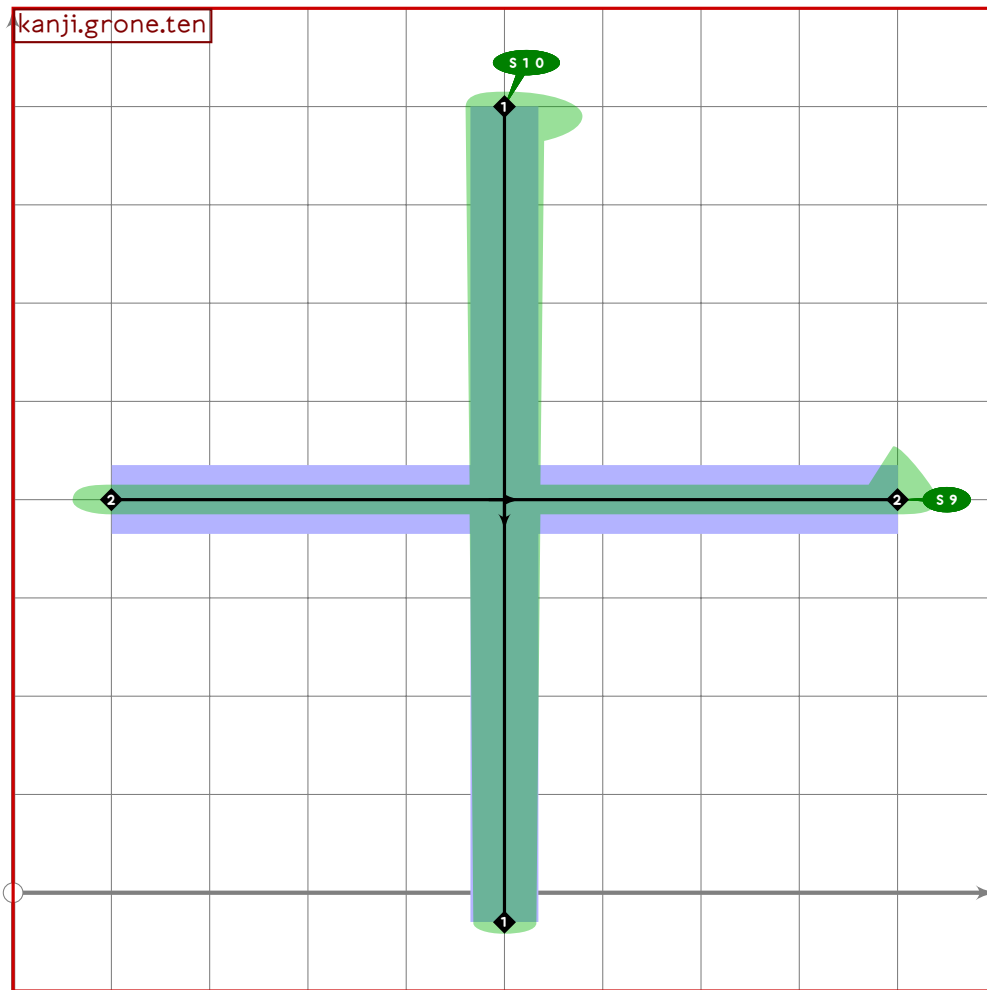
```



```

529
530 vardef tsu_curve.kanji.grone.stand_up =
531   add_proof_box("kanji.grone.stand_up");
532   bp[sp]:=(500,810)-(500,610);
533   bq[sp]:=(1.6,1.6)-(1.5,1.5);
534   bo_serif[sp][0]:=10;
535   bp[sp*1]:=(120,610)-(880,610);
536   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
537   bo_serif[sp*1][1]:=9;
538   bp[sp*2]:=(250,490)..tension 1.2..(350,250)..(380,100);
539   bq[sp*2]:=(1.2,1.2)-(1.4,1.4)-(1.7,1.7);
540   bp[sp*3]:=(750,510)..tension 1.2..(660,250)..(580,60);
541   bq[sp*3]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3);
542   bo_serif[sp*3][0]:=10;
543   bp[sp*4]:=(70,0)-(930,0);
544   bq[sp*4]:=(1.6,1.6)-(1.6,1.6);
545   bo_serif[sp*4][1]:=9;
546   sp:=sp*5;
547 enddef;

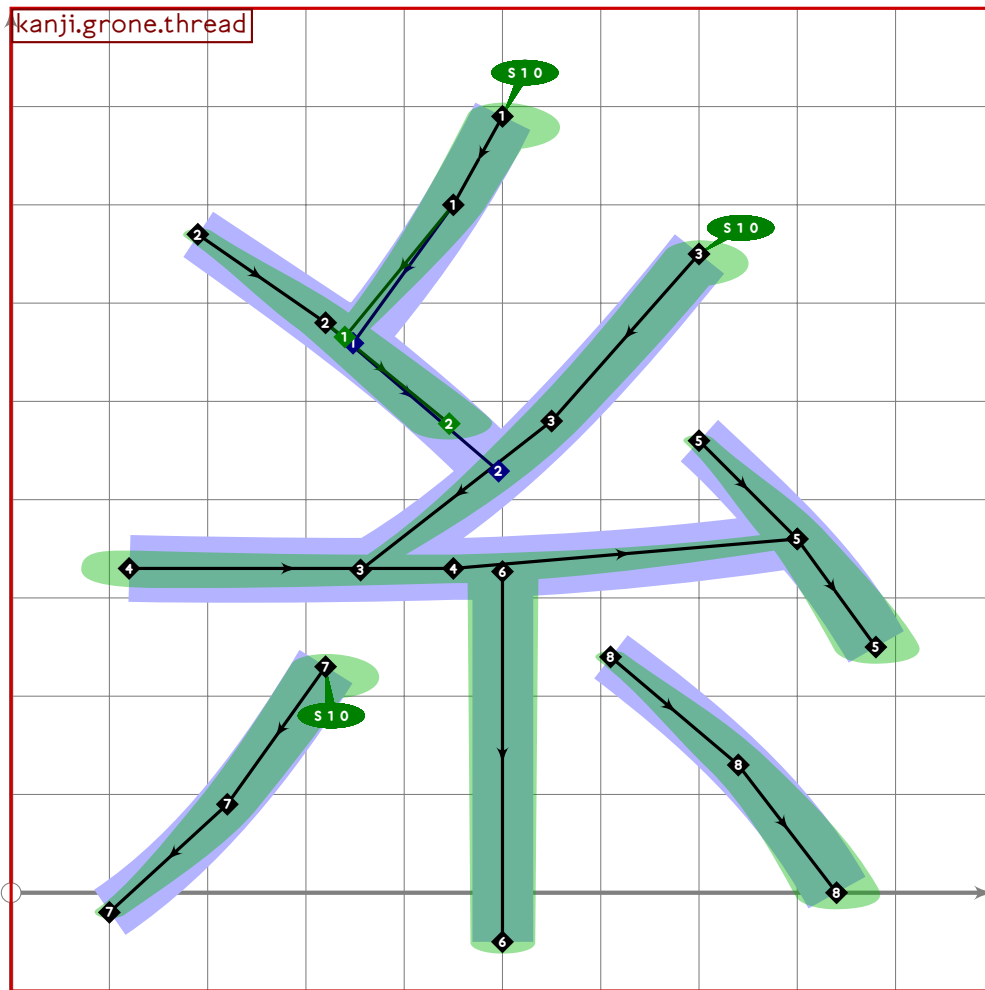
```



```

548
549 vardef tsu_curve.kanji.grone.ten =
550   add_proof_box("kanji.grone.ten");
551   bp[sp]:=(500,800)-(500,30);
552   bq[sp]:=(1.6,1.6)-(1.4,1.4);
553   bo_serif[sp][0]:=10;
554   bp[sp*1]:=(100,400)-(900,400);
555   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
556   bo_serif[sp*1][1]:=9;
557   sp:=sp*2;
558 enddef;

```



```

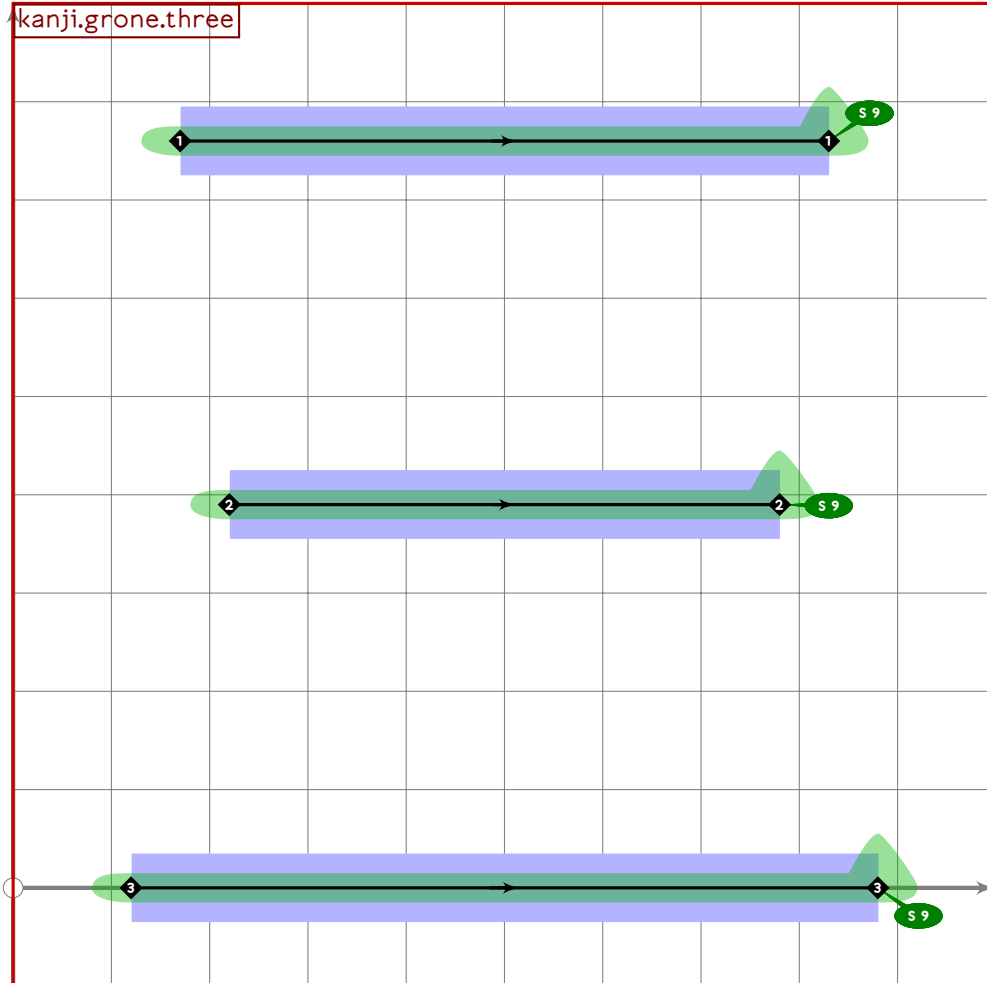
559
560 vardef tsu_curve.kanji.grone.thread =
561   add_proof_box("kanji.grone.thread");
562   bp[sp*3]:=(120,330)..tension 1.2..(450,330)..(800,360);
563   bq[sp*3]:=(2,2)-(1.7,1.7)-(1.2,1.2);
564   bp[sp*2]:=(700,650)..tension 1.3..(550,480)..(point 0.7 of bp[sp*3]);
565   bq[sp*2]:=(1.6,1.6)-(1.5,1.5)-(1,1);
566   bo_serif[sp*2][0]:=10;
567   bp[sp*1]:=subpath (0,2-0.3*mincho) of
568     ((190,670)..tension 1.3..(320,580)..(point 1.3 of bp[sp*2]));
569   bq[sp*1]:=(1,1)-(1.5,1.5)-(1.8,1.8);
570   bp[sp]:=(500,790)..(450,700)..(point 1.15 of bp[sp*1]);
571   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1,1);
572   bo_serif[sp][0]:=10;
573   bp[sp*4]:=(700,460)..tension 1.3..(800,360)..(880,250);
574   bq[sp*4]:=(1,1)-(1.5,1.5)-(1.8,1.8);
575   bp[sp*5]:=((bp[sp*3] intersectionpoint ((500,1000)-(500,0)))+(0,-5))
576     -(500,50);
577   bq[sp*5]:=(1.6,1.6)-(1.5,1.5);
578   bp[sp*6]:=(320,230)..tension 1.3..(220,90)..(100,-20);
579   bq[sp*6]:=(1.6,1.6)-(1.5,1.5)-(1,1);

```

```

580 bo_serif[bp*6][0]:=10;
581 bp[sp*7]:=(610,240)..tension 1.3..(740,130)..(840,0);
582 bq[sp*7]:=(1,1)-(1.5,1.5)-(1.8,1.8);
583 for i=sp upto sp*7: bo_size[i]:=90; endfor;
584 sp:=sp*8;
585 enddef;

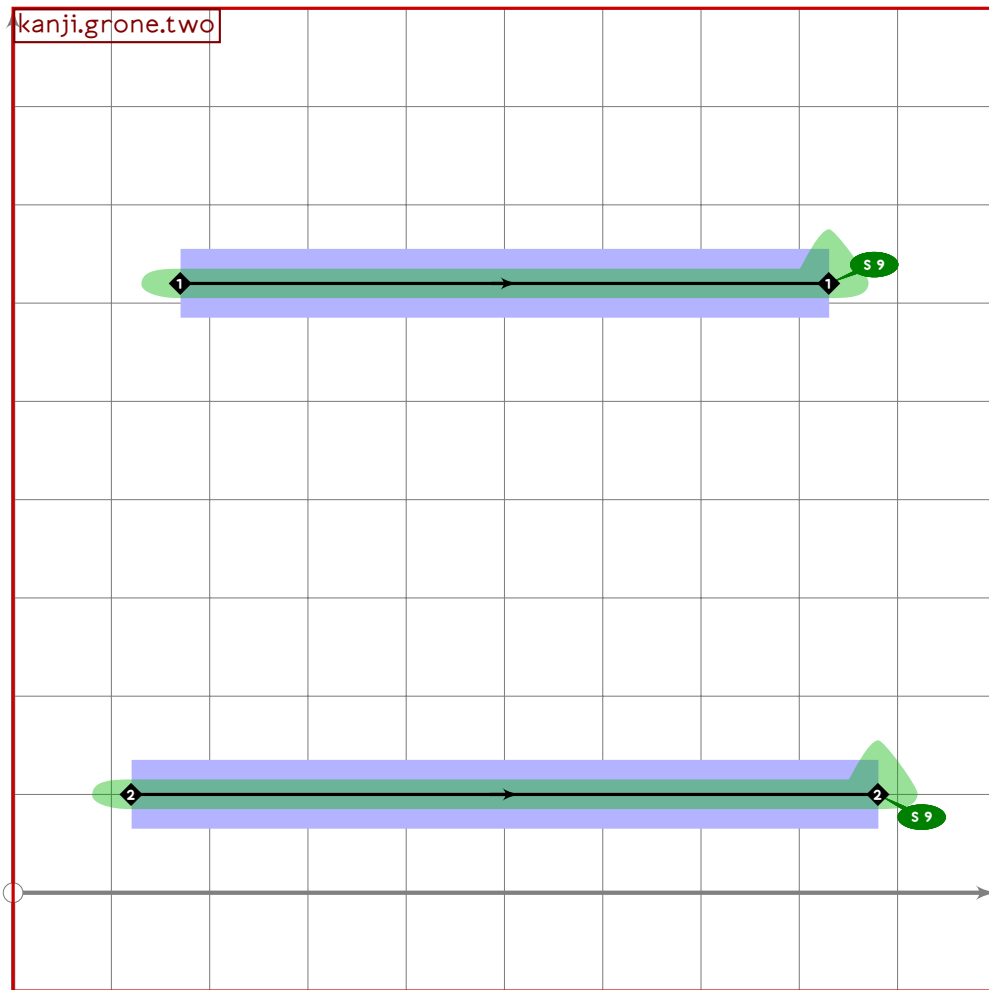
```



```

586
587 vardef tsu_curve.kanji.grone.three =
588   add_proof_box("kanji.grone.three");
589   bp[sp]:=(170,760)-(830,760);
590   bq[sp]:=(1.6,1.6)-(1.6,1.6);
591   bo_serif[sp][1]:=9;
592   bp[sp*1]:=(220,390)-(780,390);
593   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
594   bo_serif[sp*1][1]:=9;
595   bp[sp*2]:=(120,0)-(880,0);
596   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
597   bo_serif[sp*2][1]:=9;
598   sp:=sp*3;
599 enddef;

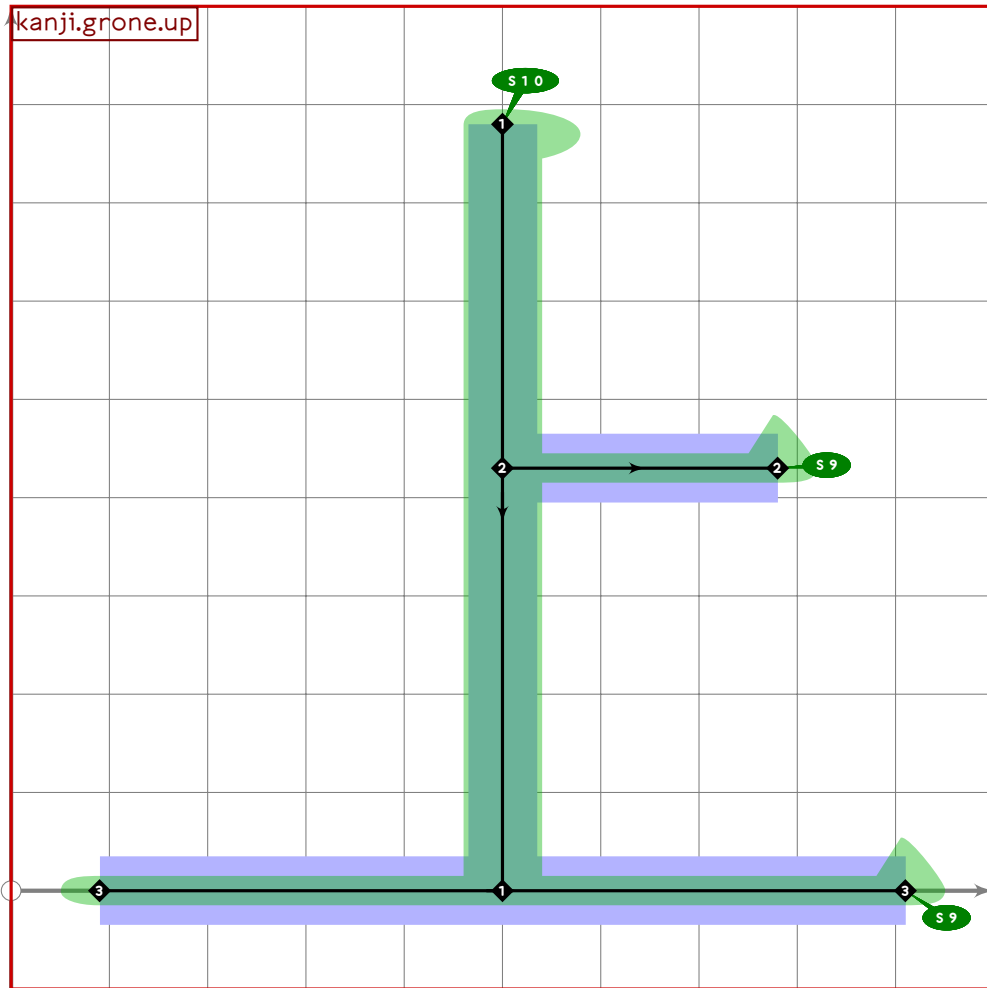
```



```

600
601 vardef tsu_curve.kanji.grone.two =
602   add_proof_box("kanji.grone.two");
603   bp[sp]:=(170,620)-(830,620);
604   bq[sp]:=(1.6,1.6)-(1.6,1.6);
605   bo_serif[sp][1]:=9;
606   bp[sp*1]:=(120,100)-(880,100);
607   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
608   bo_serif[sp*1][1]:=9;
609   sp:=sp*2;
610 enddef;

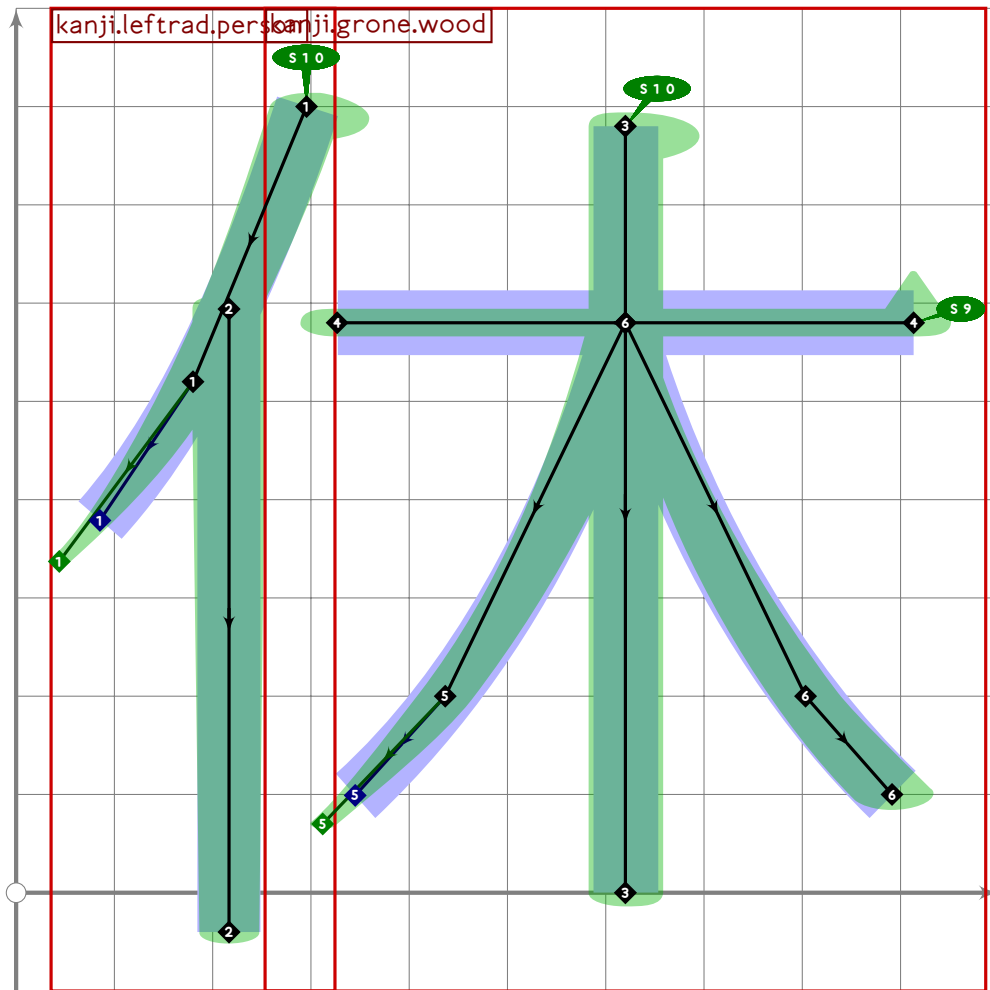
```



```

611
612 vardef tsu_curve.kanji.grone.up =
613   add_proof_box("kanji.grone.up");
614   bp[sp]:= (500,780)-(500,0);
615   bq[sp]:= (1.6,1.6)-(1.6,1.6);
616   bo_serif[sp][0]:=10;
617   bp[sp*1]:= (500,430)-(780,430);
618   bq[sp*1]:= (1.6,1.6)-(1.6,1.6);
619   bo_serif[sp*1][1]:=9;
620   bp[sp*2]:= (90,0)-(910,0);
621   bq[sp*2]:= (1.6,1.6)-(1.6,1.6);
622   bo_serif[sp*2][1]:=9;
623   sp:=sp*3;
624 enddef;

```

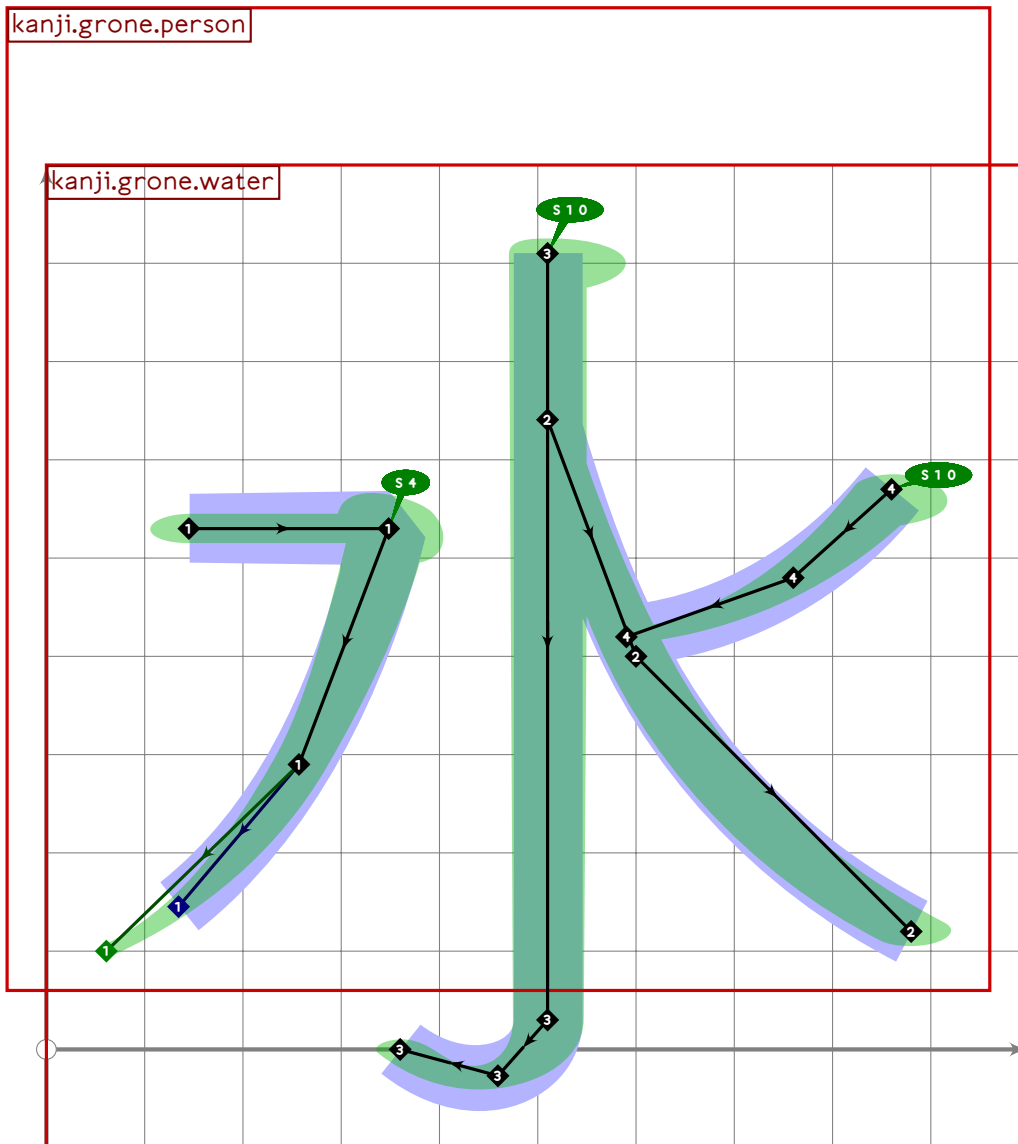


```

625
626 vardef tsu_curve.kanji.grone.vacation =
627   add_proof_box("kanji.grone.vacation");
628   build_kanji.lr(300,20)
629     (tsu_curve.kanji.leftrad.person)
630     (tsu_curve.kanji.grone.wood);
631 enddef;

```





```

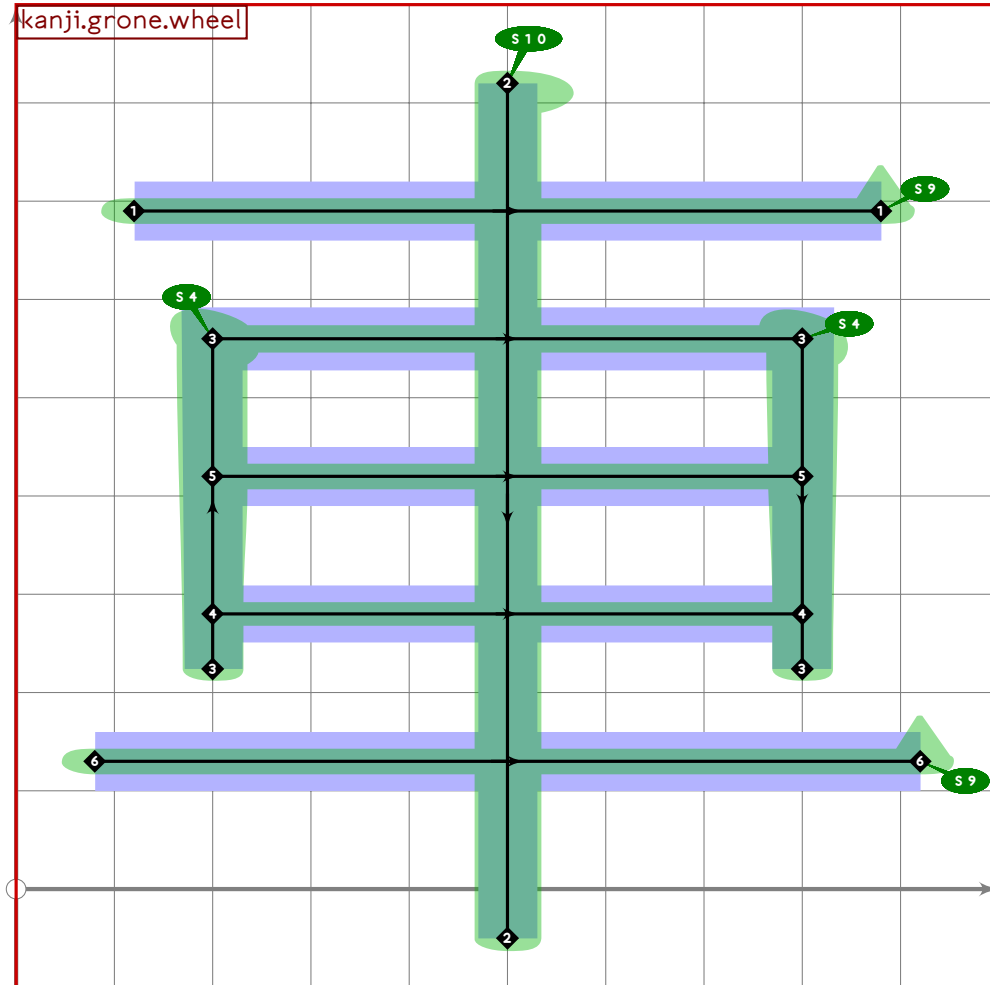
632
633 vardef tsu_curve.kanji.grone.water =
634   tsu_xform(identity shifted (-40,160))(tsu_curve.kanji.grone.person);
635   add_proof_box("kanji.grone.water");
636   sp:=sp-2;
637   bp[sp]:=(100,500)-
638     (subpath (xpart (bp[sp] intersectiontimes
639       ((0,500)-(1000,500))),infinity) of bp[sp]);
640   bp[sp]:=bp[sp] shifted (-250,0) xscaled 0.7 shifted (250,30);
641   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.3,1.3)-(0.85,0.85);
642   bo_serif[sp][0]:=whatever;
643   bo_serif[sp][1]:=4;
644   bo_tip[sp][1]:=0;
645   bp[sp*2]:=(510,810);
646   bq[sp*2]:=(1.6,1.6);
647   build_kanji.add_jtail(sp*2);
648   bo_serif[sp*2][0]:=10;

```

```

649 bp[sp*1]:=subpath (xpart (bp[sp*1] intersectiontimes bp[sp*2]),infinity)
650   of bp[sp*1];
651 bp[sp*3]:=(860,570)..(760,480)..(point 0.9 of bp[sp*1]);
652 bq[sp*3]:=(1.6,1.6)-(1.4,1.4)-(1,1);
653 bo_serif[sp*3][0]:=10;
654 sp:=sp*4;
655 enddef;

```



```

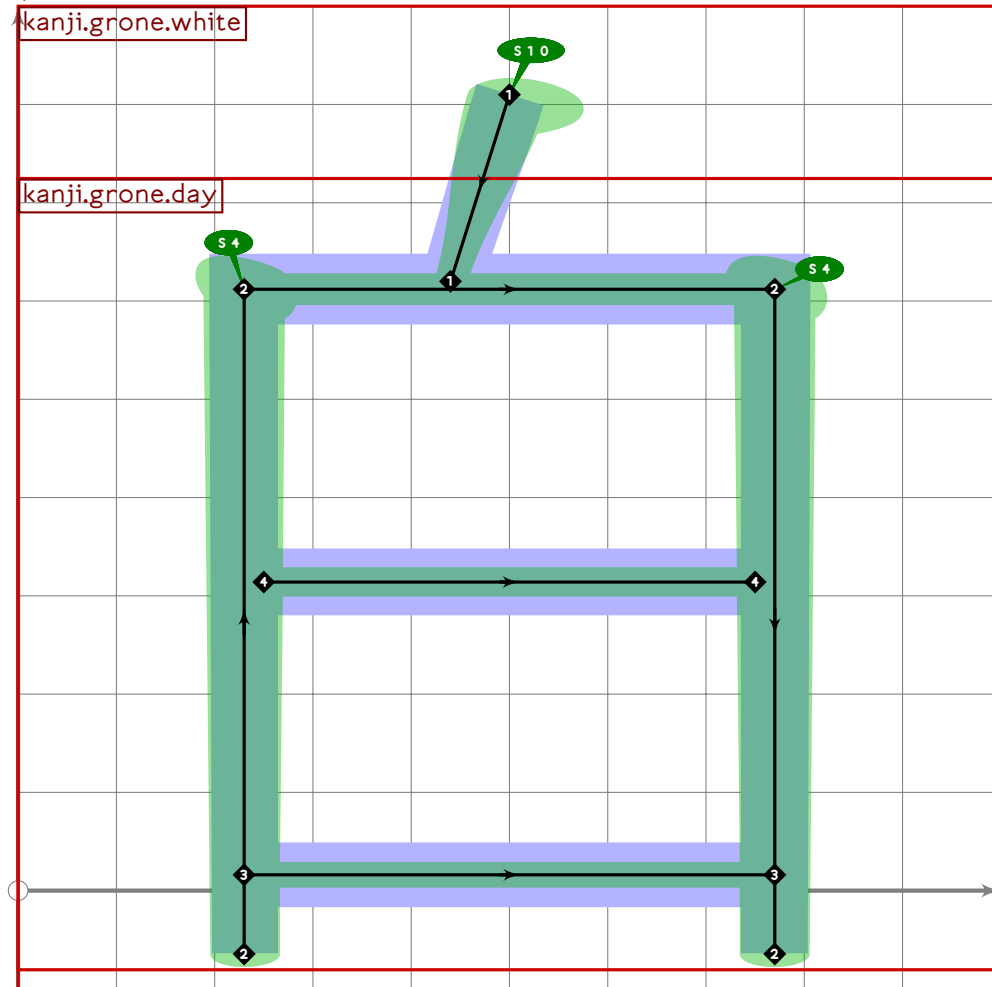
656
657 vardef tsu_curve.kanji.grone.wheel =
658   add_proof_box("kanji.grone.wheel");
659   bp[sp]:=(120,690)-(880,690);
660   bq[sp]:=(1.6,1.6)-(1.6,1.6);
661   bo_serif[sp][1]:=9;
662   bp[sp*1]:=(500,820)-(500,-50);
663   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
664   bo_serif[sp*1][0]:=10;
665   sp:=sp*2;
666   build_kanji.box((200,560),(800,280));
667   bp[sp]:=(200,420)-(800,420);
668   bq[sp]:=(1.6,1.6)-(1.6,1.6);
669   bp[sp*1]:=(80,130)-(920,130);

```

```

670 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
671 bo_serif[sp*1][1]:=9;
672 sp:=sp*2;
673 bo_size[sp-6]:=85;
674 bo_size[sp-5]:=85;
675 bo_size[sp-4]:=85;
676 bo_size[sp-3]:=85;
677 bo_size[sp-2]:=85;
678 bo_size[sp-1]:=85;
679 enddef;

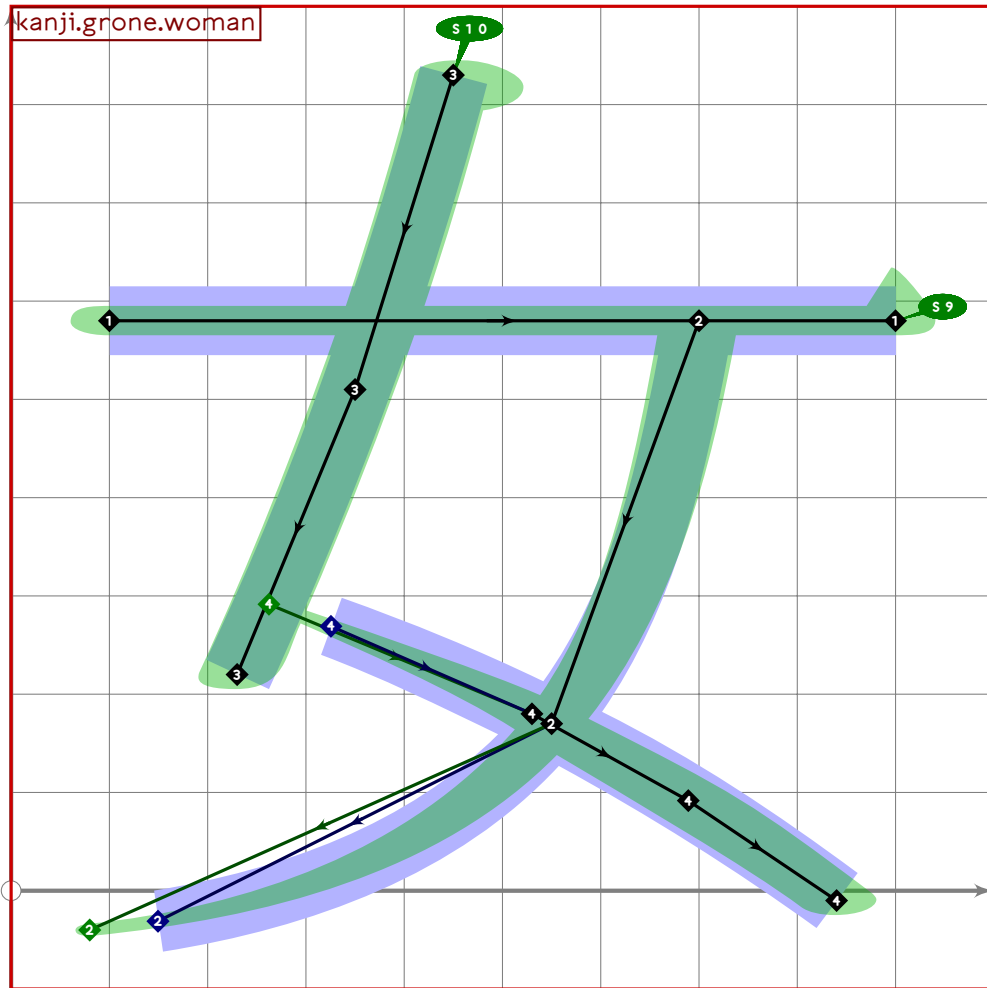
```



```

680
681 vardef tsu_curve.kanji.grone.white =
682   add_proof_box("kanji.grone.white");
683   bp[sp]:=(500,810)-(440,620);
684   bq[sp]:=(1.7,1.7)-(1,1);
685   bo_serif[sp][0]:=10;
686   sp:=sp*1;
687   tsu_xform(identity yscaled (620/770))(tsu_curve.kanji.grone.day);
688 enddef;

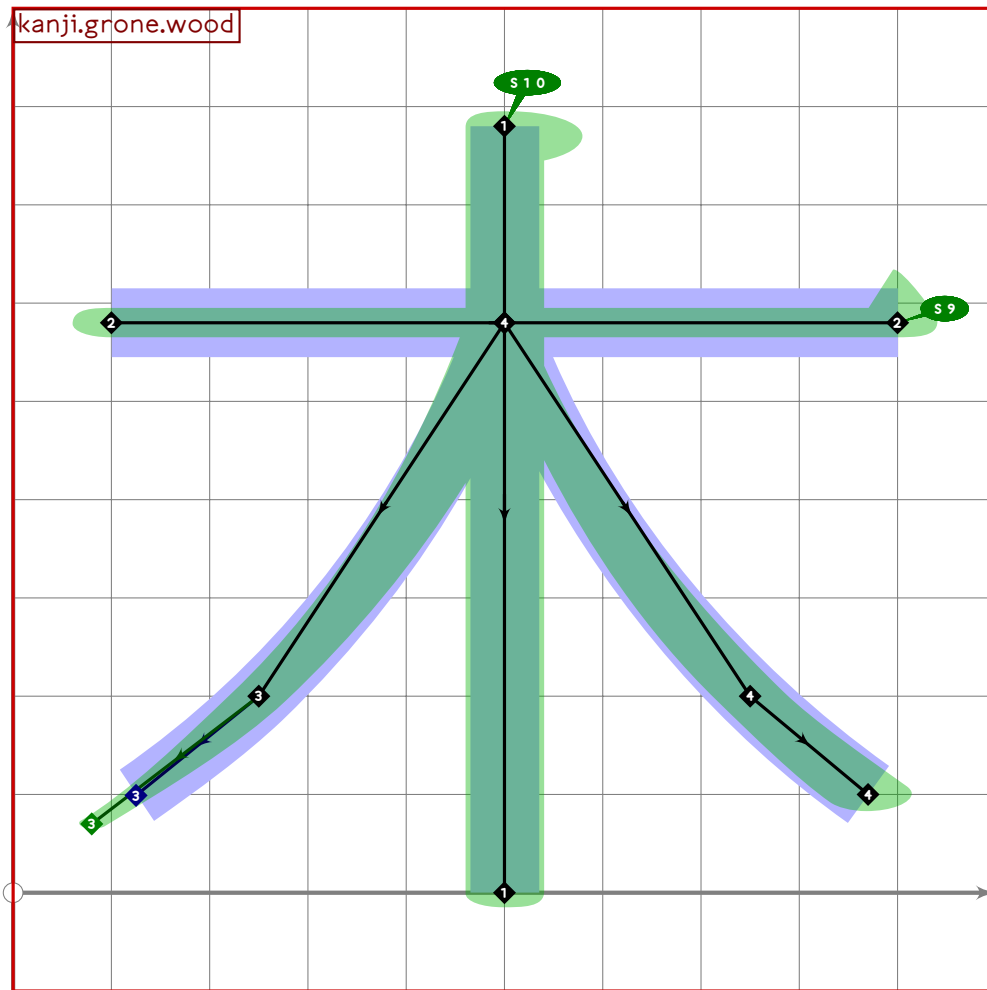
```



```

689
690 vardef tsu_curve.kanji.grone.woman =
691   add_proof_box("kanji.grone.woman");
692   bp[sp]:=(100,580)-(900,580);
693   bq[sp]:=(1.6,1.6)-(1.6,1.6);
694   bo_serif[sp][1]:=9;
695   bp[sp*1]:=(700,580){curl 0}..(550,170)..{curl 0.3}(80,-40);
696   bq[sp*1]:=(1.6,1.6)-(1.4,1.4)-(0.94,0.94);
697   bp[sp*2]:=(450,830)..(350,510)..(230,220);
698   bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
699   bo_serif[sp*2][0]:=10;
700   bp[sp*3]:=(point 1.75 of bp[sp*2])..(530,180)..(840,-10);
701   bp[sp*3]:=insert_nodes(bp[sp*3])(1.5);
702   bq[sp*3]:=(0.85,0.85)-(1.5,1.5)-(1.8,1.8)-(1.6,1.6);
703   sp:=sp*4;
704 enddef;

```



```

705
706 vardef tsu_curve.kanji.grone.wood =
707   add_proof_box("kanji.grone.wood");
708   bp[sp]:=(500,780)-(500,0);
709   bq[sp]:=(1.6,1.6)-(1.6,1.6);
710   bo_serif[sp][0]:=10;
711   bp[sp*1]:=(100,580)-(900,580);
712   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
713   bo_serif[sp*1][1]:=9;
714   bp[sp*2]:=(500,580)..(250,200)..(80,70);
715   bq[sp*2]:=(1.6,1.6)..(1.3,1.3)..(0.9,0.9);
716   bp[sp*3]:=(500,580)..(750,200)..(870,100);
717   bq[sp*3]:=(1.1,1.1)..(1.5,1.5)..(1.7,1.7);
718   sp:=sp*4;
719 enddef;

```

# gradetwo.mp

1 %

2 % Grade Two kanji used on more than one page

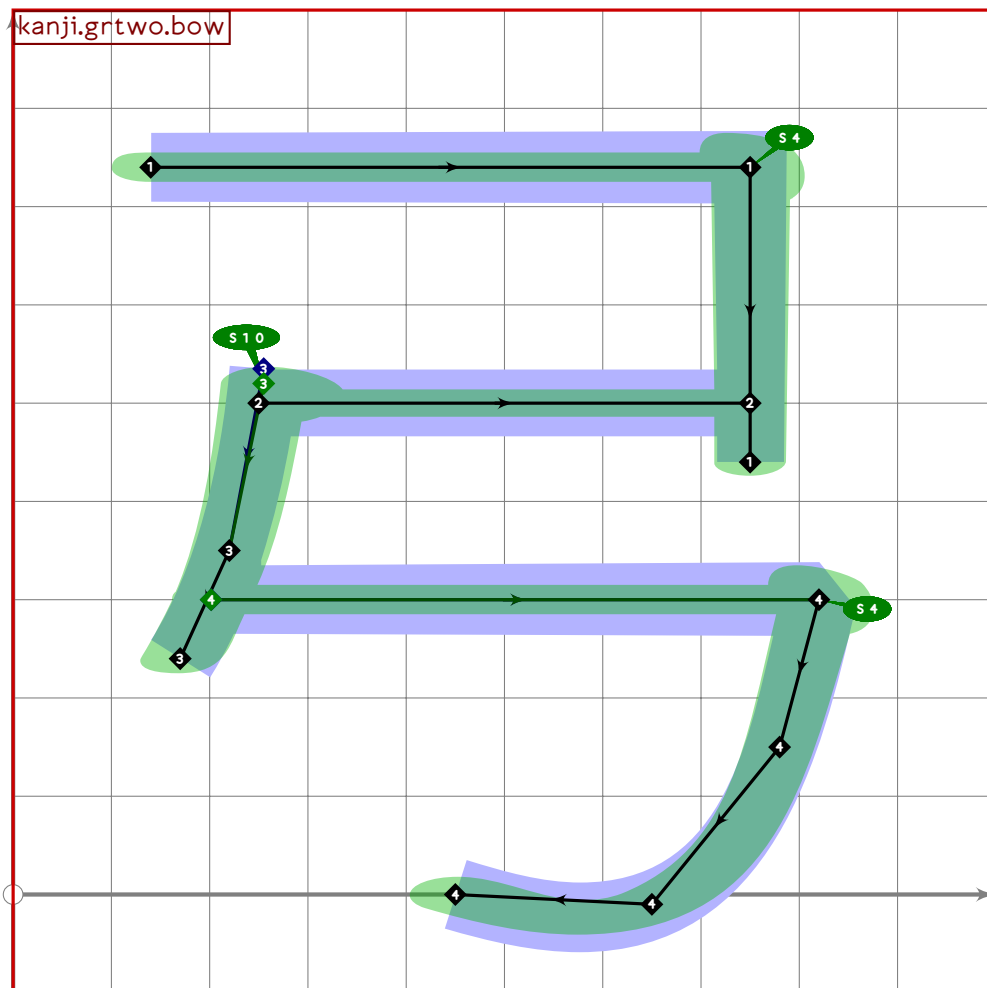
3 % Copyright (C) 2011 Matthew Skala

4 %

5-29 [Standard copyright notice]

30

31



32

33 vardef tsu\_curve.kanji.grtwo.bow =

34 add\_proof\_box("kanji.grtwo.bow");

35 bp[sp]:=(140,740)-(750,740)-(750,440);

36 bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.5,1.5);

37 bo\_tip[sp][1]:=1;

38 bo\_serif[sp][1]:=4;

39 bp[sp\*1]:=(250,500)-(750,500);

40 bq[sp\*1]:=(1.5,1.5)-(1.5,1.5);

41 bp[sp\*2]:=(255,535-15\*mincho)..tension 1.2..(220,350)..(170,240);

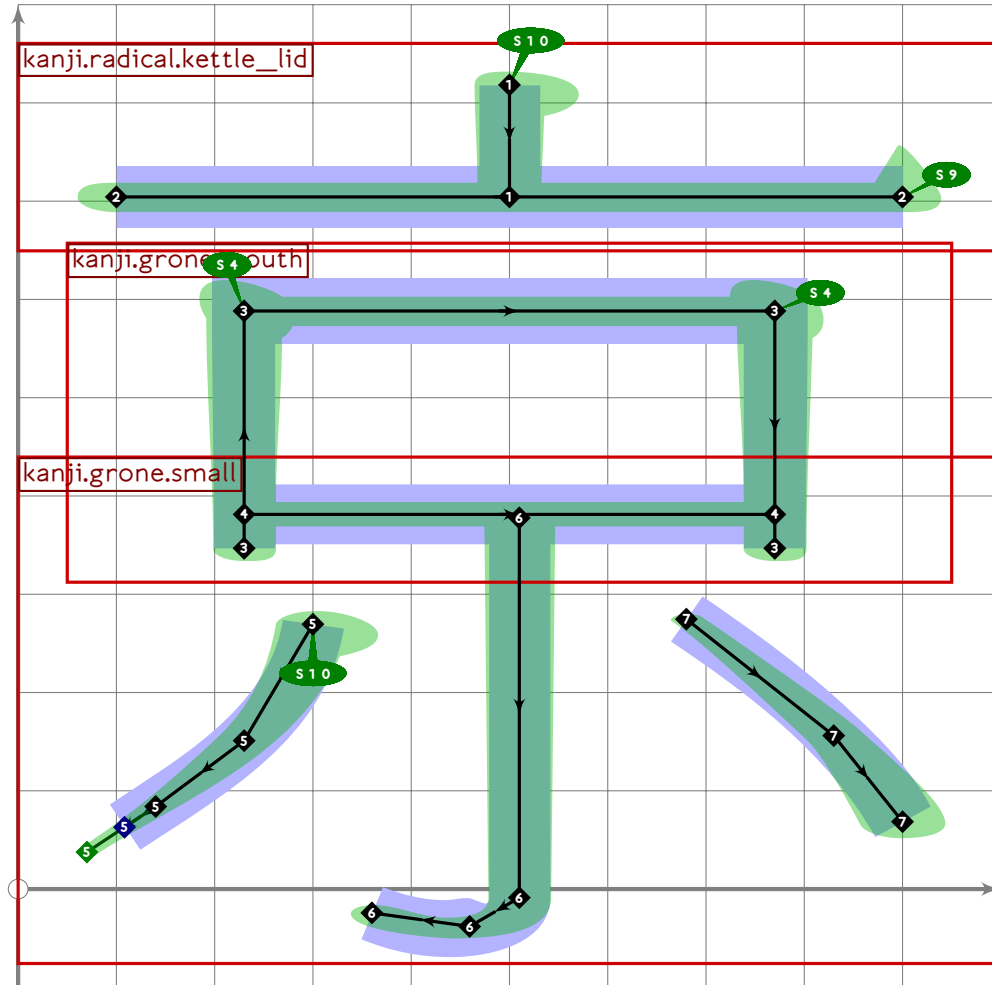
42 bq[sp\*2]:=(1.7,1.7)-(1.6,1.6)-(1.6,1.6);

43 bo\_serif[sp\*2][0]:=10;

```

44 bp[sp+3]:=(bp[sp+2] intersectionpoint ((0,300)-(1000,300)))-
45 (820,300)..tension 1.7..(780,150)..(650,-10)..{curl 0.1}(450,0);
46 bq[sp+3]:=(1.6,1.6)-(1.6,1.6)-(1.5,1.5)-(1.7,1.7)-(1.8,1.8);
47 bo_tip[sp+3][1]:=1;
48 bo_serif[sp+3][1]:=4;
49 sp:=sp+4;
50 enddef;

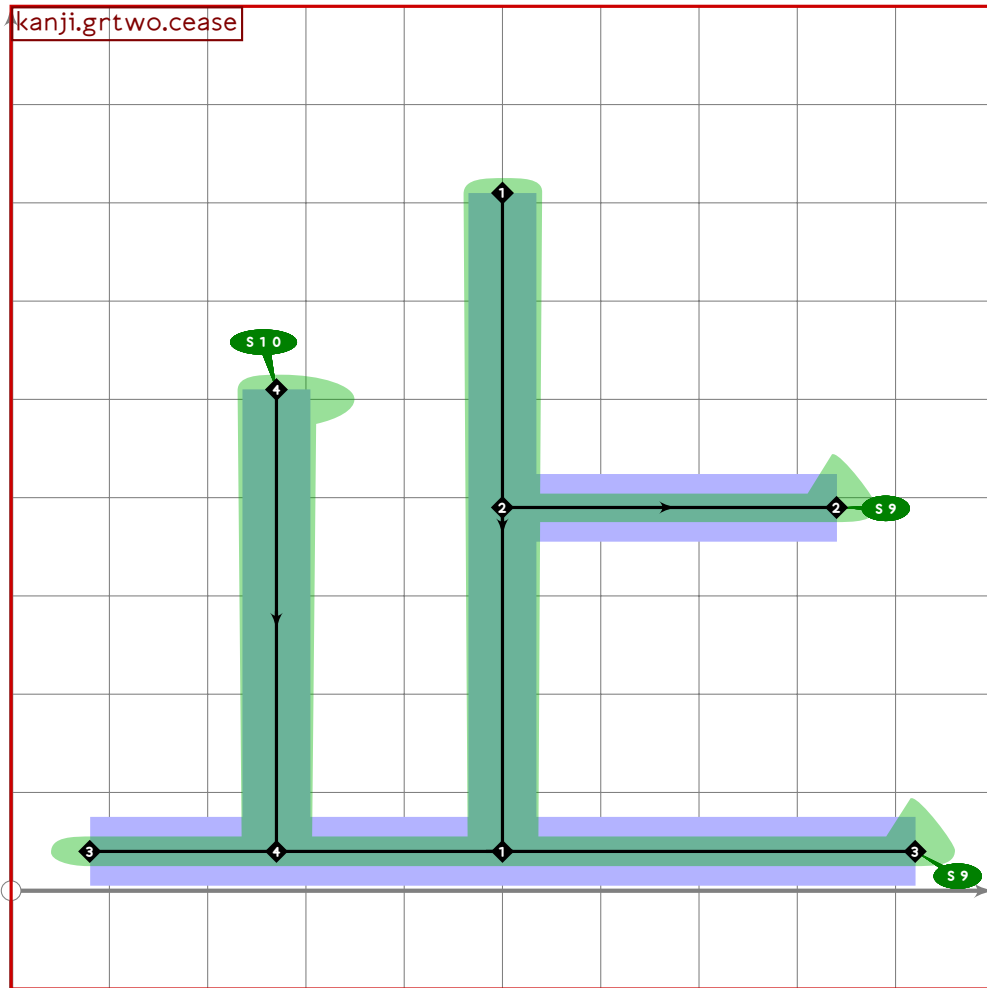
```



```

51
52 vardef tsu_curve.kanji.grtwo.capital =
53   add_proof_box("kanji.grtwo.capital");
54   build_kanji.level(build_kanji.tb(650,-20)
55     (tsu_curve.kanji.radical.kettle_lid)
56     (build_kanji.tb(500,110)
57       (build_kanji.sscale(xscaled 0.9)(tsu_curve.kanji.grone.mouth))
58       (tsu_curve.kanji.grone.small)));
59   bo_serif[sp-2][0]:=whatever;
60 enddef;
61

```

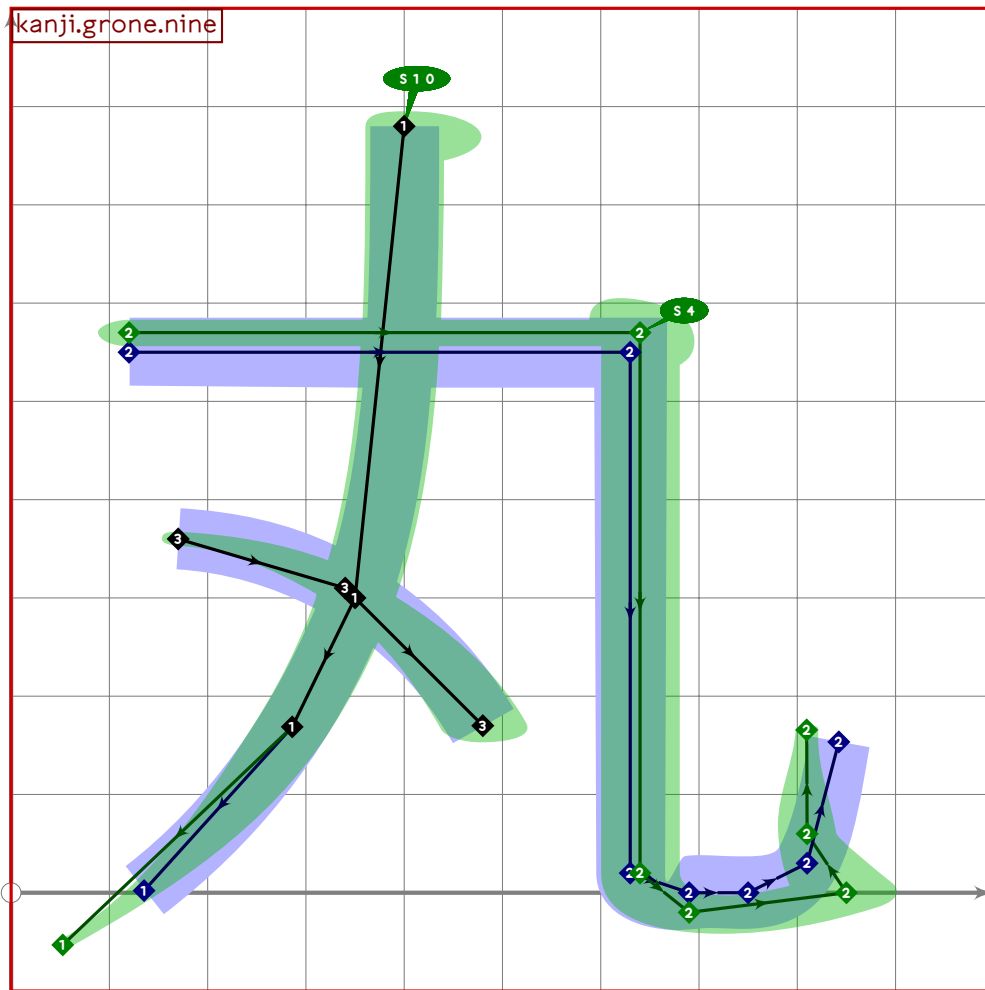


```

62 % can't use "stop," it is reserved by Metafont
63 vardef tsu_curve.kanji.grtwo.cease =
64   add_proof_box("kanji.grtwo.cease");
65   bp[sp]:=(500,710)-(500,40);
66   bq[sp]:=(1.6,1.6)-(1.5,1.5);
67   bp[sp*1]:=(500,390)-(840,390);
68   bq[sp*1]:=(1.5,1.5)-(1.6,1.6);
69   bo_serif[sp*1][1]:=9;
70   bp[sp*2]:=(80,40)-(920,40);
71   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
72   bo_serif[sp*2][1]:=9;
73   bp[sp*3]:=(270,510)-(270,40);
74   bq[sp*3]:=(1.6,1.6)-(1.5,1.5);
75   bo_serif[sp*3][0]:=10;
76   sp:=sp*4;
77 enddef;

```

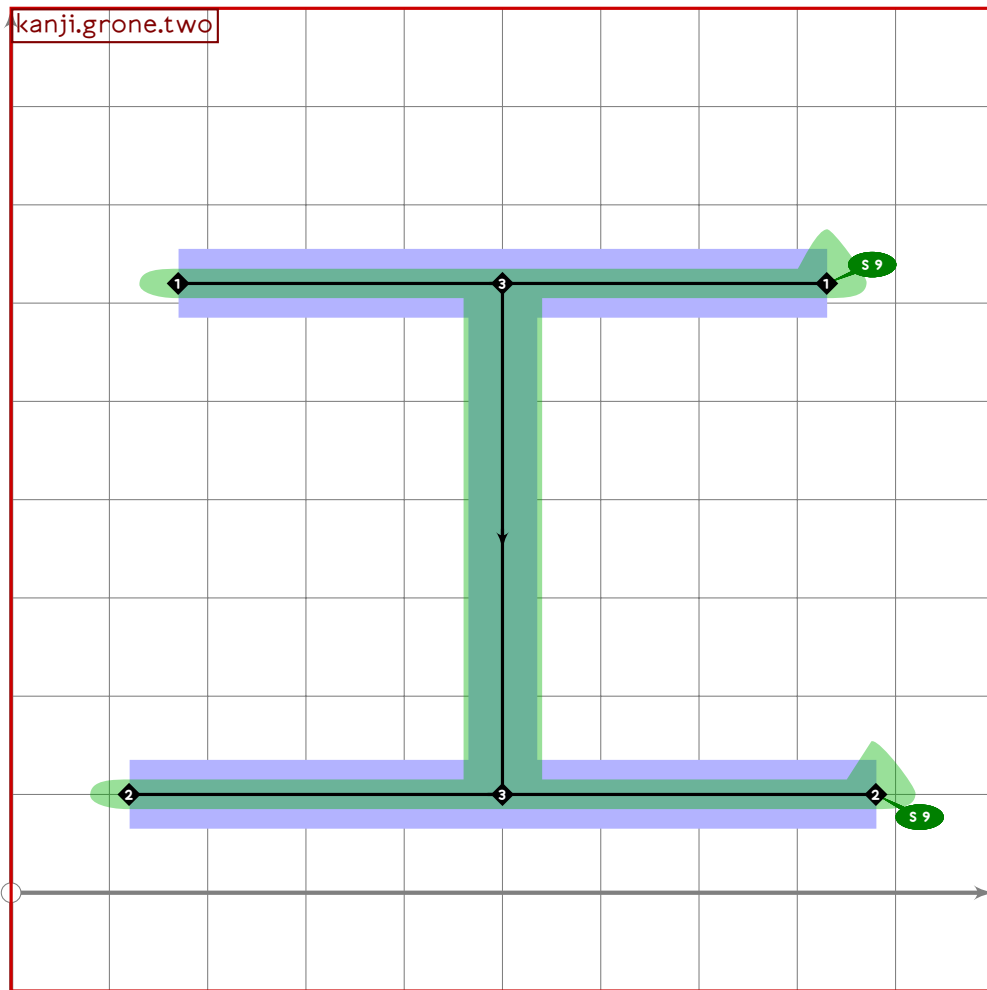




```

78
79 vardef tsu_curve.kanji.grtwo.circle =
80   add_proof_box("kanji.grtwo.circle");
81   tsu_curve.kanji.grone.nine;
82   bp[sp]:=(170,360)..(340,310)..(480,170);
83   bq[sp]:=(1,1)-(1.4,1.4)-(1.7,1.7);
84   sp:=sp*1;
85 enddef;

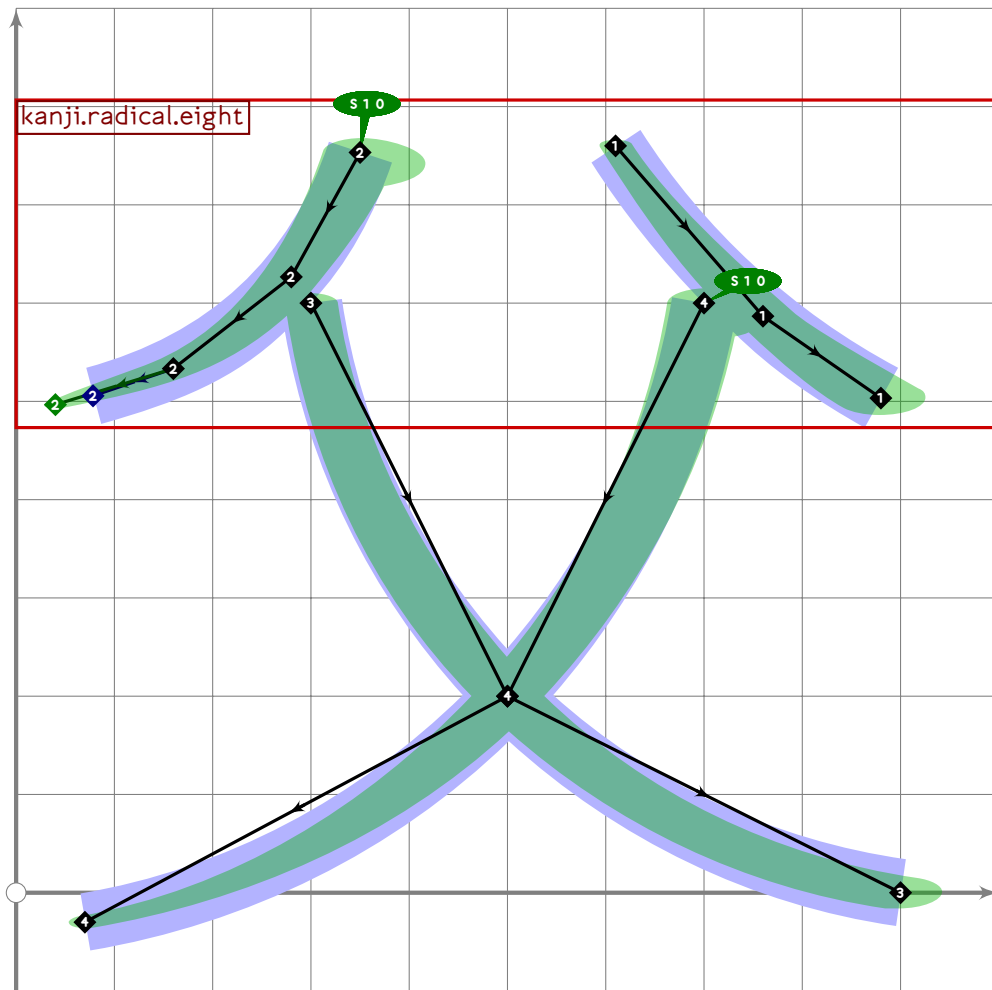
```



```

86
87 vardef tsu_curve.kanji.grtwo.craft =
88   add_proof_box("kanji.grtwo.craft");
89   tsu_curve.kanji.grone.two;
90   bp[sp]:=(point 0.5 of bp[sp-2])-(point 0.5 of bp[sp-1]);
91   bq[sp]:=(1.6,1.6)-(1.6,1.6);
92   sp:=sp*1;
93 enddef;

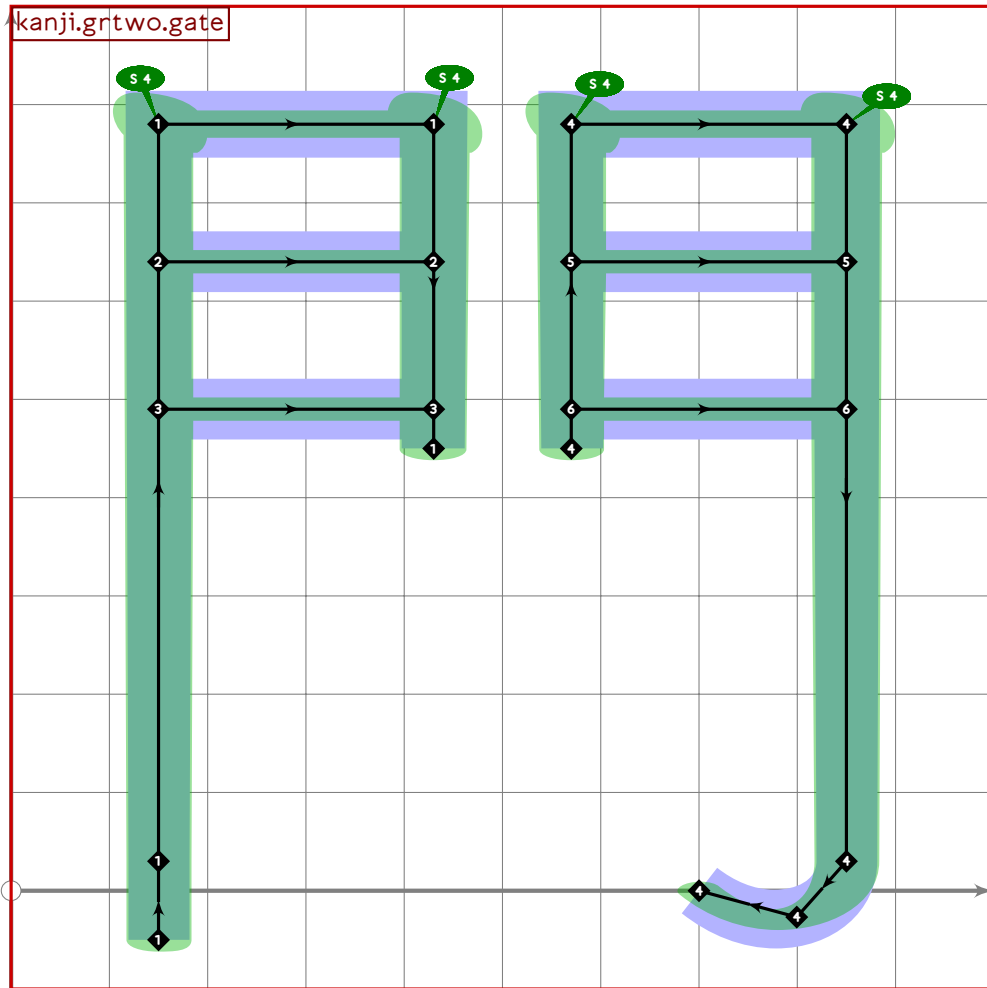
```



```

94
95 vardef tsu_curve.kanji.grtwo.father =
96   add_proof_box("kanji.grtwo.father");
97   build_kanji.level(build_kanji.tb(700,300)
98     (tsu_xform(identity shifted (0,-180))(tsu_curve.kanji.radical.eight))
99     (bp[sp]:=(300,600)..(500,200)..(900,0);
100    bq[sp]:=(1.3,1.3)-(1.5,1.5)-(1.7,1.7);
101    bp[sp+1]:=(700,600)..(500,200)..(70,-30);
102    bq[sp+1]:=(1.6,1.6)-(1.5,1.5)-(1,1);
103    bo_serif[sp+1][0]:=10;
104    sp:=sp+2;));
105 enddef;

```



```

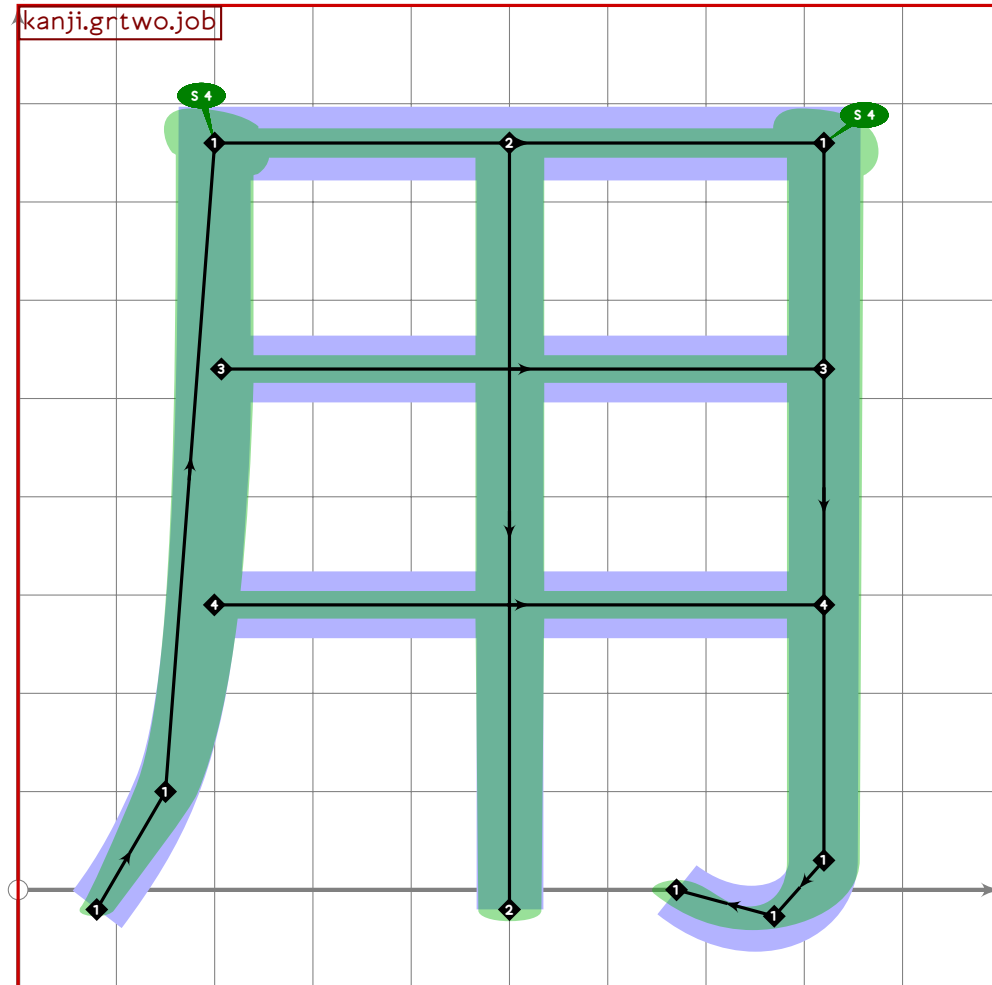
106
107 vardef tsu_curve.kanji.grtwo.gate =
108   add_proof_box("kanji.grtwo.gate");
109   bp[sp]:=(150,-50)-(150,30)-(150,780)-(430,780)-(430,450);
110   bq[sp]:=(1.5,1.5)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.5,1.5);
111   bo_tip[sp][2]:=1;
112   bo_tip[sp][3]:=1;
113   bo_serif[sp][2]:=4;
114   bo_serif[sp][3]:=4;
115   bp[sp*1]:=(150,640)-(430,640);
116   bq[sp*1]:=(1.5,1.5)-(1.5,1.5);
117   bp[sp*2]:=(150,490)-(430,490);
118   bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
119   bp[sp*3]:=(570,450)-(570,780)-(850,780);
120   bq[sp*3]:=(1.5,1.5)-(1.6,1.6)-(1.6,1.6);
121   build_kanji.add_jtail(sp*3);
122   bo_tip[sp*3][1]:=1;
123   bo_tip[sp*3][2]:=1;
124   bo_serif[sp*3][1]:=4;
125   bo_serif[sp*3][2]:=4;
126   bp[sp*4]:=(570,640)-(850,640);

```

```

127 bq[sp*4]:=(1.5,1.5)-(1.5,1.5);
128 bp[sp*5]:=(570,490)-(850,490);
129 bq[sp*5]:=(1.5,1.5)-(1.5,1.5);
130 for i=sp upto sp*6: bo_size[i]:=90; endfor;
131 sp:=sp*6;
132 enddef;

```



```

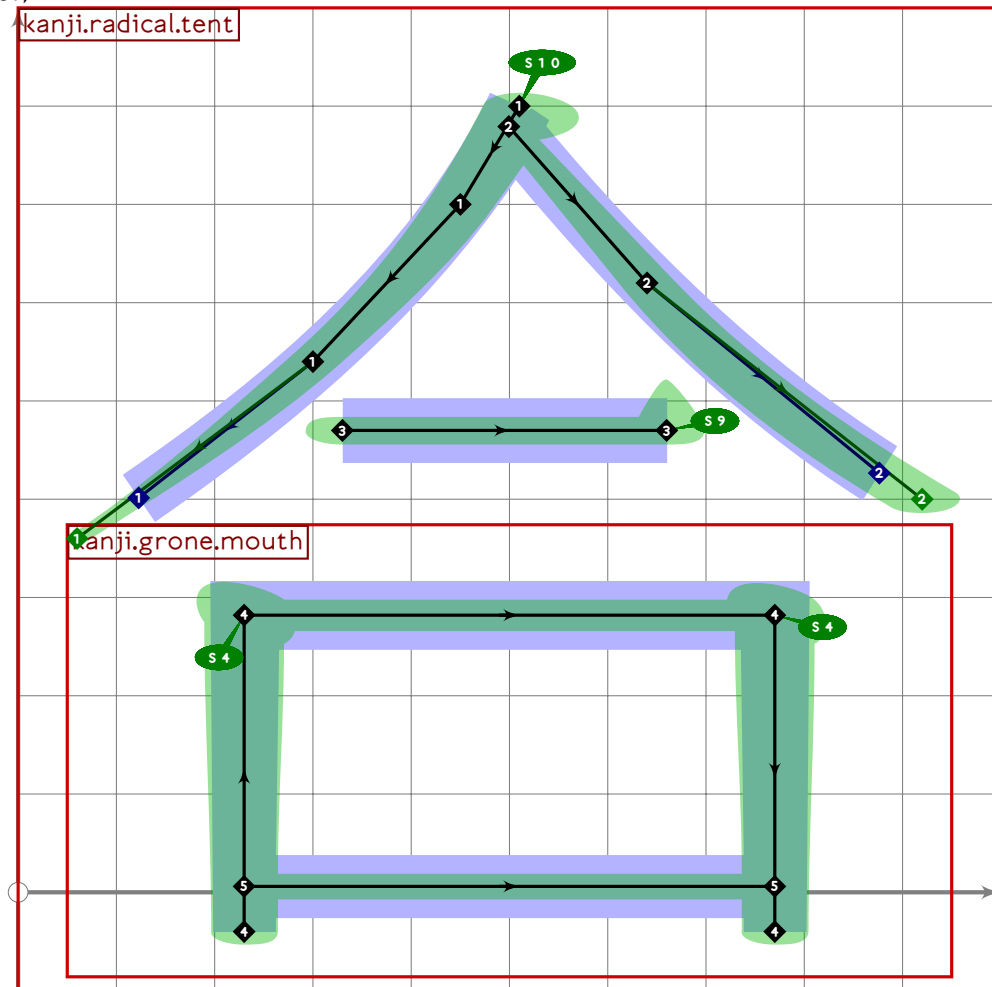
133
134 vardef tsu_curve.kanji.grtwo.job =
135   add_proof_box("kanji.grtwo.job");
136   bp[sp]:=(80,-20)..(150,100)..{up}(200,760){right}-(820,760);
137   bq[sp]:=(1,1)-(1.4,1.4)-(1.6,1.6)-(1.6,1.6);
138   build_kanji.add_jtail(sp);
139   bo_tip[sp][2]:=0.8;
140   bo_tip[sp][3]:=1;
141   bo_serif[sp][2]:=4;
142   bo_serif[sp][3]:=4;
143   bp[sp*1]:=(500,760)-(500,20);
144   bq[sp*1]:=(1.5,1.5)-(1.4,1.4);
145   bp[sp*2]:=(bp[sp] intersectionpoint ((0,530)-(1000,530)))-(820,530);
146   bq[sp*2]:=(1.5,1.5)-(1.5,1.5);
147   bp[sp*3]:=(bp[sp] intersectionpoint ((0,290)-(1000,290)))-(820,290);

```

```

148 bq[sp+3]:=(1.5,1.5)-(1.5,1.5);
149 sp:=sp*4;
150 enddef;

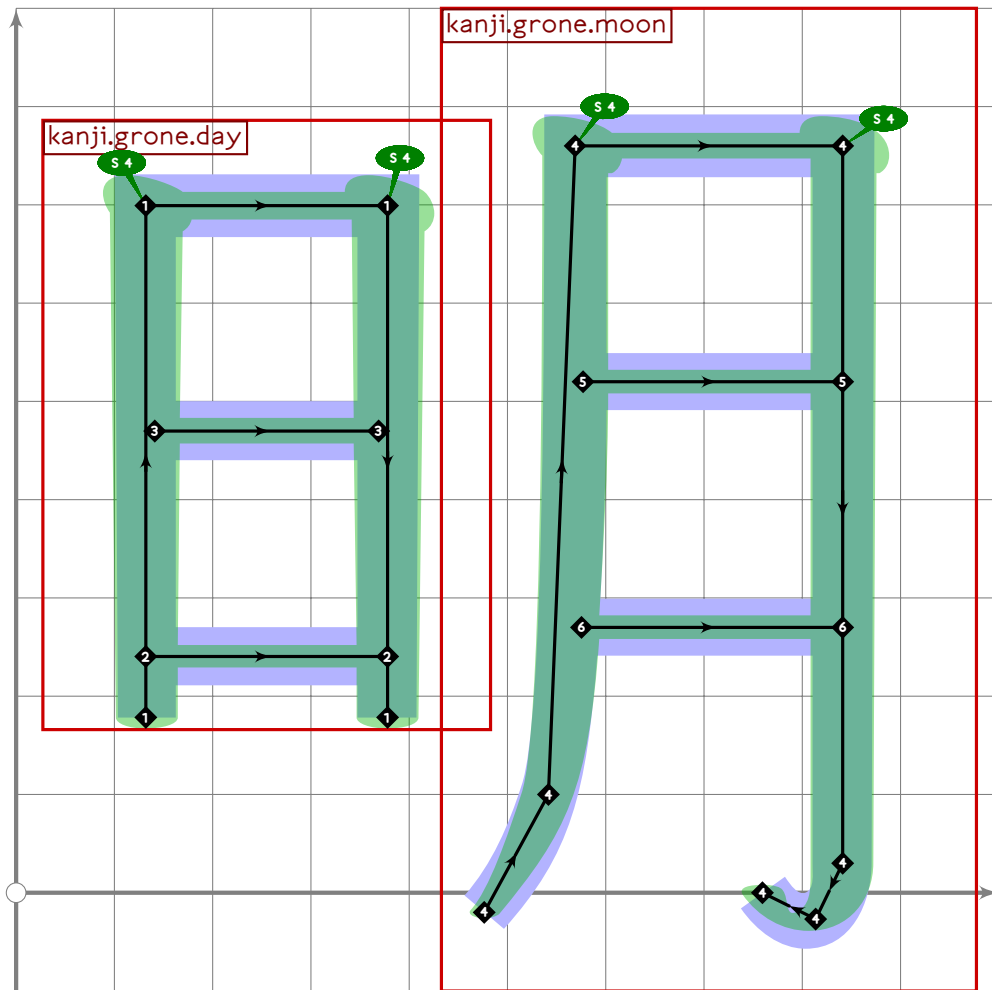
```



```

151
152 vardef tsu_curve.kanji.grtwo.join =
153   add_proof_box("kanji.grtwo.join");
154   build_kanji.level(
155     tsu_curve.kanji.radical.tent;
156     tsu_xform(identity shifted (-500,0) xyscaled (0.9,0.46) shifted (500,-40))
157     (tsu_curve.kanji.grone.mouth);
158   );
159 enddef;

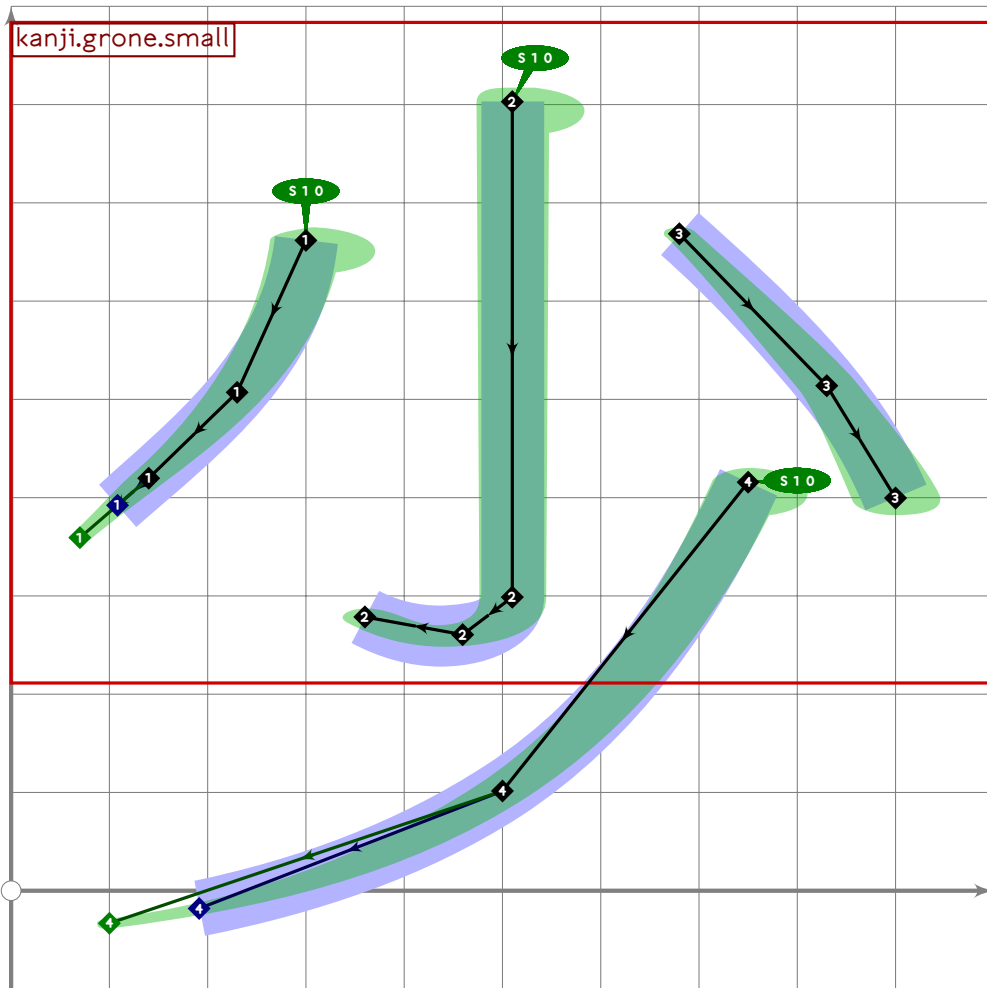
```



```

160
161 vardef tsu_curve.kanji.grtwo.light =
162   add_proof_box("kanji.grtwo.light");
163   build_kanji.level(build_kanji.lr(460,0)
164     (tsu_curve.kanji.leftrad.day)
165     (tsu_curve.kanji.grone.moon));
166 enddef;

```

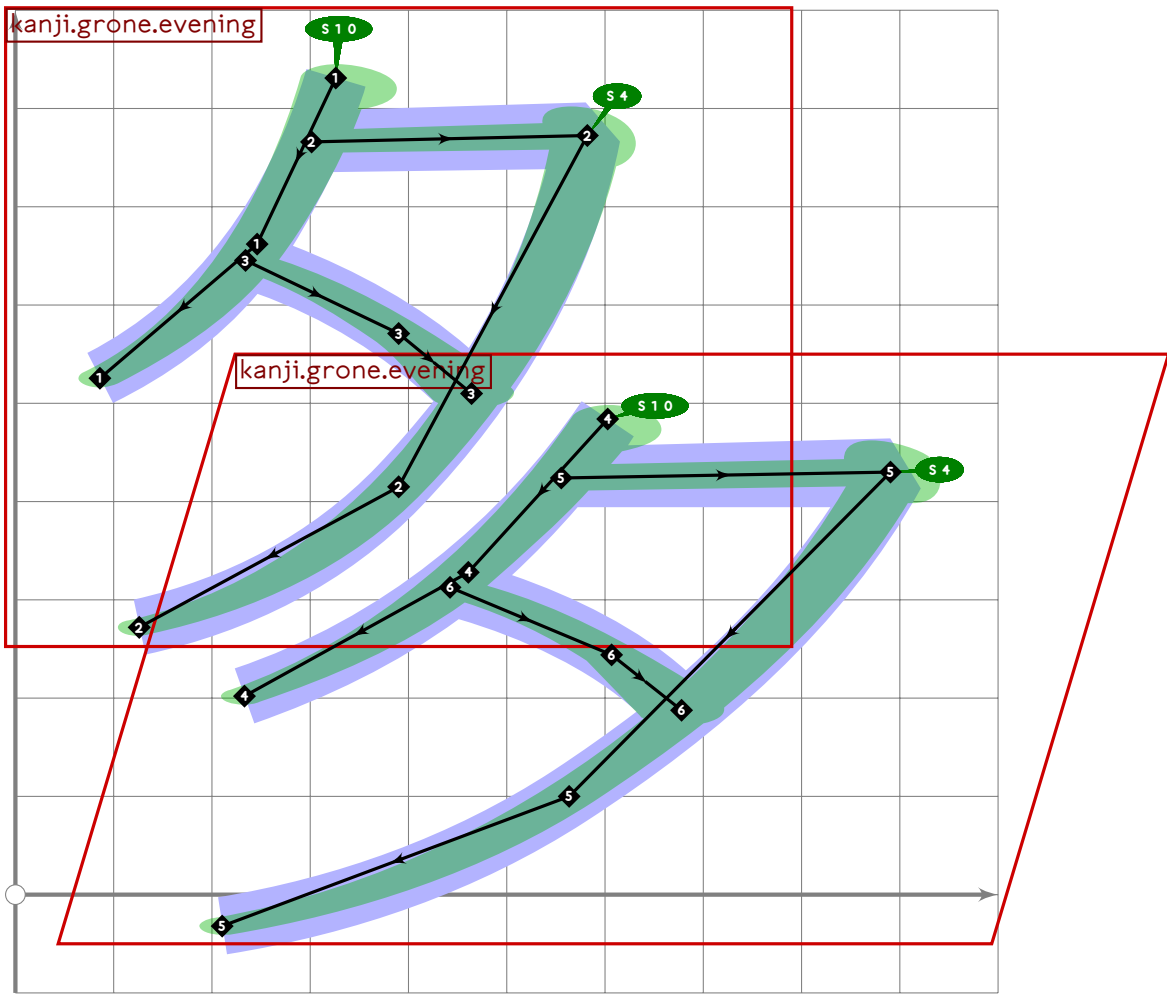


```

167
168 vardef tsu_curve.kanji.grtwo.little =
169   add_proof_box("kanji.grtwo.little");
170   build_kanji.level(build_kanji.tb(350,210)
171     (tsu_curve.kanji.grone.small)
172     (
173       bp[sp]=(750,780){curl 0.1}..(500,220)..(100,-20);
174       bq[sp]=(1.6,1.6)-(1.4,1.4)-(0.9,0.9);
175       bo_serif[sp][0]=10;
176       sp:=sp+1;
177     ));
178 enddef;

```

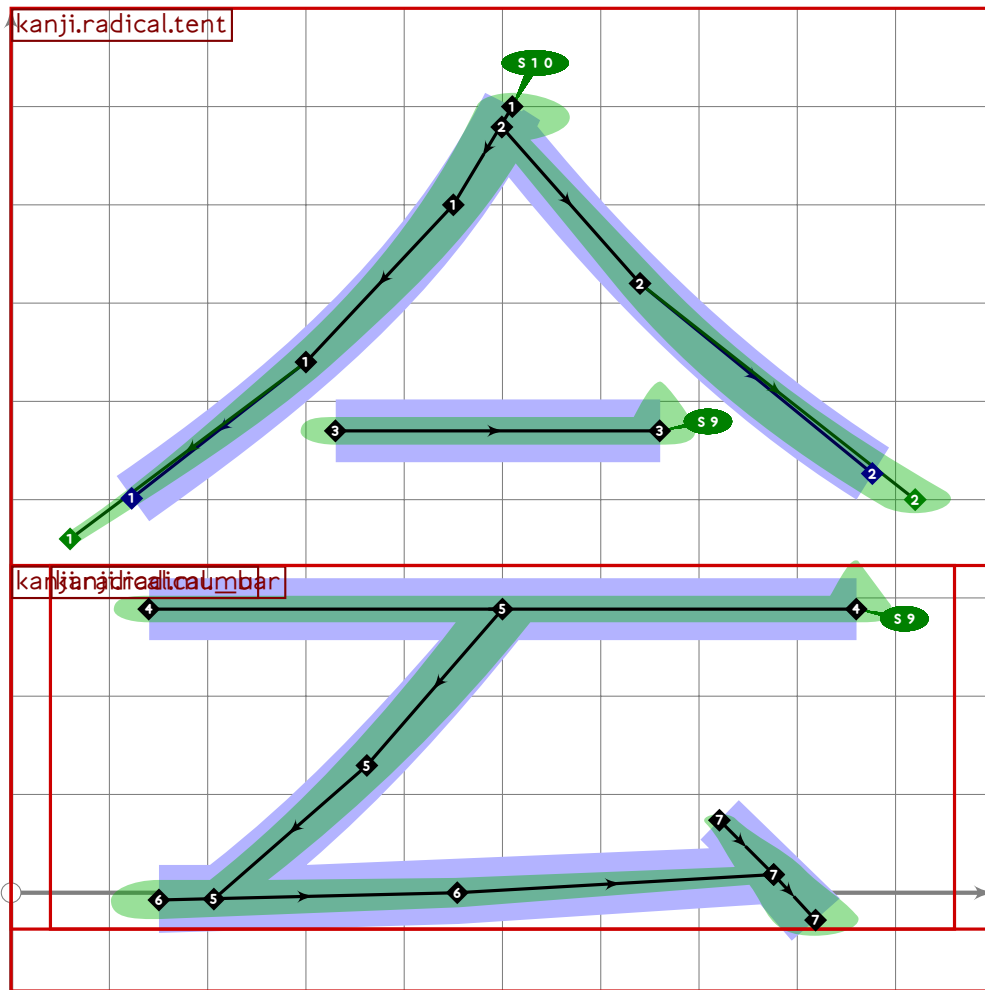




```

179
180 vardef tsu_curve.kanji.grtwo.many =
181   add_proof_box("kanji.grtwo.many");
182   tsu_xform(identity shifted (-50,-850) xyscaled (0.8,0.65) shifted (30,870))
183     (tsu_curve.kanji.grone.evening);
184   tsu_xform(identity shifted (-50,50)
185     xyscaled (0.95,0.6) slanted 0.3 shifted (100,-20))
186     (tsu_curve.kanji.grone.evening);
187 enddef;

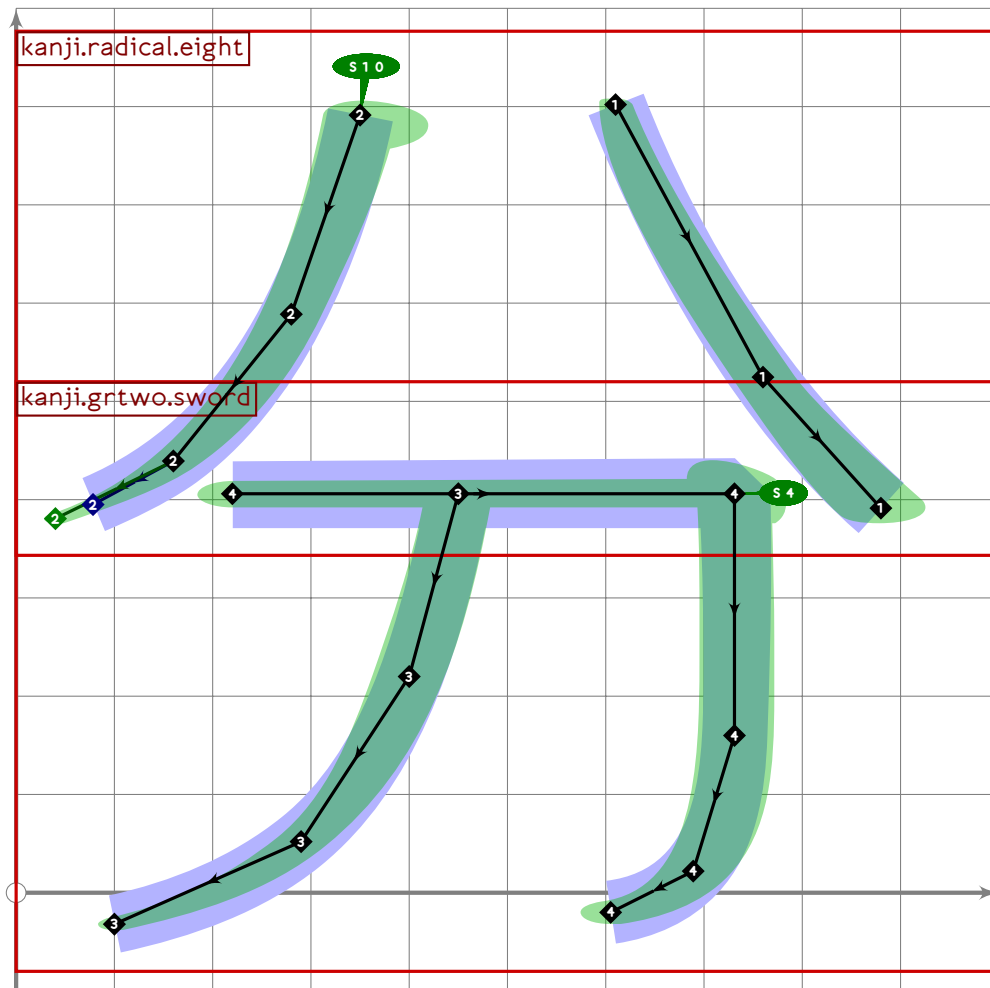
```



```

188
189 vardef tsu_curve.kanji.grtwo.meet =
190   add_proof_box("kanji.grtwo.meet");
191   build_kanji.level(
192     tsu_curve.kanji.radical.tent;
193     tsu_xform(identity yscaled 0.37)(tsu_curve.kanji.radical.mu_bar);
194   );
195 enddef;

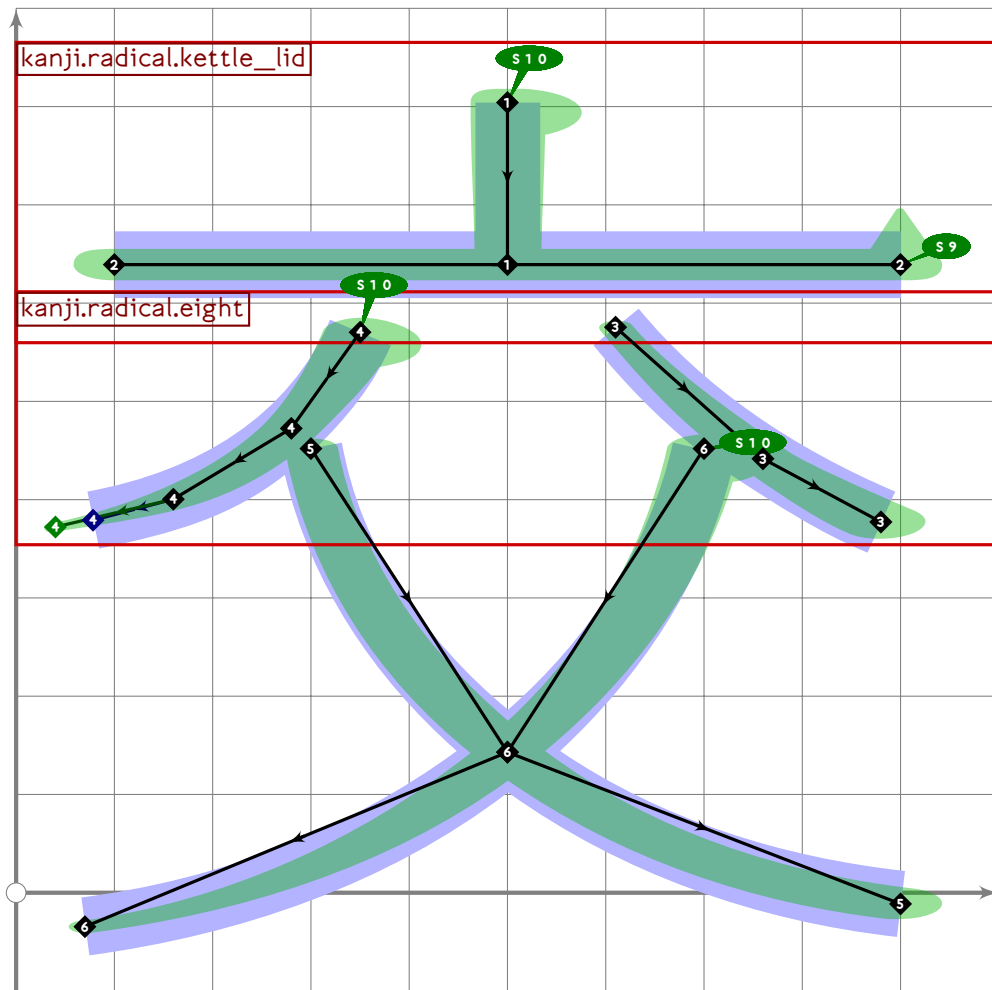
```



```

196
197 vardef tsu_curve.kanji.grtwo.minute =
198   add_proof_box("kanji.grtwo.minute");
199   build_kanji.level(build_kanji.tb(430,120)
200     (tsu_curve.kanji.radical.eight)
201     (tsu_curve.kanji.grtwo.sword;
202       bp[sp-1]:=bp[sp-1] shifted (-500,0) xscaled 0.7 shifted (500,0));
203 enddef;

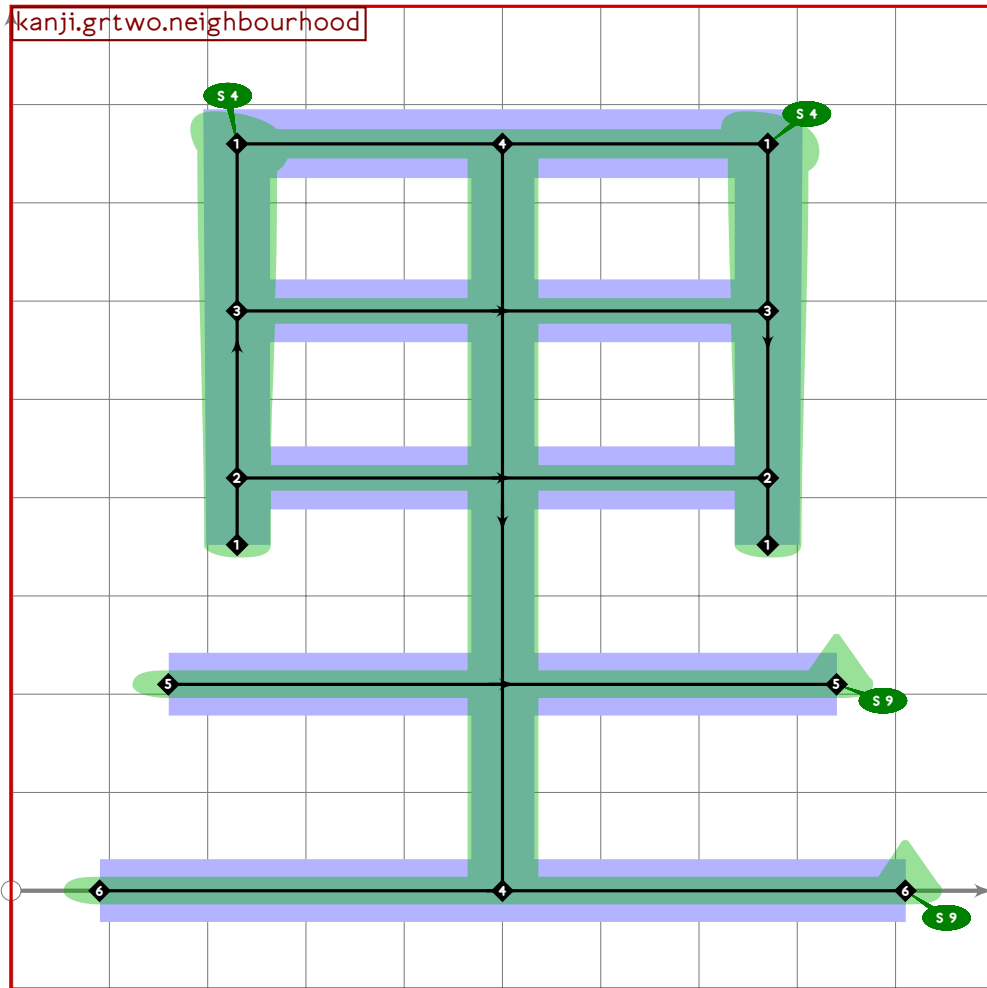
```



```

204
205 vardef tsu_curve.kanji.grtwo.mix =
206   add_proof_box("kanji.grtwo.mix");
207   build_kanji.level(build_kanji.tb(610,70)
208     (tsu_curve.kanji.radical.kettle_lid)
209     (tsu_curve.kanji.grtwo.father));
210 enddef;

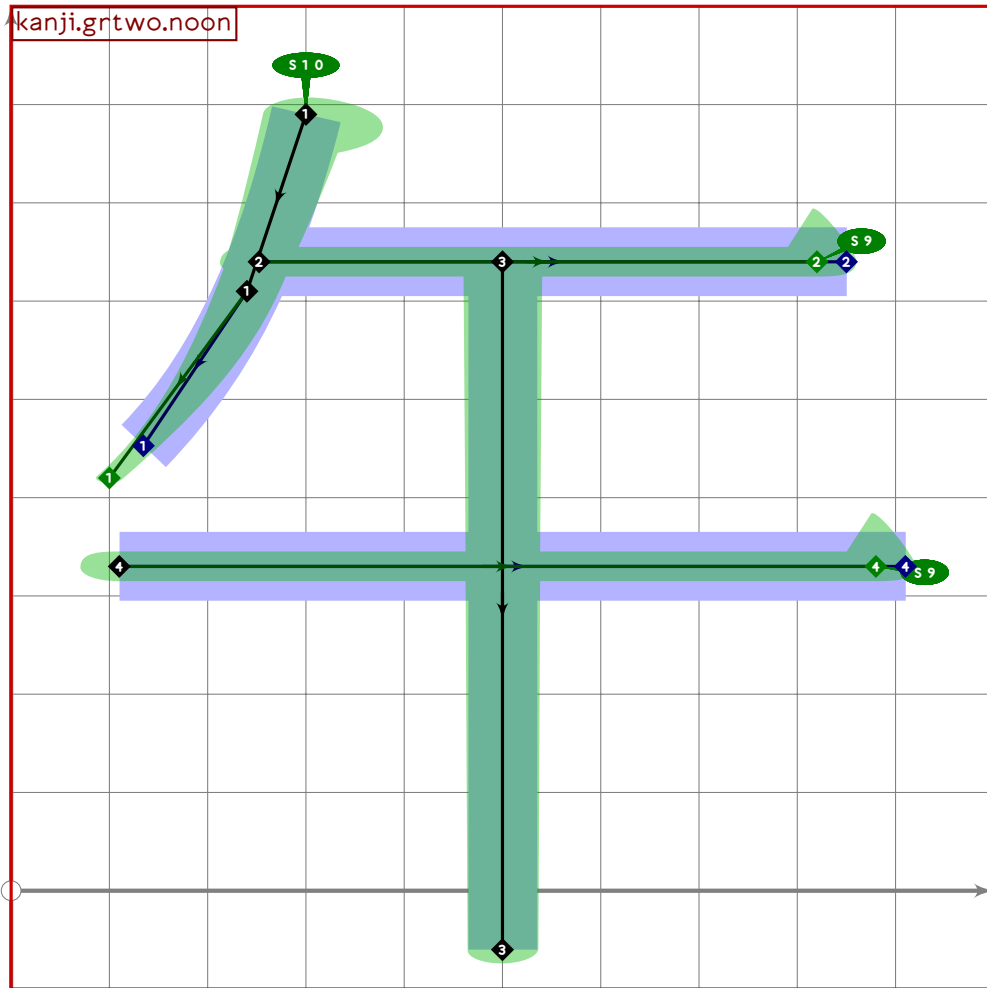
```



```

211
212 vardef tsu_curve.kanji.grtwo.neighbourhood =
213   add_proof_box("kanji.grtwo.neighbourhood");
214   build_kanji.box((230,760),(770,420));
215   bp[sp]:=(230,590)-(770,590);
216   bq[sp]:=(1.5,1.5)-(1.5,1.5);
217   bp[sp*1]:=(500,760)-(500,0);
218   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
219   bp[sp*2]:=(160,210)-(840,210);
220   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
221   bo_serif[sp*2][1]:=9;
222   bp[sp*3]:=(90,0)-(910,0);
223   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
224   bo_serif[sp*3][1]:=9;
225   for i=sp*3 upto sp*3: bo_size[i]:=93; endfor;
226   sp:=sp*4;
227 enddef;

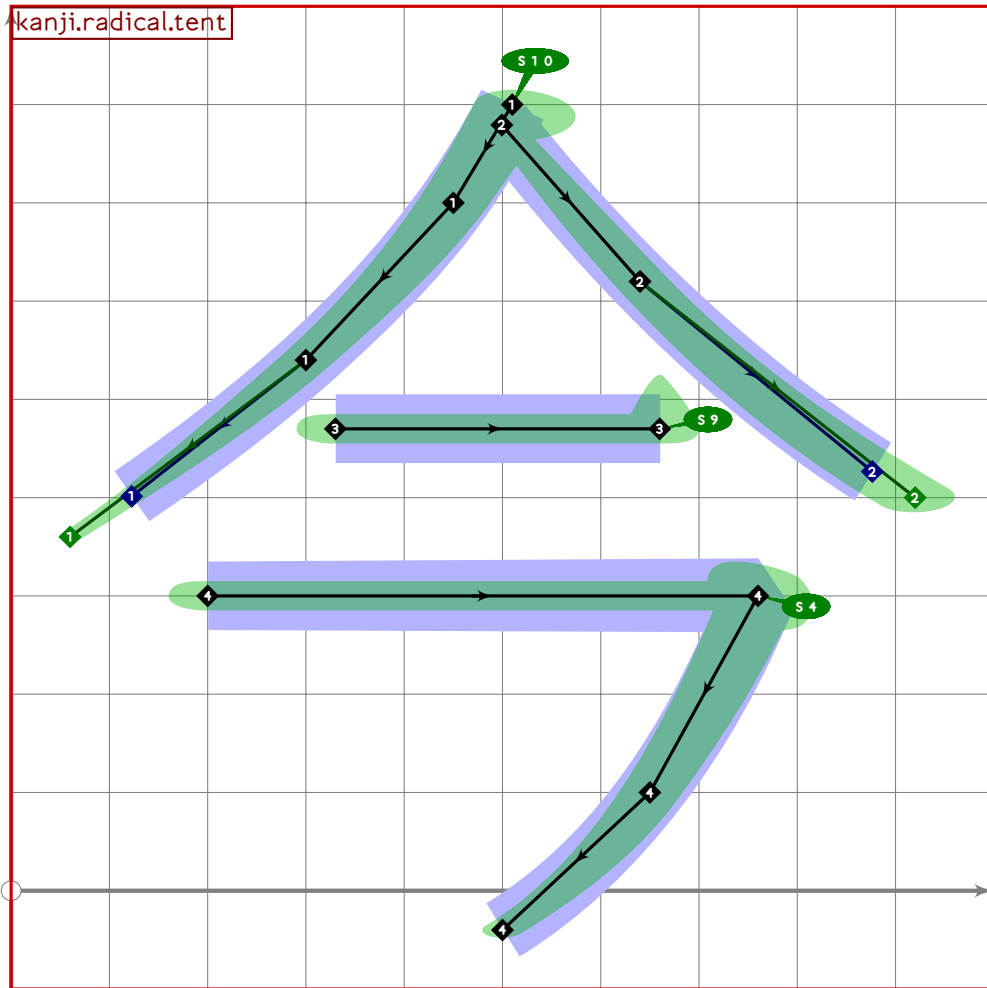
```



```

228
229 vardef tsu_curve.kanji.grtwo.noon =
230   add_proof_box("kanji.grtwo.noon");
231   bp[sp]:=(300,790)..tension 1.2..(240,610)..(100,420);
232   bq[sp]:=(1.7,1.7)-(1.4,1.4)-(0.9,0.9);
233   bo_serif[sp][0]:=10;
234   bp[sp*1]:=((0,640)-(1000,640)) intersectionpoint bp[sp])-
235     (850-30*mincho,640);
236   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
237   bo_serif[sp*1][1]:=9;
238   bp[sp*2]:=(500,640)-(500,-60);
239   bq[sp*2]:=(1.6,1.6)-(1.5,1.5);
240   bp[sp*3]:=(110,330)-(910-30*mincho,330);
241   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
242   bo_serif[sp*3][1]:=9;
243   sp:=sp*4;
244 enddef;

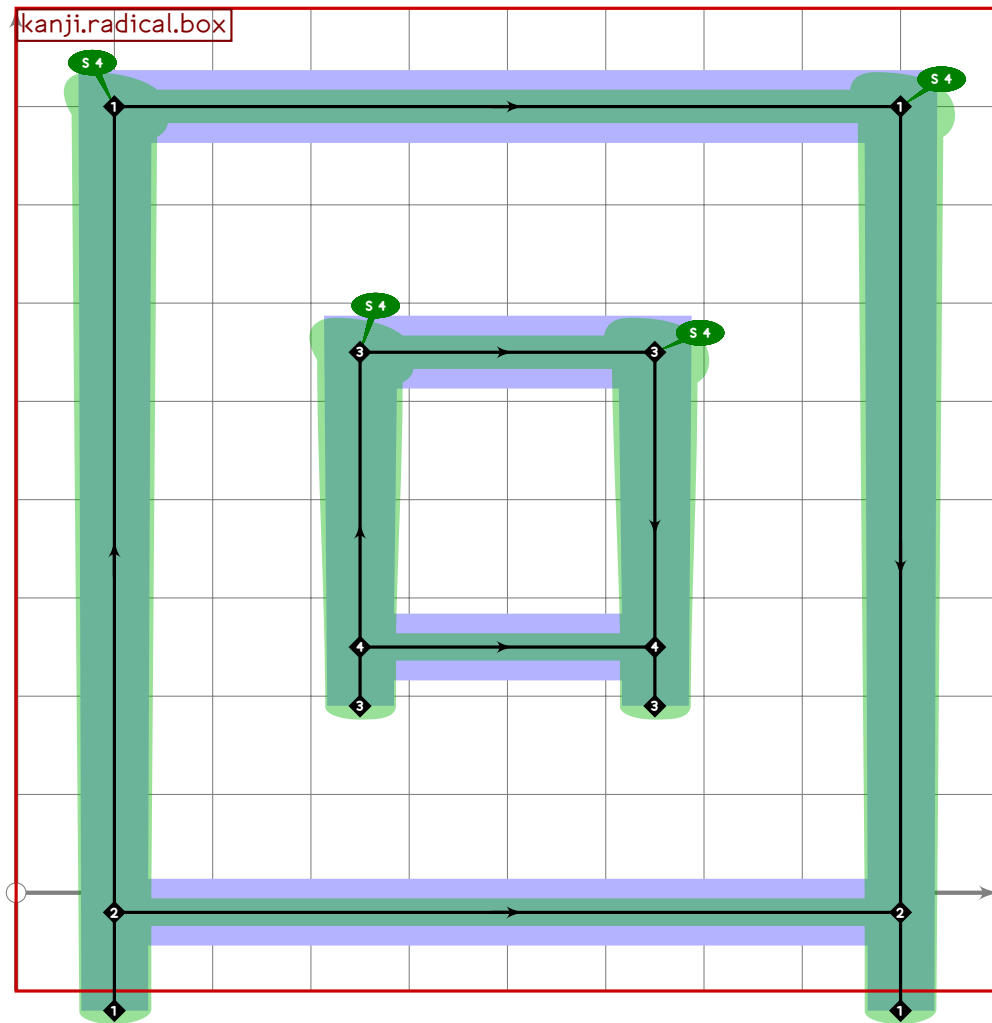
```



```

245
246 vardef tsu_curve.kanji.grtwo.now =
247   add_proof_box("kanji.grtwo.now");
248   tsu_curve.kanji.radical.tent;
249   bp[sp]:=(200,300)-(760,300)..tension 1.2..(650,100)..(500,-40);
250   bq[sp]:=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.1,1.1);
251   bo_serif[sp][1]:=4;
252   bo_tip[sp][1]:=0;
253   sp:=sp*1;
254 enddef;

```

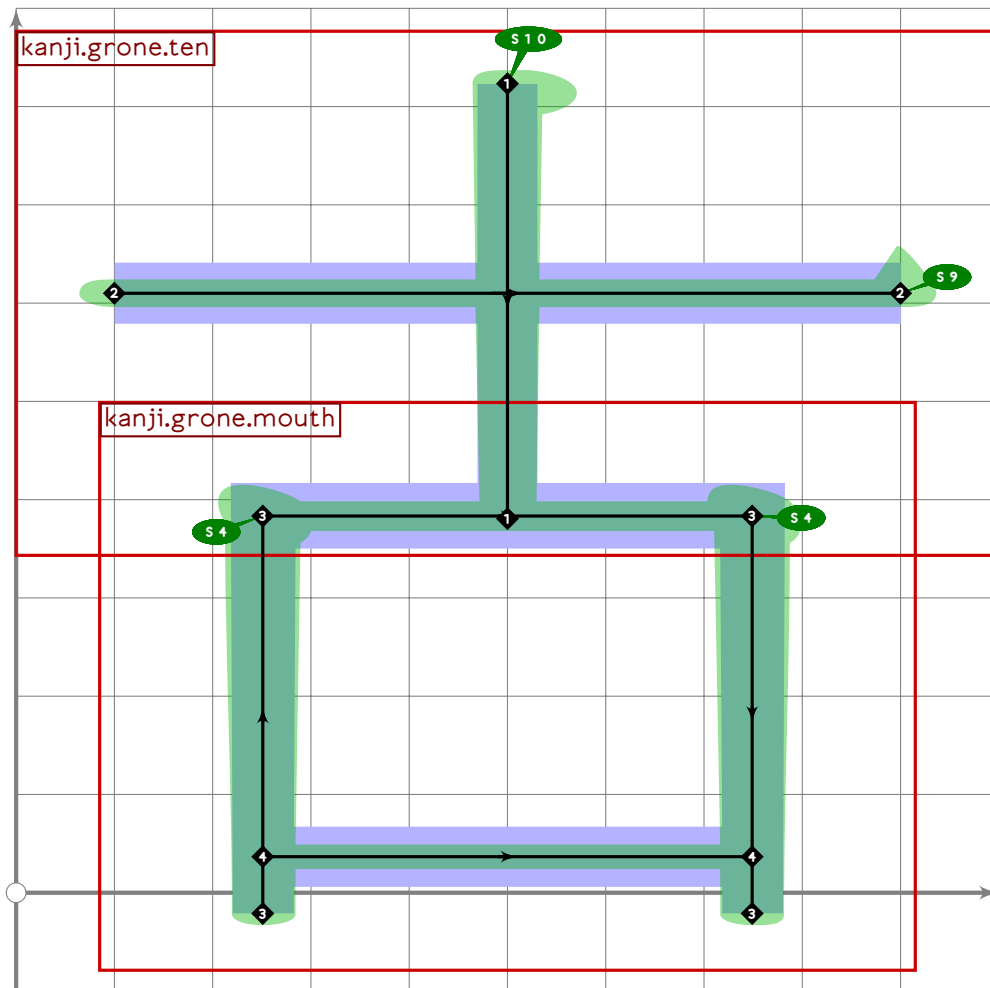


```

255
256 vardef tsu_curve.kanji.grtwo.occurrences =
257   add_proof_box("kanji.grtwo.occurrences");
258   tsu_curve.kanji.radical.box;
259   build_kanji.box((350,550),(650,250));
260 enddef;

```

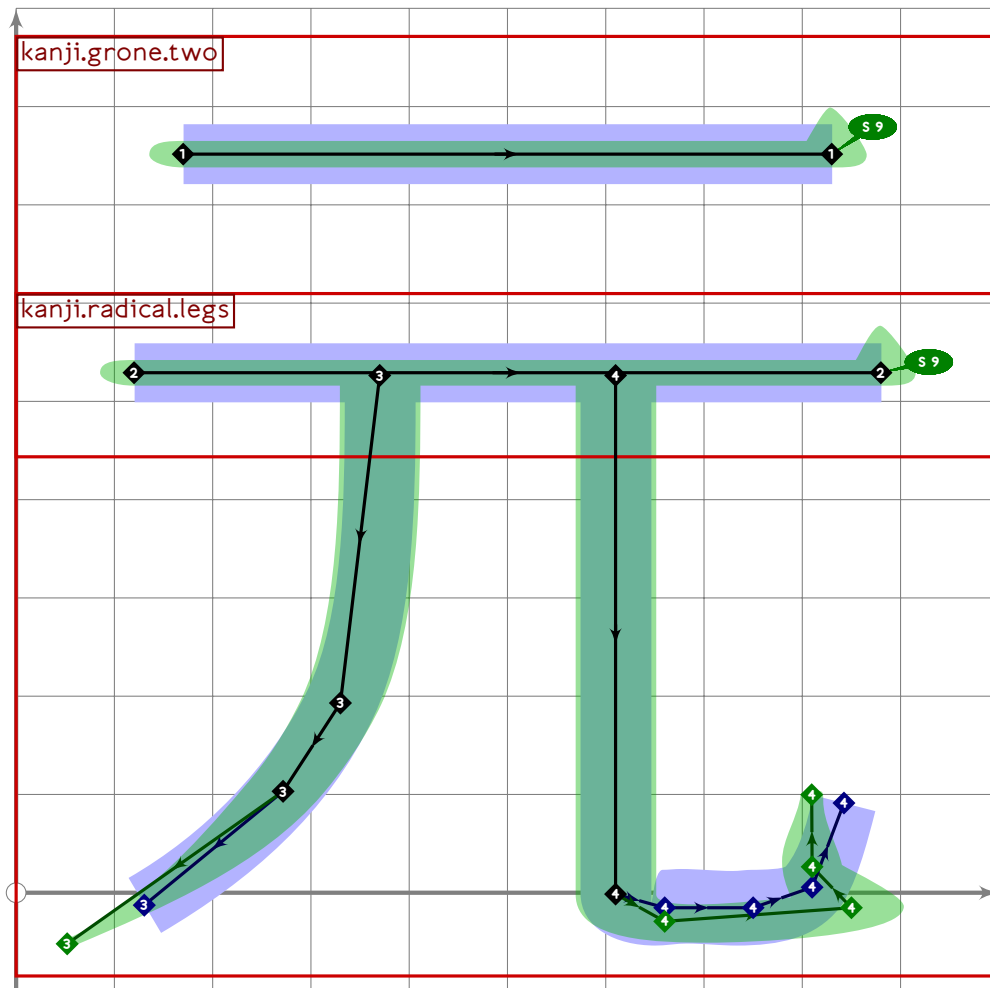




```

261
262 vardef tsu_curve.kanji.grtwo.old =
263   add_proof_box("kanji.grtwo.old");
264   build_kanji.level(build_kanji.tb(420,100)
265     (tsu_curve.kanji.grone.ten)
266     (build_kanji.sscale(xscaled 0.83)(tsu_curve.kanji.grone.mouth)));
267 enddef;

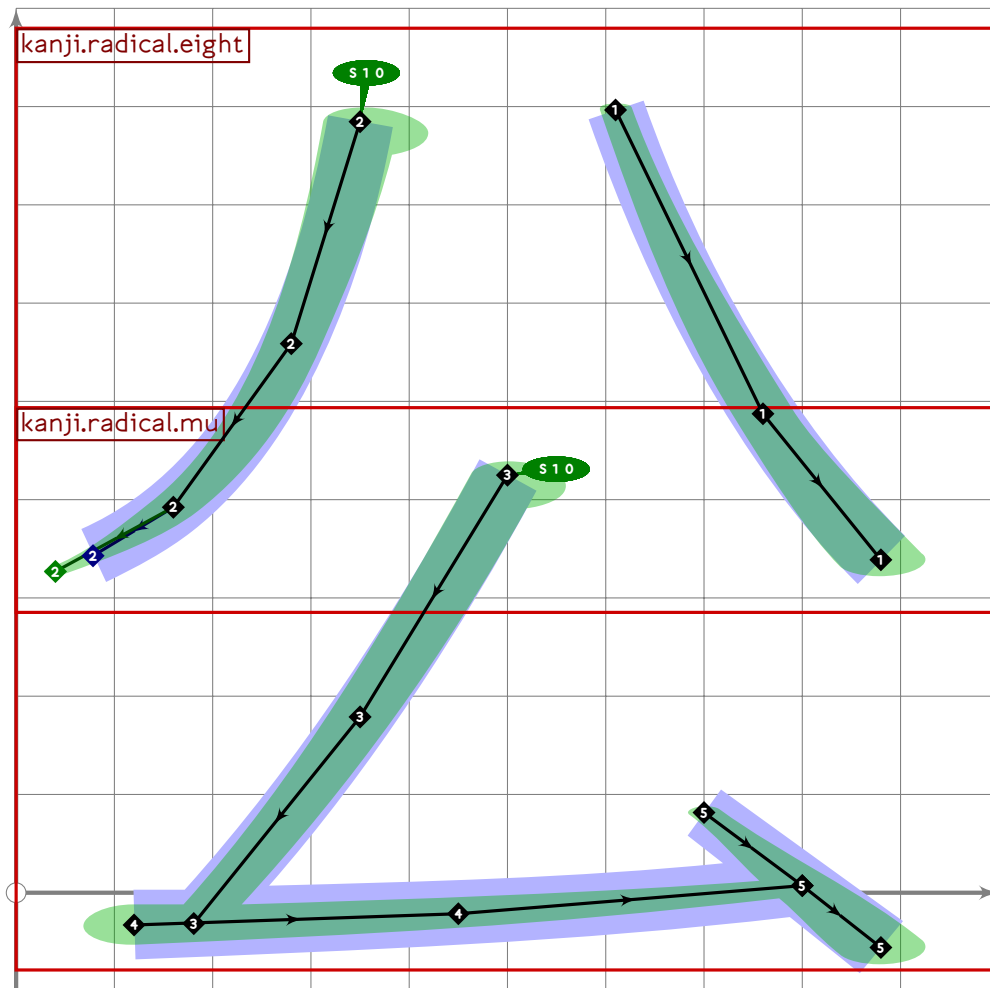
```



```

268
269 vardef tsu_curve.kanji.grtwo.origin =
270   add_proof_box("kanji.grtwo.origin");
271   build_kanji.tb(520,110)
272     (tsu_curve.kanji.grone.two)
273     (tsu_curve.kanji.radical.legs);
274 enddef;

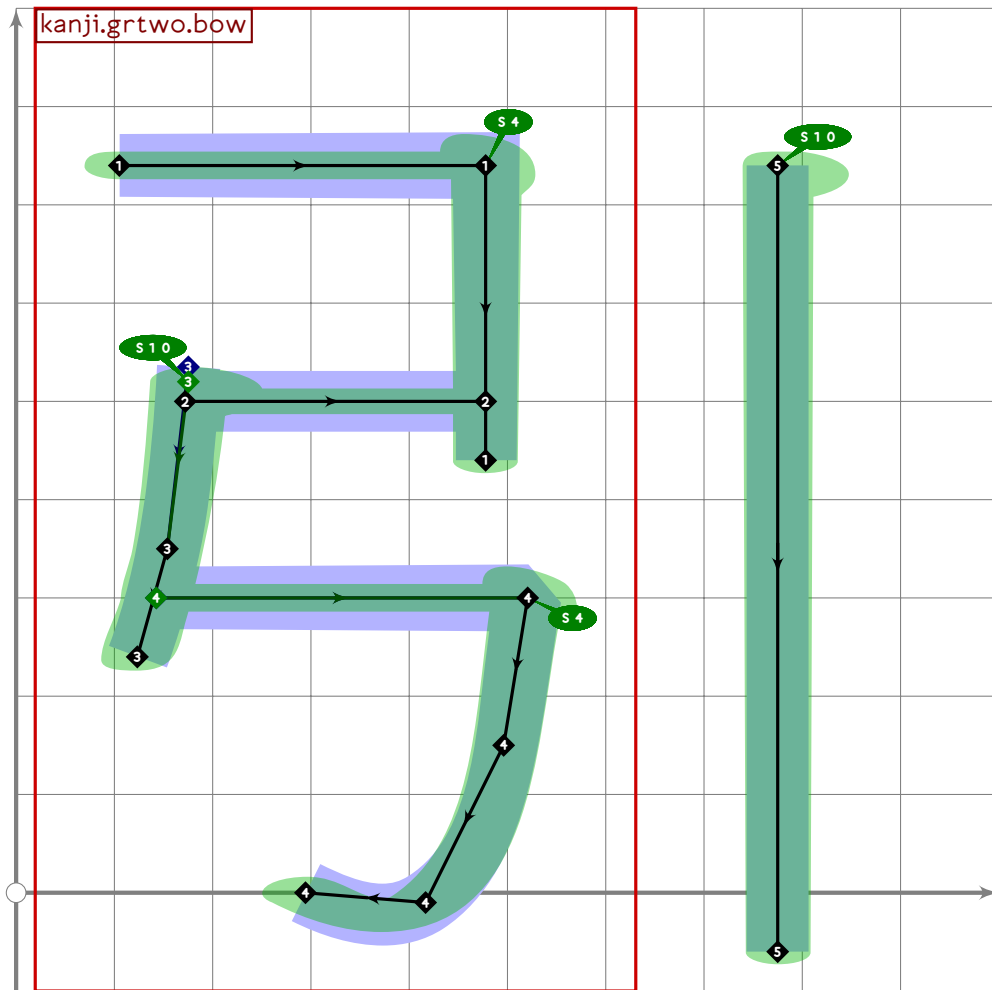
```



```

275
276 vardef tsu_curve.kanji.grtwo.public =
277   add_proof_box("kanji.grtwo.public");
278   build_kanji.level(build_kanji.tb(390,150)
279     (tsu_curve.kanji.radical.eight)
280     (tsu_curve.kanji.radical.mu));
281 enddef;

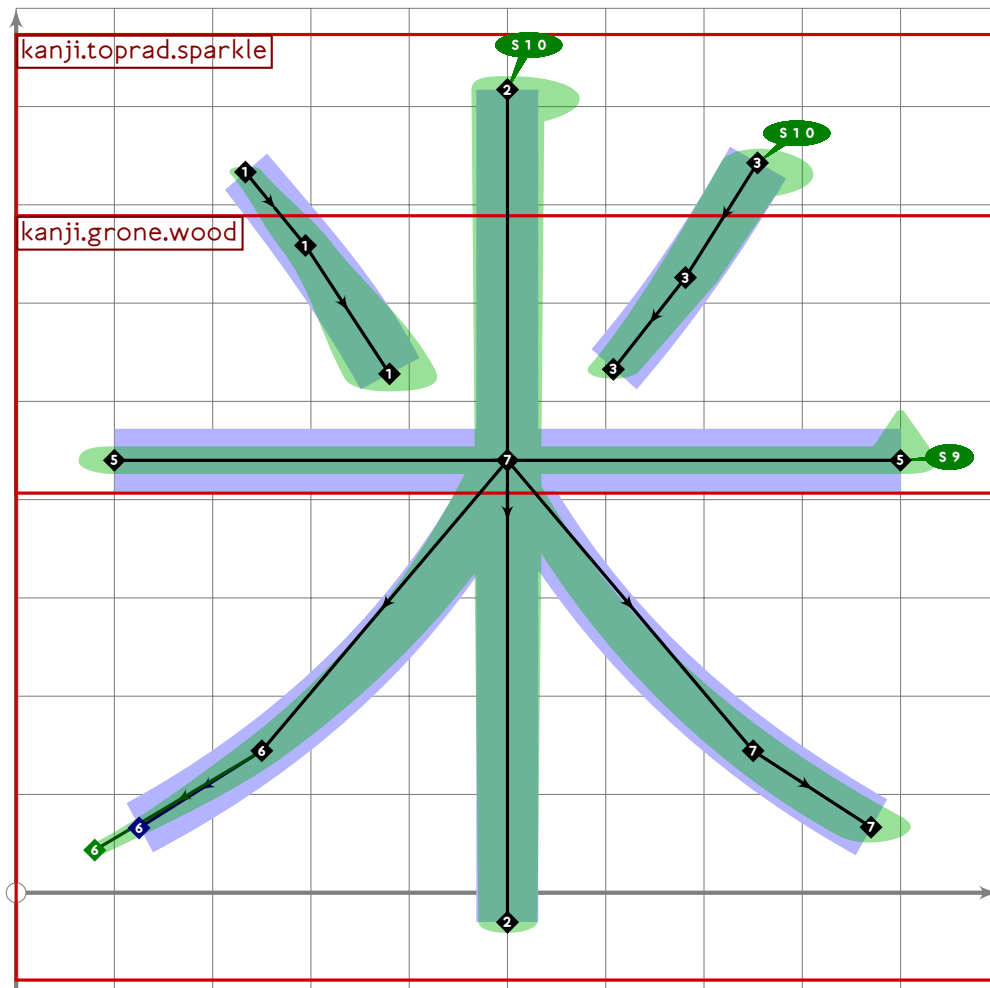
```



```

282
283 vardef tsu_curve.kanji.grtwo.pull =
284   add_proof_box("kanji.grtwo.pull");
285   build_kanji.level(build_kanji.lr(600,0)
286     (tsu_curve.kanji.grtwo.bow)
287     (bp[sp]:=(500,740)-(500,-60);
288     bq[sp]:=(1.6,1.6)-(1.5,1.5);
289     bo_serif[sp][0]:=10;
290     sp:=sp+1));
291 enddef;

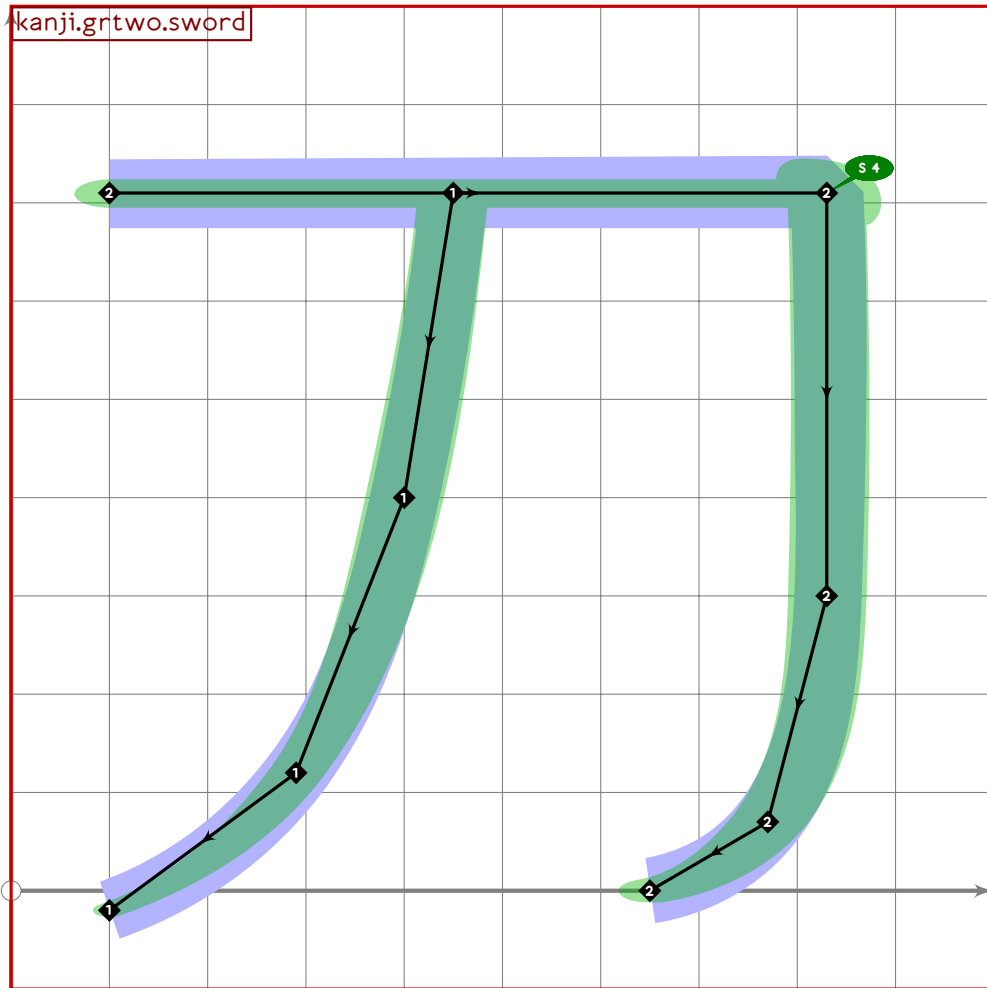
```



```

292
293 vardef tsu_curve.kanji.grtwo.rice =
294   add_proof_box("kanji.grtwo.rice");
295   build_kanji.level(build_kanji.tb(540,220)
296     (build_kanji.spread_legs(-200)(tsu_curve.kanji.toprad.sparkle))
297     (tsu_curve.kanji.grone.wood));
298   bo_size[sp-4]:=0;
299   bp[sp-6]:=(point 0 of bp[sp-6])-(xpart point 0 of bp[sp-6],30);
300   bq[sp-6]:=(1.6,1.6)-(1.4,1.4);
301 enddef;

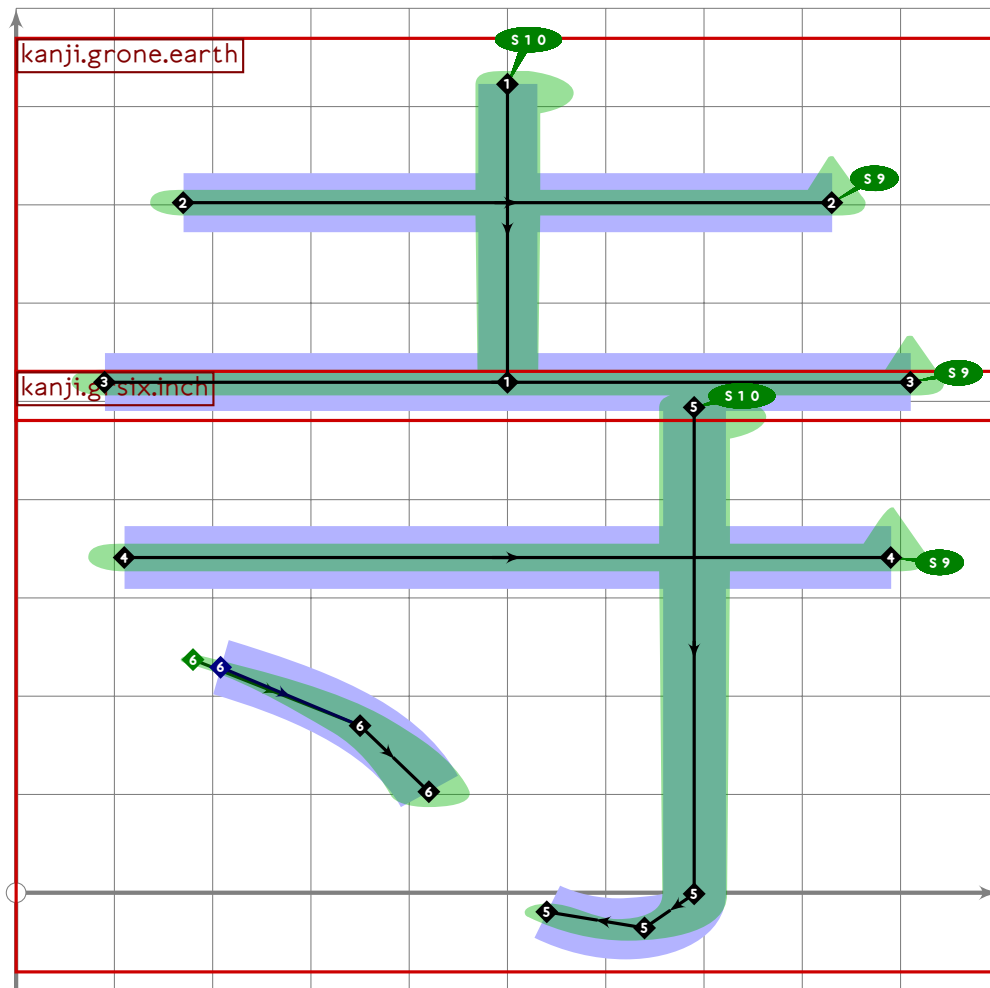
```



```

302
303 vardef tsu_curve.kanji.grtwo.sword =
304   add_proof_box("kanji.grtwo.sword");
305   bp[sp]:=(450,710)..(400,400)..(290,120)..(100,-20);
306   bq[sp]:=(1.5,1.5)-(1.6,1.6)-(1.3,1.3)-(1,1);
307   bp[sp*1]:=(100,710)-(830,710)..tension 11..(830,300)..(770,70)..(650,0);
308   bq[sp*1]:=(1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.4,1.4);
309   bo_tip[sp*1][1]:=0;
310   bo_serif[sp*1][1]:=4;
311   sp:=sp*2;
312 enddef;

```



```

313
314 vardef tsu_curve.kanji.grtwo.temple =
315   add_proof_box("kanji.grtwo.temple");
316   build_kanji.tb(500,0)
317     (tsu_curve.kanji.grone.earth)
318     (tsu_curve.kanji.grsix.inch;
319     bp[sp-2]:=((point 0 of bp[sp-2])*(0,60))
320     -(subpath (1,infinity) of bp[sp-2]));
321 enddef;

```

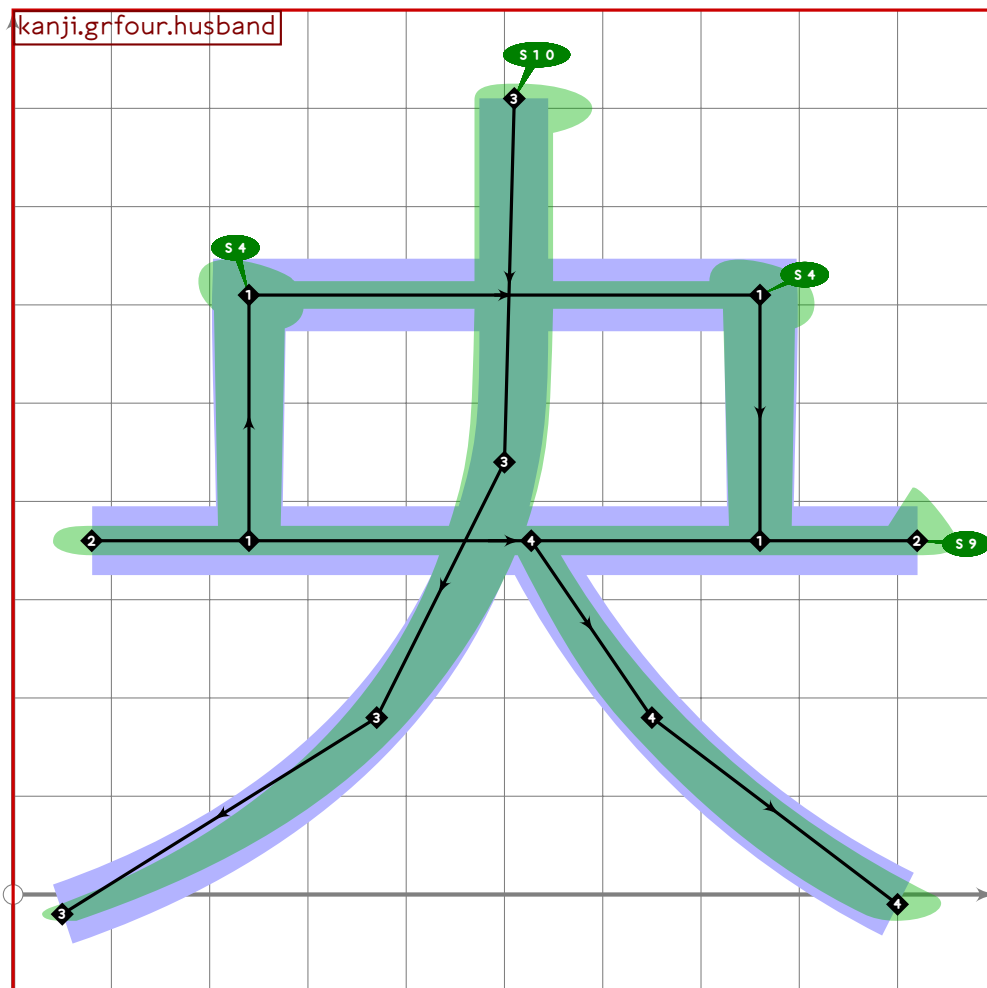
# gradethree.mp

```

1 %
2 % Grade Three kanji used on more than one page
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]

```

30  
31

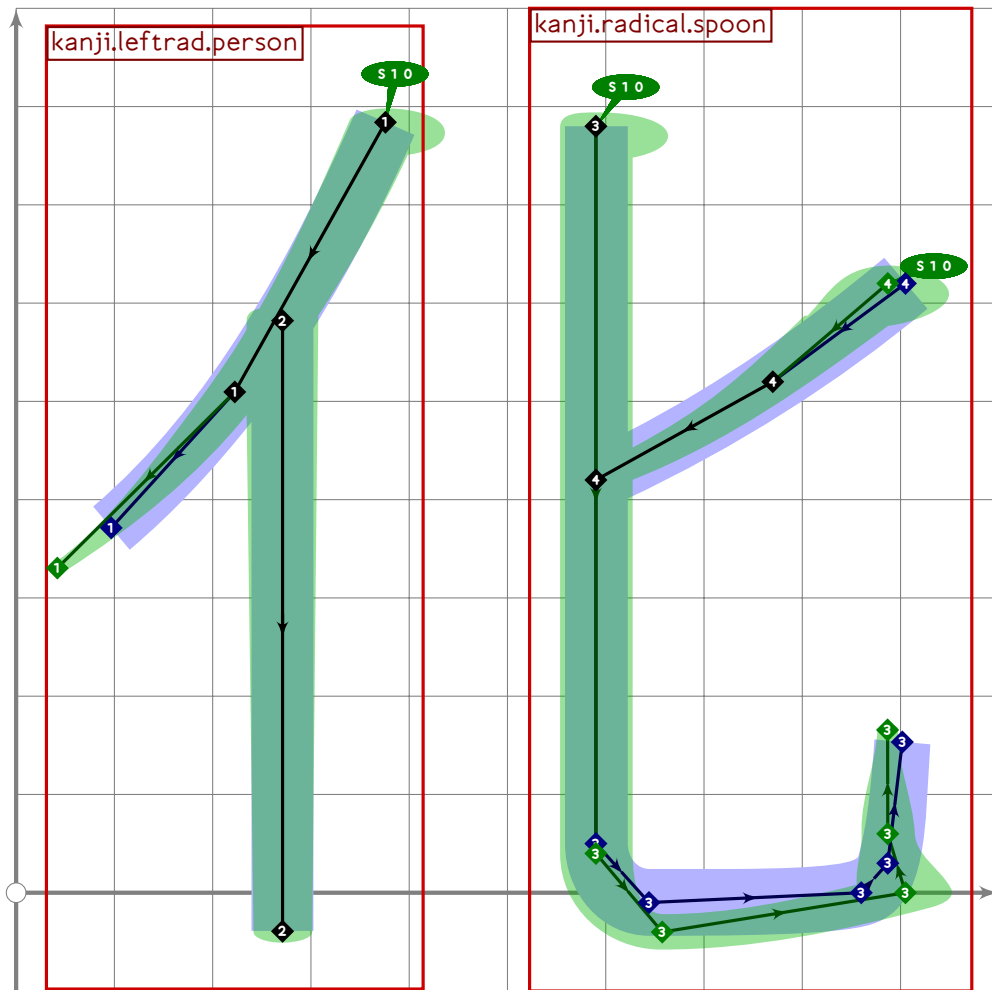


```

32
33 vardef tsu_curve.kanji.grthree.centre =
34   add_proof_box("kanji.grthree.centre");
35   tsu_curve.kanji.grfour.husband;
36   bp[sp-4]:=(240,360)-(240,610)-(760,610)-(760,360);
37   bq[sp-4]:=(1.4,1.4)-(1.5,1.5)-(1.5,1.5)-(1.4,1.4);
38   bo_serif[sp-4][1]:=4;
39   bo_serif[sp-4][2]:=4;
40   bo_tip[sp-4][1]:=1;
41   bo_tip[sp-4][2]:=1;
42 enddef;

```

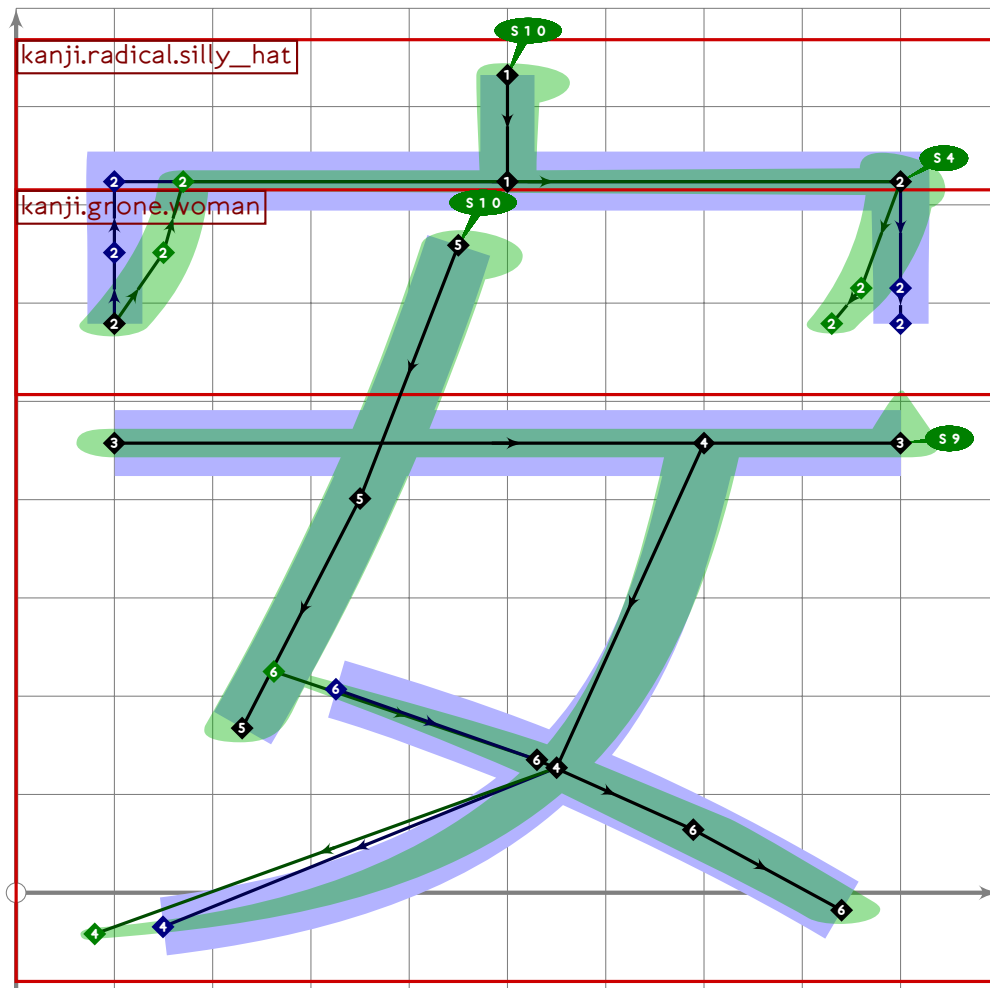




```

43
44 vardef tsu_curve.kanji.grthree.change =
45   add_proof_box("kanji.grthree.change");
46   build_kanji.level(build_kanji.lr(470;-150)
47     (tsu_xform(identity yscaled 0.98)(tsu_curve.kanji.leftrad.person))
48     (tsu_curve.kanji.radical.spoon));
49   bo_serif[sp-1][0]:=10;
50 enddef;

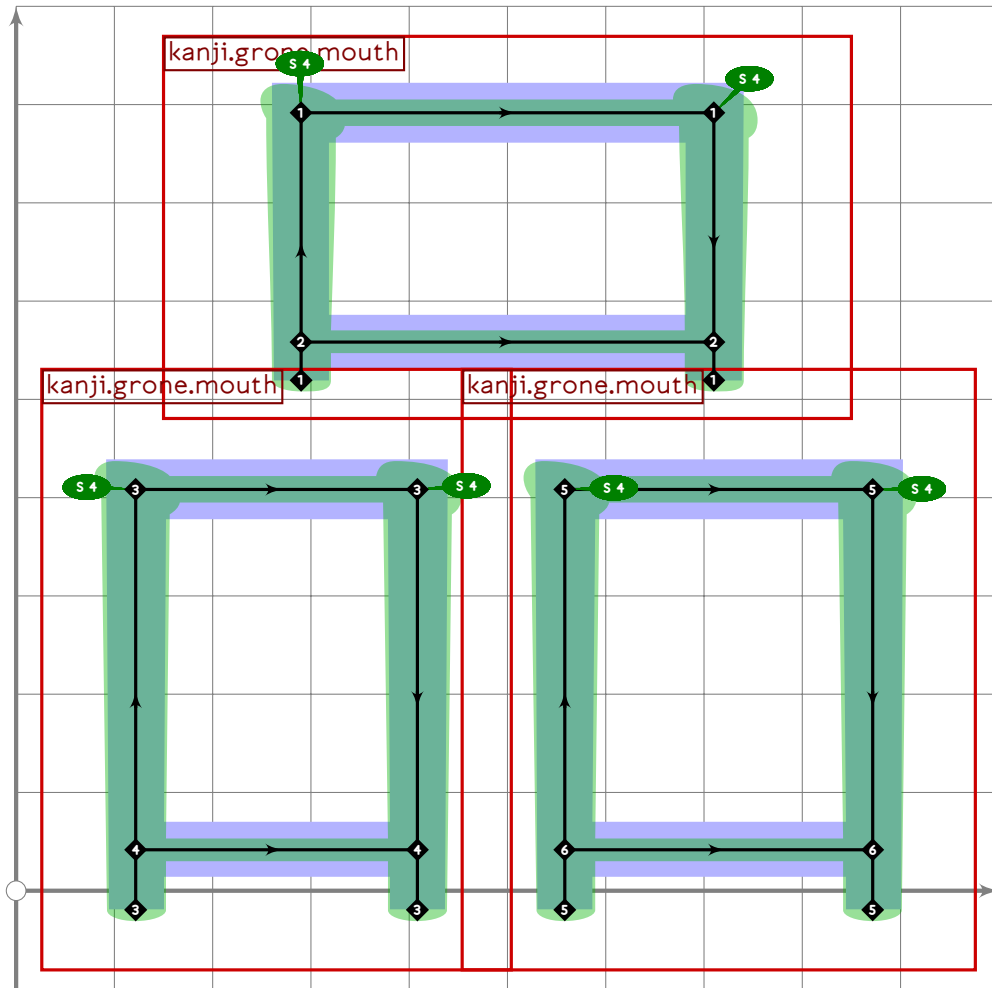
```



```

51
52 vardef tsu_curve.kanji.grthree.easy =
53   add_proof_box("kanji.grthree.easy");
54   build_kanji.tb(600,150)
55     (tsu_curve.kanji.radical.silly_hat)
56     (tsu_curve.kanji.grone.woman);
57 enddef;

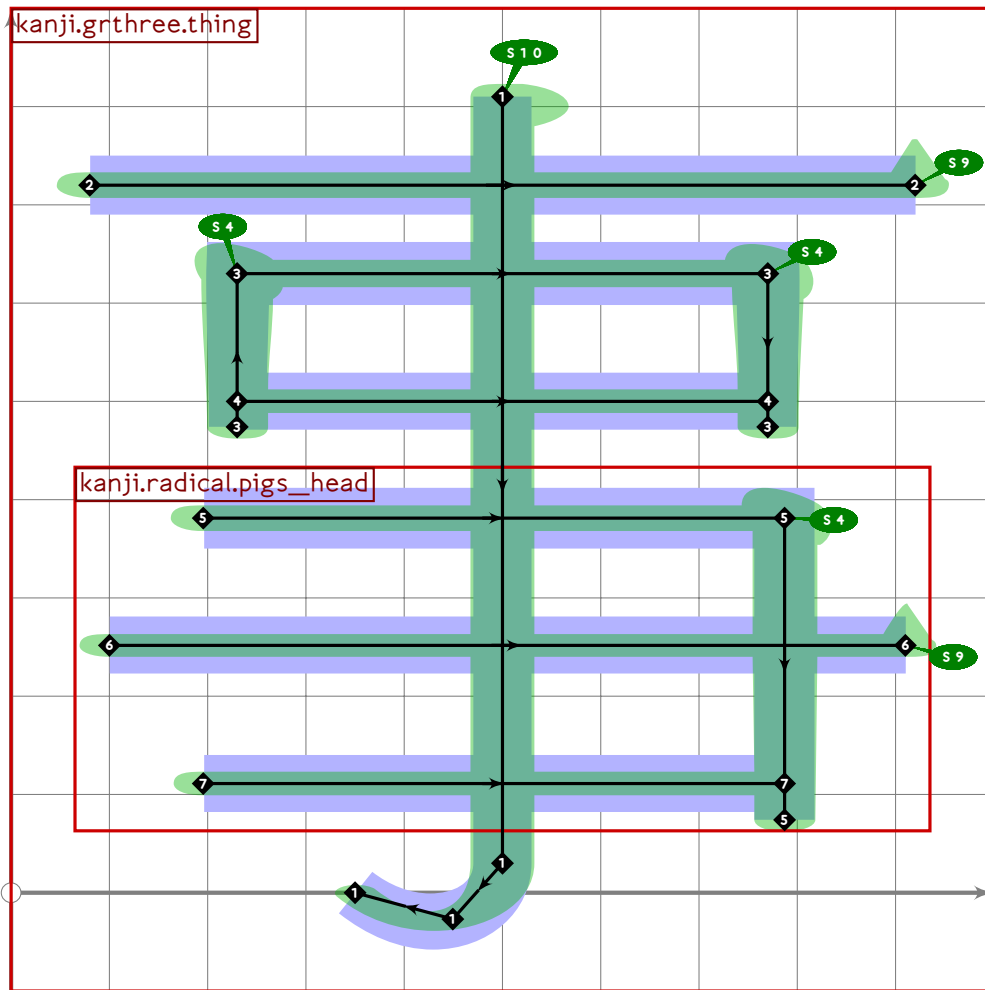
```



```

58
59 vardef tsu_curve.kanji.grthree.goods =
60   add_proof_box("kanji.grthree.goods");
61   build_kanji.level(build_kanji.tricluster(0.7)
62     (tsu_curve.kanji.grone.mouth)
63     (tsu_curve.kanji.grone.mouth)
64     (tsu_curve.kanji.grone.mouth));
65 enddef;

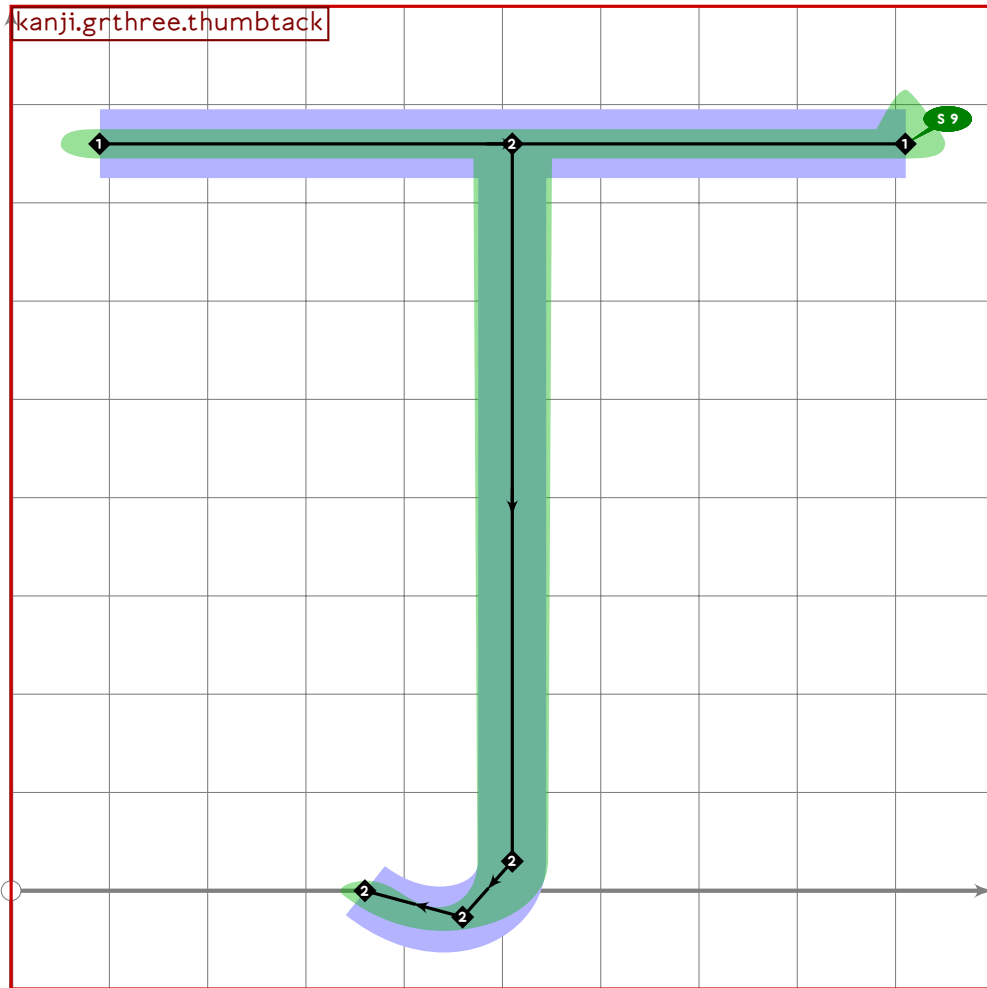
```



```

66
67 vardef tsu_curve.kanji.grthree.thing =
68   add_proof_box("kanji.grthree.thing");
69   bp[sp]:=(500,810);
70   bq[sp]:=(1.6,1.6);
71   bo_serif[sp][0]:=10;
72   build_kanji.add_jtail(sp);
73   bp[sp*1]:=(80,720)-(920,720);
74   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
75   bo_serif[sp*1][1]:=9;
76   sp:=sp*2;
77   build_kanji.box((230,630),(770,500));
78   tsu_xform(identity yscaled 0.37 shifted (0,100))
79     (tsu_curve.kanji.radical.pigs_snout);
80   for i=sp*8 upto sp*1: bo_size[i]:=85; endfor;
81 enddef;

```



```

82
83 vardef tsu_curve.kanji.grthree.thumbtack =
84   add_proof_box("kanji.grthree.thumbtack");
85   bp[sp]:=(90,760)-(910,760);
86   bq[sp]:=(1.6,1.6)-(1.6,1.6);
87   bo_serif[sp][1]:=9;
88   bp[sp*1]:=(510,760);
89   bq[sp*1]:=(1.6,1.6);
90   build_kanji.add_jtail(sp*1);
91   sp:=sp*2;
92 enddef;

```

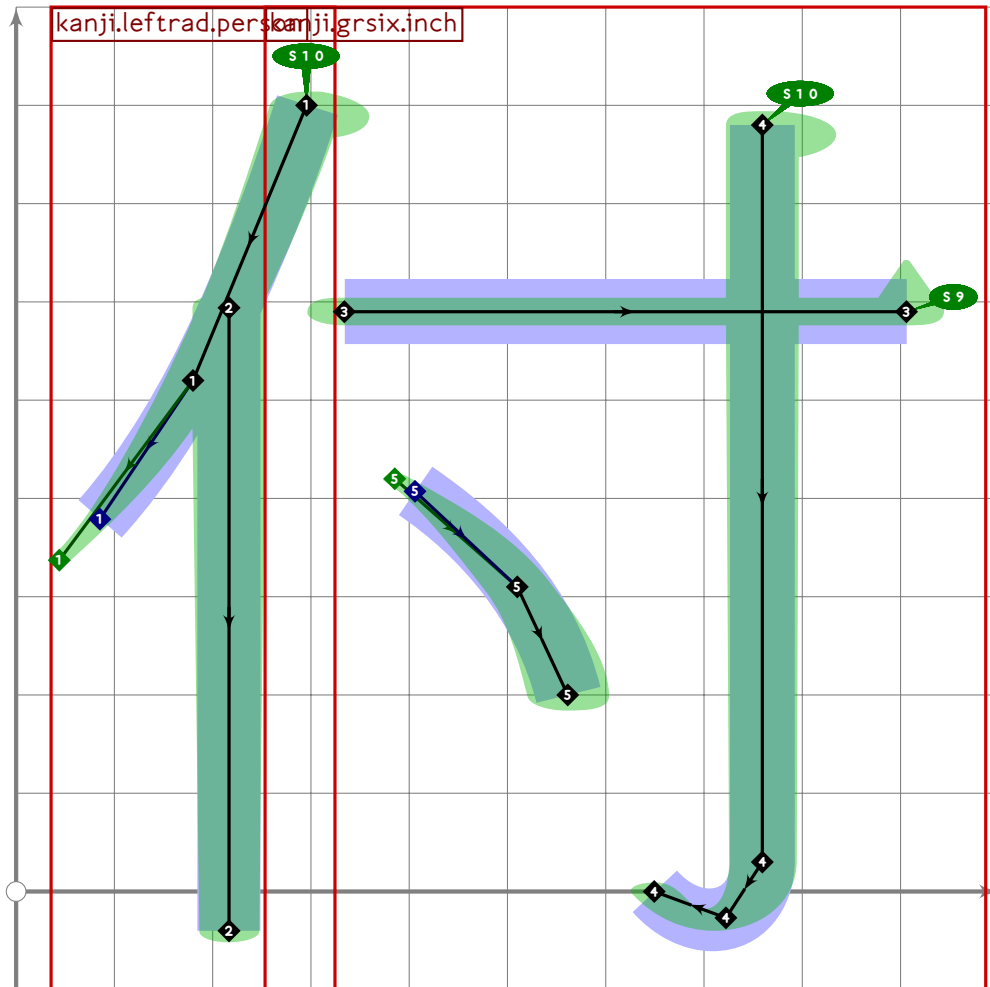
# gradefour.mp

```
1 %  
2 % Grade Four kanji used on more than one page  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

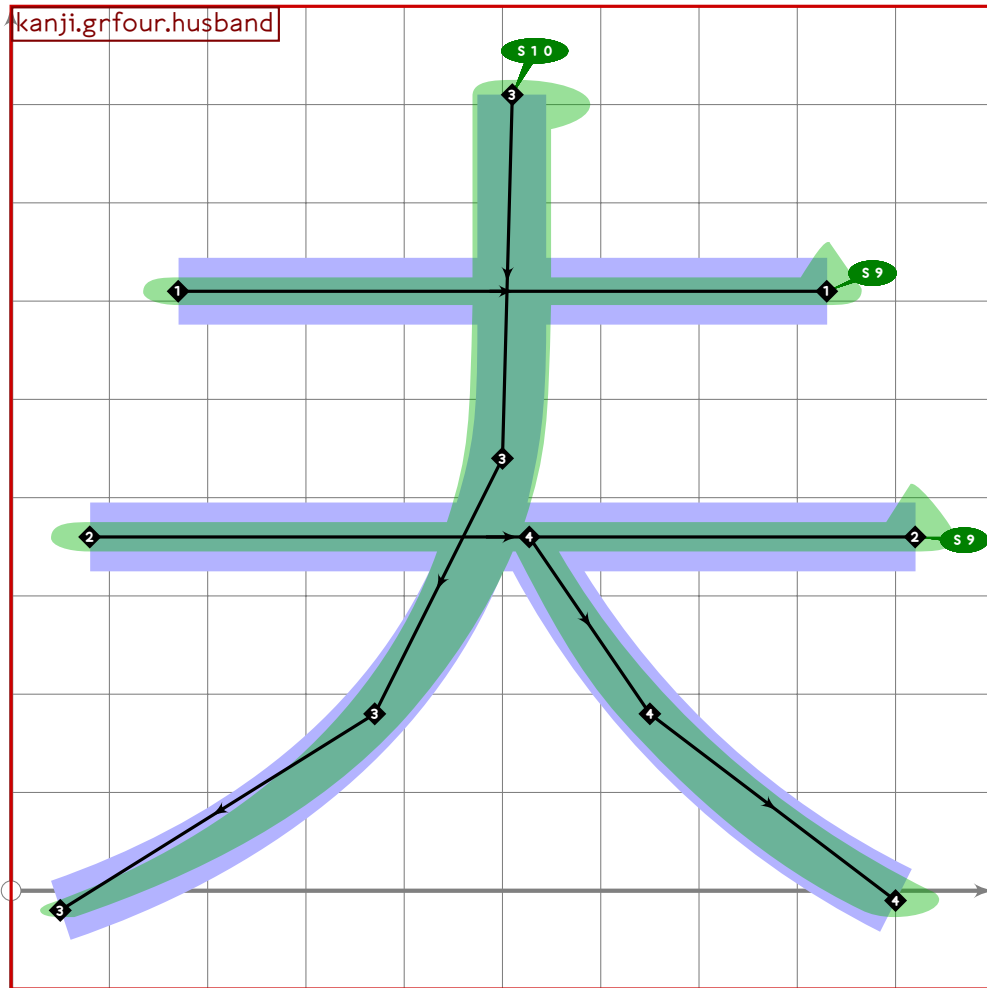
```
30
```

```
31
```



```
32
```

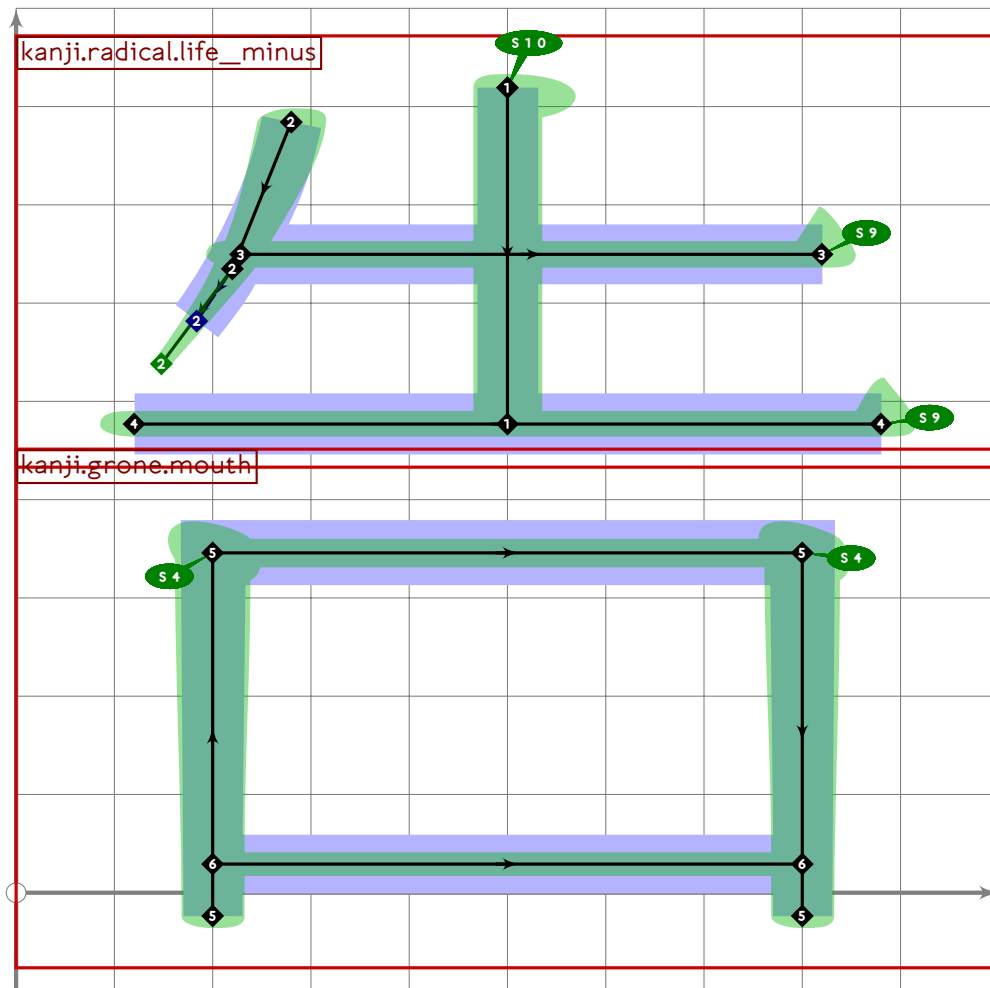
```
33 vardef tsu_curve.kanji.grfour.attach =  
34   add_proof_box("kanji.grfour.attach");  
35   build_kanji.lr(300,20)  
36     (tsu_curve.kanji.leftrad.person)  
37     (tsu_curve.kanji.grsix.inch);  
38 enddef;
```



```

39
40 vardef tsu_curve.kanji.grfour.husband =
41   add_proof_box("kanji.grfour.husband");
42   bp[sp]:=(170,610)-(830,610);
43   bq[sp]:=(1.5,1.5)-(1.5,1.5);
44   bo_serif[sp][1]:=9;
45   bp[sp*1]:=(80,360)-(920,360);
46   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
47   bo_serif[sp*1][1]:=9;
48   bp[sp*2]:=(510,810){down}..(500,440)..(370,180)..{curl 0.5}(50,-20);
49   bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.1,1.1);
50   bo_serif[sp*2][0]:=10;
51   bp[sp*3]:=((bp[sp*1] intersectionpoint bp[sp*2])+(50,0))..
52     (650,180)..(900,-10);
53   bq[sp*3]:=(1.1,1.1)-(1.4,1.4)-(1.7,1.7);
54   sp:=sp*4;
55 enddef;

```



```

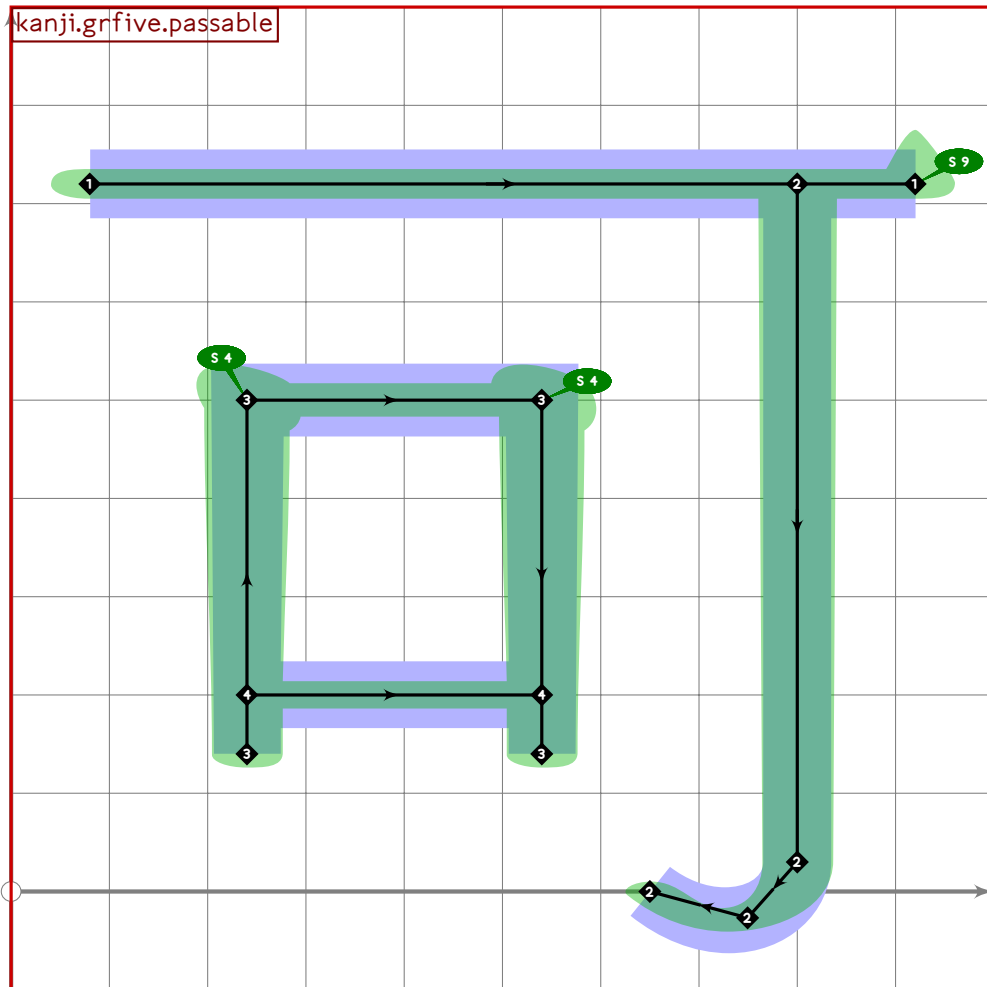
56
57 vardef tsu_curve.kanji.grfour.revelation =
58   add_proof_box("kanji.grfour.revelation");
59   build_kanji.level(build_kanji.tb(440;30)
60     (tsu_curve.kanji.radical.life_minus)
61     (tsu_curve.kanji.grone.mouth));
62 enddef;

```

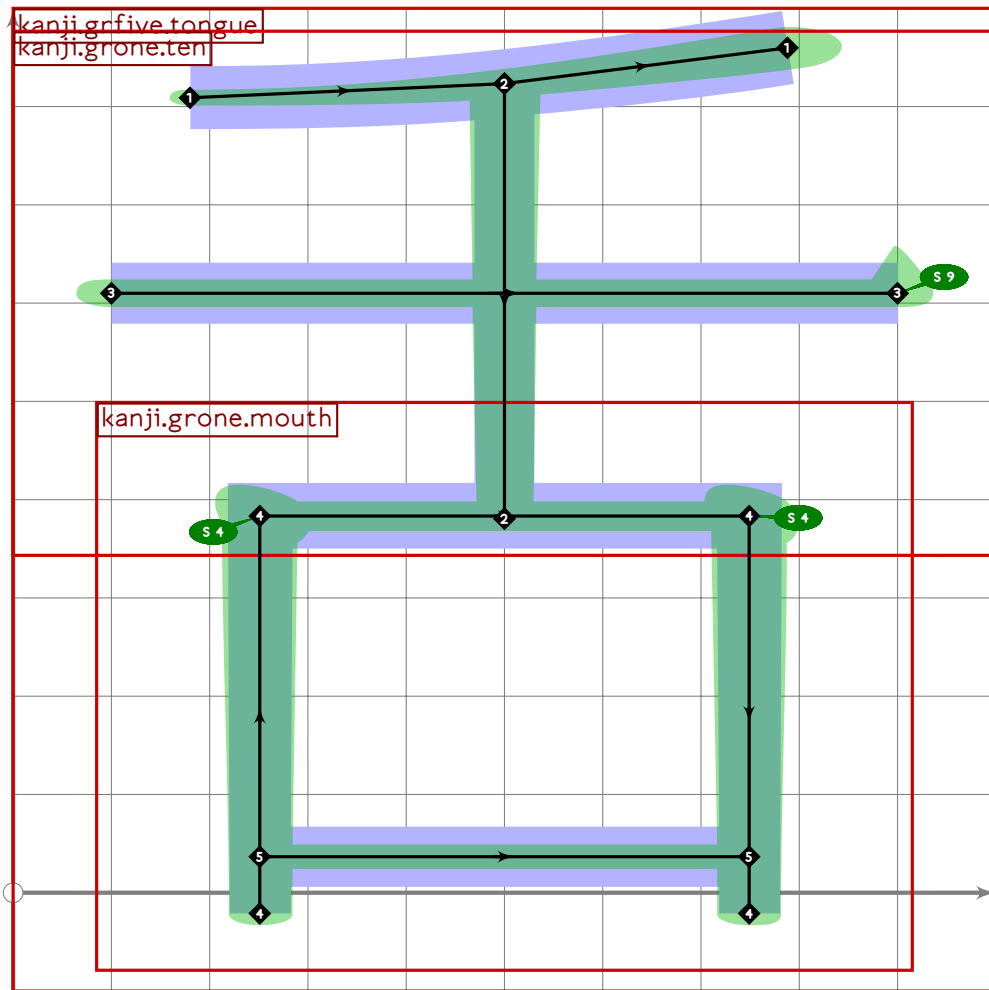


# gradefive.mp

```
1 %  
2 % Grade Five kanji used on more than one page  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31
```



```
32  
33 vardef tsu_curve.kanji.grfive.passable =  
34   add_proof_box("kanji.grfive.passable");  
35   bp[sp]:=(80,720)-(920,720);  
36   bq[sp]:=(1.6,1.6)-(1.6,1.6);  
37   bo_serif[sp][1]:=9;  
38   bp[sp*1]:=(800,720);  
39   bq[sp*1]:=(1.6,1.6);  
40   build_kanji.add_jtail(sp*1);  
41   sp:=sp*2;  
42   build_kanji.box((240,500),(540,200));  
43 enddef;
```



```

44
45 vardef tsu_curve.kanji.grfive.tongue =
46   add_proof_box("kanji.grfive.tongue");
47   build_kanji.add_beret(tsu_curve.kanji.grtwo.old);
48 enddef;

```

# gradesix.mp

1 %

2 % Grade Six kanji used on more than one page

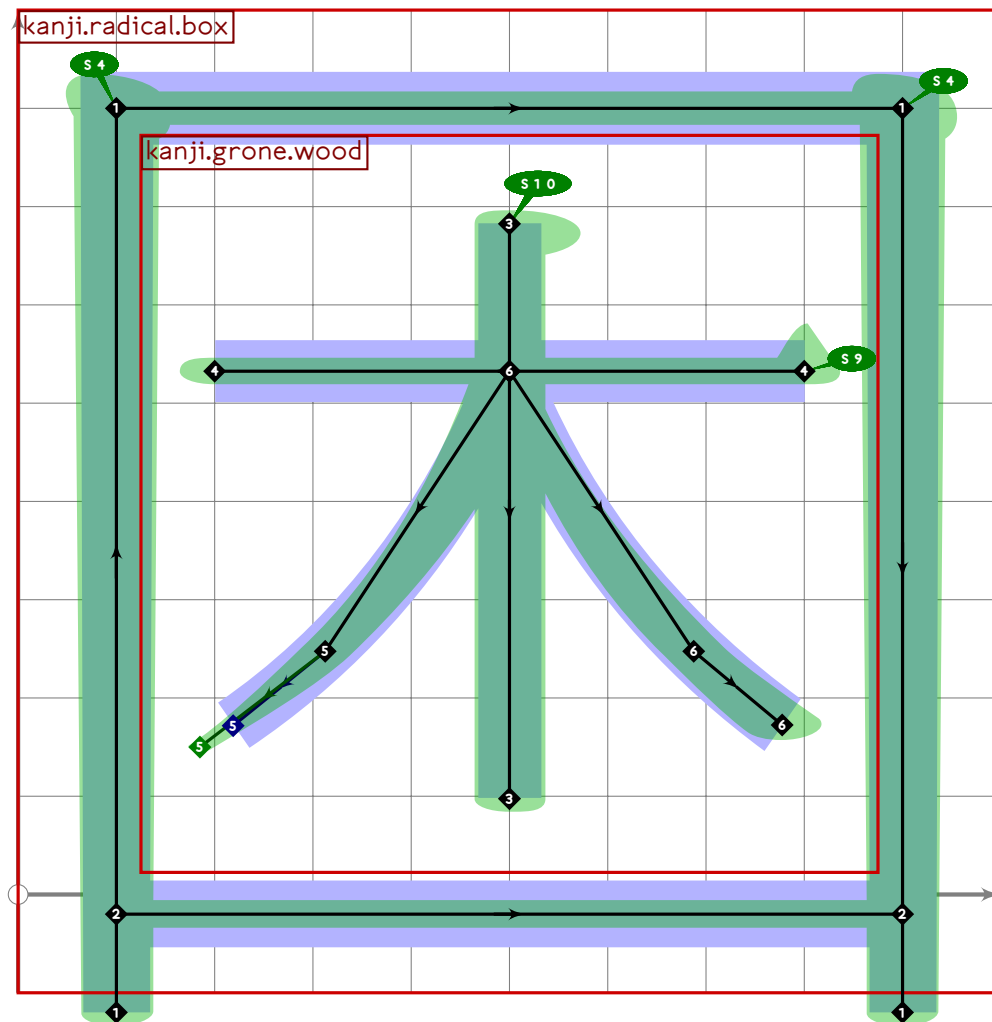
3 % Copyright (C) 2011 Matthew Skala

4 %

5-29 [Standard copyright notice]

30

31



32

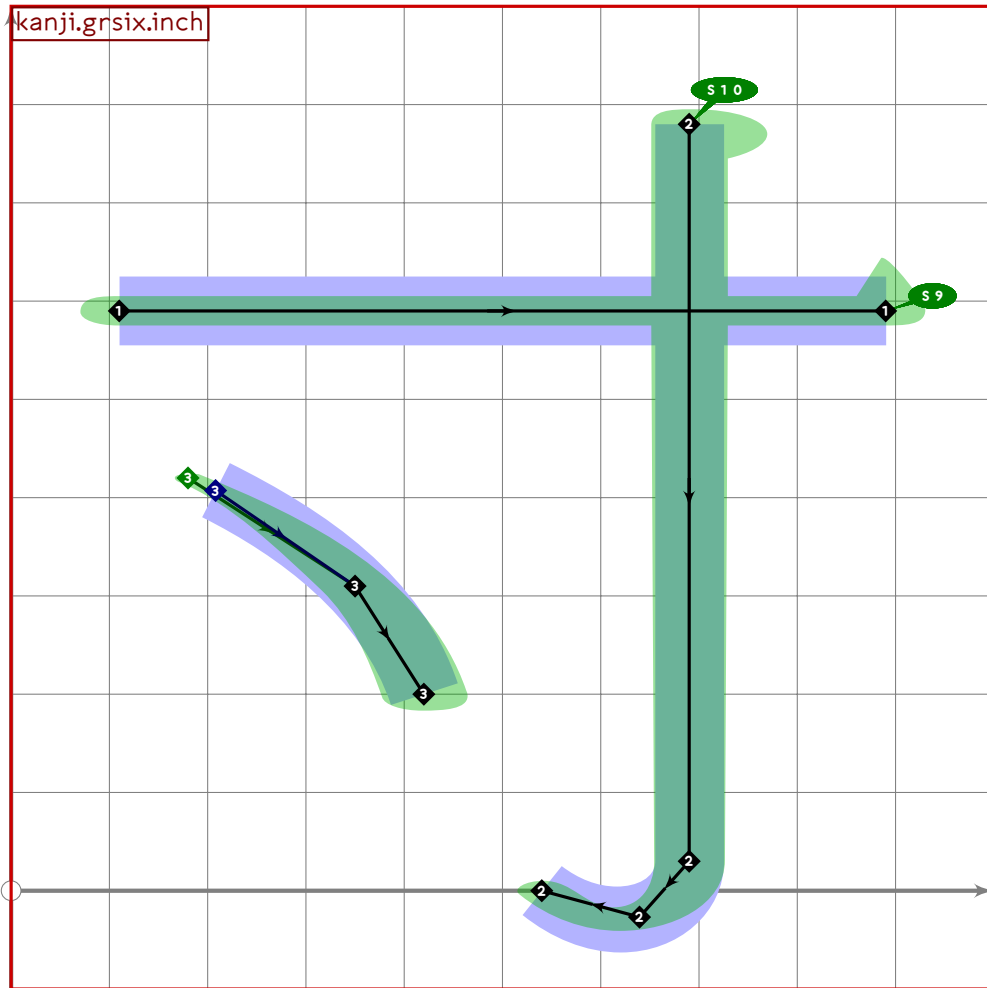
33 vardef tsu\_curve.kanji.grsix.bothered =

34 add\_proof\_box("kanji.grsix.bothered");

35 tsu\_curve.kanji.radical.box;

36 build\_kanji.sscale(scaled 0.75)(tsu\_curve.kanji.grone.wood);

37 enddef;



```

38
39 vardef tsu_curve.kanji.grsix.inch =
40   add_proof_box("kanji.grsix.inch");
41   bp[sp]:=(110,590)-(890,590);
42   bq[sp]:=(1.6,1.6)-(1.6,1.6);
43   bo_serif[sp][1]:=9;
44   bp[sp*1]:=(690,780);
45   bq[sp*1]:=(1.6,1.6);
46   build_kanji.add_jtail(sp*1);
47   bo_serif[sp*1][0]:=10;
48   bp[sp*2]:=(180,420)..tension 1.2..(350,310)..(420,200);
49   bq[sp*2]:=(0.9,0.9)-(1.5,1.5)-(1.7,1.7);
50   sp:=sp*3;
51 enddef;

```

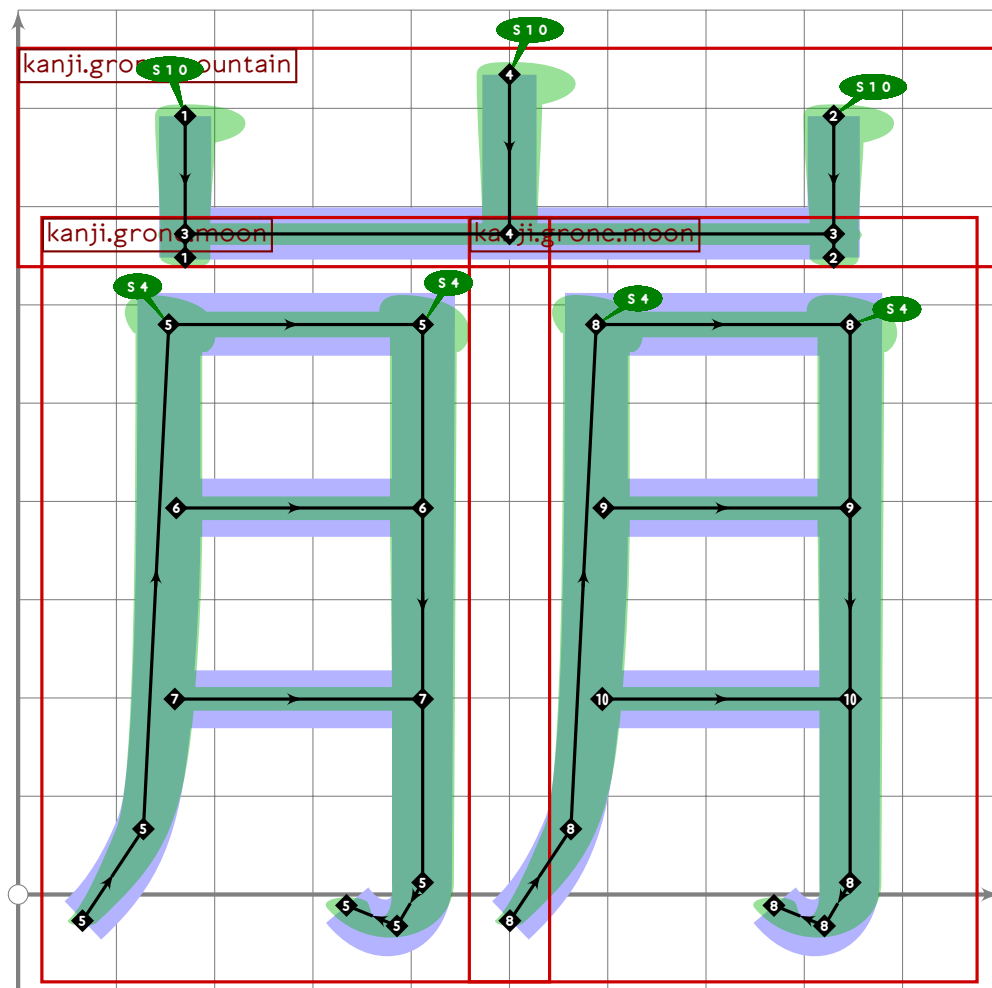
# gradeeight.mp

1 %  
2 % Grade Eight kanji used on more than one page  
3 % Copyright (C) 2011 Matthew Skala  
4 %

5-29 [Standard copyright notice]

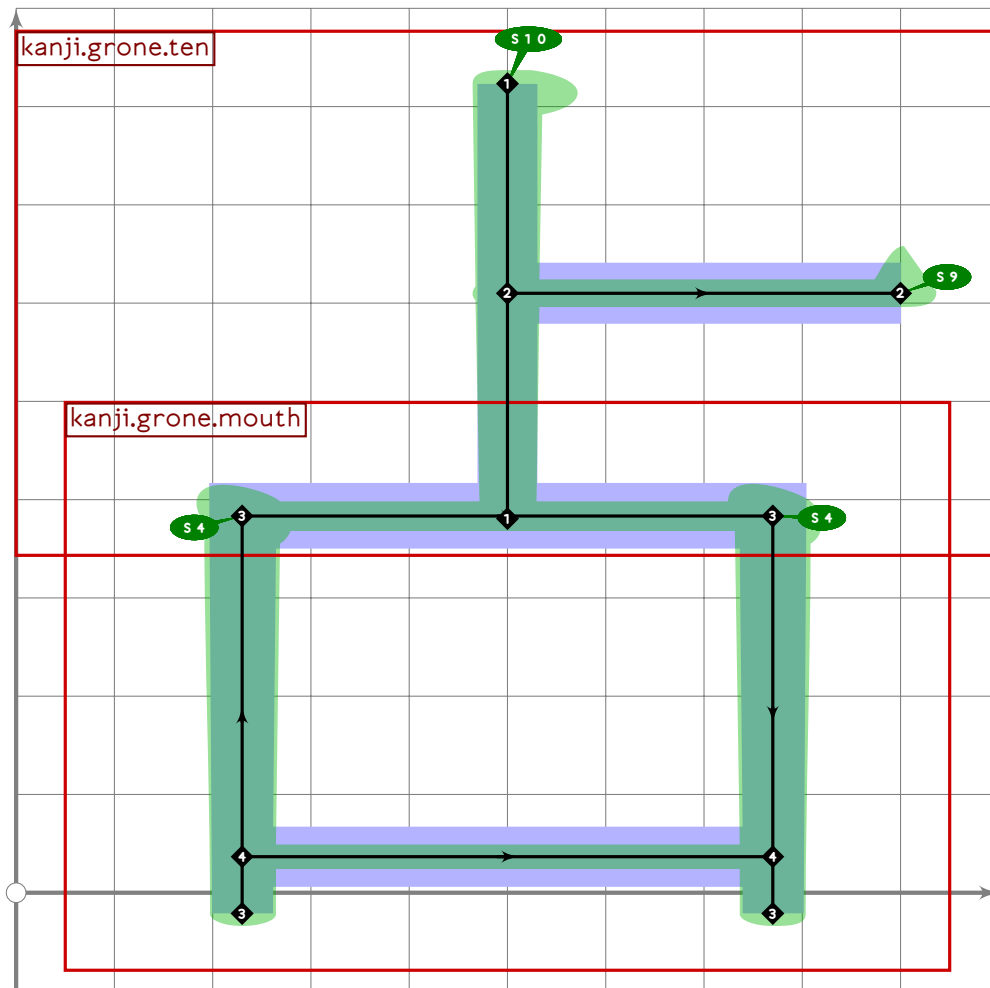
30

31



32

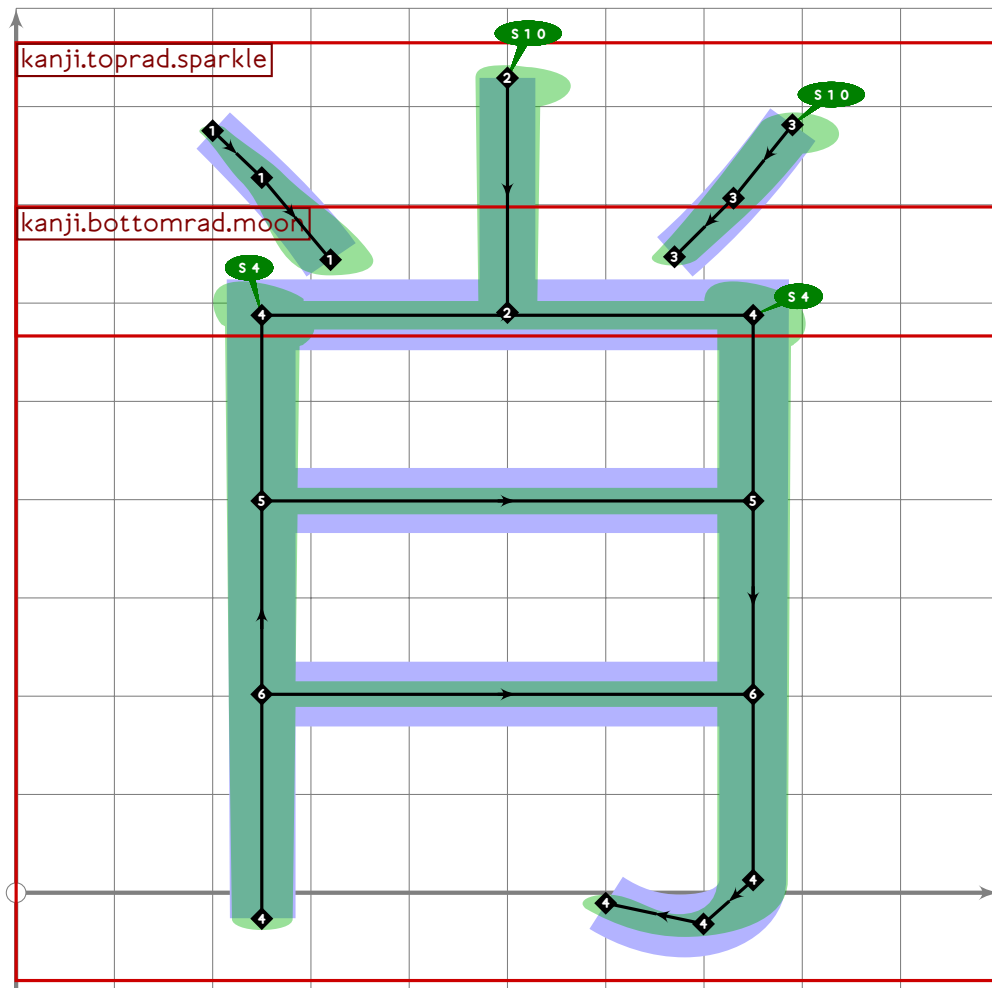
```
33 vardef tsu_curve.kanji.greight.demolish =  
34   add_proof_box("kanji.greight.demolish");  
35   build_kanji.tb(650,0)  
36     (tsu_curve.kanji.grone.mountain)  
37     (build_kanji.lr(500,30)  
38     (tsu_curve.kanji.grone.moon)  
39     (tsu_curve.kanji.grone.moon));  
40 enddef;
```



```

41
42 vardef tsu_curve.kanji.greight.divination =
43   add_proof_box("kanji.greight.divination");
44   build_kanji.level(build_kanji.tb(420,100)
45     (tsu_curve.kanji.grone.ten;
46       bp[sp-1]:=subpath (0.5,1) of bp[sp-1];)
47     (build_kanji.sscale(xscaled 0.9)(tsu_curve.kanji.grone.mouth)));
48 enddef;

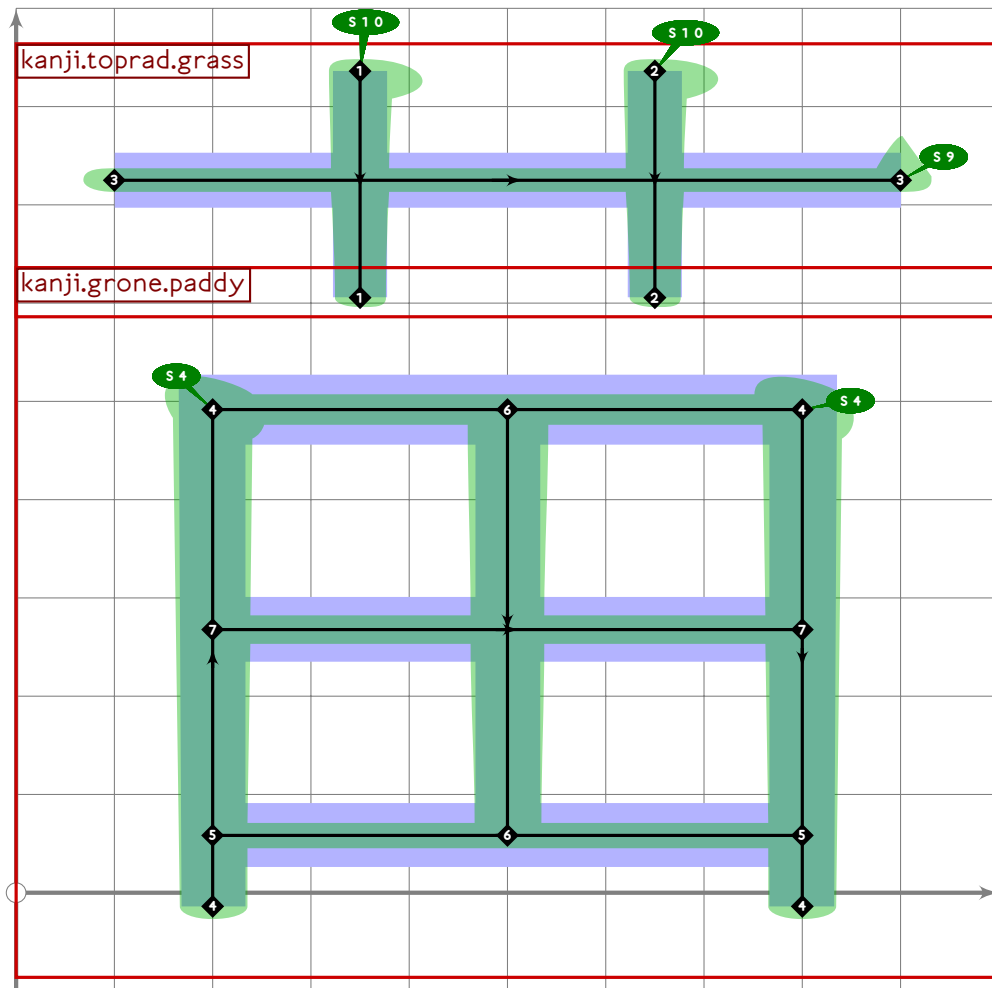
```



```

49
50 vardef tsu_curve.kanji.greight.resemblance =
51   add_proof_box("kanji.greight.resemblance");
52   build_kanji.tb(620,77)
53     (tsu_curve.kanji.toprad.sparkle)
54     (tsu_curve.kanji.bottomrad.moon);
55 enddef;

```

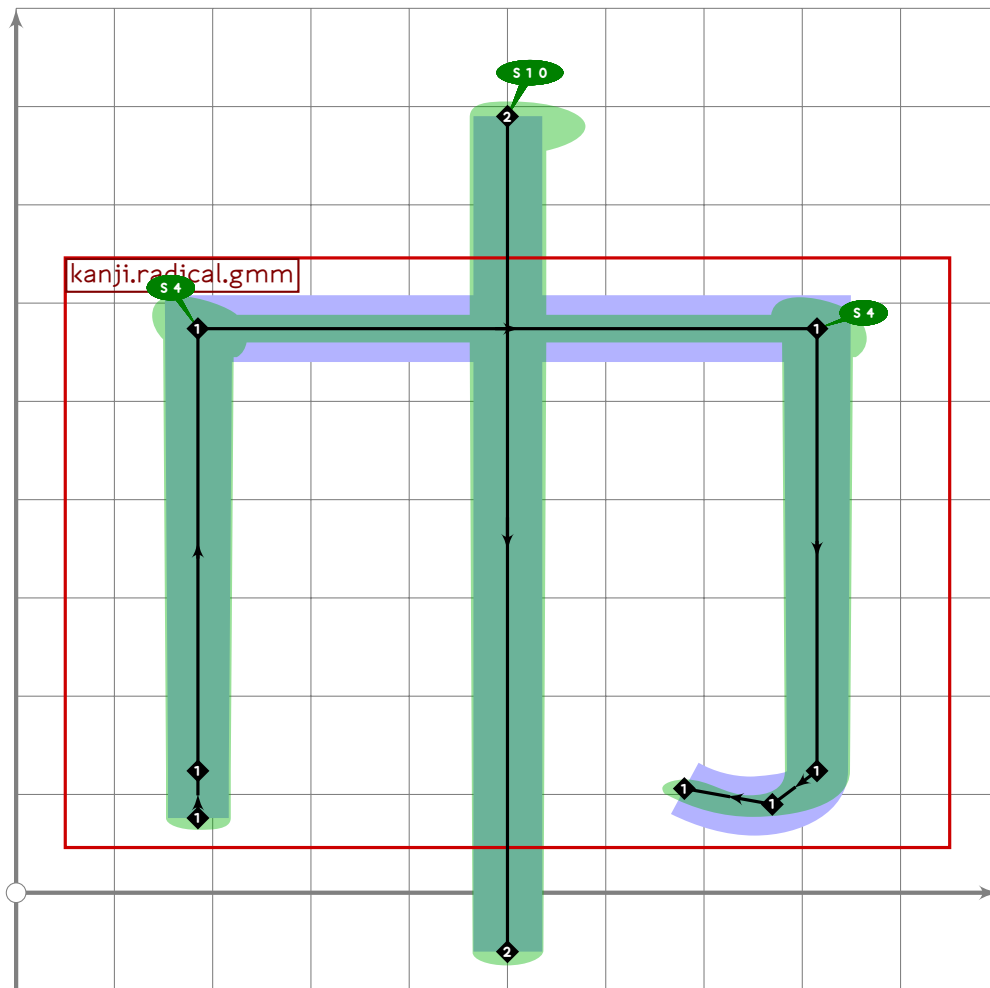


```

56
57 vardef tsu_curve.kanji.greight.seedling =
58   add_proof_box("kanji.greight.seedling");
59   build_kanji.tb(600,0)
60     (tsu_curve.kanji.toprad.grass)
61     (tsu_curve.kanji.grone.paddy);
62 enddef;

```

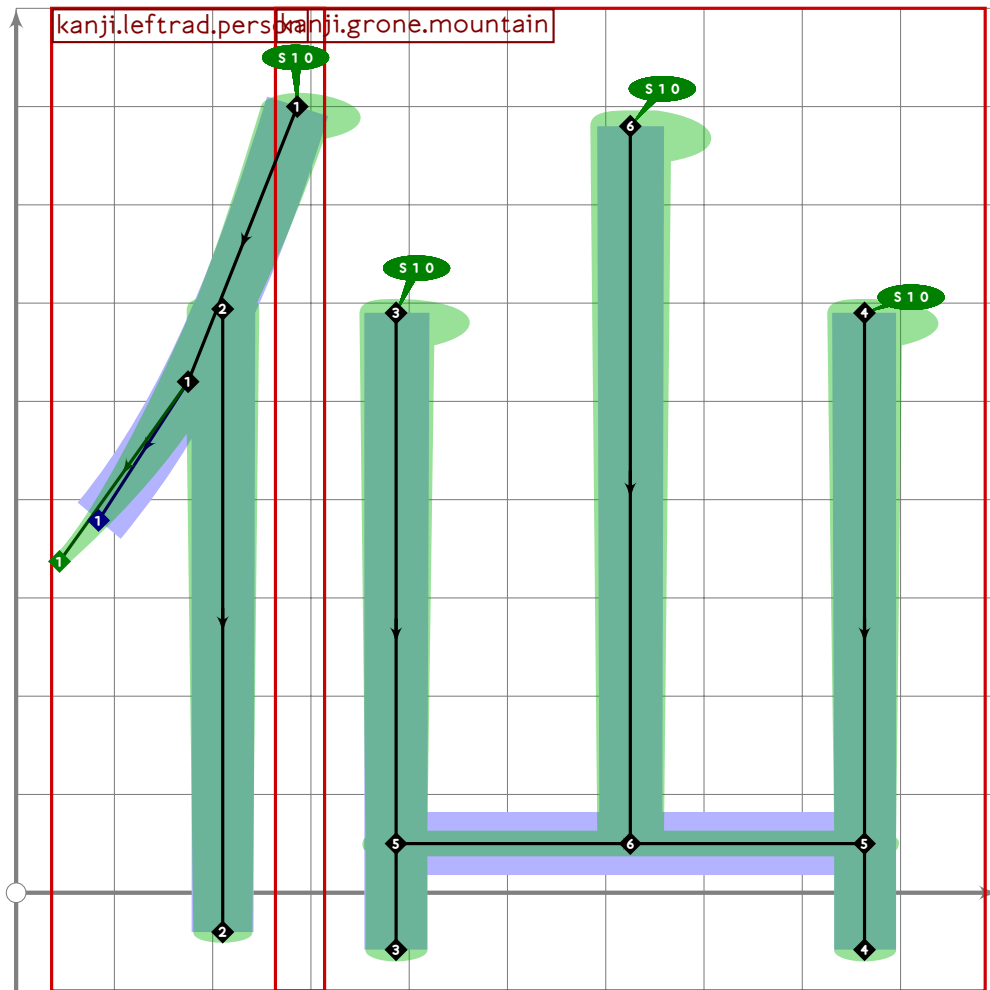




```

63
64 vardef tsu_curve.kanji.greight.towel =
65   add_proof_box("kanji.greight.towel");
66   build_kanji.sscale(xyscaled (0.9,0.6) shifted (0,-50))
67     (tsu_curve.kanji.radical.gmm);
68   bp[sp]:=(500,790)-(500,-60);
69   bq[sp]:=(1.6,1.6)-(1.5,1.5);
70   bo_serif[sp][0]:=10;
71   sp:=sp*1;
72 enddef;

```



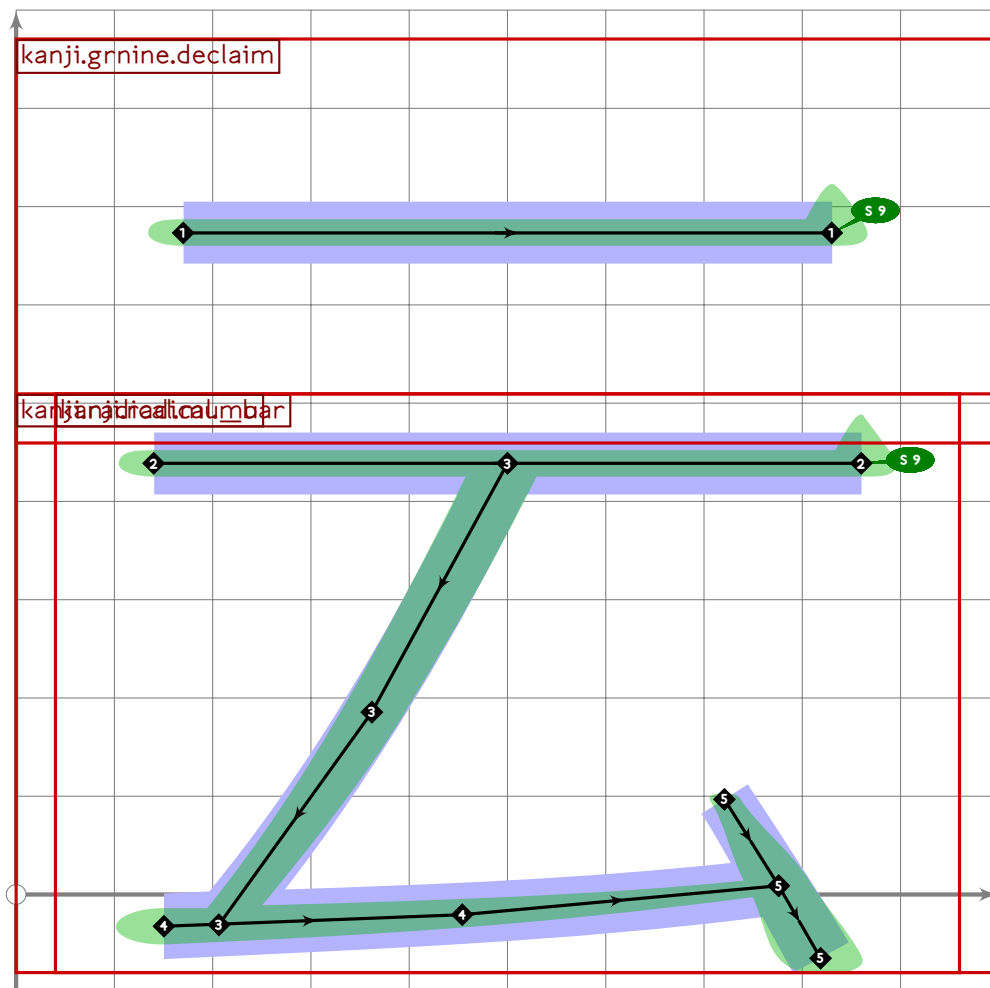
```

73
74 vardef tsu_curve.kanji.greight.wizard =
75   add_proof_box("kanji.greight.wizard");
76   build_kanji.lr(300,0)
77     (tsu_curve.kanji.leftrad.person)
78     (tsu_curve.kanji.grone.mountain);
79 enddef;

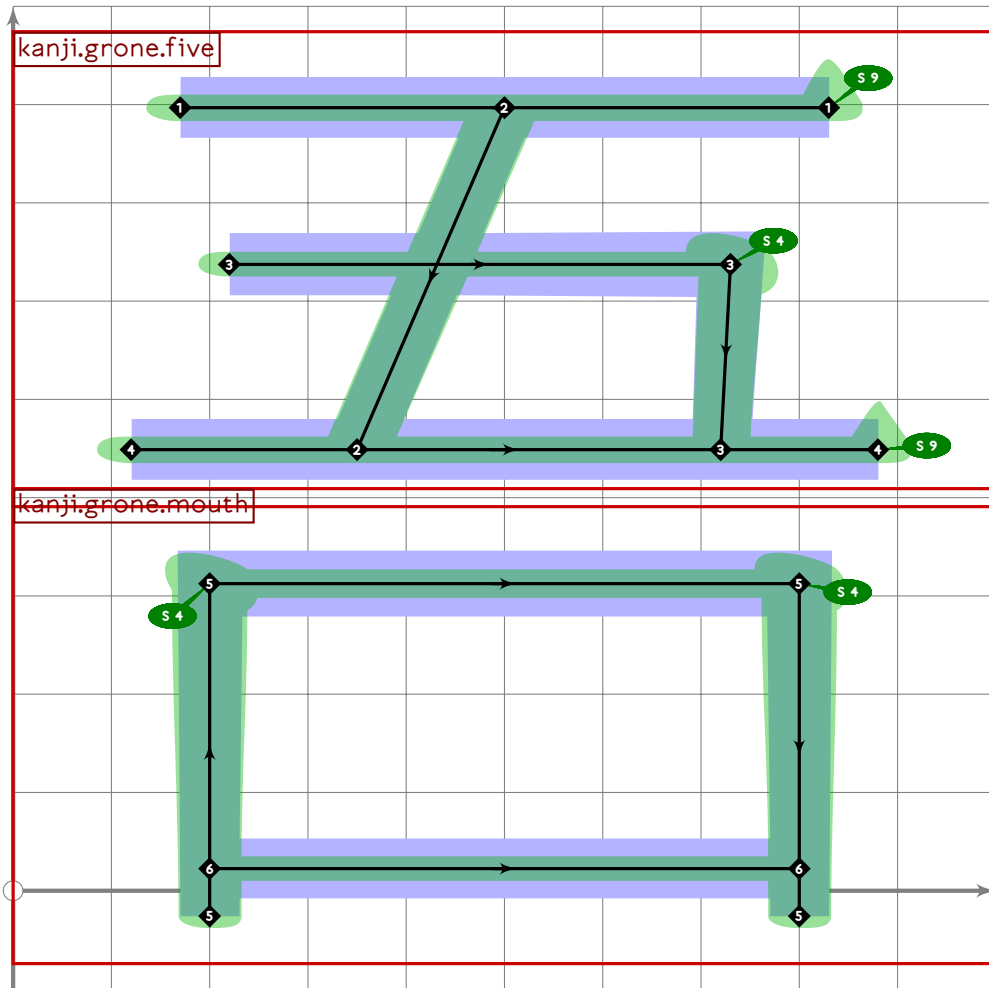
```

# gradenine.mp

```
1 %  
2 % Grade Nine kanji used on more than one page  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31
```



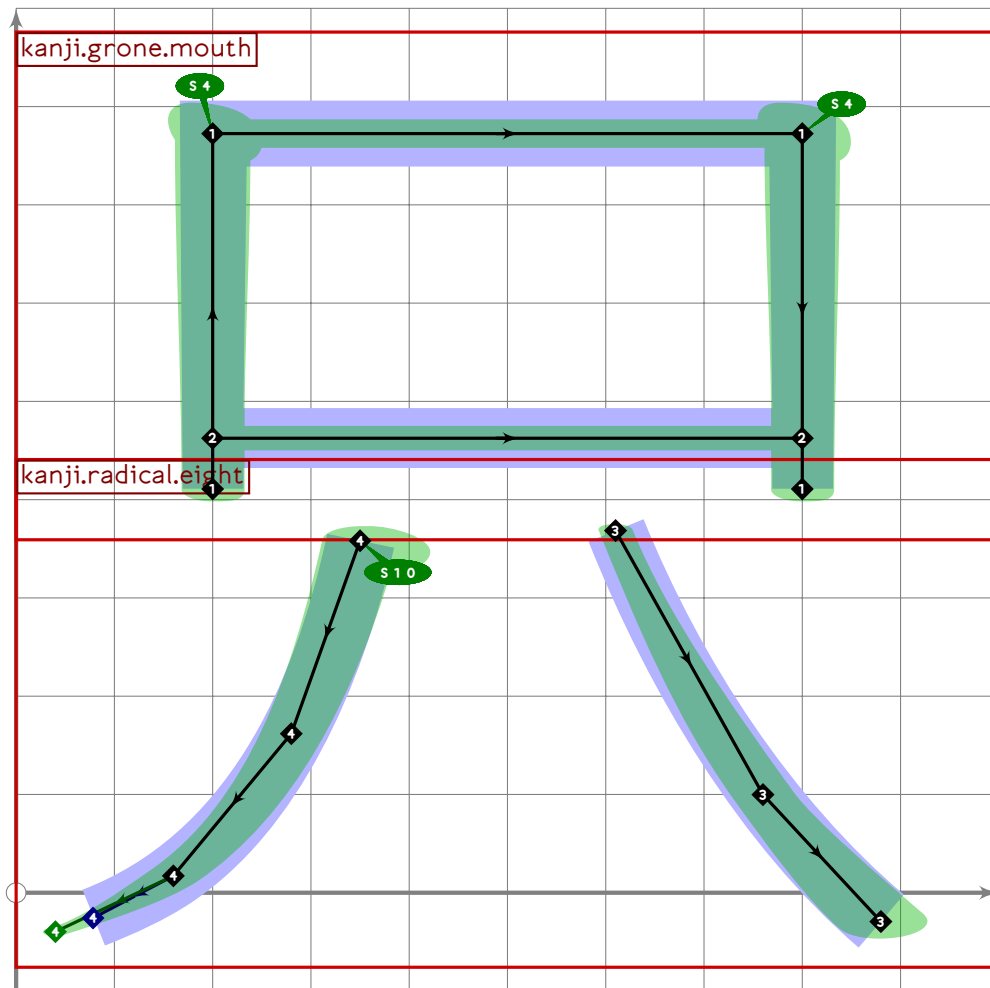
```
32  
33 vardef tsu_curve.kanji.grnine.declaim =  
34   add_proof_box("kanji.grnine.declaim");  
35   build_kanji.level(build_kanji.tb(480,0)  
36     (bp[sp]:=(170,420)-(830,420);  
37     bq[sp]:=(1.6,1.6)-(1.6,1.6);  
38     bo_serif[sp][1]:=9;  
39     sp:=sp+1;)  
40   (tsu_curve.kanji.radical.mu_bar));  
41 enddef;
```



```

42
43 vardef tsu_curve.kanji.grnine.my =
44   add_proof_box("kanji.grnine.my");
45   build_kanji.level(build_kanji.tb(400,30)
46     (tsu_curve.kanji.grone.five)
47     (tsu_curve.kanji.grone.mouth));
48 enddef;

```



```

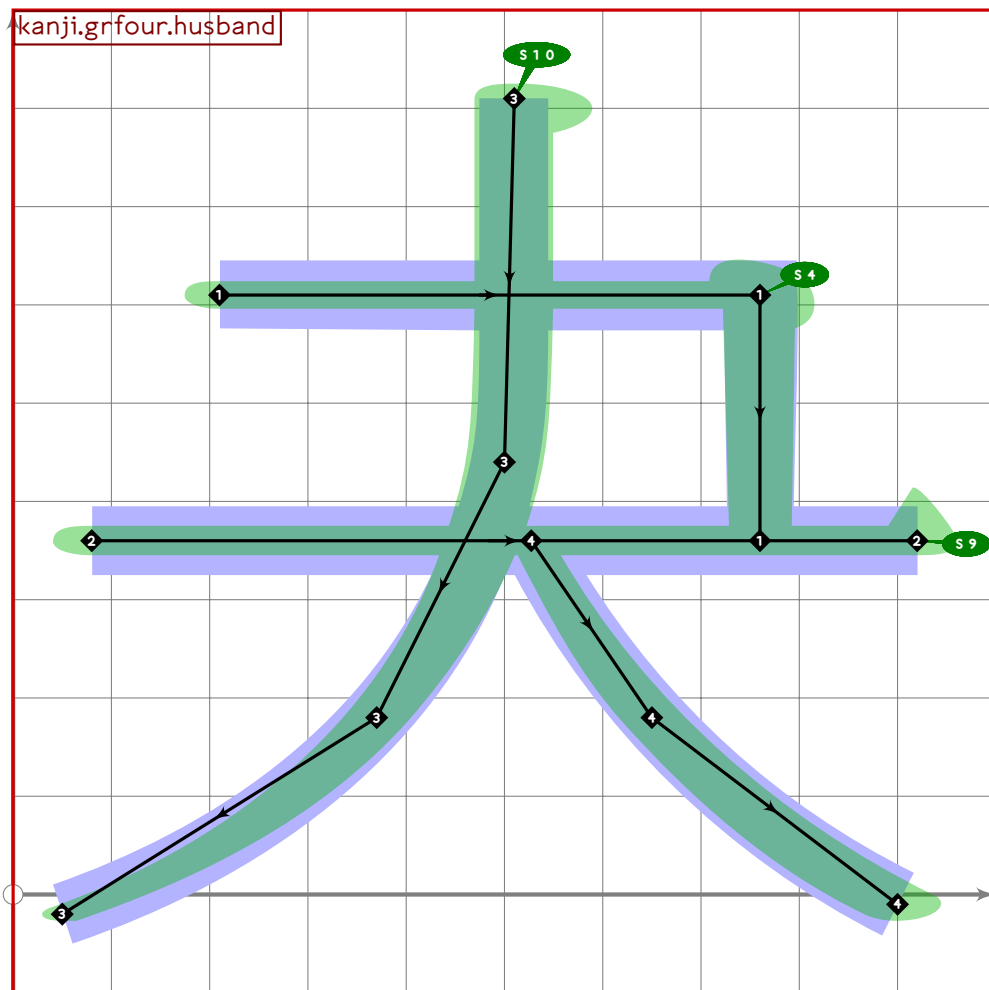
49
50 vardef tsu_curve.kanji.grnine.only =
51   add_proof_box("kanji.grnine.only");
52   build_kanji.tb(400,30)
53     (tsu_curve.kanji.grone.mouth)
54     (tsu_curve.kanji.radical.eight);
55 enddef;

```

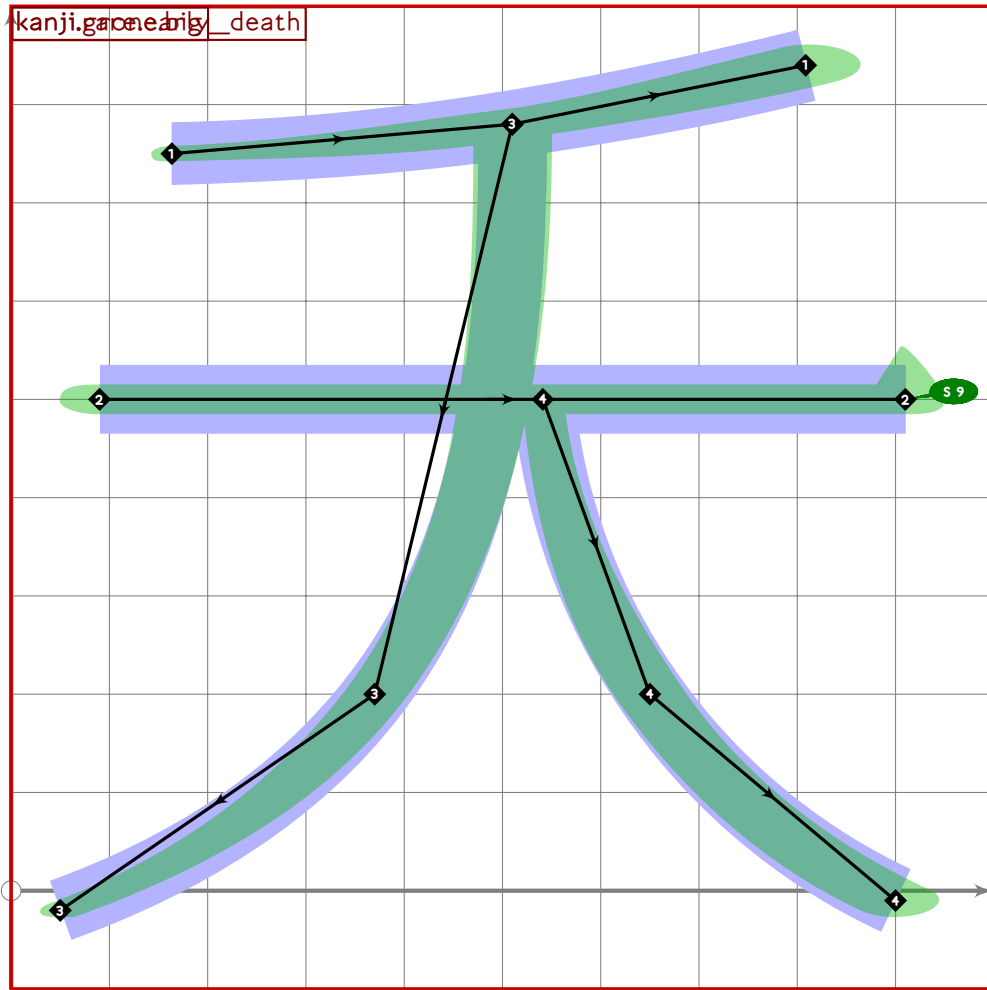
# rare.mp

```
1 %  
2 % Rare kanji needed to build others  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]
```

```
30  
31
```



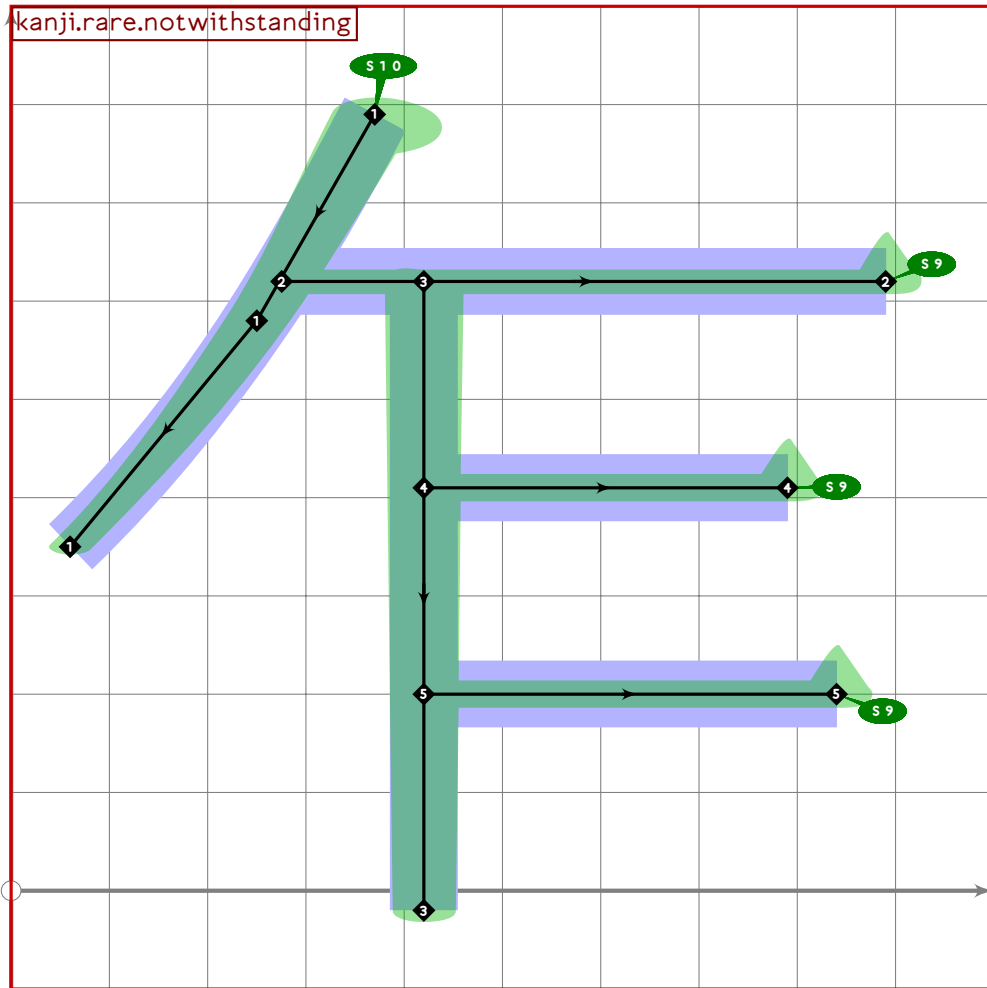
```
32  
33 vardef tsu_curve.kanji.rare.decide =  
34   add_proof_box("kanji.rare.decide");  
35   tsu_curve.kanji.grfour.husband;  
36   bp[sp-4]:=(210,610)-(760,610)-(760,360);  
37   bq[sp-4]:=(1.5,1.5)-(1.5,1.5)-(1.4,1.4);  
38   bo_serif[sp-4][1]:=4;  
39   bo_tip[sp-4][1]:=1;  
40 enddef;
```



```

41
42 vardef tsu_curve.kanji.rare.early_death =
43   add_proof_box("kanji.rare.early_death");
44   build_kanji.add_beret(tsu_curve.kanji.grone.big);
45 enddef;

```



```

46
47 vardef tsu_curve.kanji.rare.notwithstanding =
48   add_proof_box("kanji.rare.notwithstanding");
49   bp[sp]:=(370,790){curl 0.1}..(250,580)..(60,350);
50   bq[sp]:=(1.7,1.7)-(1.4,1.4)-(1.1,1.1);
51   bo_serif[sp][0]:=10;
52   bp[sp*1]:=((0,620)-(1000,620)) intersectionpoint bp[sp]-(890,620);
53   bq[sp*1]:=(1.4,1.4)-(1.5,1.5);
54   bo_serif[sp*1][1]:=9;
55   bp[sp*2]:=(420,620)-(420,-20);
56   bq[sp*2]:=(1.6,1.6)-(1.4,1.4);
57   bp[sp*3]:=(420,410)-(790,410);
58   bq[sp*3]:=(1.5,1.5)-(1.5,1.5);
59   bo_serif[sp*3][1]:=9;
60   bp[sp*4]:=(420,200)-(840,200);
61   bq[sp*4]:=(1.5,1.5)-(1.5,1.5);
62   bo_serif[sp*4][1]:=9;
63   sp:=sp*5;
64 enddef;

```



Part II

U+0000 to U+2FFF

# tsuku-00.mp

```
1 %
2 % Unicode page 00 (ASCII/ISO Latin-1) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

---

```
32
```

```
33 beginfont
```

```
34
```

```
35 input latin-intro.mp;
```

```
36
```

```
37 % AUTODEPS
```

```
38 input accent.mp;
```

```
39 input latin.mp;
```

```
40 input numerals.mp;
```

```
41 input punct.mp;
```

```
42
```

```
43 path bracket[];
```

```
44
```

```
45
```

---

```
46
```

## Ascii

```
47 % ASCII
```

```
48
```

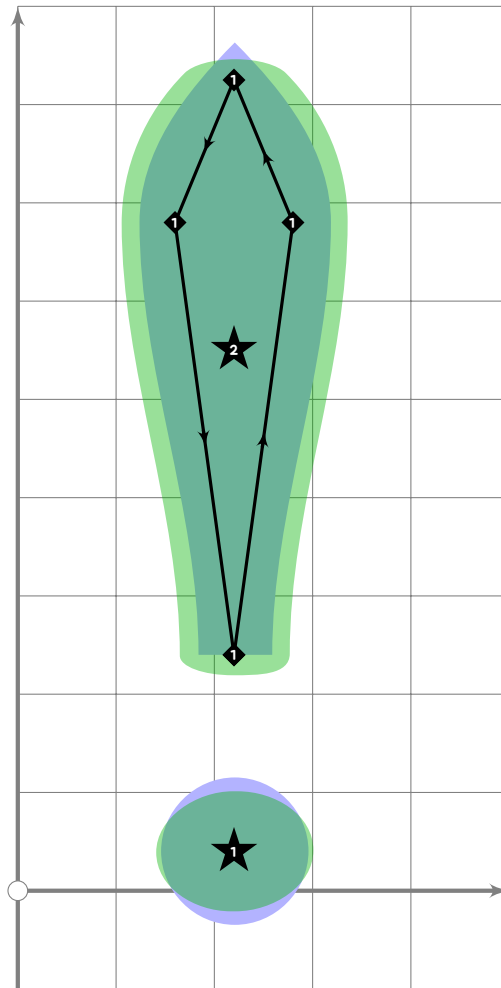
```
49 tsu_rescale_native_narrow;
```

```
50
```

```
51 % WARNING this code is substantially duplicated in tsuku-ff; just
```

```
52 % enough differences to make sharing impractical
```

```
53
```



```

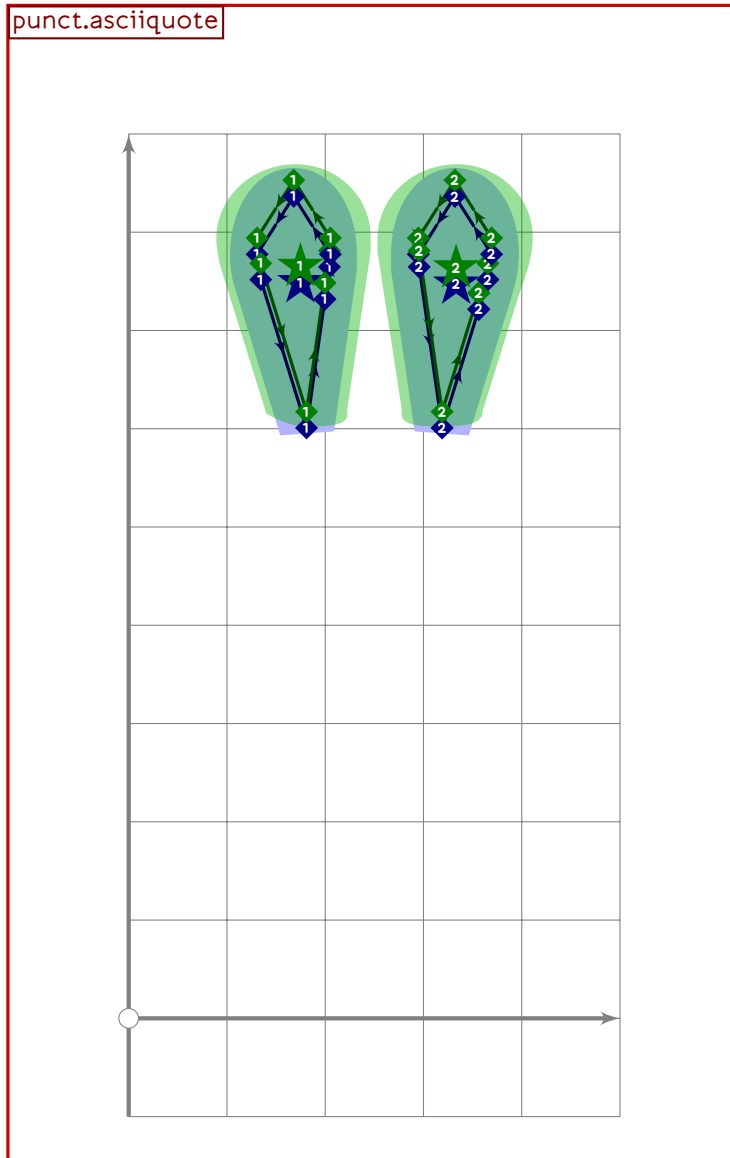
54 % exclamation point
55 begintsuglyph("exclam",33);
56 if tsu_pbrush_size>=(tsu_punct_size*0.5):
57     lcblob1:=fullcircle
58         xscaled (tsu_punct_size*tsu_pbrush_size)
59         yscaled (tsu_punct_size*tsu_pbrush_size*tsu_pbrush_shape)
60         rotated tsu_pbrush_angle
61         shifted (220,40);
62 else:
63     bp[sp]:=fullcircle scaled tsu_punct_size shifted (220,40);
64     bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-cycle;
65     sp:=sp+1;
66 fi;
67
68 bp[sp]:=(220,240){up}..(280,680){up}..{curl 1}(220,825){curl 1}..
69     (160,680){down}..{down}(220,240);
70 bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2);
71 sp:=sp+1;
72
73 if tsu_pbrush_size>=30:
74     if known lcblob1: i:=2; else i:=1; fi;

```

```

75     if sp>2: lcblob[i]:=bp1; i++; fi;
76     lcblob[i]:=(subpath (0,1,3,9) of bp[sp-1])—cycle;
77     fi;
78
79     tsu_render;
80 endsuglyph;
81
82 % WARNING changing rescale setting
83 tsu_rescale_half;
84

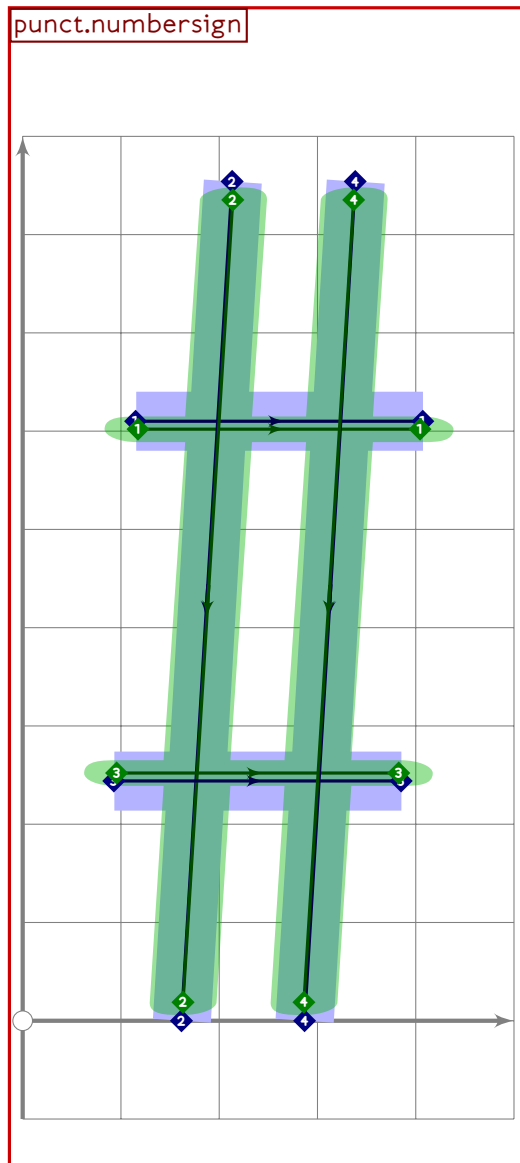
```



```

85 % ASCII (neither left nor right) quotation mark
86 beginsuglyph("quotedbl";34);
87 tsu_curve.punct.asciiquote;
88 tsu_render;
89 endsuglyph;
90

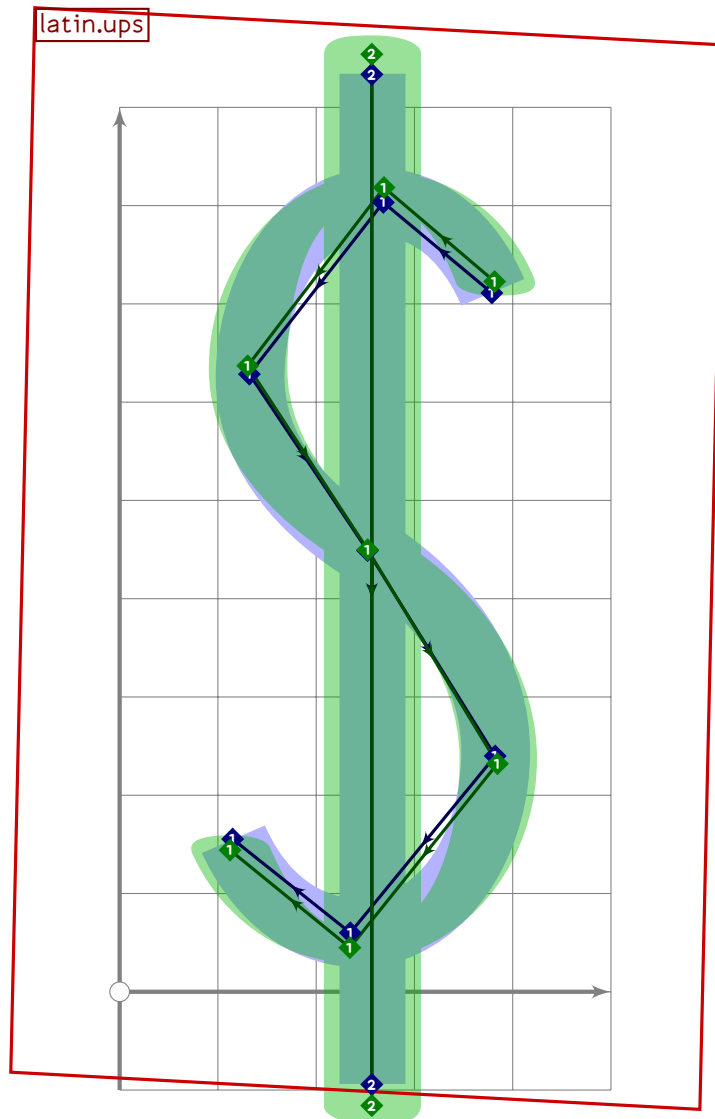
```



```

91 % number sign
92 begintsuglyph("numbersign";35);
93 tsu_curve.punct.numbersign;
94 tsu_render;
95 endsuglyph;
96

```



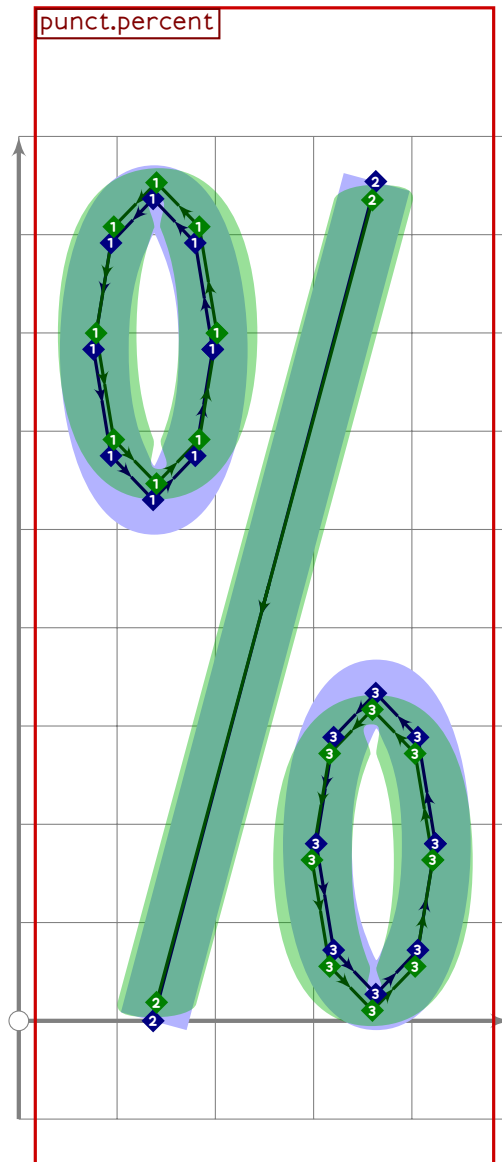
```

97 % dollar sign
98 begintsuglyph("dollar",36);
99 tsu_xform(identity shifted -centre_pt
100   rotated -2 xyscaled (1.06,0.92) shifted centre_pt)(tsu_curve.latin.ups);
101
102 numeric x[],y[];
103 x1=x2=0.53[xpart llcorner bp1,xpart lrcorner bp1];
104 y1=1.12[latin_wide_low_r,latin_wide_high_r];
105 y2=(-0.15)[latin_wide_low_r,latin_wide_high_r];
106
107 bp2:=z1-z2;
108 bp2:=z1-z2;
109 bq2:=(2,2)-(2,2);
110 bo_size2:=90;
111
112 sp:=sp*1;
113 tsu_render;

```

114 endtsuglyph;

115



116 % percent

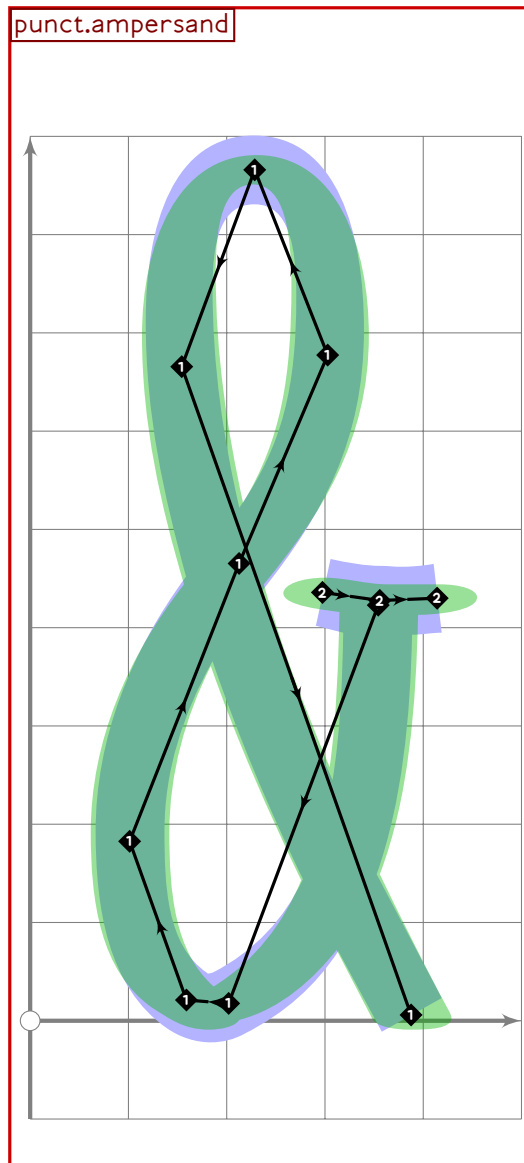
117 begintsuglyph("percent";37);

118 tsu\_curve.punct.percent;

119 tsu\_render;

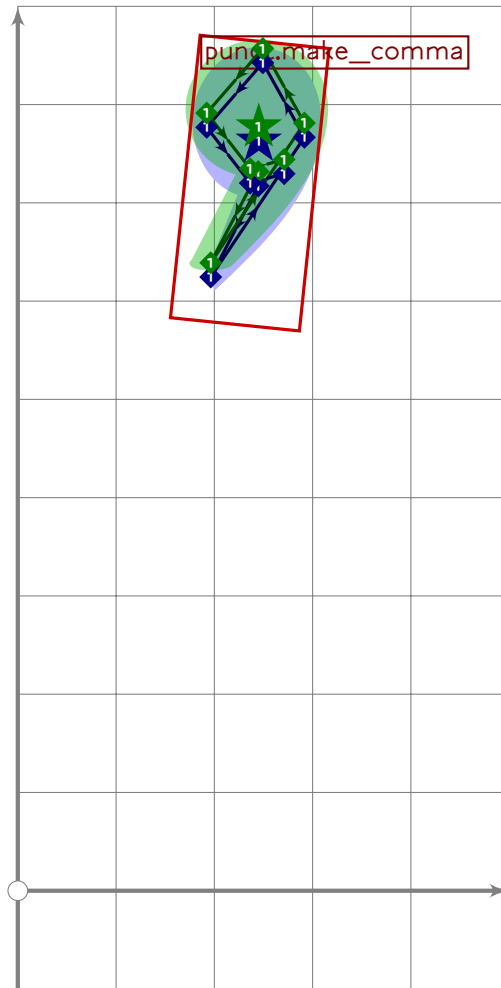
120 endtsuglyph;

121



```
122 % ampersand
123 beginsuglyph("ampersand",38);
124   tsu_curve.punct.ampersand;
125   tsu_render;
126 endsuglyph;
127
```



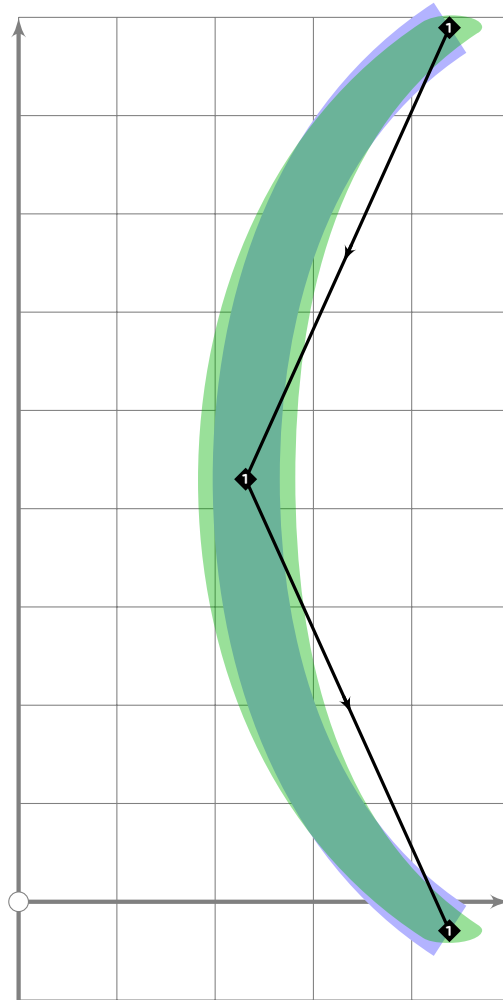


```

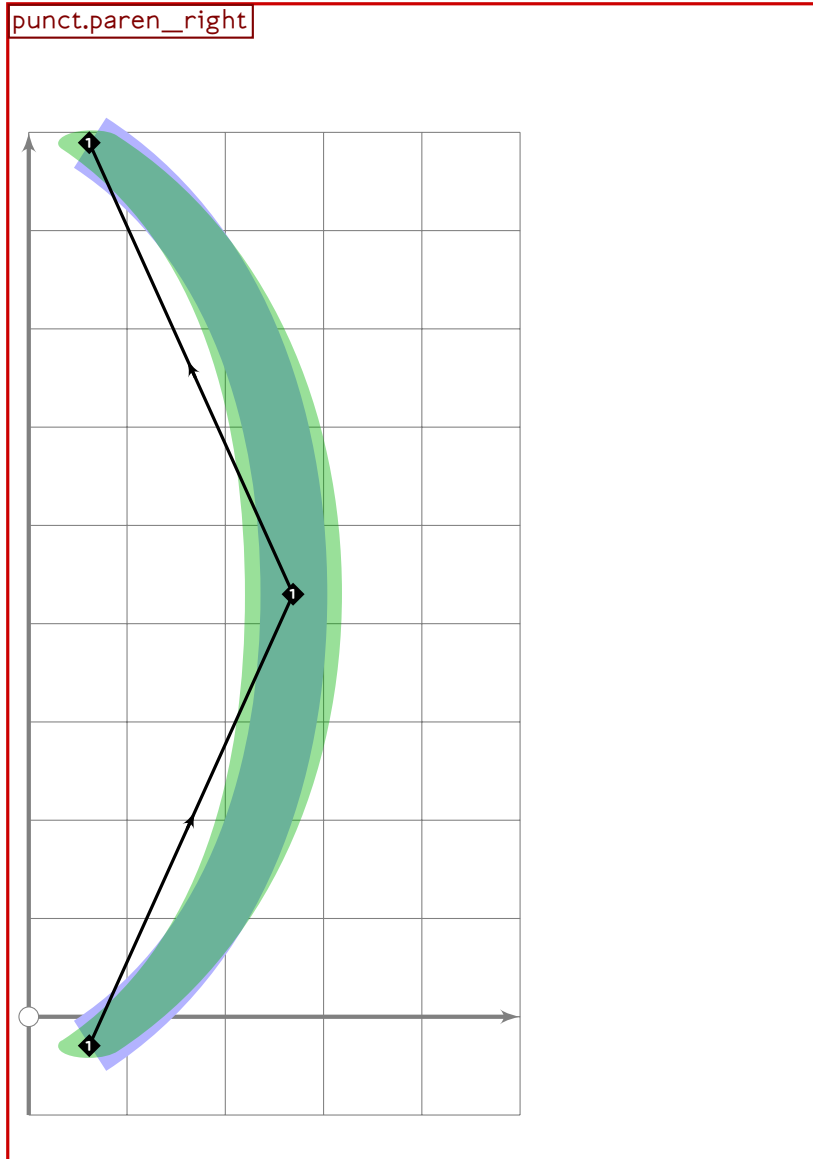
128 % apostrophe
129 begintsuglyph("quotesingle",39);
130 tsu_curve.punct.make_comma((480,vmetric(0.94)),0);
131 tsu_render;
132 endsuglyph;
133
134 % left and right parentheses
135 tsu_curve.punct.paren_intro;

```

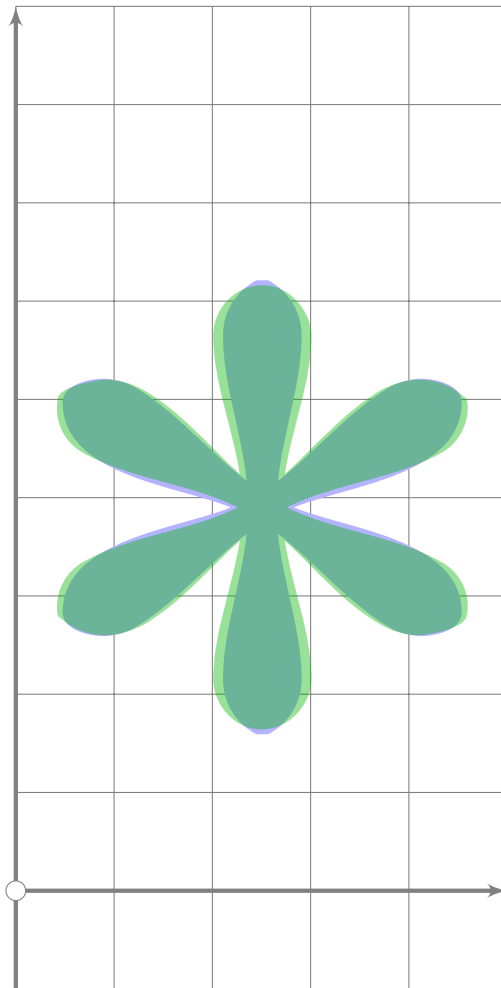
punct.paren\_left



```
136 begint Suglyph("parenleft",40);  
137   tsu_curve.punct.paren_left;  
138   tsu_render;  
139 endsuglyph;
```



```
140 beginsuglyph("parenright",41);  
141   tsu_curve.punct.paren_right;  
142   tsu_render;  
143 endsuglyph;  
144  
145 % WARNING changing rescale setting  
146 tsu_rescale_native_narrow;  
147
```

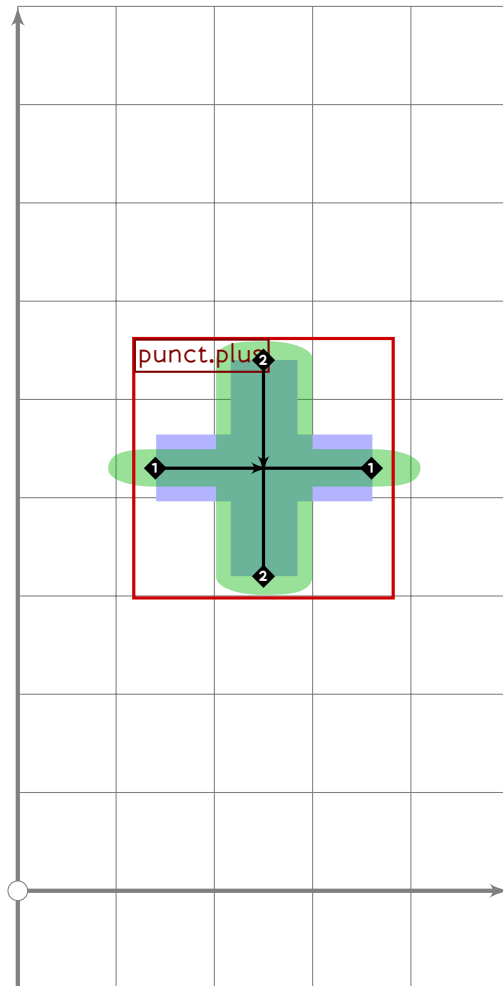


```

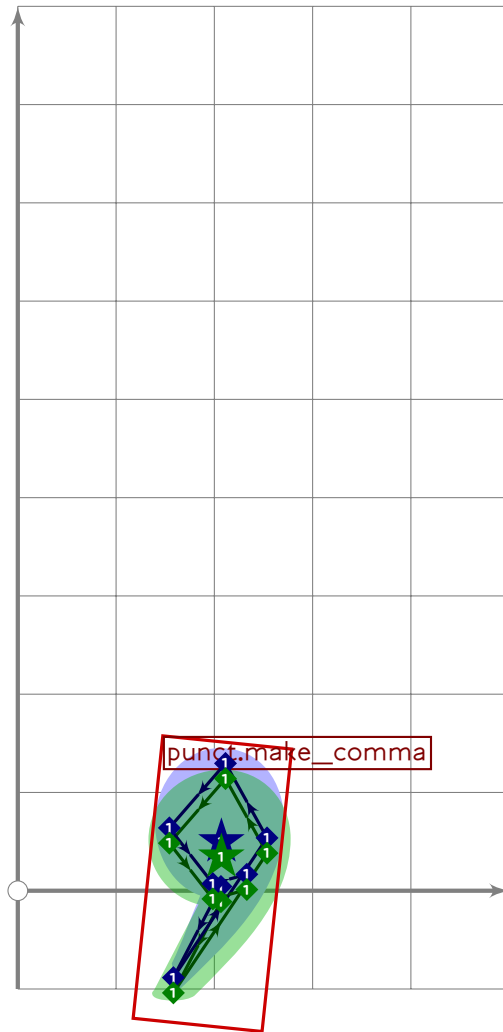
148 % asterisk
149 begint Suglyph("asterisk",42);
150   beingroup
151     path lobe, glyph[];
152
153     lobe:=(1,0){up}..((1+tsu_brush_max)*tsu_punct_size/8,140){up}
154       ..{curl 1}(0,175){curl 1}
155       ..(-(1+tsu_brush_max)*tsu_punct_size/8,140){down};
156     lobe:=(lobe..(lobe rotated 180)..cycle) scaled (tsu_punct_size/80);
157
158     default_nib:=fix_nib(35*tsu_brush_max,
159       35*tsu_brush_max*tsu_brush_shape,
160       tsu_brush_angle);
161     pen_stroke()(lobe shifted centre_pt shifted (-250,0))(glyph1);
162     pen_stroke()(lobe rotated 60 shifted centre_pt shifted (-250,0))(glyph2);
163     pen_stroke()(lobe rotated 120 shifted centre_pt shifted (-250,0))(glyph3);
164
165     dangerousFill glyph1.r;
166     dangerousFill glyph2.r;
167     dangerousFill glyph3.r;
168   endgroup;

```

```
169 endtsuglyph;  
170
```



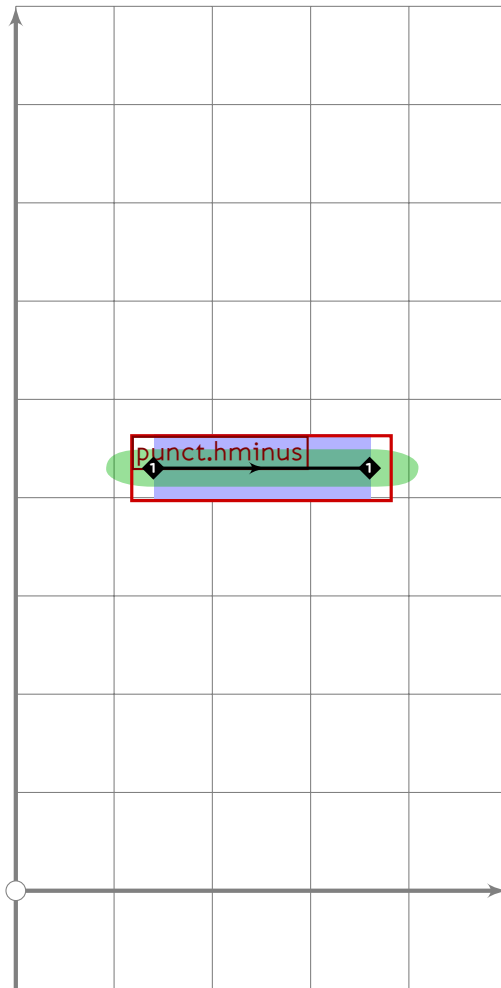
```
171 % plus  
172 begint Suglyph("plus";43);  
173 tsu_curve.punct.plus  
174 (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));  
175 tsu_render;  
176 endtsuglyph;  
177  
178 % WARNING changing rescale setting  
179 tsu_rescale_half;  
180
```



```

181 % comma
182 beginsuglyph("comma";44);
183   tsu_curve.punct.make_comma((380,vmetric(0.03)),0);
184   tsu_render;
185 endsuglyph;
186
187 % WARNING changing rescale setting
188 tsu_rescale_native_narrow;
189

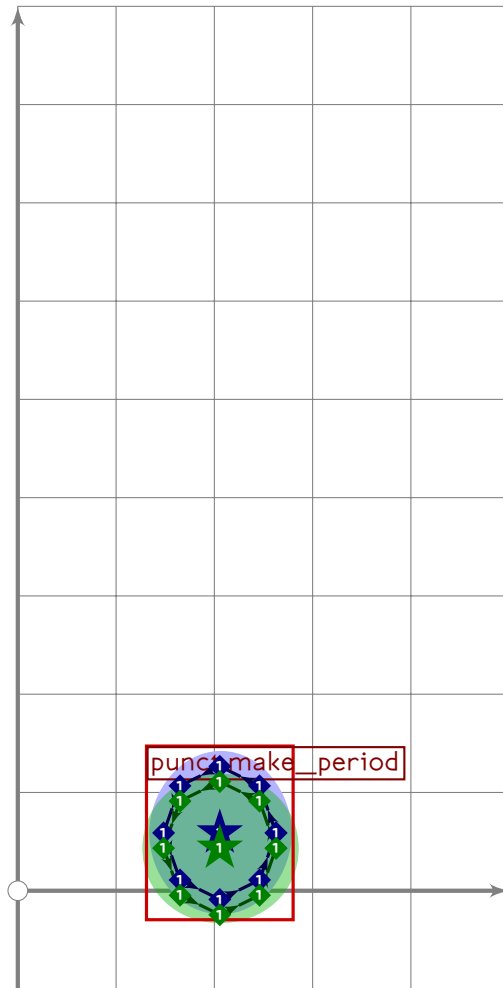
```



```

190 % hyphen-minus
191 begint Suglyph("hyphen";45);
192   tsu_curve.punct.hminus
193   (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));
194   tsu_render;
195 endtsuglyph;
196
197 % WARNING changing rescale setting
198 tsu_rescale_half;
199

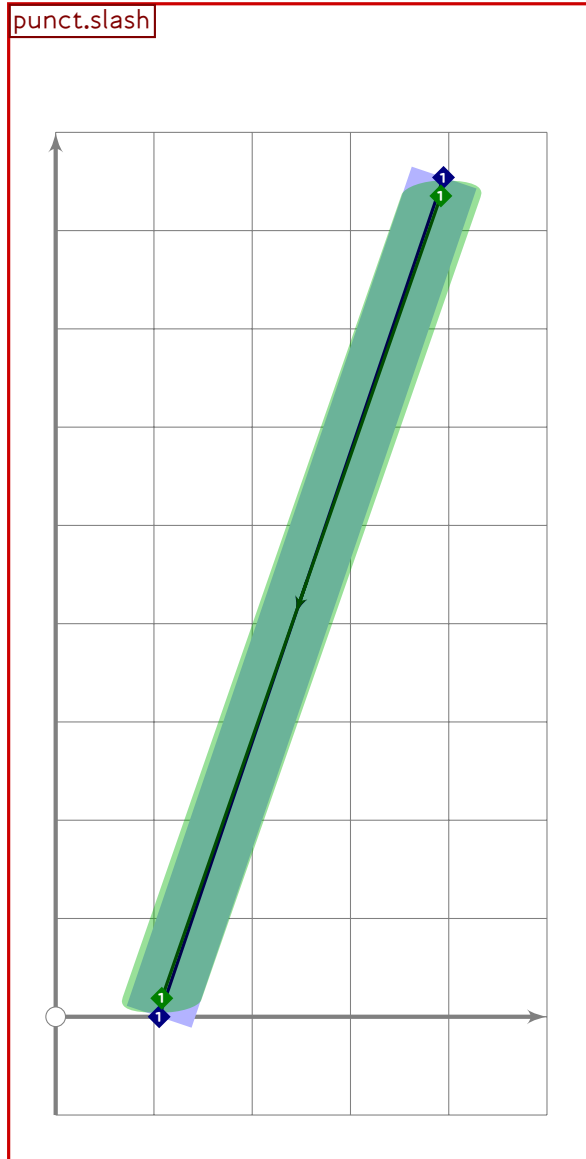
```



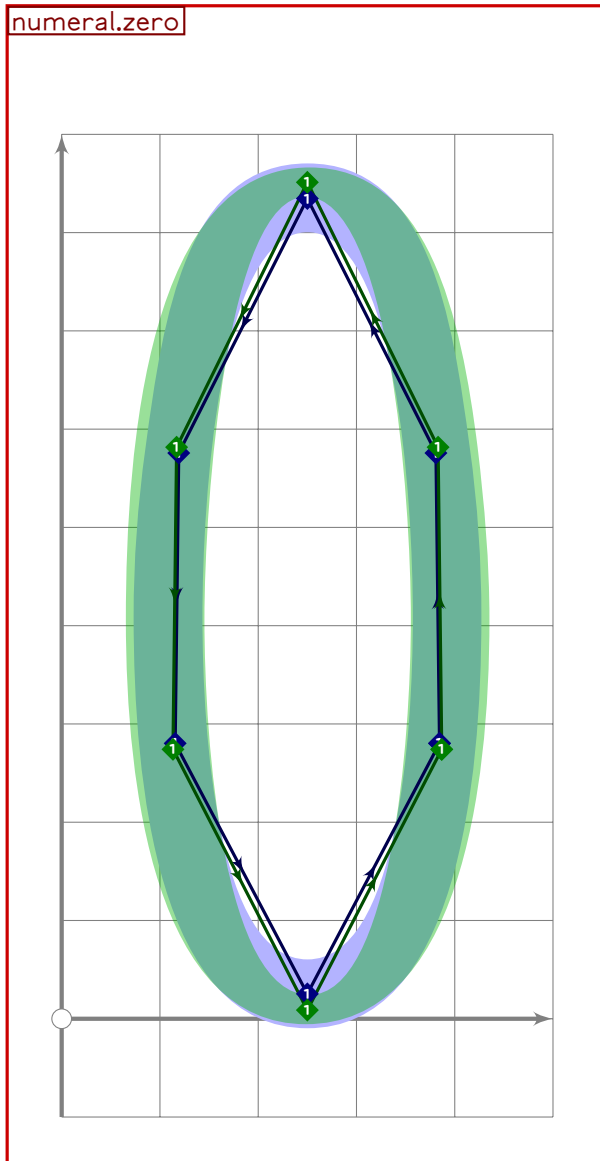
```
200 % period
201 begintsuglyph("period",46);
202 tsu_curve.punct.make_period((380,vmetric(0.03)));
203 tsu_render;
204 endtsuglyph;
205
```



punct.slash



```
206 % slash
207 begint Suglyph("slash";47);
208   tsu_curve.punct.slash;
209   tsu_render;
210 endsuglyph;
211
```

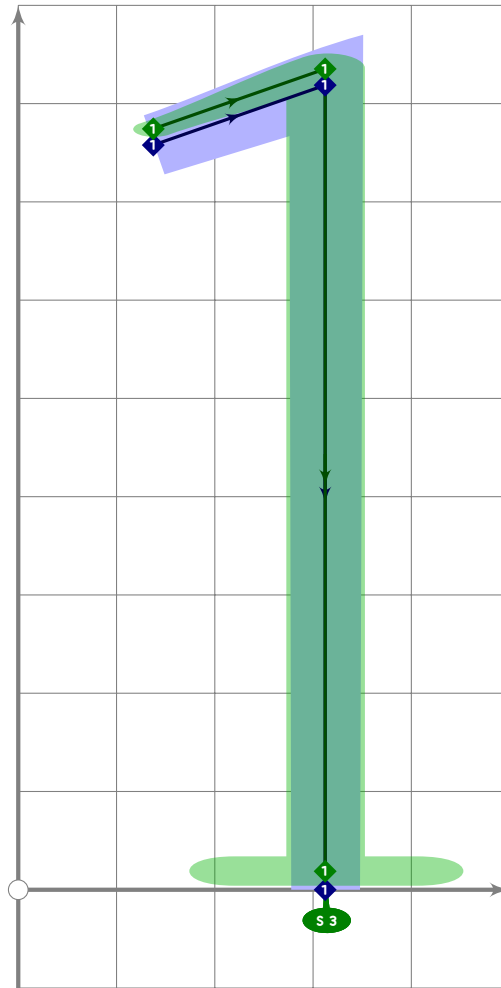


```

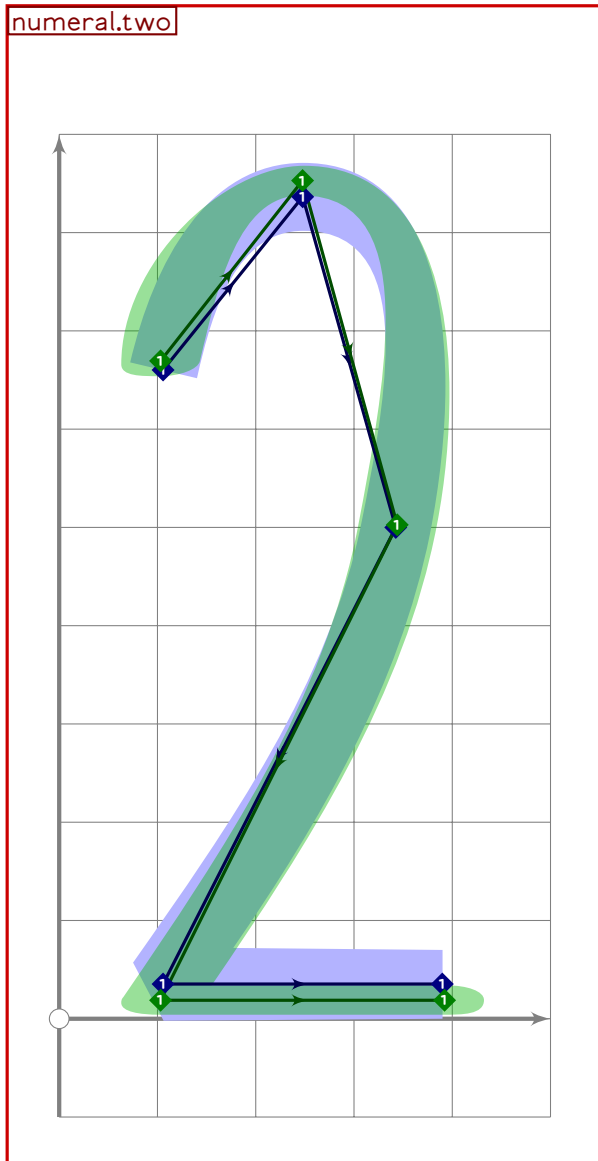
212 % 0
213 begintsuglyph("zero",48);
214 tsu_curve.numeral.zero;
215 tsu_render;
216 endtsuglyph;
217

```

numeral.one



```
218 % 1
219 begint Suglyph("one";49);
220 tsu_curve.numeral.one;
221 tsu_render;
222 endtsuglyph;
223
```

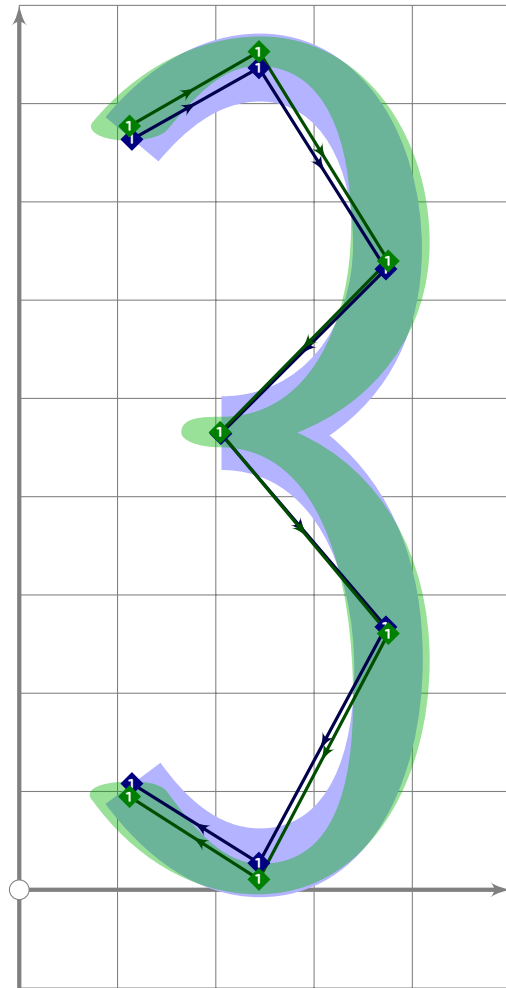


```

224 % 2
225 beginsuglyph("two",50);
226 tsu_curve.numeral.two;
227 tsu_render;
228 endsuglyph;
229

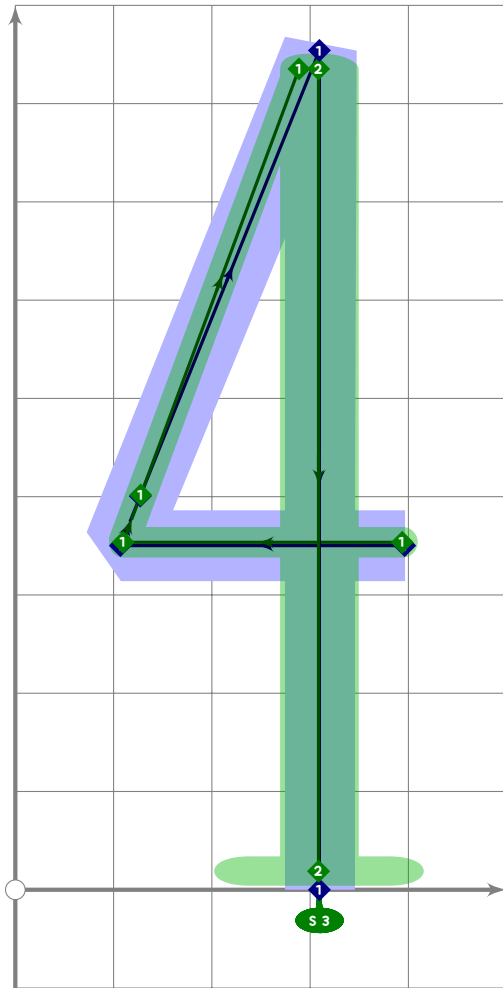
```

numeral.three



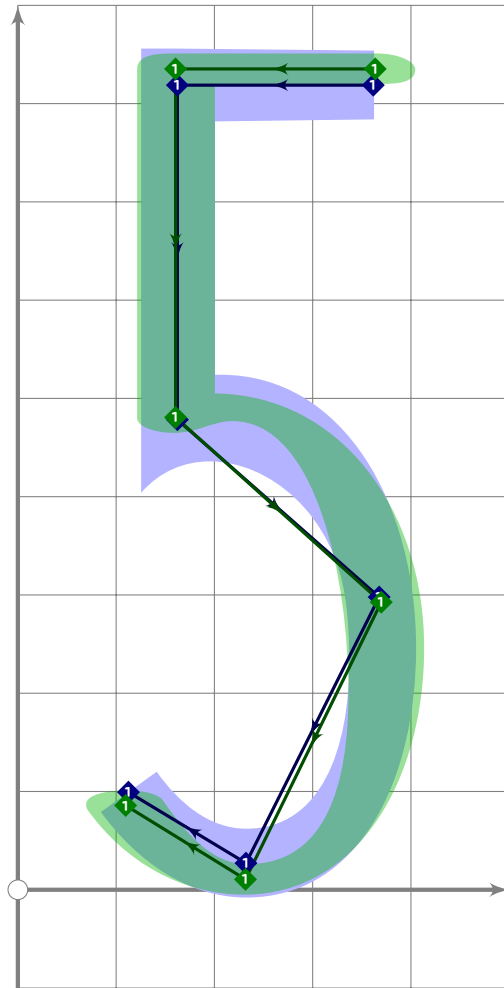
```
230 % 3
231 beginsuglyph("three",51);
232 tsu_curve.numeral.three;
233 tsu_render;
234 endsuglyph;
235
```

numeral.four

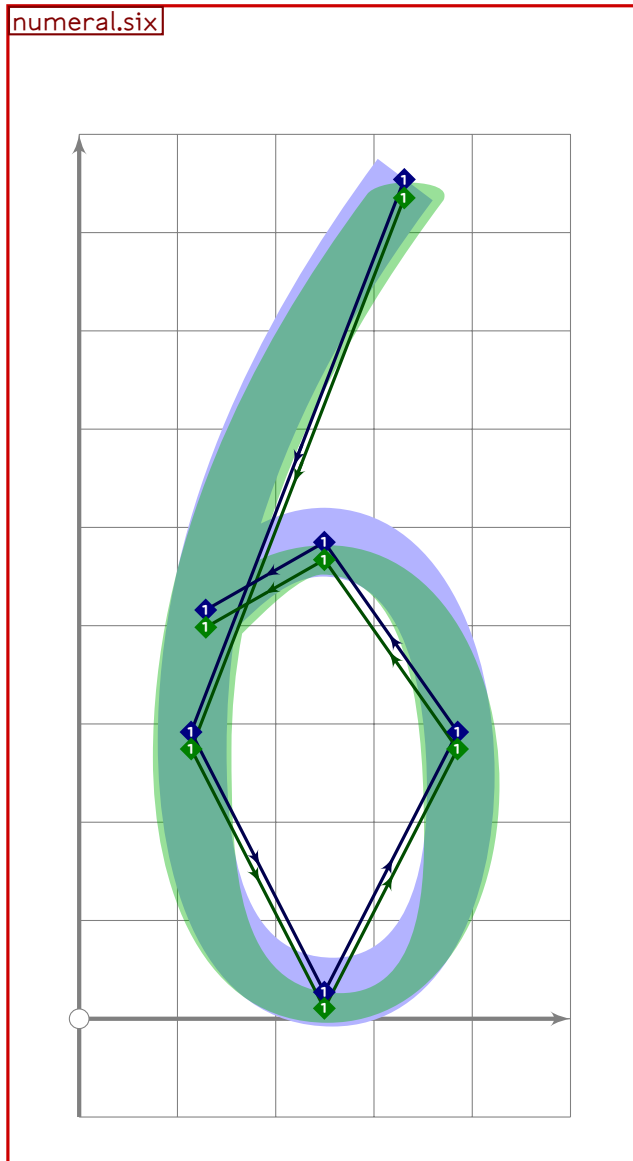


```
236 % 4
237 beginsuglyph("four",52);
238   tsu_curve.numeral.four;
239   tsu_render;
240 endsuglyph;
241
```

numeral.five

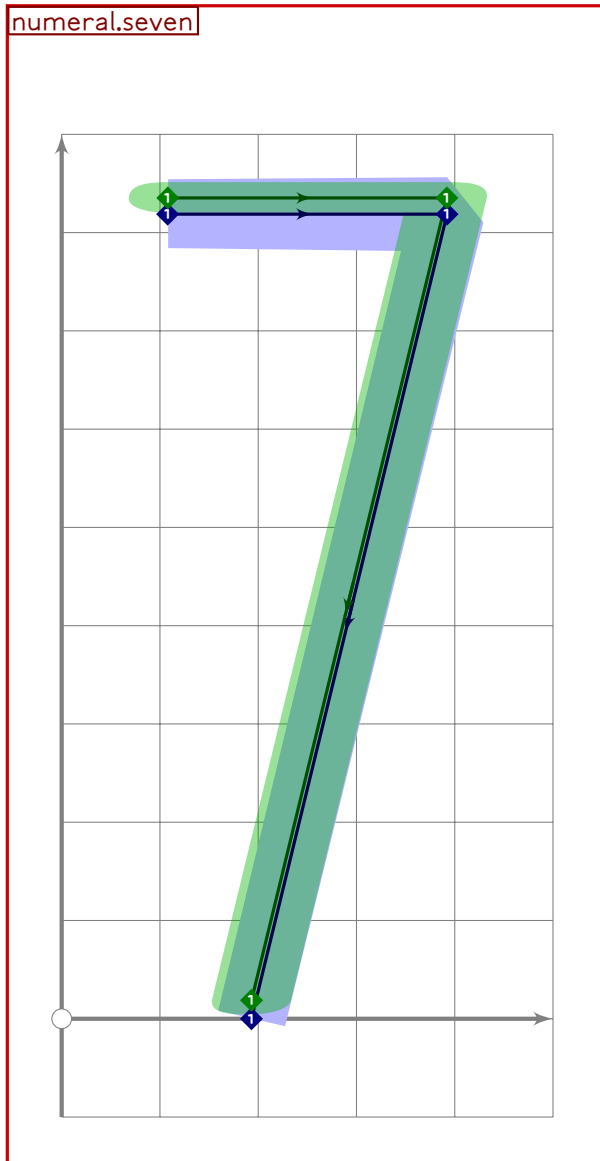


```
242 % 5
243 begintsuglyph("five",53);
244 tsu_curve.numeral.five;
245 tsu_render;
246 endtsuglyph;
247
```

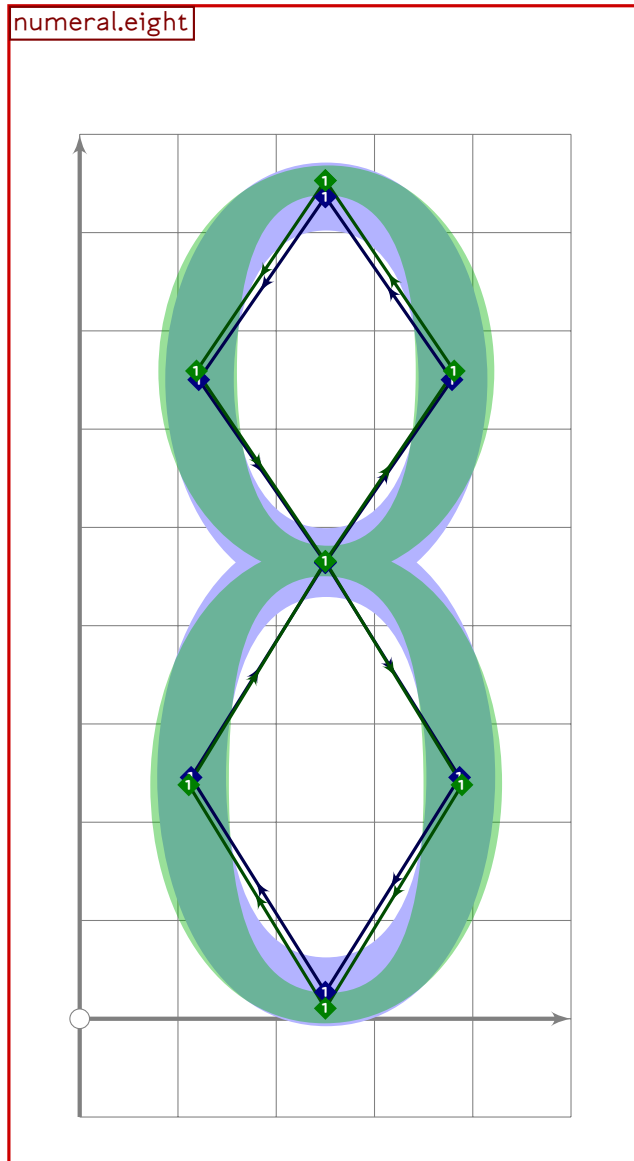


```
248 % 6
249 begintsuglyph("six",54);
250 tsu_curve.numeral.six;
251 tsu_render;
252 endtsuglyph;
253
```



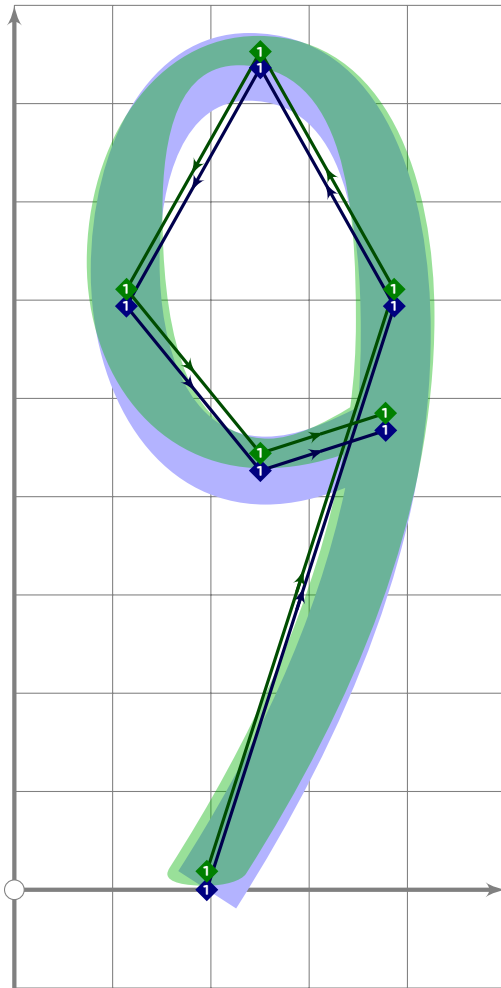


```
254 % 7
255 beginsuglyph("seven";55);
256 tsu_curve.numeral.seven;
257 tsu_render;
258 endsuglyph;
259
```

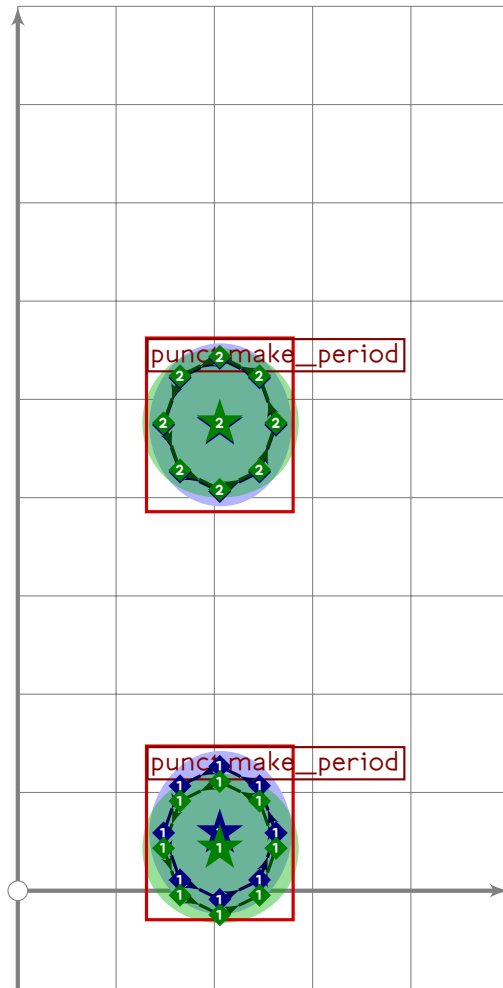


```
260 % 8  
261 beginsuglyph("eight";56);  
262 tsu_curve.numeral.eight;  
263 tsu_render;  
264 endsuglyph;  
265
```

numeral.nine



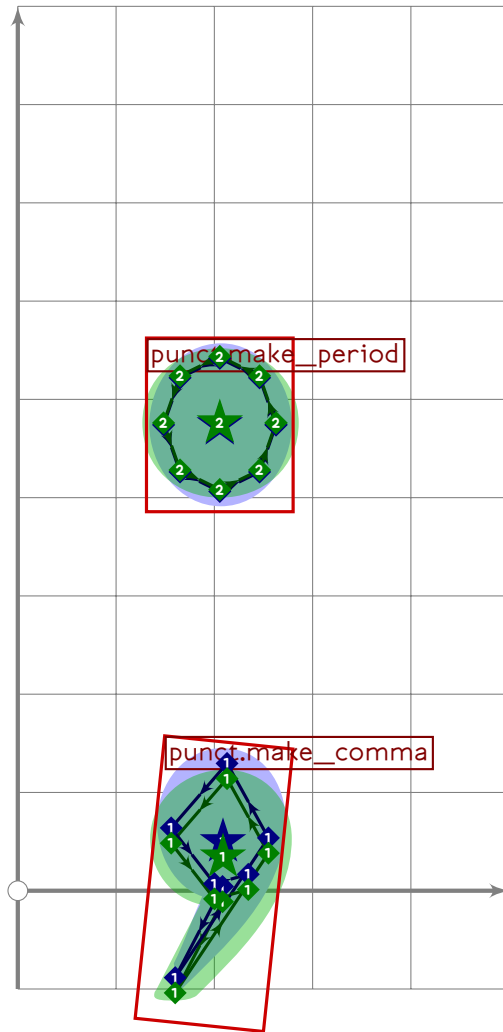
```
266 % 9
267 begint Suglyph("nine",57);
268 tsu_curve.numeral.nine;
269 tsu_render;
270 endtsuglyph;
271
```



```

272 % colon
273 begint Suglyph("colon",58);
274 tsu_curve.punct.make_period((380,vmetric(0.03)));
275 tsu_curve.punct.make_period((380,vmetric(0.56)));
276 tsu_render;
277 endsuglyph;
278

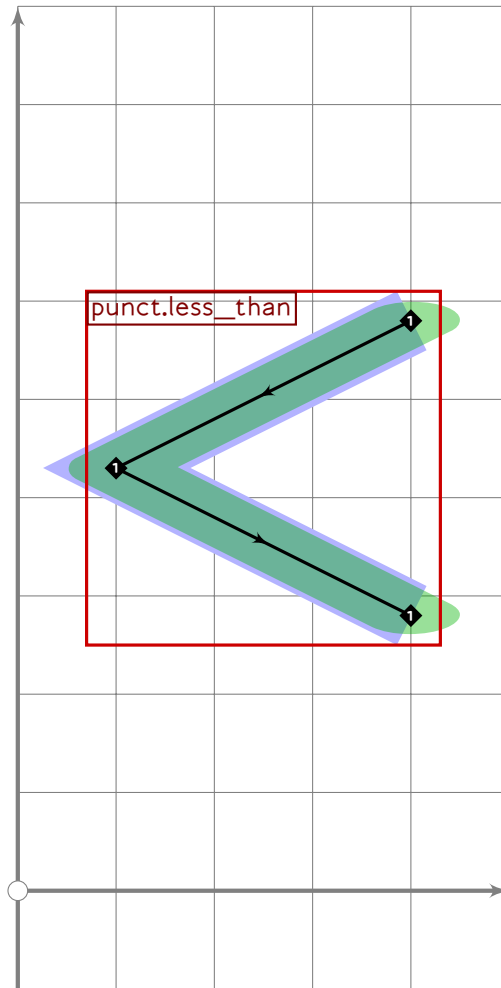
```



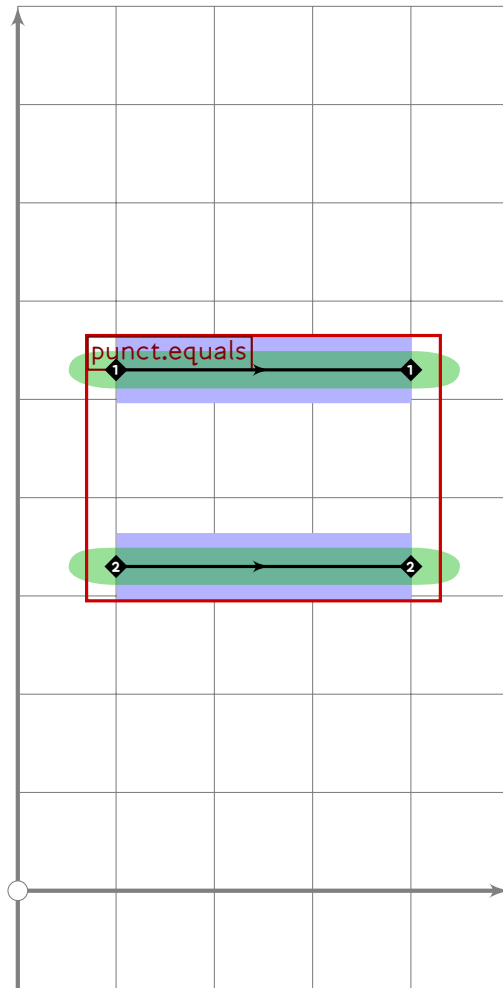
```

279 % semicolon
280 beginsuglyph("semicolon",59);
281 tsu_curve.punct.make_comma((380,vmetric(0.03)),0);
282 tsu_curve.punct.make_period((380,vmetric(0.56)));
283 tsu_render;
284 endsuglyph;
285
286 % WARNING, changing rescale setting
287 tsu_rescale_native_narrow;
288

```



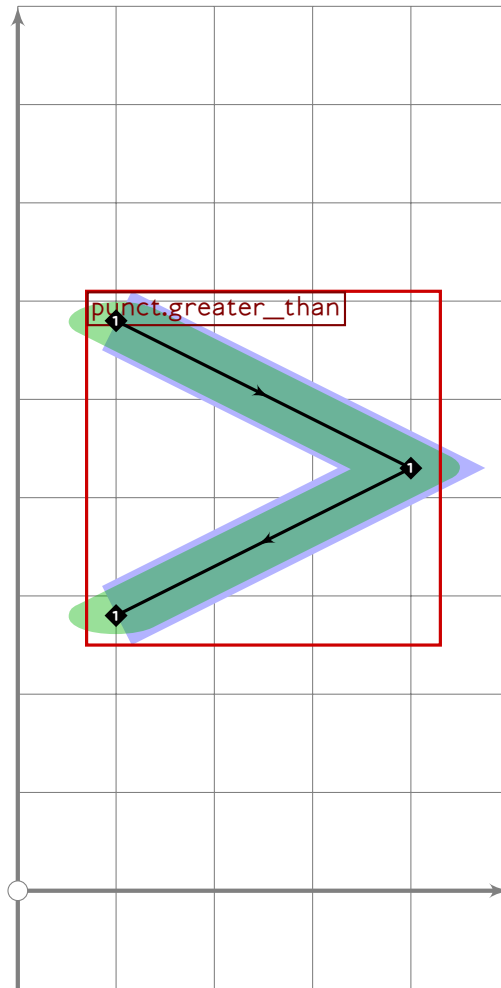
```
289 % less than
290 begintsuglyph("less";60);
291 tsu_curve,punct.less_than
292   (identity scaled (1.5*tsu_punct_size) shifted (250,latin_vcentre));
293 tsu_render;
294 endsuglyph;
295
```



```

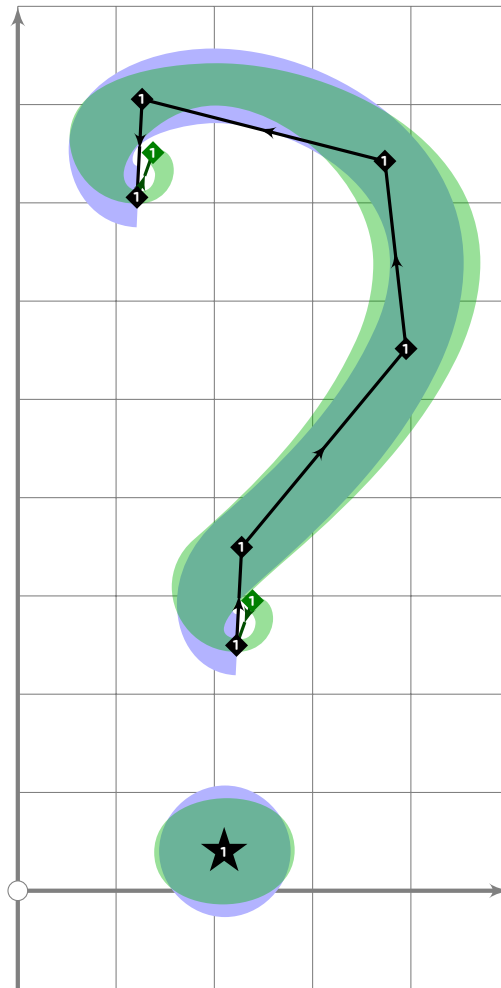
296 % equals
297 begint Suglyph("equals",61);
298   tsu_curve.punct.equals
299   (identity scaled (1.5*tsu_punct_size) shifted (250,latin_vcentre));
300   tsu_render;
301   endtsuglyph;
302

```



```
303 % greater than
304 begintsuglyph("greater";62);
305 tsu_curve.punct.greater_than
306   (identity scaled (1.5*tsu_punct_size) shifted (250,latin_vcentre));
307 tsu_render;
308 endsuglyph;
309
```





```

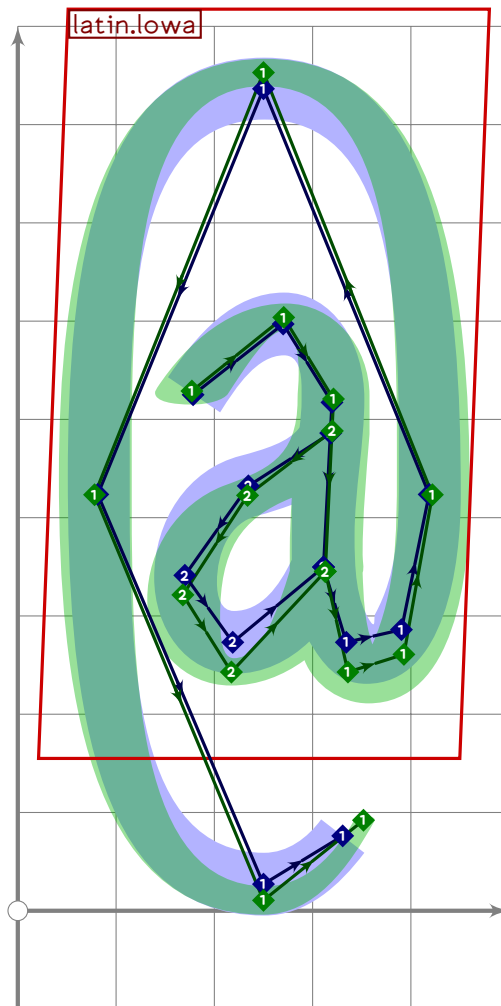
310 % question mark
311 begintsuglyph("question",63);
312     numeric r;
313     if tsu_pbrush_size>=(tsu_punct_size*0.5):
314         lcblob1:=fullcircle
315             xscaled ((tsu_punct_size+tsu_pbrush_size)*0.89)
316             yscaled ((tsu_punct_size+tsu_pbrush_size*tsu_pbrush_shape)*0.89)
317             rotated tsu_pbrush_angle
318             shifted (210,40);
319     else:
320         bp[sp]:=fullcircle scaled tsu_punct_size shifted (210,40);
321         bq[sp]:=(1,1)..(2,2)..(2,2)..(1,1);
322         if tsu_pbrush_size>=30:
323             lcblob1:=bp[sp];
324             fi;
325             sp:=sp+1;
326         fi;
327         r:=tsu_punct_size/2;
328
329         bp[sp]:=(210,300){right}..(210,300-r){left}..
330             (210,300+r)..(210+2.5*r,750)..

```

```

331 tension 1.3..(210-2.5*r,750*r)..
332 (210-2.5*r,750-r){right}..
333 (210-2.5*r,750){left};
334 bp[sp]:=insert__nodes(bp[sp])(2.5);
335 bp[sp]:=bp[sp] rotatedaround ((210,10),-3);
336 bq[sp]:=(0.8,0.8)-(1,1)-(2,2)-(2,2)-(2,2)-(2,2)-(1,1)-(0.8,0.8);
337 sp:=sp*1;
338
339 tsu_render;
340 endtsuglyph;
341
342 % WARNING, changing rescale setting
343 tsu_rescale_half;
344

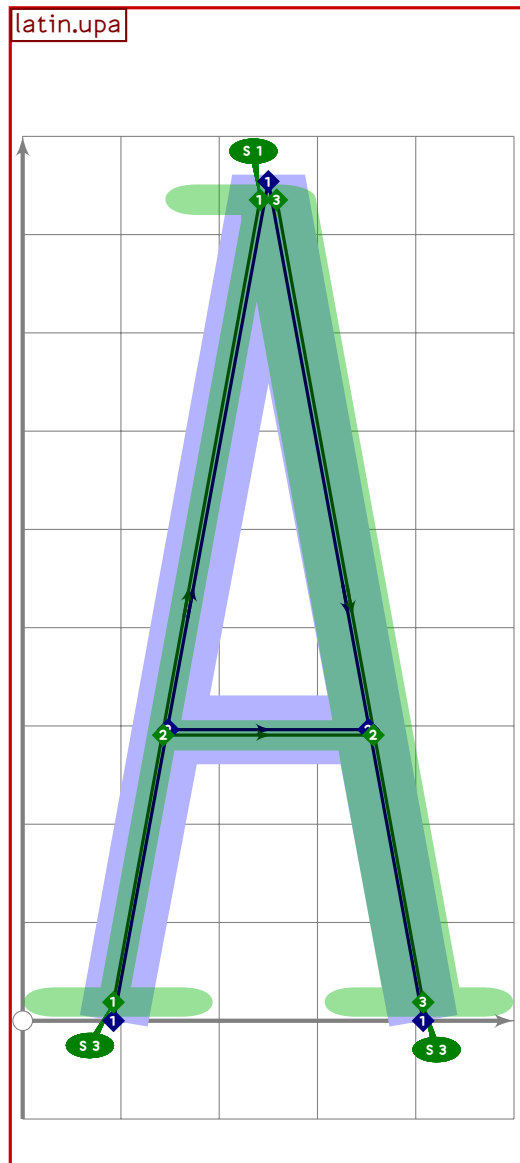
```



```

345 % commercial at
346 begint Suglyph("at",64);
347 tsu_curve.punct.atsign;
348 tsu_render;
349 endtsuglyph;
350

```

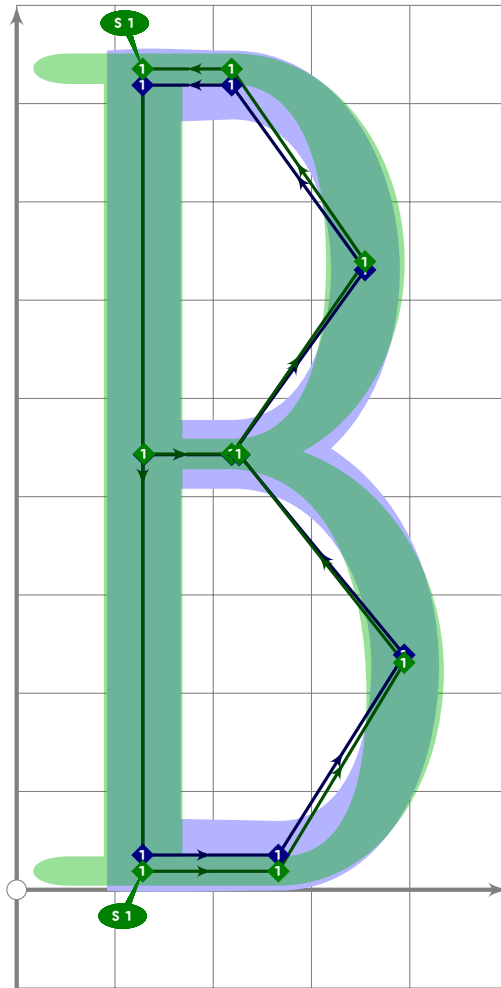


```

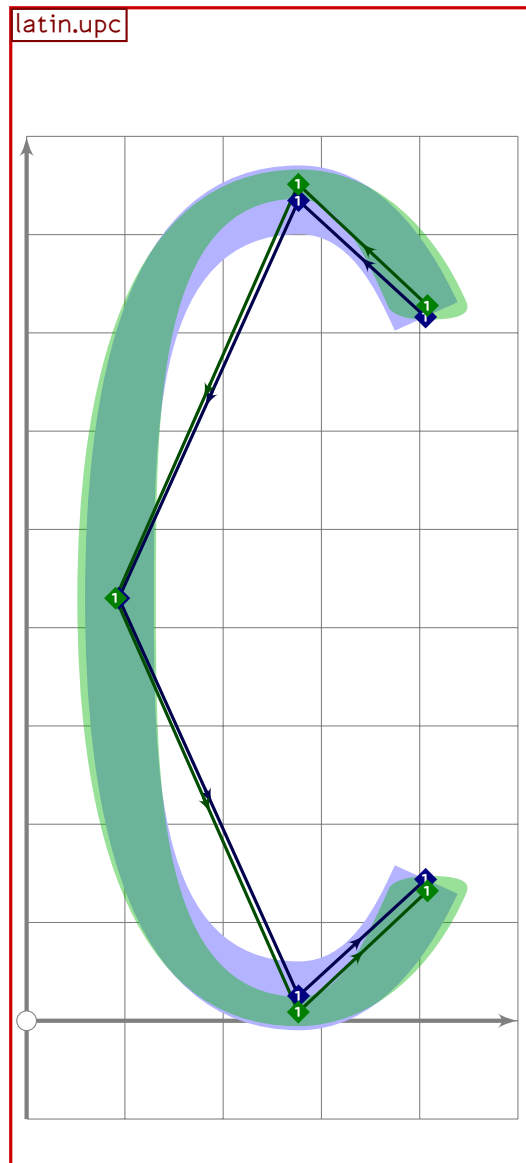
351 % A
352 begint Suglyph("A",65);
353   tsu_curve.latin.upa;
354   tsu_render;
355   endtsuglyph;
356

```

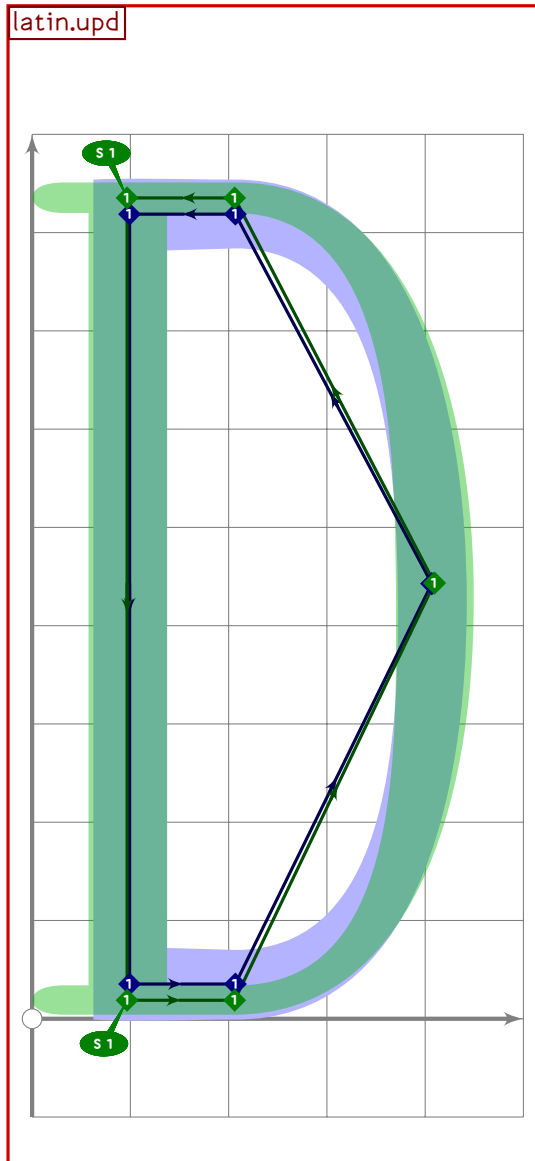
latin.upb



```
357 % B
358 begint Suglyph("B";66);
359 tsu_curve.latin.upb;
360 tsu_render;
361 endsuglyph;
362
```



```
363 % C
364 begint Suglyph("C",67);
365 tsu_curve.latin.upc;
366 tsu_render;
367 endtsuglyph;
368
```

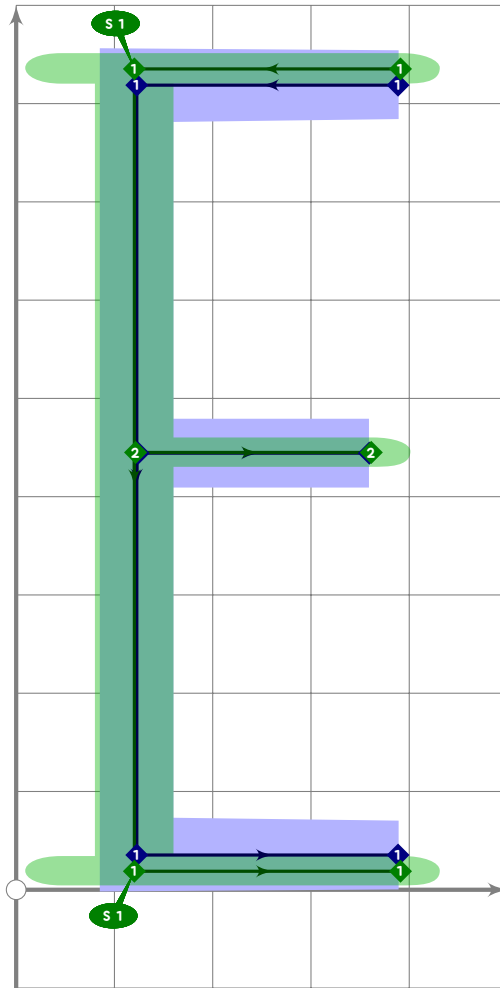


```

369 % D
370 beginsuglyph("D",68);
371 tsu_curve.latin.upd;
372 tsu_render;
373 endsuglyph;
374

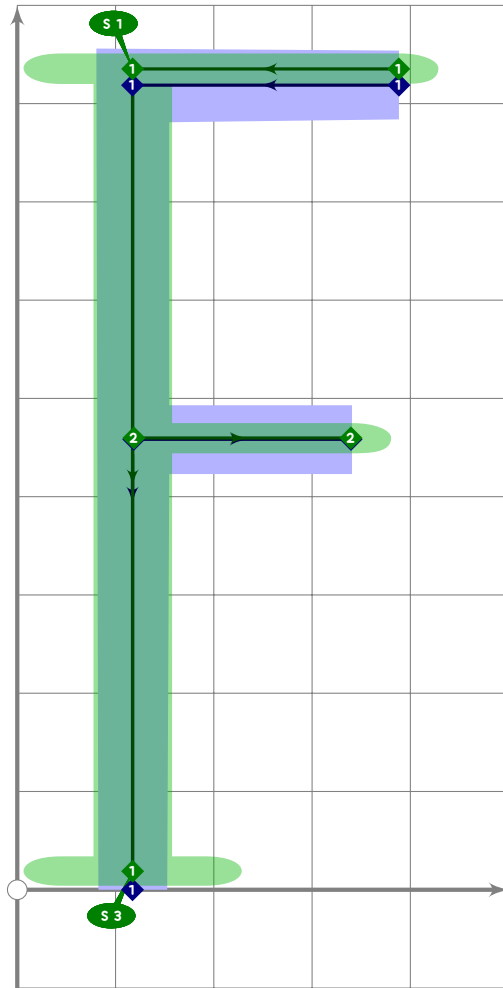
```

latin.upe



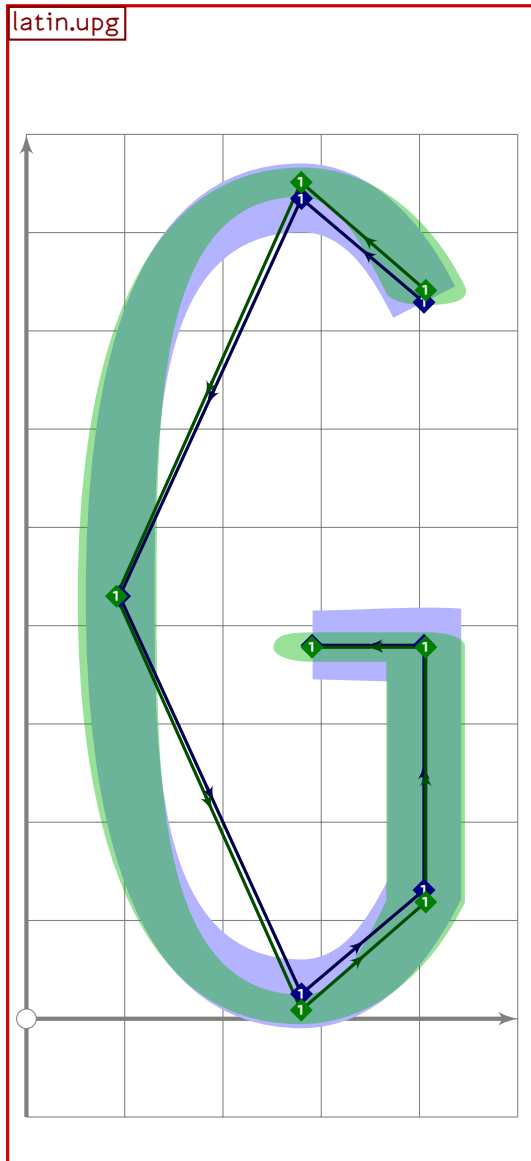
```
375 % E
376 begint Suglyph("E";69);
377 tsu_curve.latin.upe;
378 tsu_render;
379 endtsuglyph;
380
```

latin.upf



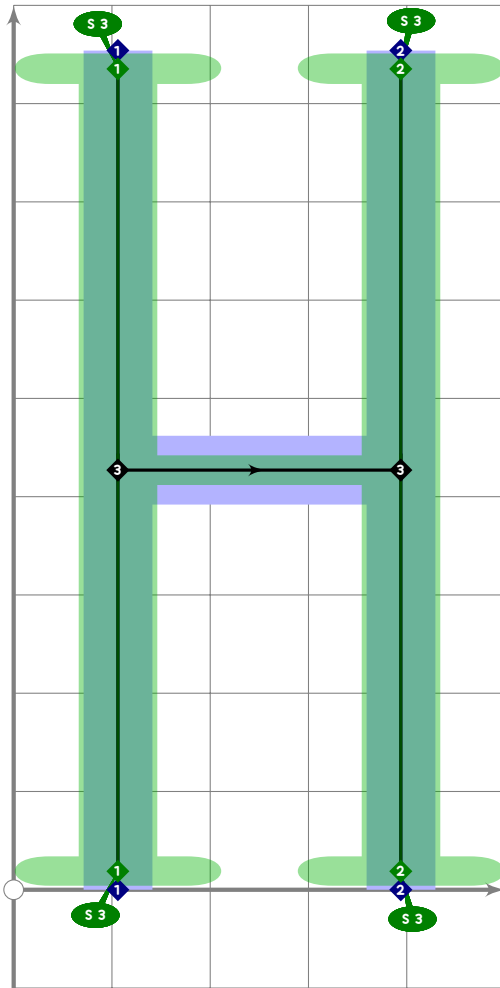
```
381 % F
382 beginsuglyph("F";70);
383 tsu_curve.latin.upf;
384 tsu_render;
385 endsuglyph;
386
```





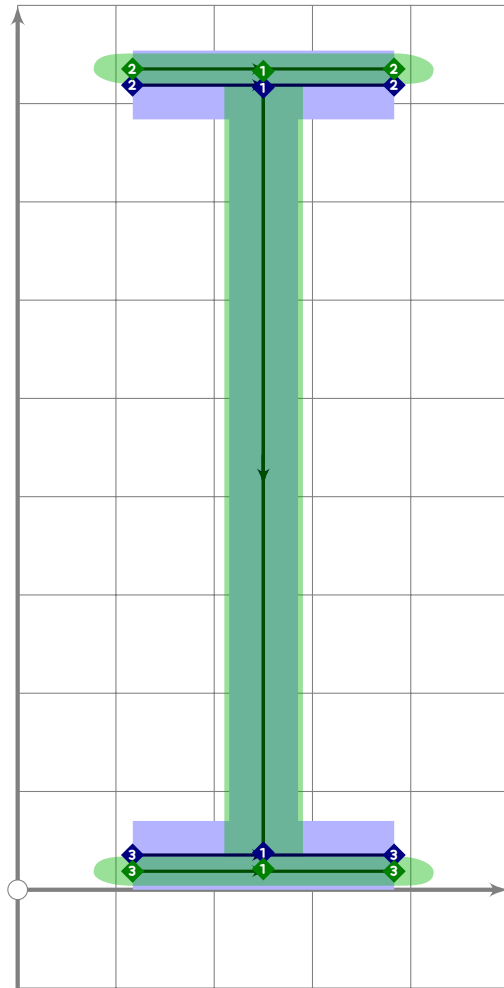
```
387 % G
388 begint Suglyph("G";71);
389 tsu_curve.latin.upg;
390 tsu_render;
391 endtsuglyph;
392
```

latin.uph

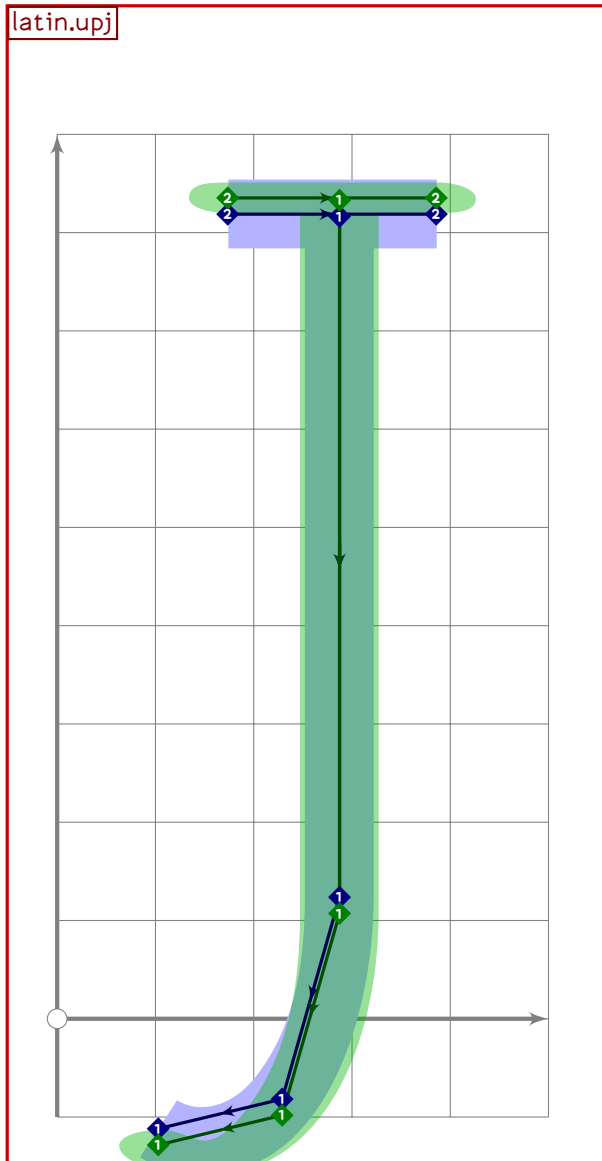


```
393 % H
394 begintsuglyph("H";72);
395 tsu_curve.latin.uph;
396 tsu_render;
397 endsuglyph;
398
```

latin.upi



```
399 % I
400 beginsuglyph("I";73);
401   tsu_curve.latin.upi;
402   tsu_render;
403 endsuglyph;
404
```

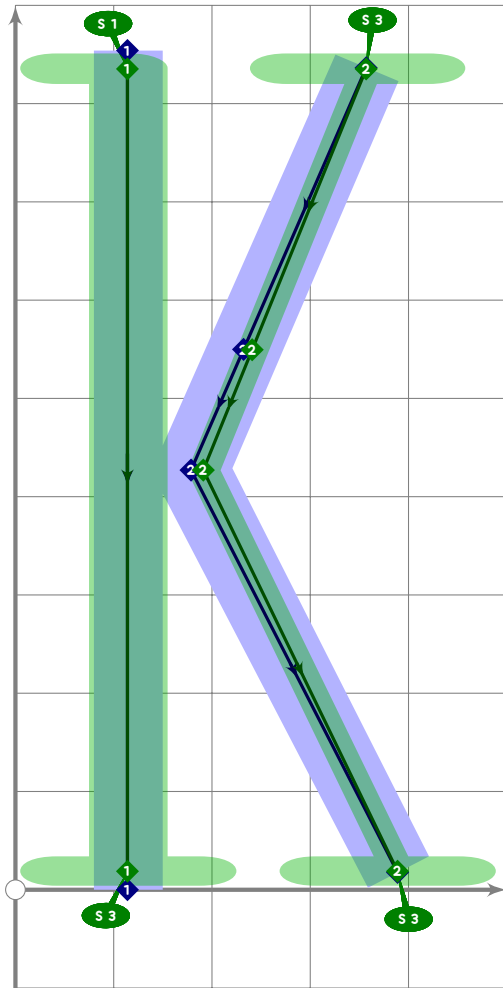


```

405 % J
406 beginsuglyph("J";74);
407   tsu_curve.latin.upj;
408   tsu_render;
409 endsuglyph;
410

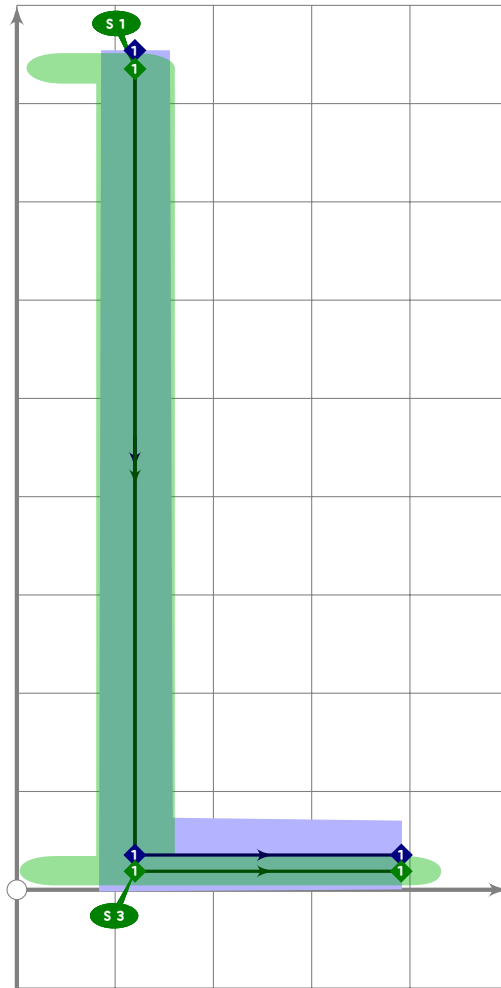
```

latin.upk

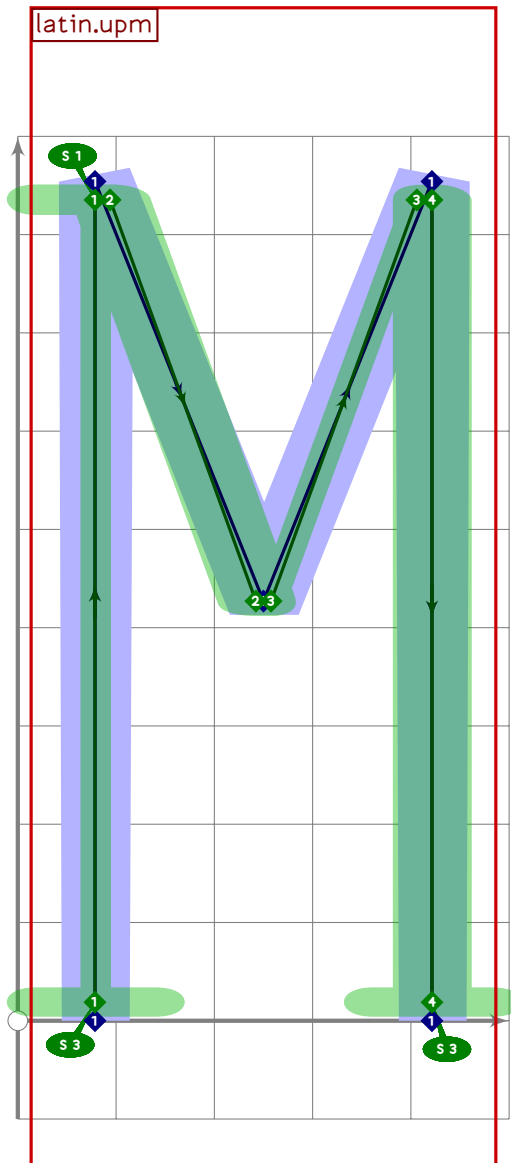


```
411 % K
412 begintsuglyph("K";75);
413 tsu_curve.latin.upk;
414 tsu_render;
415 endtsuglyph;
416
```

latin.upl



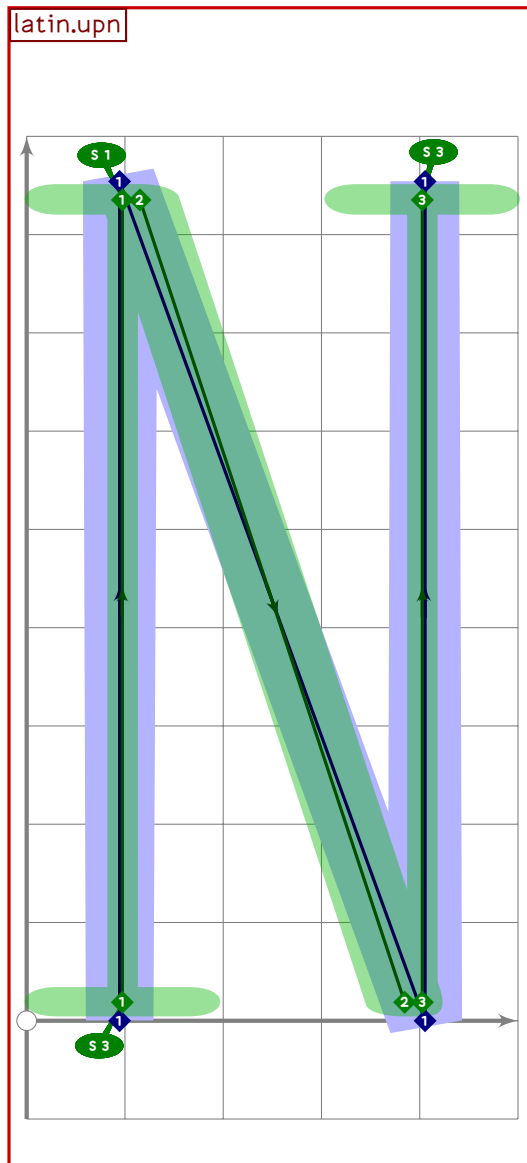
```
417 % L
418 begint Suglyph("L",76);
419 tsu_curve.latin.upl;
420 tsu_render;
421 endtsuglyph;
422
```



```

423 % M
424 begintsuglyph("M";77);
425 tsu_curve.latin.upm;
426 tsu_render;
427 endsuglyph;
428

```

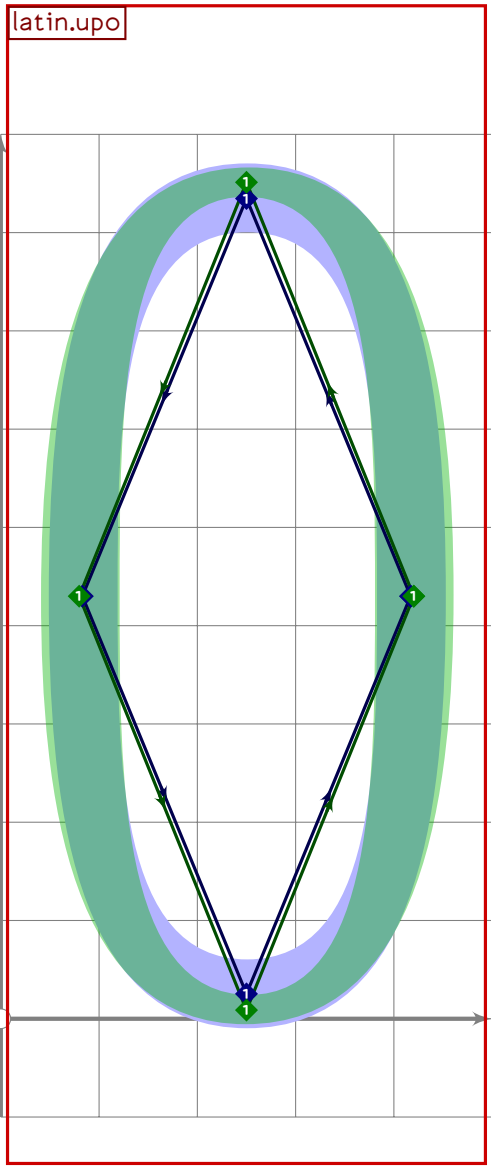


```

429 % N
430 begintsuglyph("N";78);
431 tsu_curve.latin.upn;
432 tsu_render;
433 endsuglyph;
434

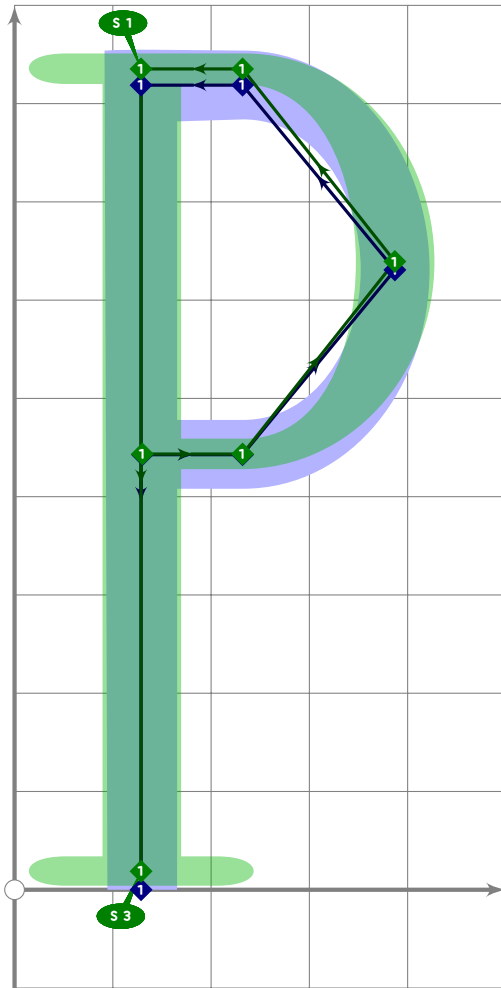
```



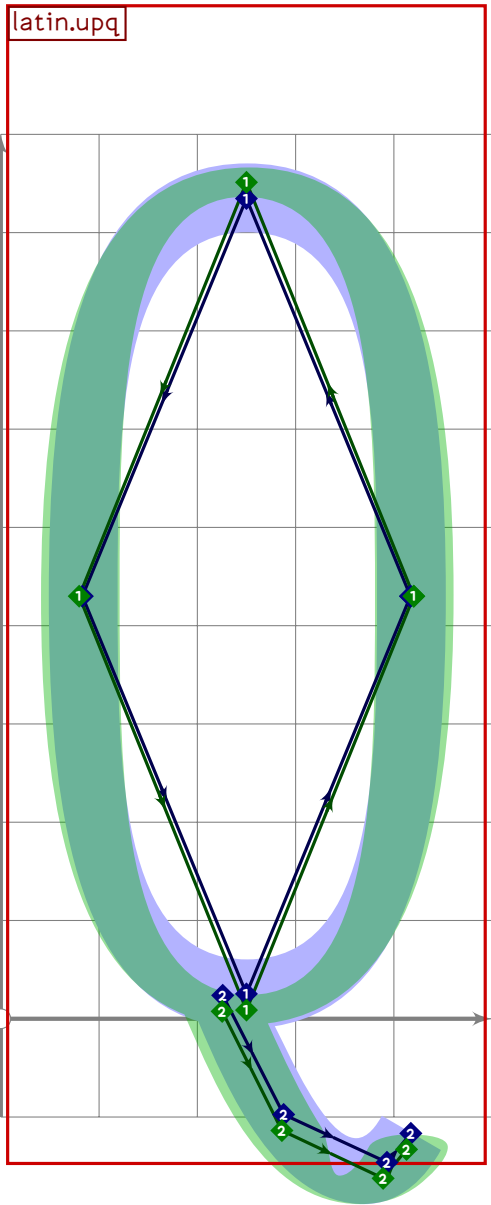


```
435 % O
436 beginsuglyph("O";79);
437 tsu_curve.latin.upo;
438 tsu_render;
439 endsuglyph;
440
```

latin.upp

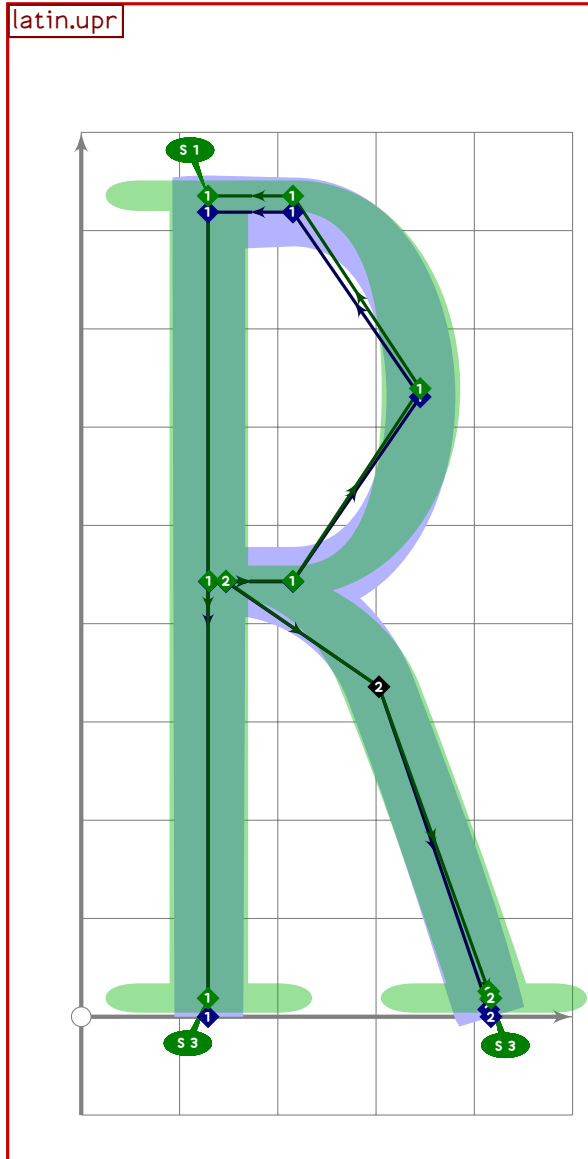


```
441 % P  
442 begintuglyph("P";80);  
443 tsu_curve.latin.upp;  
444 tsu_render;  
445 endtsuglyph;  
446
```



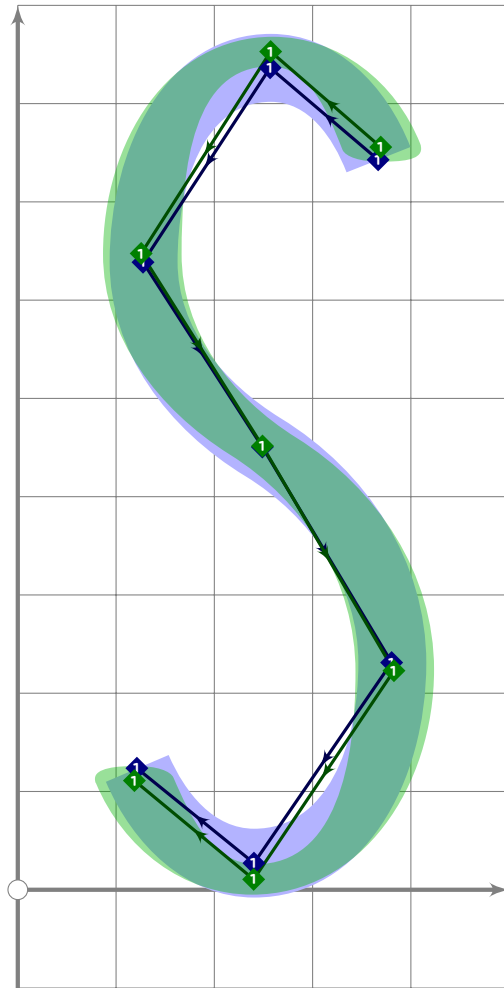
```
447 % Q
448 begintsuglyph("Q";81);
449 tsu_curve.latin.upq;
450 tsu_render;
451 endsuglyph;
452
```

latin.upr

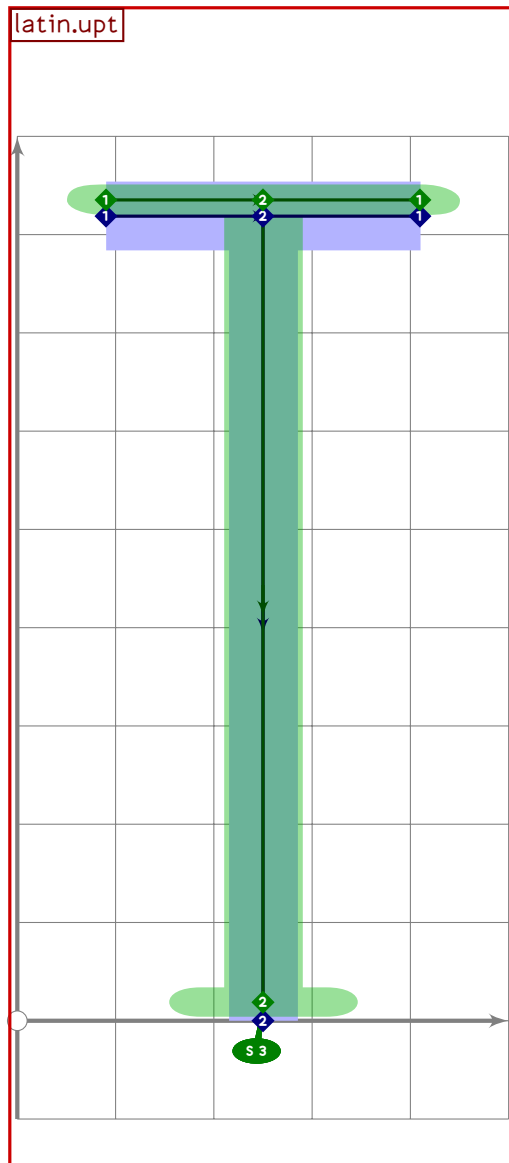


```
453 % R
454 begint Suglyph("R";82);
455   tsu_curve.latin.upr;
456   tsu_render;
457 endsuglyph;
458
```

latin.ups



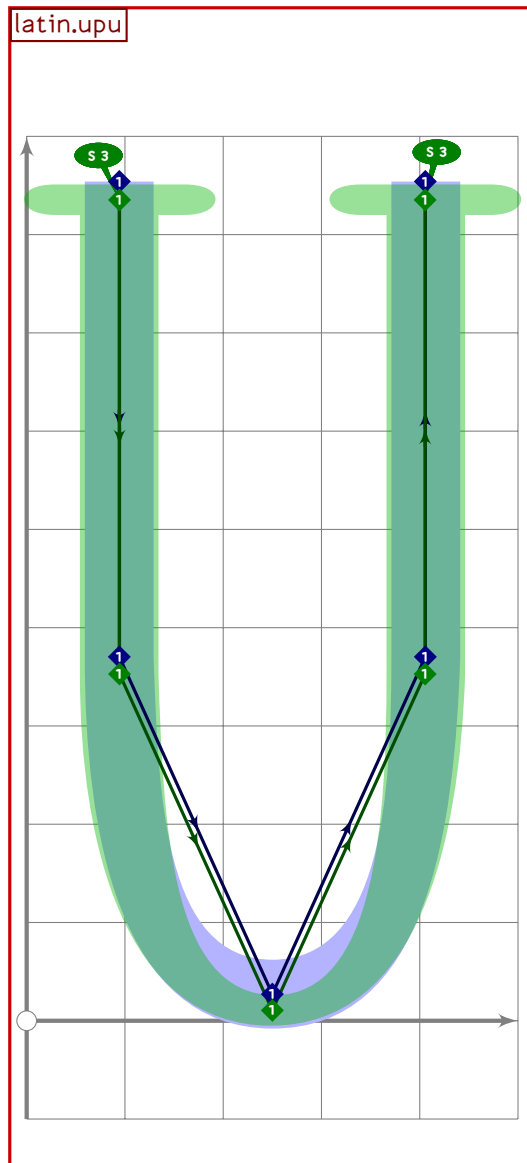
```
459 % S
460 beginsuglyph("S";83);
461   tsu_curve.latin.ups;
462   tsu_render;
463 endsuglyph;
464
```



```

465 % T
466 begintsuglyph("T";84);
467 tsu_curve.latin.upt;
468 tsu_render;
469 endsuglyph;
470

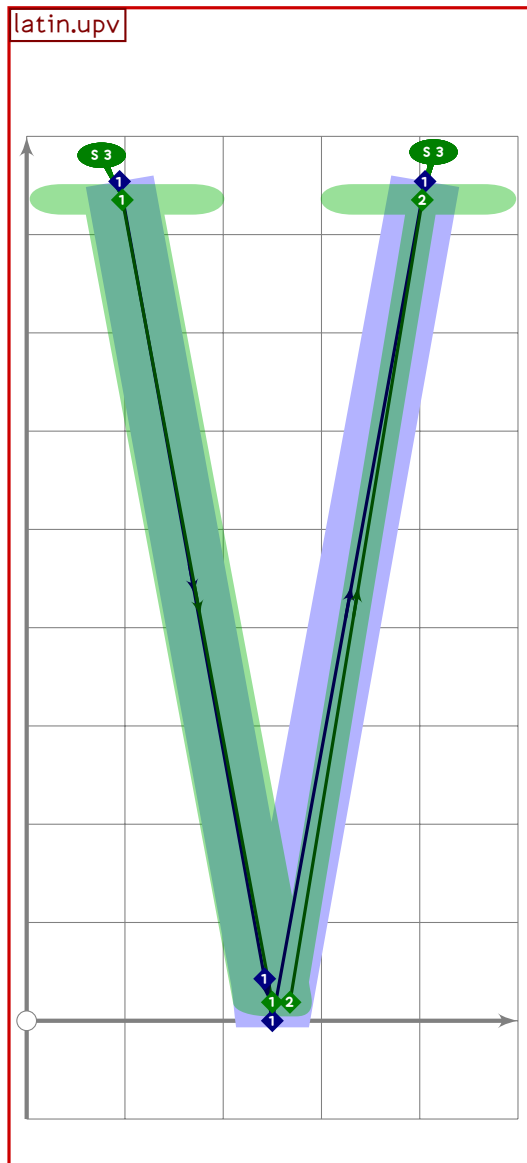
```



```

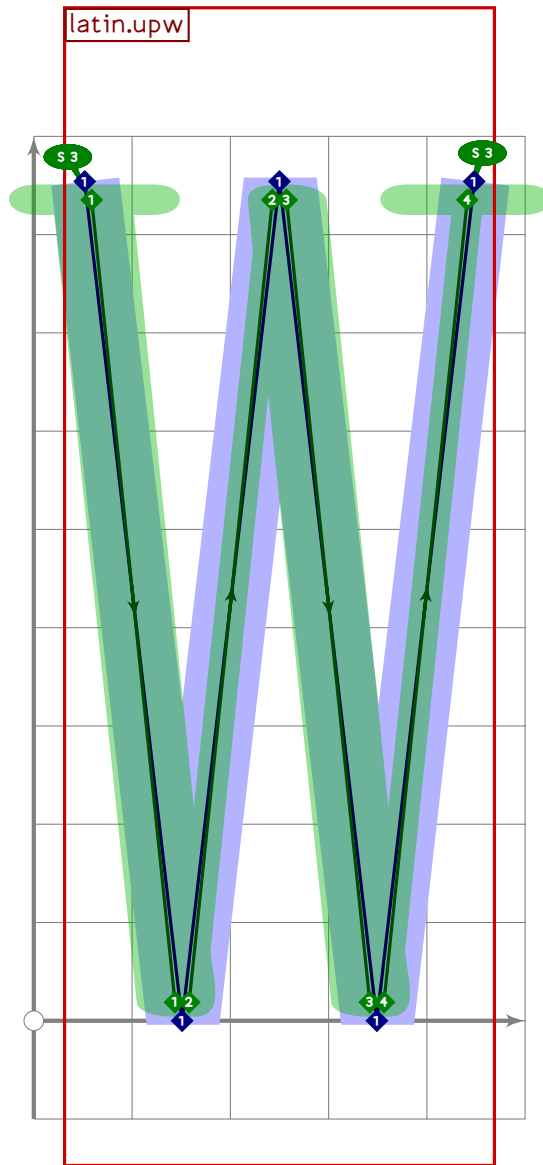
471 % U
472 beginsuglyph("U",85);
473 tsu_curve.latin.upu;
474 tsu_render;
475 endsuglyph;
476

```



```
477 % V
478 begintsuglyph("V";86);
479 tsu_curve.latin.upv;
480 tsu_render;
481 endsuglyph;
482
```

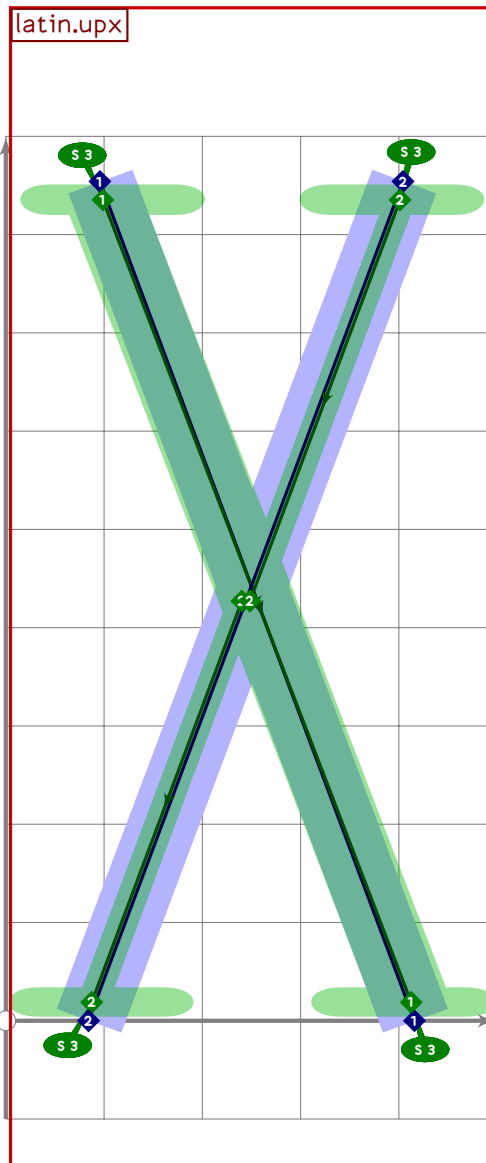




```

483 % W
484 beginsuglyph("W",87);
485   tsu_curve.latin.upw;
486   tsu_render;
487 endsuglyph;
488

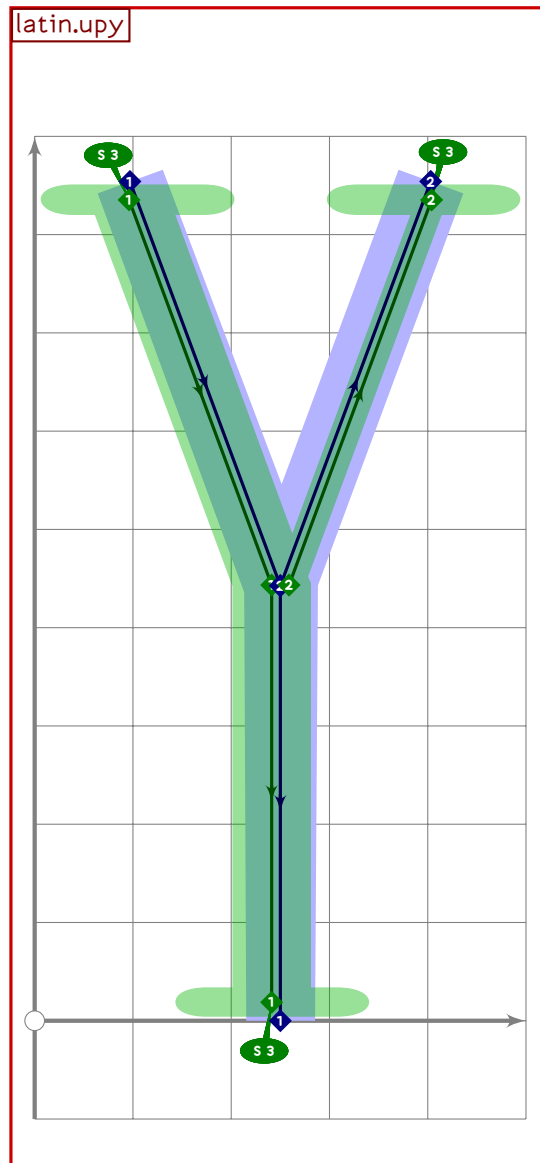
```



```

489 % X
490 begint Suglyph("X",88);
491   tsu_curve.latin.upx;
492   tsu_render;
493 endtsuglyph;
494

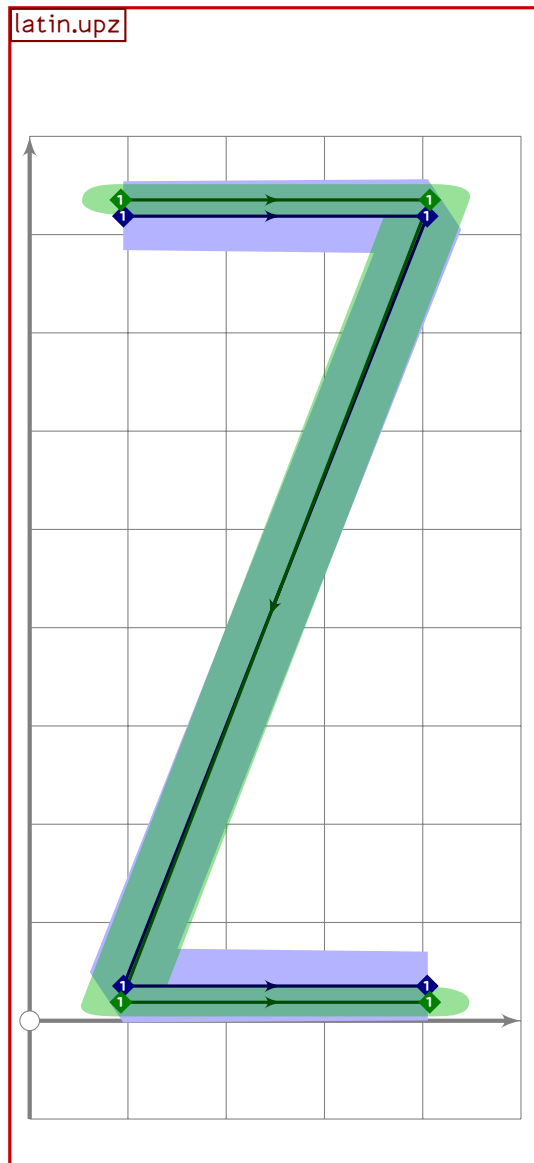
```



```

495 % Y
496 begint Suglyph("Y";89);
497   tsu_curve.latin.upy;
498   tsu_render;
499 endtsuglyph;
500

```

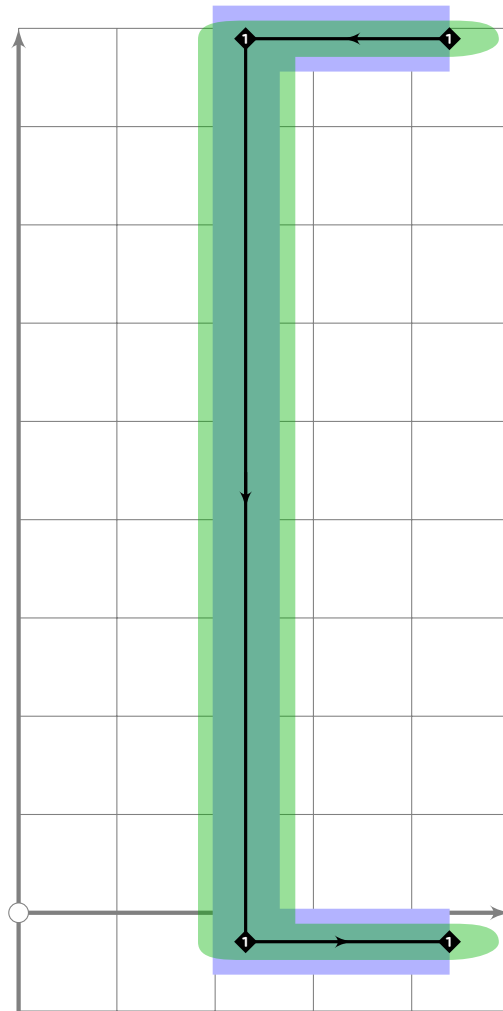


```

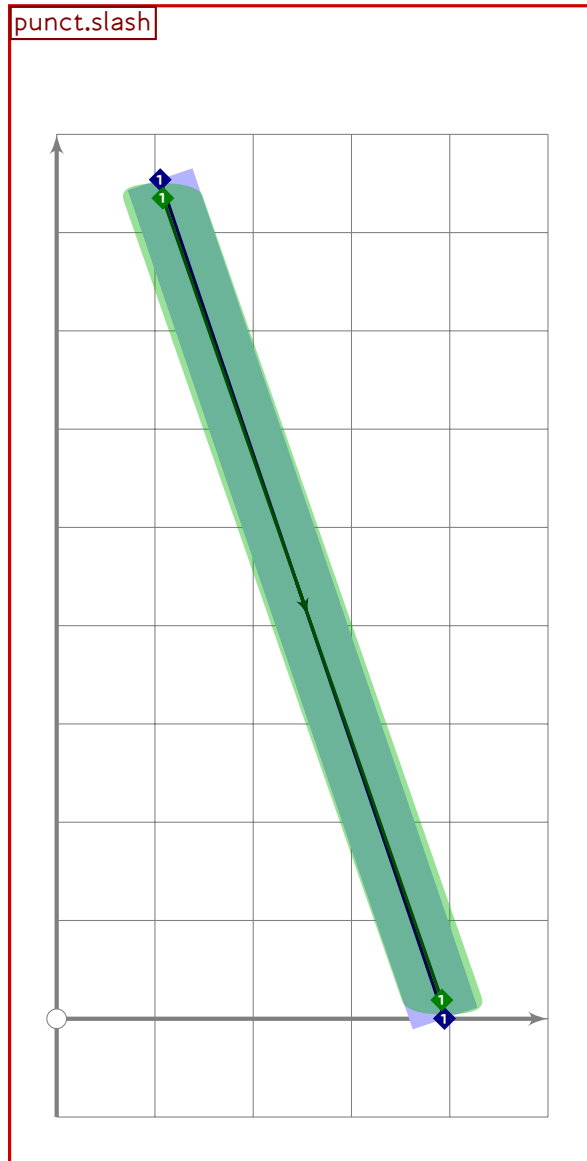
501 % Z
502 begintsuglyph("Z";90);
503 tsu_curve.latin.upz;
504 tsu_render;
505 endsuglyph;
506
507 % left and right square brackets, backslash between
508 tsu_curve.punct.sqb_intro;

```

punct.sqb\_left



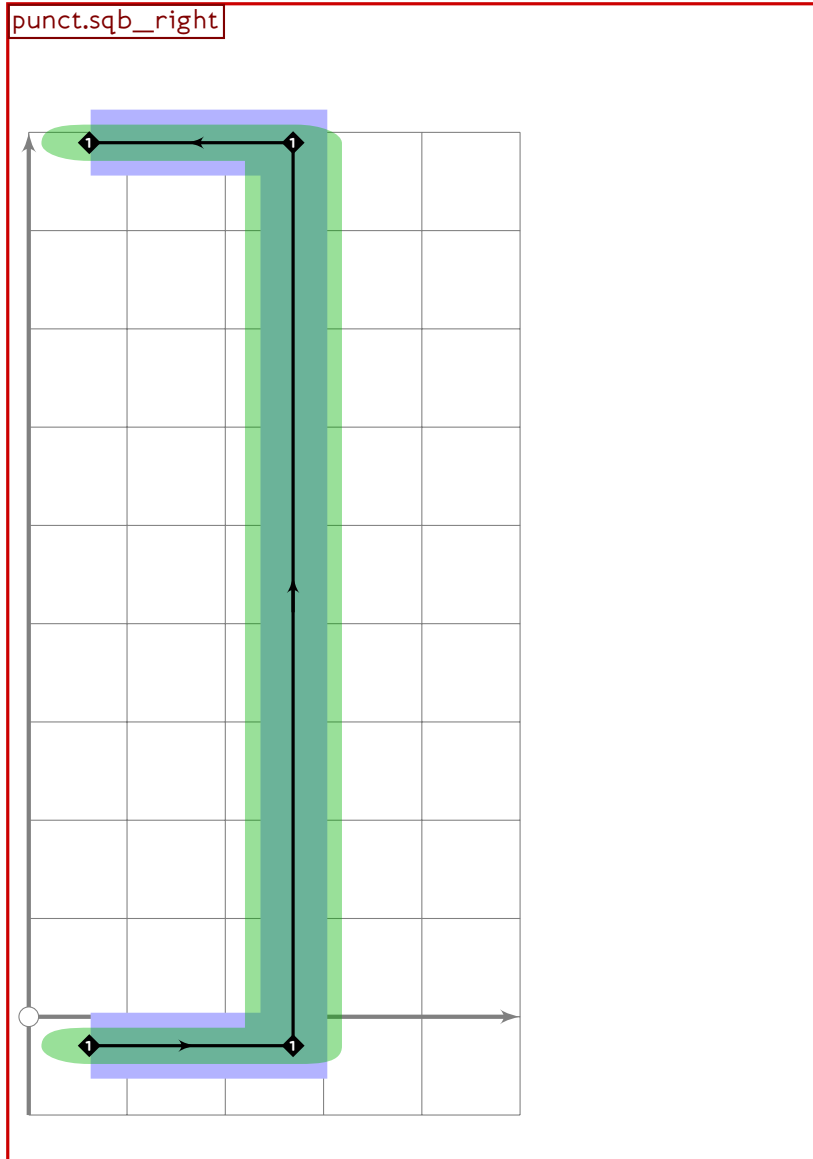
```
509 begint Suglyph("bracketleft";91);  
510   tsu_curve.punct.sqb_left;  
511   tsu_render;  
512 endsuglyph;
```



```

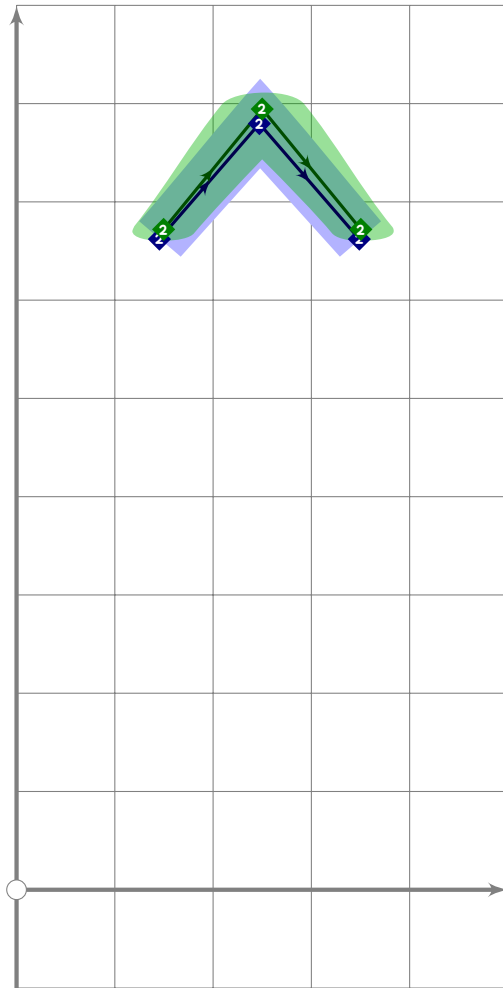
513 % backslash
514 begintsuglyph("backslash";92);
515 tsu_curve.punct.slash;
516 bp1:=bp1 reflectedabout (centre_pt,(centre_pt*down));
517 tsu_render;
518 endtsuglyph;

```



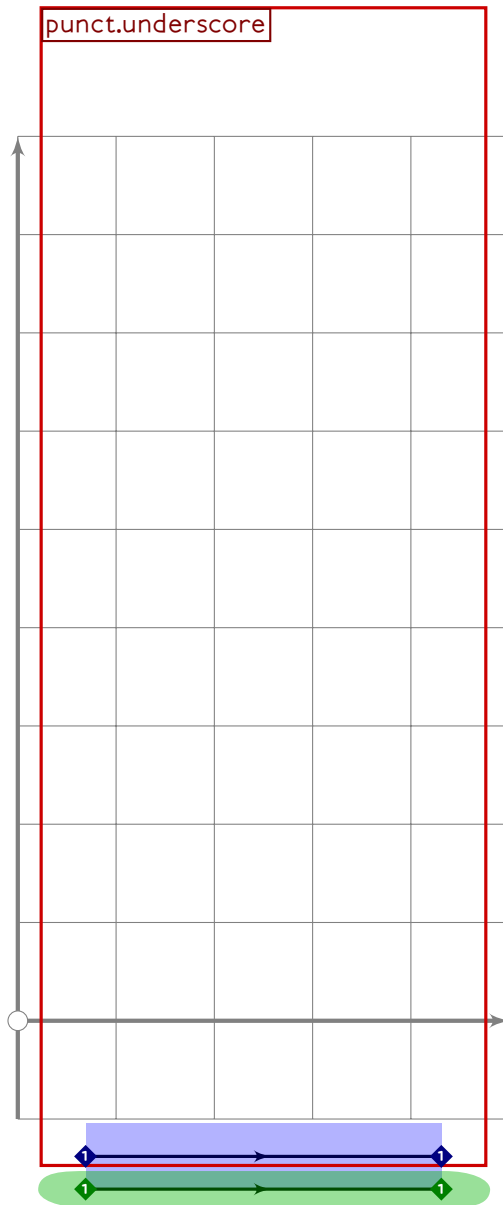
```
519 beginsuglyph("bracketright";93);  
520 tsu_curve.punct.sqb_right;  
521 tsu_render;  
522 endsuglyph;  
523
```

latin.love



```
524 % circumflex accent/caret
525 begintsuglyph("asciicircum";94);
526 tsu_accent.circumflex(tsu_curve.latin.love);
527 bo_size[1]=0;
528 tsu_render;
529 endtsuglyph;
530
```



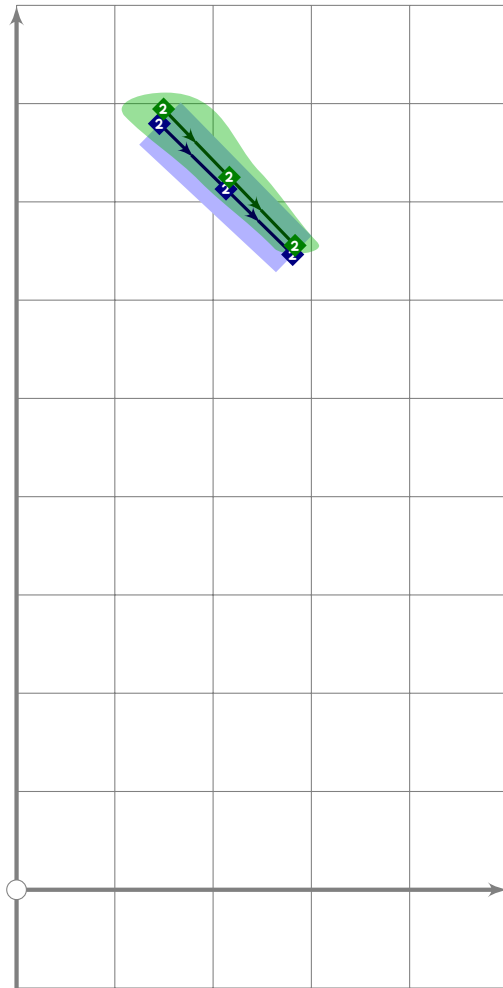


```

531 % underscore
532 begintsuglyph("underscore";95);
533 tsu_curve.punct.underscore;
534 tsu_render;
535 endtsuglyph;
536

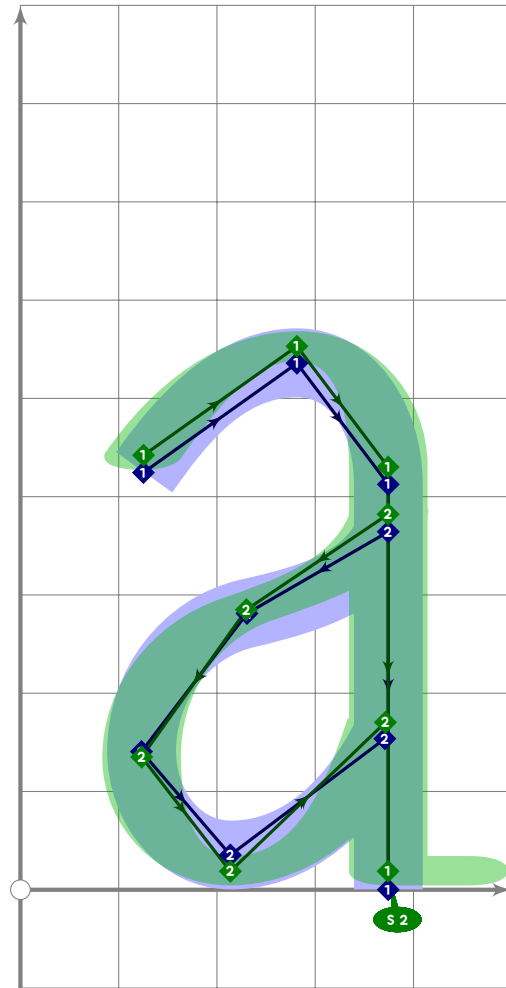
```

latin.lower

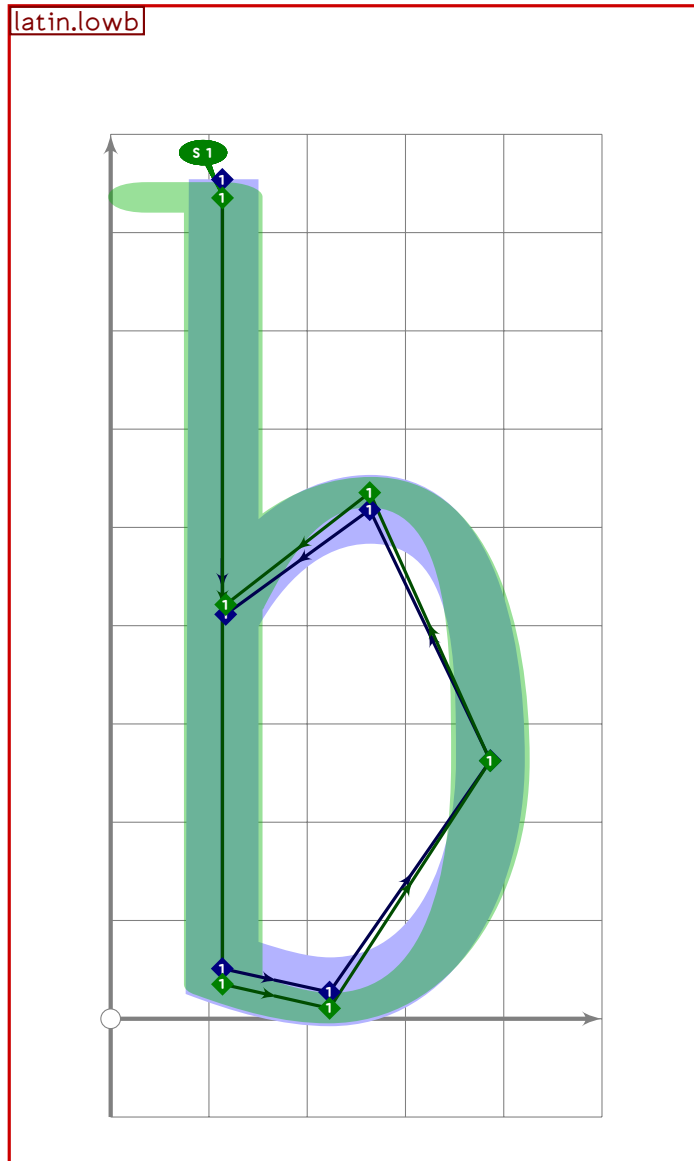


```
537 % grave accent
538 begintsuglyph("grave";96);
539 tsu_accent.grave(tsu_curve.latin.lower);
540 bo_size[1]=0;
541 tsu_render;
542 endtsuglyph;
543
544 % WARNING changing rescale setting
545 tsu_rescale_half_lc;
546
```

latin.lowa

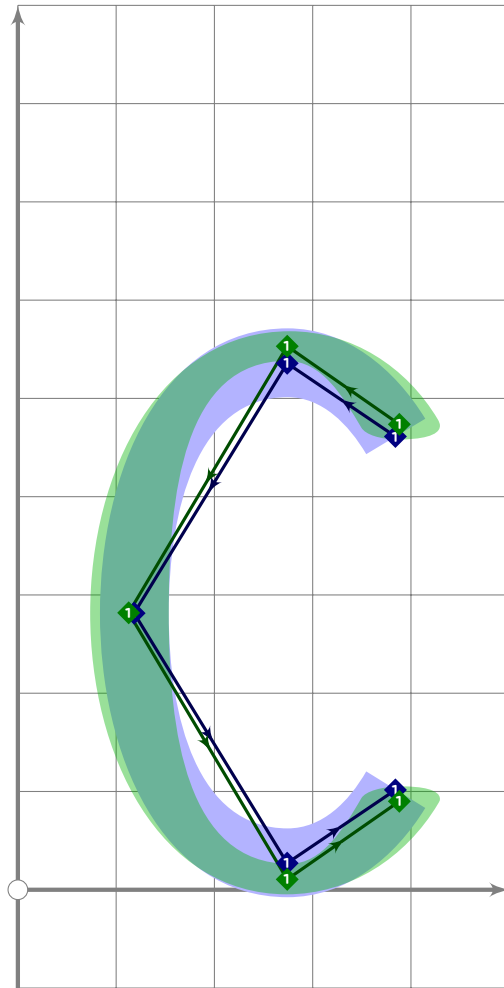


```
547 % a
548 begintsuglyph("a";97);
549 tsu_curve.latin.lowa;
550 tsu_render;
551 endtsuglyph;
552
```



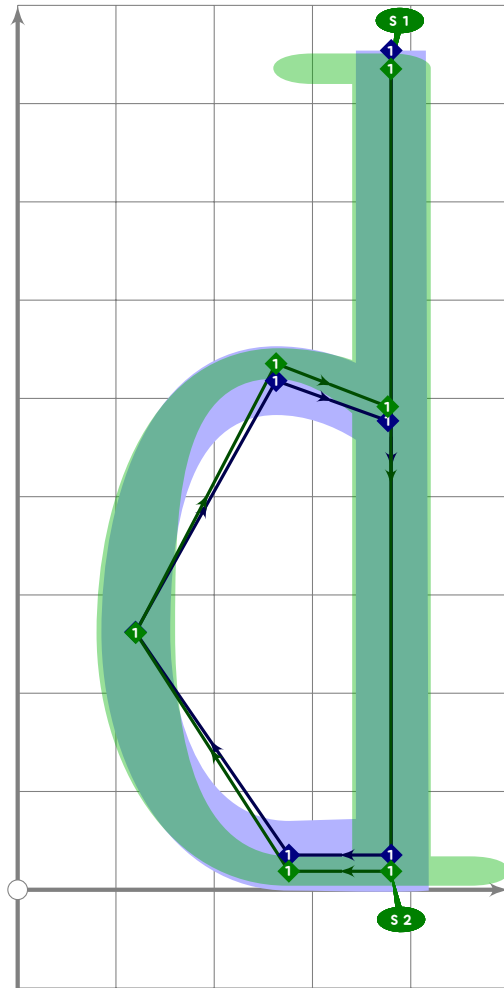
```
553 % b
554 begint Suglyph("b";98);
555   tsu_curve.latin.lowb;
556   tsu_render;
557 endtsuglyph;
558
```

latin.lowc



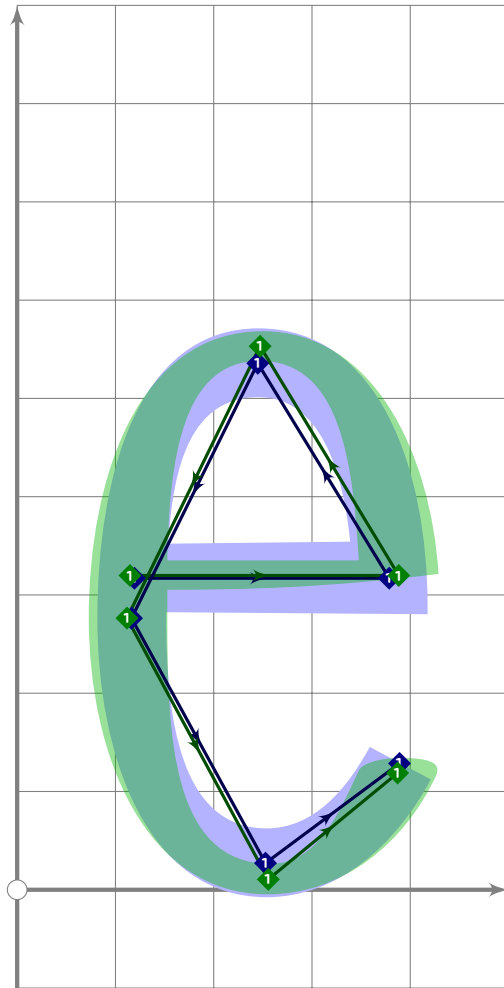
```
559 % c
560 begintsuglyph("c";99);
561 tsu_curve.latin.lowc;
562 tsu_render;
563 endsuglyph;
564
```

latin.lowd



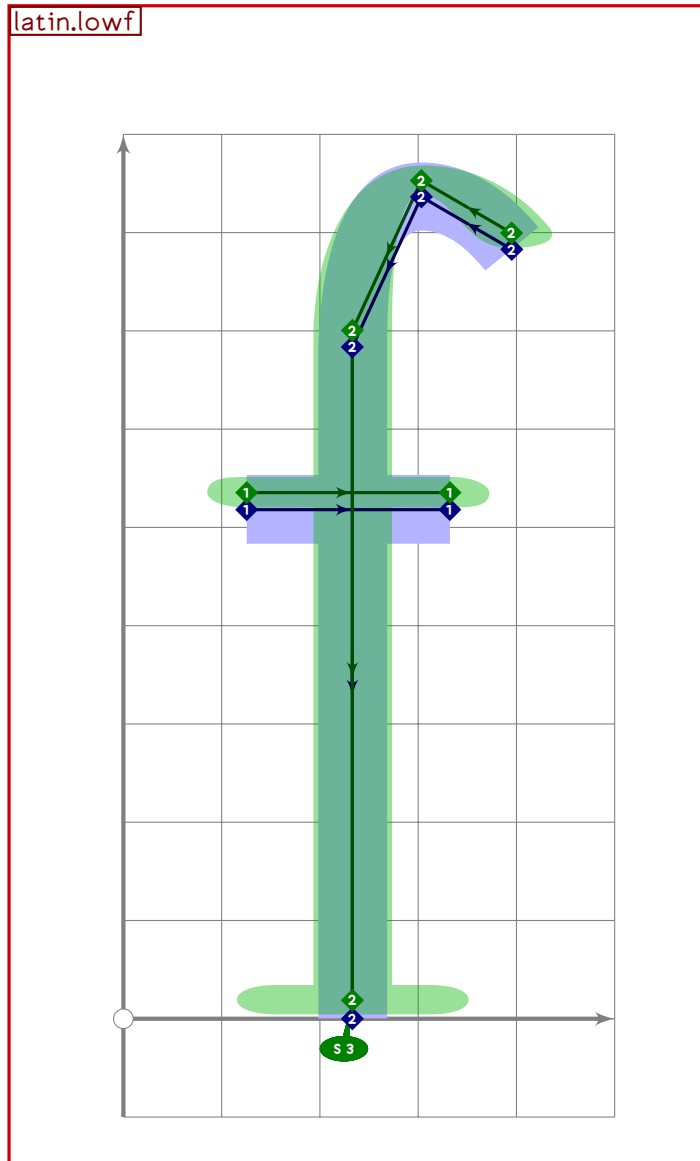
```
565 % d
566 begint Suglyph("d";100);
567   tsu_curve.latin.lowd;
568   tsu_render;
569 endsuglyph;
570
```

latin.lowe



```
571 % e
572 begintsuglyph("e";101);
573 tsu_curve.latin.lowe;
574 tsu_render;
575 endsuglyph;
576
```

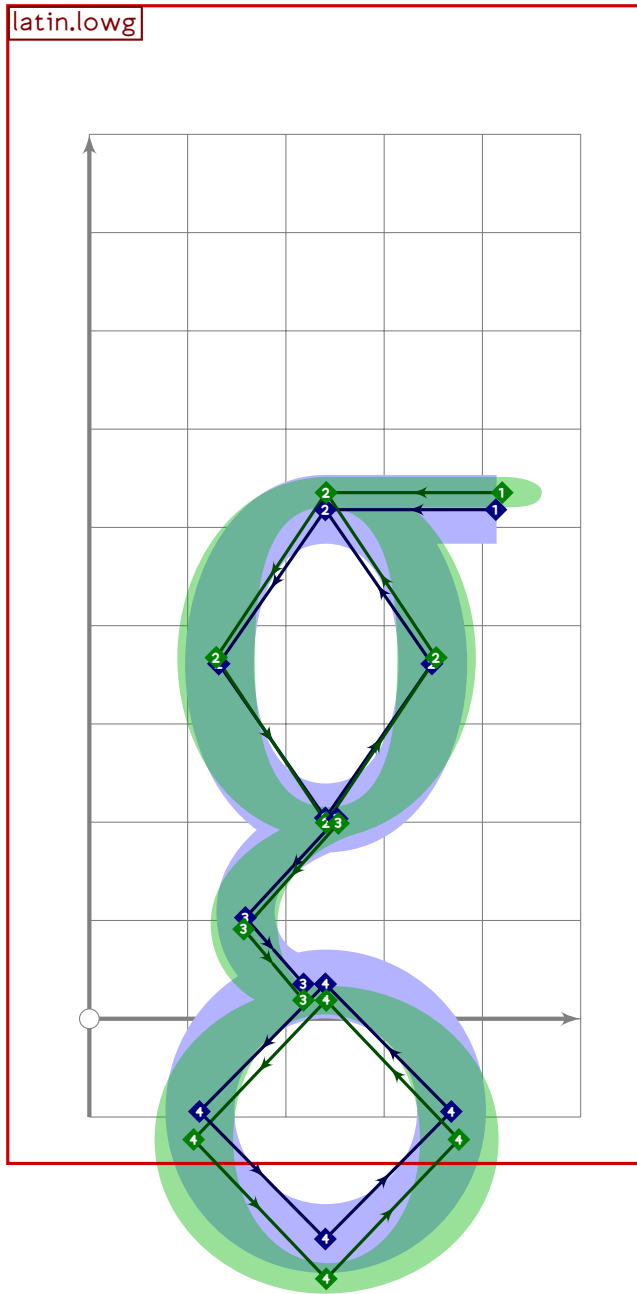
latin.lowf



```
577 % f
578 begint Suglyph("f";102);
579   tsu_curve.latin.lowf;
580   tsu_render;
581 endsuglyph;
582
```

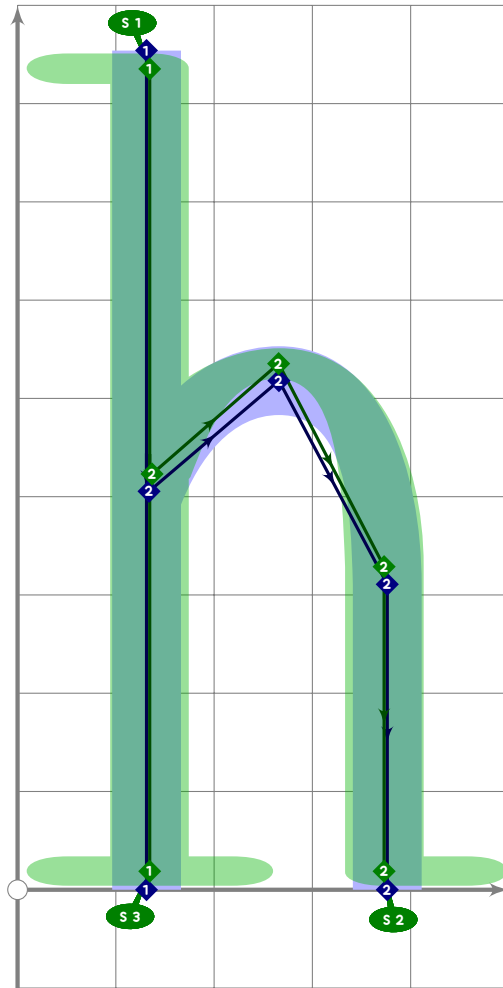


latin.lowg



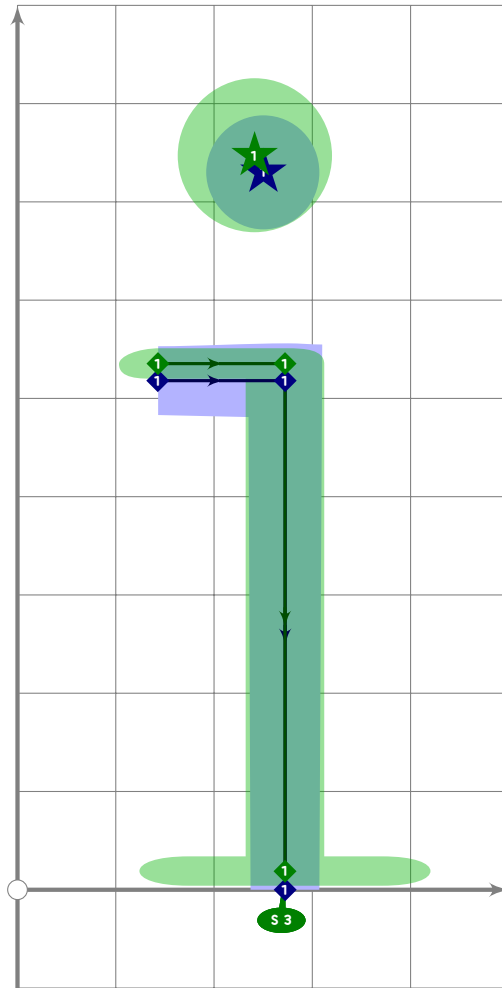
```
583 % g
584 beginsuglyph("g";103);
585   tsu_curve.latin.lowg;
586   tsu_render;
587 endsuglyph;
588
```

latin.lowh



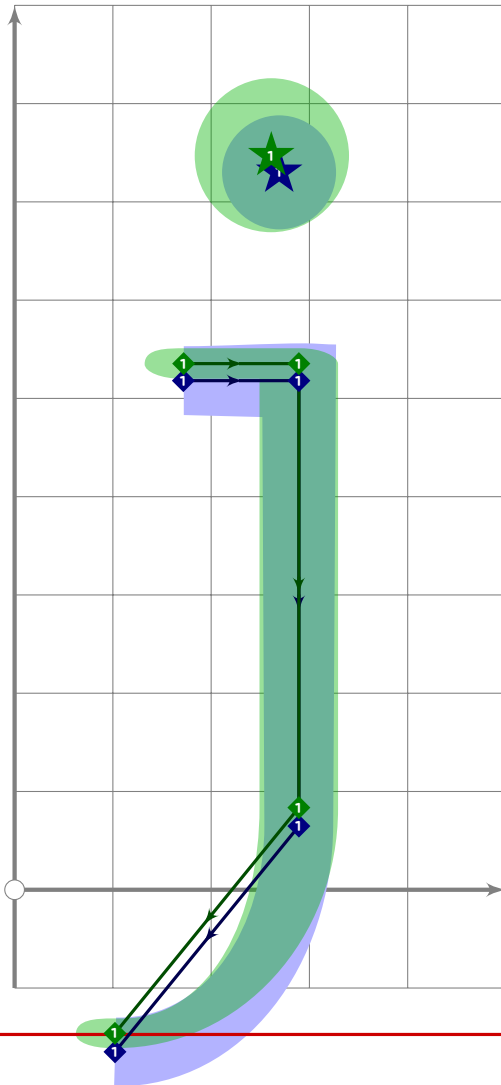
```
589 % h
590 begint Suglyph("h";104);
591   tsu_curve.latin.lowh;
592   tsu_render;
593 endtsuglyph;
594
```

latin.lowi



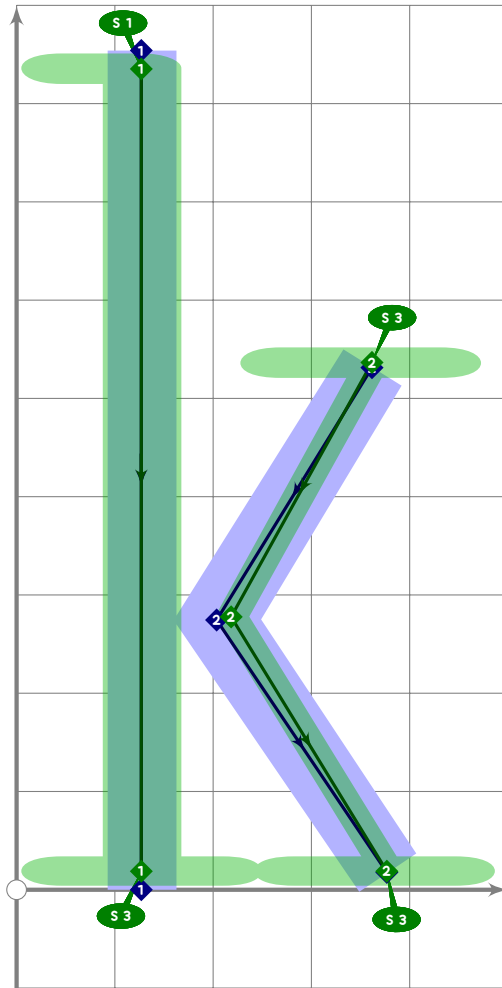
```
595 % i
596 begint Suglyph("i";105);
597 tsu_curve.latin.lowi;
598 tsu_render;
599 endsuglyph;
600
```

latin.lowj



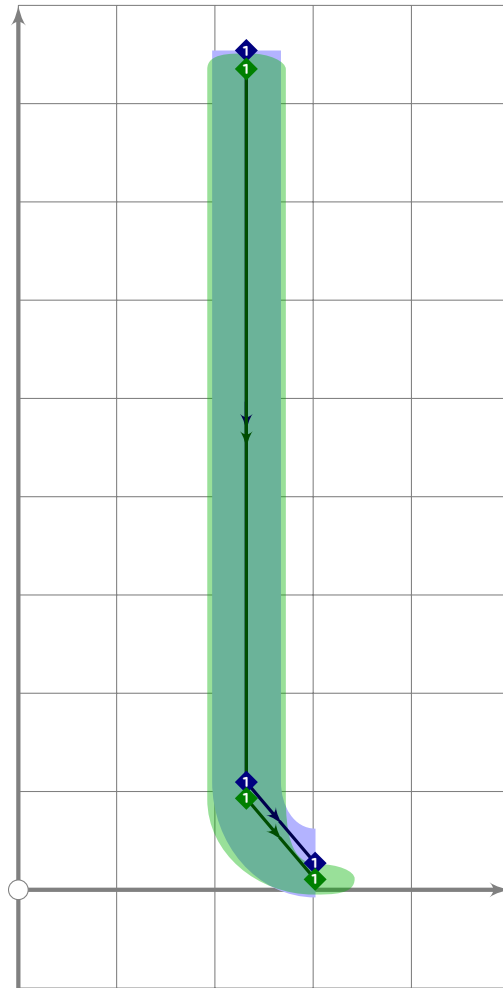
```
601 % j
602 begintsuglyph("j";106);
603 tsu_curve.latin.lowj;
604 tsu_render;
605 endtsuglyph;
606
```

latin.lowk

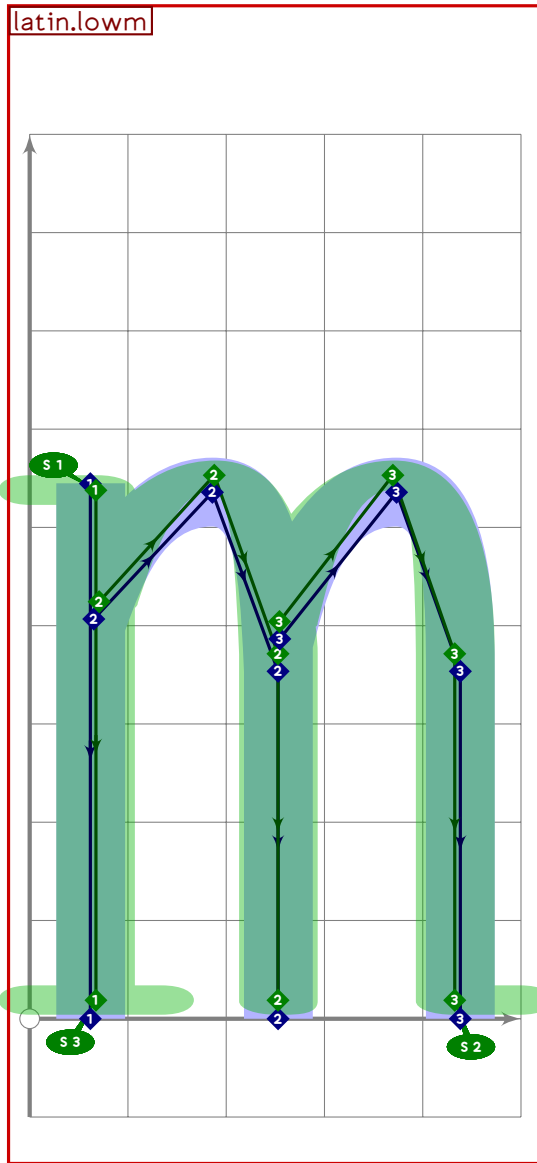


```
607 % k
608 beginsuglyph("k";107);
609 tsu_curve.latin.lowk;
610 tsu_render;
611 endsuglyph;
612
```

latin.lowl



```
613 % l
614 begint Suglyph("l",108);
615   tsu_curve.latin.lowl;
616   tsu_render;
617 endtsuglyph;
618
```

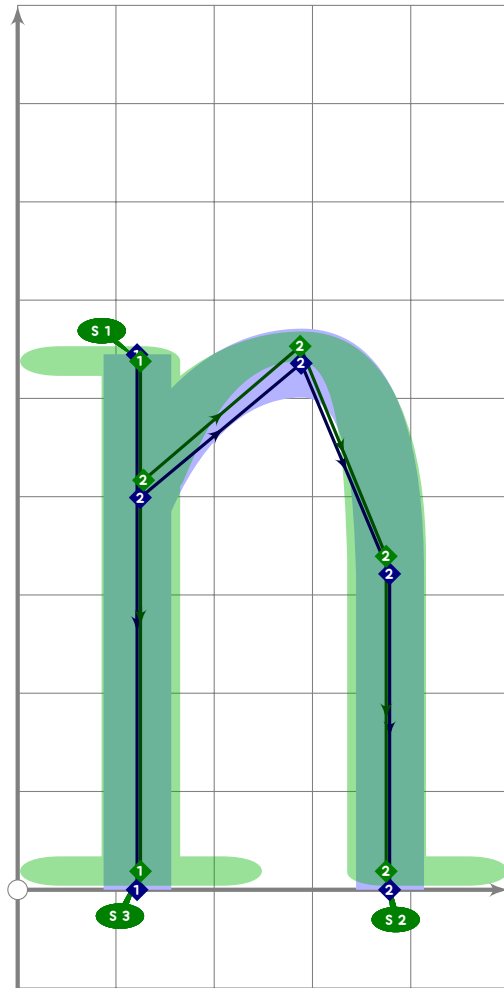


```

619 % m
620 begint Suglyph("m",109);
621   tsu_curve.latin.lowm;
622   tsu_render;
623 endtsuglyph;
624

```

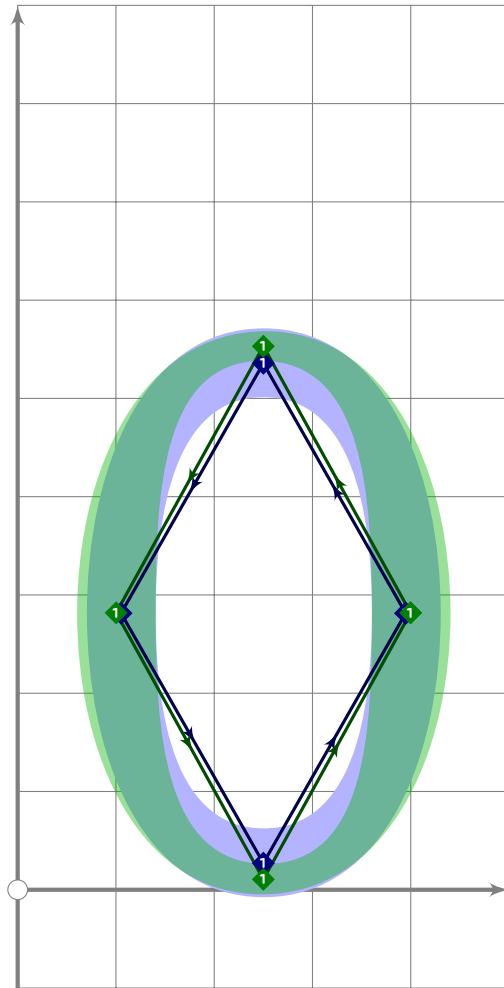
latin.lown



```
625 % n
626 begintsuglyph("n",110);
627 tsu_curve.latin.lown;
628 tsu_render;
629 endtsuglyph;
630
```

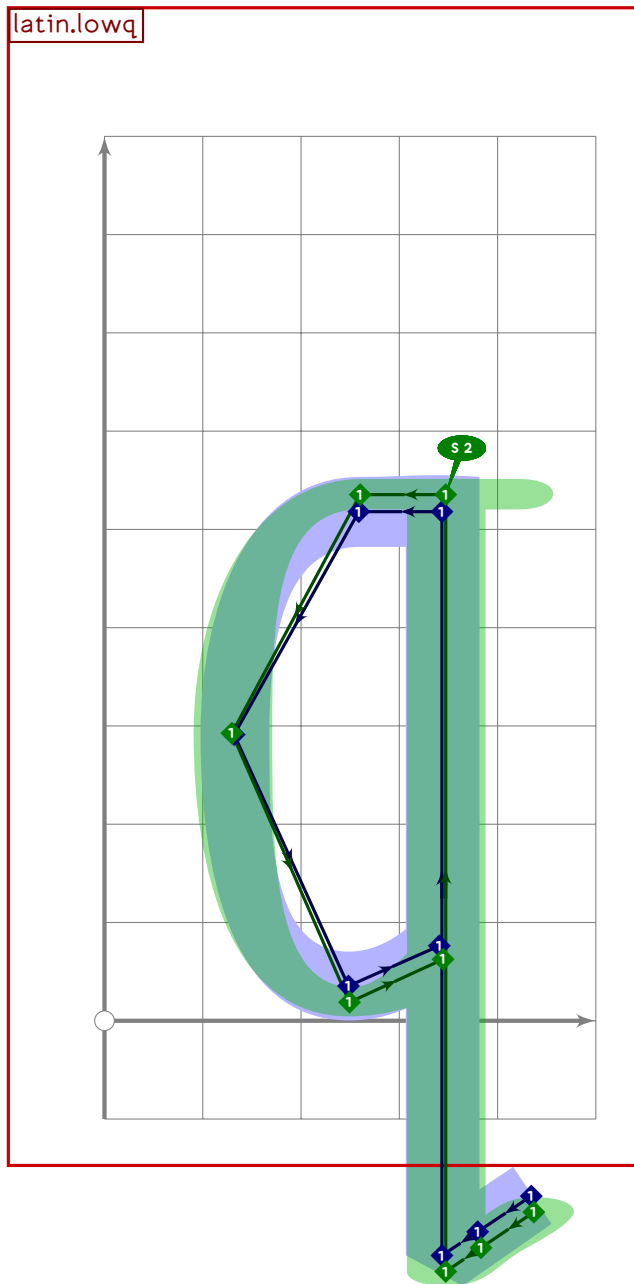


latin.lowo



```
631 % o
632 beginsuglyph("o",111);
633 tsu_curve.latin.lowo;
634 tsu_render;
635 endsuglyph;
636
```



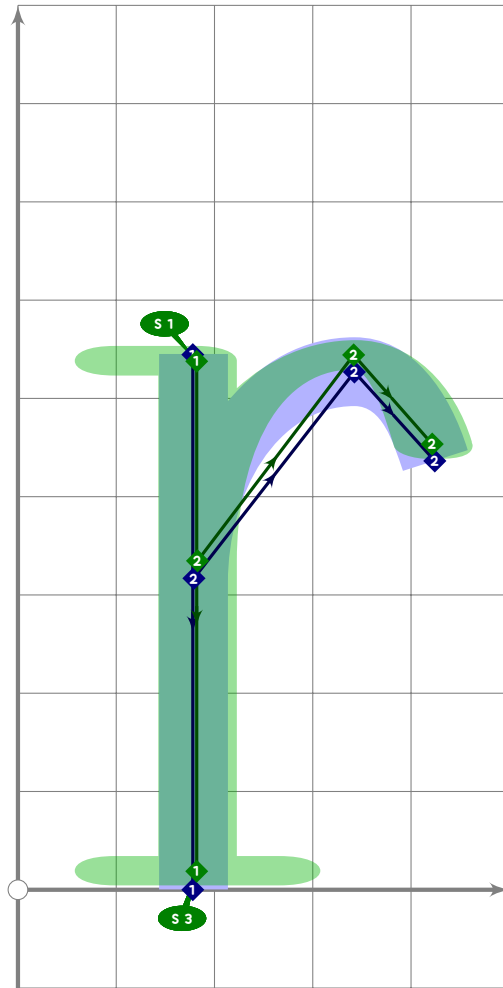


```

643 % q
644 begintsuglyph("q";113);
645   tsu_curve.latin.lowq;
646   tsu_render;
647 endsuglyph;
648

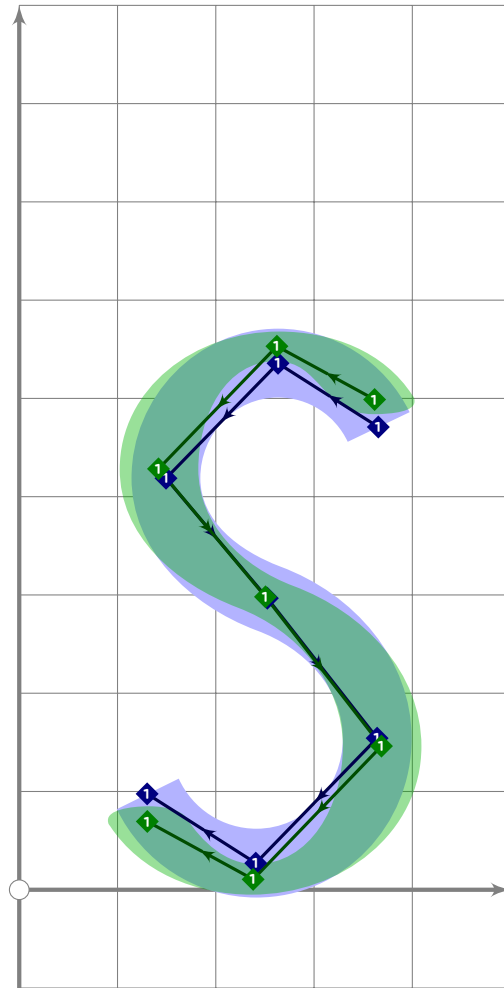
```

latin.lowr



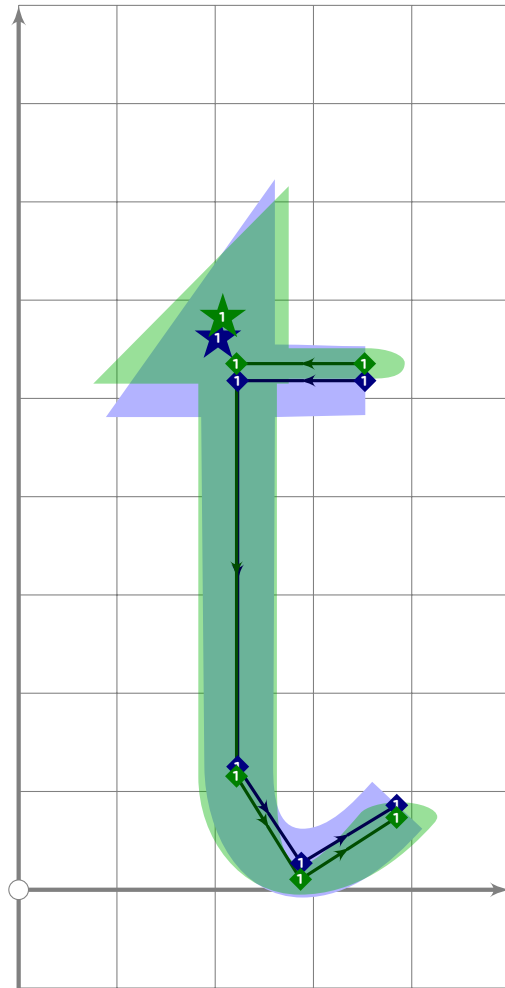
```
649 % r
650 begint Suglyph("r",114);
651   tsu_curve.latin.lowr;
652   tsu_render;
653 endsuglyph;
654
```

latin.lows



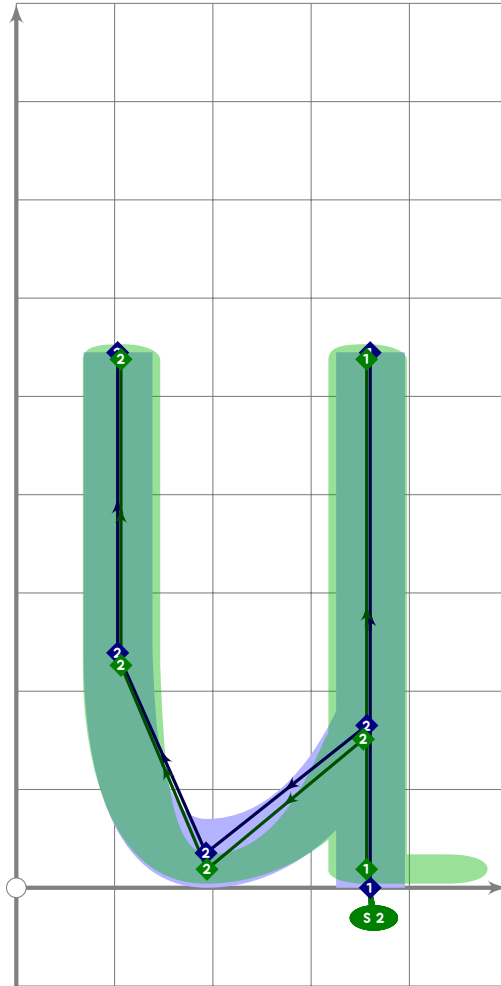
```
655 % s
656 begint Suglyph("s";115);
657 tsu_curve.latin.lows;
658 tsu_render;
659 endtsuglyph;
660
```

latin.lowt



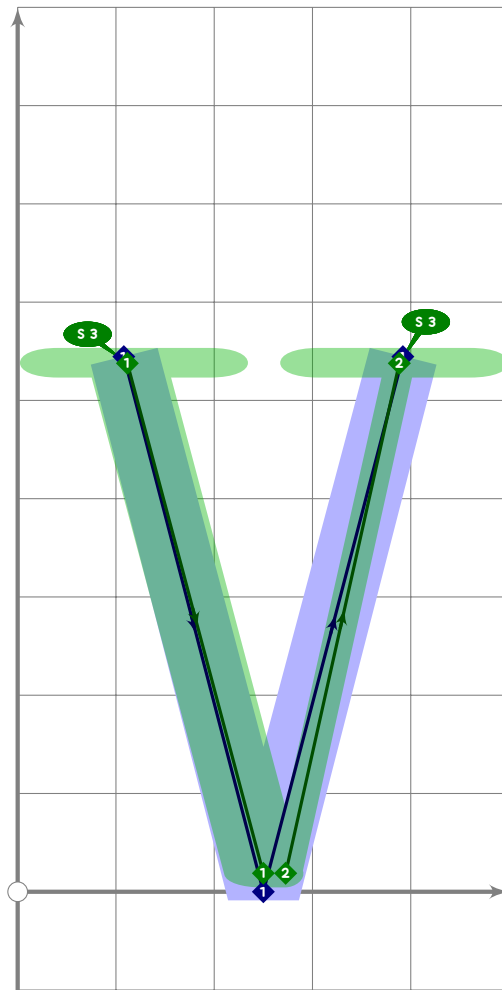
```
661 % t
662 begintsuglyph("t",116);
663 tsu_curve.latin.lowt;
664 tsu_render;
665 endsuglyph;
666
```

latin.lowu



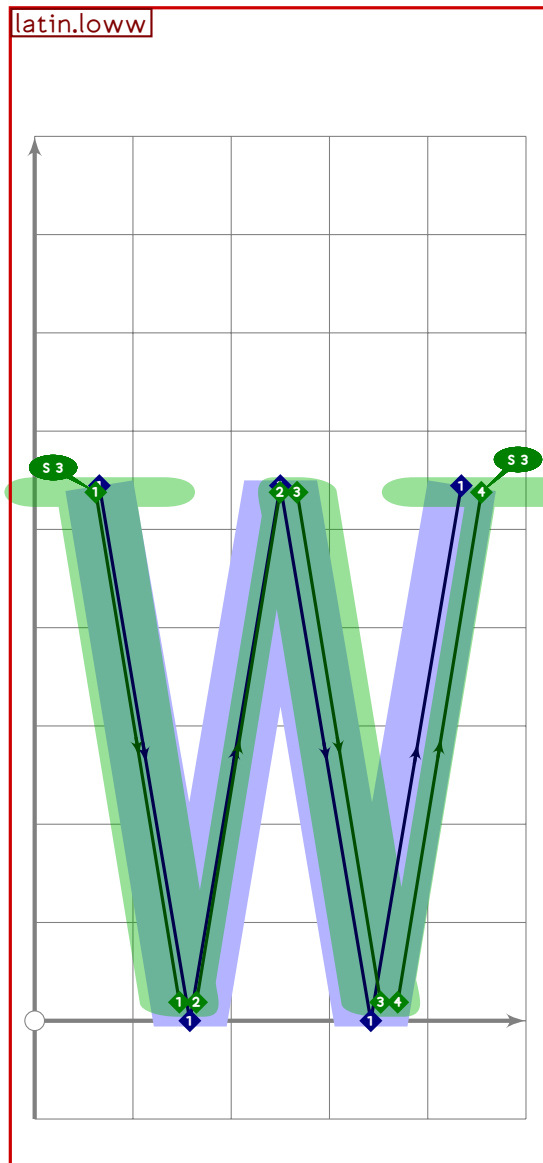
```
667 % u  
668 begintsuglyph("u",117);  
669 tsu_curve.latin.lowu;  
670 tsu_render;  
671 endsuglyph;  
672
```

latin.lowv



```
673 % v  
674 begintsuglyph("v";118);  
675 tsu_curve.latin.lowv;  
676 tsu_render;  
677 endtsuglyph;  
678
```



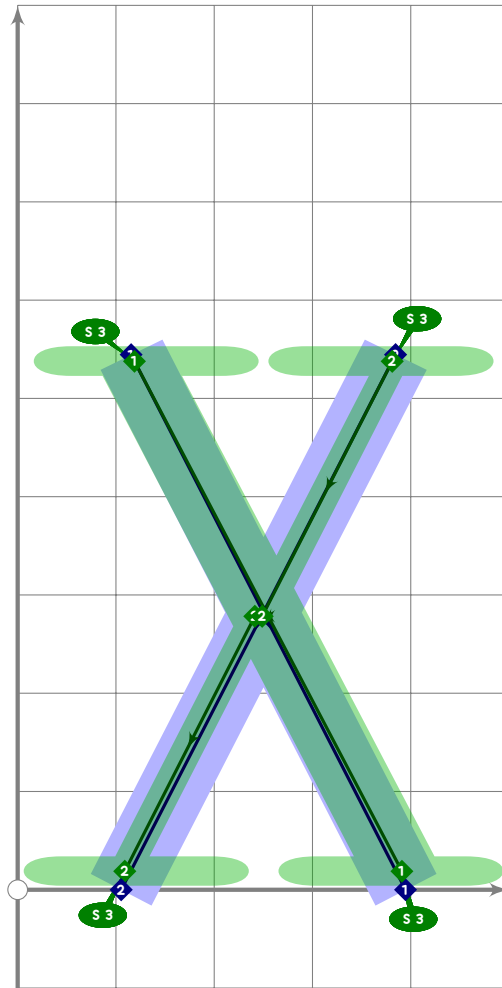


```

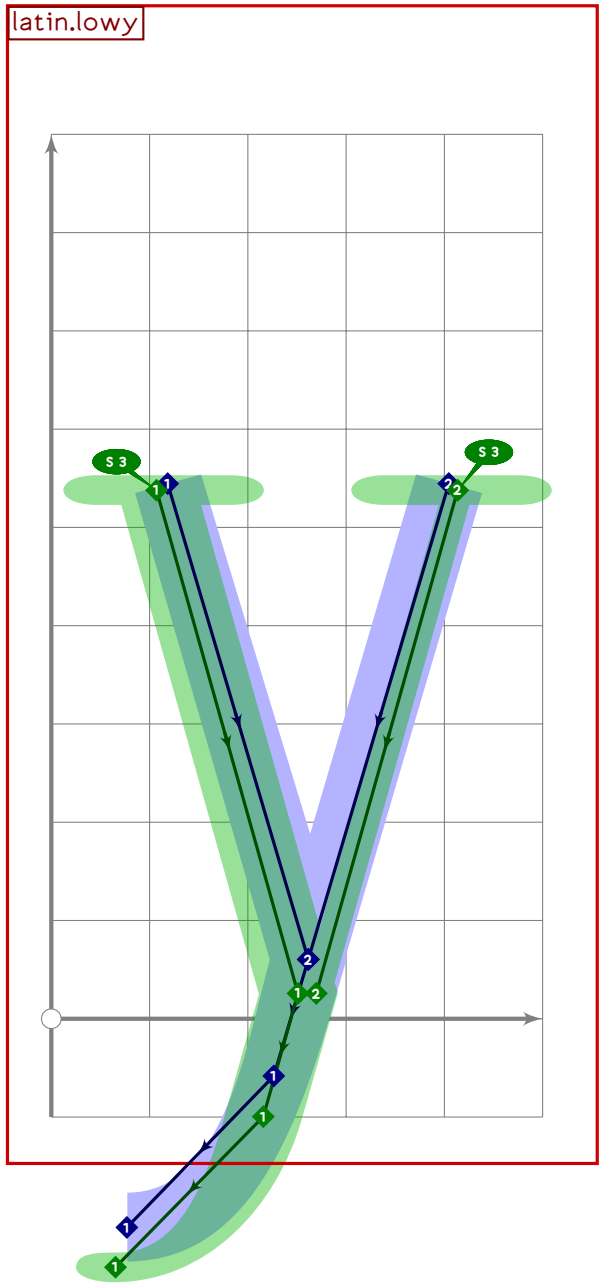
679 % w
680 begint Suglyph("w",119);
681 tsu_curve.latin.loww;
682 tsu_render;
683 endtsuglyph;
684

```

latin.lowx



```
685 % x
686 beginsuglyph("x";120);
687 tsu_curve.latin.lowx;
688 tsu_render;
689 endsuglyph;
690
```

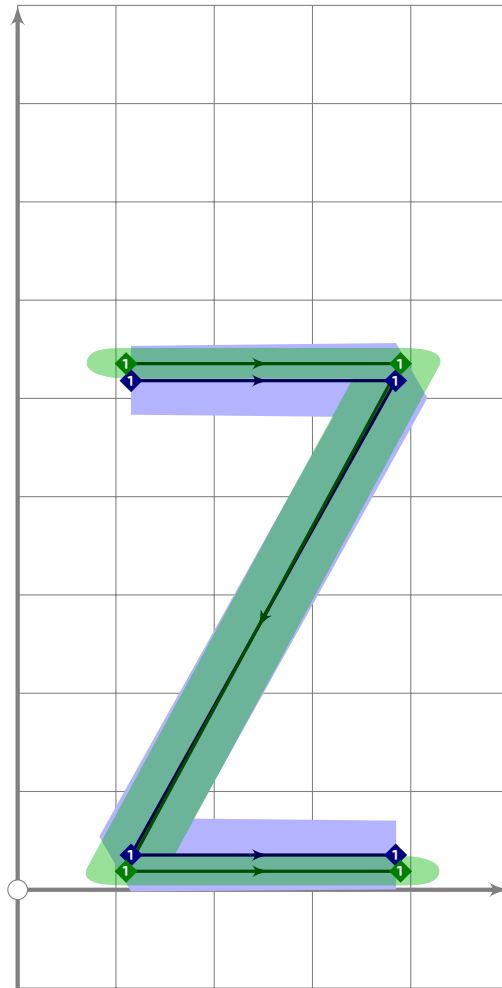


```

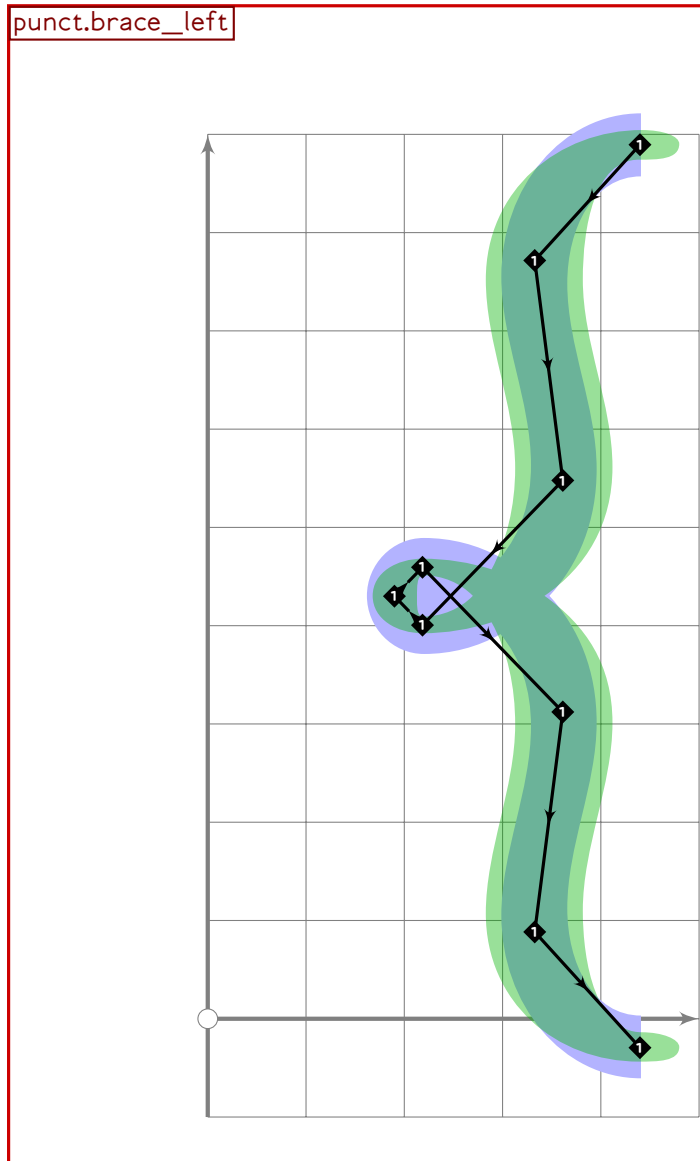
691 % y
692 beginsuglyph("y";121);
693   tsu_curve.latin.lowy;
694   tsu_render;
695 endsuglyph;
696

```

latin.lowz



```
697 % z
698 begintsuglyph("z";122);
699 tsu_curve.latin.lowz;
700 tsu_render;
701 endsuglyph;
702
703 % WARNING changing rescale setting
704 tsu_rescale_half;
705
706 % left and right square brackets
707 tsu_curve.punct.brace_intro;
```

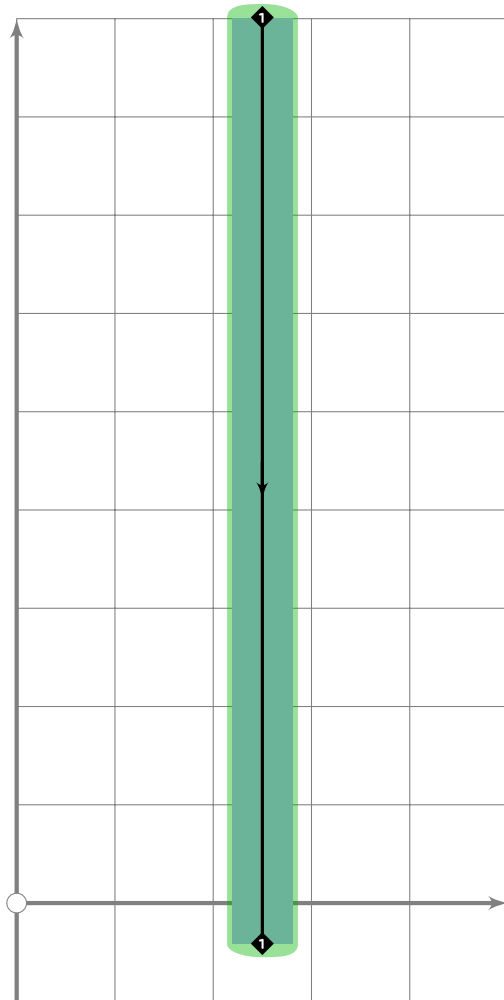


```

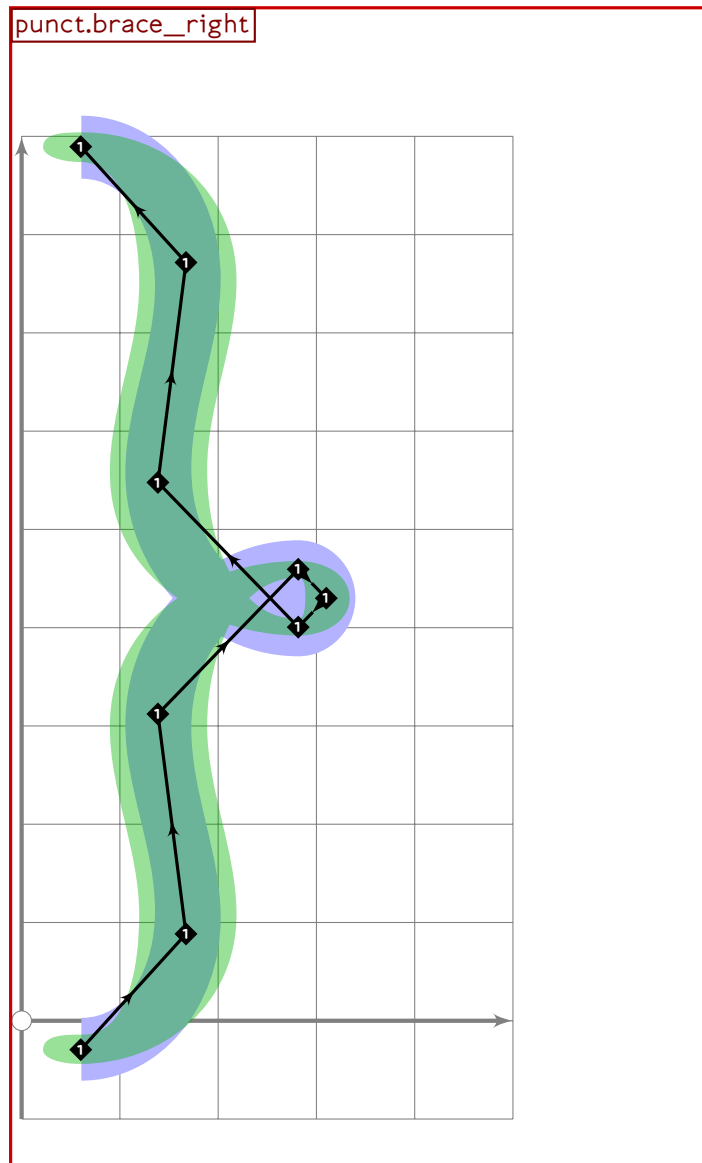
708 begint Suglyph("braceleft";123);
709   tsu_curve.punct.brace_left;
710   tsu_render;
711 endsuglyph;

```

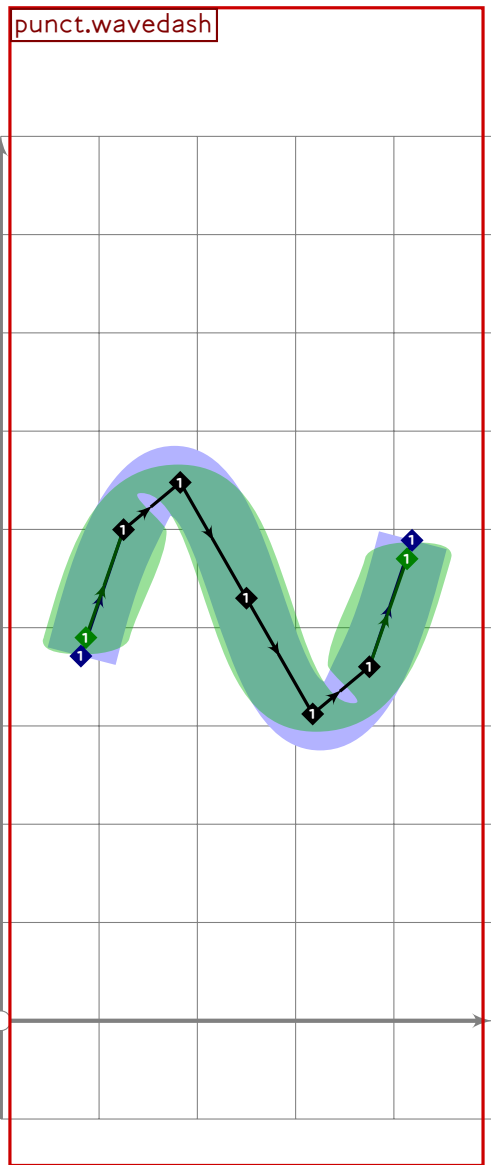
punct.vline



```
712 begintuglyph("bar";124);  
713   tsu_curve.punct.vline;  
714   tsu_render;  
715 endtuglyph;
```



```
716 begint Suglyph("braceright";125);  
717   tsu_curve.punct.brace_right;  
718   tsu_render;  
719   endtsuglyph;  
720
```



721 % "tilde" - rescaled "wave dash"

722 `begintsuglyph("asciitilde";126);`

723 `tsu_curve.punct.wavedash;`

724 `tsu_render;`

725 `endtsuglyph;`

726

727

728

729 % 007F through 009F are nonprinting control characters.

730 % 00A0 is a space, supplied by the make-font script later

731

732

733

## Latin-1 Extra Characters

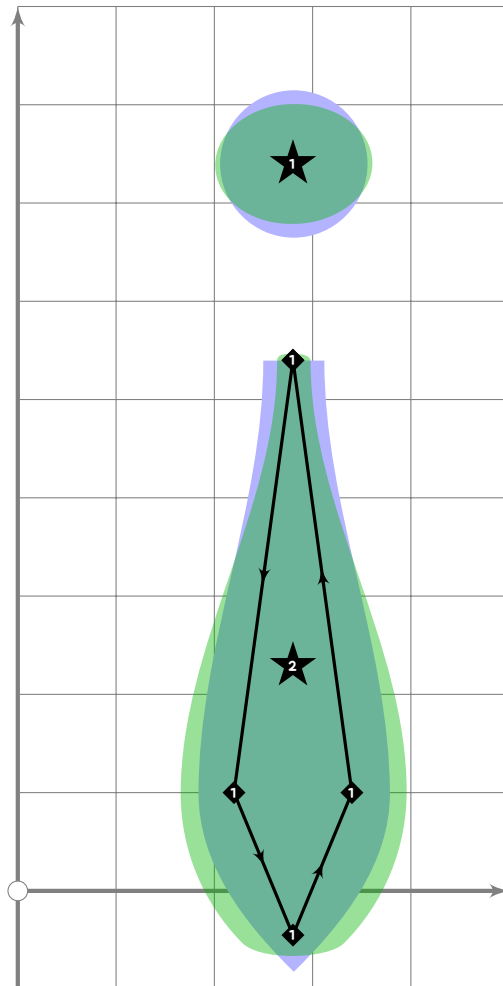
734 % LATIN-1 EXTRA CHARACTERS



```

735
736 transform tsu_xf.latin_one_super,tsu_xf.latin_one_circled,
737   tsu_xf.latin_one_cbound;
738
739 xypart tsu_xf.latin_one_super=yxpart tsu_xf.latin_one_super=0;
740 xxpart tsu_xf.latin_one_super=yypart tsu_xf.latin_one_super=0.55;
741 (500,latin_wide_xheight_r) transformed tsu_xf.latin_one_super=
742   (250,2*latin_vcentre);
743
744 xypart tsu_xf.latin_one_circled=yxpart tsu_xf.latin_one_circled=0;
745 xxpart tsu_xf.latin_one_circled=yypart tsu_xf.latin_one_circled=0.333;
746 centre_pt transformed tsu_xf.latin_one_circled=(250,latin_vcentre);
747
748 tsu_xf.latin_one_cbound=identity scaled 150 shifted (250,latin_vcentre);
749
750 % WARNING, setting rescale
751 tsu_rescale_native_narrow;
752

```



```

753 % inverted exclamation point
754 begintsuglyph("exclamdown",161);
755 if tsu_pbrush_size>=(tsu_punct_size*0.5):

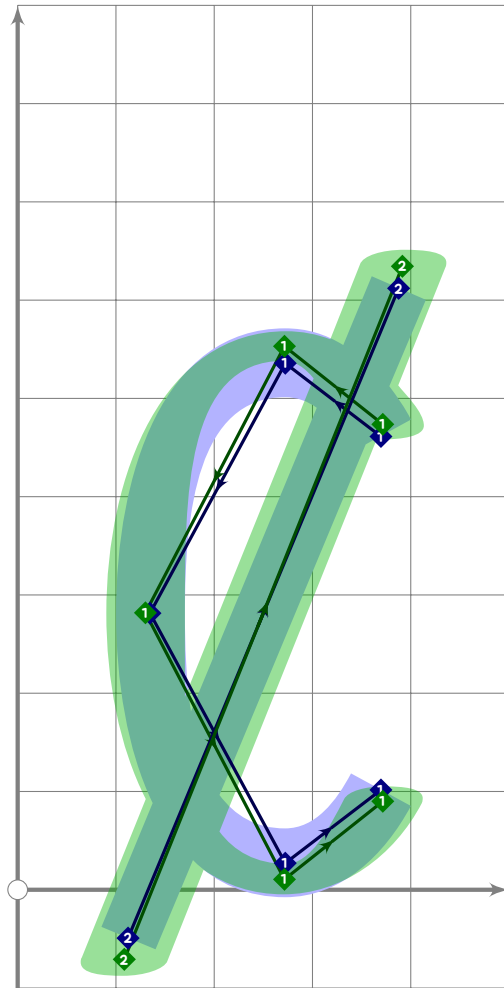
```

```

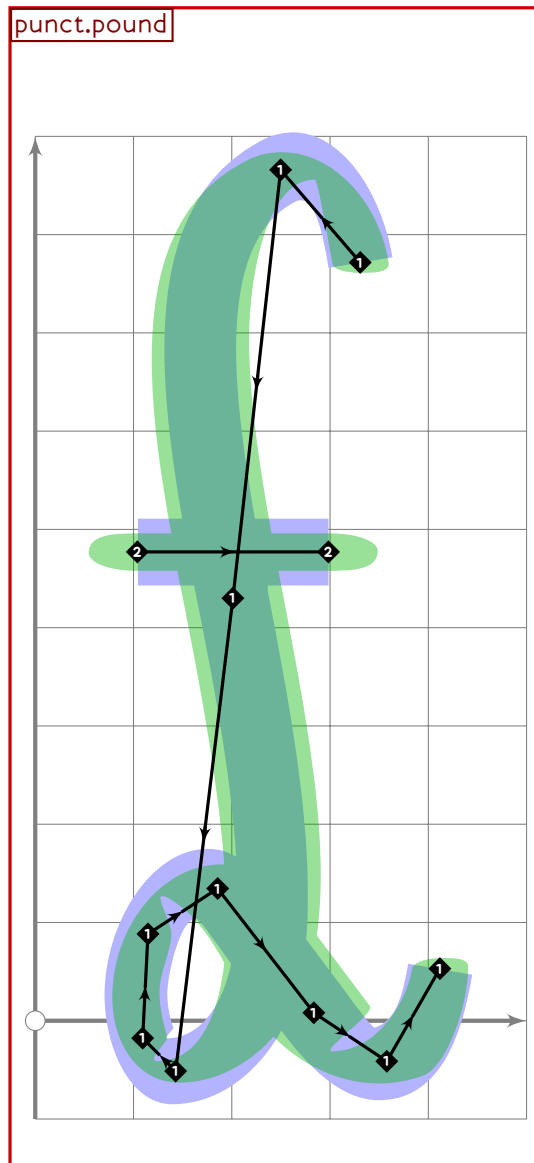
756     lcblob1:=fullcircle
757         xscaled (tsu_punct_size*tsu_pbrush_size)
758         yscaled (tsu_punct_size*tsu_pbrush_size*tsu_pbrush_shape)
759         rotated tsu_pbrush_angle
760         shifted (220,40)
761         rotatedaround ((250,390),180);
762 else:
763     bp[sp]:=fullcircle
764         scaled tsu_punct_size
765         shifted (220,40)
766         rotatedaround ((250,390),180);
767     bq[sp]:=(1,1)..(2,2)..(2,2)..(1,1);
768     if tsu_pbrush_size>=30:
769         lcblob1:=bp[sp];
770     fi;
771     sp:=sp+1;
772 fi;
773
774 bp[sp]:=(220,240){up}..(280,680){up}..{curl 1}(220,825){curl 1}..
775     (160,680){down}..{down}(220,240);
776 bp[sp]:=bp[sp] rotatedaround ((250,390),180);
777 bq[sp]:=(1,1)..(2,2)..(2,2)..(2,2)..(1,1);
778 sp:=sp+1;
779
780 if tsu_pbrush_size>=30:
781     lcblob2:=(subpath (0,1,3,9) of bp[sp-1])–cycle;
782 fi;
783 tsu_render;
784 endtsuglyph;
785
786 % WARNING, setting rescale
787 tsu_rescale_half;

```

latin.lowc

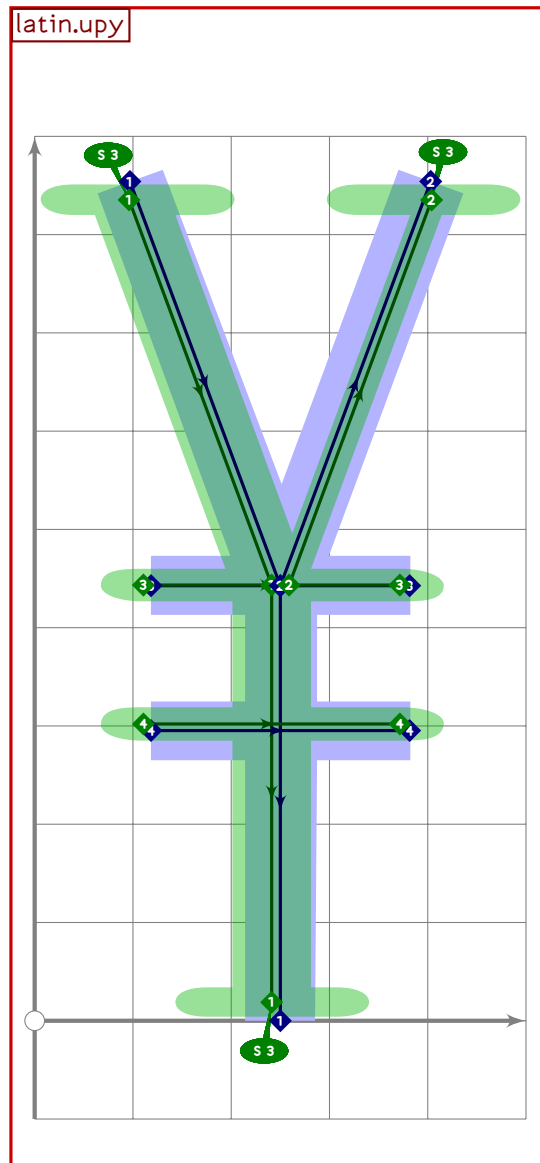


```
788  
789 begintsuglyph("cent",162);  
790 tsu_accent.lcslash(tsu_curve.latin.lowc);  
791 tsu_render;  
792 endsuglyph;
```



```
793  
794 begintsuglyph("sterling";163);  
795 tsu_curve.punct.pound;  
796 tsu_render;  
797 endtsuglyph;  
798  
799 begintsuglyph("currency";164);  
800 tsu_curve.punct.currency;  
801 tsu_render;  
802 endtsuglyph;  
803
```

[see page 263]

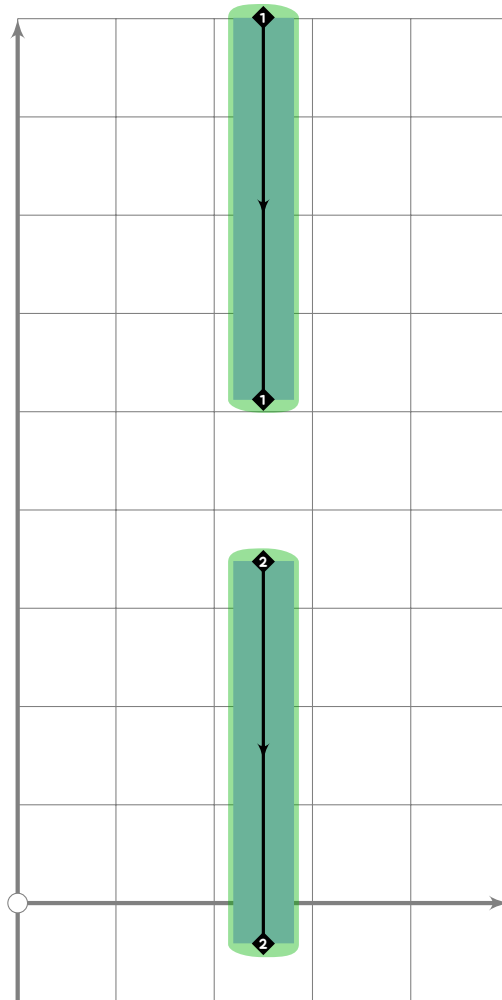


```

804 % yen sign
805 begintsuglyph("yen",165);
806 tsu_curve.latin.upy;
807 bp3:=((-240,0)-(240,0)) shifted point 1 of bp1;
808 bq3:=(2,2)-(2,2);
809 bo_size3:=80;
810 bp4:=((-240,0)-(240,0)) shifted point 1.333 of bp1;
811 bq4:=(2,2)-(2,2);
812 bo_size4:=80;
813 sp:=sp*2;
814 tsu_render;
815 endtsuglyph;

```

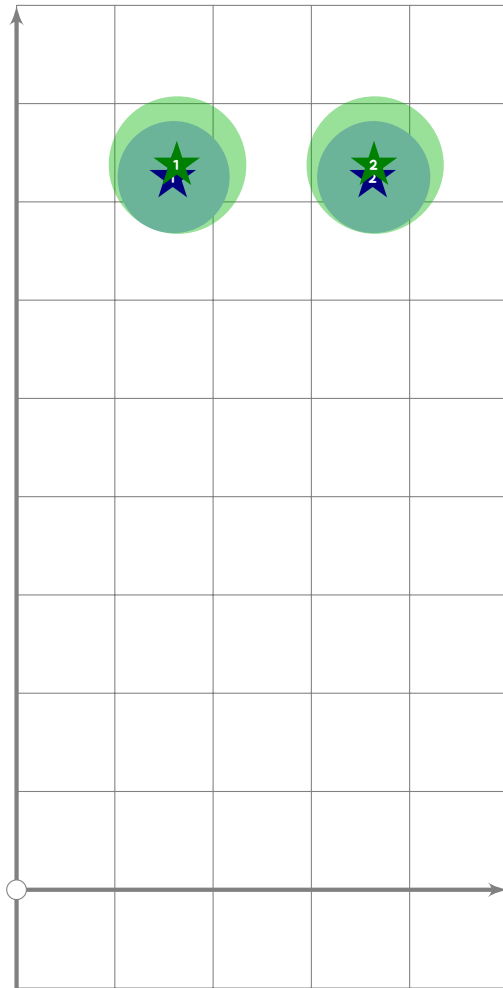
punct.bvline



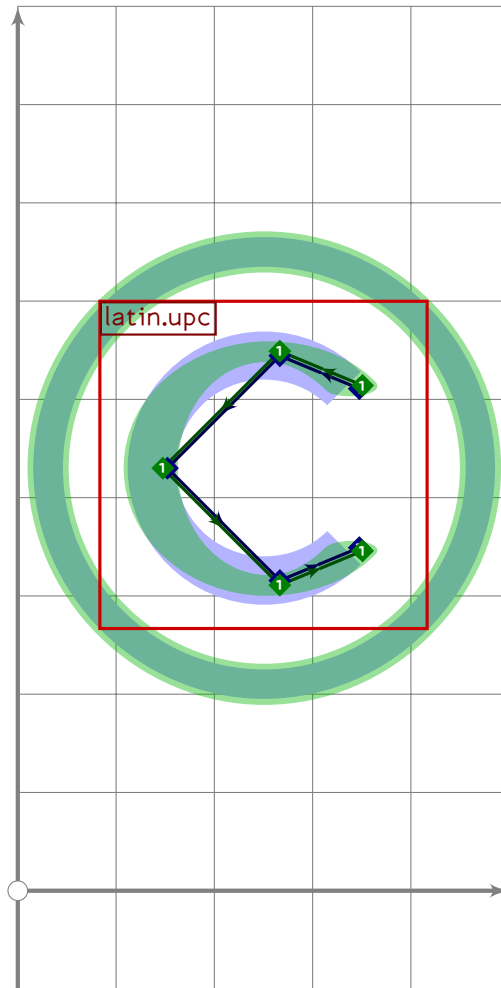
```
816
817 begintsuglyph("brokenbar",166);
818 tsu_curve.punct.bvline;
819 tsu_render;
820 endtsuglyph;
821
822 begintsuglyph("section",167);
823 tsu_curve.punct.section;
824 tsu_render;
825 endtsuglyph;
826
```

[see page 286]

latin.lowe



```
827 % naked umlaut
828 begintsuglyph("dieresis";168);
829 tsu_accent.umlaut(tsu_curve.latin.lowe);
830 bo_size[1]=0;
831 tsu_render;
832 endtsuglyph;
833
834 % WARNING, setting rescale
835 tsu_rescale_native_narrow;
```

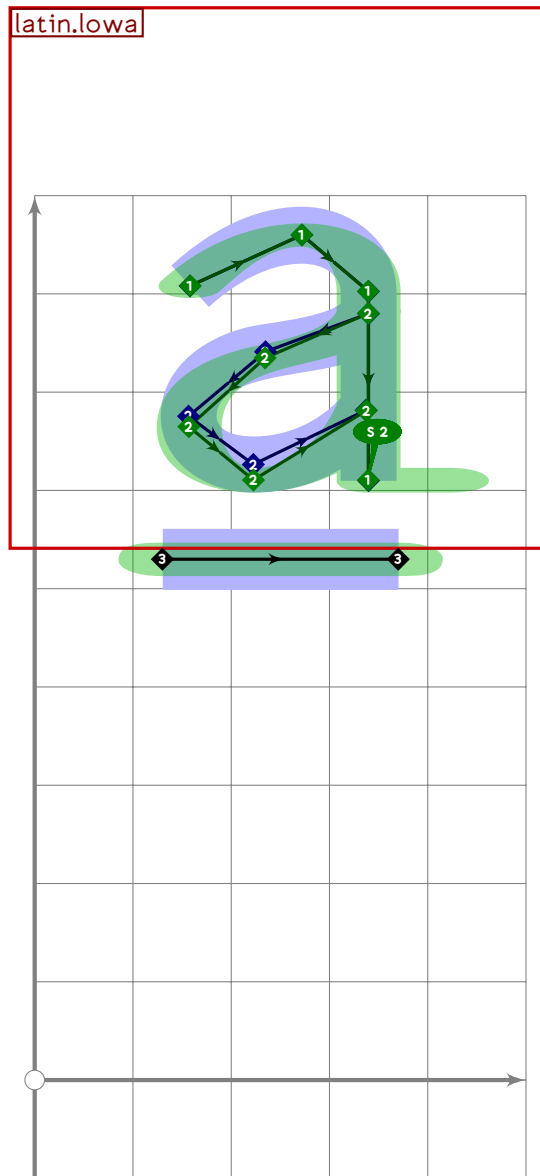


```

836
837 begintsuglyph("copyright",169);
838   Fill fullcircle scaled (440+40*tsu_brush_max) shifted (250,latin_vcentre);
839   unFill reverse fullcircle scaled (440-40*tsu_brush_max)
840     shifted (250,latin_vcentre);
841   tsu_xform(tsu_xf.latin_one_circled)(tsu_curve.latin.upc);
842   tsu_render_in_circle(tsu_xf.latin_one_cbound);
843 endtsuglyph;

```





```

844
845 begintsuglyph("ordfeminine",170);
846 tsu_xform(tsu_xf.latin_one_super)(tsu_curve.latin.lowa);
847 bp3:=(130,530)-(370,530);
848 bq3:=(2,2)-(2,2);
849 bo_size3:=bo_size1;
850 sp:=sp*1;
851 tsu_render;
852 endtsuglyph;
853
854 % WARNING, changing rescale setting
855 tsu_rescale_half;
856
857 begintsuglyph("guillemotleft",171);
858 tsu_curve.punct.guillemet_left;
859 tsu_render;

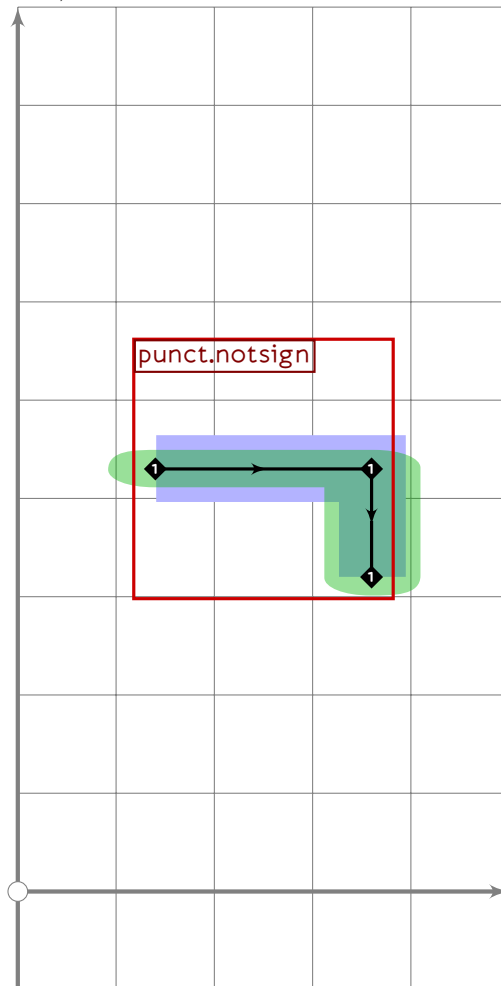
```

[see page 271]

```

860 endtsuglyph;
861
862 % WARNING, setting rescale
863 tsu_rescale_native_narrow;

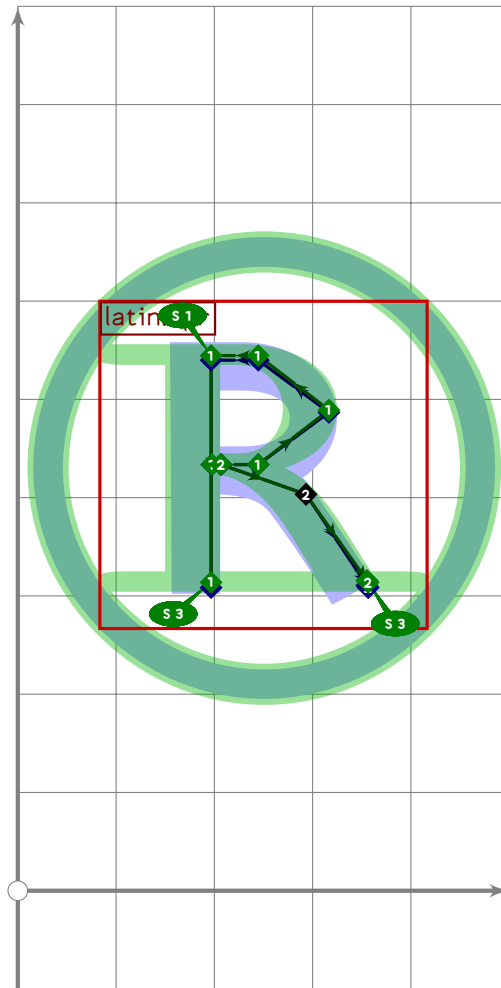
```



```

864
865 begint Suglyph("logicalnot";172);
866 tsu_curve.punct.notsign
867 (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));
868 tsu_render;
869 endtsuglyph;
870
871 % soft hyphen is a zero-width space and added by make-font script

```

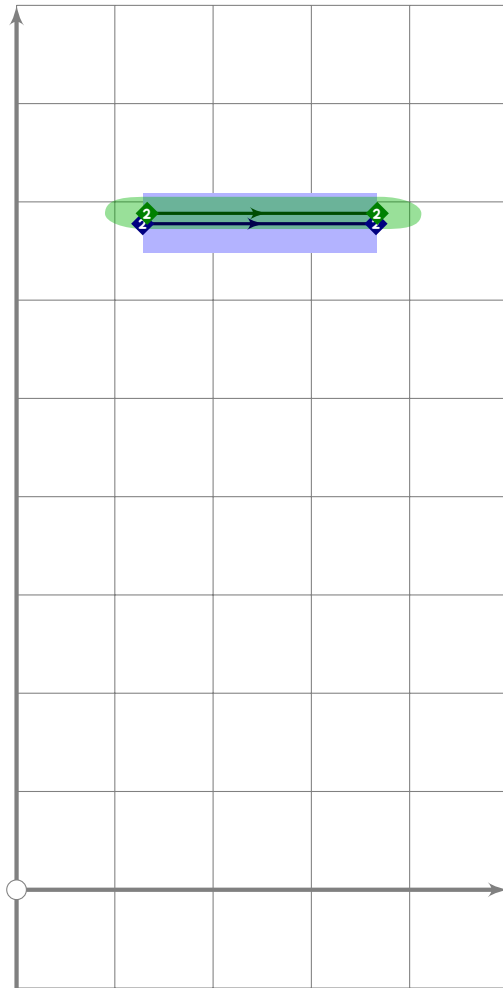


```

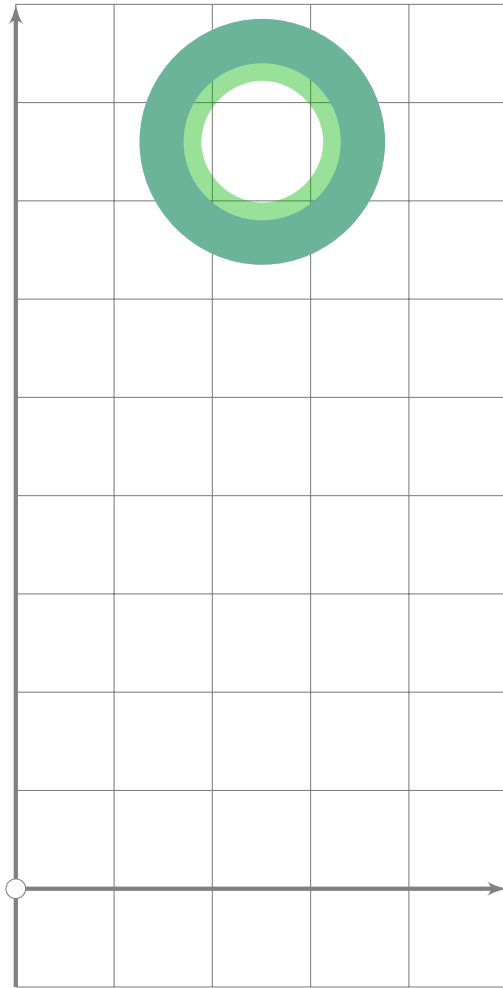
872
873 begintsuglyph("registered",174);
874 Fill fullcircle scaled (440*40*tsu_brush_max) shifted (250,latin_vcentre);
875 unFill reverse fullcircle scaled (440-40*tsu_brush_max)
876   shifted (250,latin_vcentre);
877 tsu_xform(tsu_xf.latin_one_circled)(tsu_curve.latin.upr);
878 tsu_render_in_circle(tsu_xf.latin_one_cbound);
879 endtsuglyph;
880
881 % WARNING, setting rescale
882 tsu_rescale_half;
883

```

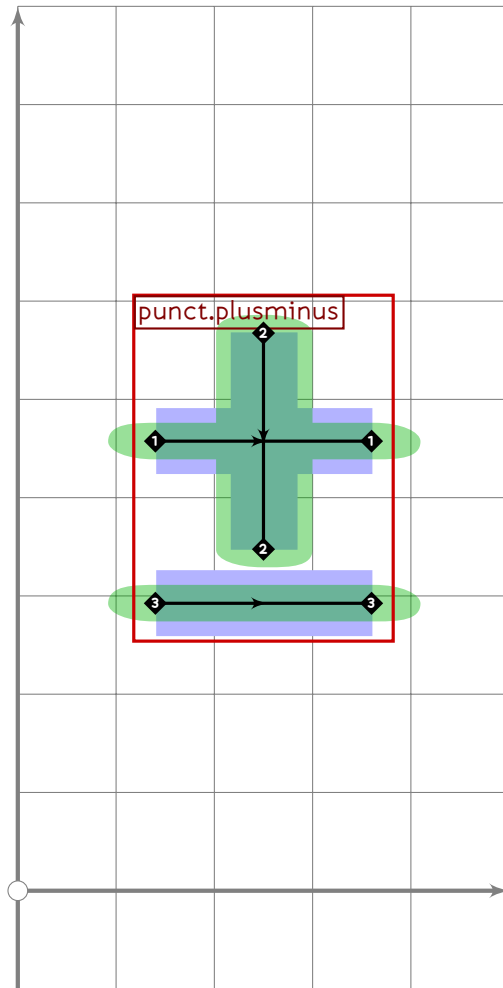
latin.lowe



```
884 % naked macron
885 begintsuglyph("macron";175);
886 tsu_accent.macron(tsu_curve.latin.lowe);
887 bo_size[1]=0;
888 tsu_render;
889 endtsuglyph;
890
891 % WARNING, setting rescale
892 tsu_rescale_native_narrow;
```



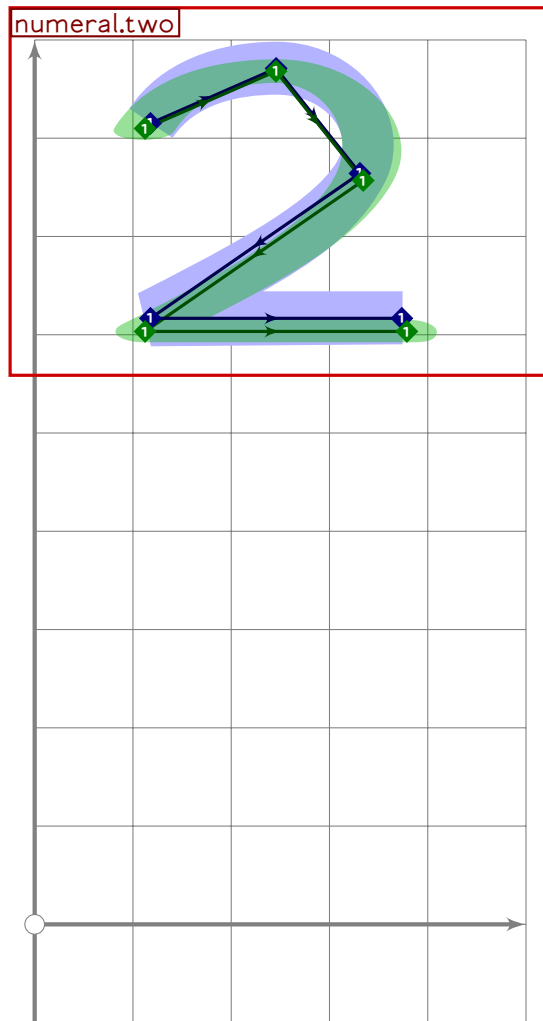
```
893  
894 begintsuglyph("degree",176);  
895   Fill fullcircle scaled (2.5*tsu_punct_size) shifted (250,760);  
896   unFill reverse fullcircle  
897     scaled (2.5*tsu_punct_size-120*tsu_brush_max) shifted (250,760);  
898 endsuglyph;
```



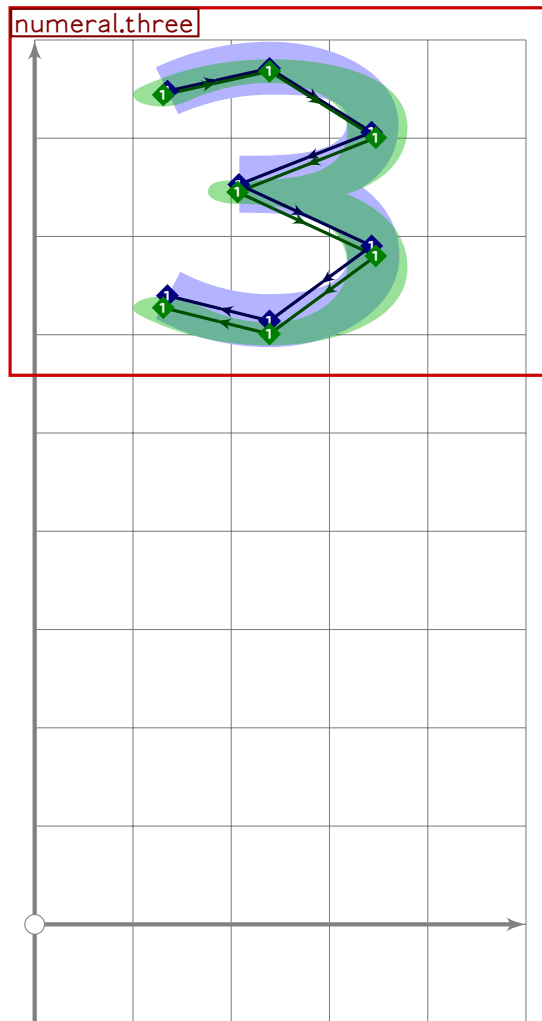
```

899
900 begintsuglyph("plusminus";177);
901 tsu_curve.punct.plusminus
902   (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));
903 tsu_render;
904 endsuglyph;

```



```
905  
906 begintsuglyph("uni00B2",178);  
907 tsu_xform(identity yscaled 0.68 transformed tsu_xf.latin_one_super)(  
908 tsu_curve.numeral.two);  
909 tsu_render;  
910 endsuglyph;
```



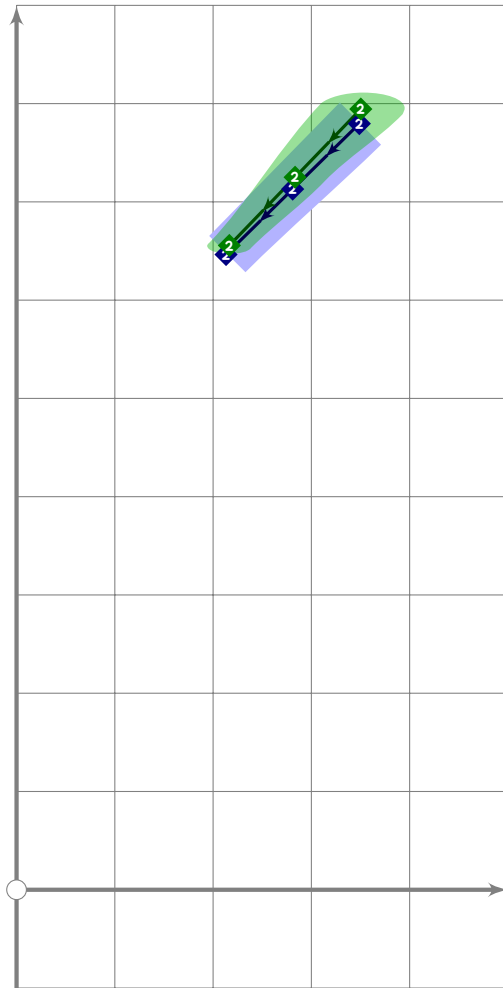
```

911
912 begintsuglyph("uni00B3";179);
913 tsu_xform(identity yscaled 0.68 transformed tsu_xf.latin_one_super)(
914   tsu_curve.numeral.three);
915 tsu_render;
916 endsuglyph;
917
918 % WARNING, changing rescale setting
919 tsu_rescale_half;
920

```



latin.lowe

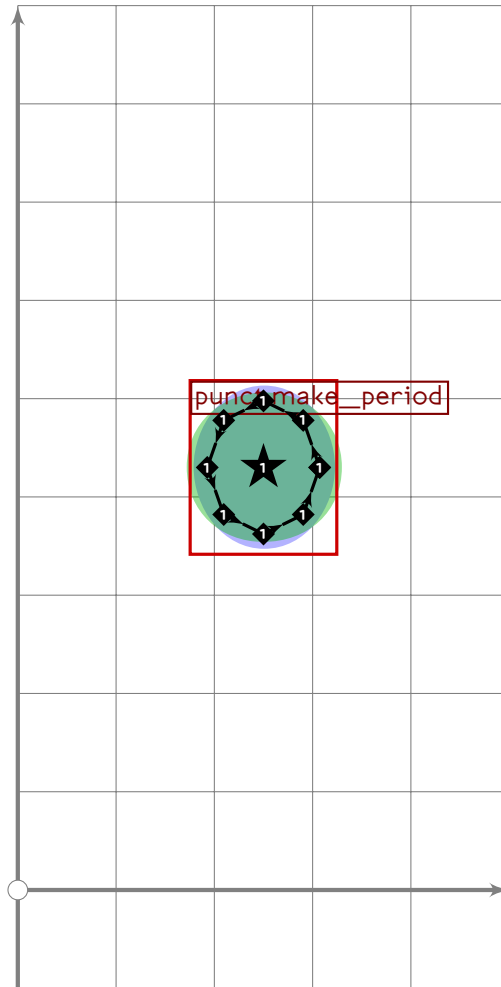


```
921 % naked acute
922 begintsuglyph("acute";180);
923 tsu_accent.acute(tsu_curve.latin.lowe);
924 bo_size[1]=0;
925 tsu_render;
926 endtsuglyph;
927
928 % micro
929 begintsuglyph("mu";181);
930 tsu_curve.punct.micro;
931 tsu_render;
932 endtsuglyph;
933
934 % pilcrow
935 begintsuglyph("paragraph";182);
936 tsu_curve.punct.pilcrow;
```

[see page 274]

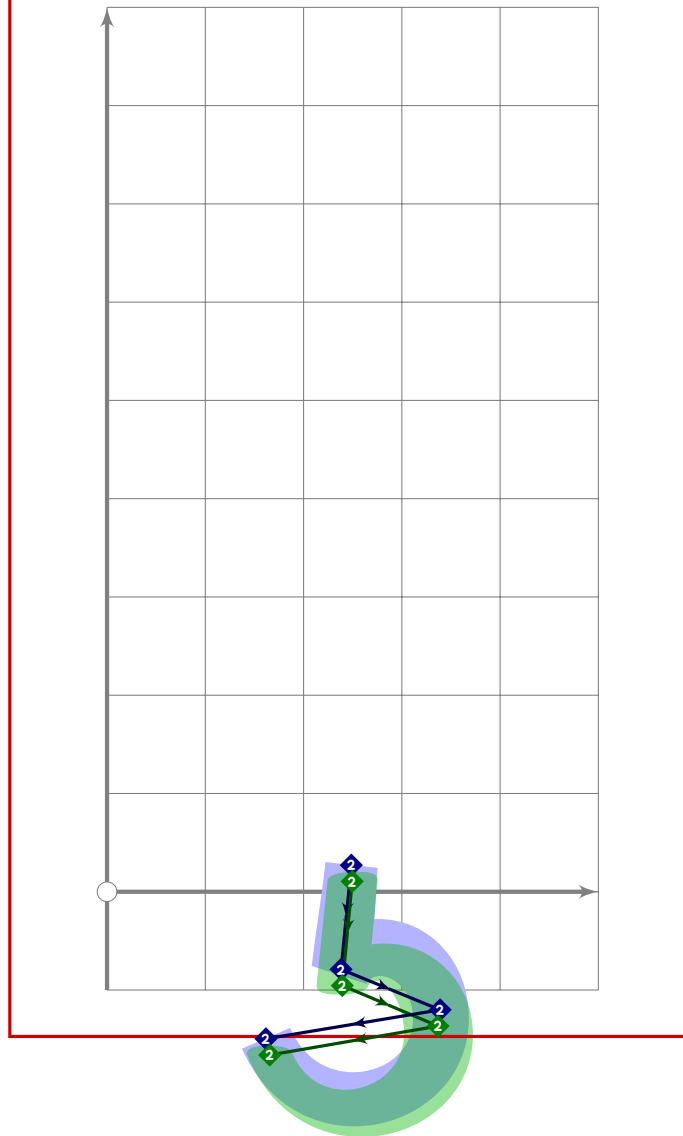
[see page 282]

```
937 tsu_render;  
938 endsuglyph;  
939
```

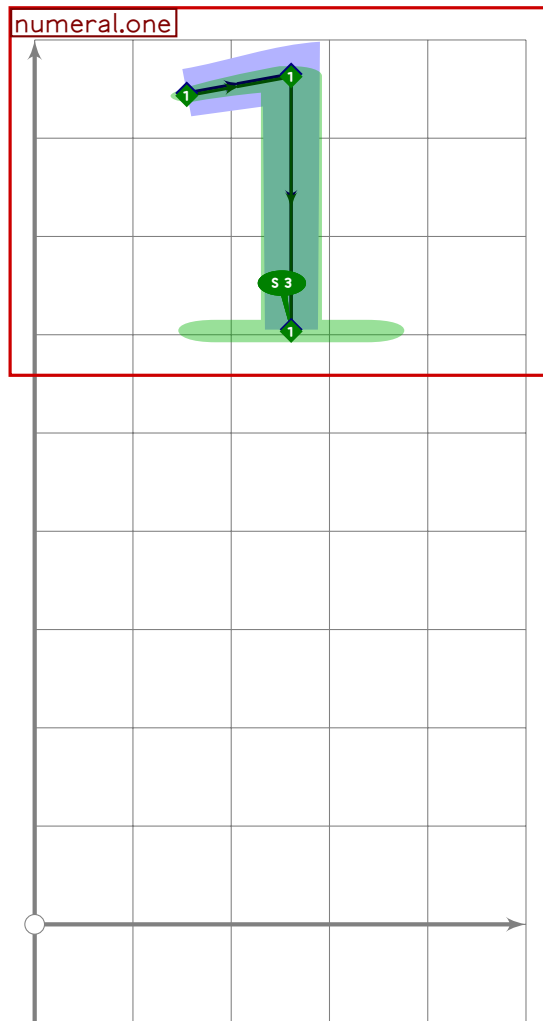


```
940 % period at centre  
941 beginsuglyph("periodcentered",183);  
942 tsu_curve.punct.make_period(centre_pt);  
943 tsu_render;  
944 endsuglyph;  
945
```

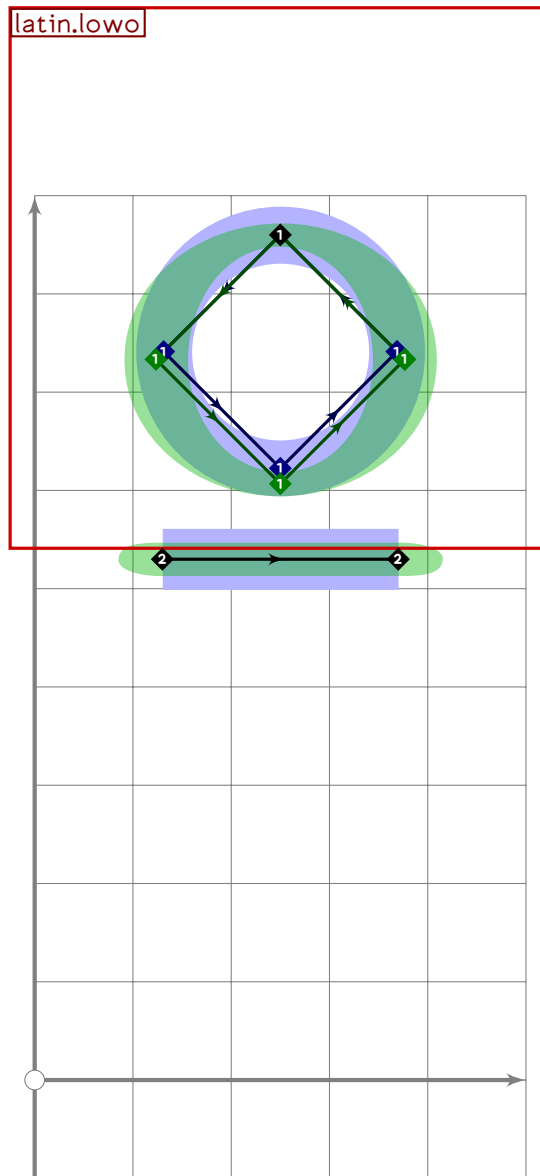
latin.lowc



```
946 % naked cedilla
947 begint Suglyph("cedilla";184);
948   tsu_accent.cedilla(tsu_curve.latin.lowc);
949   bo_size[1]:=0;
950   tsu_render;
951 endsuglyph;
952
953 % WARNING, changing rescale setting
954 tsu_rescale_native_narrow;
```



```
955  
956 begintsuglyph("uni00B9";185);  
957 tsu_xform(identity yscaled 0.68 transformed tsu_xf.latin_one_super)(  
958 tsu_curve.numeral.one);  
959 tsu_render;  
960 endsuglyph;
```



```

961
962 begintsuglyph("ordmasculine",186);
963 tsu_xform(tsu_xf.latin_one_super)(tsu_curve.latin.owo);
964 bp[sp]:=(130,530)-(370,530);
965 bq[sp]:=(2,2)-(2,2);
966 bo_size[sp]:=bo_size[sp-1];
967 sp:=sp*1;
968 tsu_render;
969 endtsuglyph;
970
971 % WARNING, changing rescale setting
972 tsu_rescale_half;
973
974 begintsuglyph("guillemotright",187);
975 tsu_curve.punct.guillemet_right;
976 tsu_render;

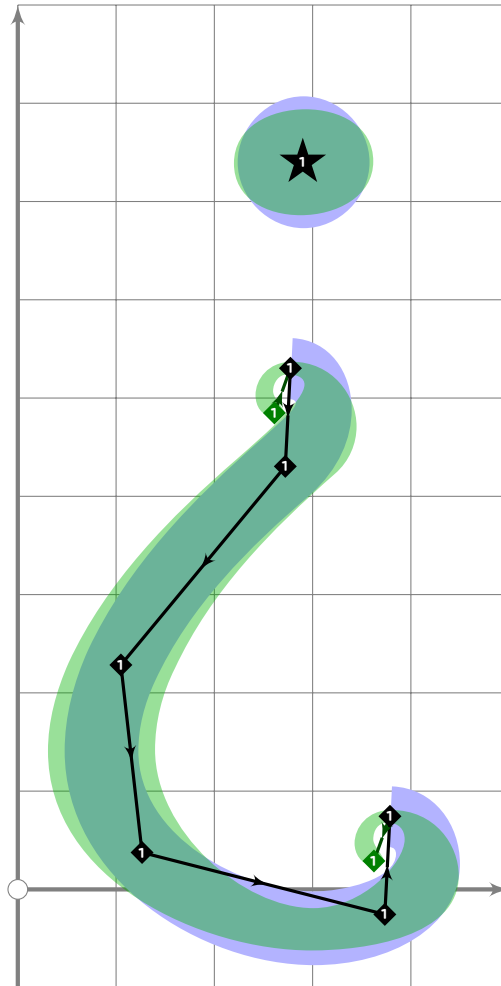
```

[see page 272]

```

977 endtsuglyph;
978
979 % WARNING, changing rescale setting
980 tsu_rescale_native_narrow;
981

```



```

982 % question mark
983 begint Suglyph("questiondown",191);
984 if tsu_pbrush_size>=(tsu_punct_size*0.5):
985     lcblob1:=fullcircle
986         xscaled ((tsu_punct_size+tsu_pbrush_size)*0.89)
987         yscaled ((tsu_punct_size+tsu_pbrush_size*tsu_pbrush_shape)*0.89)
988         rotated tsu_pbrush_angle
989         shifted (210,40)
990         rotatedaround ((250,390),180);
991 else:
992     bp[sp]:=fullcircle scaled tsu_punct_size shifted (210,40)
993         rotatedaround ((250,390),180);
994     bq[sp]:=(1,1)..(2,2)..(2,2)..(1,1);
995     sp:=sp+1;
996     if tsu_pbrush_size>=30:
997         lcblob1:=bp[sp];

```

```

998     fi;
999     fi;
1000    r:=tsu_punct_size/2;
1001
1002    bp[sp]:=(210,300){right}..(210,300-r){left}..
1003      (210,300+r)..(210+2.5*r,750)..
1004      tension 1.3..(210-2.5*r,750+r)..
1005      (210-2.5*r,750-r){right}..
1006      (210-2.5*r,750){left};
1007    bp[sp]:=insert_nodes(bp[sp])(2.5);
1008    bp[sp]:=bp[sp] rotatedaround ((210,10),-3)
1009      rotatedaround ((250,390),180);
1010    bq[sp]:=(0.8,0.8)-(1,1)-(2,2)-(2,2)-(2,2)-(2,2)-(1,1)-(0.8,0.8);
1011    sp:=sp+1;
1012
1013    tsu_render;
1014    endtsuglyph;
1015
1016    

---


1017

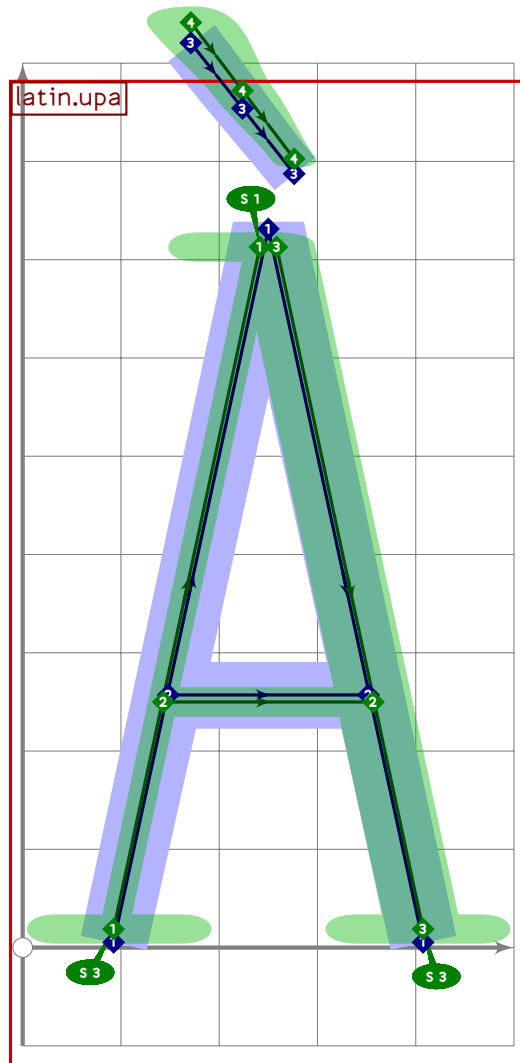
```

## Accented Latin

```

1018 % ACCENTED LATIN
1019
1020 % WARNING, setting rescale
1021 tsu_rescale_half;
1022

```

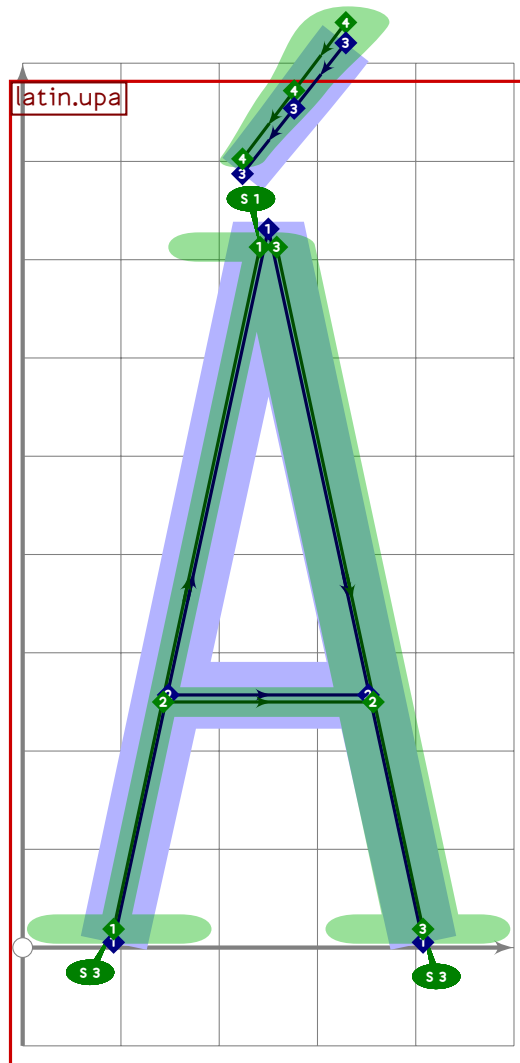


```

1023 % A with grave
1024 begintsuglyph("Agrave";192);
1025 tsu_accent.capital(grave)(tsu_curve.latin.upa);
1026 tsu_render;
1027 endsuglyph;
1028

```

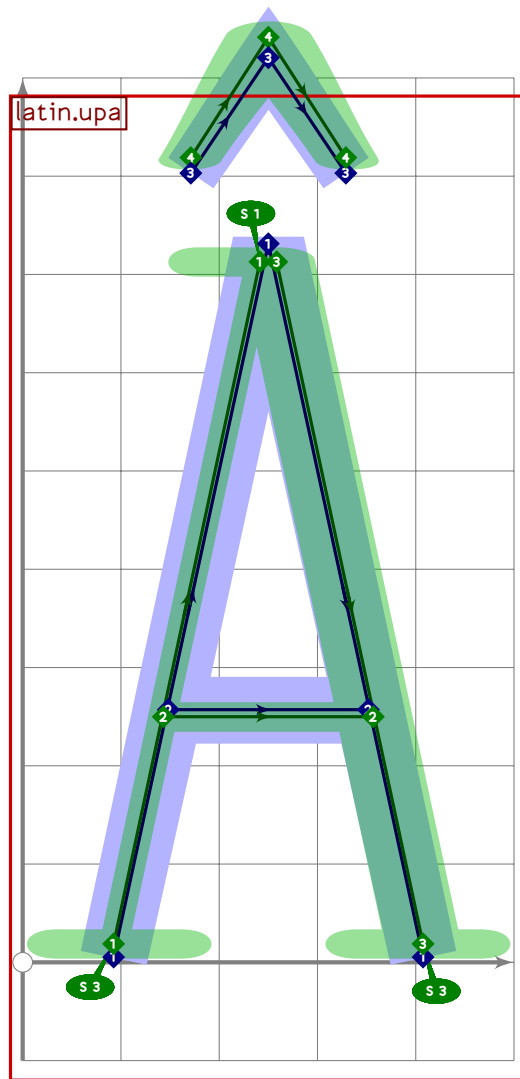




```

1029 % A with acute
1030 beginsuglyph("Aacute",193);
1031   tsu_accent.capital(acute)(tsu_curve.latin.upa);
1032   tsu_render;
1033 endsuglyph;
1034

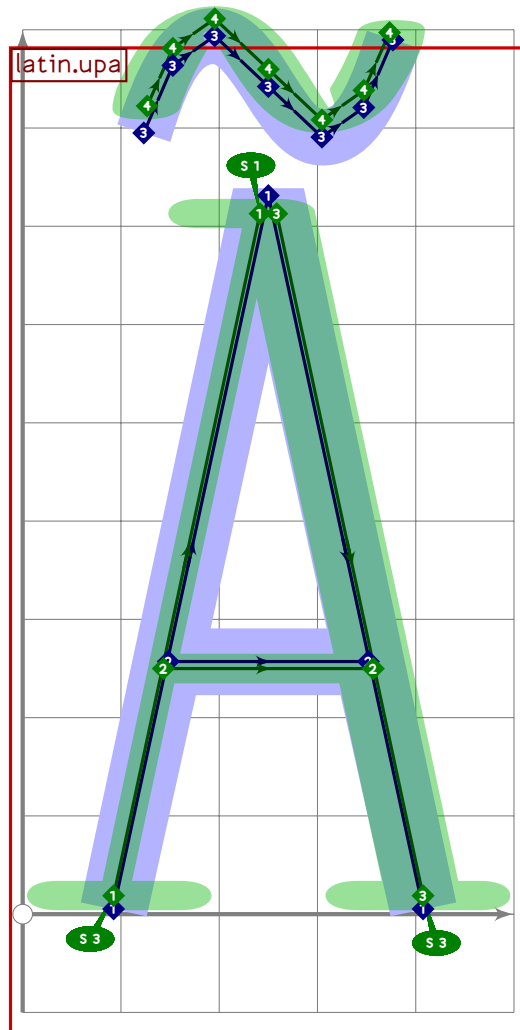
```



```

1035 % A with circumflex
1036 begintsuglyph("Acircumflex";194);
1037 tsu_accent.capital(circumflex)(tsu_curve.latin.upa);
1038 tsu_render;
1039 endsuglyph;
1040

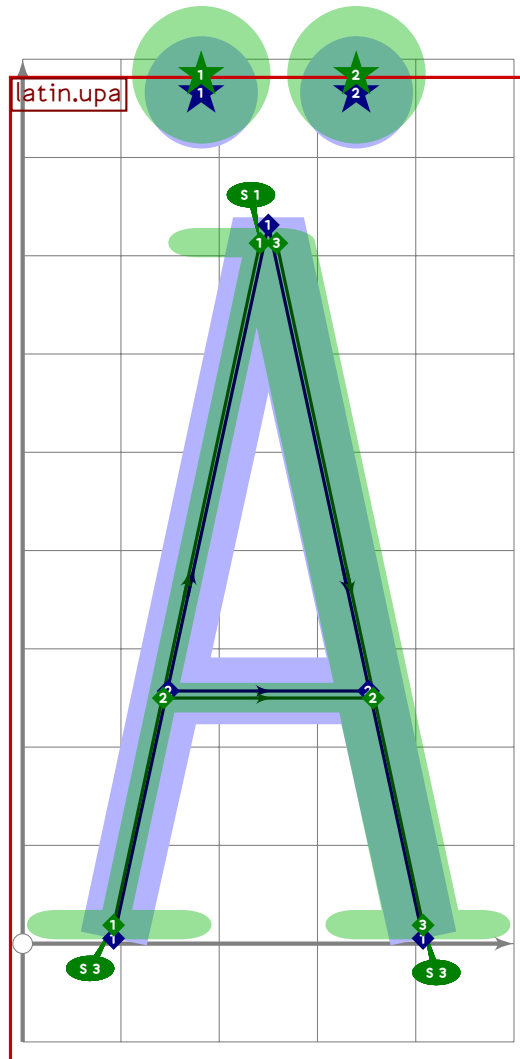
```



```

1041 % A with tilde
1042 beginsuglyph("Atilde";195);
1043   tsu_accent.capital(tilde)(tsu_curve.latin.upa);
1044   tsu_render;
1045 endsuglyph;
1046

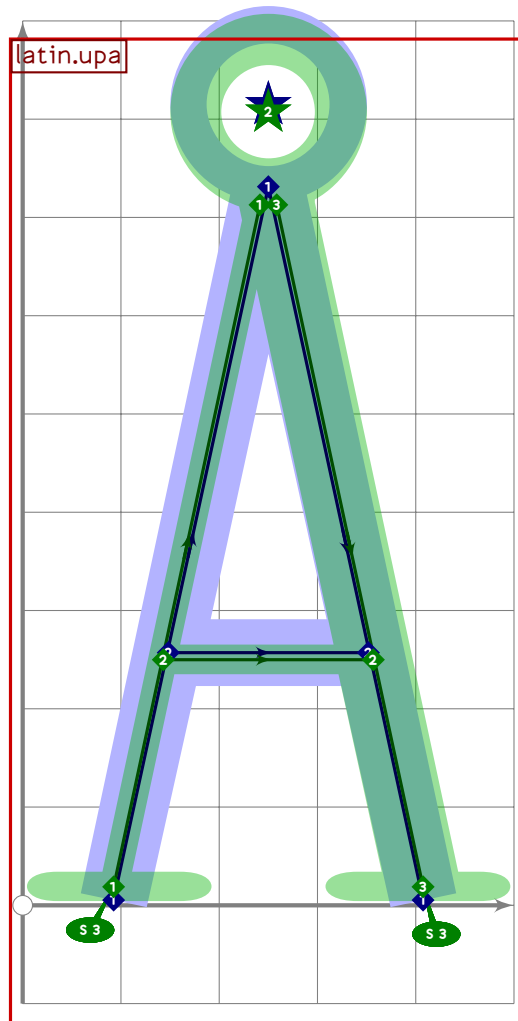
```



```

1047 % A with dieresis/umlaut
1048 begintsuglyph("Adieresis",196);
1049 tsu_accent.capital(umlaut)(tsu_curve.latin.upa);
1050 tsu_render;
1051 endsuglyph;
1052

```

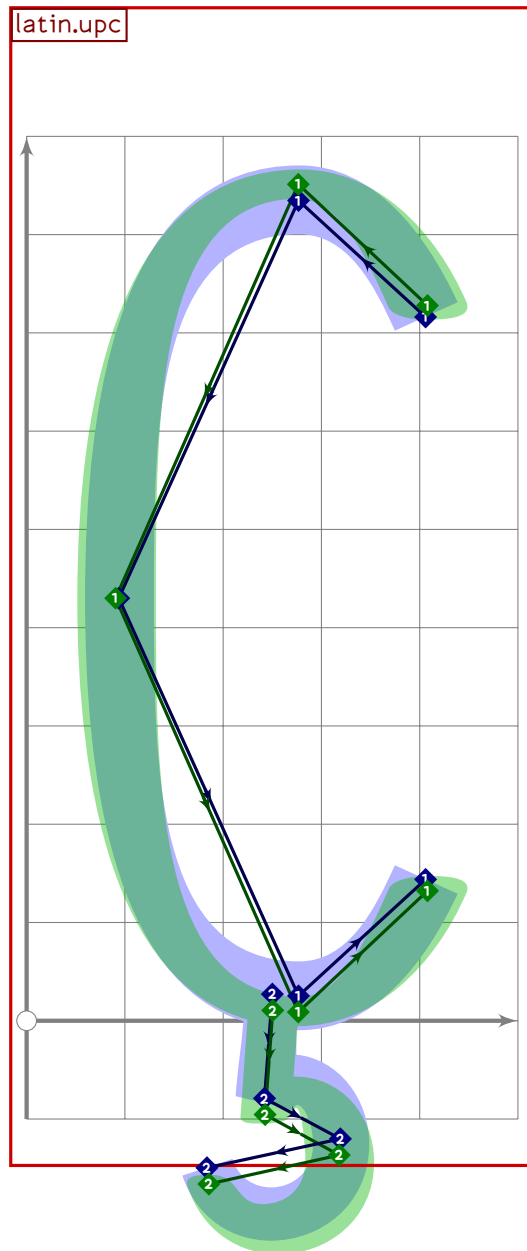


```

1053 % A with ring above
1054 begintsuglyph("Aring",197);
1055   begingroup
1056     save xsp;
1057     xsp:=sp;
1058     tsu_accent.capital(ringabove)(tsu_curve.latin.upa);
1059     bo_serif[xsp][1]:=whatever;
1060   endgroup;
1061   tsu_render;
1062 endtsuglyph;
1063
1064 % AE ligature
1065 begintsuglyph("AE",198);
1066   tsu_curve.latin.upae;
1067   tsu_render;
1068 endtsuglyph;
1069

```

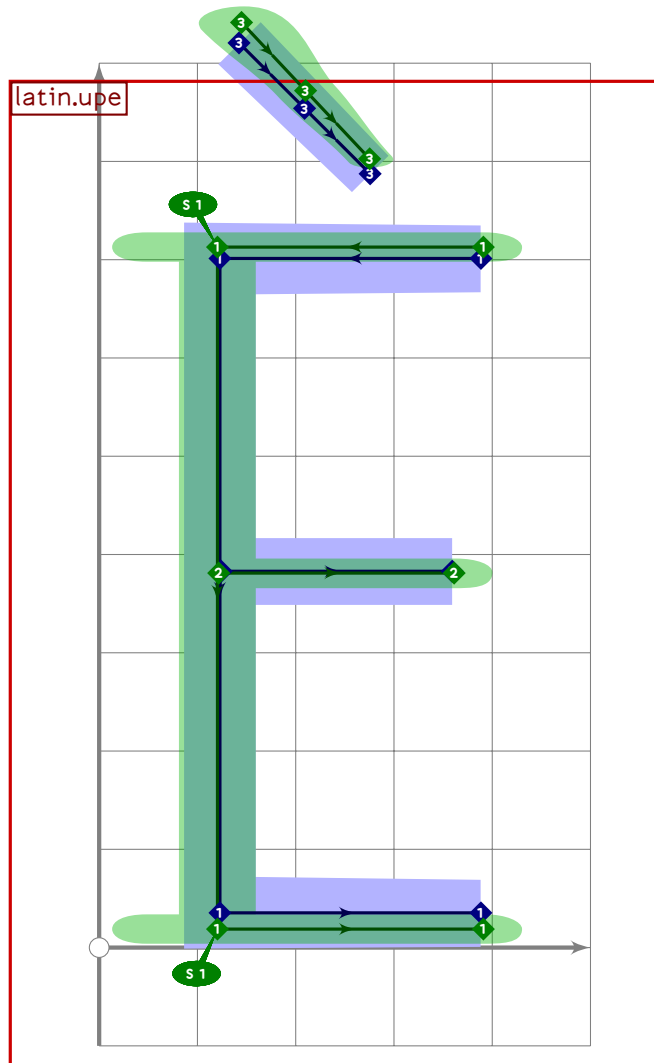
[see page 151]



```

1070 % C with cedilla
1071 begintsuglyph("Ccedilla";199);
1072 tsu_accent.cedilla(tsu_curve.latin.upc);
1073 tsu_render;
1074 endsuglyph;
1075

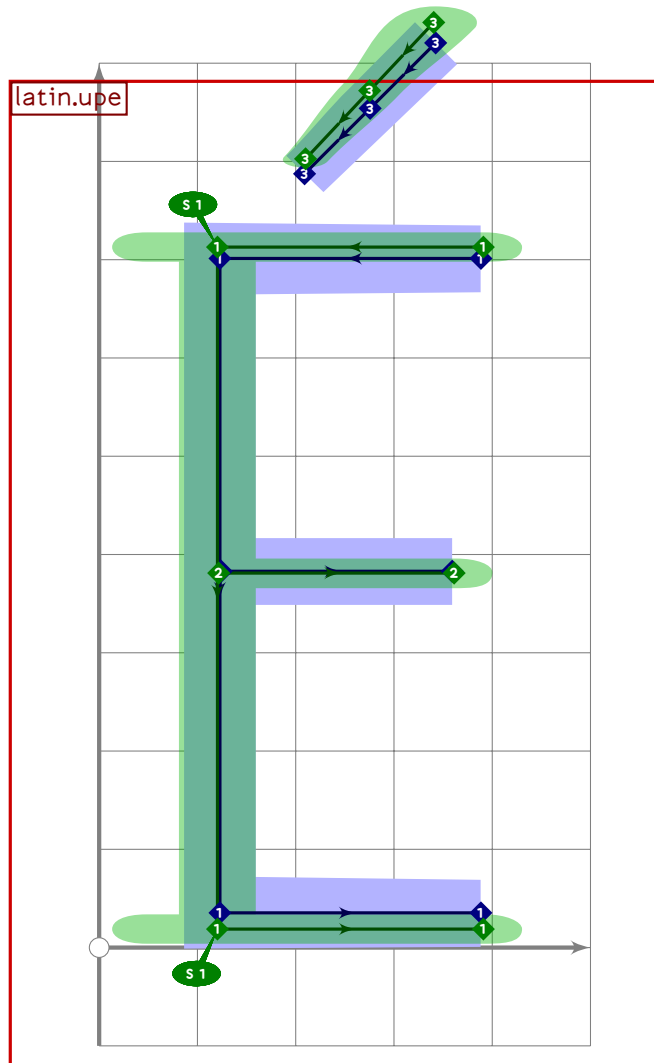
```



```

1076 % E with grave
1077 begintsuglyph("Egrave";200);
1078   tsu_accent.capital(grave)(tsu_curve.latin.upe);
1079   tsu_render;
1080 endsuglyph;
1081

```

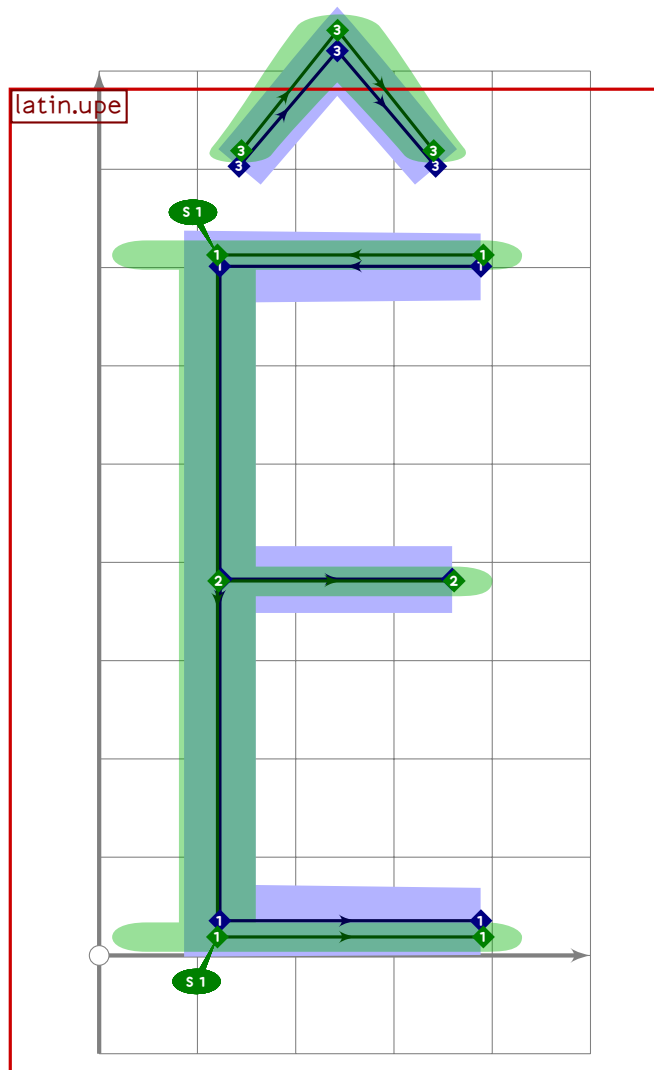


```

1082 % E with acute
1083 begintsuglyph("Eacute";201);
1084 tsu_accent.capital(acute)(tsu_curve.latin.upe);
1085 tsu_render;
1086 endsuglyph;
1087

```

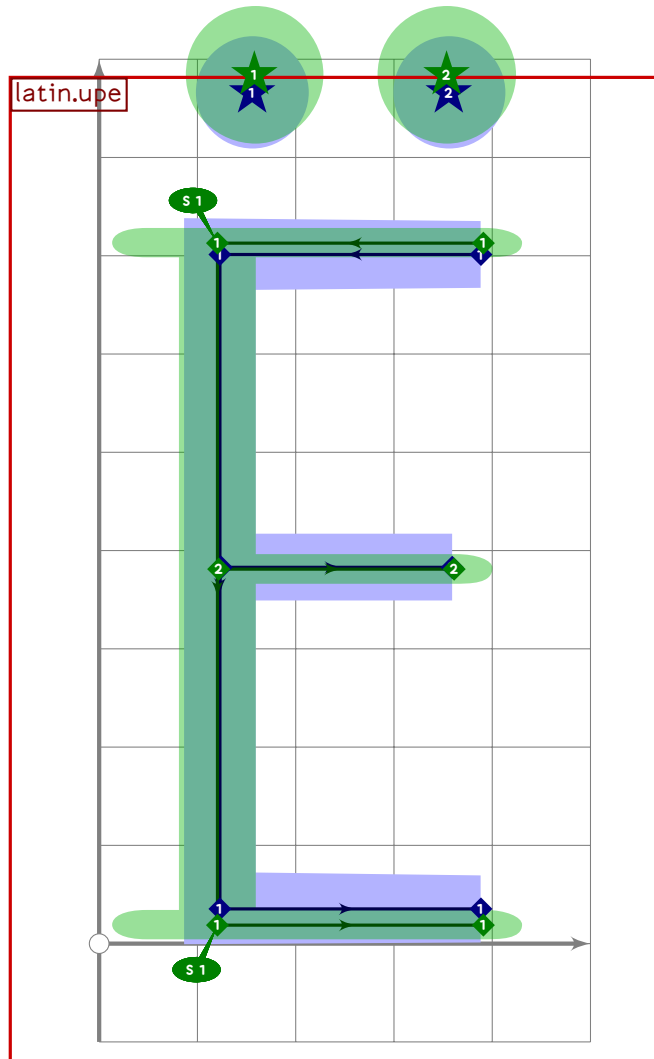




```

1088 % E with circumflex
1089 begintsuglyph("Ecircumflex";202);
1090 tsu_accent.capital(circumflex)(tsu_curve.latin.upe);
1091 tsu_render;
1092 endtsuglyph;
1093

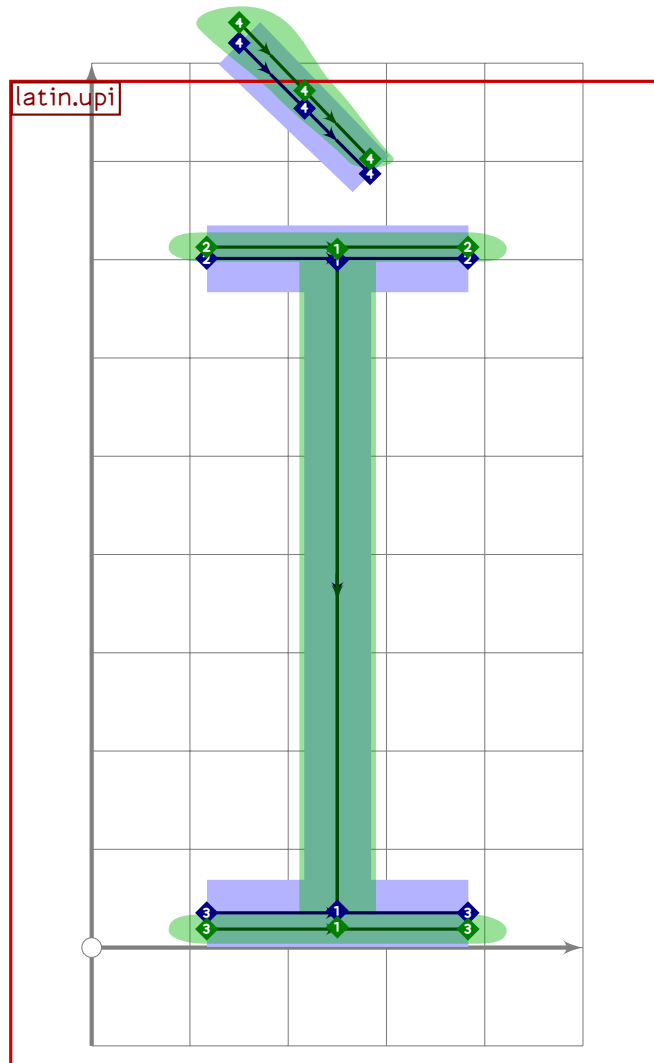
```



```

1094 % E with dieresis/umlaut
1095 begintsuglyph("Edieresis",203);
1096 tsu_accent.capital(umlaut)(tsu_curve.latin.upe);
1097 tsu_render;
1098 endsuglyph;
1099

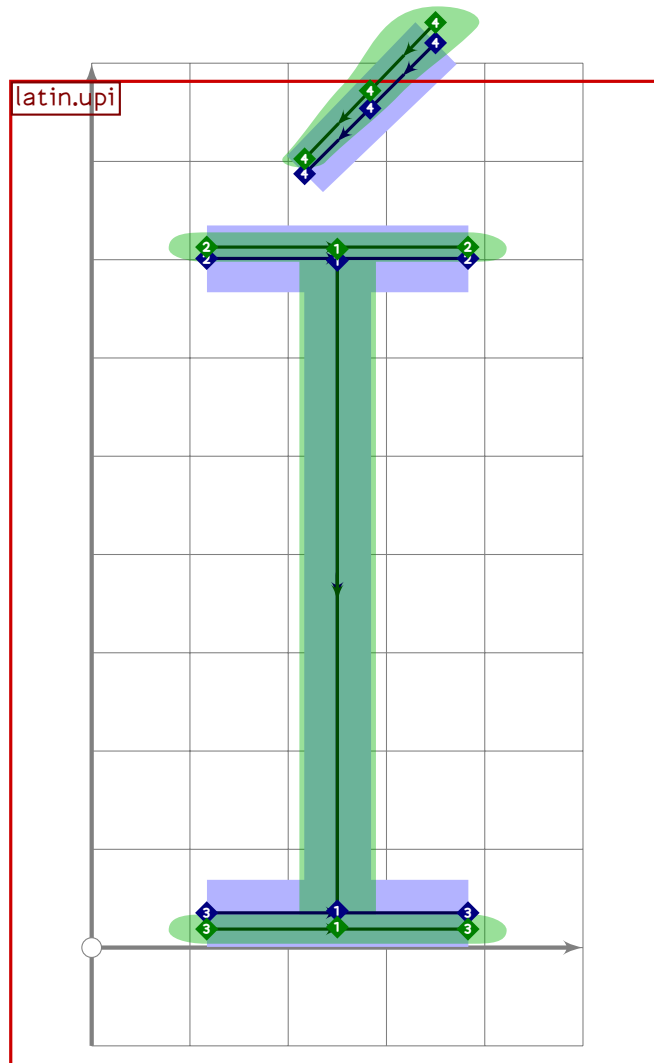
```



```

1100 % I with grave
1101 begintsuglyph("Igrave";204);
1102 tsu_accent.capital(grave)(tsu_curve.latin.upi);
1103 tsu_render;
1104 endsuglyph;
1105

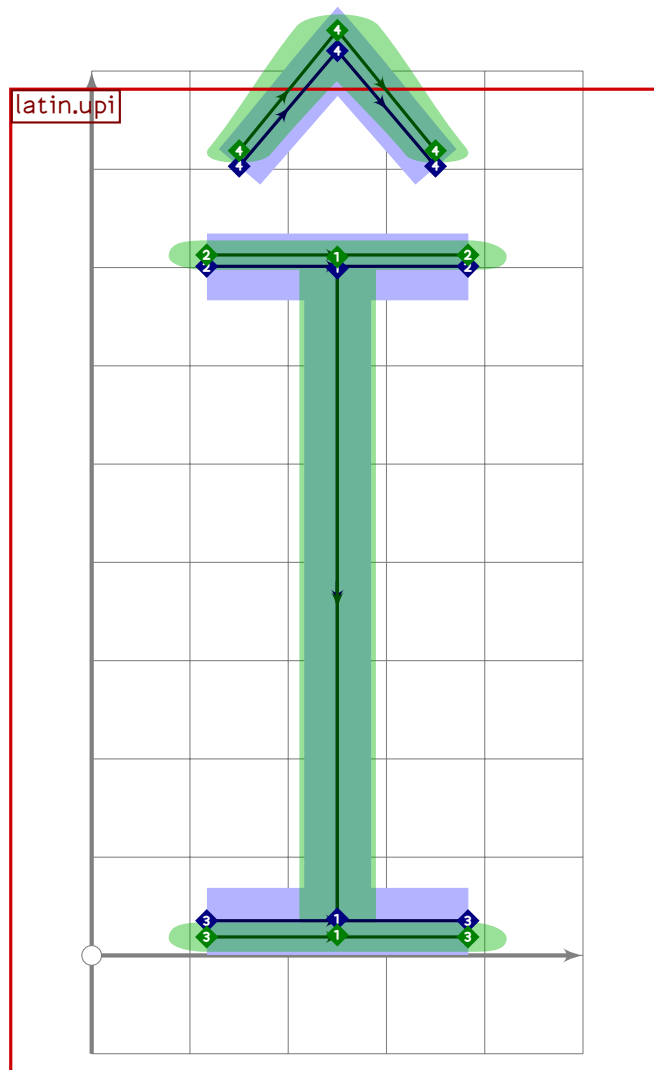
```



```

1106 % I with acute
1107 begint Suglyph("Iacute";205);
1108   tsu_accent.capital(acute)(tsu_curve.latin.upi);
1109   tsu_render;
1110 endsuglyph;
1111

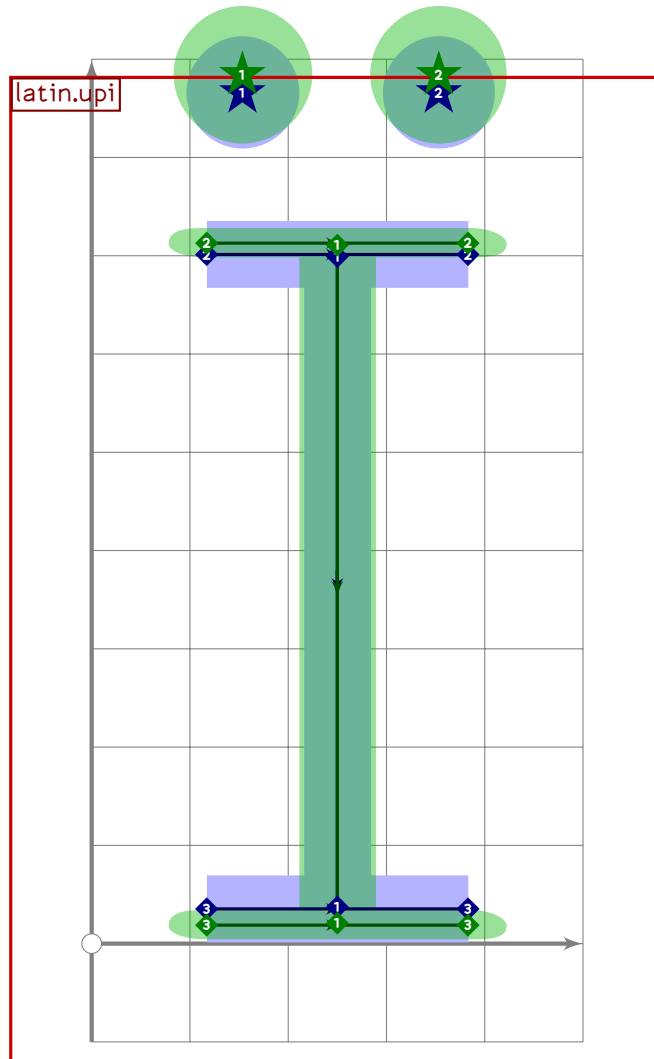
```



```

1112 % I with circumflex
1113 begintsuglyph("Icircumflex";206);
1114 tsu_accent.capital(circumflex)(tsu_curve.latin.upi);
1115 tsu_render;
1116 endsuglyph;
1117

```

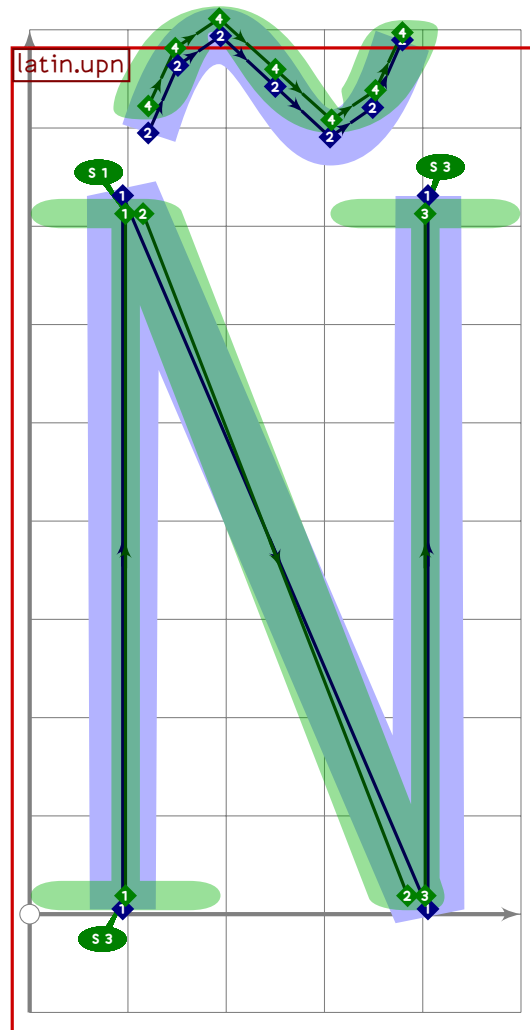


```

1118 % I with dieresis/umlaut
1119 begintsuglyph("Idieresis";207);
1120 tsu_accent.capital(umlaut)(tsu_curve.latin.upi);
1121 lcblob1:=lcblob1 shifted (15*left);
1122 lcblob2:=lcblob2 shifted (15*left);
1123 tsu_render;
1124 endsuglyph;
1125
1126 % uppercase Icelandic Eth
1127 begintsuglyph("Eth";208);
1128 tsu_curve.latin.upeth;
1129 tsu_render;
1130 endsuglyph;
1131

```

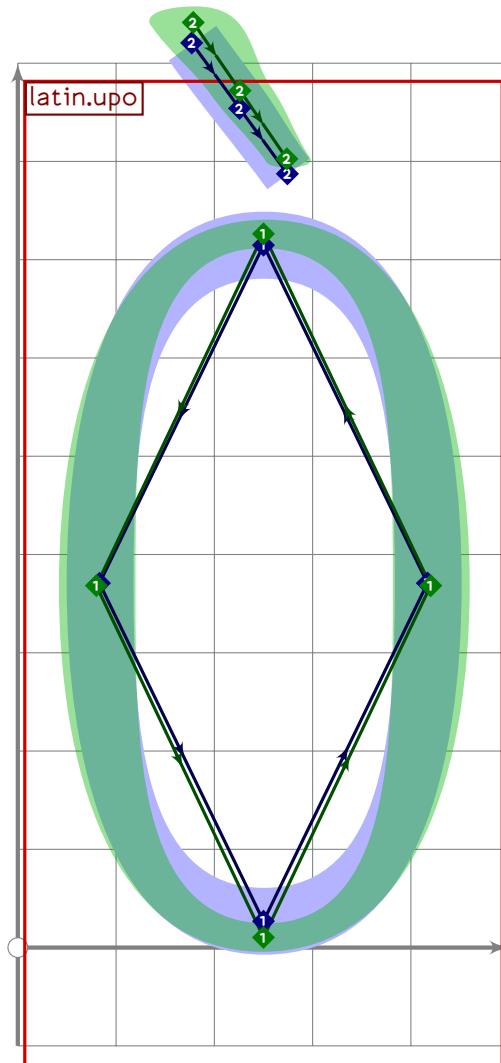
[see page 156]



```

1132 % N with tilde
1133 beginsuglyph("Ntilde";209);
1134   tsu_accent.capital(tilde)(tsu_curve.latin.upn);
1135   tsu_render;
1136 endsuglyph;
1137

```

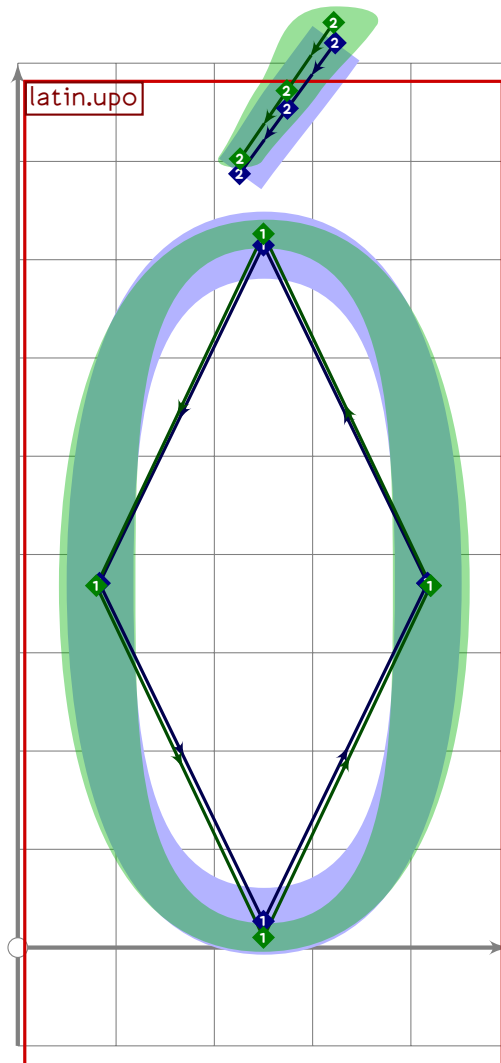


```

1138 % O with grave
1139 begintsuglyph("Ograve",210);
1140 tsu_accent.capital(grave)(tsu_curve.latin.upo);
1141 tsu_render;
1142 endsuglyph;
1143

```

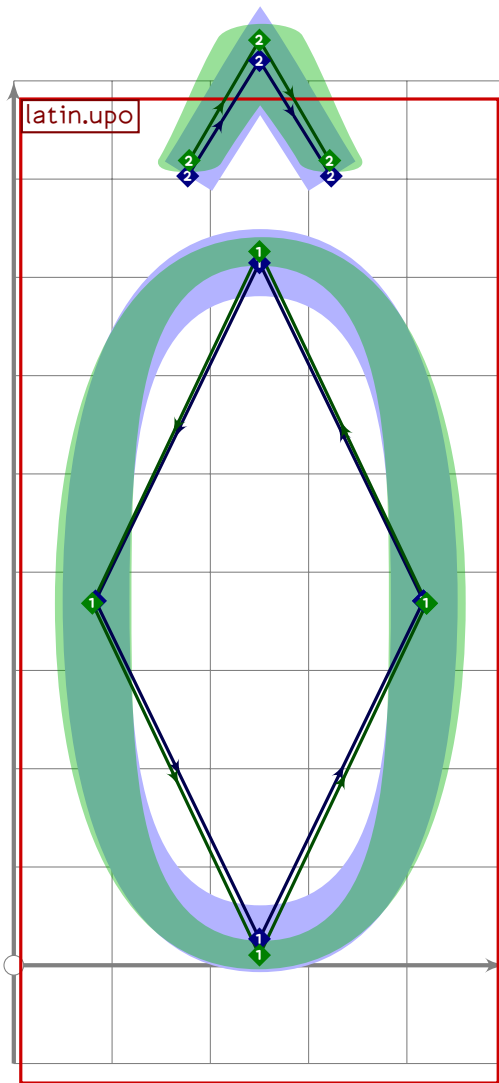




```

1144 % O with acute
1145 beginsuglyph("Oacute";211);
1146   tsu_accent.capital(acute)(tsu_curve.latin.upo);
1147   tsu_render;
1148 endsuglyph;
1149

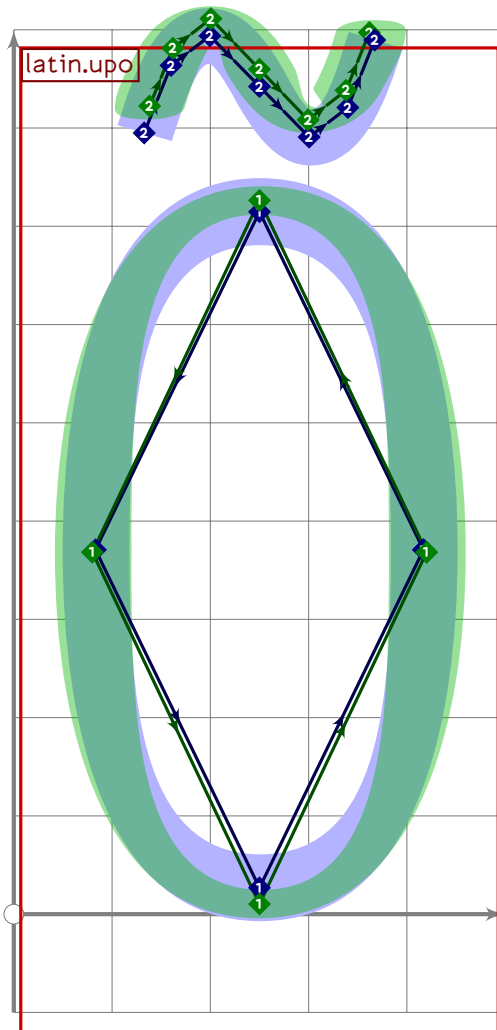
```



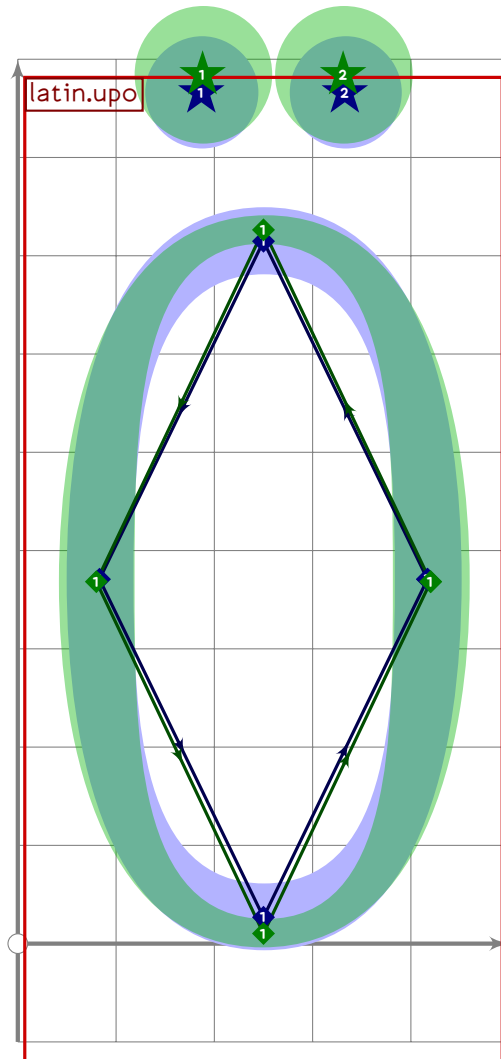
```

1150 % O with circumflex
1151 begintsuglyph("Ocircumflex";212);
1152 tsu_accent.capital(circumflex)(tsu_curve.latin.upo);
1153 tsu_render;
1154 endsuglyph;
1155

```



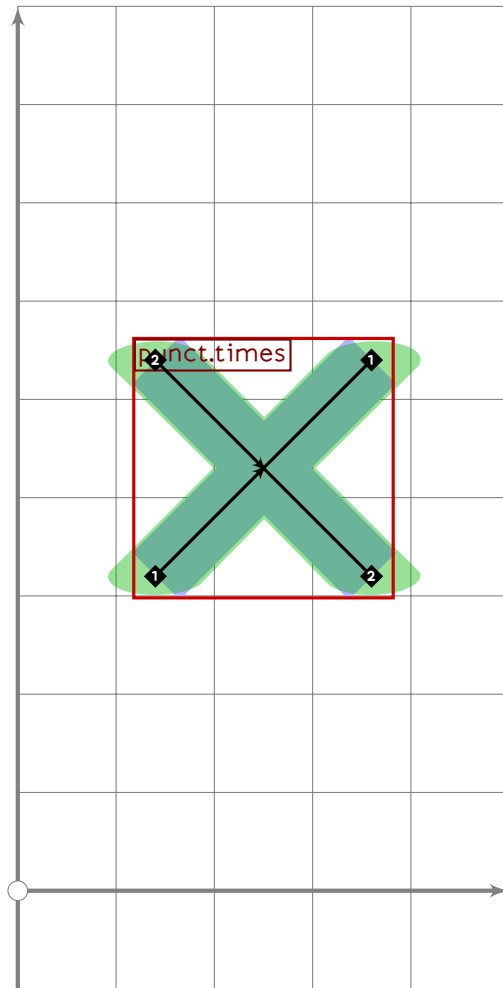
```
1156 % O with tilde
1157 beginsuglyph("Otilde";213);
1158   tsu_accent.capital(tilde)(tsu_curve.latin.upo);
1159   tsu_render;
1160 endsuglyph;
1161
```



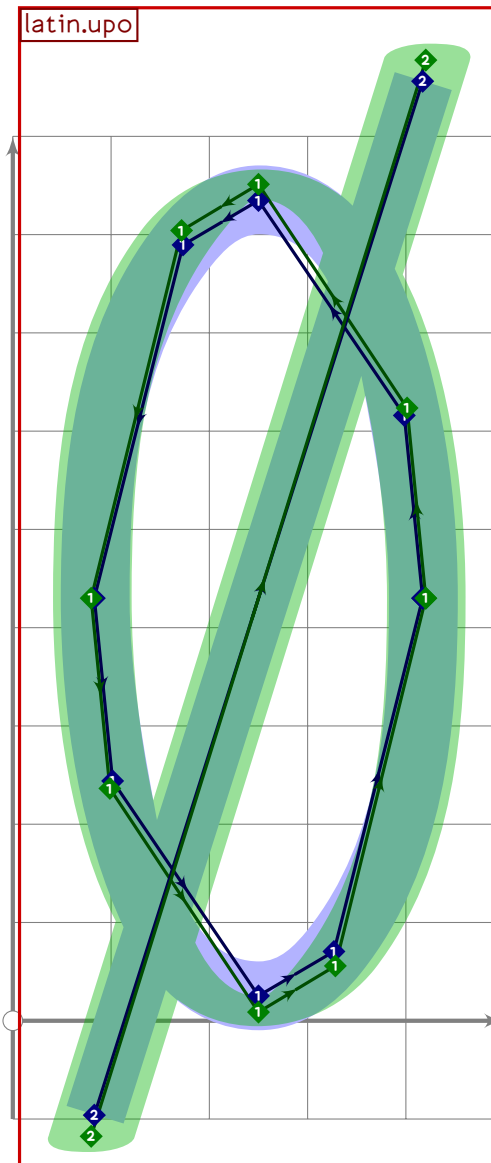
```

1162 % O with dieresis/umlaut
1163 beginsuglyph("Odieresis";214);
1164 tsu_accent.capital(umlaut)(tsu_curve.latin.upo);
1165 tsu_render;
1166 endsuglyph;
1167
1168 % times
1169 tsu_rescale_native_narrow;

```



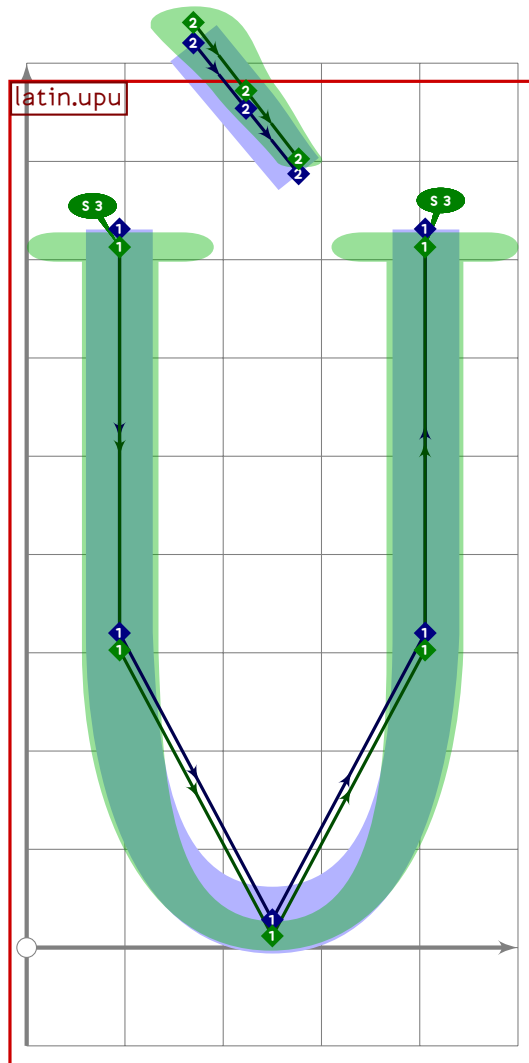
```
1170 begintsuglyph("multiply",215);  
1171 tsu_curve.punct.times  
1172   (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));  
1173 tsu_render;  
1174 endtsuglyph;  
1175 tsu_rescale_half;  
1176
```



```

1177 % O with stroke
1178 begintsuglyph("Oslash",216);
1179 tsu_accent.ucslash(tsu_curve.latin.upo);
1180 bp1:=insert_nodes(bp1)(0.3,1.3,2.3,3.3);
1181 bq1:=insert_nodes(bq1)(0.3,1.3,2.3,3.3);
1182 tsu_render;
1183 endtsuglyph;
1184

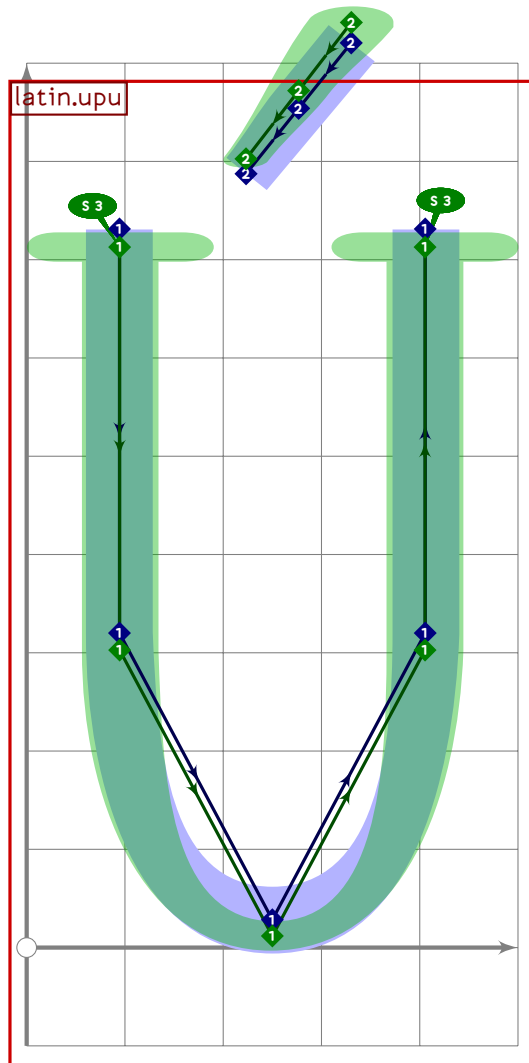
```



```

1185 % U with grave
1186 begintsuglyph("Ugrave",217);
1187 tsu_accent.capital(grave)(tsu_curve.latin.upu);
1188 tsu_render;
1189 endsuglyph;
1190

```

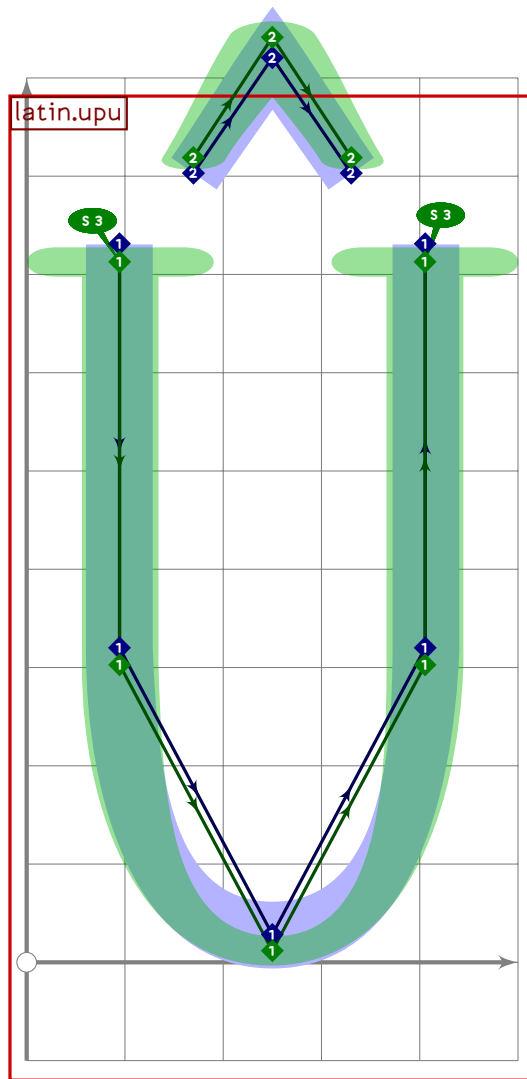


```

1191 % U with acute
1192 beginsuglyph("Uacute";218);
1193   tsu_accent.capital(acute)(tsu_curve.latin.upu);
1194   tsu_render;
1195 endsuglyph;
1196

```

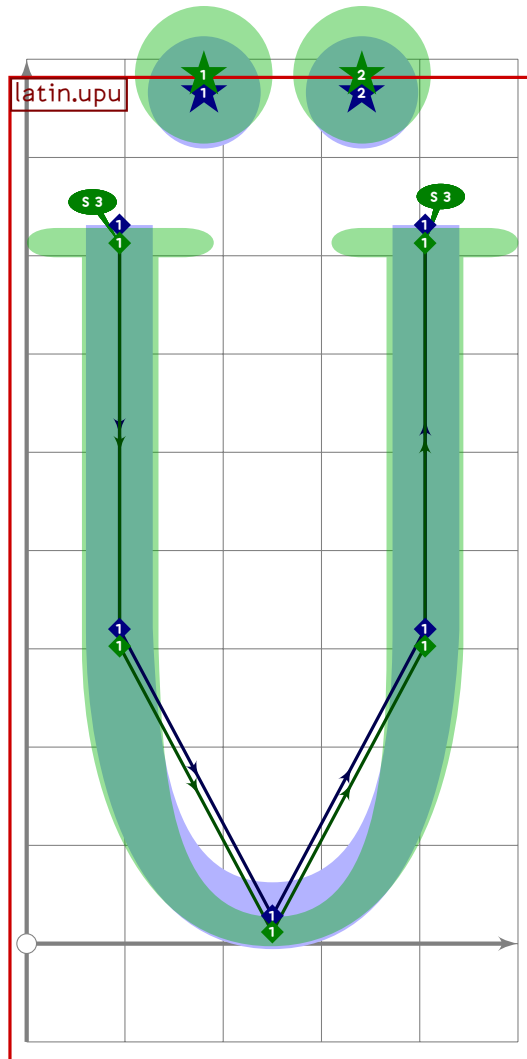




```

1197 % U with circumflex
1198 begintsuglyph("Ucircumflex";219);
1199   tsu_accent.capital(circumflex)(tsu_curve.latin.upu);
1200   tsu_render;
1201   endtsuglyph;
1202

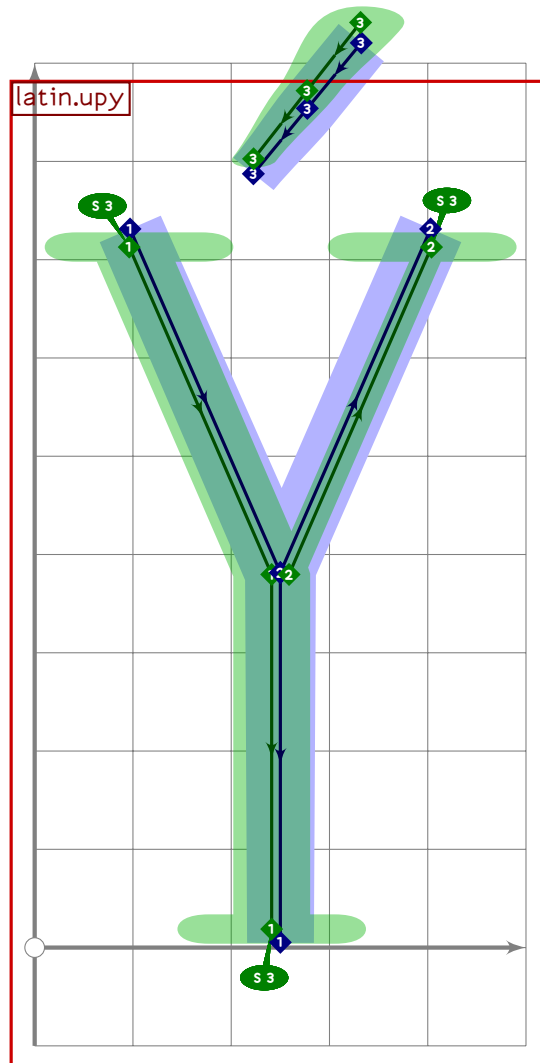
```



```

1203 % U with dieresis/umlaut
1204 beginsuglyph("Udieresis";220);
1205   tsu_accent.capital(umlaut)(tsu_curve.latin.upu);
1206   tsu_render;
1207 endsuglyph;
1208

```



```

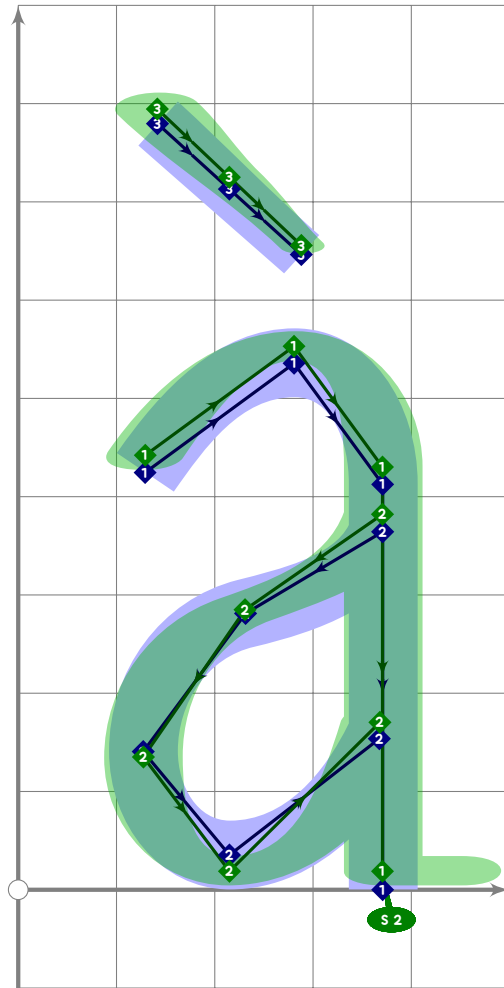
1209 % Y with acute
1210 begintsuglyph("Yacute",221);
1211   tsu_accent.capital(acute)(tsu_curve.latin.upy);
1212   tsu_render;
1213 endsuglyph;
1214
1215 % uppercase Thorn
1216 begintsuglyph("Thorn",222);
1217   tsu_curve.latin.upthorn;
1218   tsu_render;
1219 endsuglyph;
1220
1221 % eszett
1222 begintsuglyph("germandbls",223);
1223   tsu_curve.latin.loweszett;
1224   tsu_render;
1225 endsuglyph;
1226

```

[see page 178]

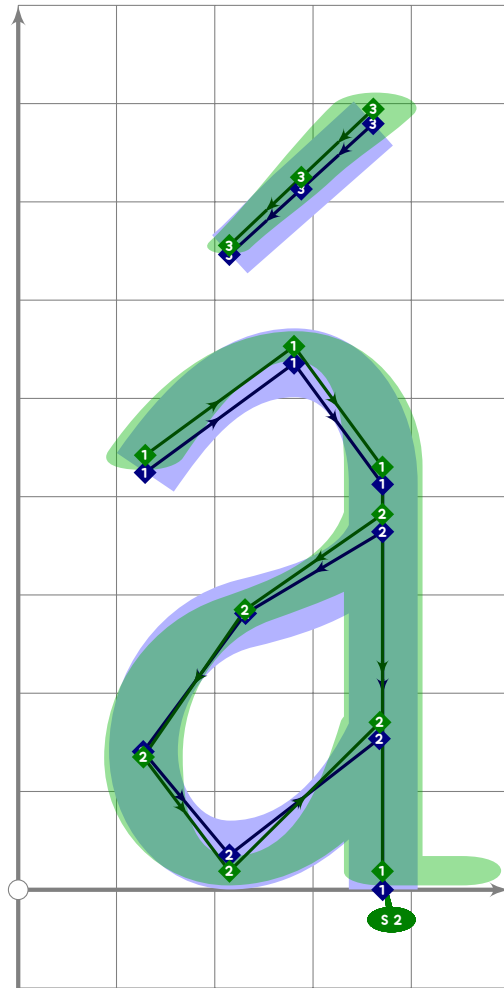
[see page 194]

latin.low



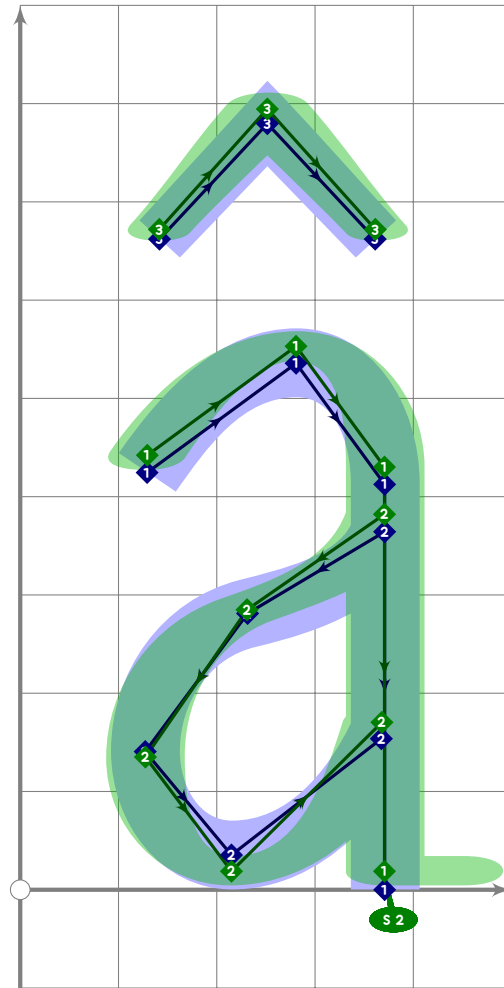
```
1227 % a with grave
1228 begint Suglyph("agrave";224);
1229 tsu_accent.grave(tsu_curve.latin.low);
1230 tsu_render;
1231 endtsuglyph;
1232
```

latin.lowa

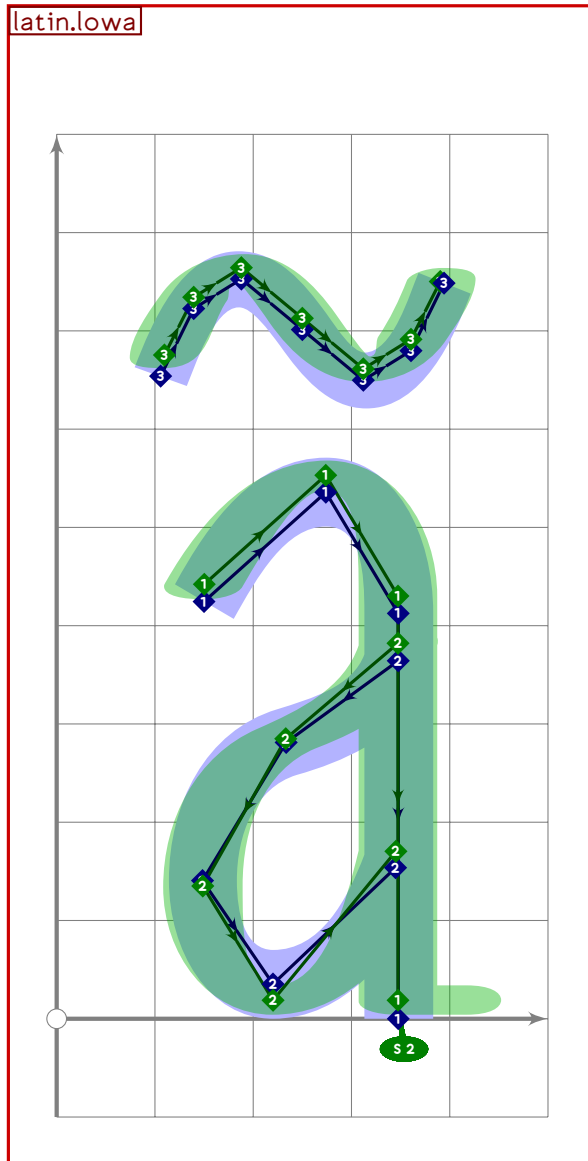


```
1233 % a with acute
1234 begint Suglyph("aacute",225);
1235   tsu_accent.acute(tsu_curve.latin.lowa);
1236   tsu_render;
1237 endsuglyph;
1238
```

latin.low\_a



```
1239 % a with circumflex
1240 begintuglyph("acircumflex",226);
1241   tsu_accent.circumflex(tsu_curve.latin.low_a);
1242   tsu_render;
1243 endtuglyph;
1244
```

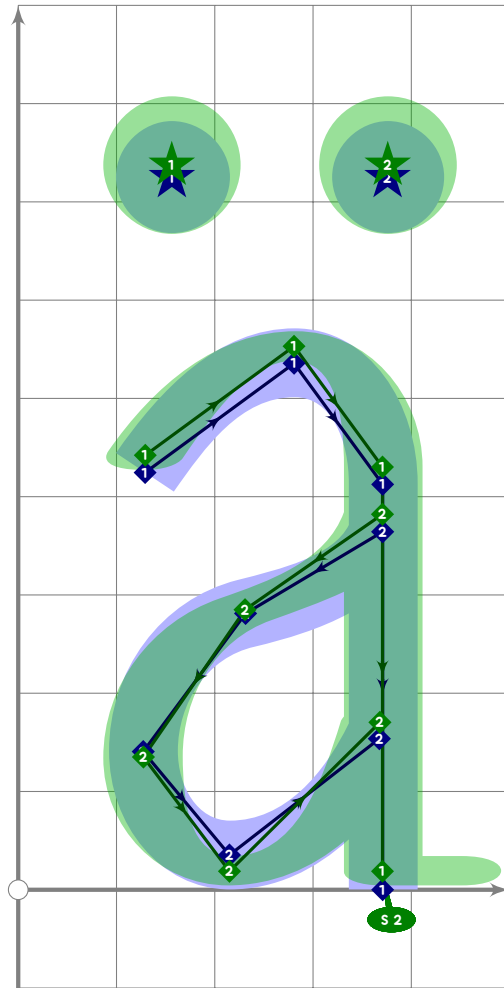


```

1245 % a with tilde
1246 begintsuglyph("atilde";227);
1247   tsu_accent.tilde(tsu_curve.latin.lowa);
1248   tsu_render;
1249 endtsuglyph;
1250

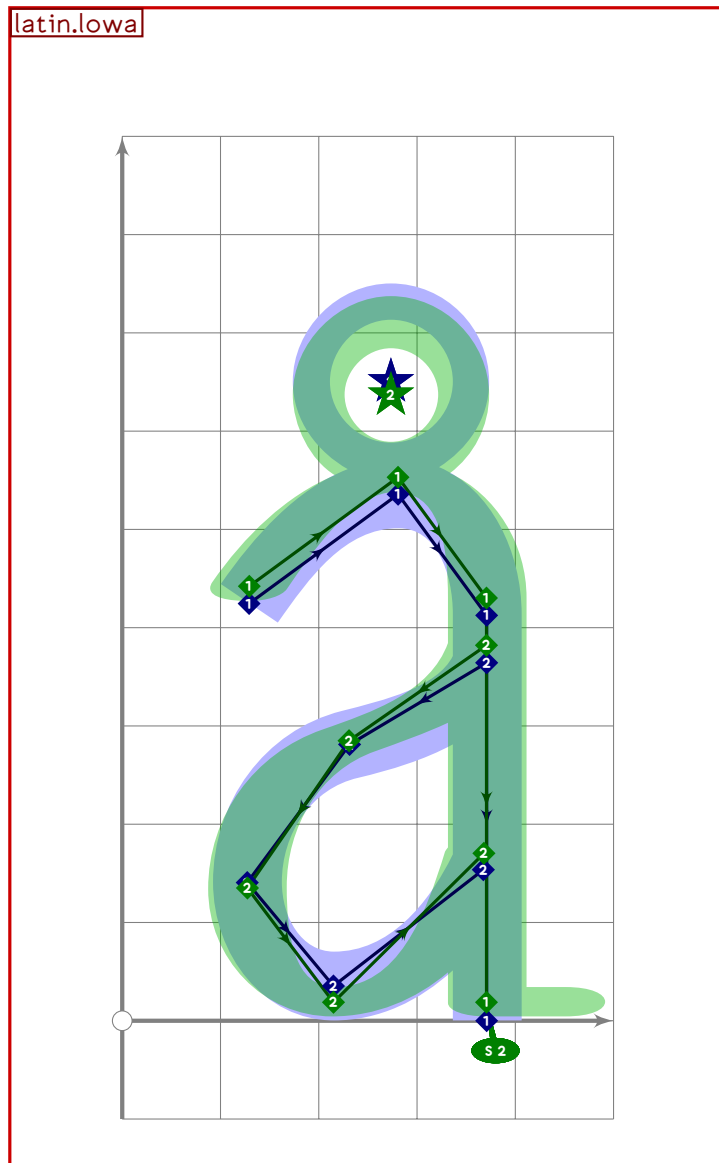
```

latin.lowa



```
1251 % a with dieresis/umlaut
1252 begintsuglyph("adieresis",228);
1253 tsu_accent.umlaut(tsu_curve.latin.lowa);
1254 tsu_render;
1255 endtsuglyph;
1256
```





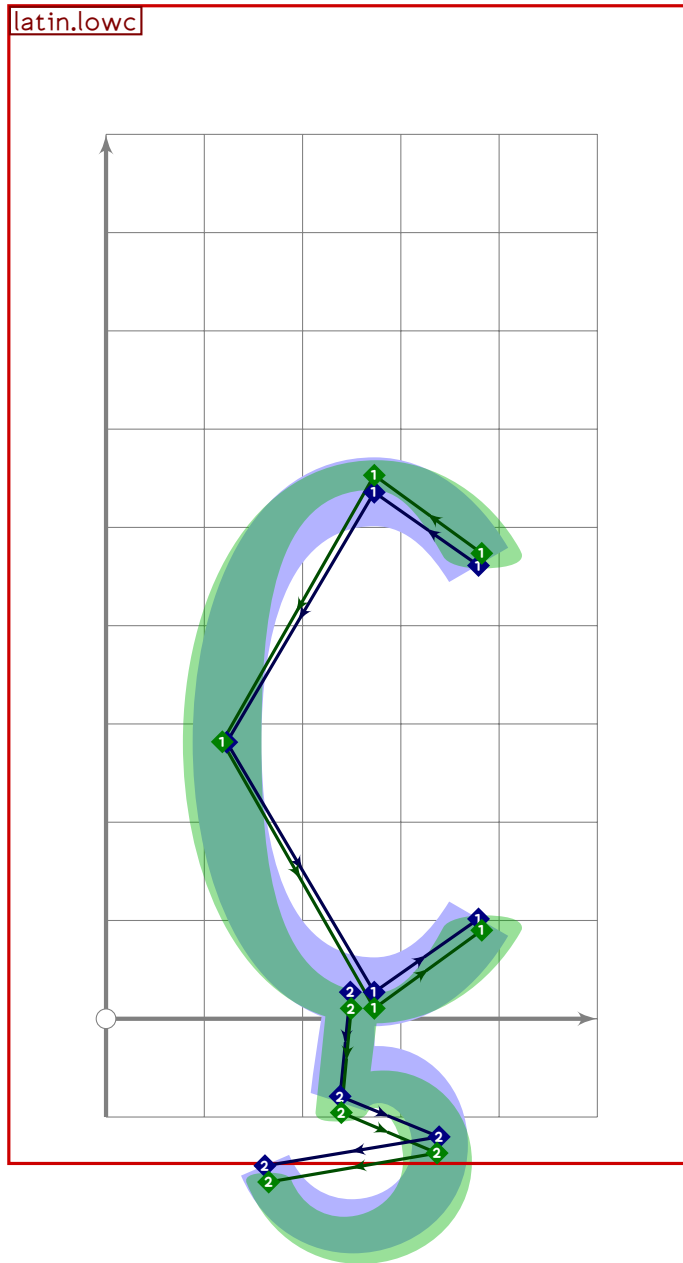
```

1257 % a with ring above
1258 begintsuglyph("aring";229);
1259 tsu_accent.ringabove(tsu_curve.latin.lowa);
1260 lcblob1:=lcblob1 shifted (30,-20);
1261 lcblob2:=lcblob2 shifted (30,-20);
1262 tsu_render;
1263 endtsuglyph;
1264
1265 % ae ligature
1266 begintsuglyph("ae";230);
1267 tsu_curve.latin.lowae;
1268 tsu_render;
1269 endtsuglyph;
1270

```

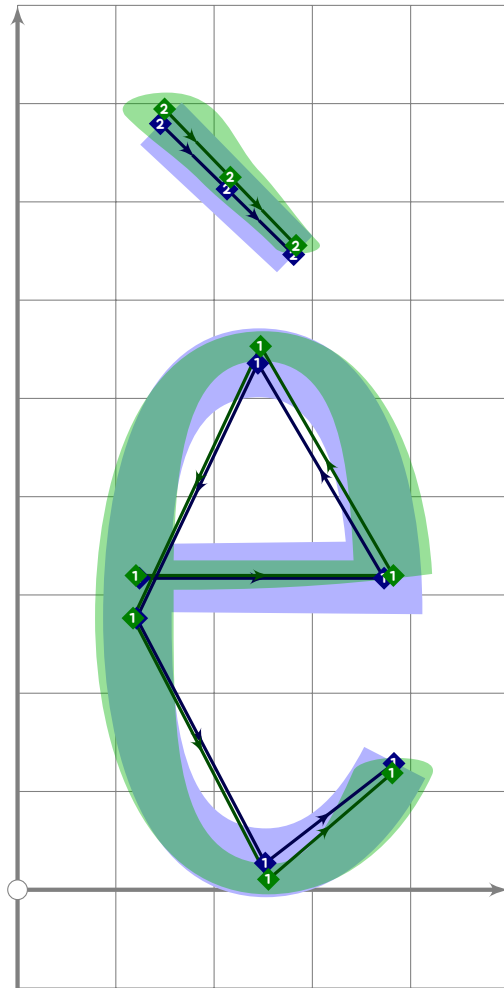
[see page 188]

latin.lowc



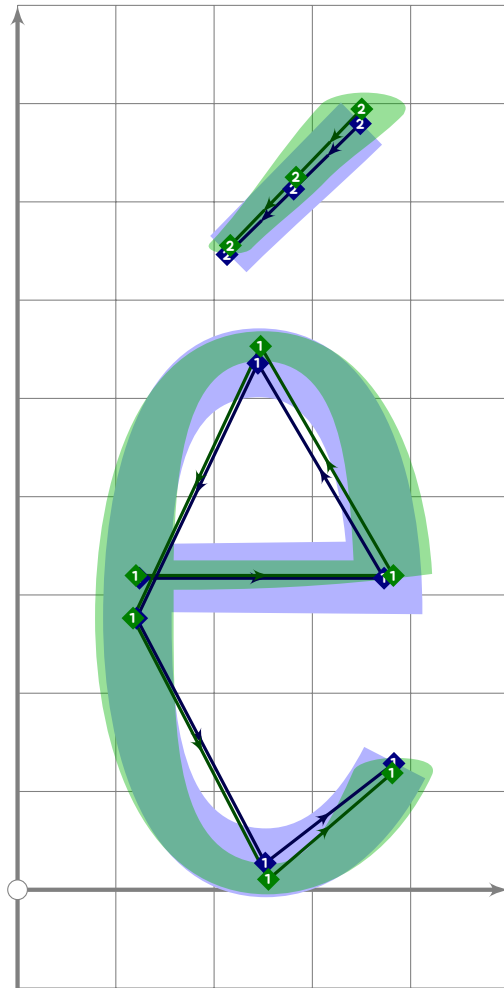
```
1271 % c with cedilla
1272 begintsuglyph("ccedilla",231);
1273 tsu_accent.cedilla(tsu_curve.latin.lowc);
1274 tsu_render;
1275 endtsuglyph;
1276
```

latin.lowe



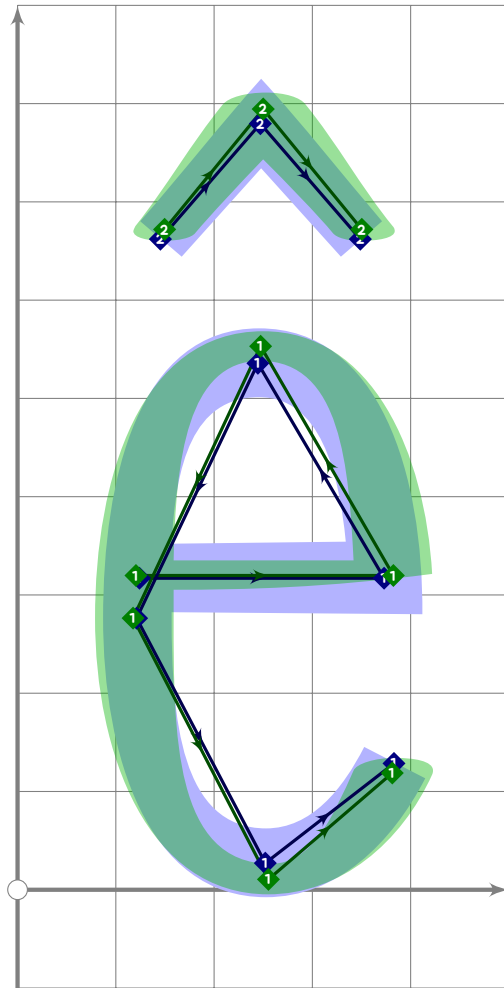
```
1277 % e with grave
1278 begintsuglyph("egrave";232);
1279 tsu_accent.grave(tsu_curve.latin.lowe);
1280 tsu_render;
1281 endtsuglyph;
1282
```

latin.lower



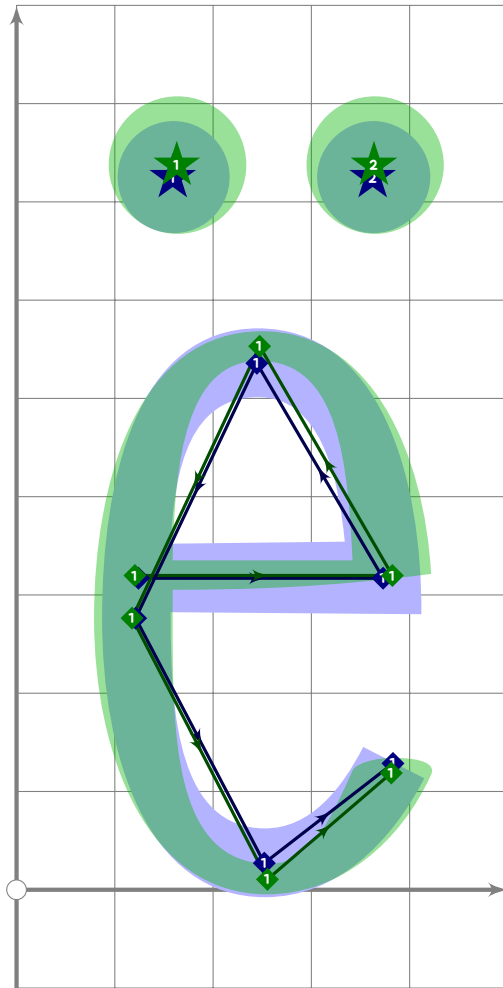
```
1283 % e with acute
1284 begintsuglyph("eacute",233);
1285 tsu_accent.acute(tsu_curve.latin.lower);
1286 tsu_render;
1287 endtsuglyph;
1288
```

latin.love



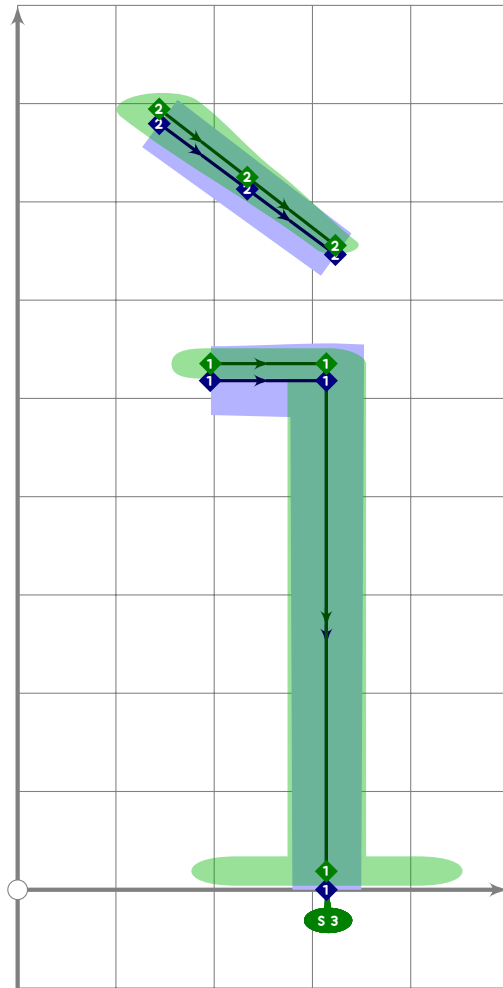
```
1289 % e with circumflex
1290 begintsuglyph("ecircumflex",234);
1291 tsu_accent.circumflex(tsu_curve.latin.love);
1292 tsu_render;
1293 endtsuglyph;
1294
```

latin.lowe



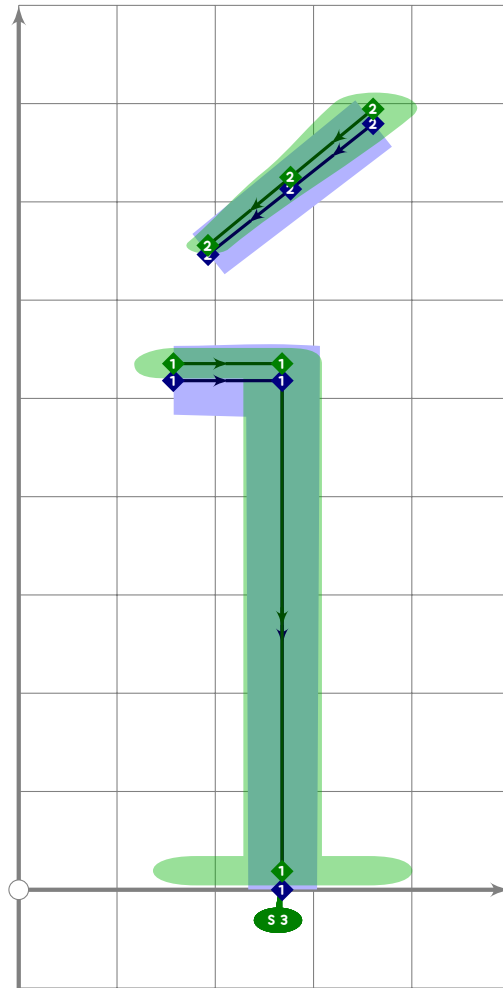
```
1295 % e with dieresis/umlaut
1296 begintsuglyph("edieresis",235);
1297 tsu_accent.umlaut(tsu_curve.latin.lowe);
1298 tsu_render;
1299 endtsuglyph;
1300
```

latin.lowi



```
1301 % i with grave
1302 begint Suglyph("igrave";236);
1303 tsu_accent.grave(
1304     tsu_curve.latin.lowi;
1305     bpl:=bpl shifted (70*right);
1306     path lcblob[]
1307 );
1308 tsu_render;
1309 endtsuglyph;
1310
```

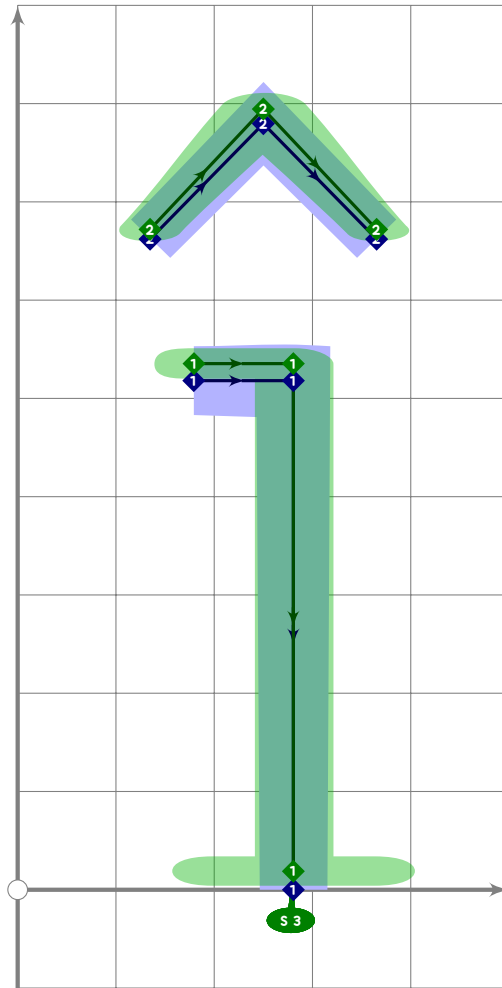
latin.lowi



```
1311 % i with acute
1312 begint Suglyph("iacute",237);
1313 tsu_accent.acute(
1314     tsu_curve.latin.lowi;
1315     bpl:=bpl shifted (70*right);
1316     path lcblob[]
1317 );
1318 tsu_render;
1319 endtsuglyph;
1320
```

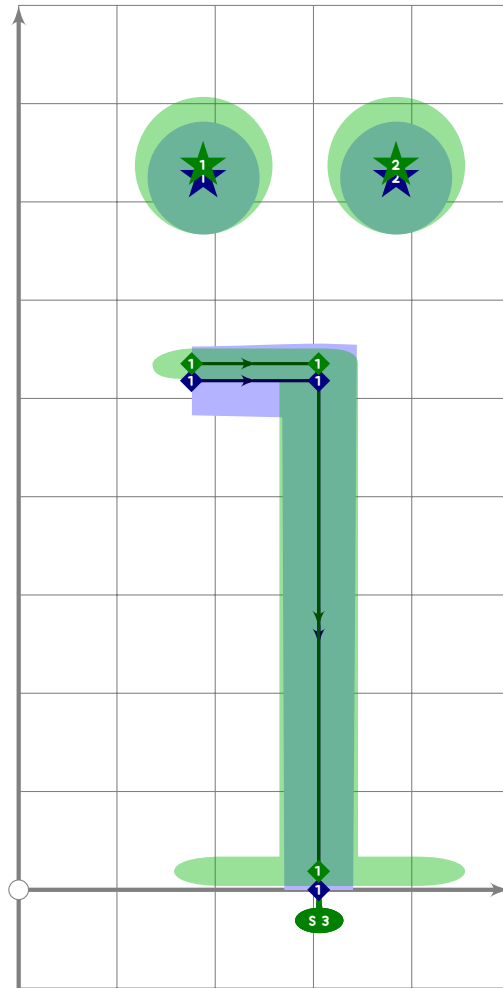


latin.lowi



```
1321 % i with circumflex
1322 begint Suglyph("icircumflex";238);
1323   tsu_accent.circumflex(
1324     tsu_curve.latin.lowi;
1325     bpl:=bpl shifted (70*right);
1326     path lcblob[]
1327   );
1328   tsu_render;
1329   endtsuglyph;
1330
```

latin.lowi

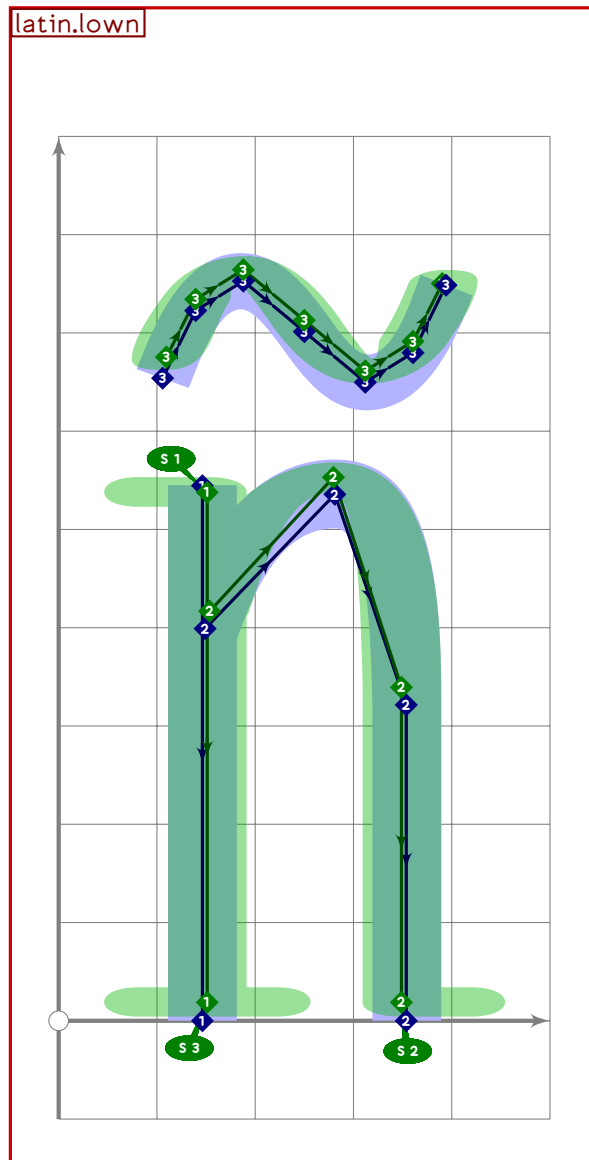


```
1331 % i with dieresis/umlaut
1332 begintsuglyph("idieresis",239);
1333 tsu_accent.umlaut(
1334     tsu_curve.latin.lowi;
1335     bpl:=bpl shifted (70*right);
1336     path lcblob[]
1337 );
1338 lcblob1:=lcblob1 shifted (50*right);
1339 lcblob2:=lcblob2 shifted (50*left);
1340 tsu_render;
1341 endtsuglyph;
1342
1343 % lowercase Icelandic eth
1344 begintsuglyph("eth",240);
1345 tsu_curve.latin.loweth;
1346 tsu_render;
```

[see page 196]

1347 endtsuglyph;

1348



1349 % n with tilde

1350 `begintsuglyph("ntilde",241);`

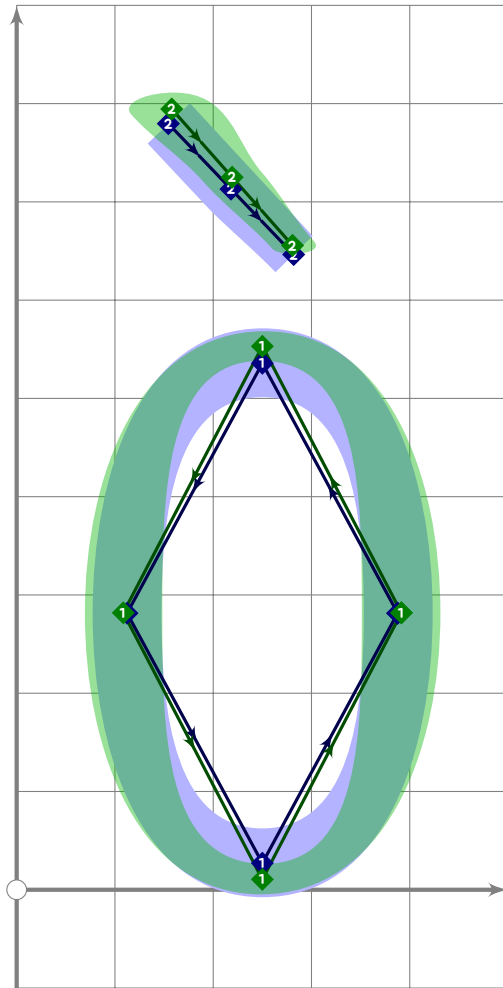
1351 `tsu_accent.tilde(tsu_curve.latin.low);`

1352 `tsu_render;`

1353 `endtsuglyph;`

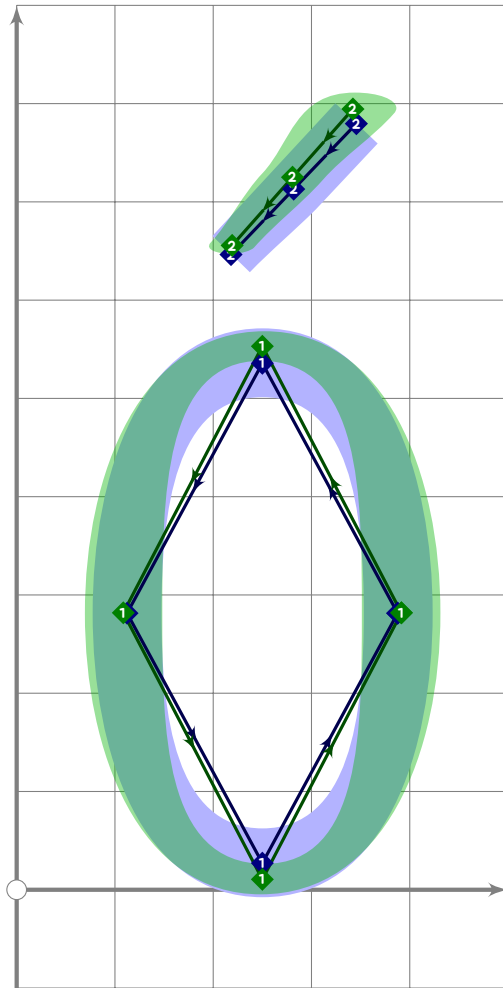
1354

latin.low



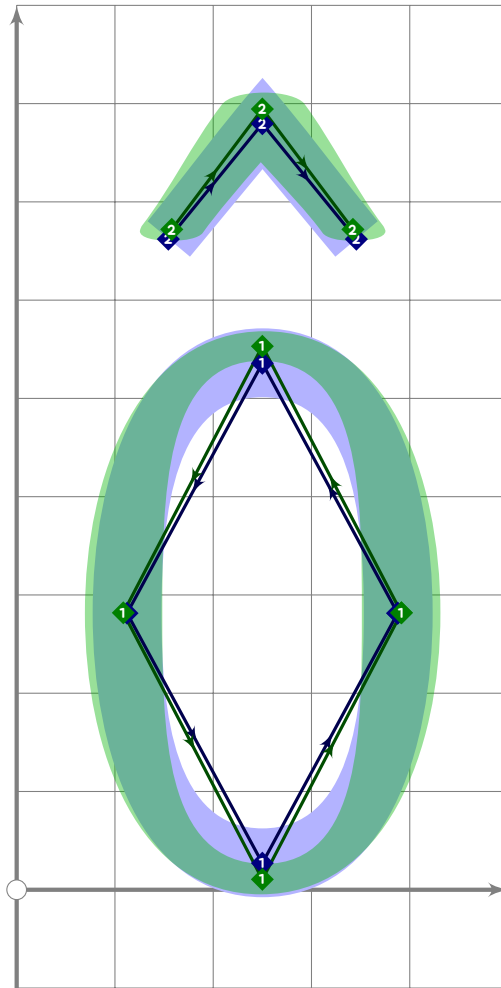
```
1355 % o with grave
1356 begintsuglyph("ograde",242);
1357 tsu_accent.grave(tsu_curve.latin.low);
1358 tsu_render;
1359 endsuglyph;
1360
```

latin.low

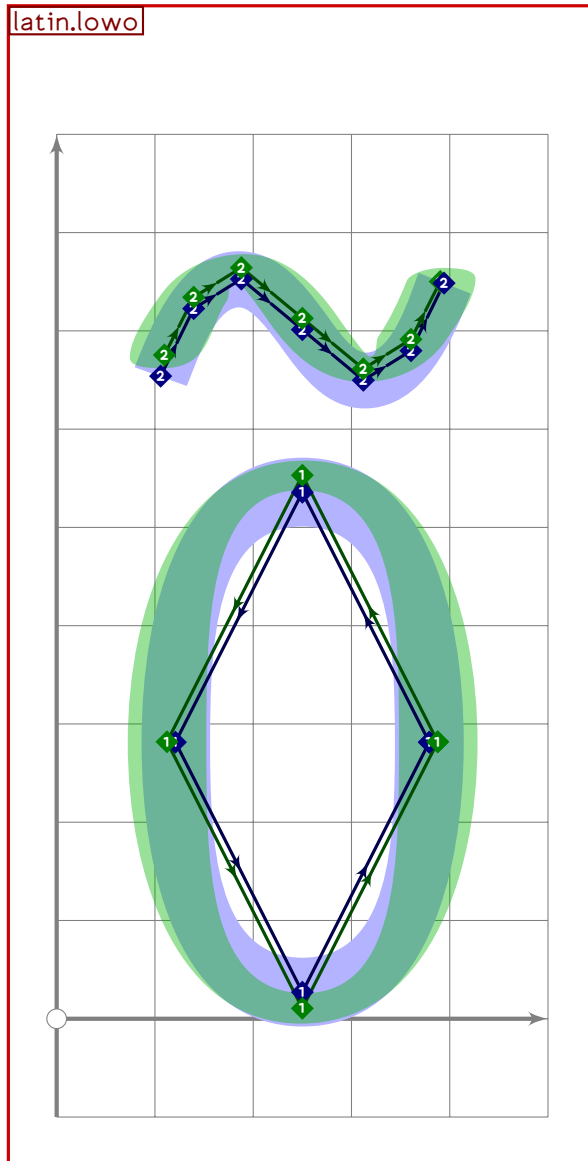


```
1361 % o with acute
1362 begintsuglyph("oacute";243);
1363 tsu_accent.acute(tsu_curve.latin.low);
1364 tsu_render;
1365 endsuglyph;
1366
```

latin.low



```
1367 % o with circumflex
1368 begintsuglyph("ocircumflex",244);
1369 tsu_accent.circumflex(tsu_curve.latin.low);
1370 tsu_render;
1371 endtsuglyph;
1372
```

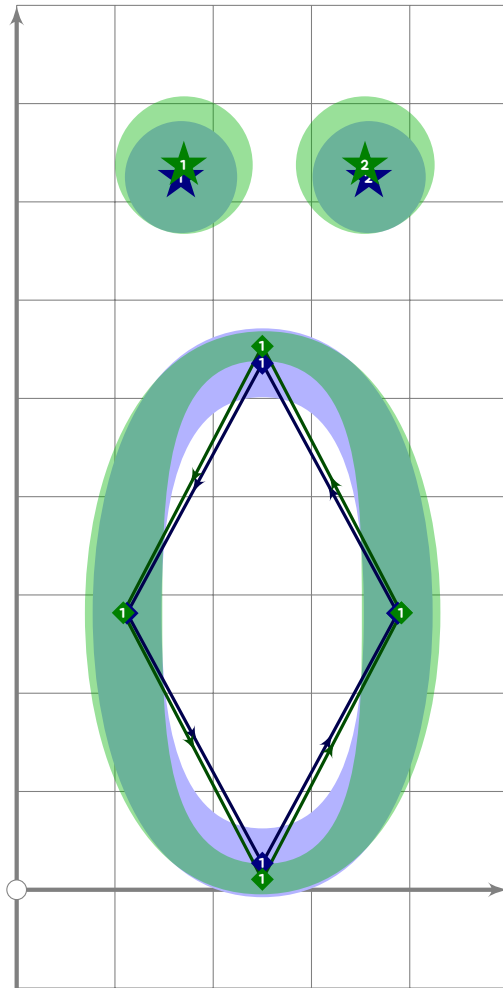


```

1373 % o with tilde
1374 begintsuglyph("otilde",245);
1375 tsu_accent.tilde(tsu_curve.latin.low);
1376 tsu_render;
1377 endsuglyph;
1378

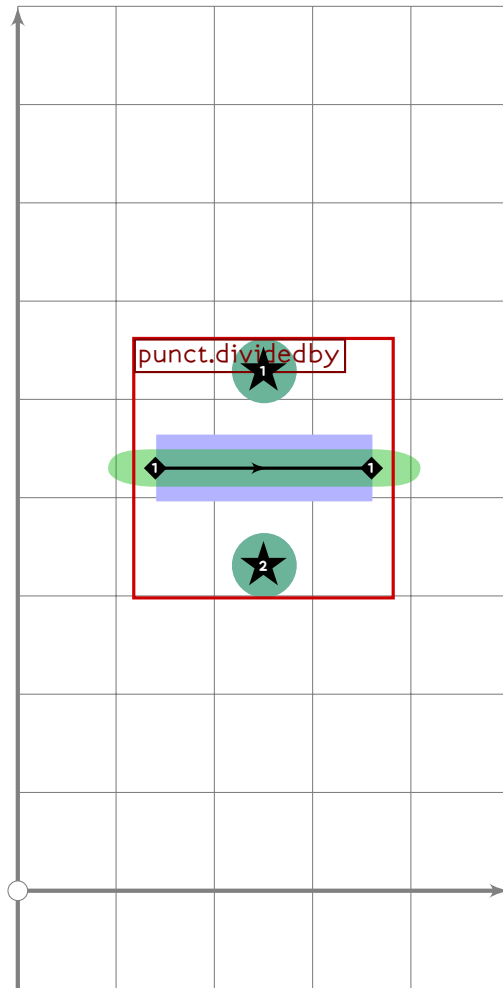
```

latin.low



```
1379 % o with dieresis/umlaut
1380 begintsuglyph("odieresis";246);
1381 tsu_accent.umlaut(tsu_curve.latin.low);
1382 tsu_render;
1383 endsuglyph;
1384
1385 % division sign
1386 tsu_rescale_native_narrow;
```



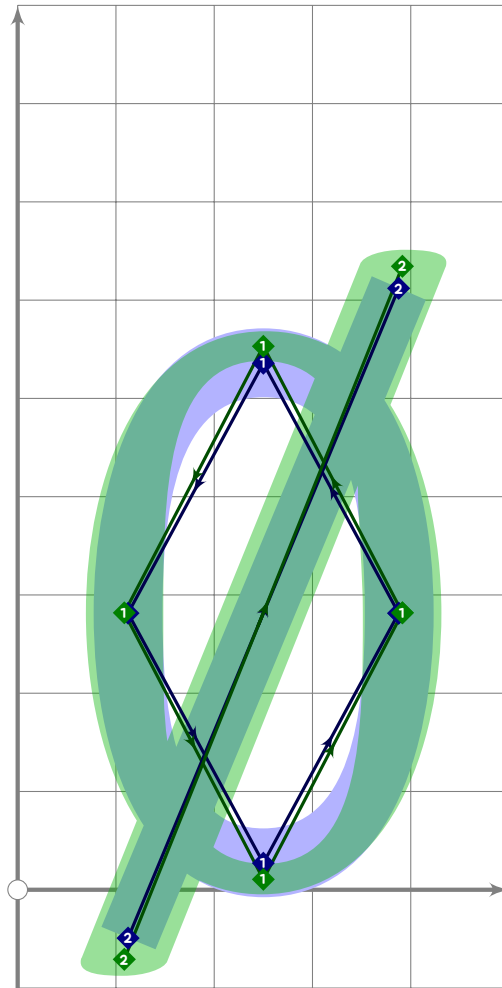


```

1387 begintsuglyph("divide",247);
1388 tsu_curve.punct.dividedby
1389     (identity scaled (1.1*tsu_punct_size) shifted (250,latin_vcentre));
1390 tsu_render;
1391 endtsuglyph;
1392 tsu_rescale_half;
1393

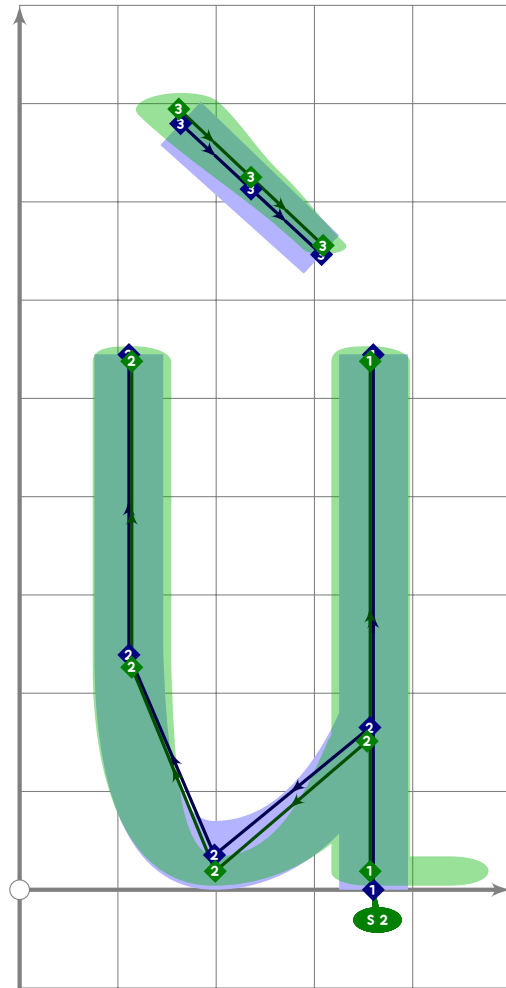
```

latin.lowo



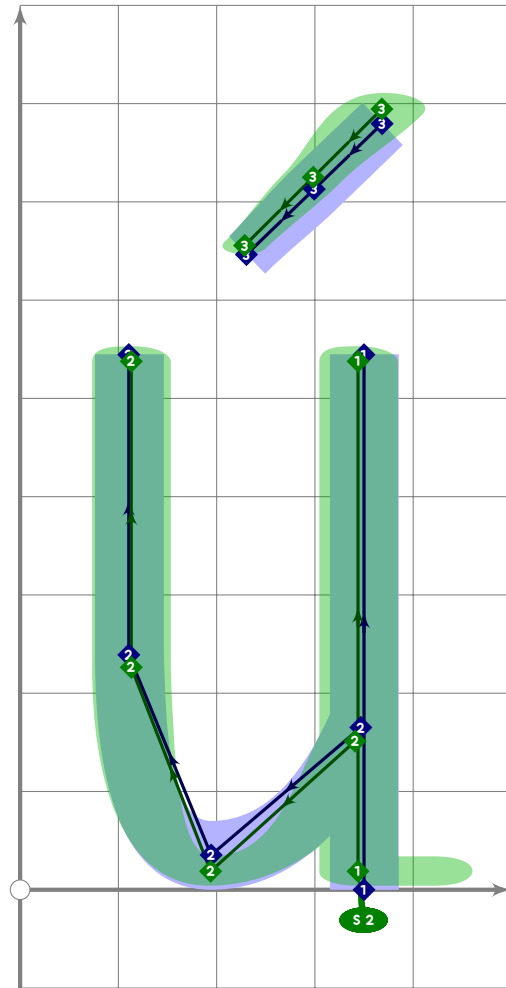
```
1394 % o with stroke
1395 begintsuglyph("oslash",248);
1396 tsu_accent.lcslash(tsu_curve.latin.lowo);
1397 tsu_render;
1398 endsuglyph;
1399
```

latin.lowu



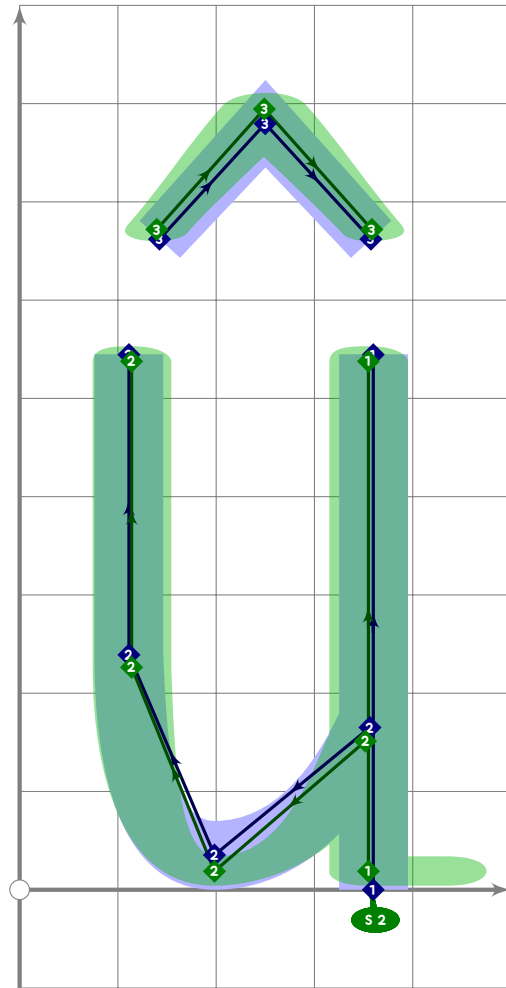
```
1400 % u with grave
1401 begint Suglyph("ugrave";249);
1402 tsu_accent.grave(tsu_curve.latin.lowu);
1403 tsu_render;
1404 endtsuglyph;
1405
```

latin.lowu



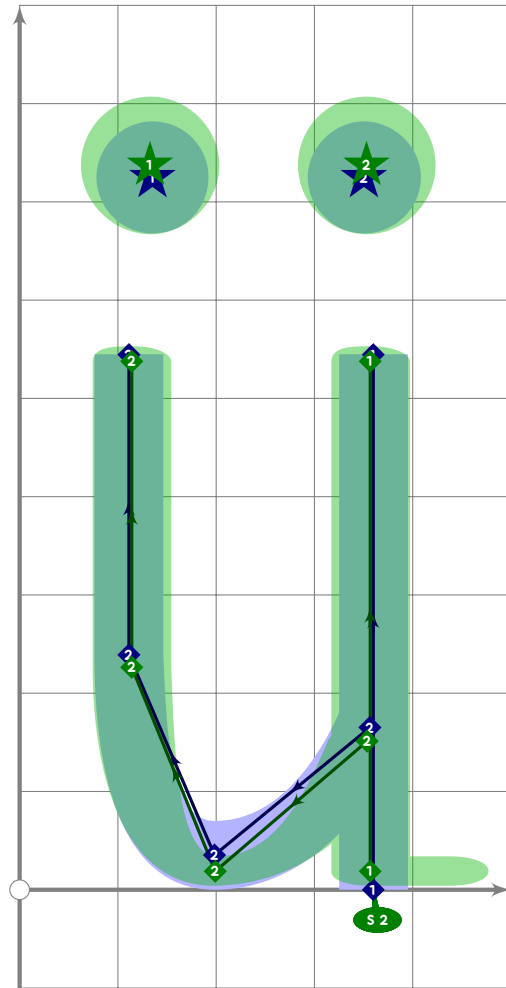
```
1406 % u with acute
1407 begintsuglyph("uacute";250);
1408 tsu_accent.acute(tsu_curve.latin.lowu);
1409 tsu_render;
1410 endsuglyph;
1411
```

latin.lowu

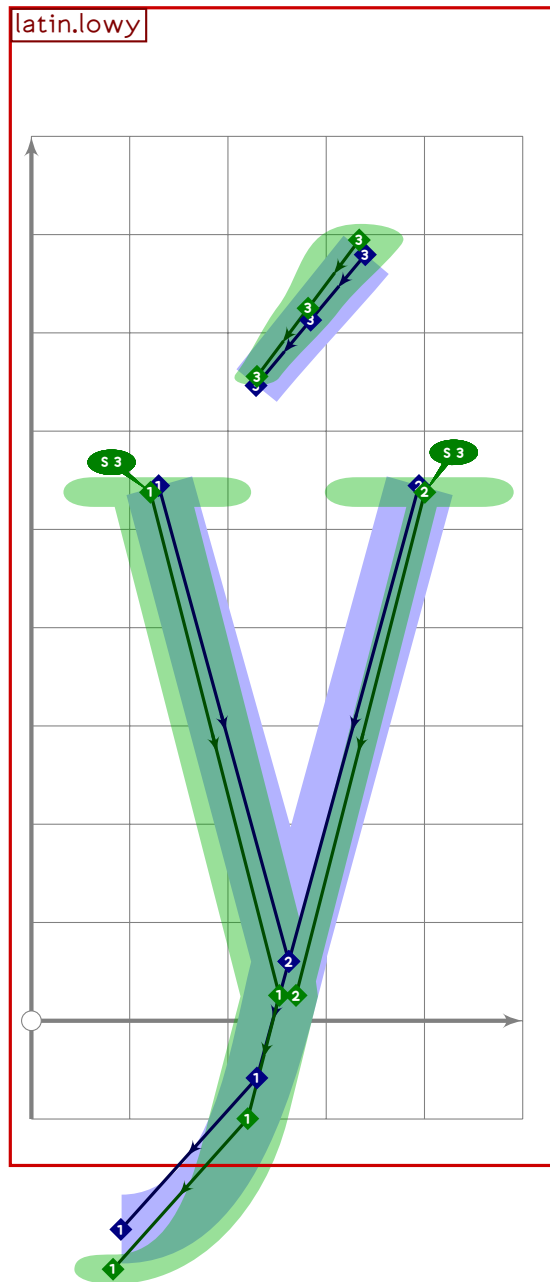


```
1412 % u with circumflex
1413 begint Suglyph("ucircumflex",251);
1414 tsu_accent.circumflex(tsu_curve.latin.lowu);
1415 bp3:=bp3 shifted (-30,0);
1416 tsu_render;
1417 endtsuglyph;
1418
```

latin.lowu



```
1419 % u with dieresis/umlaut
1420 begintsuglyph("udieresis";252);
1421 tsu_accent.umlaut(tsu_curve.latin.lowu);
1422 lcblob1=lcblob1 shifted (-60,0);
1423 lcblob2=lcblob2 shifted (-60,0);
1424 tsu_render;
1425 endtsuglyph;
1426
```

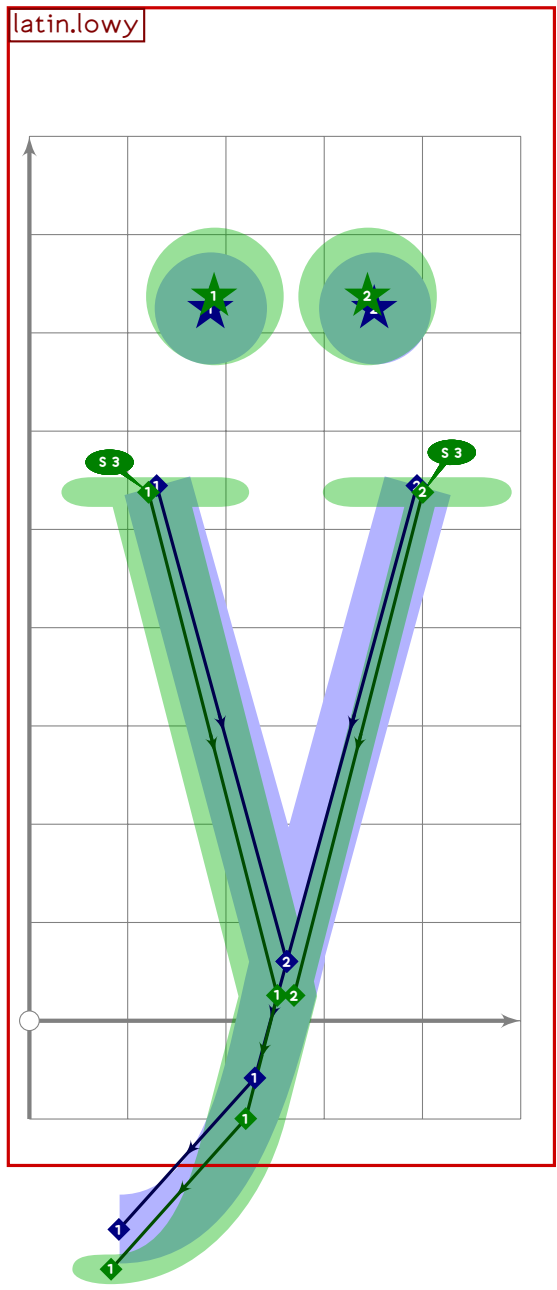


```

1427 % y with acute
1428 beginsuglyph("yacute";253);
1429 tsu_accent.acute(tsu_curve.latin.lowy);
1430 tsu_render;
1431 endsuglyph;
1432
1433 % thorn
1434 beginsuglyph("thorn";254);
1435 tsu_curve.latin.lowthorn;
1436 tsu_render;
1437 endsuglyph;
1438

```

[see page 220]



```

1439 % y with dieresis/umlaut
1440 begintsuglyph("ydieresis";255);
1441 tsu_accent.umlaut(tsu_curve.latin.lowy);
1442 tsu_render;
1443 endsuglyph;
1444
1445 _____
1446
1447 endfont;
1448
1449 _____

```



# tsuku-01.mp

```
1 %
2 % Unicode page 01 (Latin Extended A) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

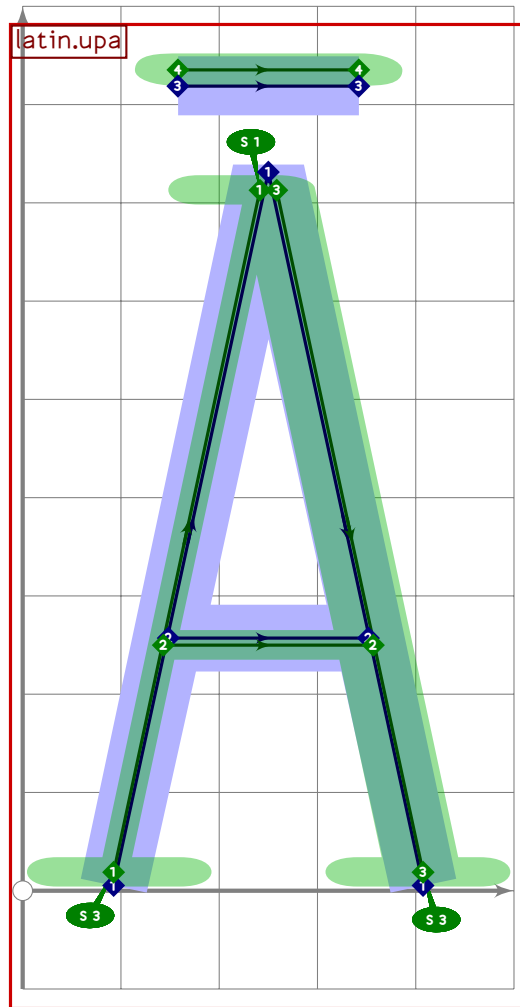

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input accent.mp;
39 input latin.mp;
40 input ogonek.mp;
41 input punct.mp;
42
43 

---


44
```

## Latin Extended A

```
45 % LATIN EXTENDED A
46
47 tsu_rescale_half;
48
```

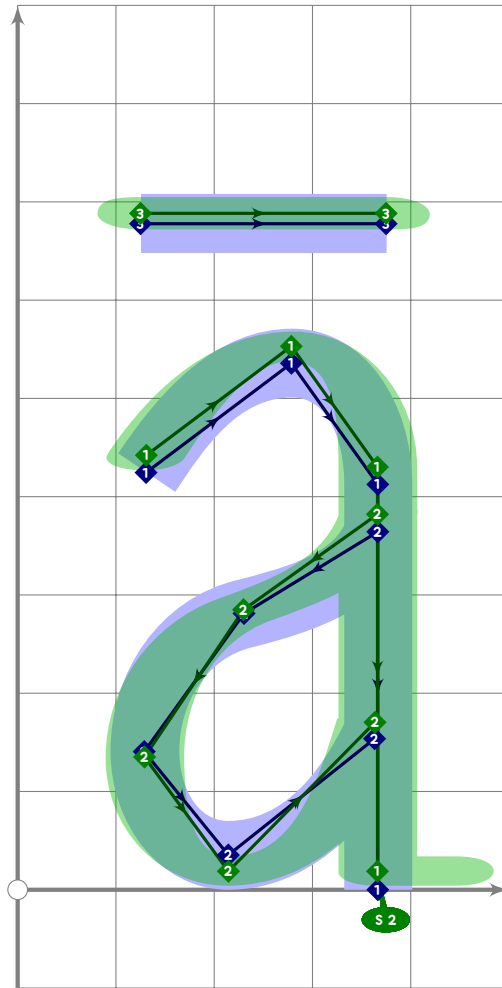


```

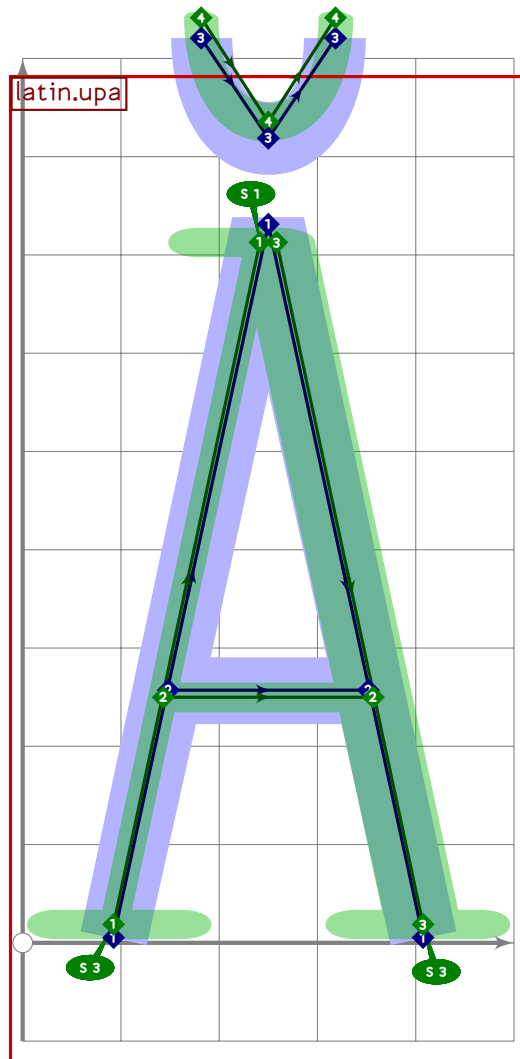
49 % A with macron
50 begintsuglyph("A macron";0);
51   tsu_accent.capital(macron)(tsu_curve.latin.upa);
52   tsu_render;
53 endsuglyph;
54

```

latin.low



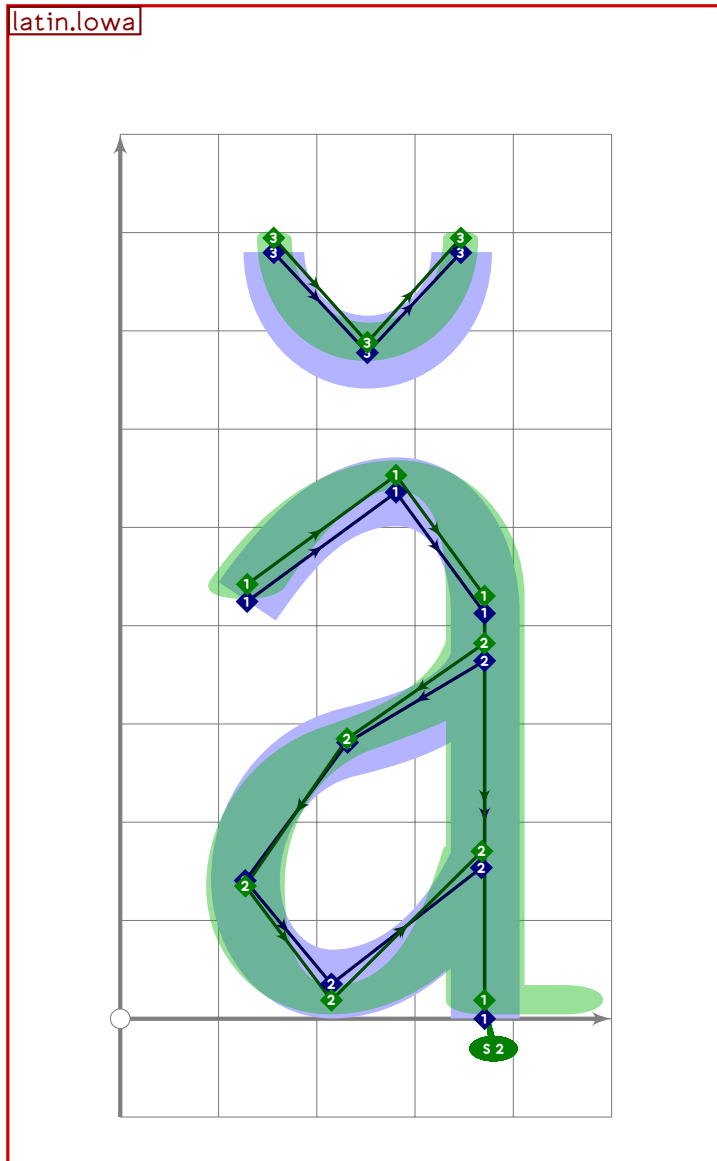
```
55 % a with macron
56 begint Suglyph("amacron",1);
57 tsu_accent.macron(tsu_curve.latin.low);
58 tsu_render;
59 endtsuglyph;
60
```



```

61 % A with breve
62 begintsuglyph("Abreve";2);
63   tsu_accent.capital(breve)(tsu_curve.latin.upa);
64   tsu_render;
65 endsuglyph;
66

```



```

67 % a with breve
68 begintsuglyph("abreve";3);
69 tsu_accent.breve(tsu_curve.latin.low);
70 tsu_render;
71 endtsuglyph;
72
73 % A with ogonek
74 begintsuglyph("Aogonek";4);
75 tsu_curve.latin.upaogonek;
76 tsu_render;
77 endtsuglyph;
78
79 % a with ogonek
80 begintsuglyph("aogonek";5);
81 tsu_curve.latin.lowaogonek;
82 tsu_render;

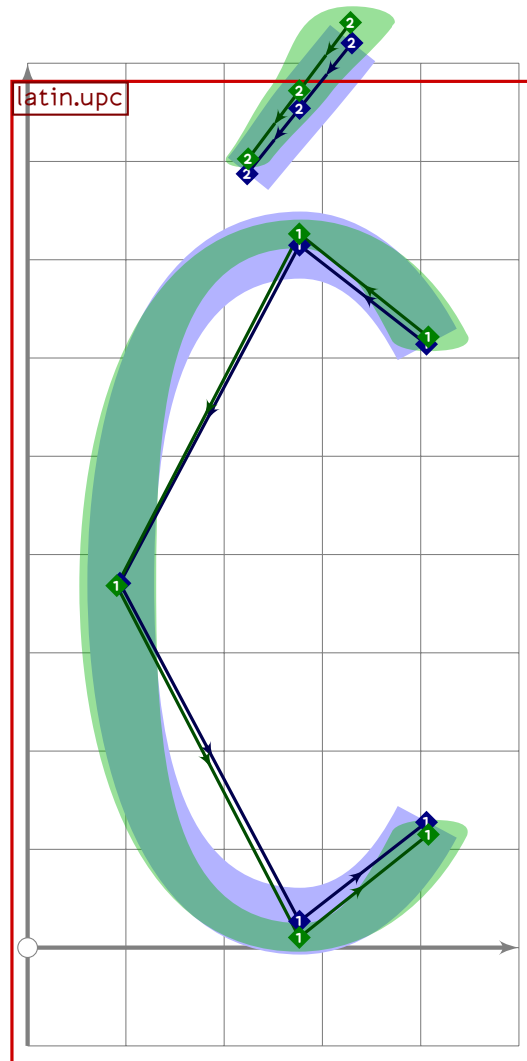
```

[see page 240]

[see page 246]

```
83 endtsuglyph;
```

```
84
```



```
85 % C with acute
```

```
86 begint Suglyph("Cacute",6);
```

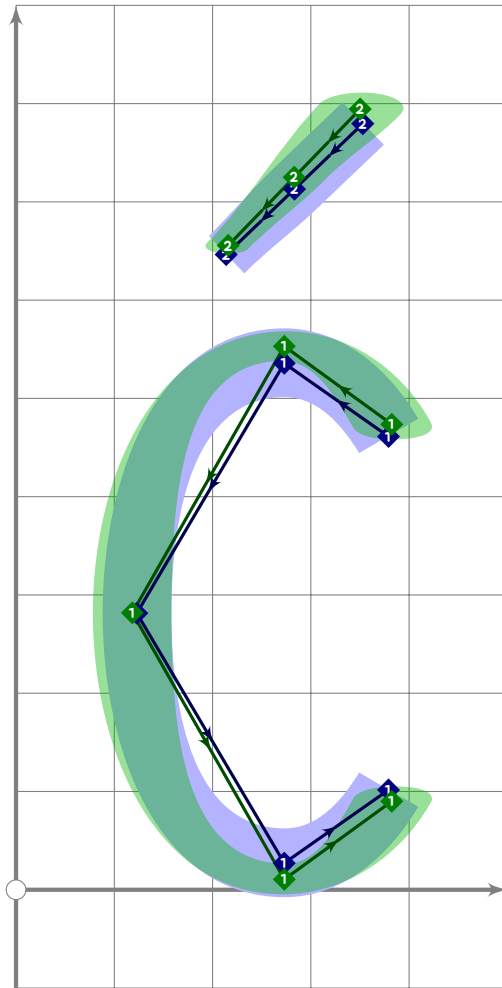
```
87 tsu_accent.capital(acute)(tsu_curve.latin.upc);
```

```
88 tsu_render;
```

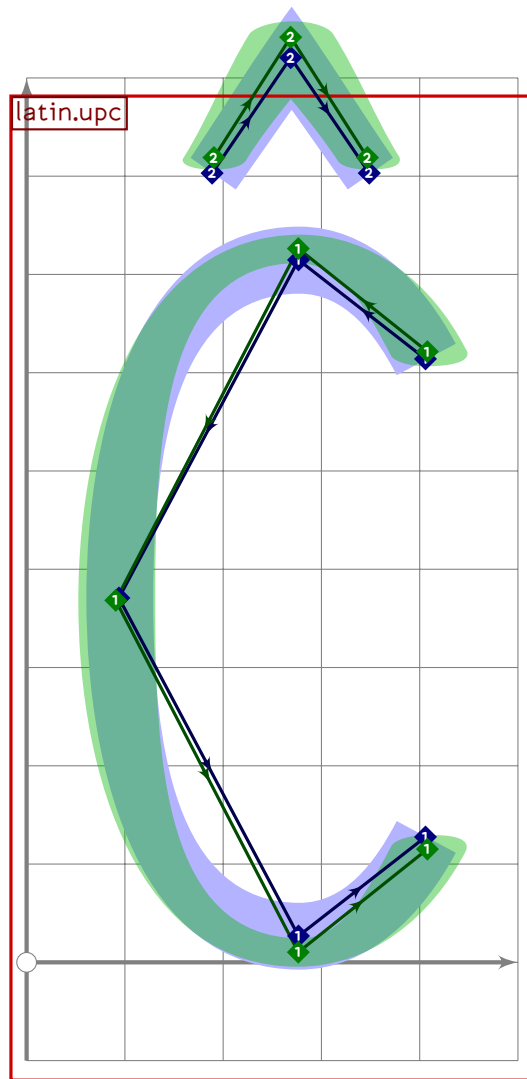
```
89 endtsuglyph;
```

```
90
```

latin.lowc



```
91 % c with acute
92 begintsuglyph("cacute";7);
93 tsu_accent.acute(tsu_curve.latin.lowc);
94 tsu_render;
95 endsuglyph;
96
```



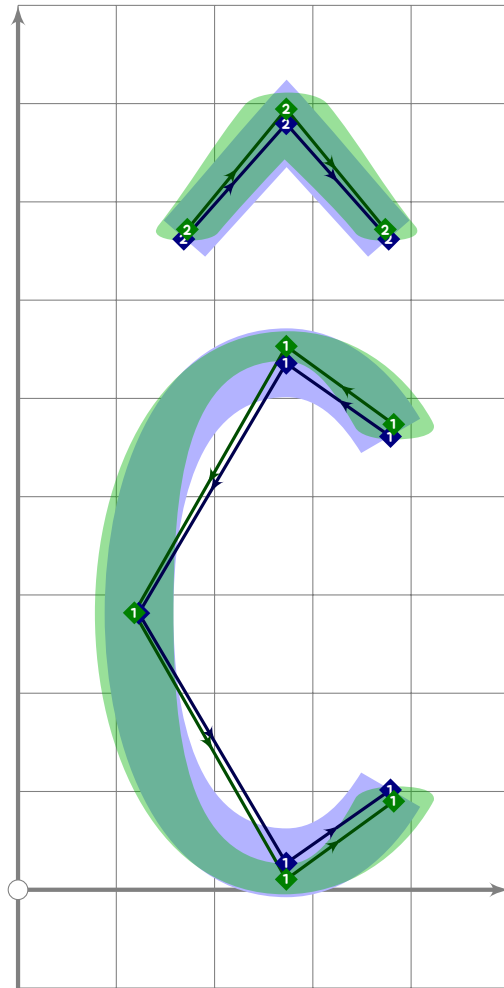
```

97 % C with circumflex
98 beginsuglyph("Ccircumflex",8);
99 tsu_accent.capital(circumflex)(tsu_curve.latin.upc);
100 bp[sp-1]:=bp[sp-1] shifted (35,0);
101 tsu_render;
102 endsuglyph;
103

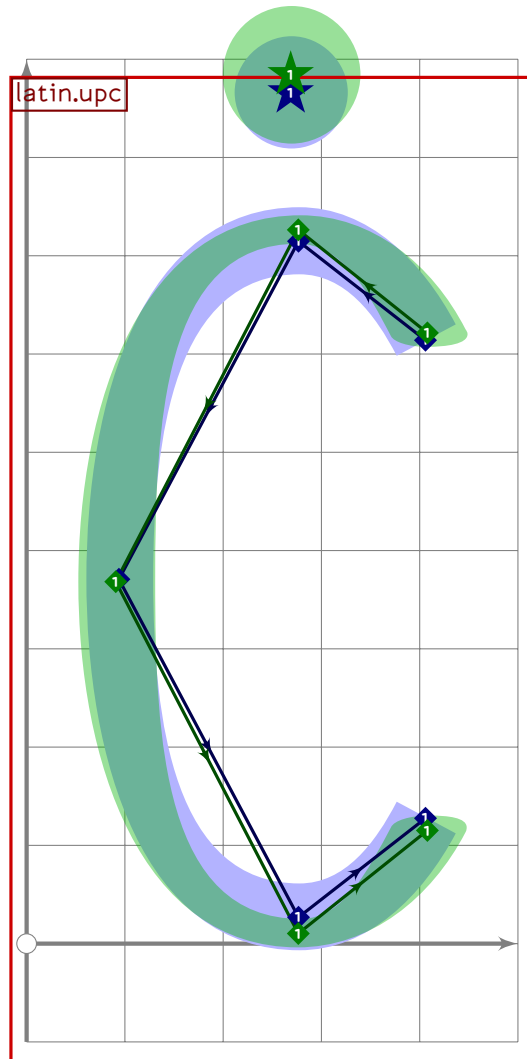
```



latin.lowc



```
104 % c with circumflex
105 begint Suglyph("ccircumflex";9);
106 tsu_accent.circumflex(tsu_curve.latin.lowc);
107 bp[sp-1]:=bp[sp-1] shifted (35,0);
108 tsu_render;
109 endsuglyph;
110
```

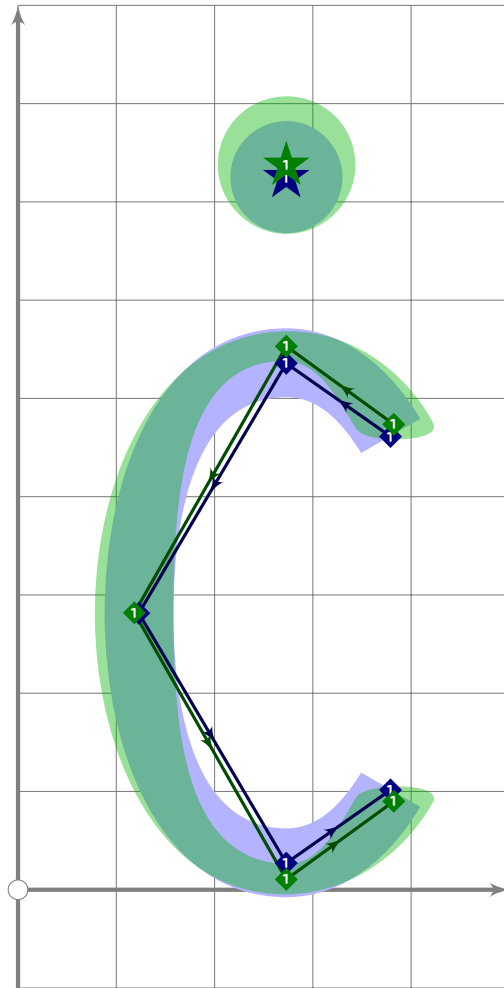


```

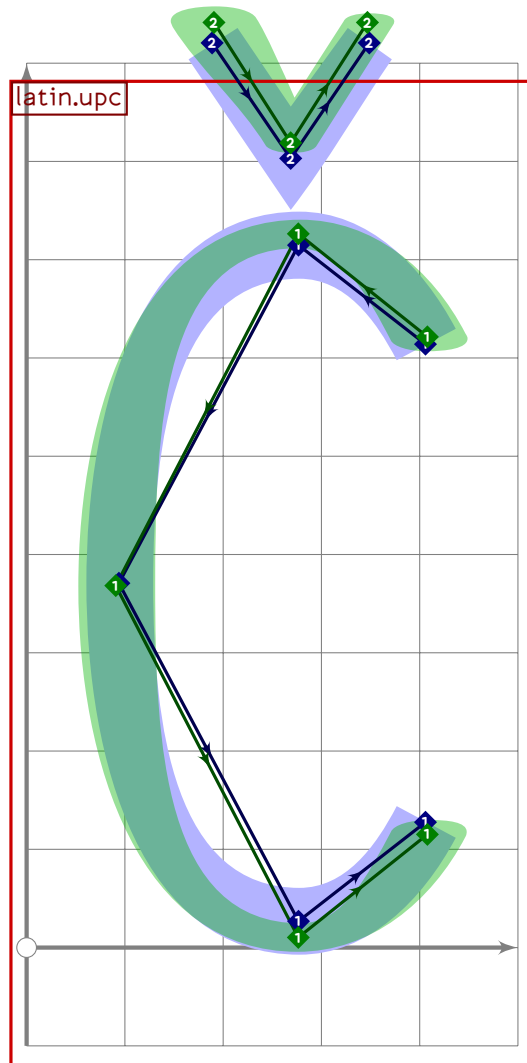
111 % C with dot above
112 beginsuglyph("Cdotaccent",10);
113   tsu_accent.capital(dotabove)(tsu_curve.latin.upc);
114   lcblob1:=lcblob1 shifted (35,0);
115   tsu_render;
116 endsuglyph;
117

```

latin.lowc



```
118 % c with dot above
119 beginsuglyph("cdotaccent",11);
120 tsu_accent.dotabove(tsu_curve.latin.lowc);
121 lcblob1=lcblob1 shifted (35,0);
122 tsu_render;
123 endsuglyph;
124
```

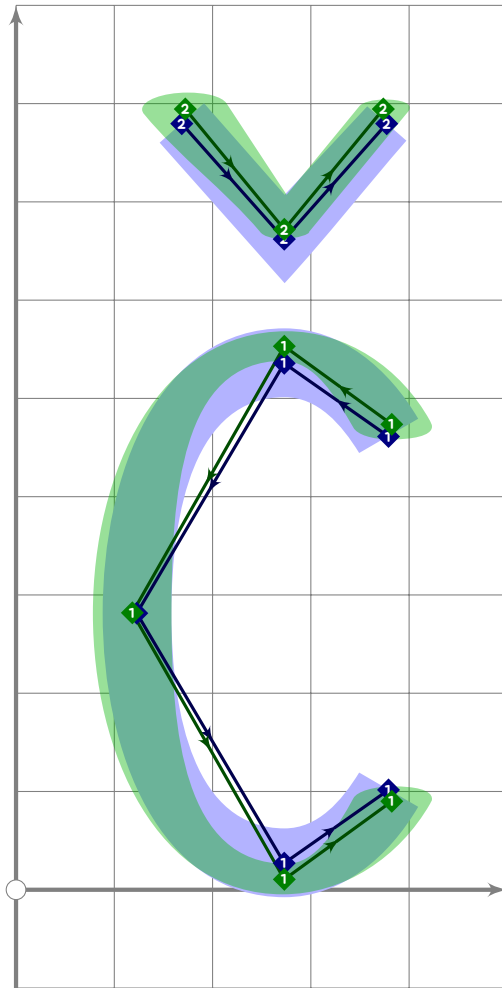


```

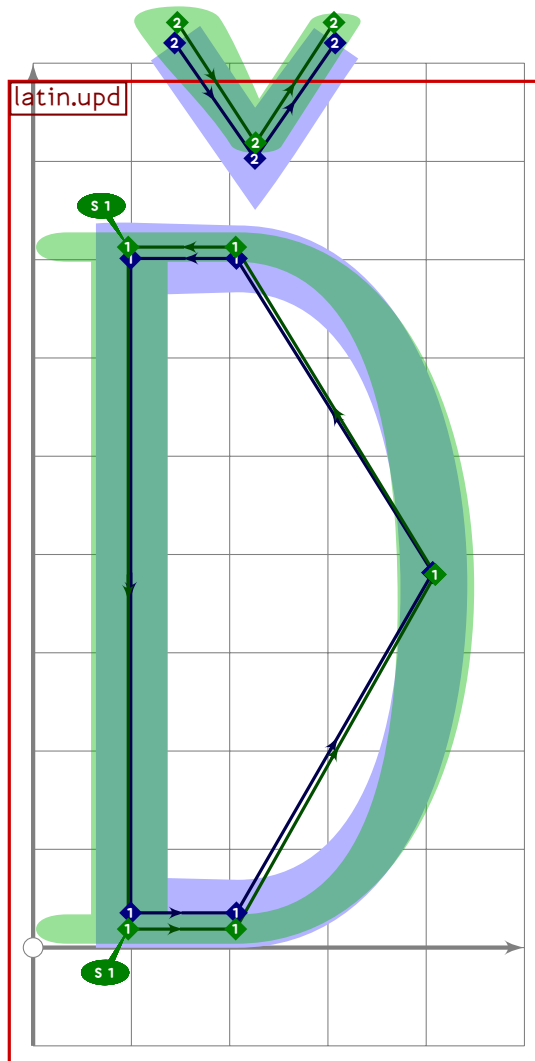
125 % C with caron
126 beginsuglyph("Ccaron";12);
127   tsu_accent.capital(caron)(tsu_curve.latin.upc);
128   bp[sp-1]:=bp[sp-1] shifted (35,0);
129   tsu_render;
130 endsuglyph;
131

```

latin.lowc



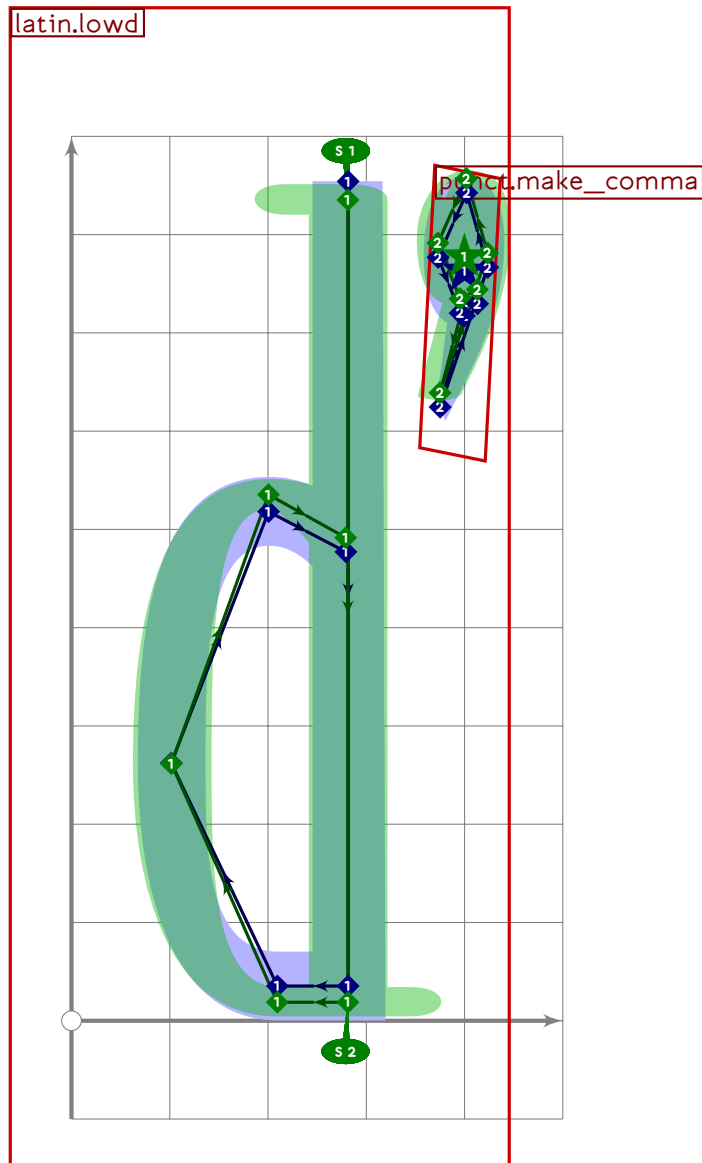
```
132 % c with caron
133 begintsuglyph("ccaron",13);
134 tsu_accent.caron(tsu_curve.latin.lowc);
135 bp[sp-1]:=bp[sp-1] shifted (35,0);
136 tsu_render;
137 endsuglyph;
138
```



```

139 % D with caron
140 begintsuglyph("Dcaron";14);
141 tsu_accent.capital(caron)(tsu_curve.latin.upd);
142 bp[sp-1]:=bp[sp-1] shifted (-40,0);
143 tsu_render;
144 endsuglyph;
145

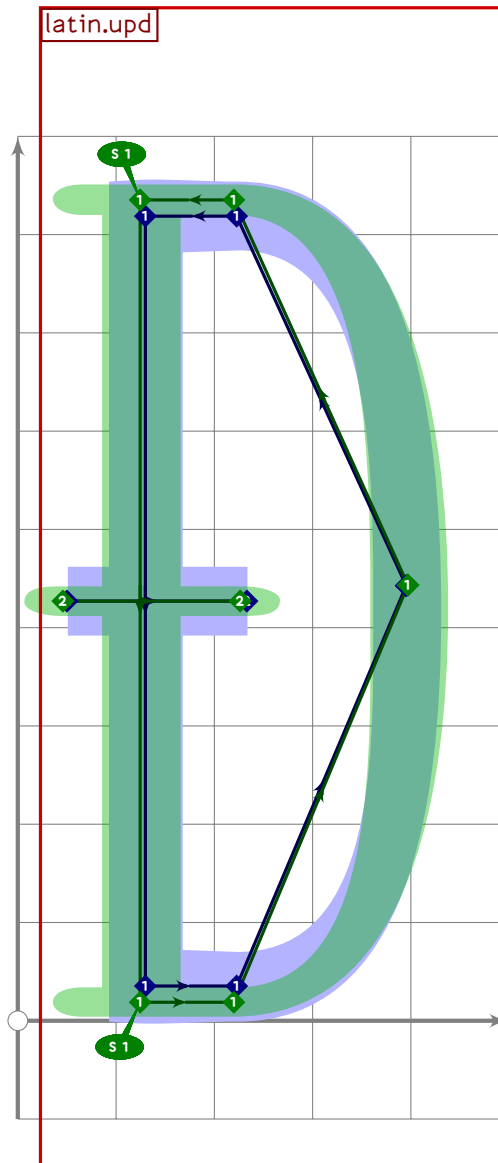
```



```

146 % d with caron apostrophe
147 begint Suglyph("dcaron",15);
148   tsu_accent.caron_apostrophe(0)(tsu_curve.latin.lowd);
149   tsu_render;
150 endsuglyph;
151

```

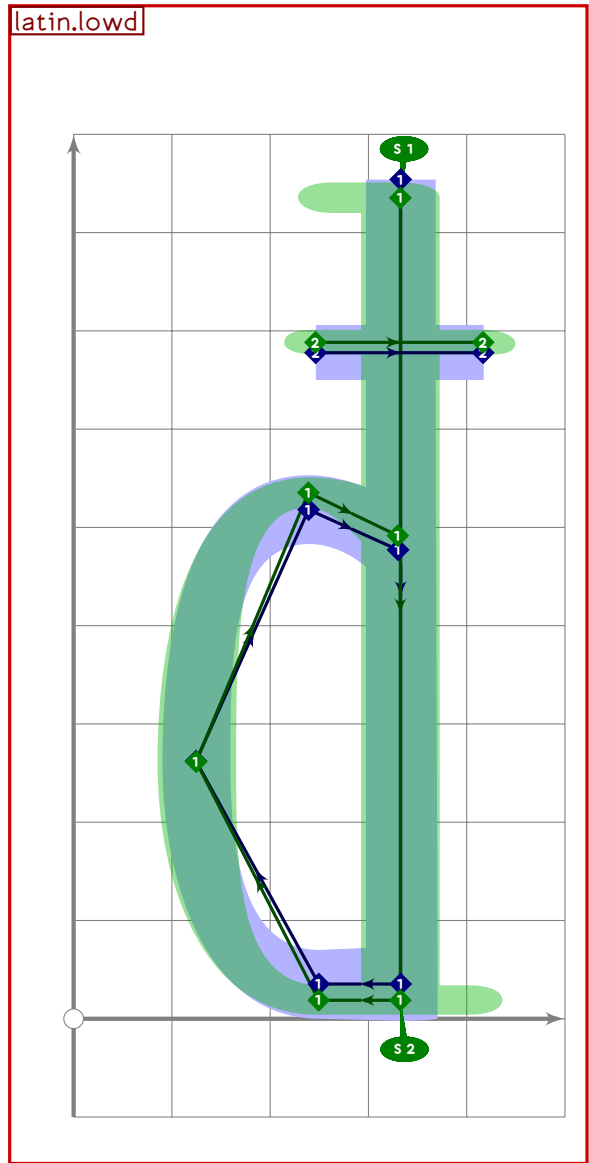


```

152 % D with stroke - same as capital Eth
153 begintsuglyph("Dcroat";16);
154 tsu_curve.latin.upeth;
155 tsu_render;
156 endtsuglyph;
157

```

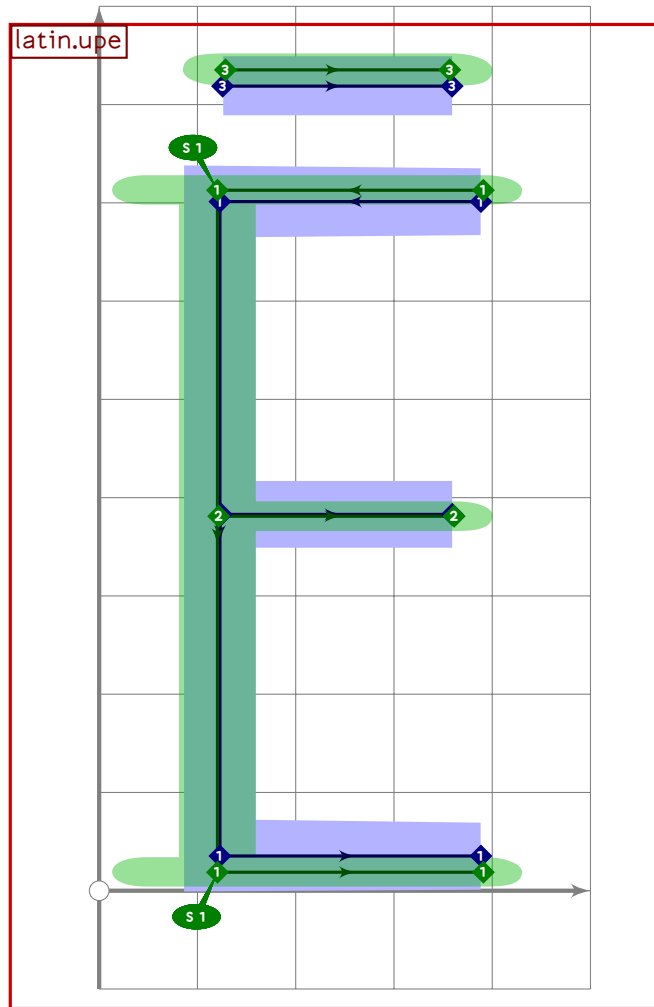




```

158 % d with bar
159 begintsuglyph("dcroat";17);
160 tsu_curve.latin.lowd;
161 bp[sp]:=(530,vmetric(0.82))-(820,vmetric(0.82));
162 bq[sp]:=(1.6,1.6)-(1.6,1.6);
163 bo_size[sp]:=80;
164 sp:=sp*1;
165 tsu_render;
166 endsuglyph;
167

```

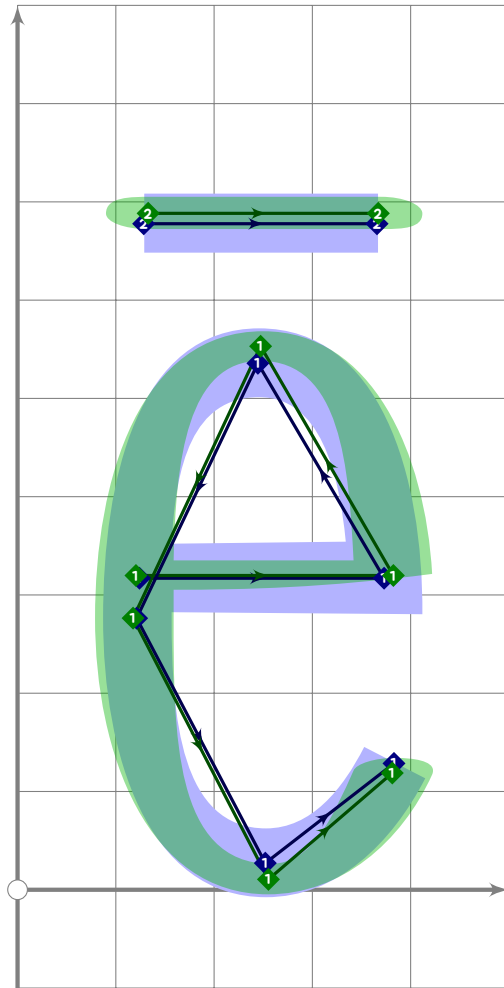


```

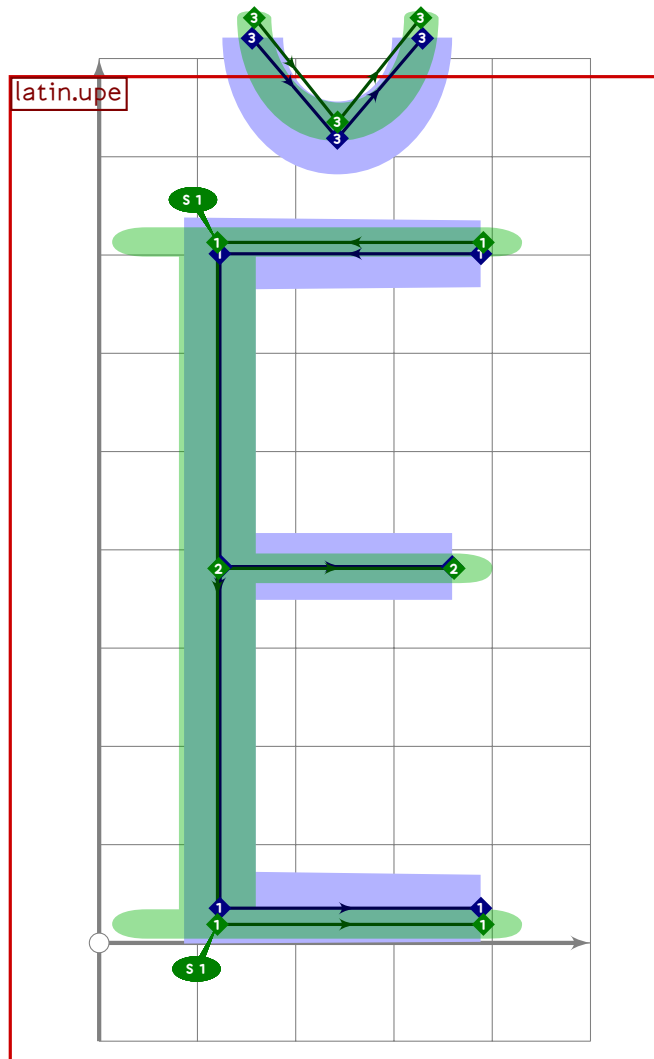
168 % E with macron
169 begintsuglyph("Emacron";18);
170 tsu_accent.capital(macron)(tsu_curve.latin.upe);
171 tsu_render;
172 endsuglyph;
173

```

latin.lowe



```
174 % e with macron
175 begintsuglyph("emacron";19);
176 tsu_accent.macron(tsu_curve.latin.lowe);
177 tsu_render;
178 endsuglyph;
179
```

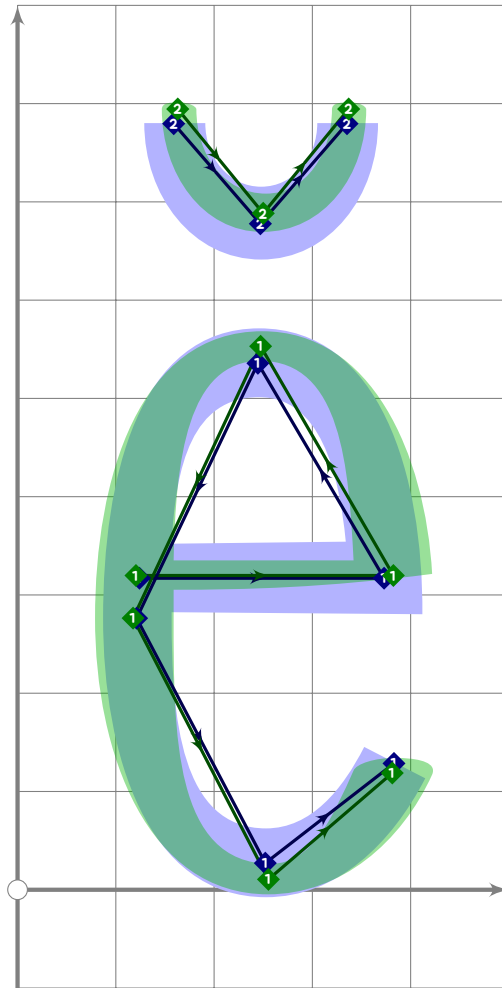


```

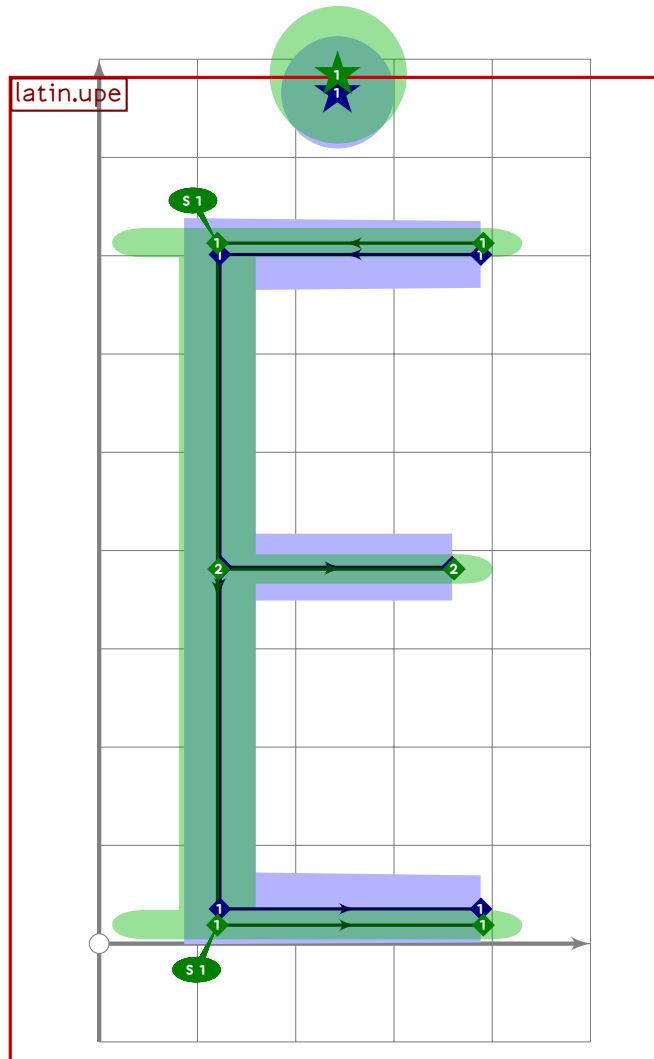
180 % E with breve
181 begint Suglyph("Ebreve";20);
182 tsu_accent.capital(breve)(tsu_curve.latin.upe);
183 tsu_render;
184 endsuglyph;
185

```

latin.lowe



```
186 % e with breve
187 begint Suglyph("ebreve";21);
188   tsu_accent.breve(tsu_curve.latin.lowe);
189   tsu_render;
190 endsuglyph;
191
```

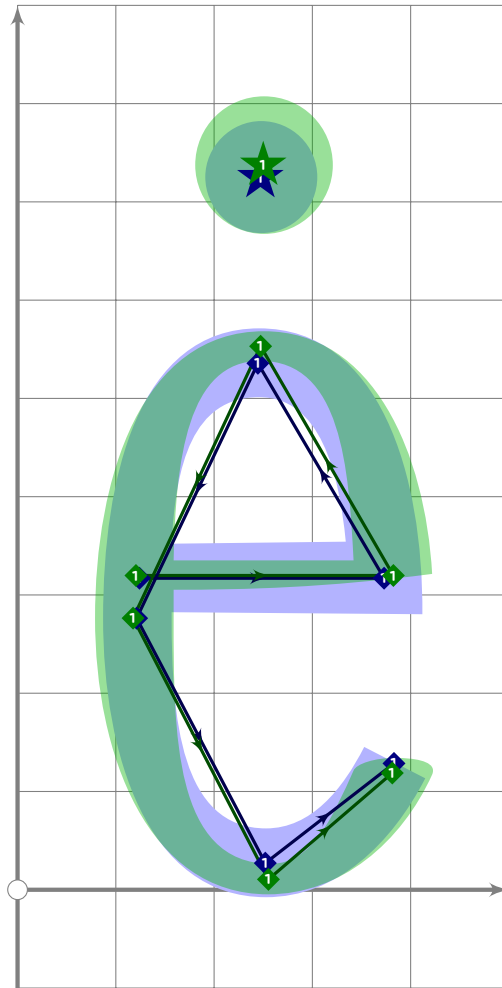


```

192 % E with dot
193 beginsuglyph("Edotaccent";22);
194 tsu_accent.capital(dotabove)(tsu_curve.latin.upe);
195 tsu_render;
196 endsuglyph;
197

```

latin.lowe



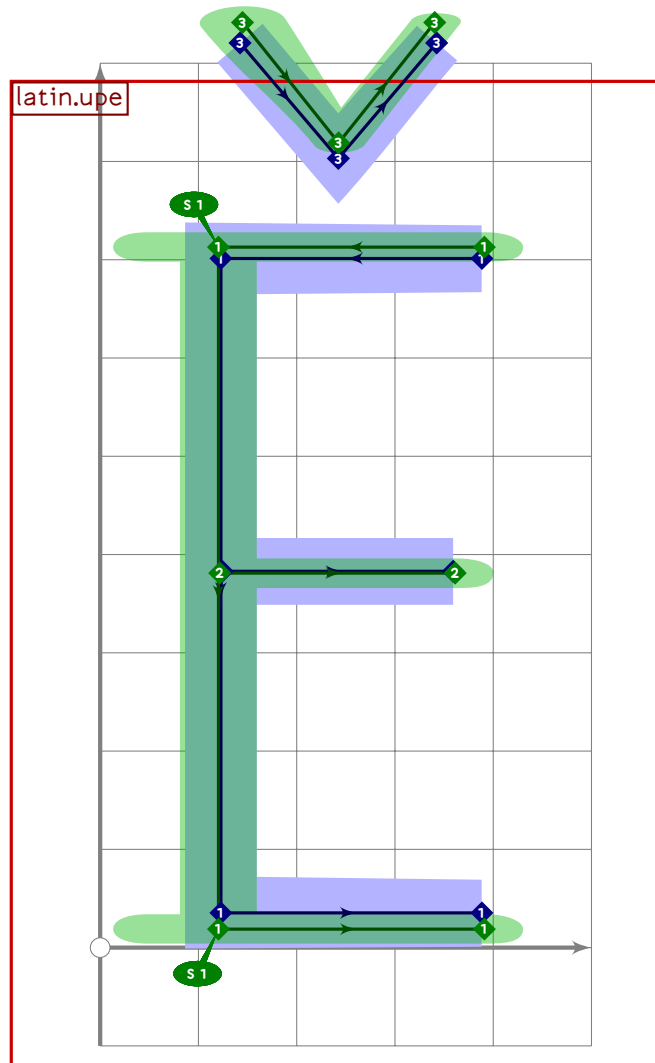
```
198 % e with dot
199 begintsuglyph("edotaccent",23);
200 tsu_accent.dotabove(tsu_curve.latin.lowe);
201 tsu_render;
202 endtsuglyph;
203
204 % E with ogonek
205 begintsuglyph("Eogonek",24);
206 tsu_curve.latin.upeogonek;
207 tsu_render;
208 endtsuglyph;
209
210 % e with ogonek
211 begintsuglyph("eogonek",25);
212 tsu_curve.latin.loweogonek;
213 tsu_render;
```

[see page 242]

[see page 247]

214 endsuglyph;

215



216 % E with caron

217 `begintsuglyph("Ecaron";26);`

218 `tsu_accent.capital(caron)(tsu_curve.latin.upe);`

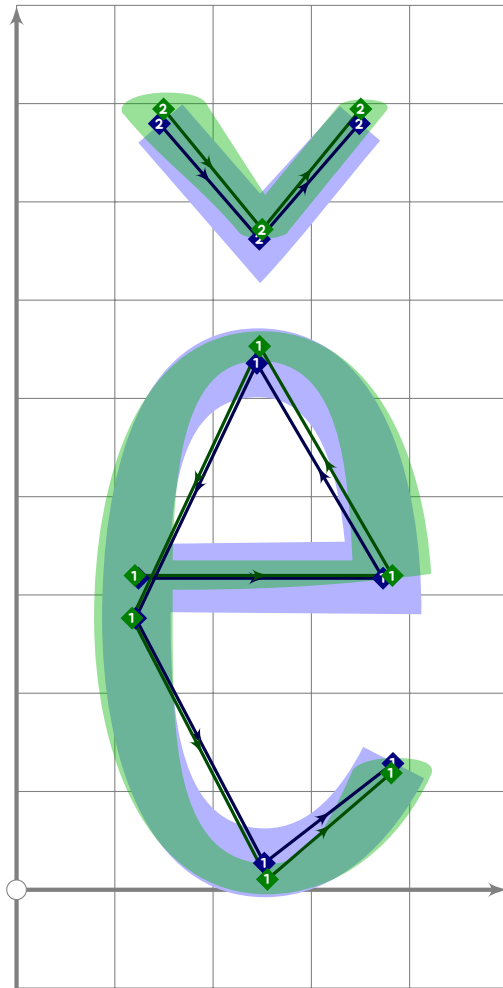
219 `tsu_render;`

220 `endsuglyph;`

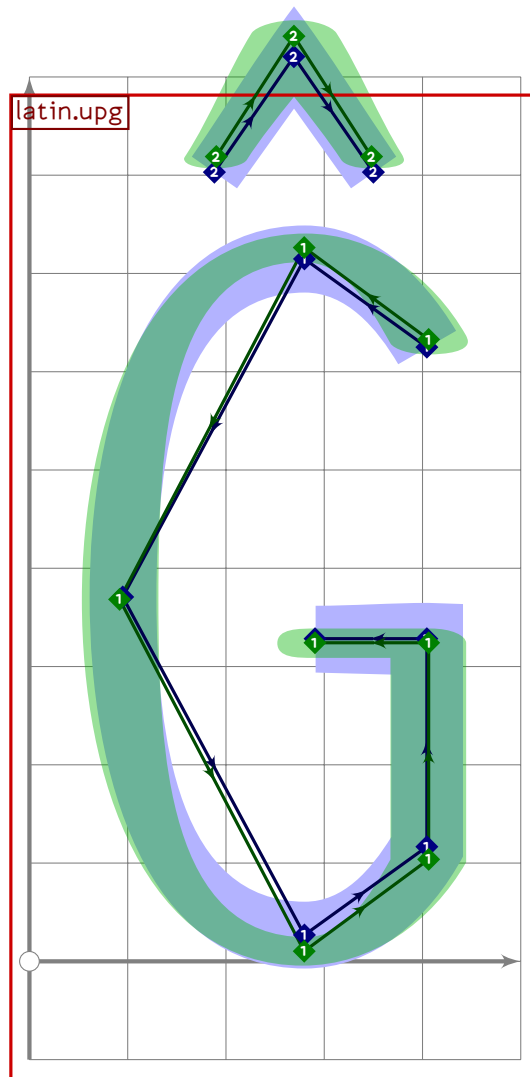
221



latin.low



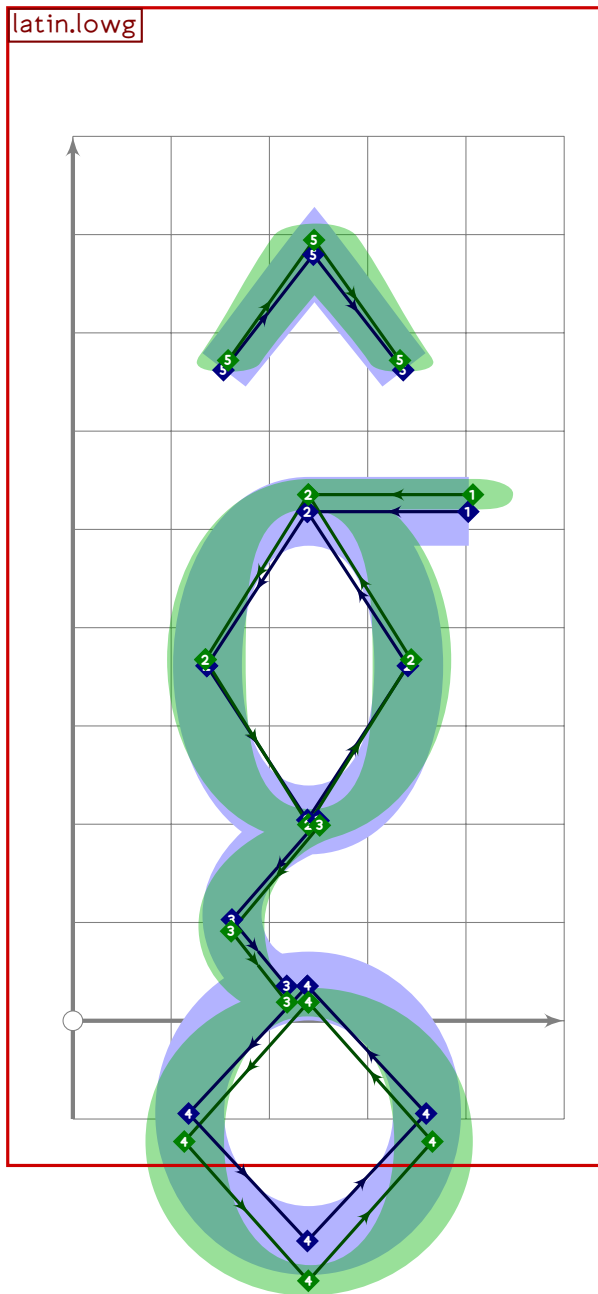
```
222 % e with caron
223 begint Suglyph("ecaron";27);
224 tsu_accent.caron(tsu_curve.latin.low);
225 tsu_render;
226 endtsuglyph;
227
```



```

228 % G with circumflex
229 begintsuglyph("Gcircumflex";28);
230 tsu_accent.capital(circumflex)(tsu_curve.latin.upg);
231 bp[sp-1]:=bp[sp-1] shifted (35,0);
232 tsu_render;
233 endsuglyph;
234

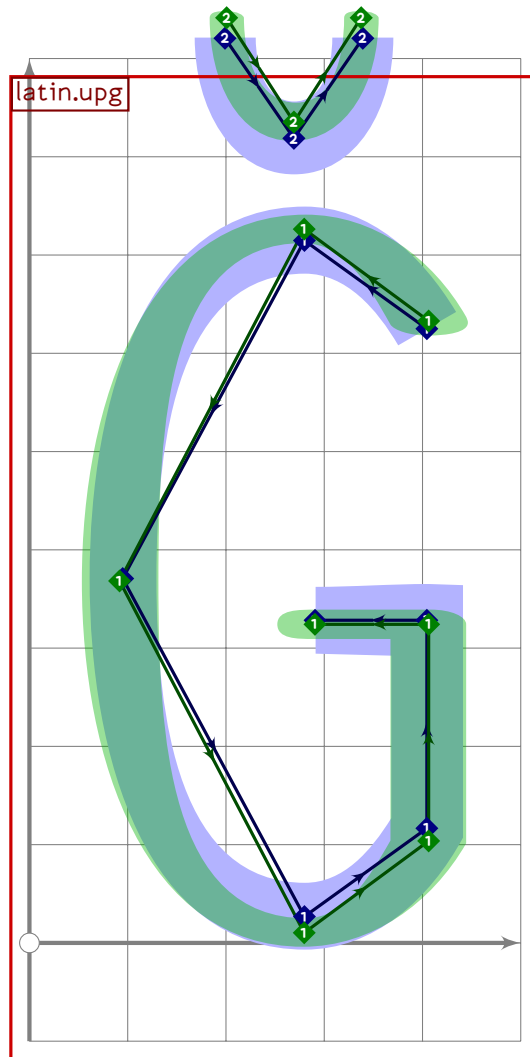
```



```

235 % g with circumflex
236 begintsuglyph("gcircumflex",29);
237 tsu_accent.circumflex(tsu_curve.latin.lowg);
238 bp[sp-1]:=bp[sp-1] shifted (10,0);
239 tsu_render;
240 endsuglyph;
241

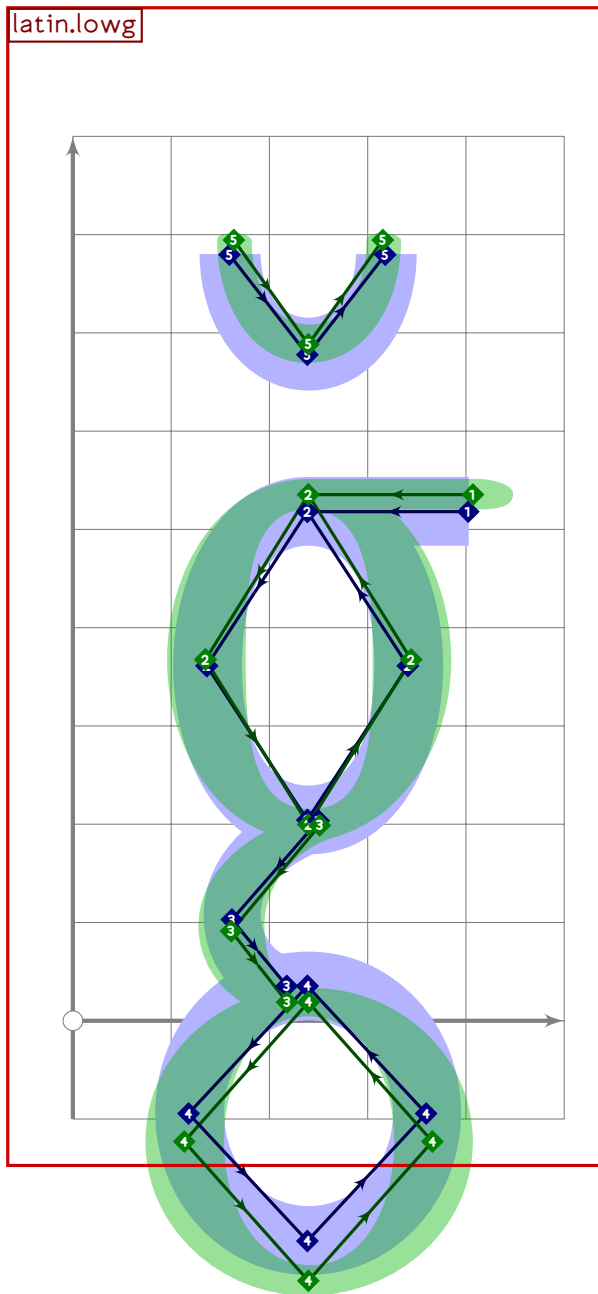
```



```

242 % G with breve
243 begintsuglyph("Gbreve";30);
244 tsu_accent.capital(breve)(tsu_curve.latin.upg);
245 bp[sp-1]:=bp[sp-1] shifted (35,0);
246 tsu_render;
247 endsuglyph;
248

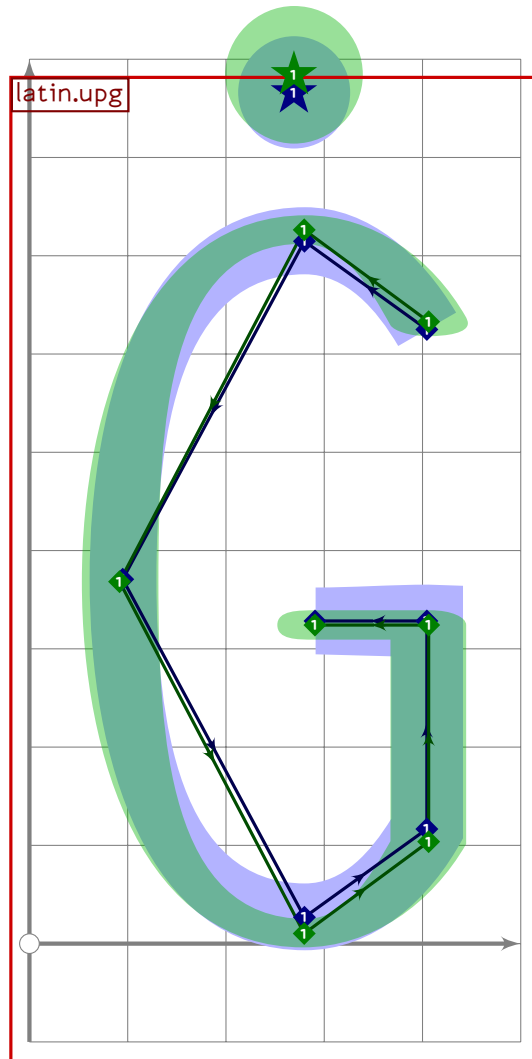
```



```

249 % g with breve
250 begintsuglyph("gbreve",31);
251 tsu_accent.breve(tsu_curve.latin.lowg);
252 tsu_render;
253 endsuglyph;
254

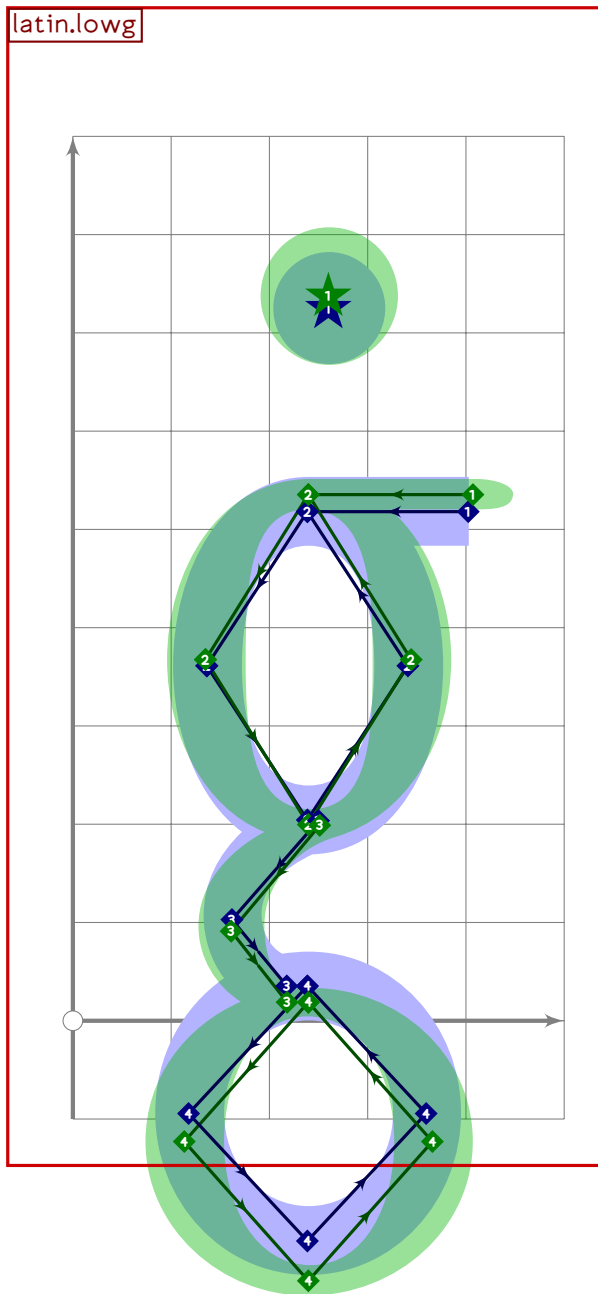
```



```

255 % G with dot
256 begintsuglyph("Gdotaccent",32);
257 tsu_accent.capital(dotabove)(tsu_curve.latin.upg);
258 lcblob1:=lcblob1 shifted (35,0);
259 tsu_render;
260 endsuglyph;
261

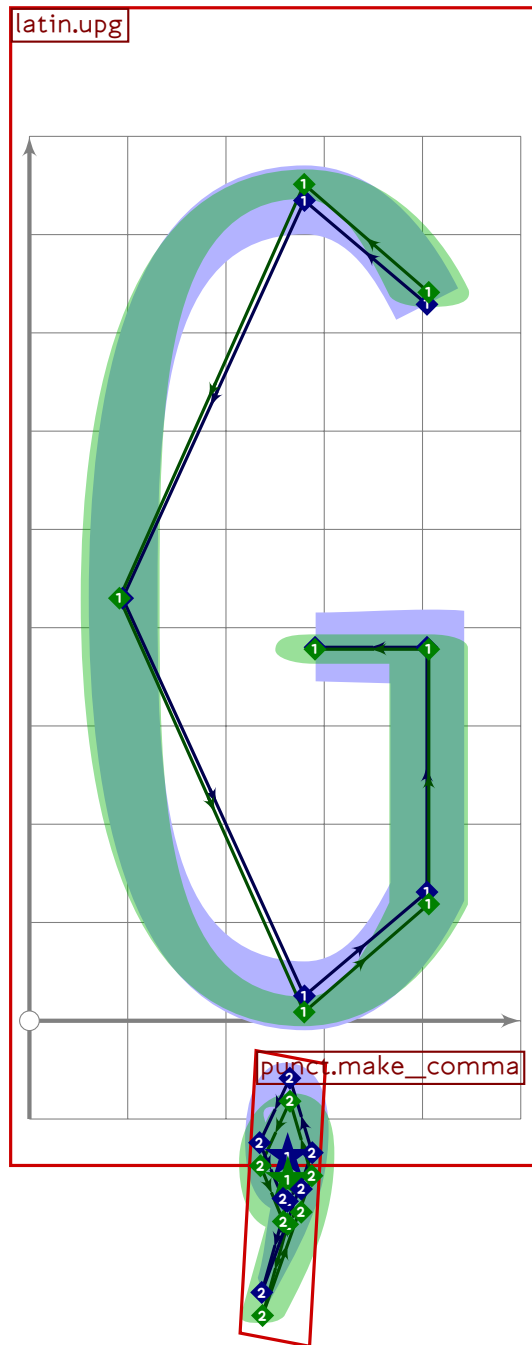
```



```

262 % g with dot
263 begintsuglyph("gdotaccent",33);
264 tsu_accent.dotabove(tsu_curve.latin.lowg);
265 lcblob1:=lcblob1 shifted (35,0);
266 tsu_render;
267 endsuglyph;
268

```

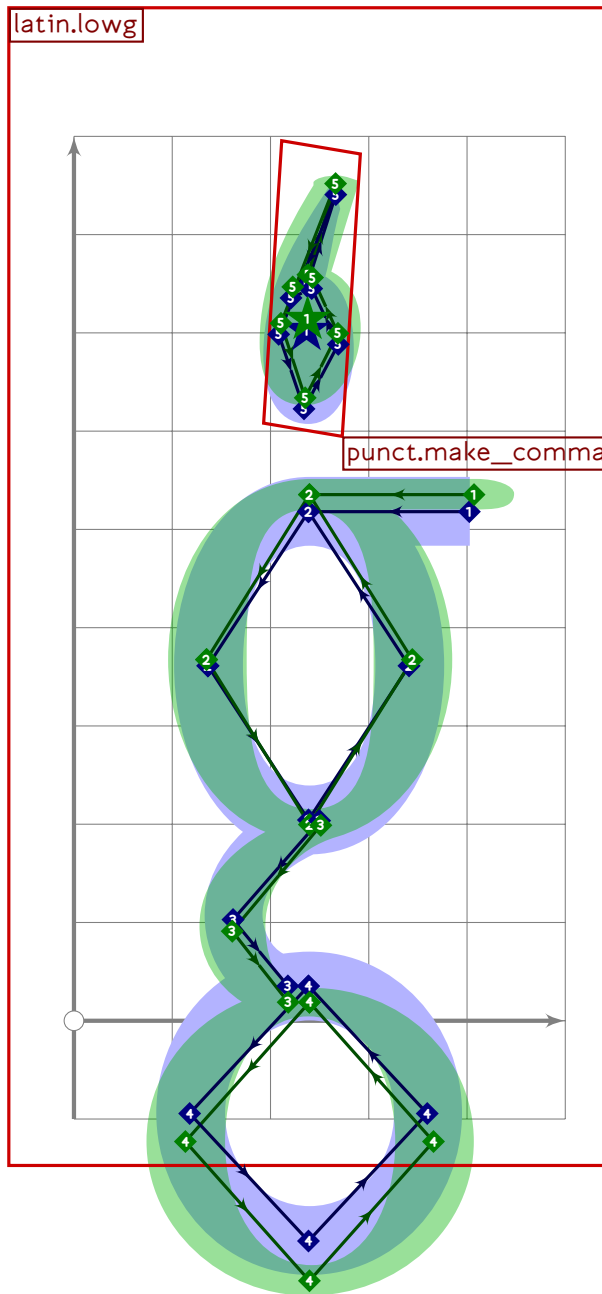


```

269 % G with comma below
270 begintsuglyph("uni0122",34);
271 tsu_accent.commabelow(tsu_curve.latin.upg);
272 tsu_render;
273 endtsuglyph;
274

```

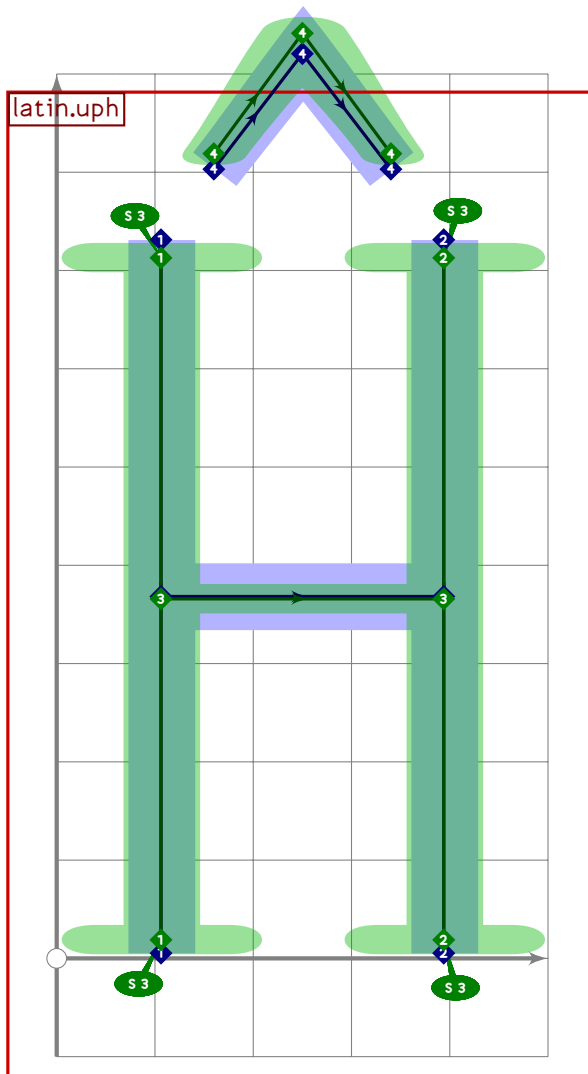




```

275 % g with comma upside-down above
276 begintsuglyph("uni0123",35);
277 tsu_curve.latin.lowg;
278 tsu_curve.punct.make_comma((500,vmetric(0.84)),180);
279 tsu_render;
280 endsuglyph;
281

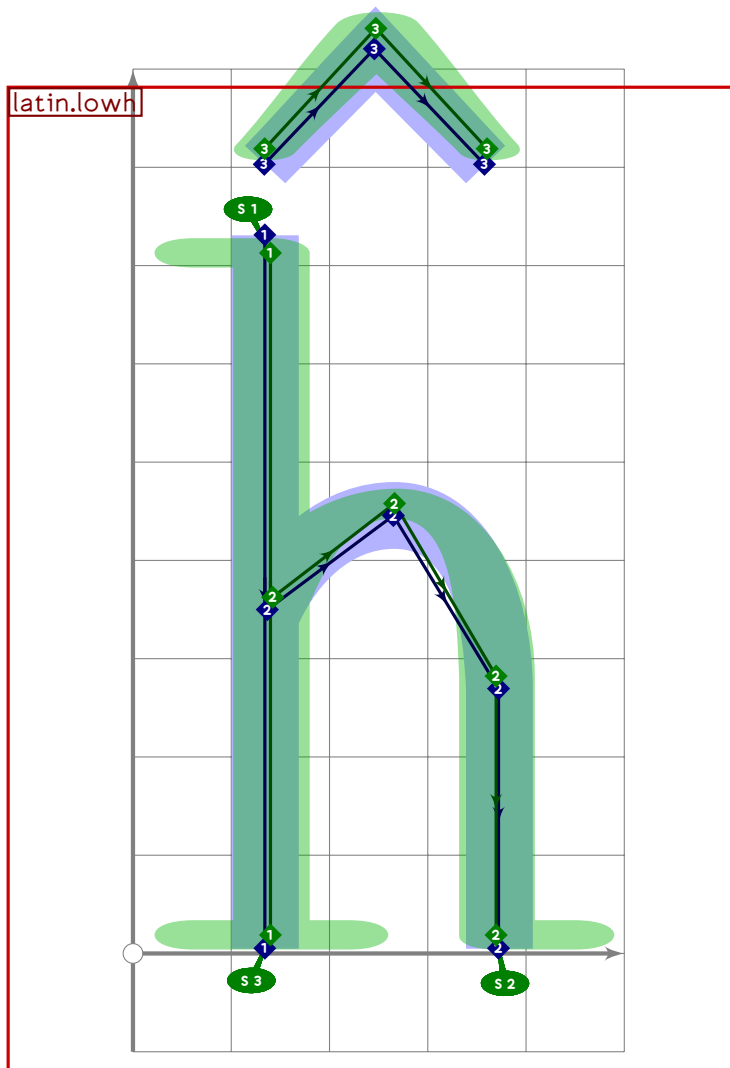
```



```

282 % H with circumflex
283 beginsuglyph("Hcircumflex";36);
284   tsu_accent.capital(circumflex)(tsu_curve.latin.uph);
285   tsu_render;
286 endsuglyph;
287

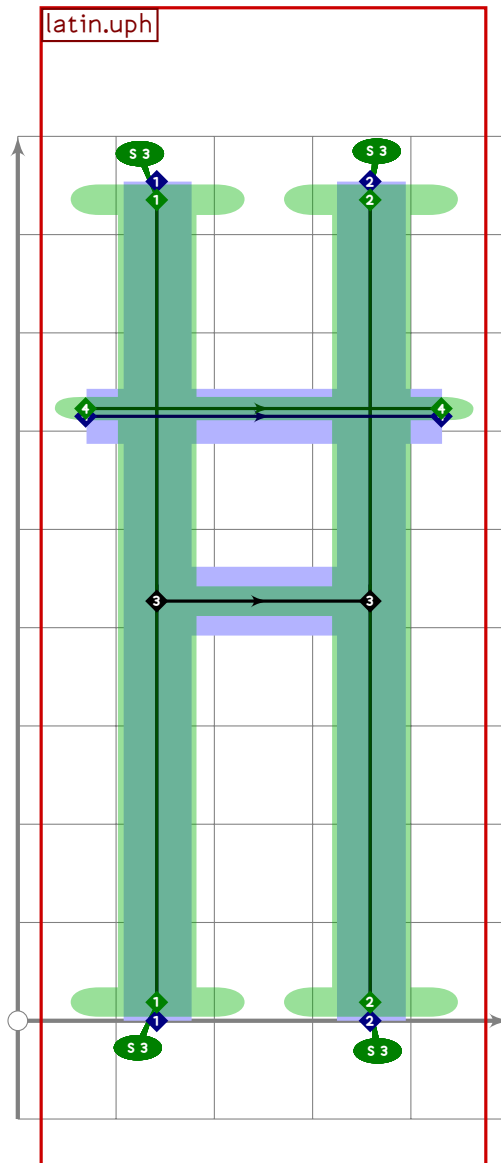
```



```

288 % h with circumflex
289 begintsuglyph("hcircumflex",37);
290 tsu_accent.capital(circumflex)(tsu_curve.latin.lowh);
291 tsu_render;
292 endtsuglyph;
293

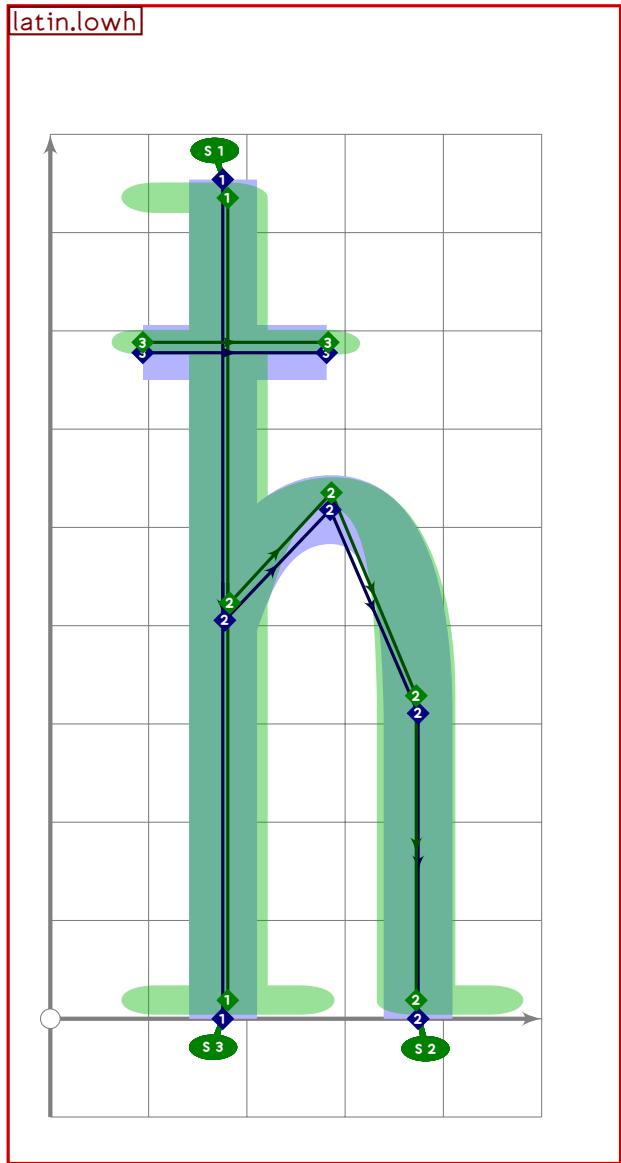
```



```

294 % H with bar
295 begintsuglyph("Hbar";38);
296 tsu_curve.latin.uph;
297 bp[sp]:=(100,vmetric(0.74))-(900,vmetric(0.74));
298 bq[sp]:=(1.6,1.6)-(1.6,1.6);
299 bo_size[sp]:=80;
300 sp:=sp*1;
301 tsu_render;
302 endsuglyph;
303

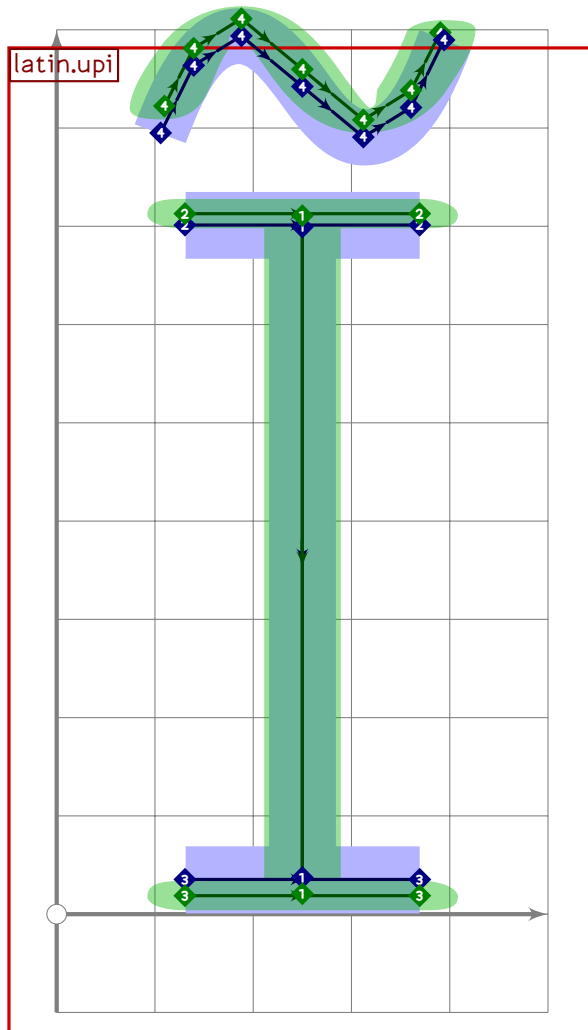
```



```

304 % h with bar
305 begintsuglyph("hbar",39);
306 tsu_curve.latin.lowh;
307 bp[sp]:=(220,vmetric(0.82))-(520,vmetric(0.82));
308 bq[sp]:=(1.6,1.6)-(1.6,1.6);
309 bo_size[sp]:=80;
310 sp:=sp*1;
311 tsu_render;
312 endsuglyph;
313

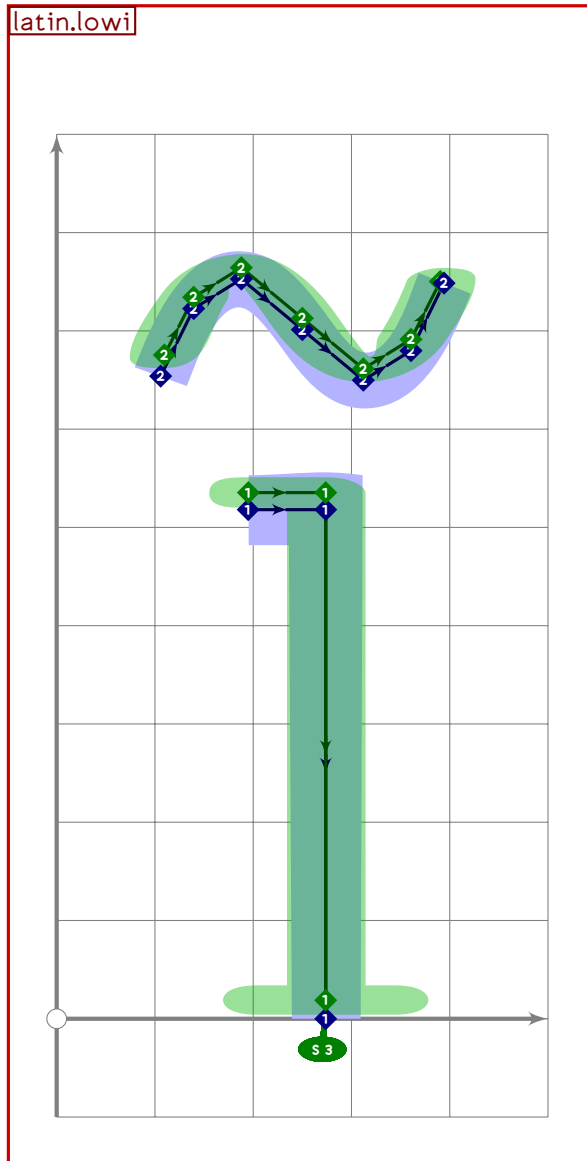
```



```

314 % I with tilde
315 beginsuglyph("Itilde";40);
316   tsu_accent.capital(tilde)(tsu_curve.latin.upi);
317   tsu_render;
318 endsuglyph;
319

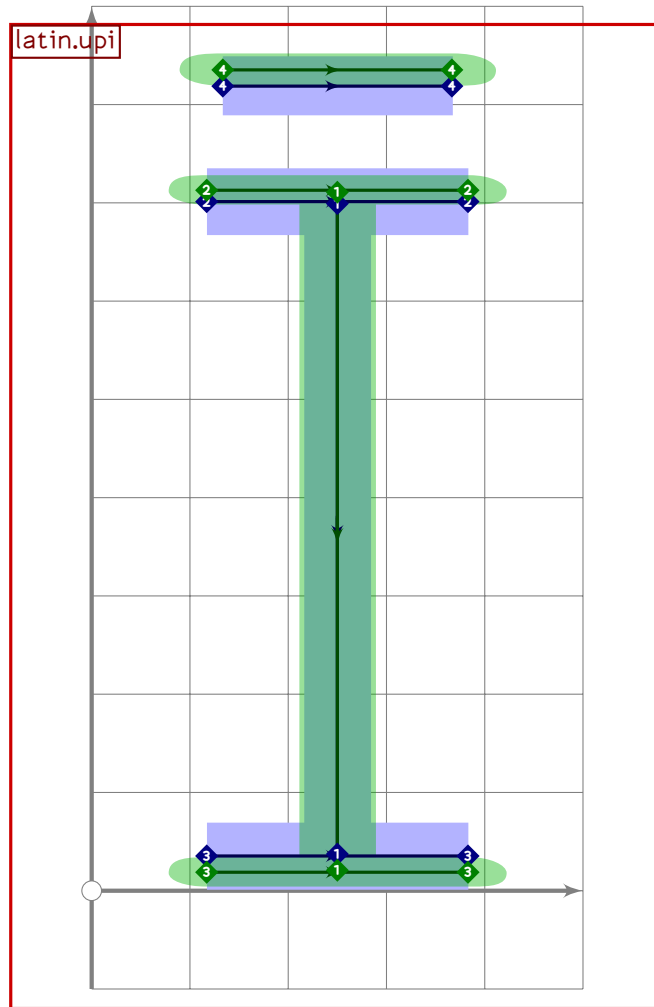
```



```

320 % i with tilde
321 begint Suglyph("itilde",41);
322   tsu_accent.tilde(
323     tsu_curve.latin.lowi;
324     bpl:=bpl shifted (70*right);
325     path lcblob[]
326   );
327   tsu_render;
328   endtsuglyph;
329

```

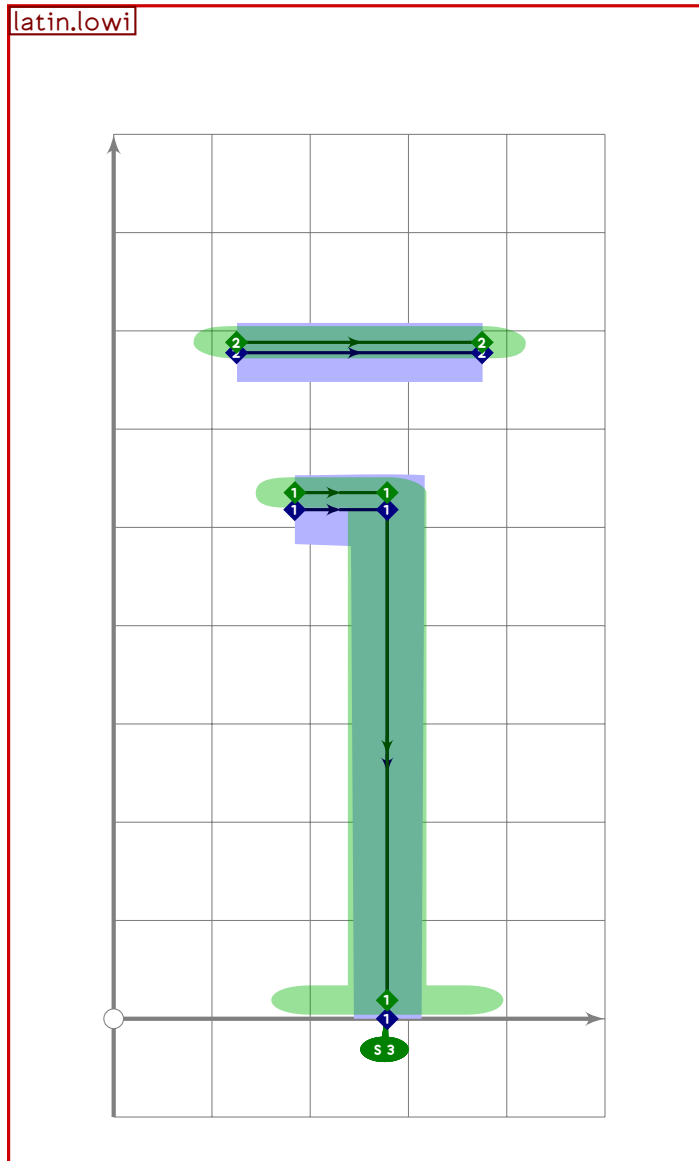


```

330 % I with macron
331 begint Suglyph("Imacron",42);
332   tsu_accent.capital(macron)(tsu_curve.latin.upi);
333   tsu_render;
334 endtsuglyph;
335

```

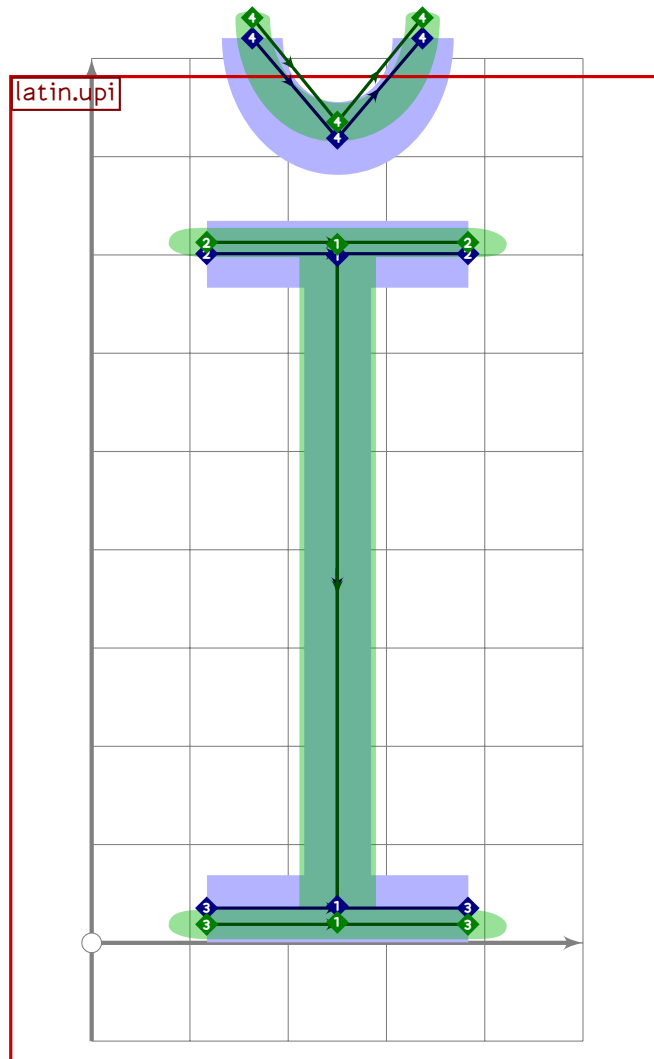




```

336 % i with macron
337 begint Suglyph("imacron";43);
338   tsu_accent.macron(
339     tsu_curve.latin.lowi;
340     bpl:=bpl shifted (70*right);
341     path lcblob[]
342   );
343   tsu_render;
344   endtsuglyph;
345

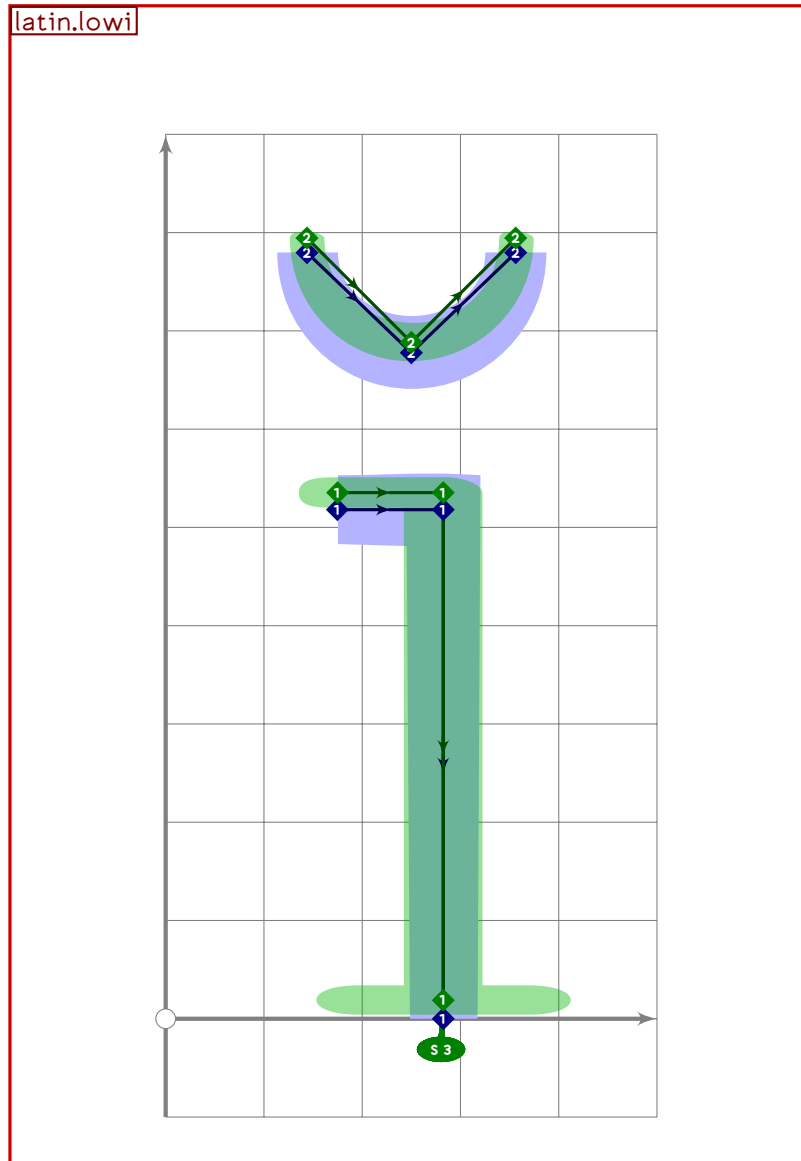
```



```

346 % I with breve
347 begintsuglyph("Ibreve",44);
348 tsu_accent.capital(breve)(tsu_curve.latin.upi);
349 tsu_render;
350 endsuglyph;
351

```



```

352 % i with breve
353 begint Suglyph("ibreve";45);
354   tsu_accent.breve(
355     tsu_curve.latin.lowi;
356     bpl:=bpl shifted (70*right);
357     path lcblob[]
358   );
359   tsu_render;
360 endsuglyph;
361
362 % I with ogonek
363 begint Suglyph("Iogonek";46);
364   tsu_curve.latin.upiogonek;
365   tsu_render;
366 endsuglyph;
367

```

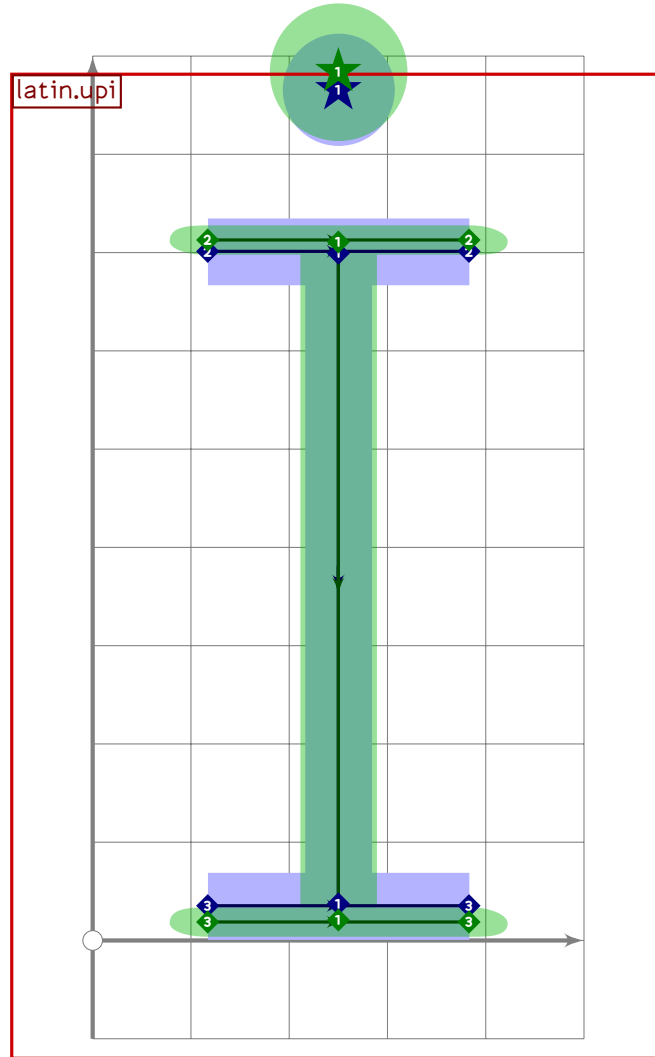
[see page 243]

```

368 % i with ogonek
369 begintsuglyph("iogonek",47);
370 tsu_curve.latin.lowiogonek;
371 tsu_render;
372 endtsuglyph;
373

```

[see page 249]

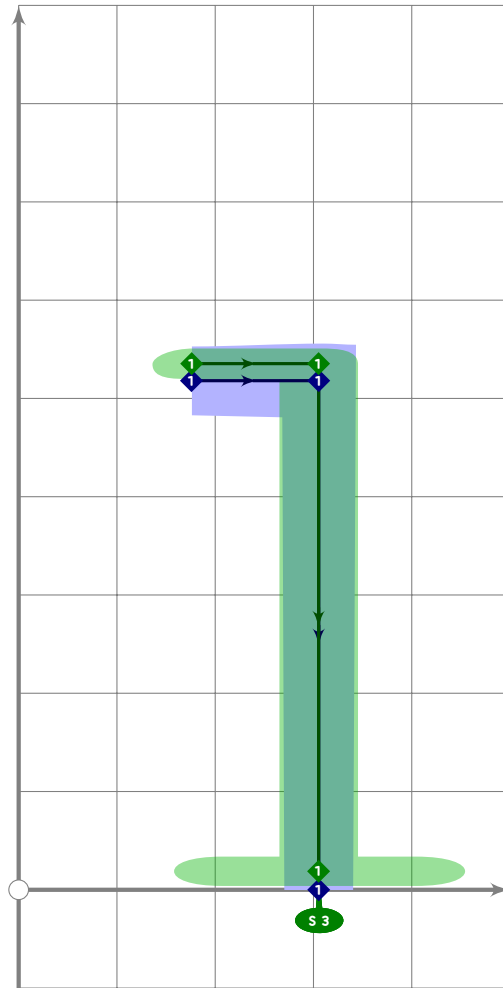


```

374 % I with dot
375 begintsuglyph("Idotaccent",48);
376 tsu_accent.capital(dotabove)(tsu_curve.latin.upi);
377 tsu_render;
378 endtsuglyph;
379

```

latin.lowi



```
380 % i without dot
381 begintsuglyph("dotlessi";49);
382 tsu_curve.latin.lowi;
383 bp1:=bp1 shifted (70*right);
384 path lcblob[];
385 tsu_render;
386 endtsuglyph;
387
388 % Dutch IJ ligature
389 begintsuglyph("IJ";50);
390 tsu_curve.latin.upij;
391 tsu_render;
392 endtsuglyph;
393
394 % Dutch ij ligature
395 begintsuglyph("ij";51);
```

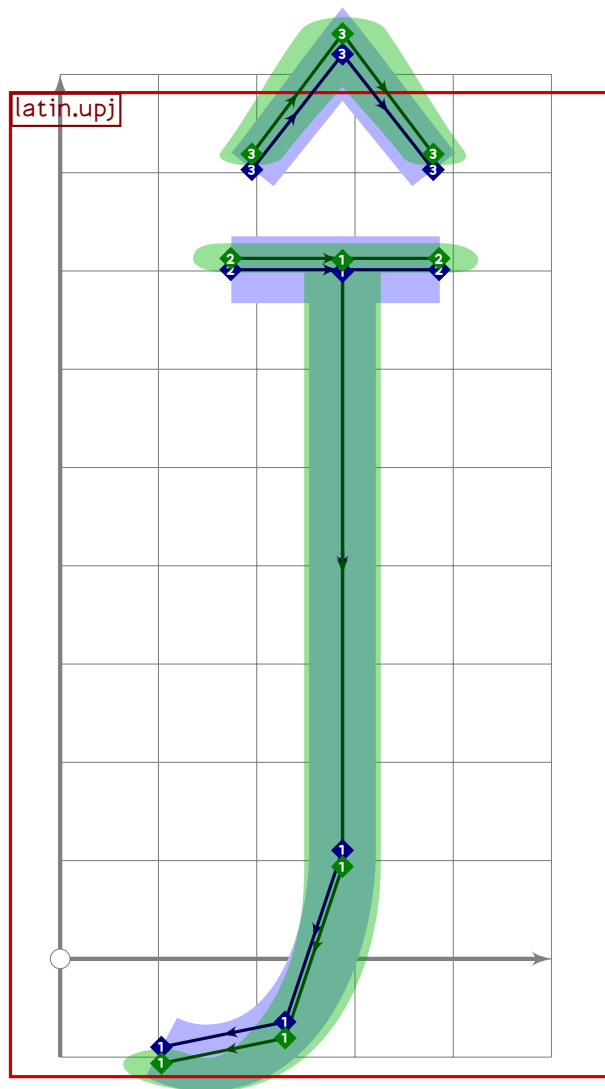
[see page 163]

[see page 203]

```

396 tsu_curve.latin.lowij;
397 tsu_render;
398 endtsuglyph;
399

```

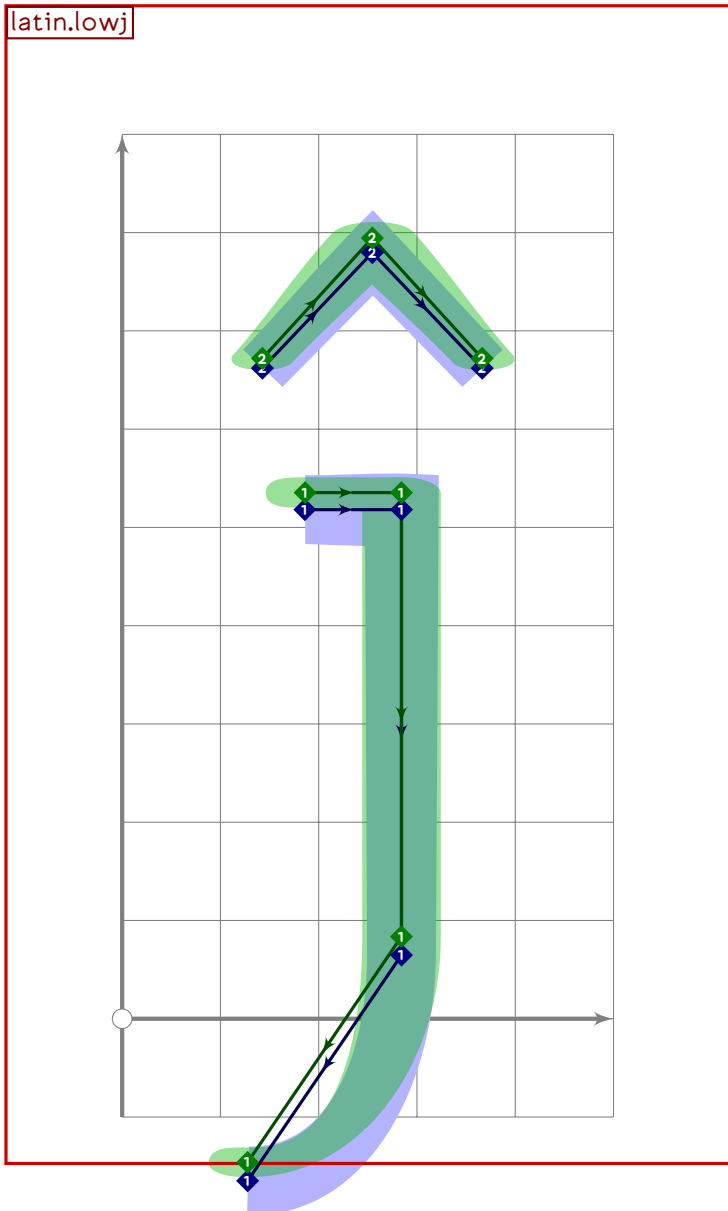


```

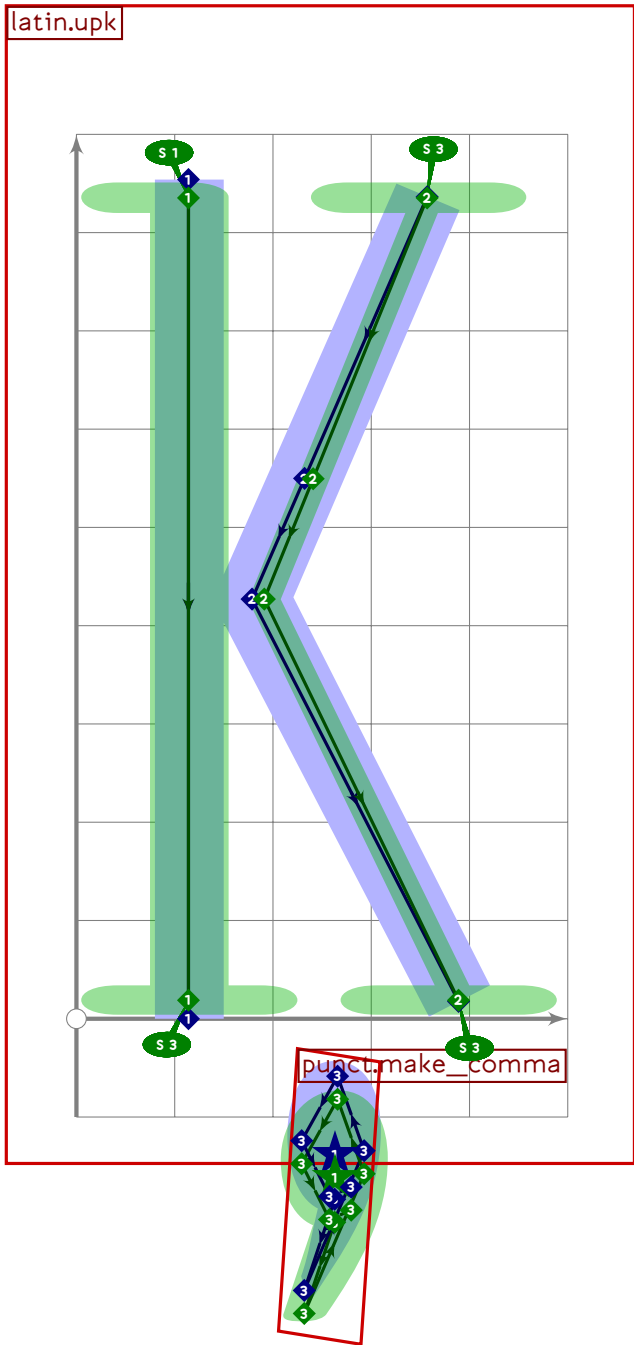
400 % J with circumflex
401 begint Suglyph("Jcircumflex";52);
402 tsu_accent.capital(circumflex)(tsu_curve.latin.upj);
403 bp[sp-1]:=bp[sp-1] shifted (50,0);
404 tsu_render;
405 endtsuglyph;
406

```

[latin.lowj]



```
407 % j with circumflex
408 begint Suglyph("jcircumflex",53);
409   tsu_accent.circumflex(
410     tsu_curve.latin.lowj;
411     bp1:=bp1 shifted (70*right);
412     path lcblob[]
413   );
414   tsu_render;
415   endtsuglyph;
416
```

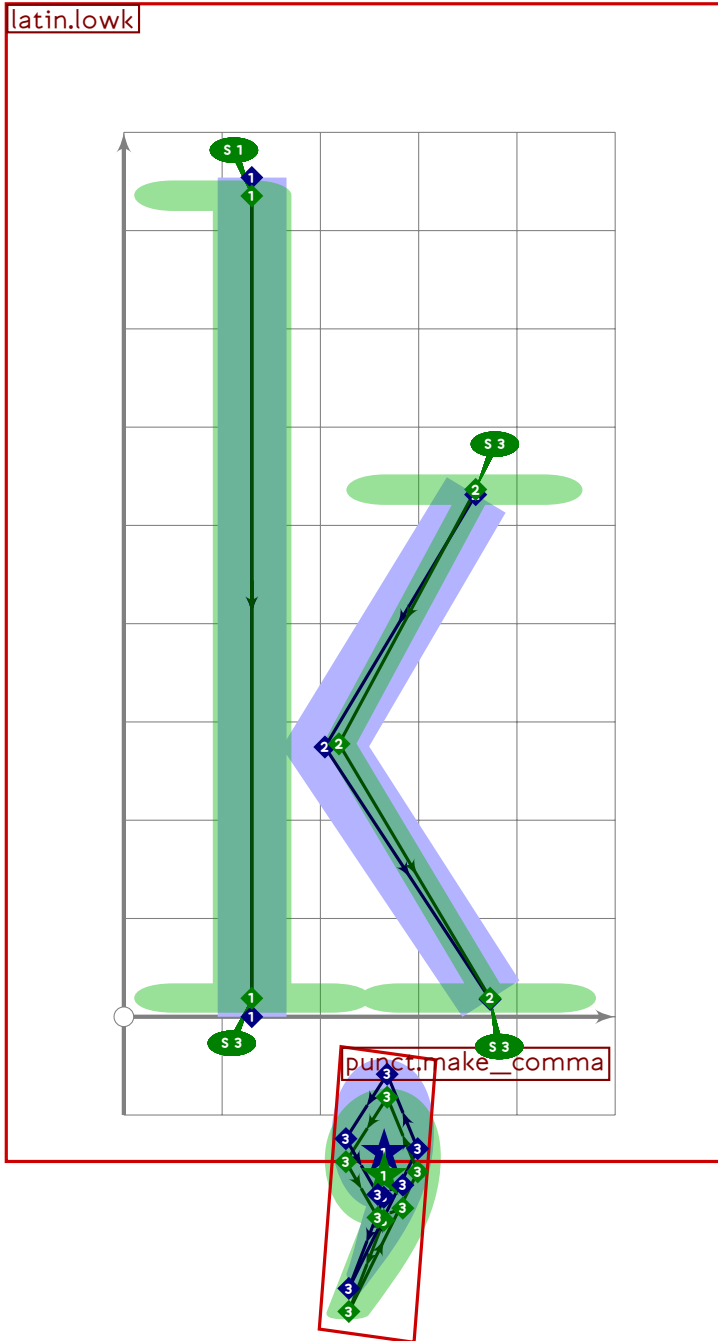


```

417 % K with comma below
418 begintsuglyph("uni0136";54);
419 tsu_accent.commabelow(tsu_curve.latin.upk);
420 tsu_render;
421 endtsuglyph;
422

```

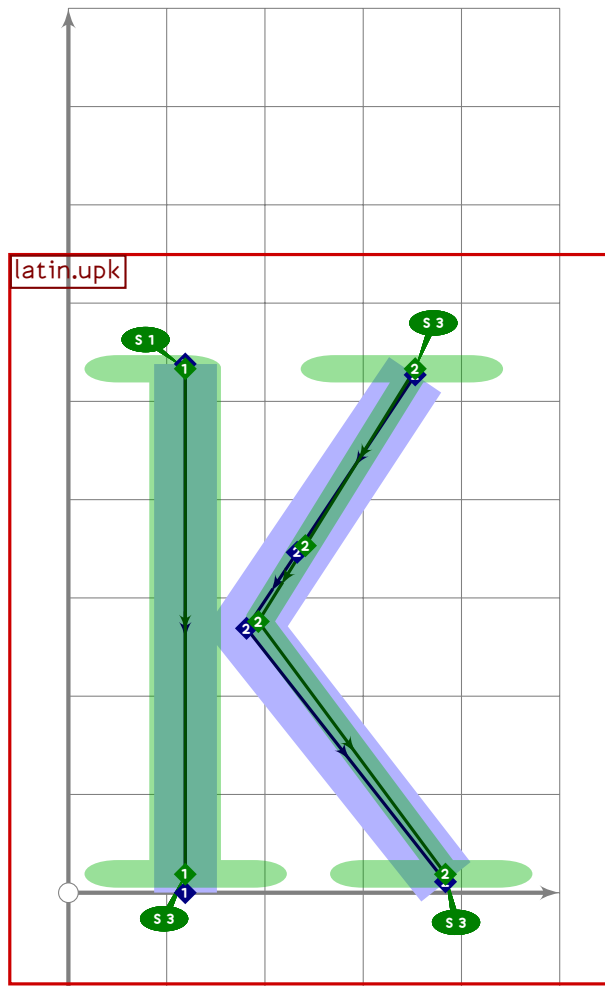




```

423 % k with comma below
424 begintsuglyph("uni0137";55);
425 tsu_accent.commabelow(tsu_curve.latin.lowk);
426 tsu_render;
427 endtsuglyph;
428

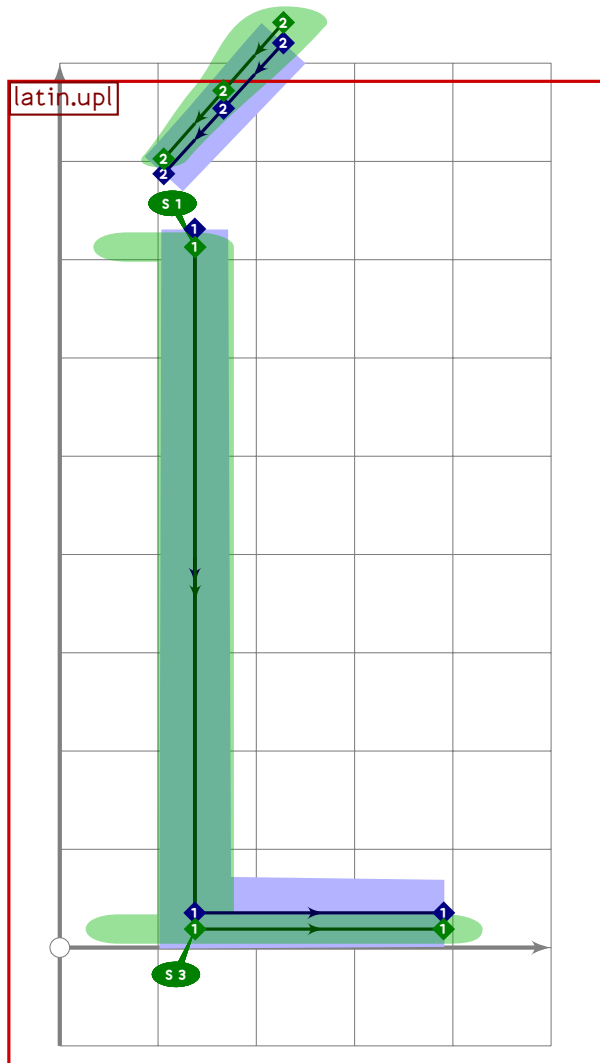
```



```

429 % Greenlandic k, which I'm interpreting as a squashed K
430 begintsuglyph("kgreenlandic",56);
431 tsu_xform(identity shifted (-500,latin_wide_low_v) xyscaled (0.92,0.63)
432   shifted (500,latin_wide_low_v))(tsu_curve.latin.upk);
433 tsu_render;
434 endsuglyph;
435

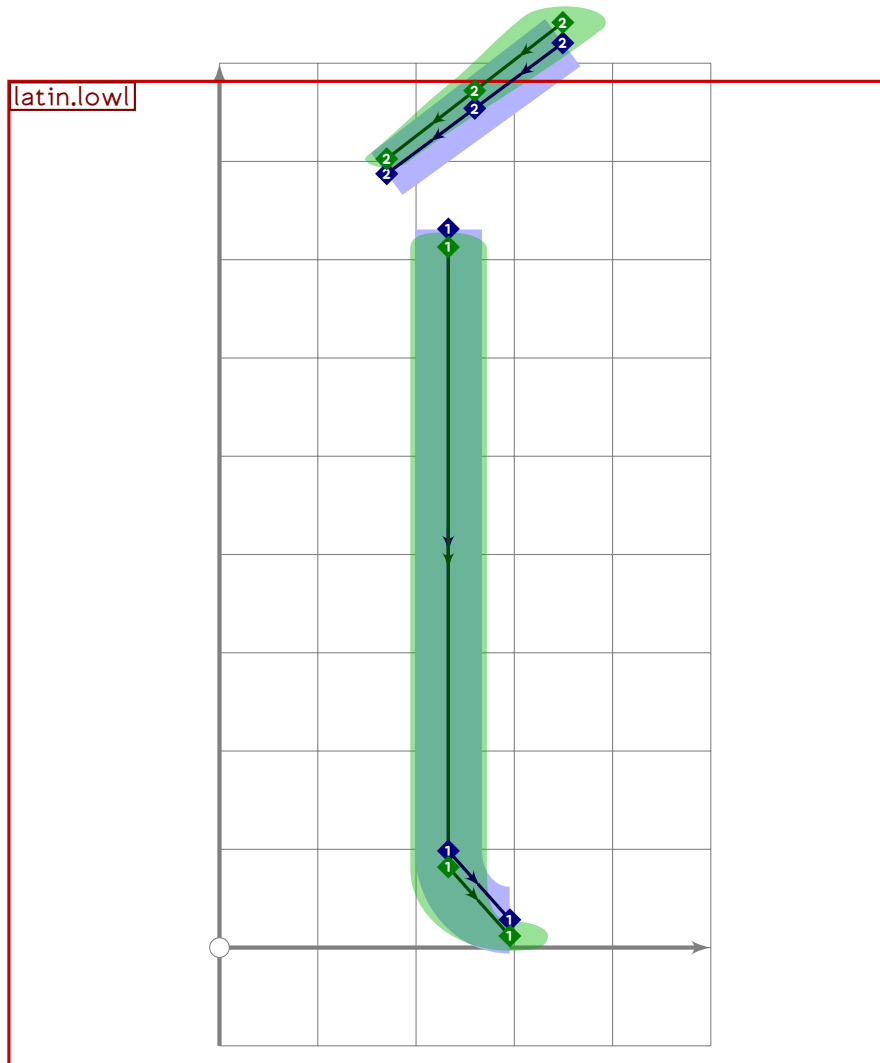
```



```

436 % L with acute
437 begintsuglyph("Lacute",57);
438   tsu_accent.capital(acute)(tsu_curve.latin.upl);
439   bp[sp-1]:=bp[sp-1] shifted (-190,0);
440   tsu_render;
441 endsuglyph;
442

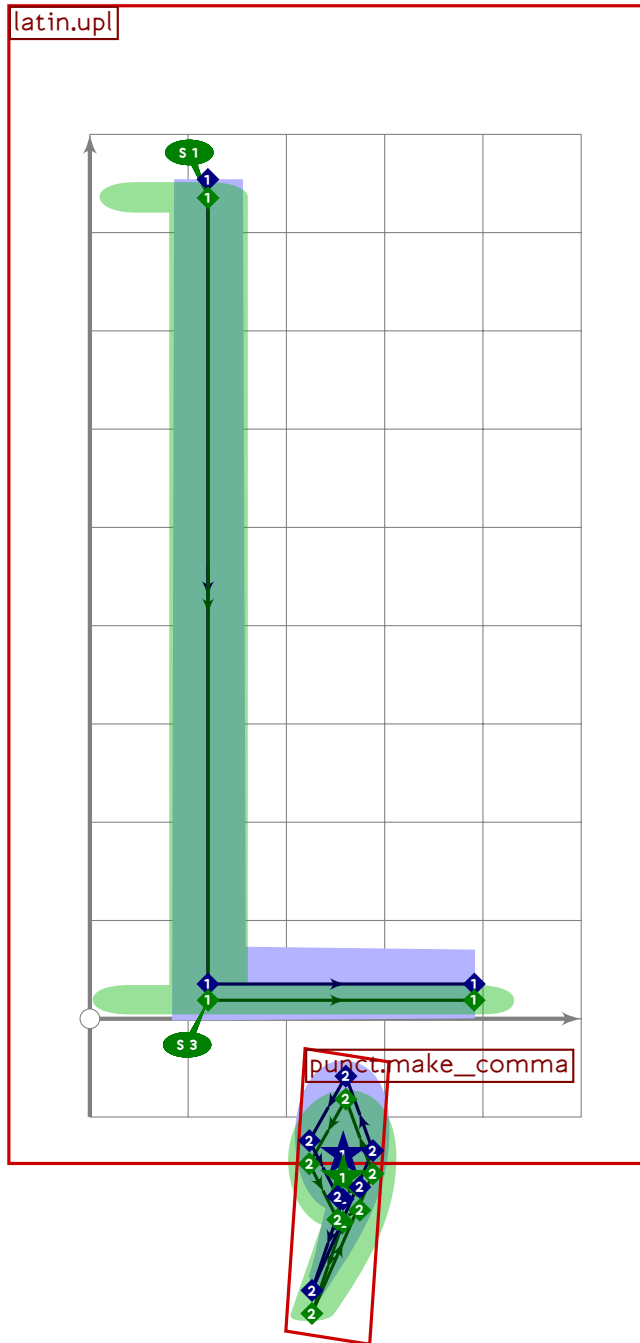
```



```

443 % l with acute
444 begintsuglyph("lacute",58);
445   tsu_accent.capital(acute)(tsu_curve.latin.lowl);
446   bp[sp-1]:=bp[sp-1] shifted (-20,0);
447   tsu_render;
448   endtsuglyph;
449

```

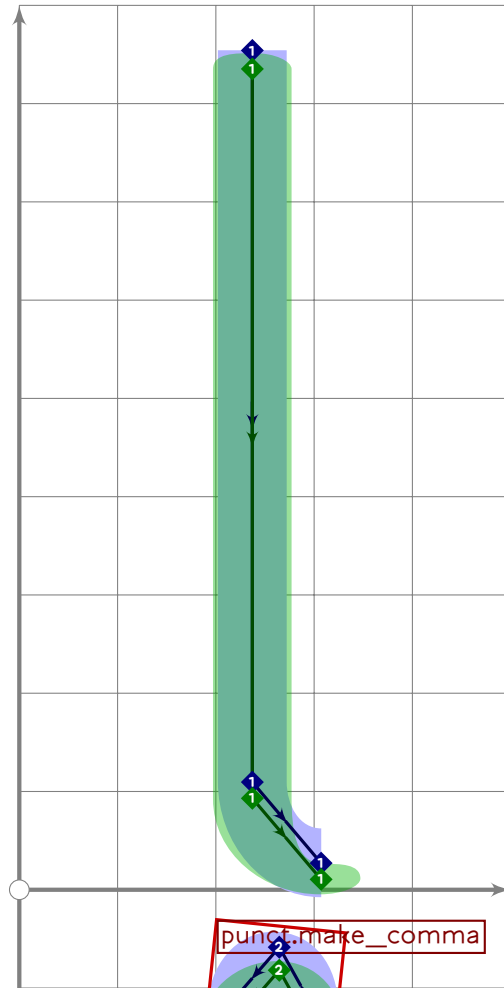


```

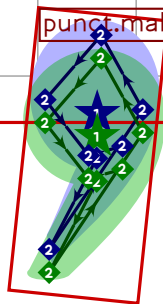
450 % L with comma below
451 begintsuglyph("uni013B";59);
452 tsu_accent.commabelow(tsu_curve.latin.upl);
453 tsu_render;
454 endtsuglyph;
455

```

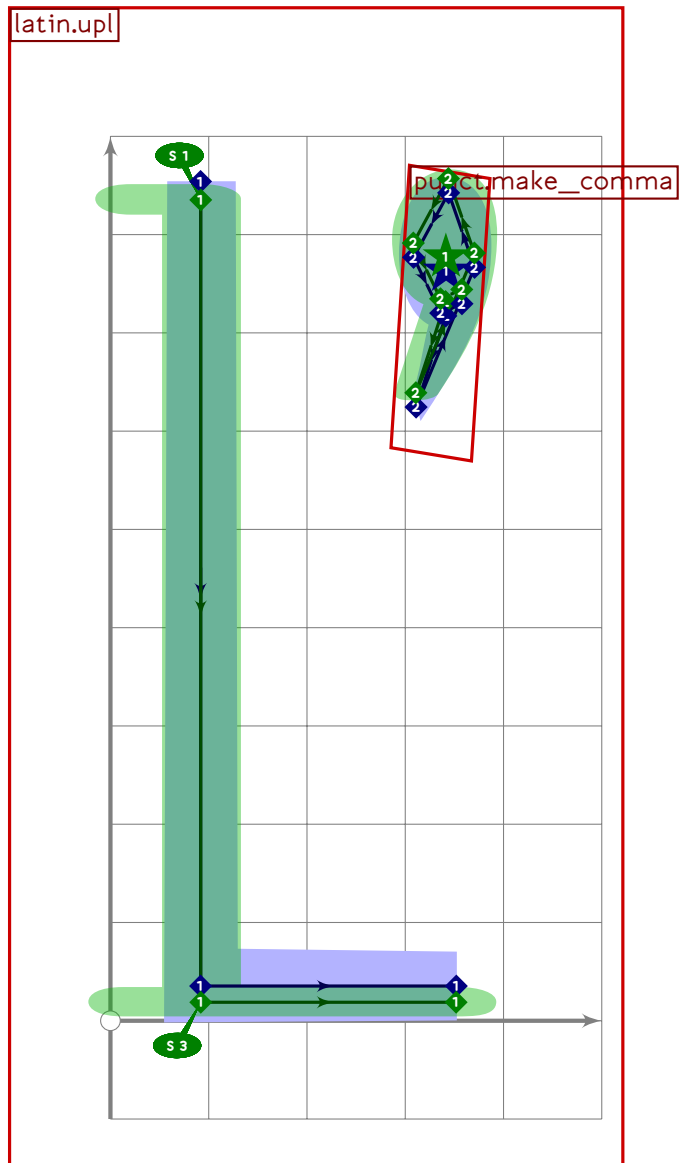
latin.lowl



punct.make\_comma



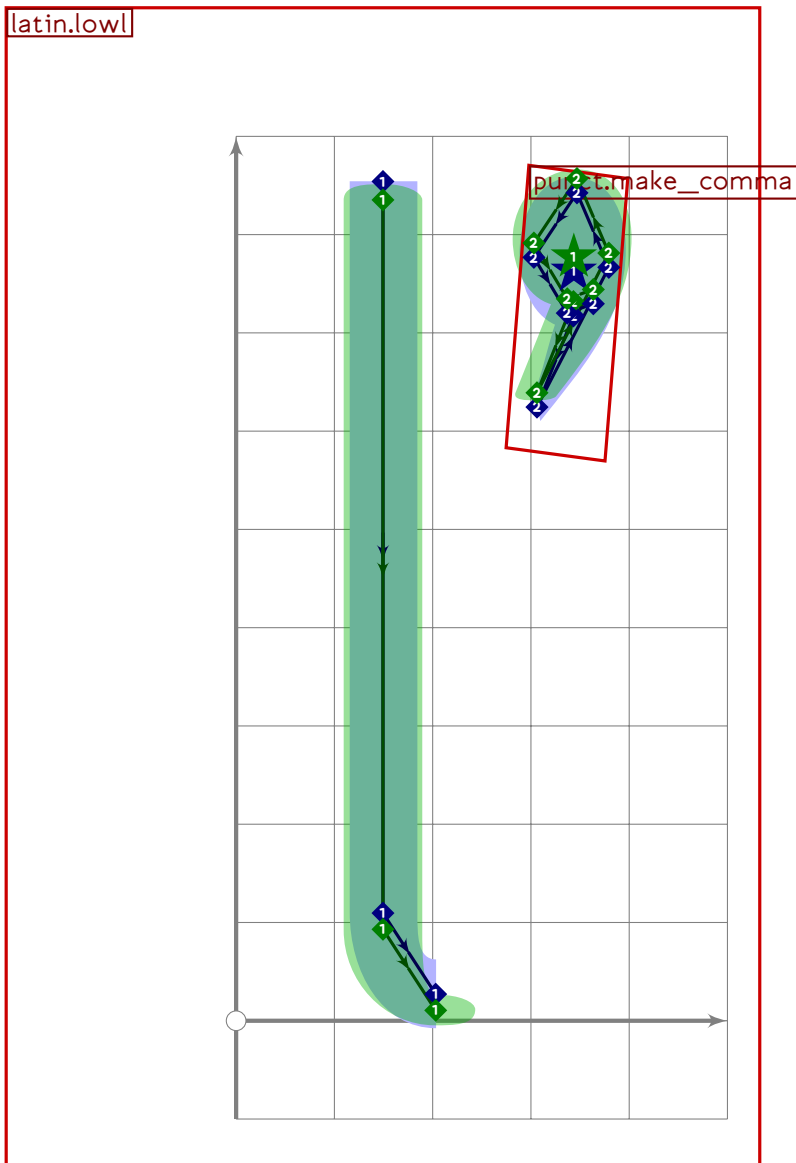
```
456 % l with comma below
457 begintsuglyph("uni013C",60);
458 tsu_accent.commabelow(tsu_curve.latin.lowl);
459 tsu_render;
460 endsuglyph;
461
```



```

462 % L with apostrophe caron
463 begintsuglyph("Lcaron",61);
464 tsu_accent.caron_apostrophe(-250)(tsu_curve.latin.upl);
465 tsu_render;
466 endtsuglyph;
467

```

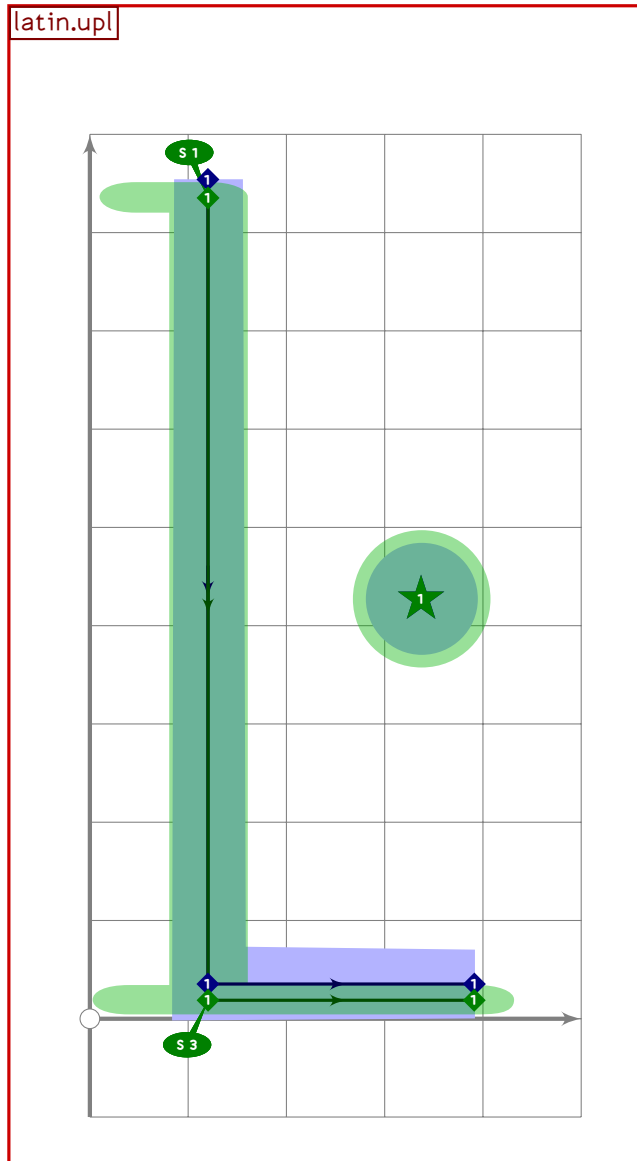


```

468 % l with apostrophe caron
469 begintsuglyph("lcaron",62);
470 tsu_accent.caron_apostrophe(-50)(tsu_curve.latin.lowl);
471 tsu_render;
472 endsuglyph;
473

```



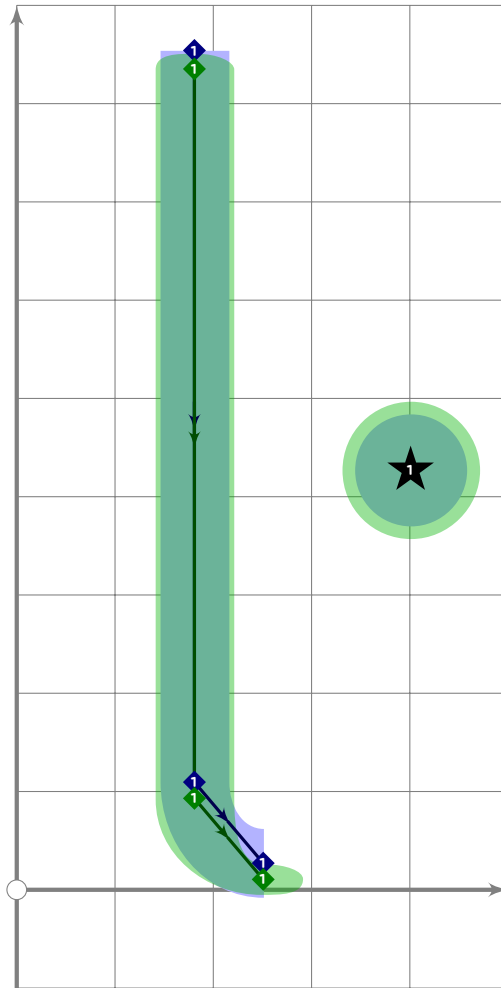


```

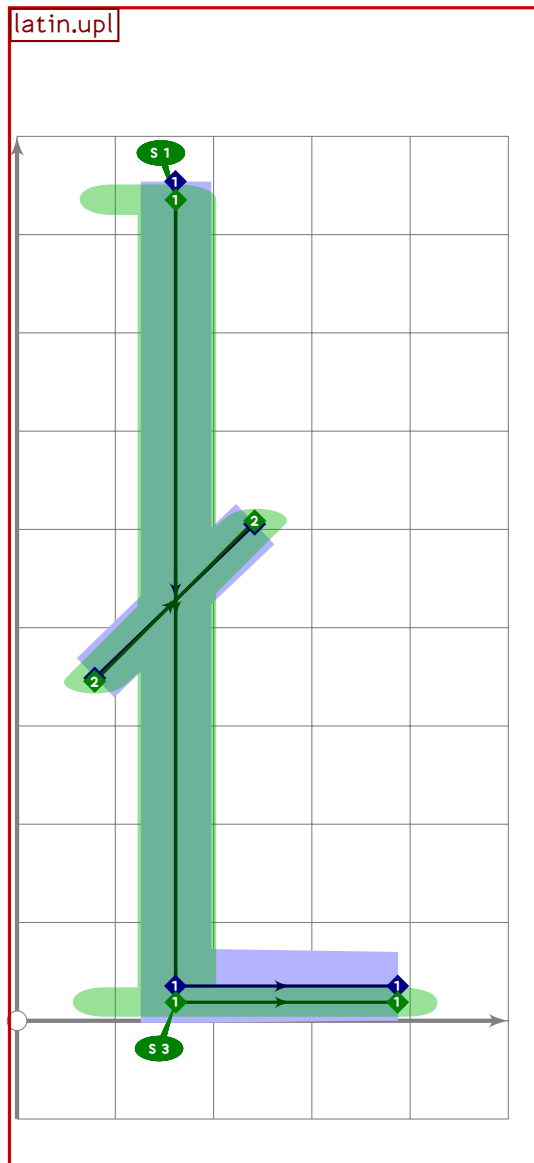
474 % L with dot
475 begintsuglyph("Ldot",63);
476 tsu_accent.dotabove(tsu_curve.latin.upl);
477 lcblob1=lcblob1
478   shifted ((xpart 0.8[lcorner bp1,rcorner bp1],vmetric(0.5))-
479           0.5[lcorner lcblob1,urcorner lcblob1]);
480 tsu_render;
481 endtsuglyph;
482

```

latin.lowl



```
483 % l with dot
484 begint Suglyph("ldot",64);
485 tsu_accent.dotabove(tsu_curve.latin.lowl);
486 bp1:=bp1 shifted (-120,0);
487 lcblob1:=lcblob1
488   shifted ((220*xpart llcorner bp1,vmetric(0.5))-
489           0.5[[lcorner lcblob1,urcorner lcblob1]]);
490 tsu_render;
491 endsuglyph;
492
```

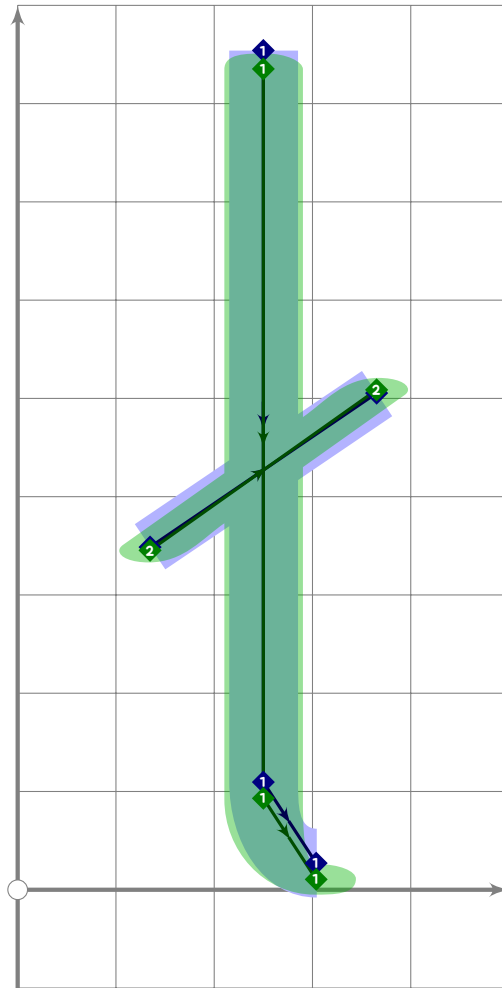


```

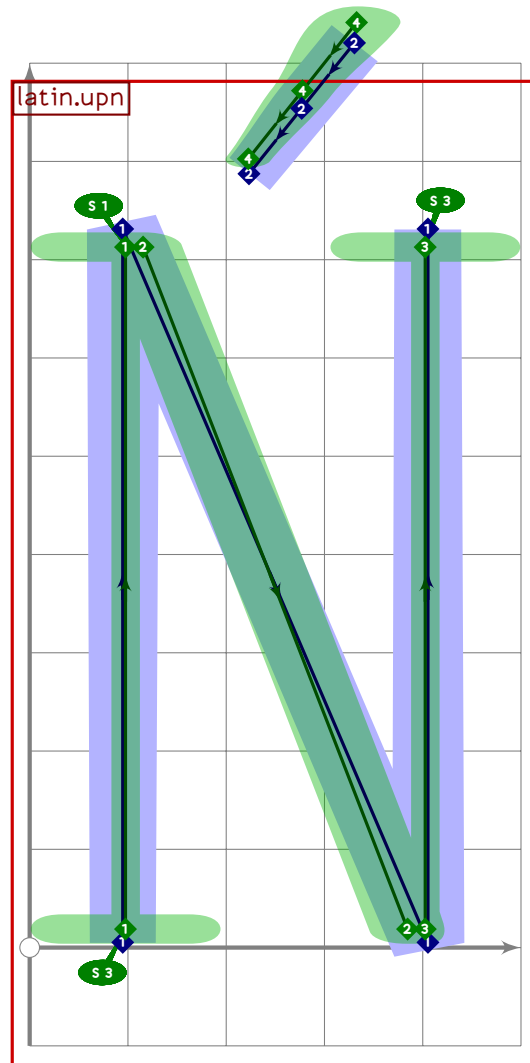
493 % L with slash
494 begintsuglyph("Lslash",65);
495 tsu_curve.latin.upl;
496 bp[sp]:=(160,vmetric(0.40))-(460,vmetric(0.60));
497 bq[sp]:=(1.6,1.6)-(1.6,1.6);
498 bo_size[sp]:=80;
499 sp:=sp*1;
500 tsu_render;
501 endsuglyph;
502

```

latin.lowl



```
503 % l with slash
504 begint Suglyph("lslash";66);
505 tsu_curve.latin.lowl;
506 bp[sp]:=(350,vmetric(0.40))-(650,vmetric(0.60));
507 bq[sp]:=(1.6,1.6)-(1.6,1.6);
508 bo_size[sp]:=80;
509 sp:=sp*1;
510 tsu_render;
511 endsuglyph;
512
```

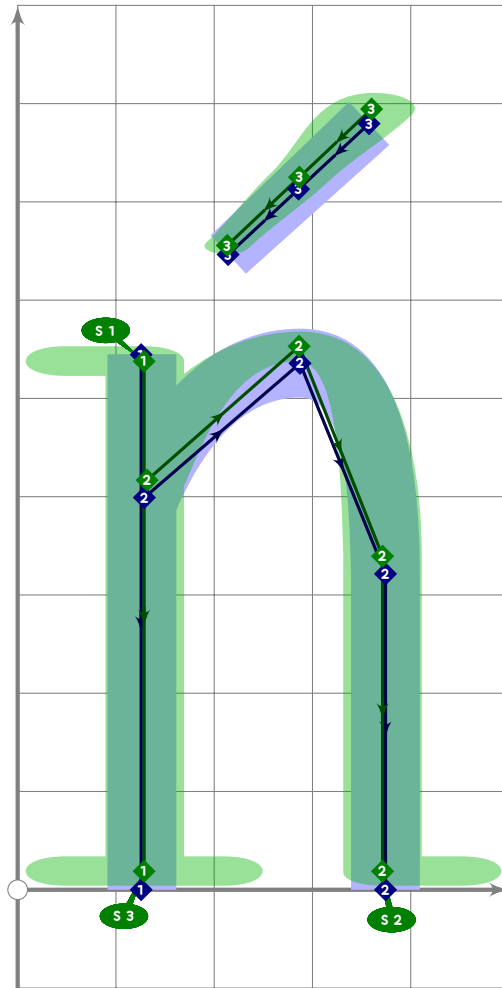


```

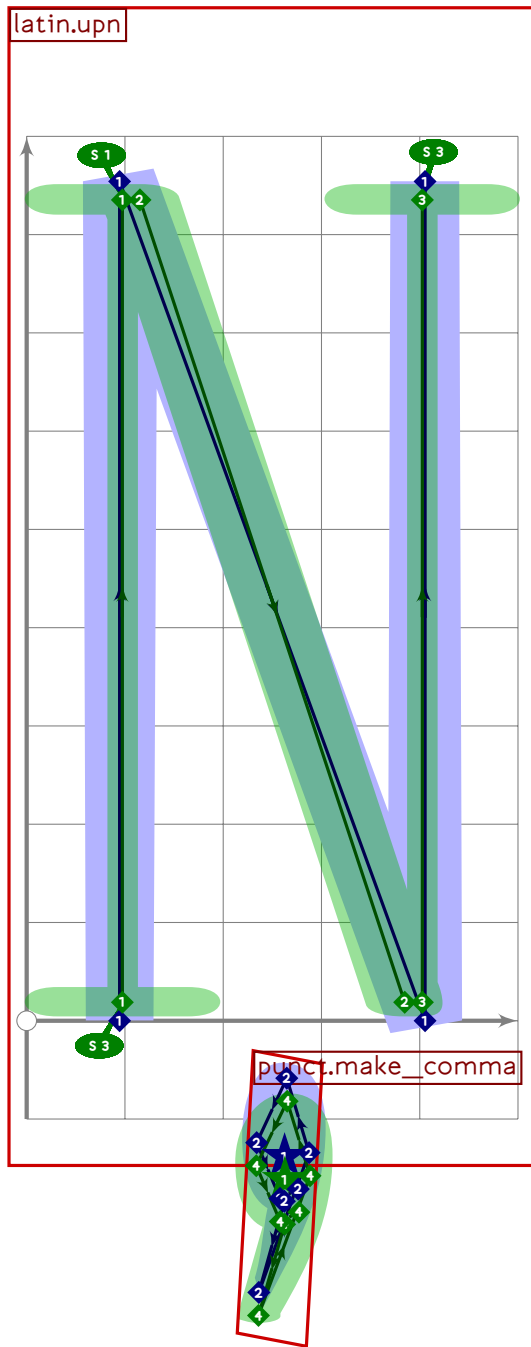
513 % N with acute
514 begintsuglyph("Nacute",67);
515   tsu_accent.capital(acute)(tsu_curve.latin.upn);
516   tsu_render;
517 endsuglyph;
518

```

latin.lown



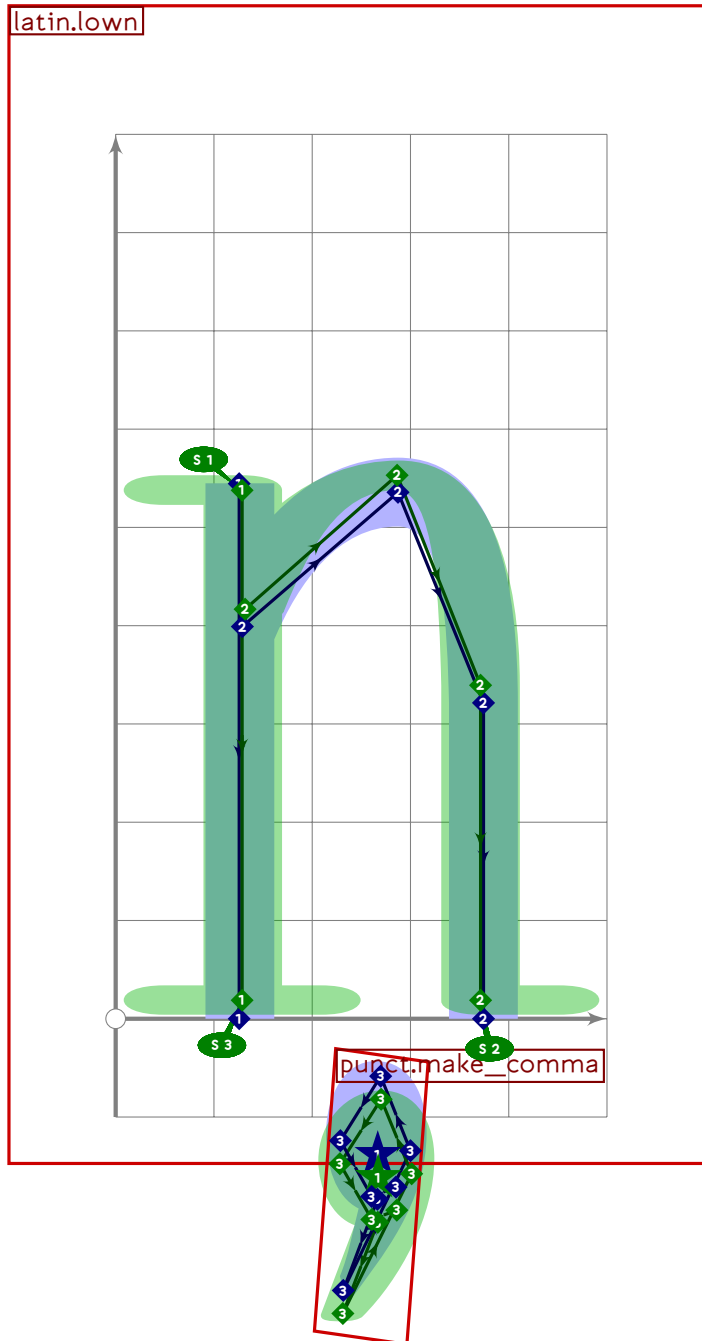
```
519 % n with acute
520 begint Suglyph("nacute",68);
521   tsu_accent.acute(tsu_curve.latin.lown);
522   tsu_render;
523 endtsuglyph;
524
```



```

525 % N with comma below
526 begintsuglyph("uni0145";69);
527 tsu_accent.commabelow(tsu_curve.latin.upn);
528 tsu_render;
529 endsuglyph;
530

```

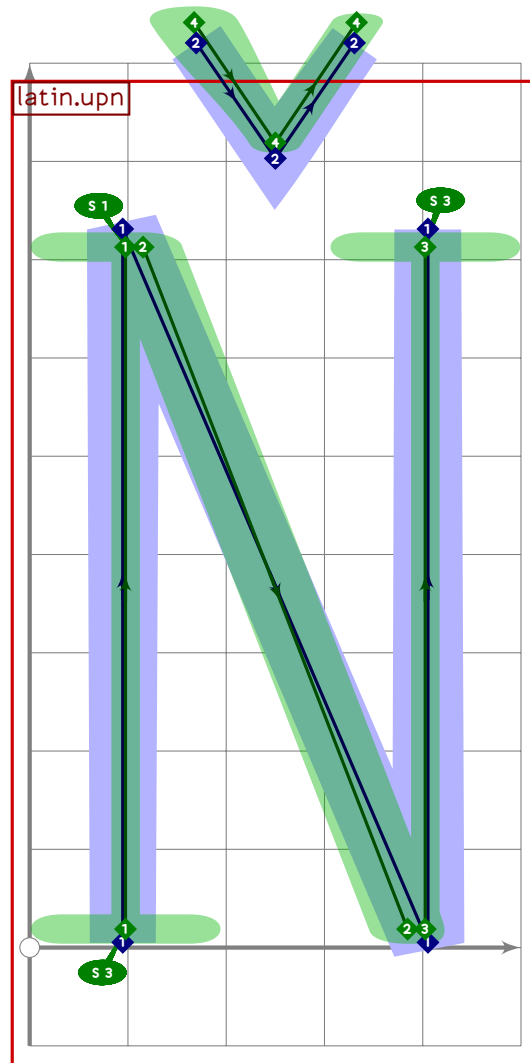


```

531 % n with comma below
532 begintsuglyph("uni0146";70);
533 tsu_accent.commabelow(tsu_curve.latin.lown);
534 tsu_render;
535 endsuglyph;
536

```



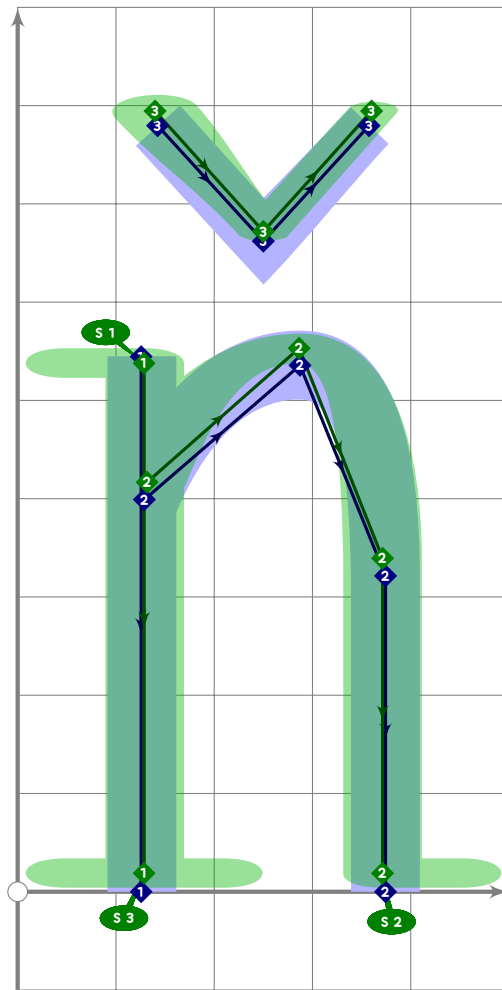


```

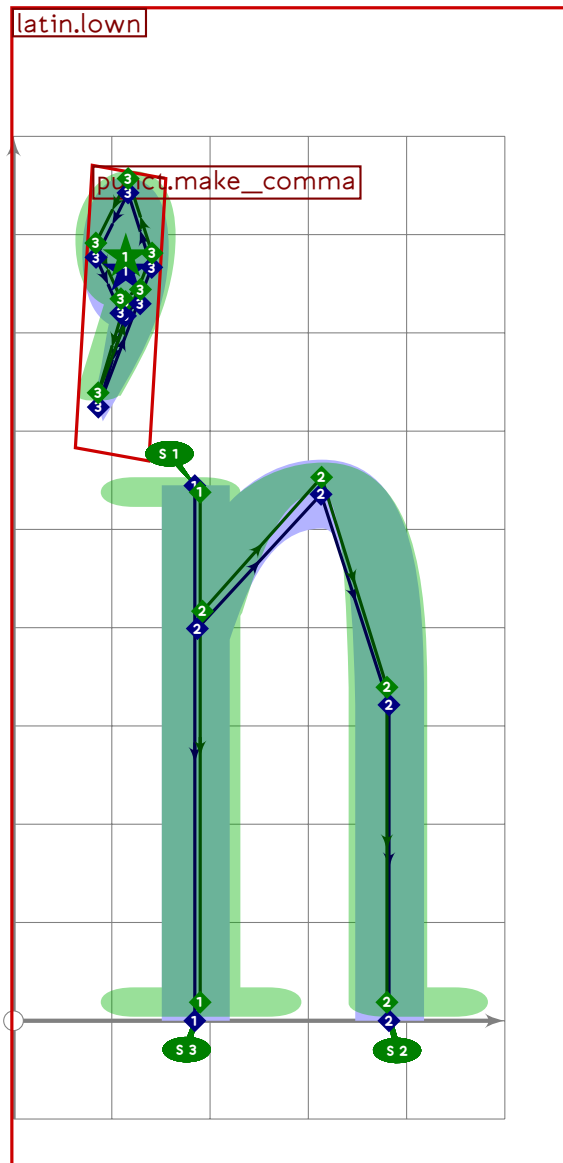
537 % N with caron
538 begintsuglyph("Ncaron";71);
539   tsu_accent.capital(caron)(tsu_curve.latin.upn);
540   tsu_render;
541 endsuglyph;
542

```

latin.lown



```
543 % n with caron
544 begintsuglyph("ncaron";72);
545 tsu_accent.caron(tsu_curve.latin.lown);
546 tsu_render;
547 endtsuglyph;
548
```



```

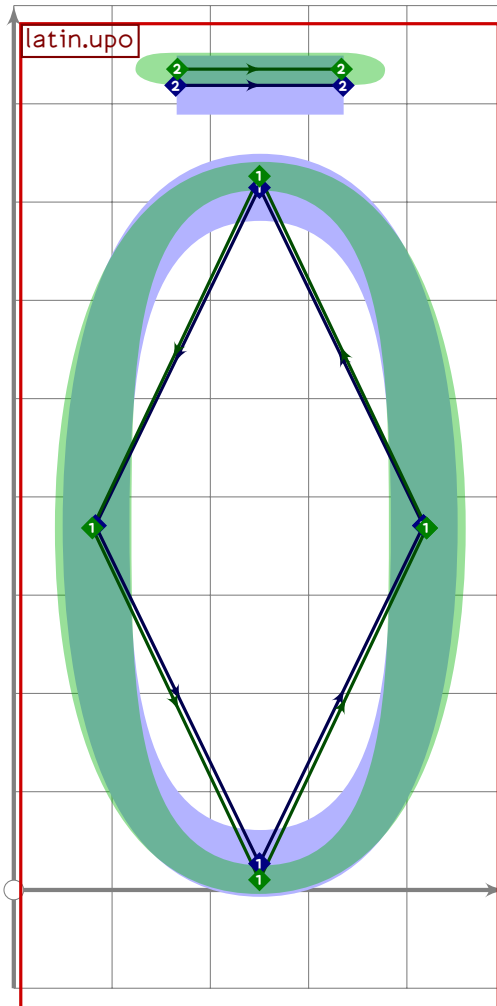
549 % n with apostrophe before
550 begintsuglyph("napostrophe",73);
551 tsu_xform(identity shifted (30,0))(tsu_curve.latin.lown);
552 tsu_curve.punct.make_comma((230,vmetric(0.94)),0);
553 tsu_render;
554 endtsuglyph;
555
556 % uppercase Eng
557 begintsuglyph("Eng",74);
558 tsu_curve.latin.upeng;
559 tsu_render;
560 endtsuglyph;
561
562 % lowercase eng
563 begintsuglyph("eng",75);
564 tsu_curve.latin.loweng;

```

[see page 170]

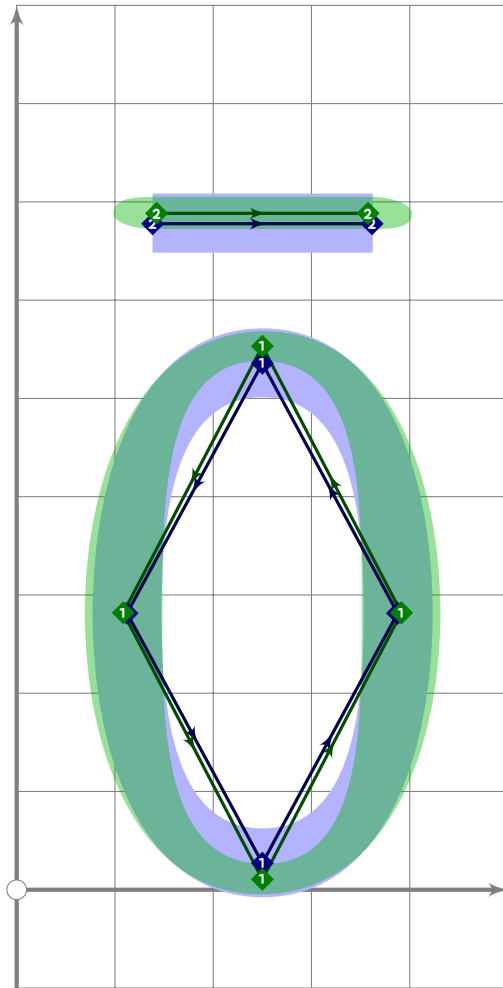
[see page 209]

```
565 tsu_render;  
566 endsuglyph;  
567
```

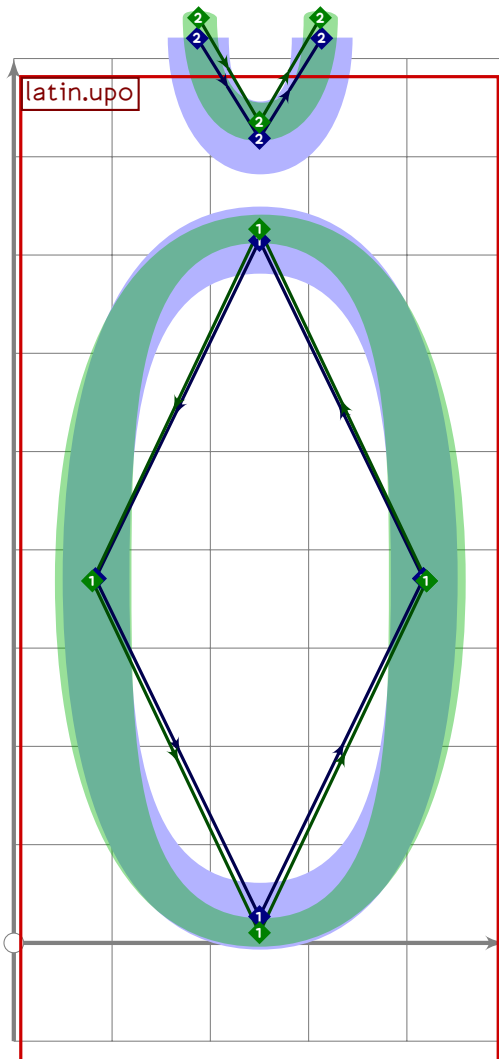


```
568 % O with macron  
569 beginsuglyph("Omacron";76);  
570 tsu_accent.capital(macron)(tsu_curve.latin.upo);  
571 tsu_render;  
572 endsuglyph;  
573
```

latin.lowo



```
574 % o with macron  
575 begintsuglyph("omacron";77);  
576 tsu_accent.macron(tsu_curve.latin.lowo);  
577 tsu_render;  
578 endsuglyph;  
579
```

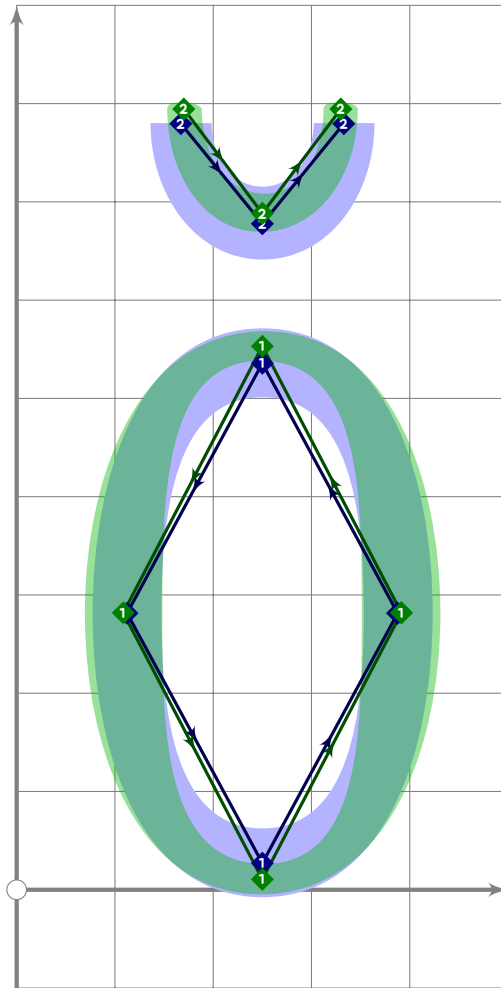


```

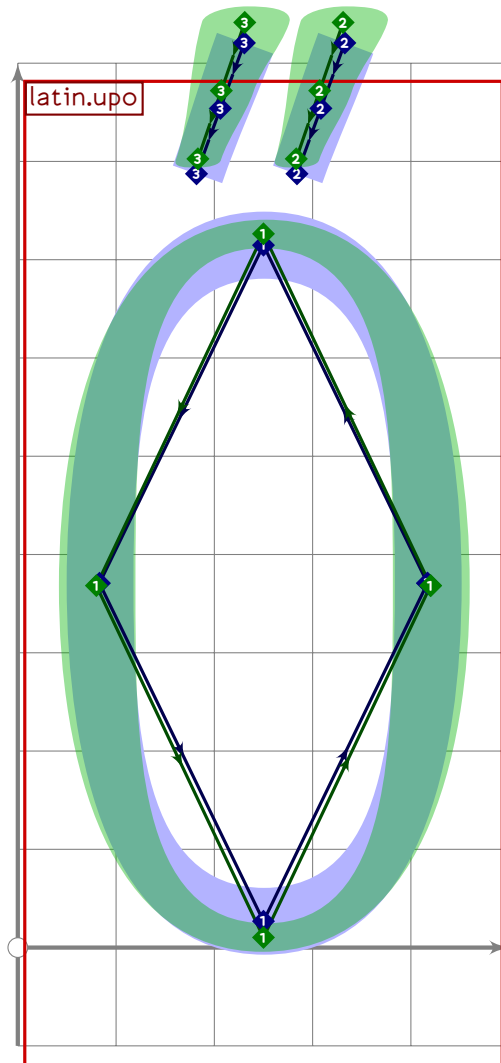
580 % O with breve
581 begintsuglyph("Obreve";78);
582 tsu_accent.capital(breve)(tsu_curve.latin.upo);
583 tsu_render;
584 endsuglyph;
585

```

latin.low



```
586 % o with breve
587 begint Suglyph("obreve";79);
588   tsu_accent.breve(tsu_curve.latin.low);
589   tsu_render;
590 endsuglyph;
591
```

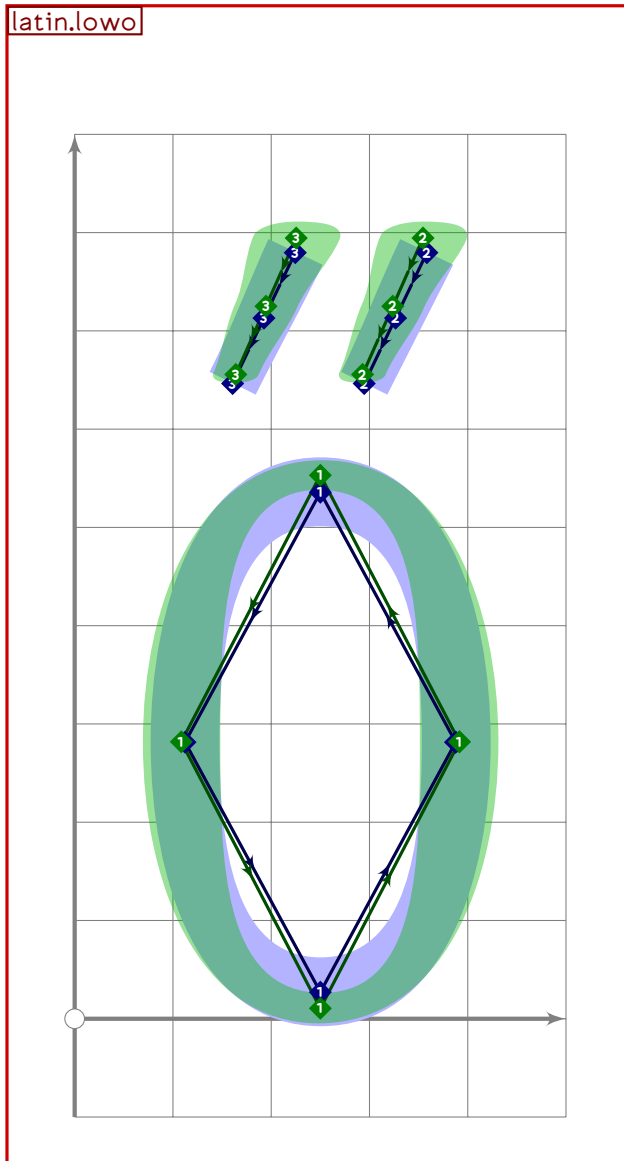


```

592 % O with Hunarian umlaut
593 begintsuglyph("Ohungarumlaut";80);
594 tsu_accent.capital(hungarian_umlaut)(tsu_curve.latin.upo);
595 tsu_render;
596 endsuglyph;
597

```





```

598 % o with hungarian umlaut
599 begintsuglyph("ohungarumlaut",81);
600 tsu_accent.hungarian_umlaut(tsu_curve.latin.lowo);
601 tsu_render;
602 endsuglyph;
603
604 % OE ligature
605 begintsuglyph("OE",82);
606 tsu_curve.latin.upoe;
607 tsu_render;
608 endsuglyph;
609
610 % oe ligature
611 begintsuglyph("oe",83);
612 tsu_curve.latin.lowoe;
613 tsu_render;

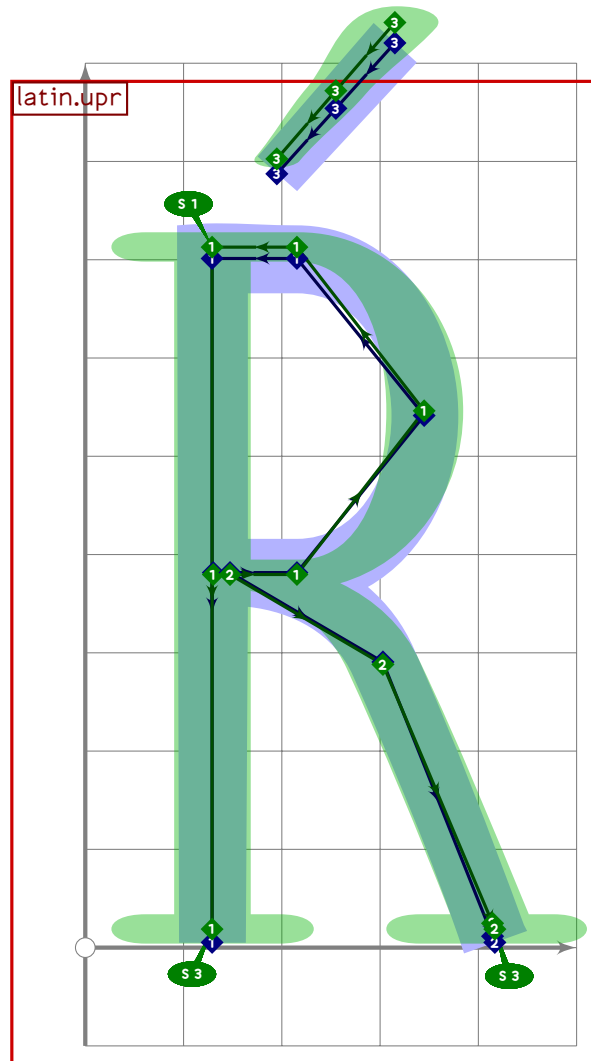
```

[see page 172]

[see page 211]

614 endsuglyph;

615



616 % R with acute

617 `begintsuglyph("Racute";84);`

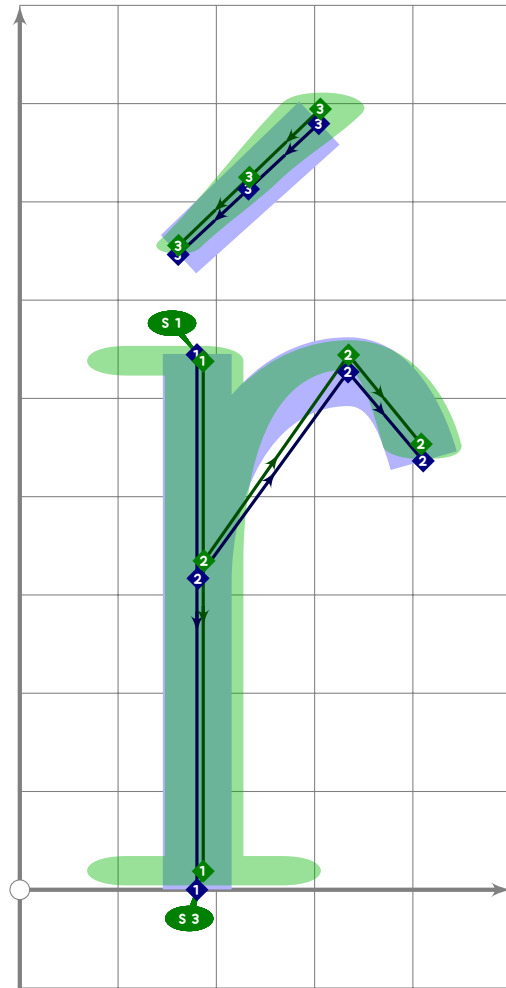
618 `tsu_accent.capital(acute)(tsu_curve.latin.upr);`

619 `tsu_render;`

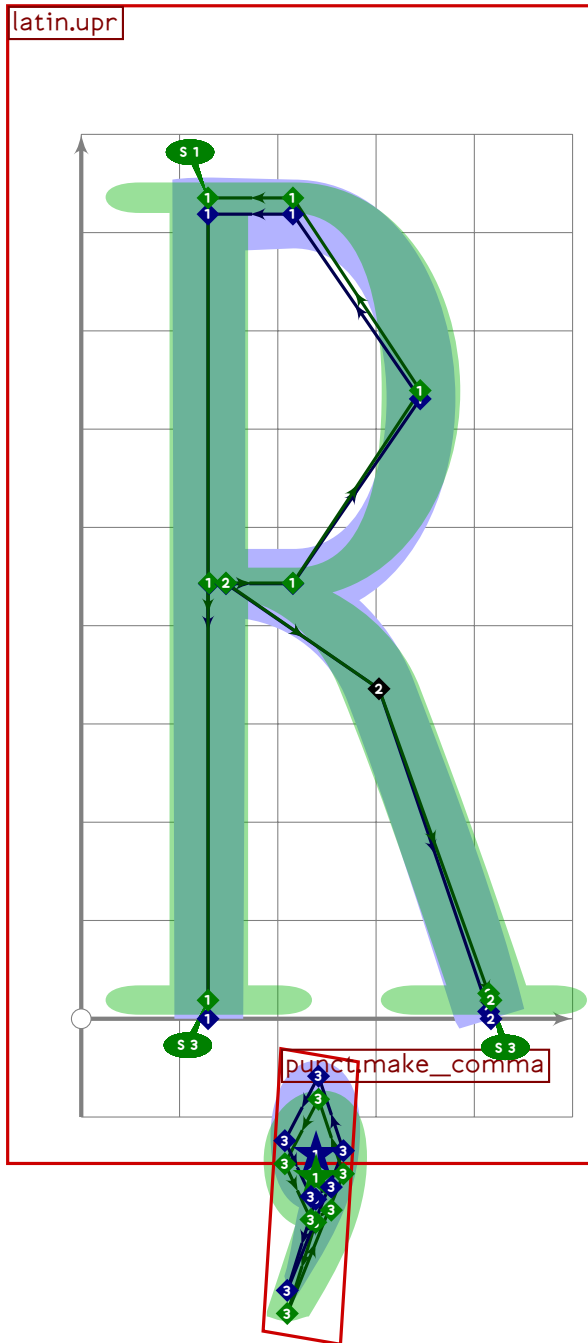
620 `endsuglyph;`

621

latin.lowr



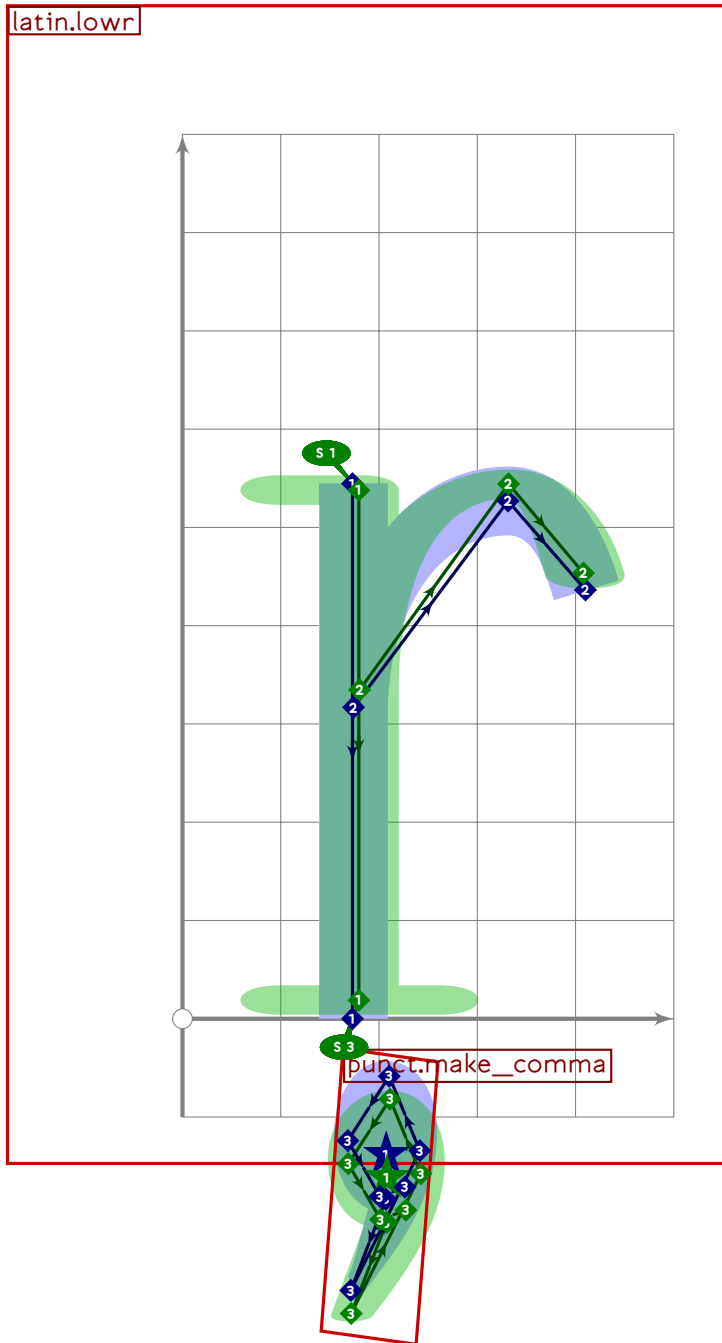
```
622 % r with acute
623 begint Suglyph("racute",85);
624   tsu_accent.acute(tsu_curve.latin.lowr);
625   tsu_render;
626 endtsuglyph;
627
```



```

628 % R with comma below
629 begintsuglyph("uni0156";86);
630 tsu_accent.commabelow(tsu_curve.latin.upr);
631 tsu_render;
632 endsuglyph;
633

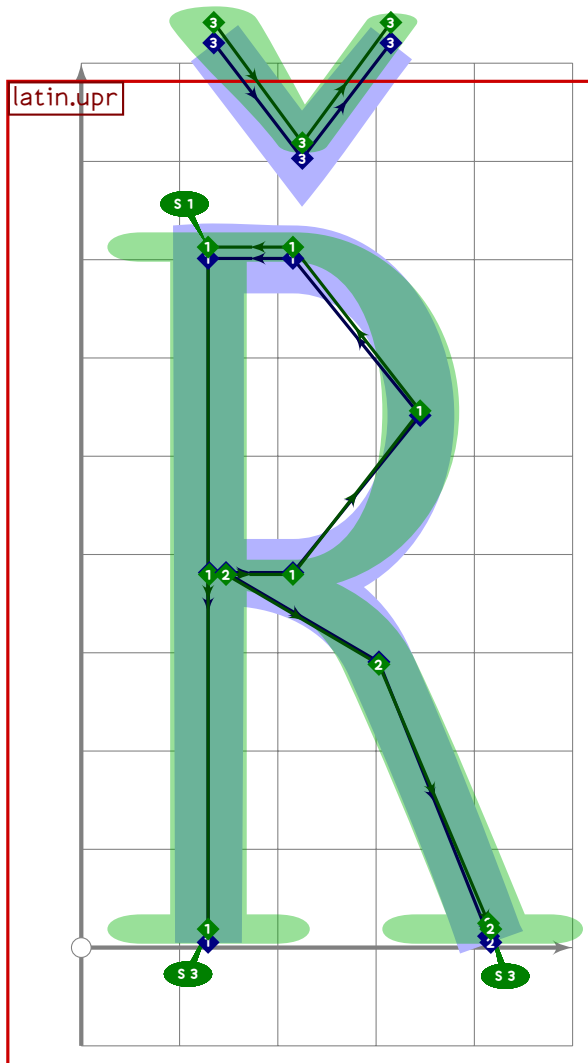
```



```

634 % r with comma below
635 begintsuglyph("uni0157",87);
636 tsu_accent.commabelow(tsu_curve.latin.lowr);
637 tsu_render;
638 endsuglyph;
639

```

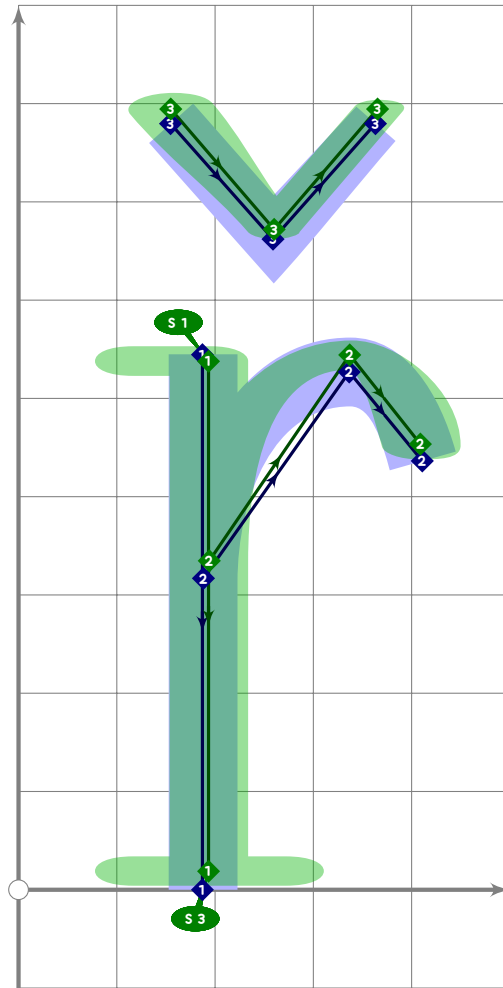


```

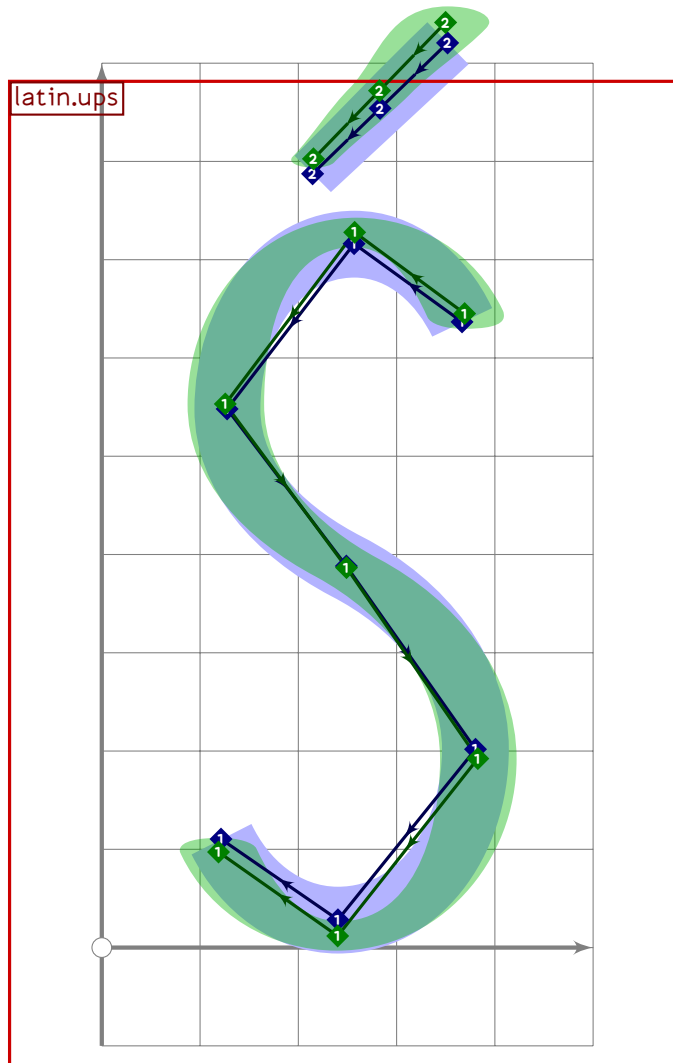
640 % R with caron
641 begintsuglyph("Rcaron";88);
642   tsu_accent.capital(caron)(tsu_curve.latin.upr);
643   tsu_render;
644 endsuglyph;
645

```

latin.lowr



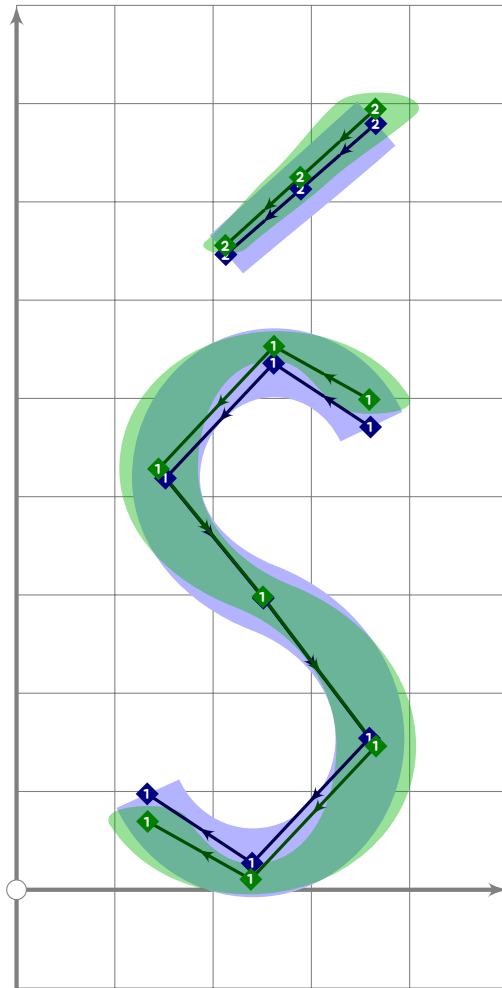
```
646 % r with caron
647 begint Suglyph("rcaron",89);
648   tsu_accent.caron(tsu_curve.latin.lowr);
649   bp[sp-1]:=bp[sp-1] shifted (80,0);
650   tsu_render;
651   endtsuglyph;
652
```



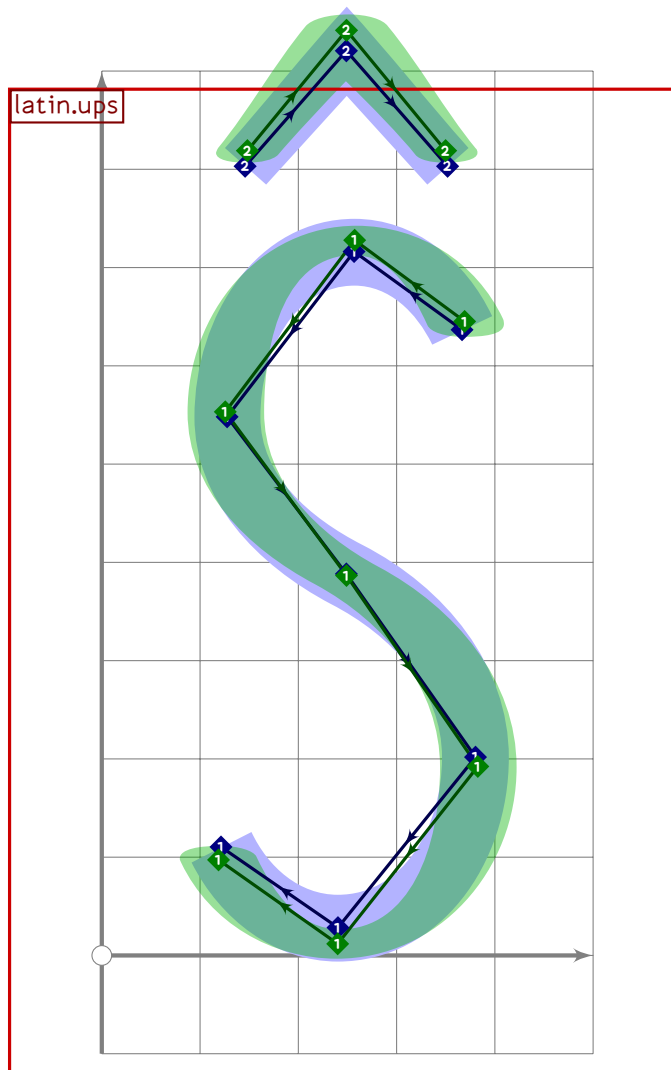
```
653 % S with acute
654 begintsuglyph("Sacute";90);
655   tsu_accent.capital(acute)(tsu_curve.latin.ups);
656   tsu_render;
657 endsuglyph;
658
```



latin.lows



```
659 % s with acute
660 begint Suglyph("sacute";91);
661   tsu_accent.acute(tsu_curve.latin.lows);
662   tsu_render;
663 endsuglyph;
664
```

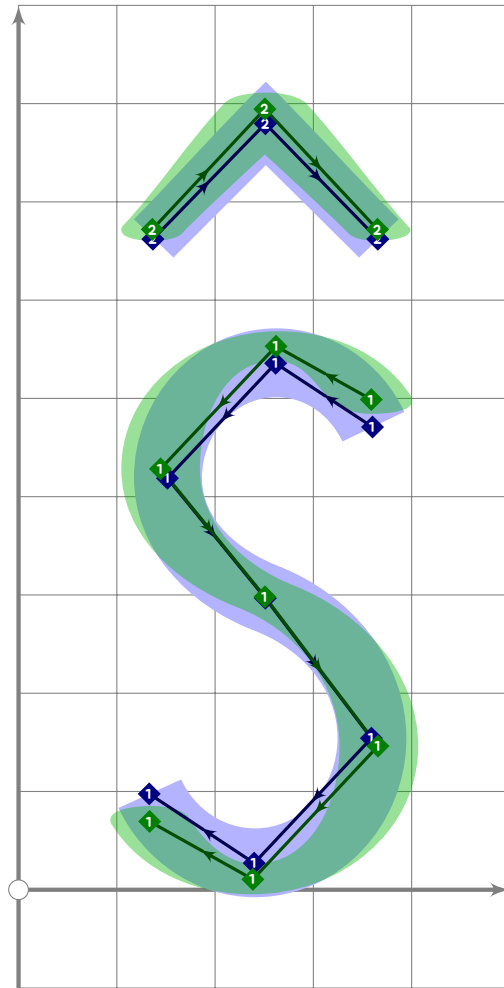


```

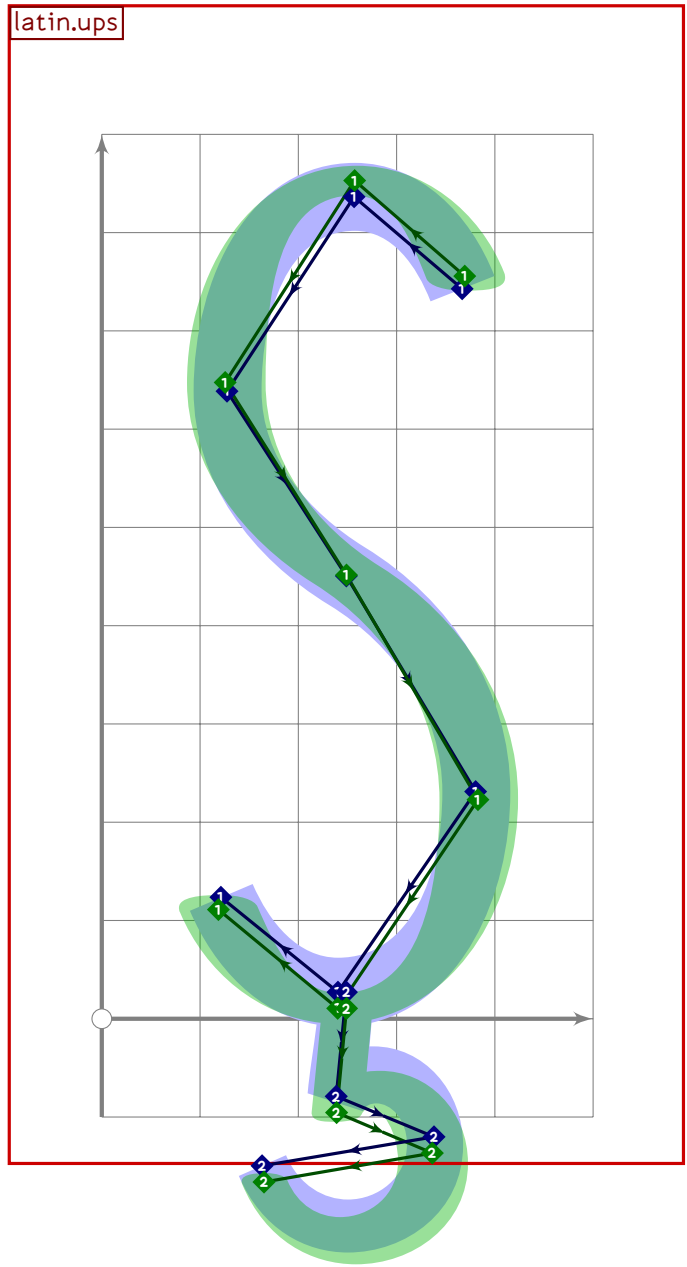
665 % S with circumflex
666 begintsuglyph("Scircumflex";92);
667 tsu_accent.capital(circumflex)(tsu_curve.latin.ups);
668 tsu_render;
669 endtsuglyph;
670

```

latin.lows

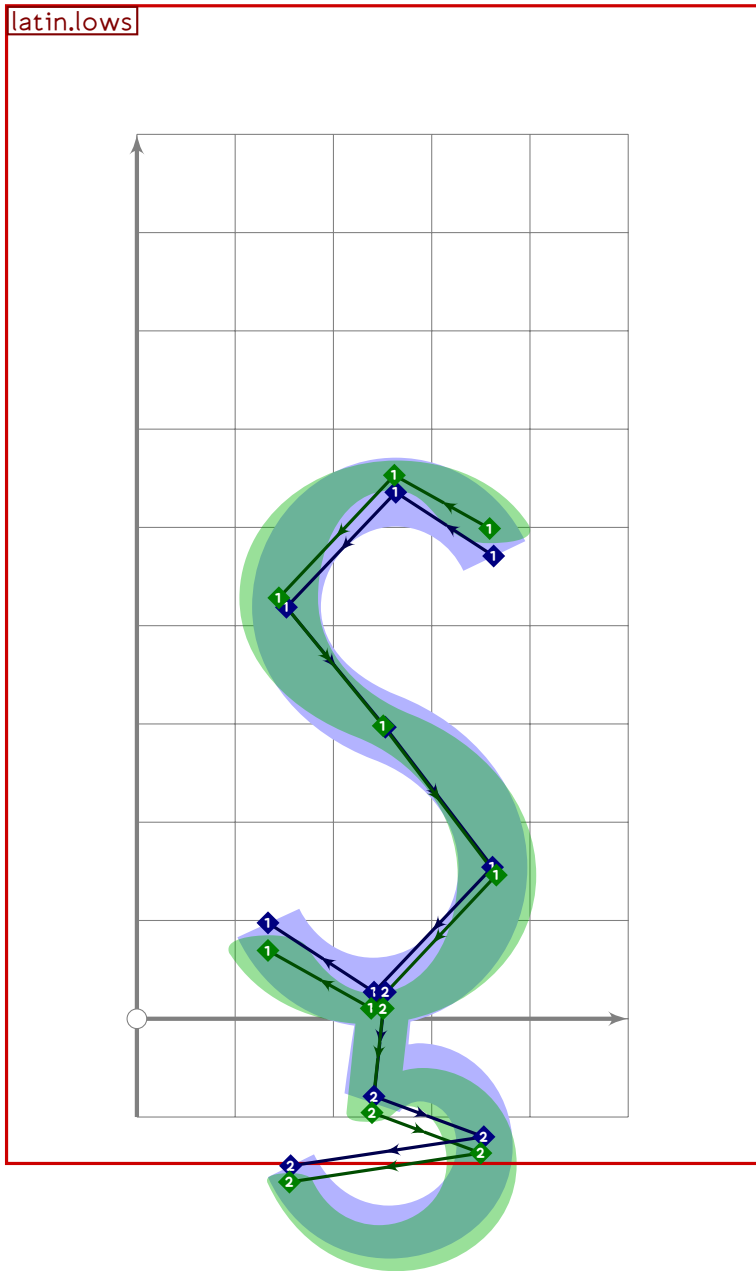


```
671 % s with circumflex
672 begint Suglyph("scircumflex";93);
673   tsu_accent.circumflex(tsu_curve.latin.lows);
674   tsu_render;
675 endtsuglyph;
676
```

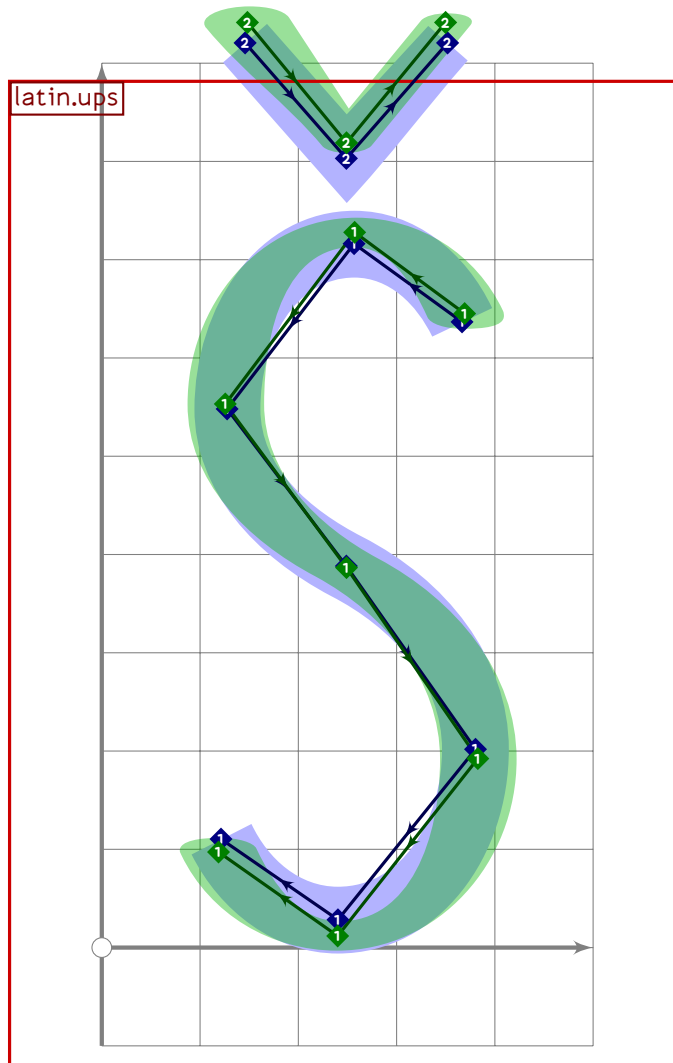


```
677 % S with cedilla
678 begintsuglyph("Scedilla";94);
679 tsu_accent.cedilla(tsu_curve.latin.ups);
680 tsu_render;
681 endtsuglyph;
682
```

latin.lows



```
683 % s with cedilla
684 begintsuglyph("scedilla";95);
685   tsu_accent.cedilla(tsu_curve.latin.lows);
686   tsu_render;
687 endsuglyph;
688
```

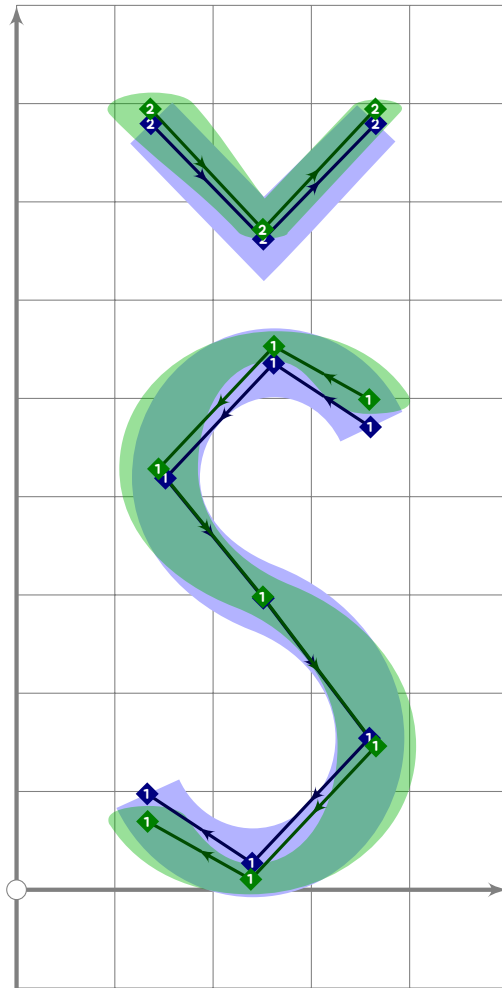


```

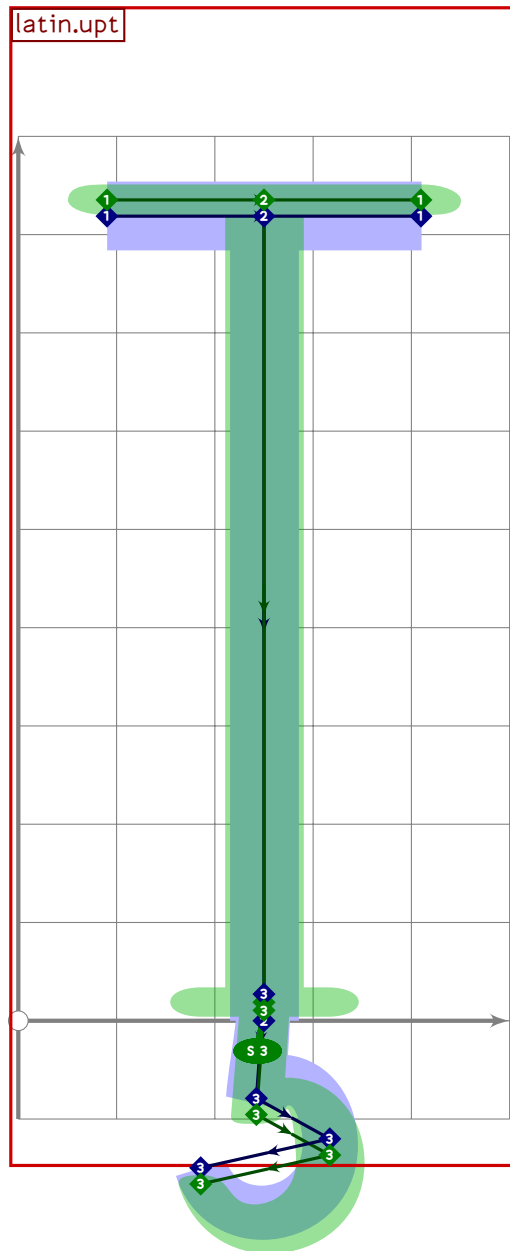
689 % S with caron
690 begintsuglyph("Scaron";96);
691   tsu_accent.capital(caron)(tsu_curve.latin.ups);
692   tsu_render;
693 endsuglyph;
694

```

latin.lows



```
695 % s with caron
696 begint Suglyph("scaron";97);
697 tsu_accent.caron(tsu_curve.latin.lows);
698 tsu_render;
699 endtsuglyph;
700
```

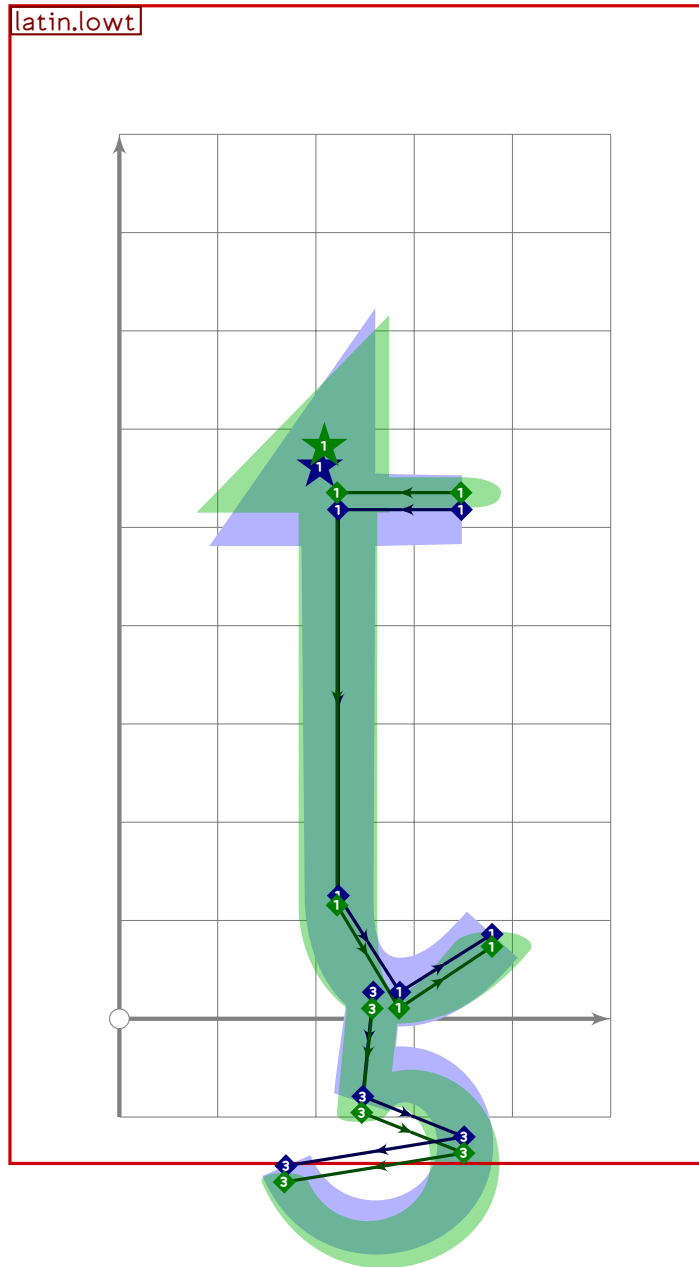


```

701 % T with cedilla [sic]
702 begintsuglyph("uni0162";98);
703   tsu_accent.cedilla(tsu_curve.latin.upt);
704   tsu_render;
705 endsuglyph;
706

```

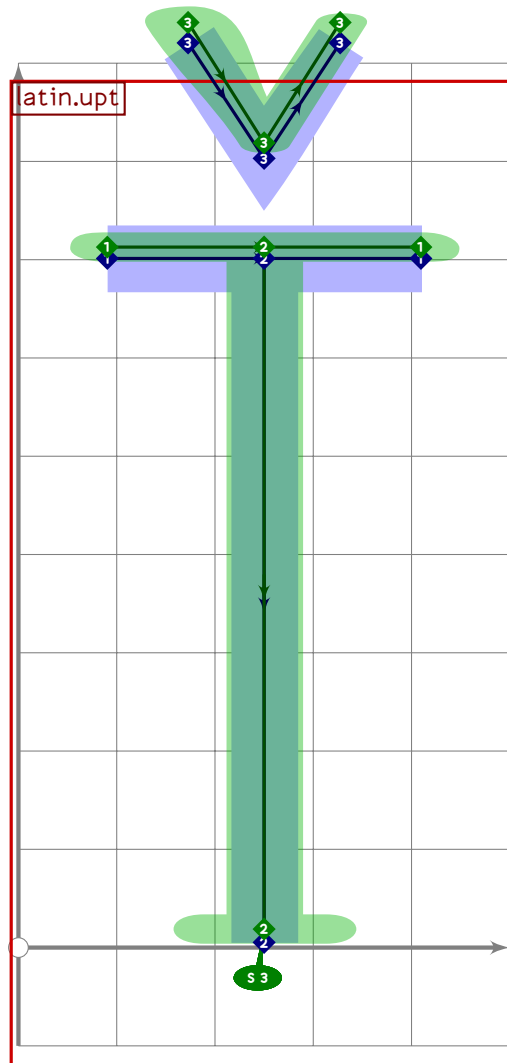




```

707 % t with cedilla [sic]
708 begint Suglyph("uni0163";99);
709 tsu_accent.cedilla(tsu_curve.latin.lowt);
710 bp[sp-1]:=bp[sp-1] shifted (20,0);
711 tsu_render;
712 endtsuglyph;
713

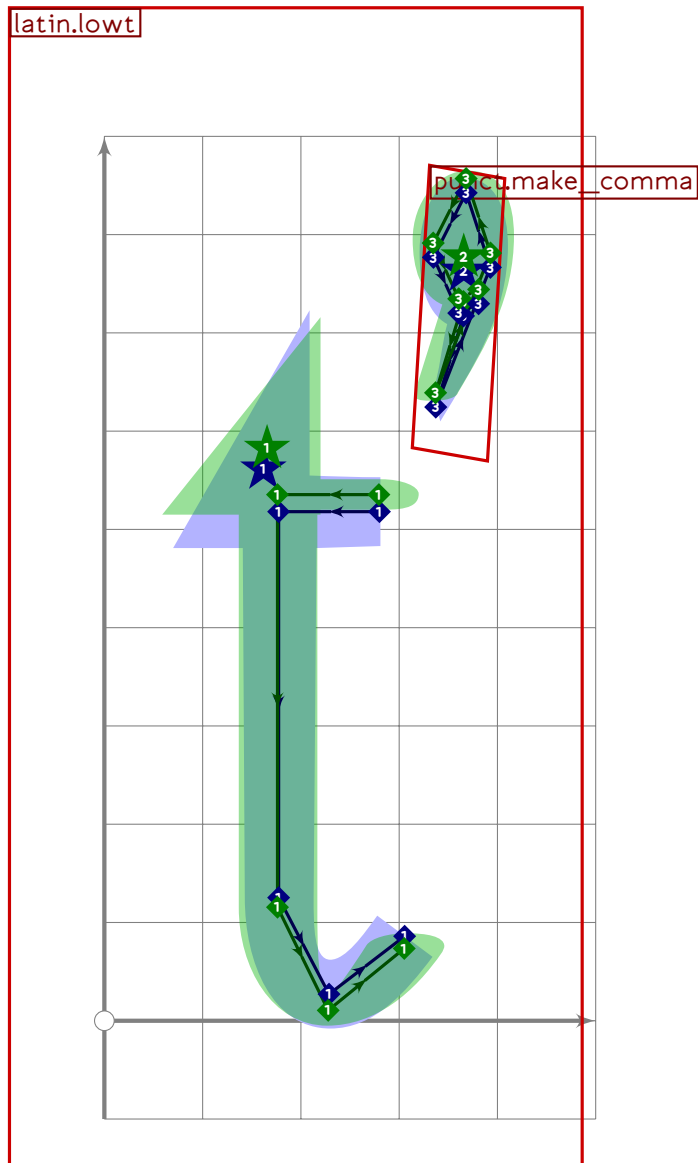
```



```

714 % T with caron
715 begintsuglyph("Tcaron";100);
716   tsu_accent.capital(caron)(tsu_curve.latin.upt);
717   tsu_render;
718 endsuglyph;
719

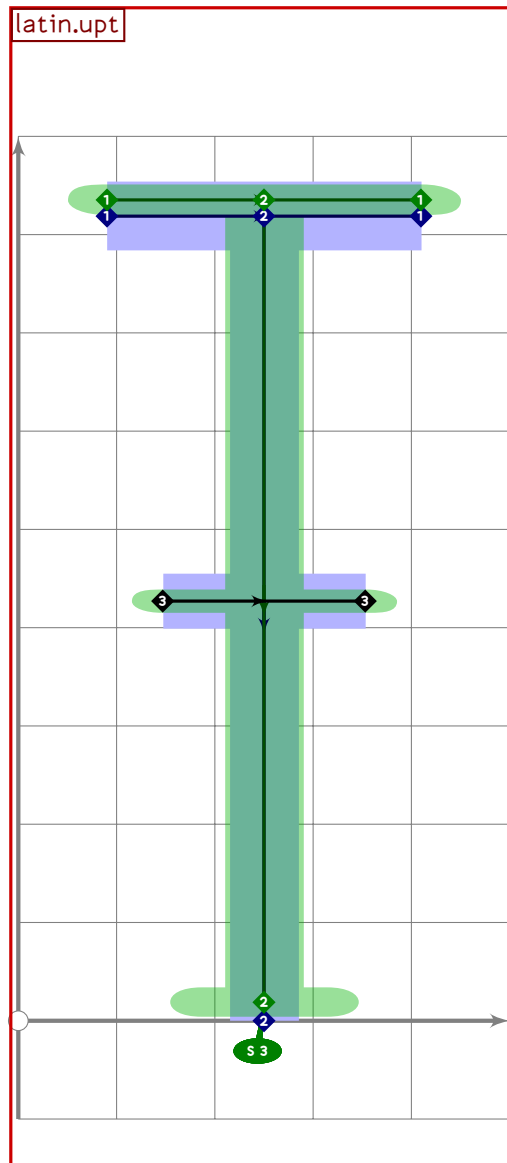
```



```

720 % t with apostrophe caron
721 begintsuglyph("tcaron",101);
722 tsu_accent.caron_apostrophe(-130)(tsu_curve.latin.lowt);
723 tsu_render;
724 endtsuglyph;
725

```

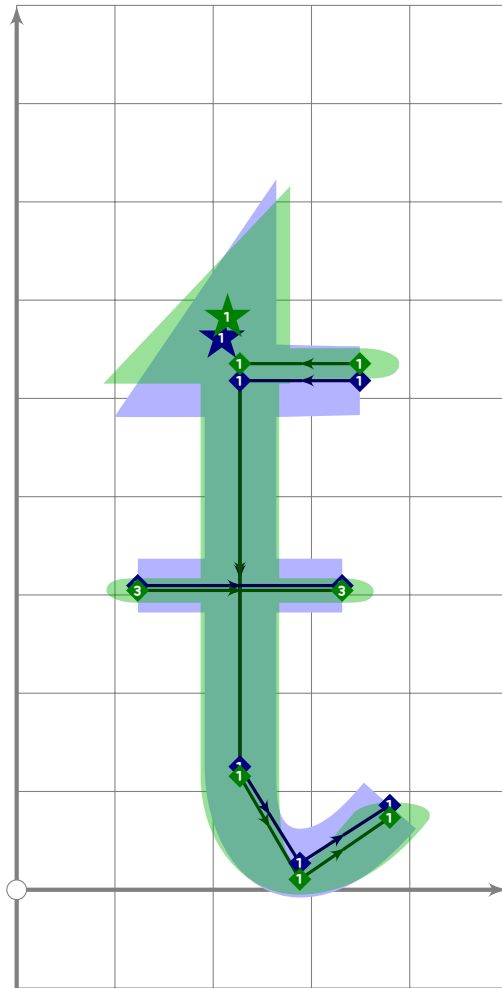


```

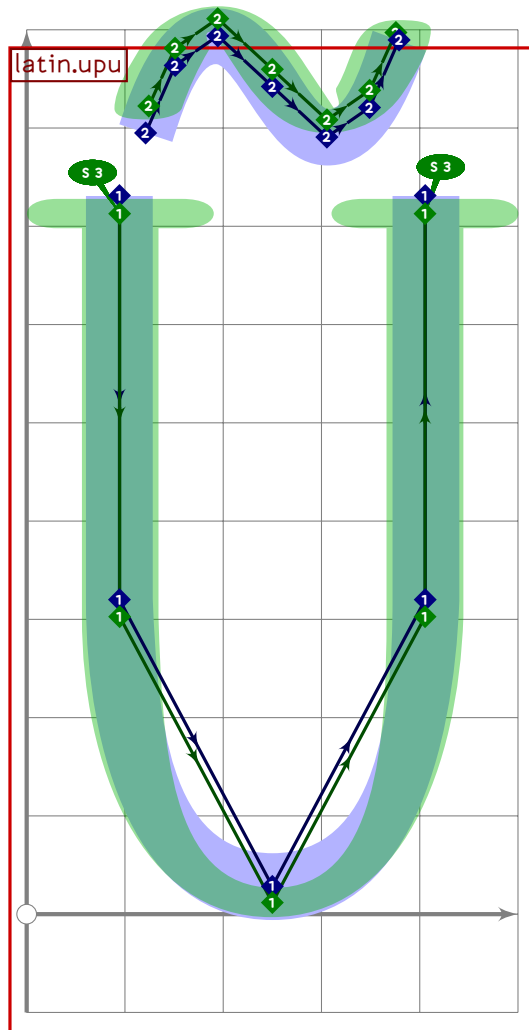
726 % T with bar
727 begintsuglyph("Tbar";102);
728 tsu_curve.latin.upt;
729 bp[sp]:=(300,vmetric(0.5))-(700,vmetric(0.5));
730 bq[sp]:=(1.6,1.6)-(1.6,1.6);
731 bo_size[sp]:=80;
732 sp:=sp*1;
733 tsu_render;
734 endsuglyph;
735

```

latin.lowt



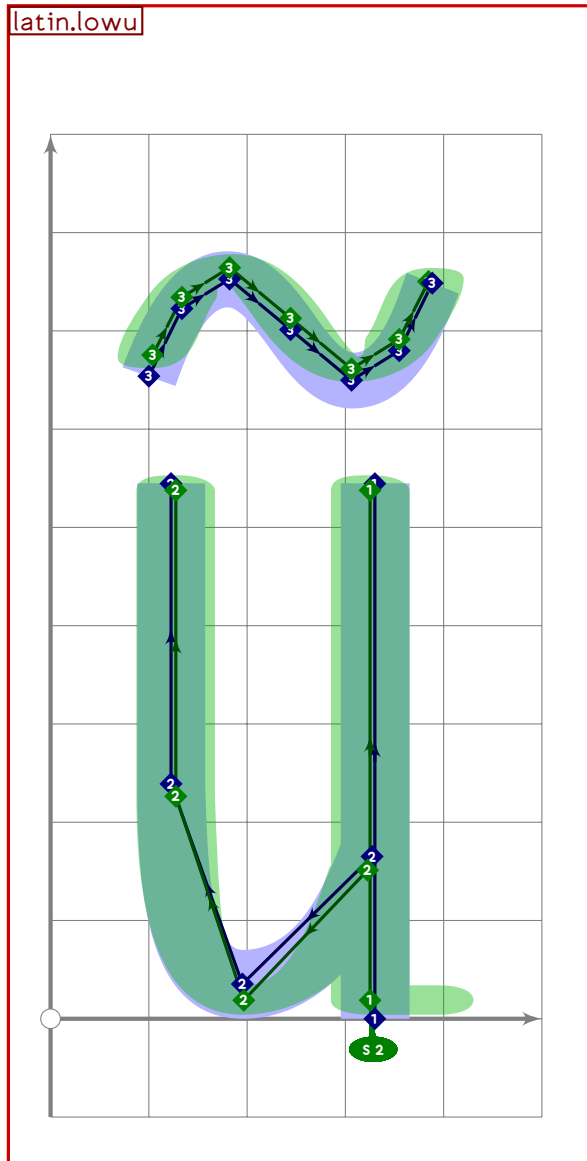
```
736 % t with bar
737 begint Suglyph("tbar",103);
738   tsu_curve.latin.lowt;
739   bp[sp]:=(320,vmetric(0.35))-(620,vmetric(0.35));
740   bq[sp]:=(1.6,1.6)-(1.6,1.6);
741   bo_size[sp]:=80;
742   sp:=sp*1;
743   tsu_render;
744   endtsuglyph;
745
```



```

746 % U with tilde
747 beginsuglyph("Utilde";104);
748   tsu_accent.capital(tilde)(tsu_curve.latin.upu);
749   tsu_render;
750 endsuglyph;
751

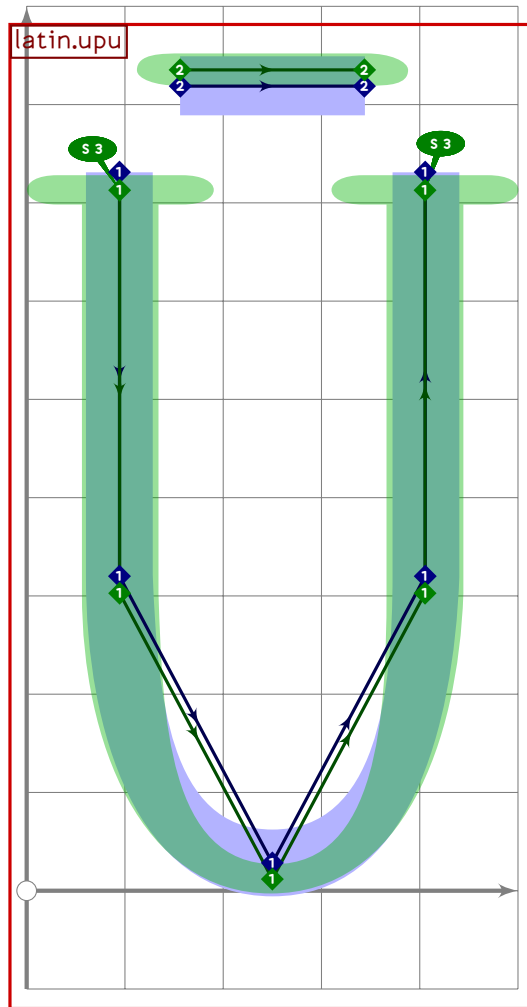
```



```

752 % u with tilde
753 begintsuglyph("utilde",105);
754 tsu_accent.tilde(tsu_curve.latin.lowu);
755 bp[sp-1]:=bp[sp-1] shifted (-20,0);
756 tsu_render;
757 endsuglyph;
758

```



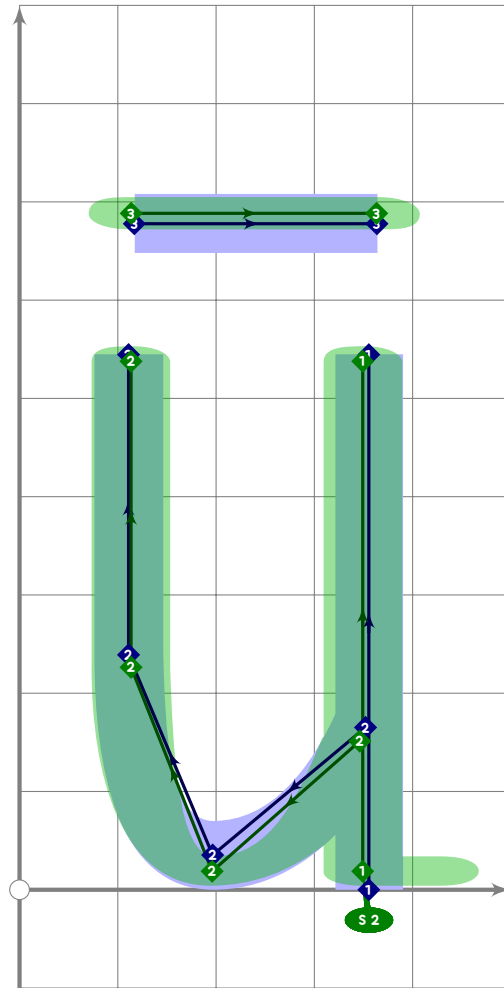
```

759 % U with macron
760 begintsuglyph("Umacron";106);
761 tsu_accent.capital(macron)(tsu_curve.latin.upu);
762 tsu_render;
763 endtsuglyph;
764

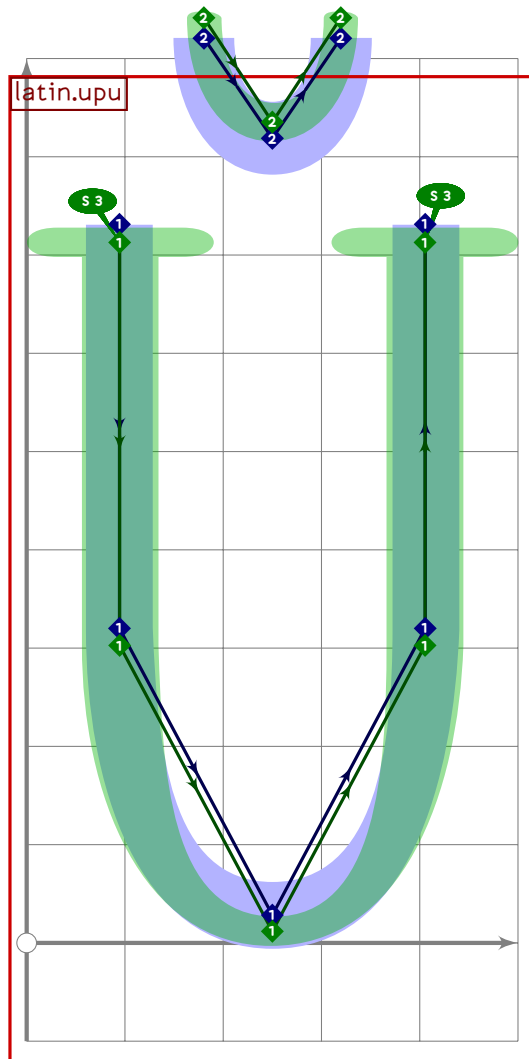
```



latin.lowu



```
765 % u with macron
766 begintsuglyph("umacron";107);
767 tsu_accent.macron(tsu_curve.latin.lowu);
768 bp[sp-1]:=bp[sp-1] shifted (-40,0);
769 tsu_render;
770 endtsuglyph;
771
```

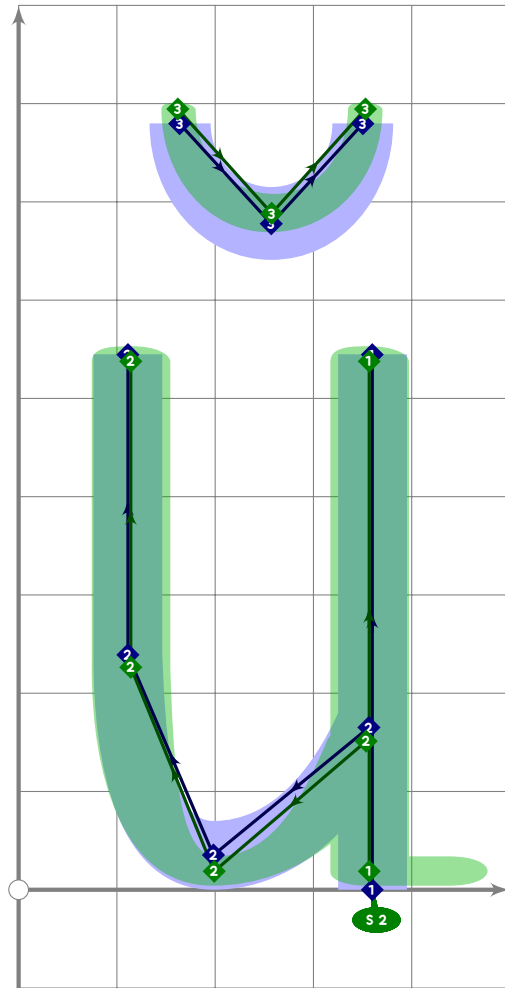


```

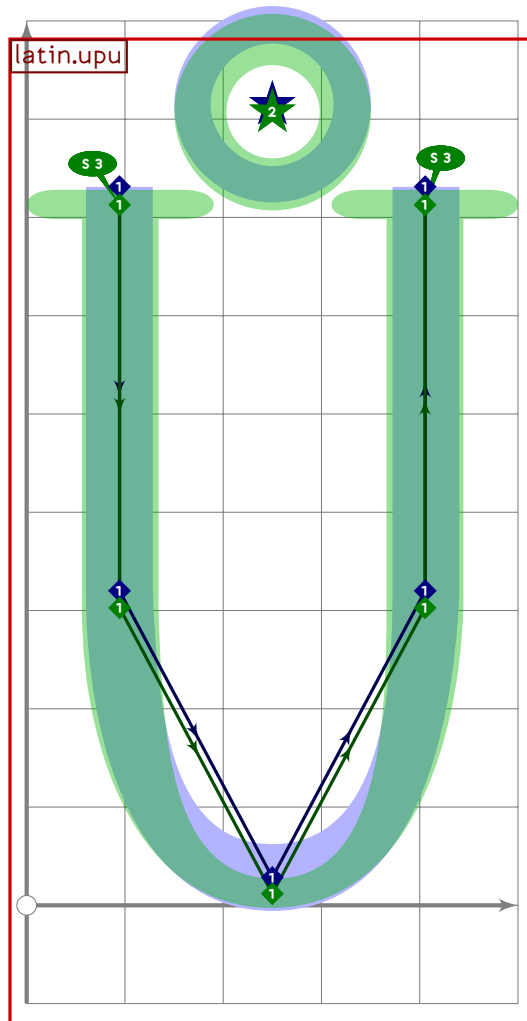
772 % U with breve
773 begintsuglyph("Ubreve";108);
774 tsu_accent.capital(breve)(tsu_curve.latin.upu);
775 tsu_render;
776 endsuglyph;
777

```

latin.lowu

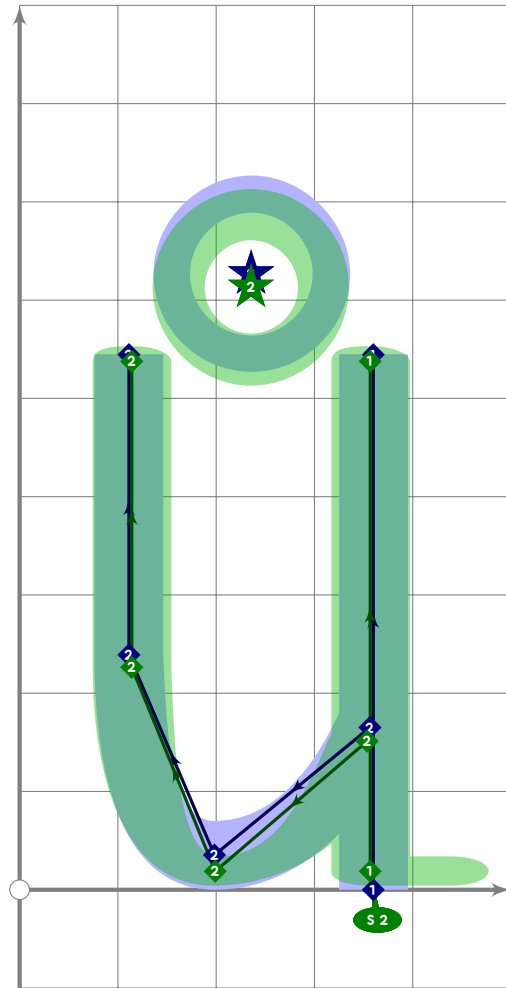


```
778 % u with breve
779 begint Suglyph("ubreve",109);
780 tsu_accent.breve(tsu_curve.latin.lowu);
781 bp[sp-1]:=bp[sp-1] shifted (-20,0);
782 tsu_render;
783 endtsuglyph;
784
```

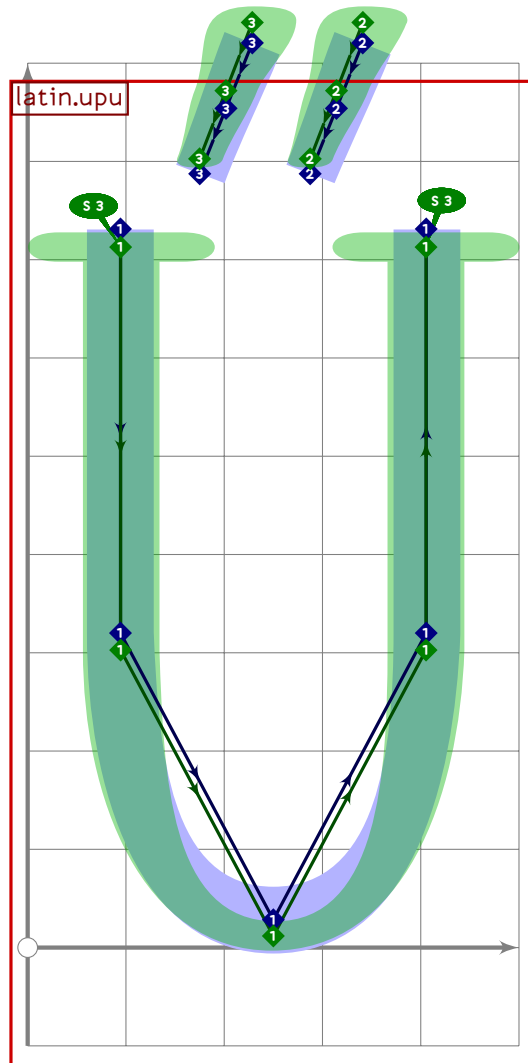


```
785 % U with ring above
786 begintsuglyph("Uring",110);
787 tsu_accent.capital(ringabove)(tsu_curve.latin.upu);
788 tsu_render;
789 endtsuglyph;
790
```

latin.lowu



```
791 % u with ring above
792 beginsuglyph("uring";111);
793 tsu_accent.ringabove(tsu_curve.latin.lowu);
794 lcblob1=lcblob1 shifted (-50;40);
795 lcblob2=lcblob2 shifted (-50;40);
796 tsu_render;
797 endsuglyph;
798
```

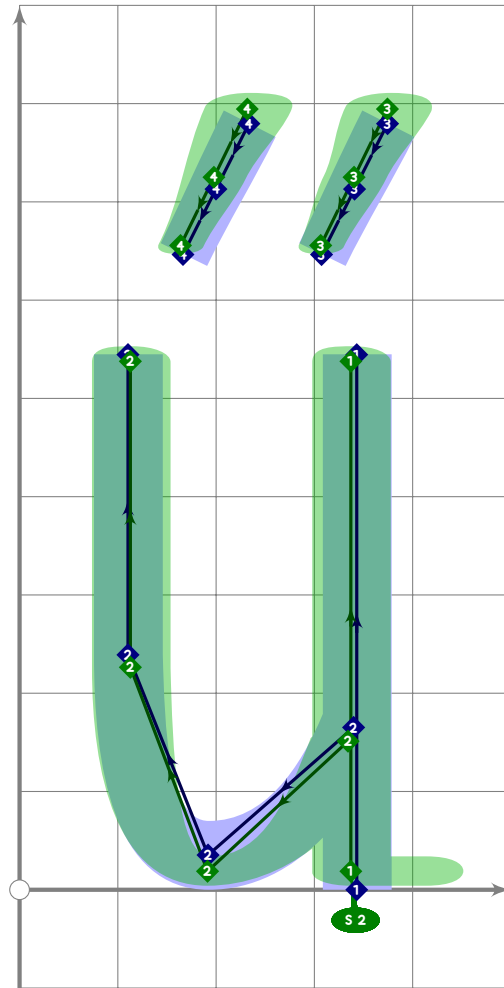


```

799 % U with Hungarian umlaut
800 begintsuglyph("Uhungarumlaut";112);
801 tsu_accent.capital(hungarian_umlaut)(tsu_curve.latin.upu);
802 tsu_render;
803 endsuglyph;
804

```

latin.lowu



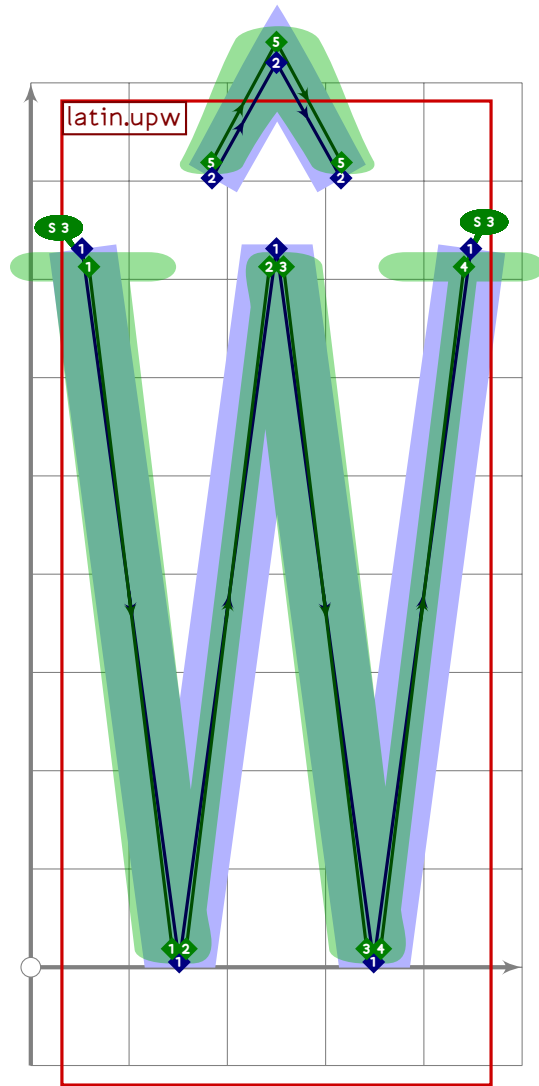
```
805 % u with Hungarian umlaut
806 begintsuglyph("uhungarumlaut";113);
807 tsu_accent.hungarian_umlaut(tsu_curve.latin.lowu);
808 tsu_render;
809 endtsuglyph;
810
811 % U with ogonek
812 begintsuglyph("Uogonek";114);
813 tsu_curve.latin.upuogonek;
814 tsu_render;
815 endtsuglyph;
816
817 % u with ogonek
818 begintsuglyph("uogonek";115);
819 tsu_curve.latin.lowuogonek;
820 tsu_render;
```

[see page 244]

[see page 250]

821 endtsuglyph;

822



823 % W with circumflex

824 `begintsuglyph("Wcircumflex",116);`

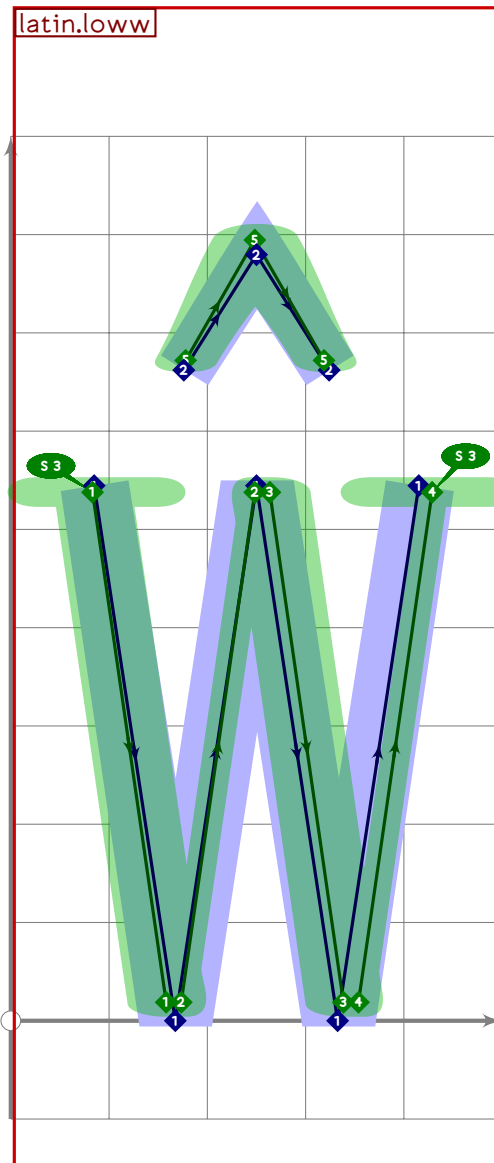
825 `tsu_accent.capital(circumflex)(tsu_curve.latin.upw);`

826 `tsu_render;`

827 `endtsuglyph;`

828

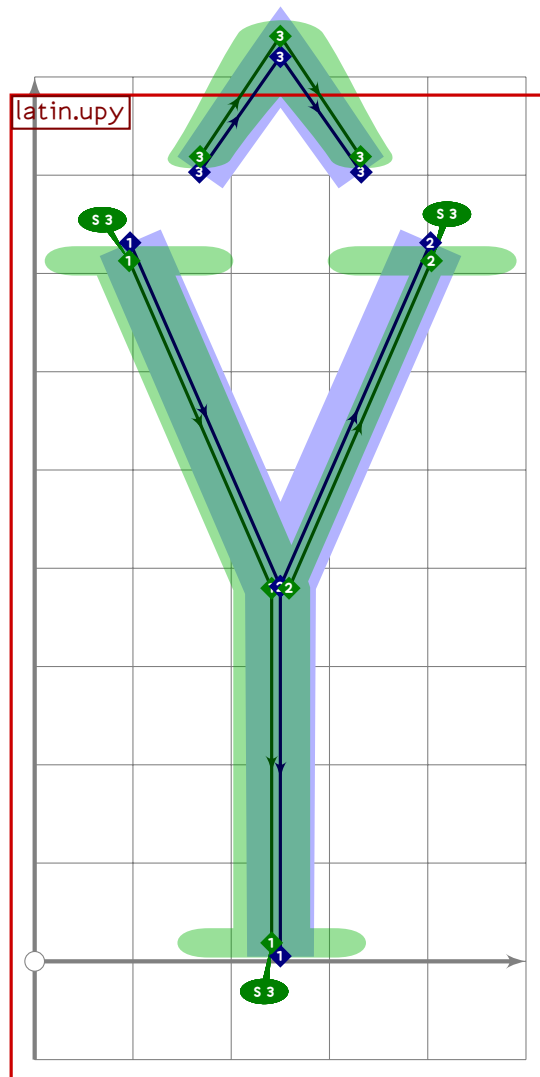




```

829 % w with circumflex
830 begintsuglyph("wcircumflex";117);
831   tsu_accent.circumflex(tsu_curve.latin.loww);
832   tsu_render;
833 endtsuglyph;
834

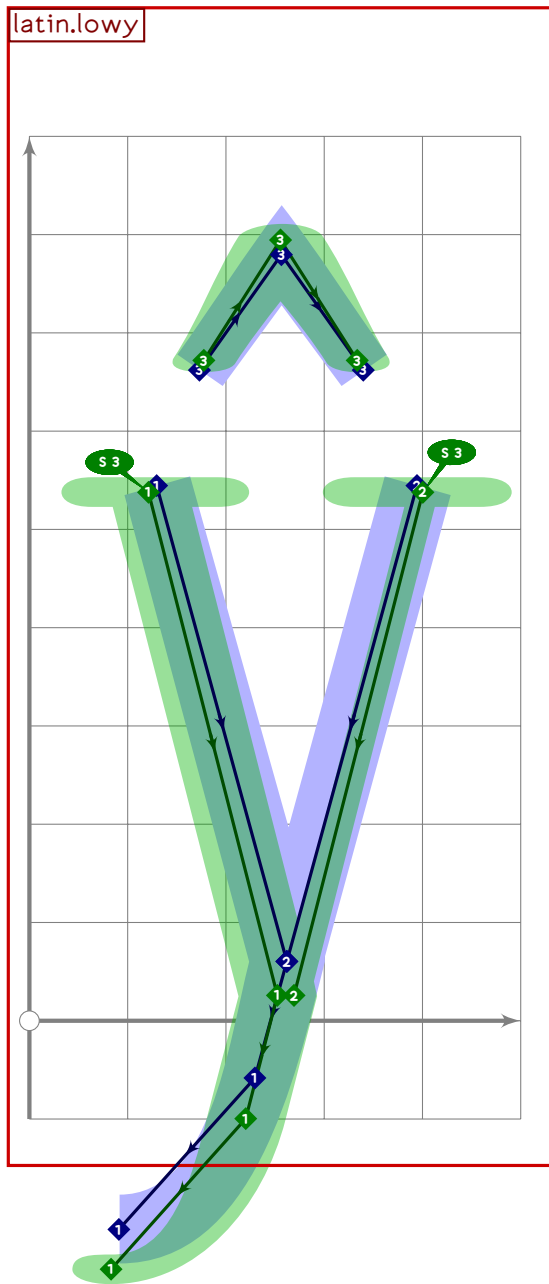
```



```

835 % Y with circumflex
836 beginsuglyph("Ycircumflex";118);
837   tsu_accent.capital(circumflex)(tsu_curve.latin.upy);
838   tsu_render;
839 endsuglyph;
840

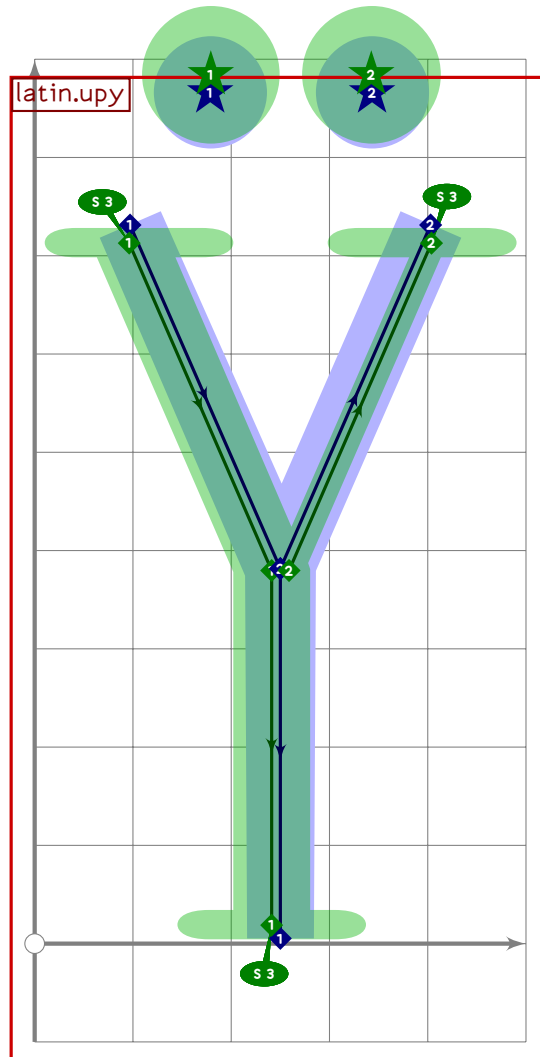
```



```

841 % y with circumflex
842 begintsuglyph("ycircumflex";119);
843 tsu_accent.circumflex(tsu_curve.latin.lowy);
844 tsu_render;
845 endtsuglyph;
846

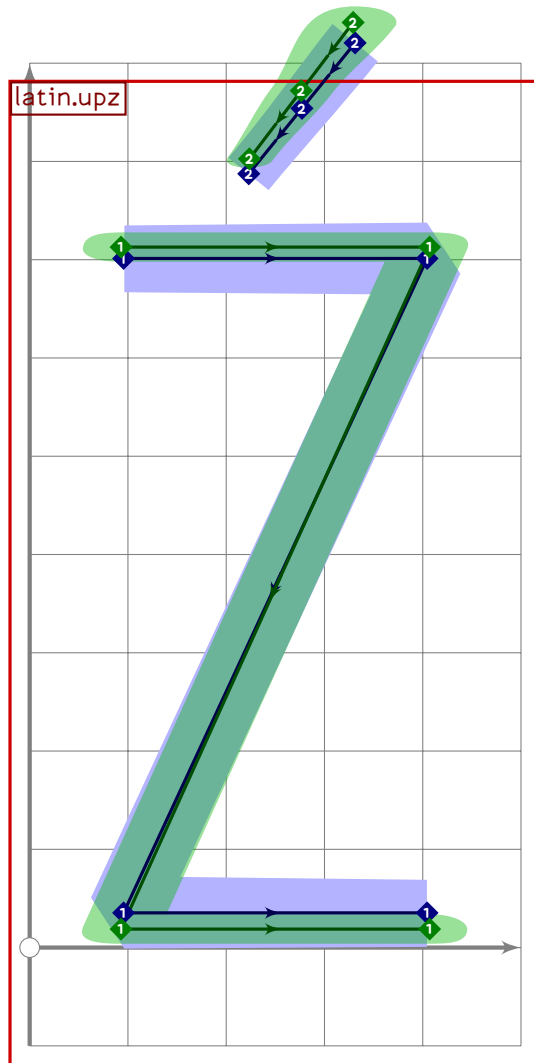
```



```

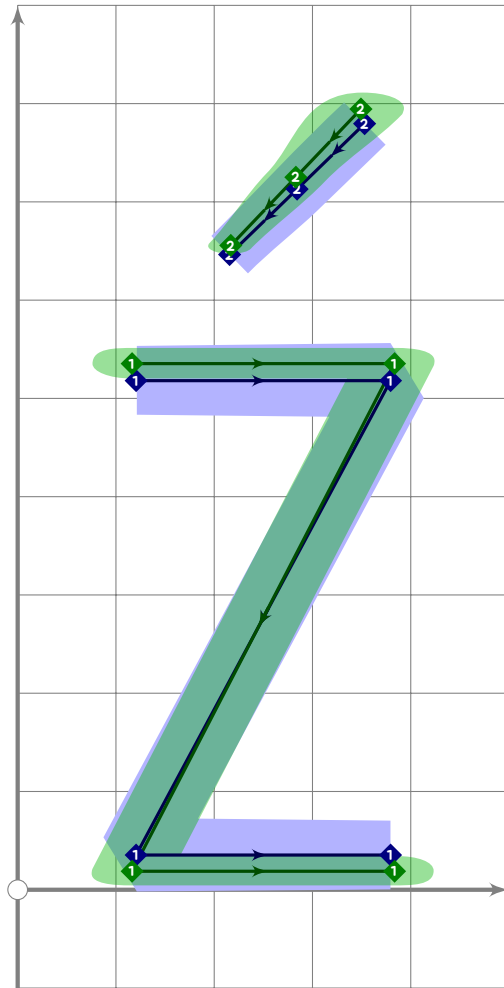
847 % Y with umlaut/dieresis
848 begintsuglyph("Ydieresis",120);
849 tsu_accent.capital(umlaut)(tsu_curve.latin.upy);
850 tsu_render;
851 endsuglyph;
852

```

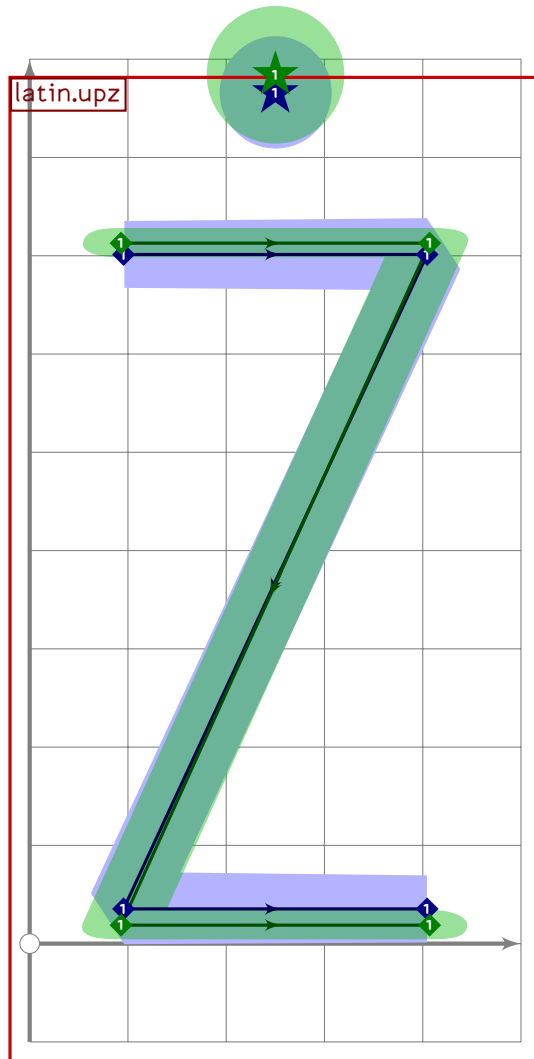


```
853 % Z with acute
854 begintsuglyph("Zacute";121);
855 tsu_accent.capital(acute)(tsu_curve.latin.upz);
856 tsu_render;
857 endsuglyph;
858
```

latin.lowz



```
859 % z with acute
860 begintsuglyph("zacute";122);
861 tsu_accent.acute(tsu_curve.latin.lowz);
862 tsu_render;
863 endsuglyph;
864
```

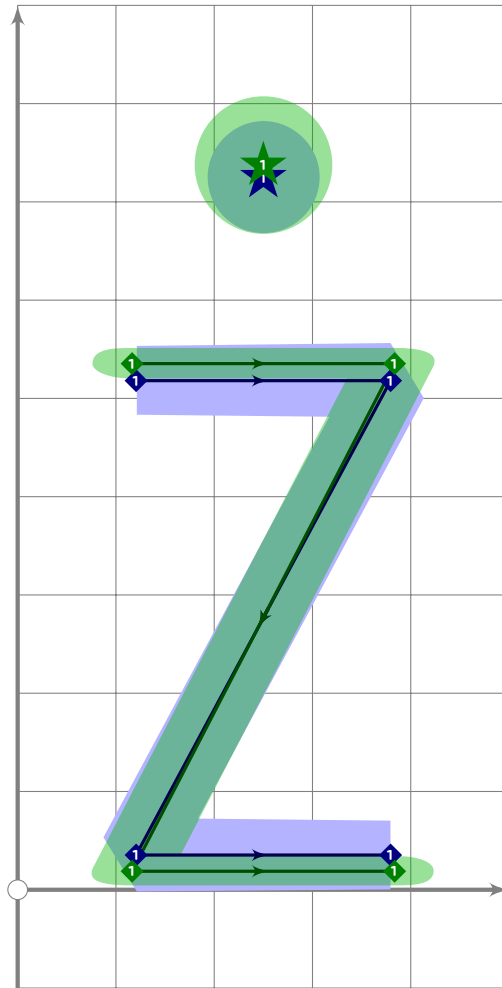


```

865 % Z with dot
866 begintsuglyph("Zdotaccent",123);
867 tsu_accent.capital(dotabove)(tsu_curve.latin.upz);
868 tsu_render;
869 endsuglyph;
870

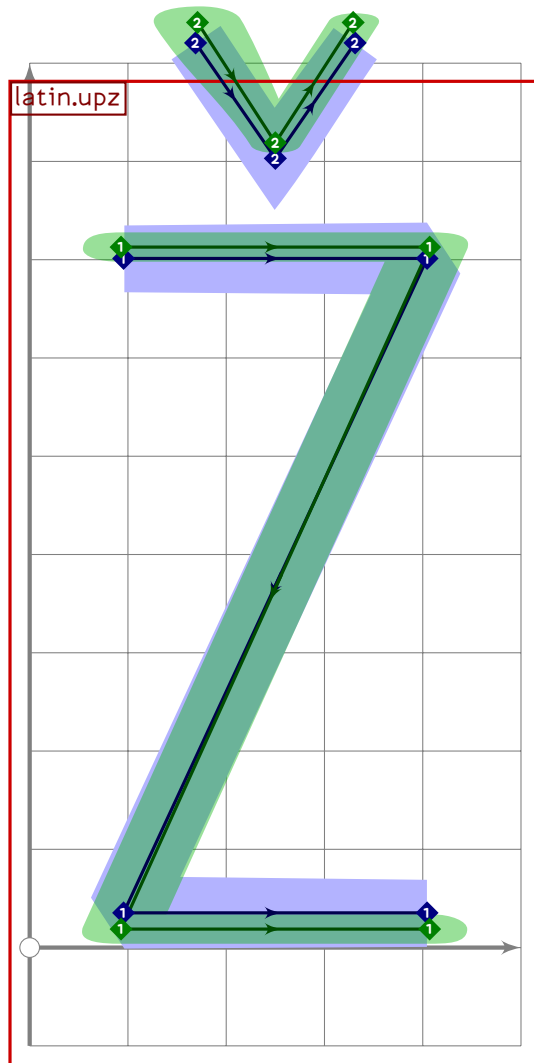
```

latin.lowz



```
871 % z with dot
872 begintsuglyph("zdotaccent",124);
873 tsu_accent.dotabove(tsu_curve.latin.lowz);
874 tsu_render;
875 endsuglyph;
876
```



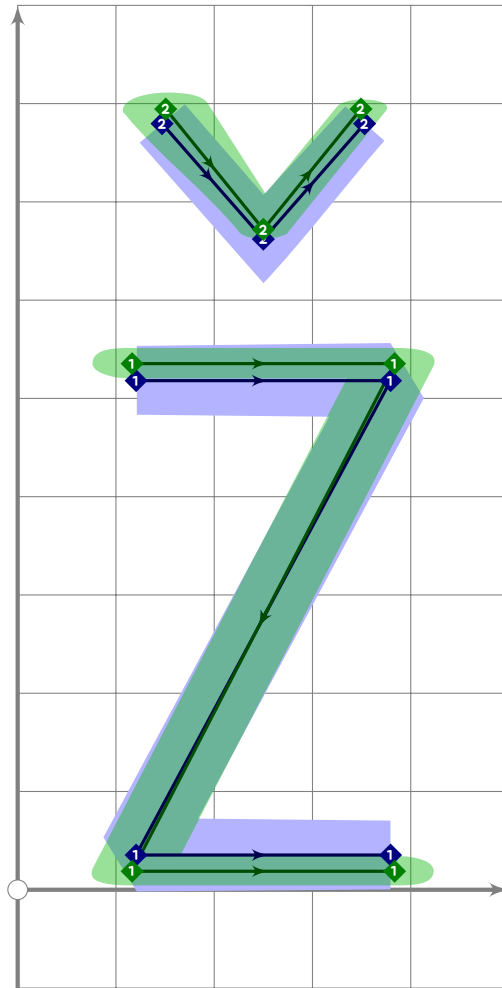


```

877 % Z with caron
878 beginsuglyph("Zcaron";125);
879   tsu_accent.capital(caron)(tsu_curve.latin.upz);
880   tsu_render;
881 endsuglyph;
882

```

latin.lowz



```
883 % z with caron
884 begintsuglyph("zcaron",126);
885 tsu_accent.caron(tsu_curve.latin.lowz);
886 tsu_render;
887 endsuglyph;
888
889 % long s
890 begintsuglyph("longs",127);
891 tsu_curve.latin.lowlongs;
892 tsu_render;
893 endsuglyph;
894
895
896
897 endfont;
898
```

[see page 217]



# tsuku-02.mp

```
1 %
2 % Unicode page 02 (Spacing Modifier Letters) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

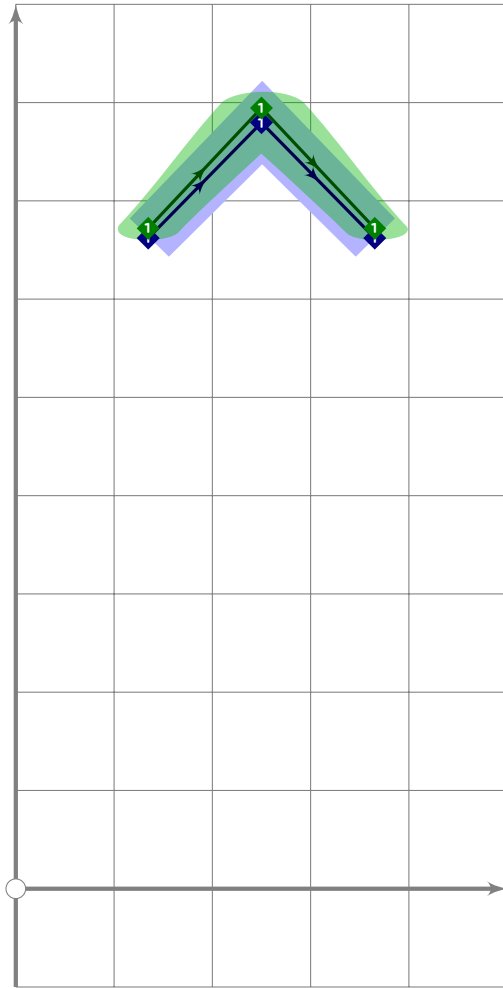

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input accent.mp;
39 input latin.mp;
40 input ogonek.mp;
41
42 

---

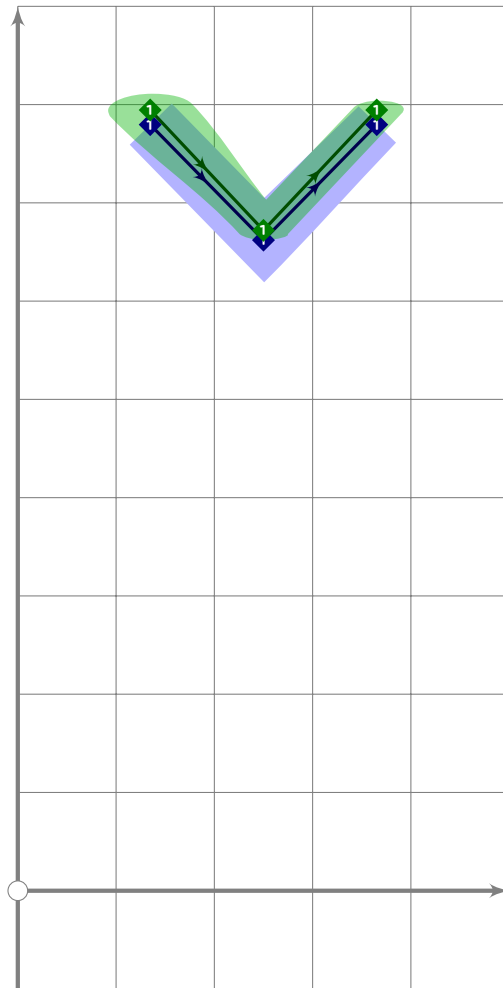

43
```

## Spacing Modifier Letters

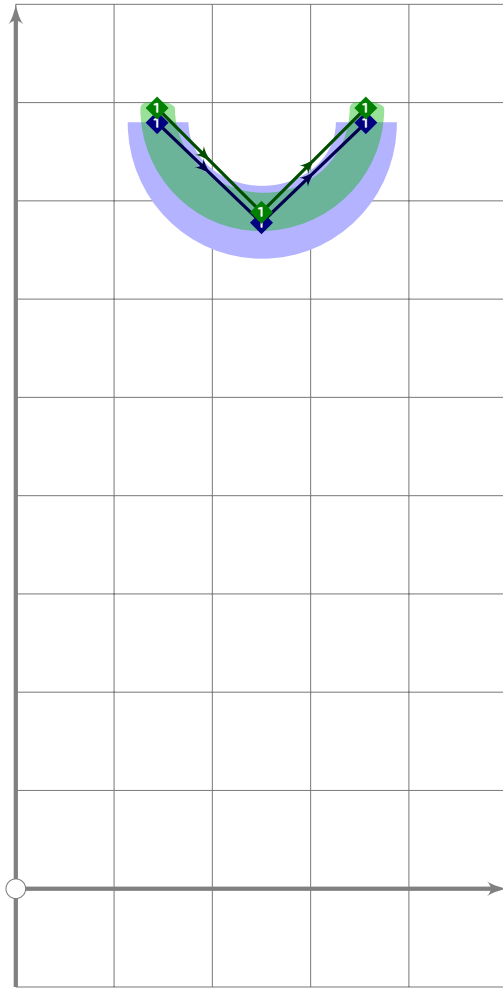
```
44 % SPACING MODIFIER LETTERS
45
46 tsu_rescale_half;
47
```



```
48 % circumflex accent
49 begint Suglyph("circumflex",198);
50   tsu_accent.circumflex();
51   tsu_render;
52 endsuglyph;
53
```

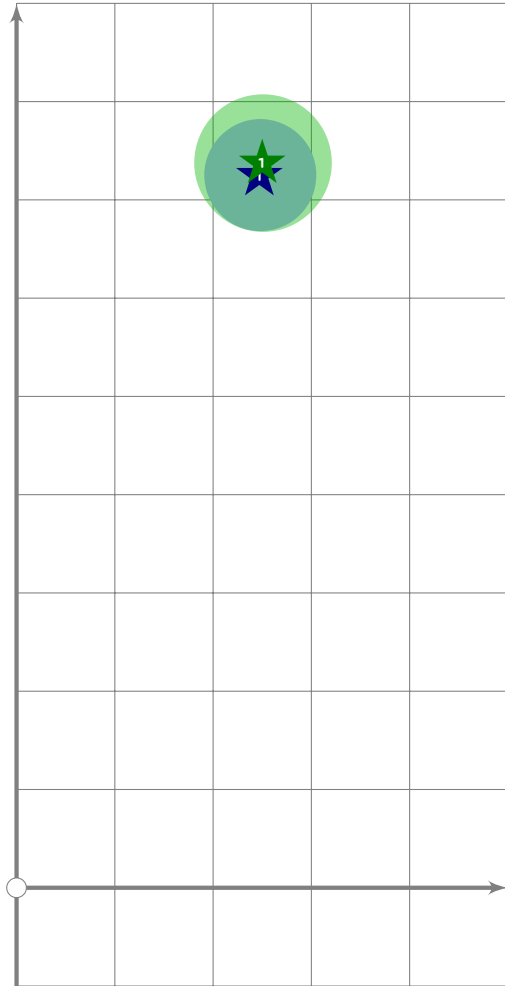


```
54 % caron
55 begint Suglyph("caron",199);
56   tsu_accent.caron();
57   tsu_render;
58 endsuglyph;
59
```



```
60 % breve
61 begint Suglyph("breve";216);
62 tsu_accent.breve();
63 tsu_render;
64 endsuglyph;
65
```

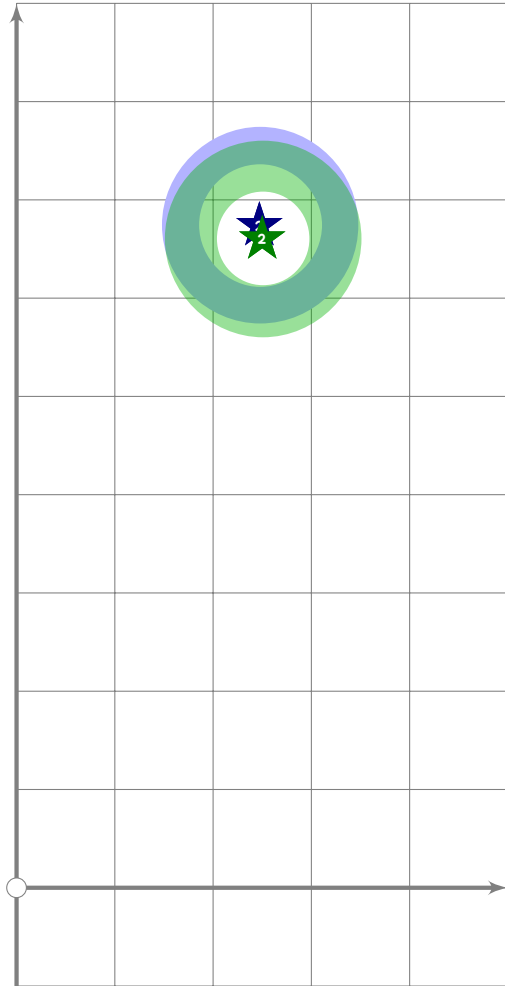
latin.lowe



```
66 % dot above
67 begint Suglyph("dotaccent",217);
68 tsu_accent.dotabove(tsu_curve.latin.lowe);
69 bo_size[sp-1]=0;
70 tsu_render;
71 endtsuglyph;
72
```

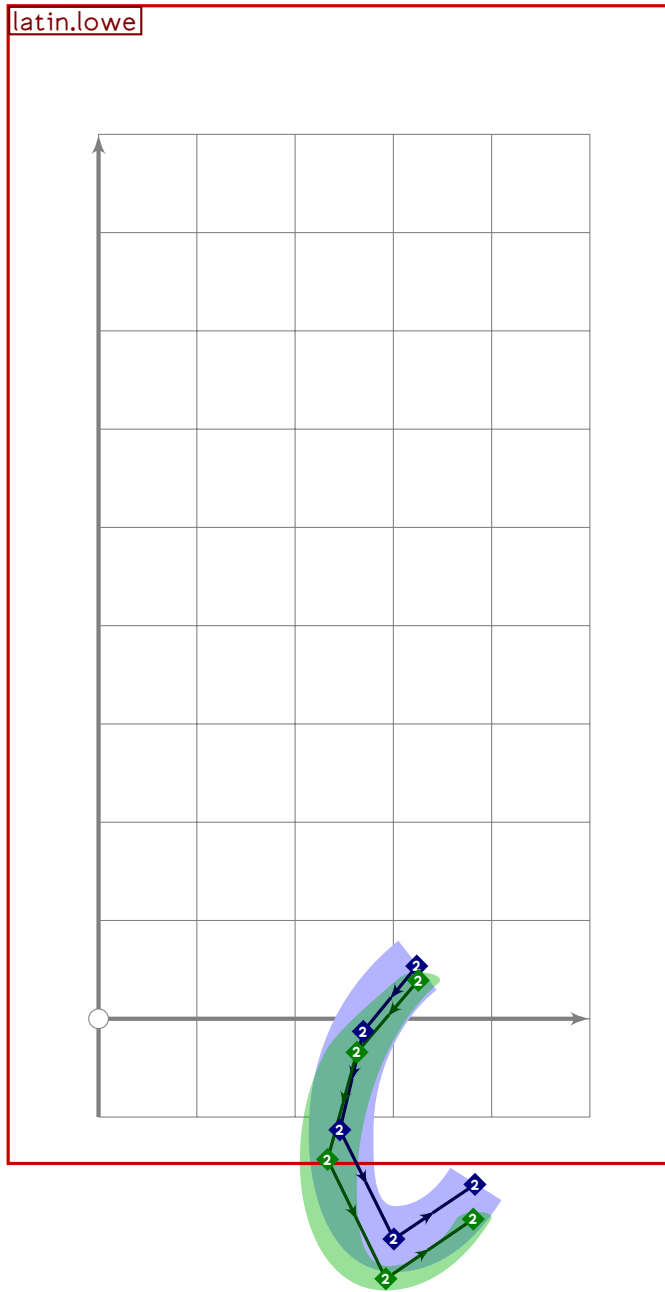


latin.lowe

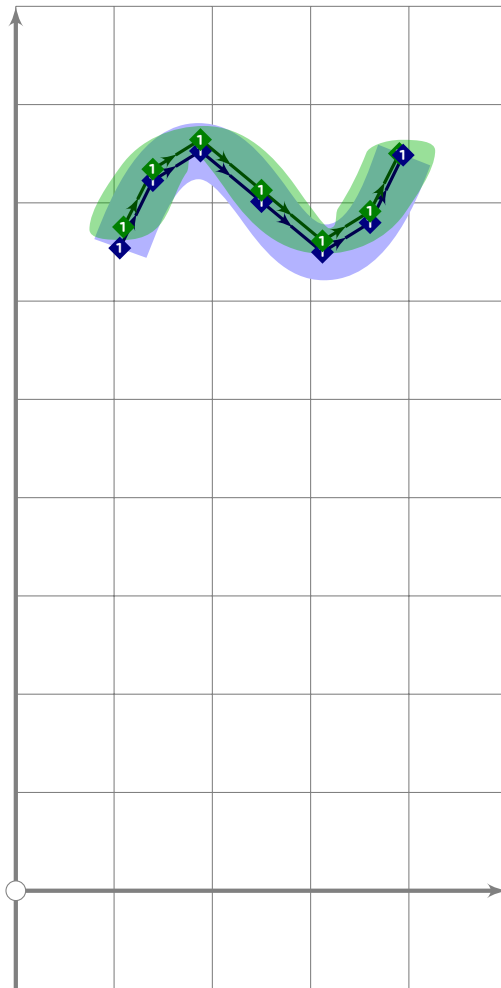


```
73 % ring above
74 begintsuglyph("ring";218);
75 tsu_accent.ringabove(tsu_curve.latin.lowe);
76 bo_size[sp-1]=0;
77 tsu_render;
78 endtsuglyph;
79
```

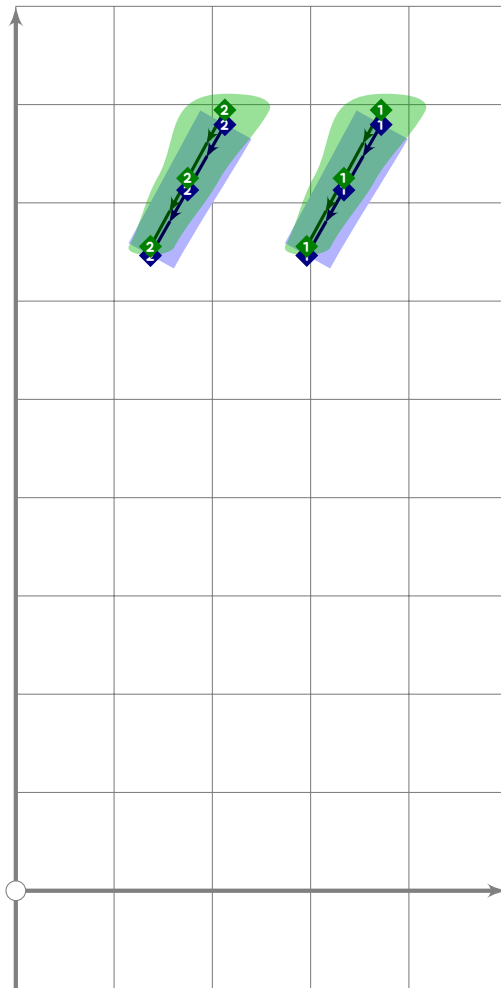
latin.lowe



```
80 % ogonek
81 begint Suglyph("ogonek",219);
82 tsu_curve.latin.loweogonek;
83 bo_size[sp-2]=0;
84 tsu_render;
85 endtsuglyph;
86
```



```
87 % small tilde
88 begintsuglyph("tilde",220);
89 tsu_accent.tilde();
90 tsu_render;
91 endsuglyph;
92
```



```

93 % double acute accent
94 begintsuglyph("hungarumlaut";221);
95   tsu_accent.hungarian_umlaut();
96   tsu_render;
97 endsuglyph;
98
99 _____
100
101 endfont;
102
103 _____

```

# tsuku-20.mp

```
1 %
2 % Unicode page 20 (Punctuation) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input punct.mp;
39
40 

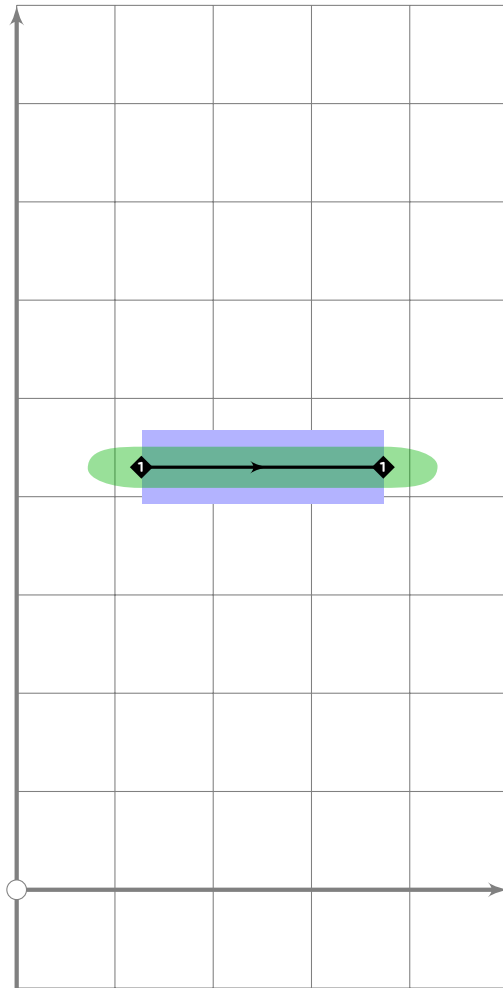
---


41
```

## General Punctuation

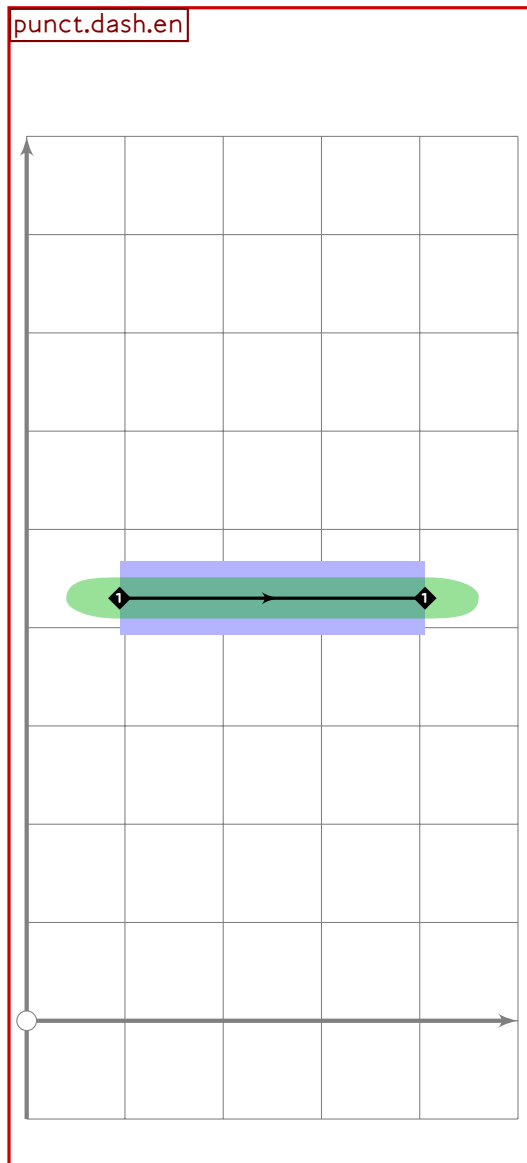
```
42 % GENERAL PUNCTUATION
43
44 % WARNING changing rescale setting
45 tsu\_rescale\_half;
46
47 % hyphen
48 begintsuglyph\("uni2010";16\); [see page 267]
49 tsu\_curve.punct.dash.hyphen;
50 tsu\_render;
51 endtsuglyph;
52
```

punct.dash.hyphen



```
53 % non-breaking hyphen
54 begintsuglyph("uni2011",17);
55 tsu_curve.punct.dash.hyphen;
56 tsu_render;
57 endsuglyph;
58
59 % figure dash
60 begintsuglyph("figuredash",18);
61 tsu_curve.punct.dash.en;
62 tsu_render;
63 endsuglyph;
64
```

[see page 266]

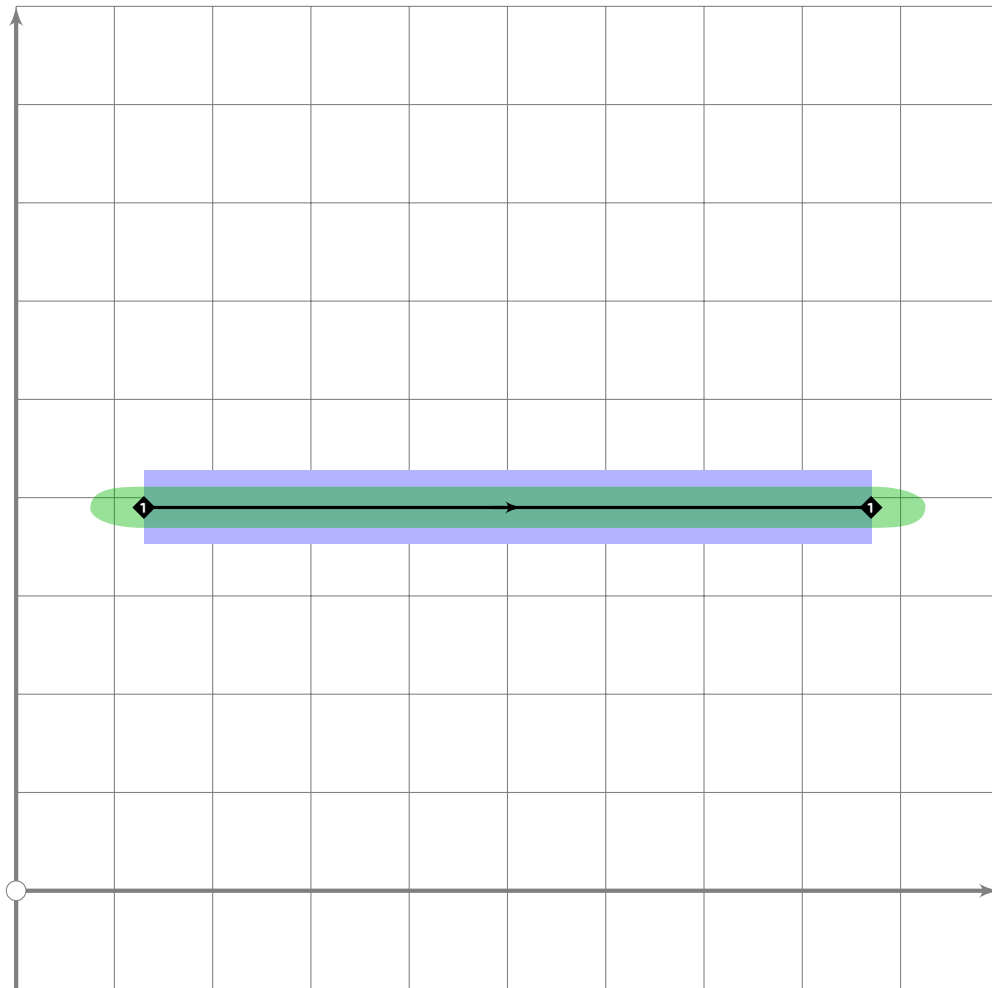


```

65 % en dash
66 begintsuglyph("endash";19);
67 tsu_curve.punct.dash.en;
68 tsu_render;
69 endtsuglyph;
70
71 % WARNING changing rescale setting
72 tsu_rescale_full;
73
74 % em dash
75 begintsuglyph("emdash";20);
76 tsu_curve.punct.dash.em;
77 tsu_render;
78 endtsuglyph;
79

```

[see page 265]

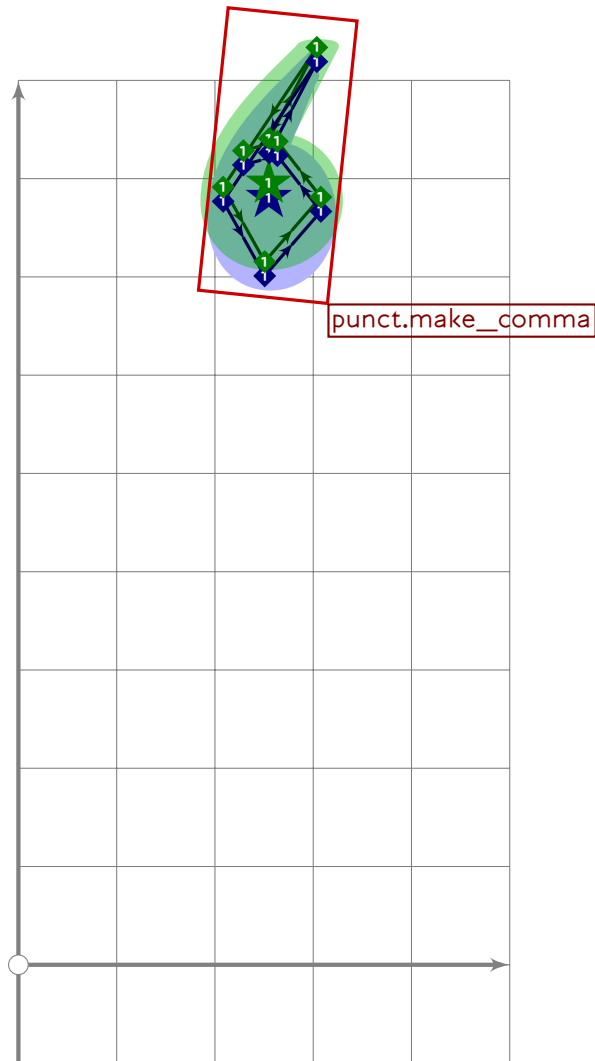


```

80 % horizontal bar
81 begintsuglyph("uni2015";21);
82 bp1=(130,390)-(870,390);
83 bq1=(2,2)-(2,2);
84 sp=2;
85 tsu_render;
86 endtsuglyph;
87
88 % WARNING changing rescale setting
89 tsu_rescale_half;
90

```





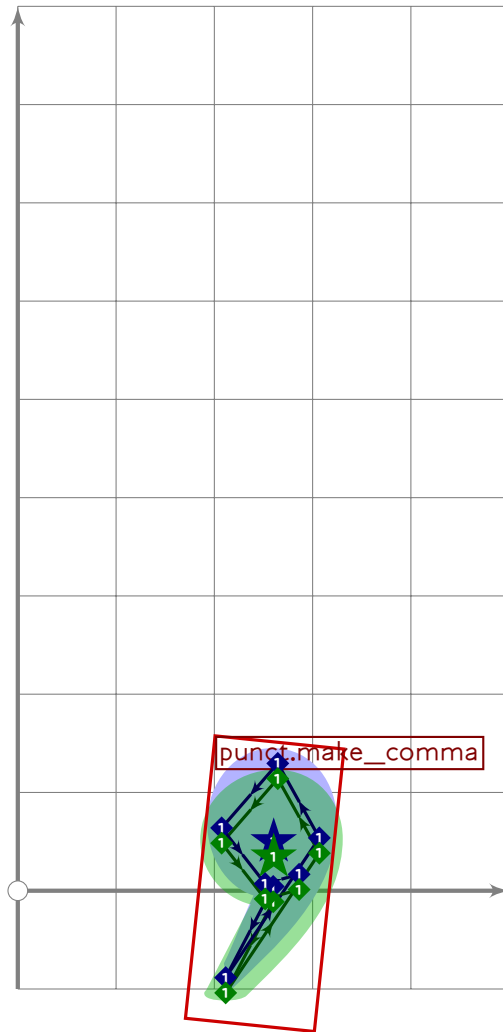
```

91 % high-6
92 beginsuglyph("quoteleft";24);
93 tsu_curve.punct.make_comma((520,vmetric(0.94)),180);
94 tsu_render;
95 endsuglyph;
96

```



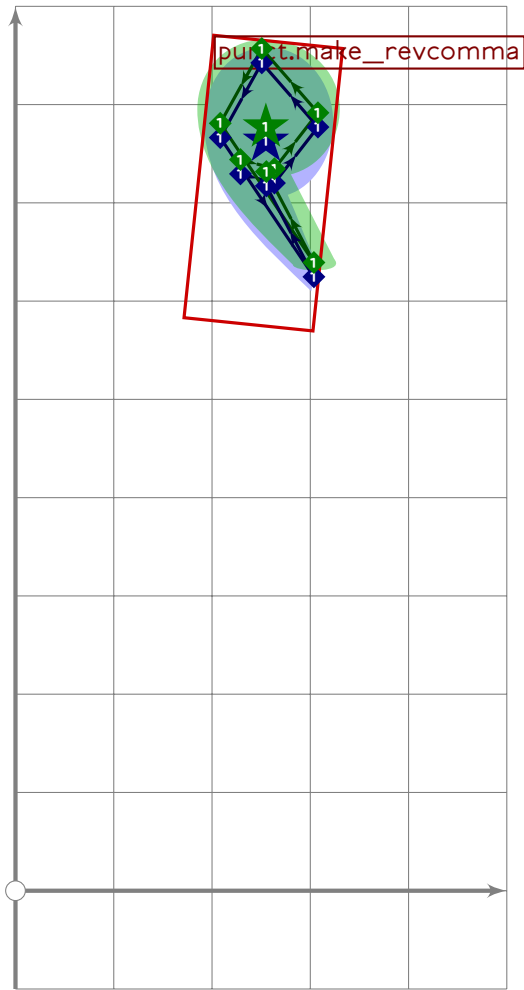
```
97 % high-9  
98 beginsuglyph("quoteright",25);  
99 tsu_curve.punct.make_comma((480,vmetric(0.94)),0);  
100 tsu_render;  
101 endsuglyph;  
102
```



```

103 % low-9
104 beginsuglyph("quotesinglbase";26);
105   tsu_curve.punct.make_comma((520,vmetric(0.03)),0);
106   tsu_render;
107 endsuglyph;
108

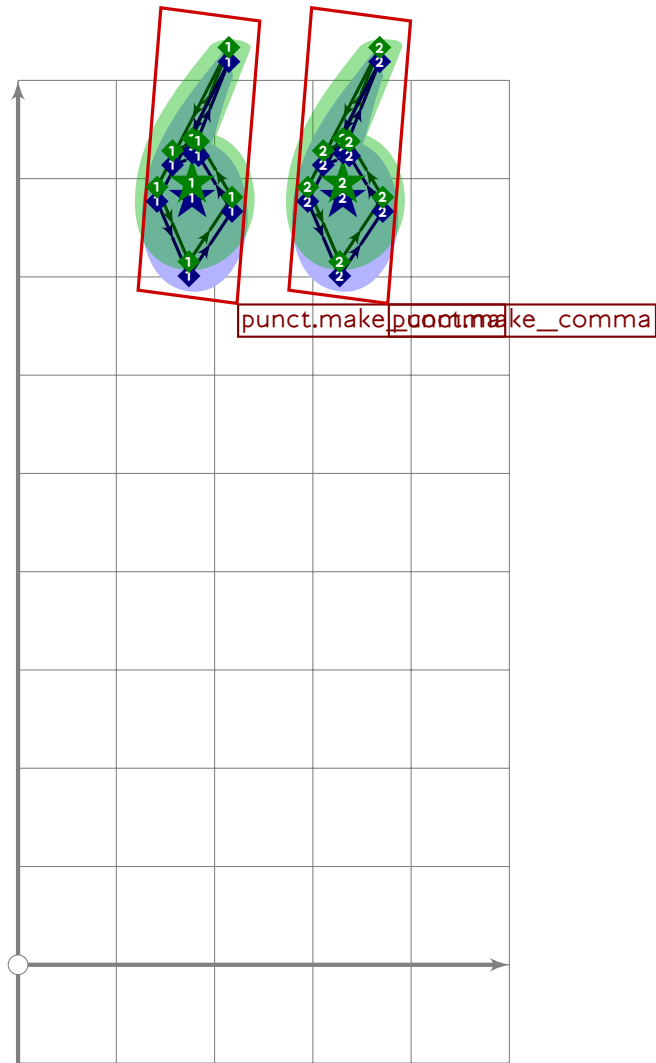
```



```

109 % high-rev-9
110 begintsuglyph("quotereversed";27);
111 tsu_curve.punct.make_revcomma((520,vmetric(0.94)),0);
112 tsu_render;
113 endtsuglyph;
114

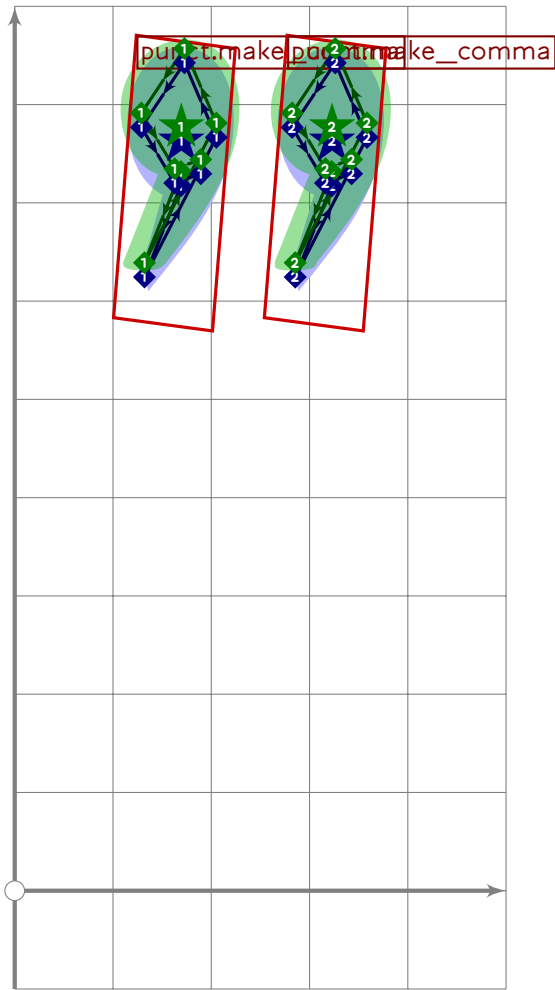
```



```

115 % high-66
116 beginsuglyph("quotedblleft",28);
117 tsu_curve.punct.make_comma((520-tsu_punct_size,vmetric(0.94)),180);
118 tsu_curve.punct.make_comma((520+tsu_punct_size,vmetric(0.94)),180);
119 tsu_render;
120 endsuglyph;
121

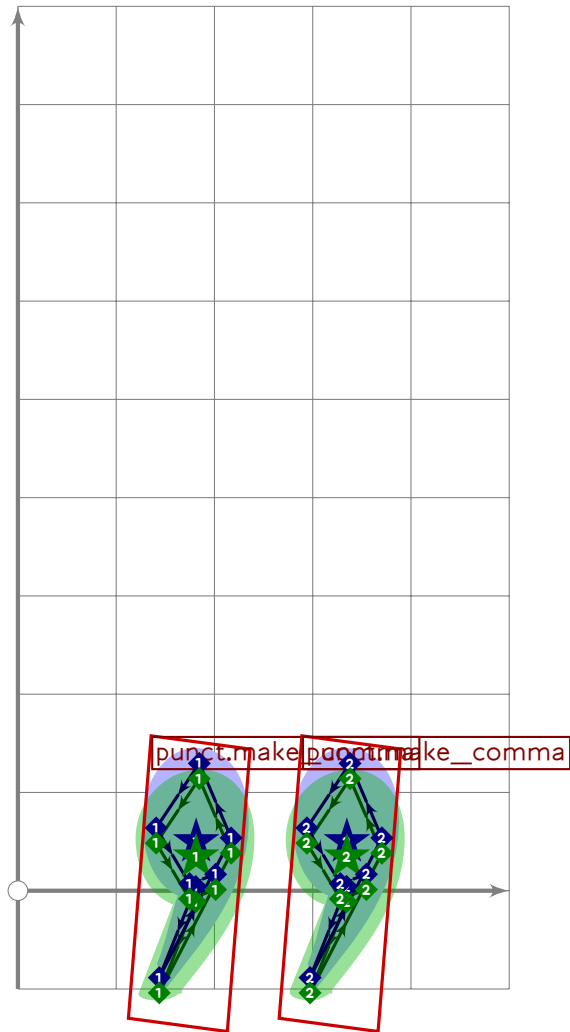
```



```

122 % high-99
123 begint Suglyph("quotedblright";29);
124   tsu_curve.punct.make_comma((480*tsu_punct_size,vmetric(0.94)),0);
125   tsu_curve.punct.make_comma((480*tsu_punct_size,vmetric(0.94)),0);
126   tsu_render;
127 endsuglyph;
128

```



```

129 % low-99
130 beginsuglyph("quotedblbase",30);
131   tsu_curve.punct.make_comma((520-tsu_punct_size,vmetric(0.03)),0);
132   tsu_curve.punct.make_comma((520+tsu_punct_size,vmetric(0.03)),0);
133   tsu_render;
134 endsuglyph;
135

```



```

136 % high-rev-99
137 \begin{suglyph{"quotedblreversed";31};
138   \tsu_curve.punct.make_revcomma((520-\tsu_punct_size,\vmetric{0.94}),0);
139   \tsu_curve.punct.make_revcomma((520+\tsu_punct_size,\vmetric{0.94}),0);
140   \tsu_render;
141 \end{suglyph};
142
143 % WARNING changing rescale setting
144 \tsu_rescale_full;
145
146 % euro symbol
147 \begin{suglyph{"Euro";172};
148   \tsu_curve.punct.euro;
149   \tsu_render;
150 \end{suglyph};
151
152 _____
153
154 \endfont;
155
156 _____

```

[see page 269]



# tsuku-21.mp

```
1 %
2 % Unicode page 21 (Symbols) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

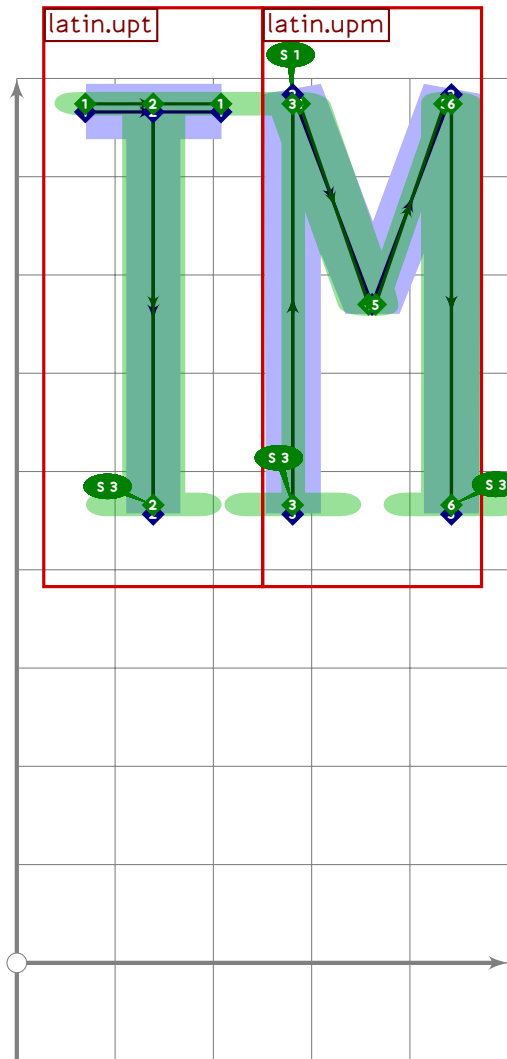

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input latin.mp;
39 input punct.mp;
40
41 

---


42
```

## Symbols Required By Mes-1

```
43 % SYMBOLS REQUIRED BY MES-1
44
45 % WARNING changing rescale setting
46 tsu\_rescale\_half;
47
```



```

48 % trademark symbol
49 begintsuglyph("trademark";34);
50 tsu_xform(identity scaled 0.5 shifted (0,400))(tsu_curve.latin.upt);
51 numeric x[],y[];
52 tsu_xform(identity scaled 0.5 shifted (500,400))(tsu_curve.latin.upm);
53 tsu_render;
54 endtsuglyph;
55
56 % ohm (resistance unit) symbol
57 begintsuglyph("uni2126";38);
58 tsu_curve.punct.ohm;
59 tsu_render;
60 endtsuglyph;
61
62 % Note: 0x5B through 0x5E, which are x/8 fractions, are assembled by the
63 % assemble-font script
64
65 % WARNING changing rescale setting
66 tsu_rescale_full;

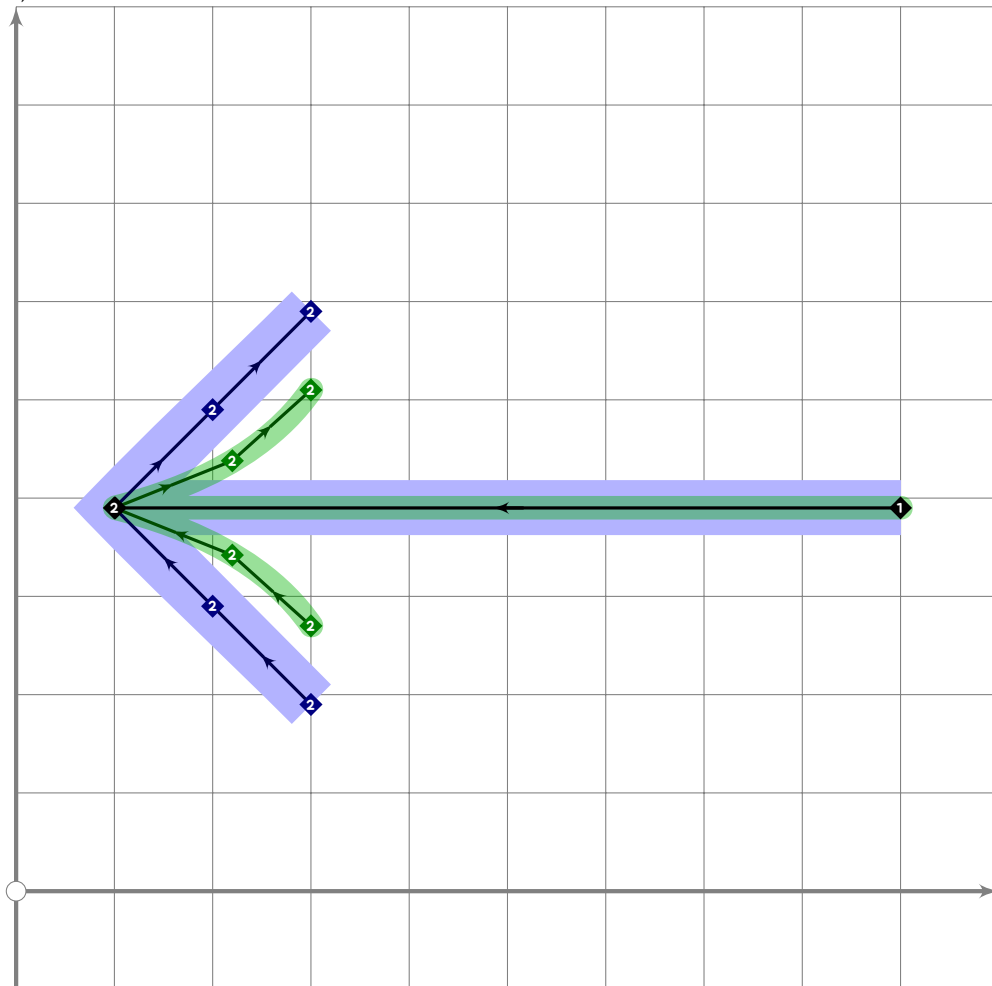
```

[see page 277]

```

67
68 vardef tsu_curve.arrow(expr rot) =
69   bp[sp]:=(-4,0)-(3.99,0)
70   scaled tsu_punct_size rotated rot shifted centre_pt;
71   bq[sp]:=(1.6,1.6)-(1.6,1.6);
72   bo_alternate[sp]:=true;
73   bo_size[sp]:=80;
74   bp[sp*1]:=((2,2)..((3,1)*(0.2*mincho*(-1,1)))..
75     {curl 1}(4,0){curl 1}..
76     ((3,-1)*(0.2*mincho*(-1,1)))..(2,-2))
77   xyscaled (1,1-0.4*mincho)
78   scaled tsu_punct_size rotated rot shifted centre_pt;
79   bq[sp*1]:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6);
80   bo_tip[sp*1][2]:=1;
81   bo_alternate[sp*1]:=true;
82   bo_size[sp*1]:=80;
83   sp:=sp*2;
84 enddef;

```

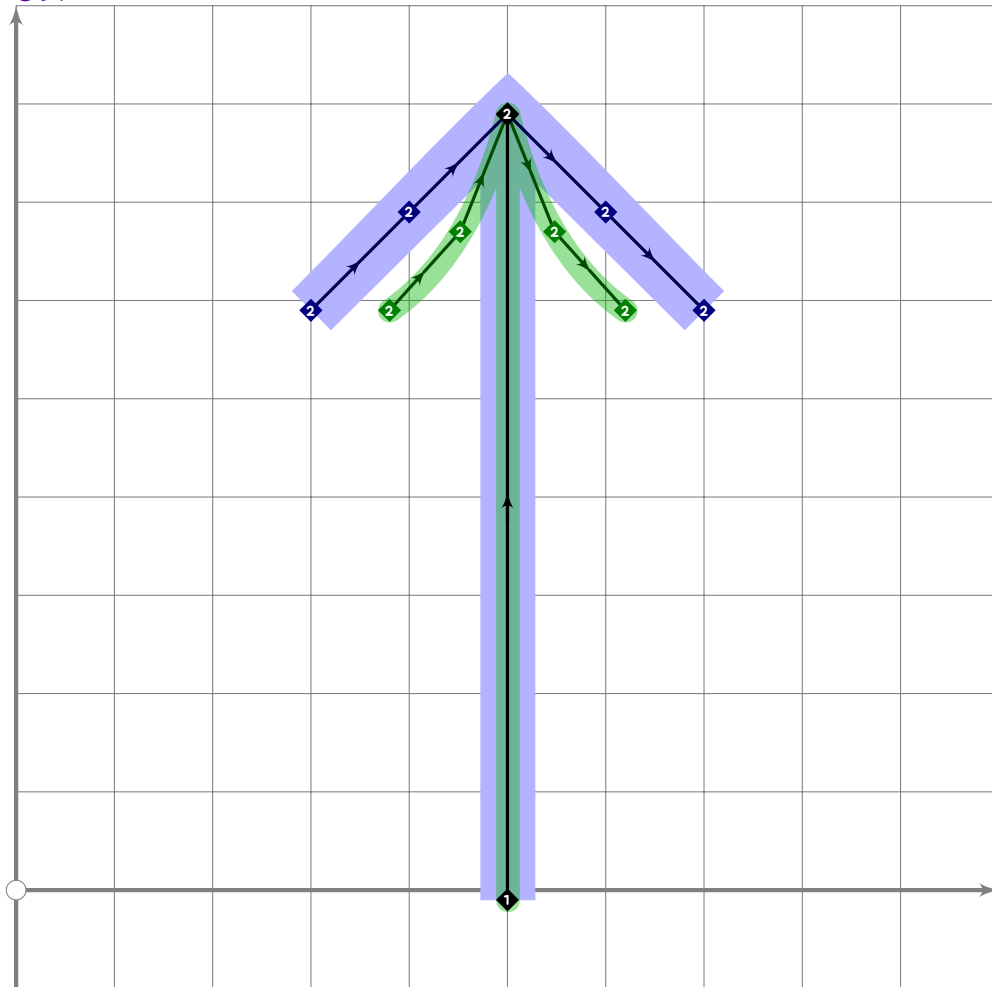


```

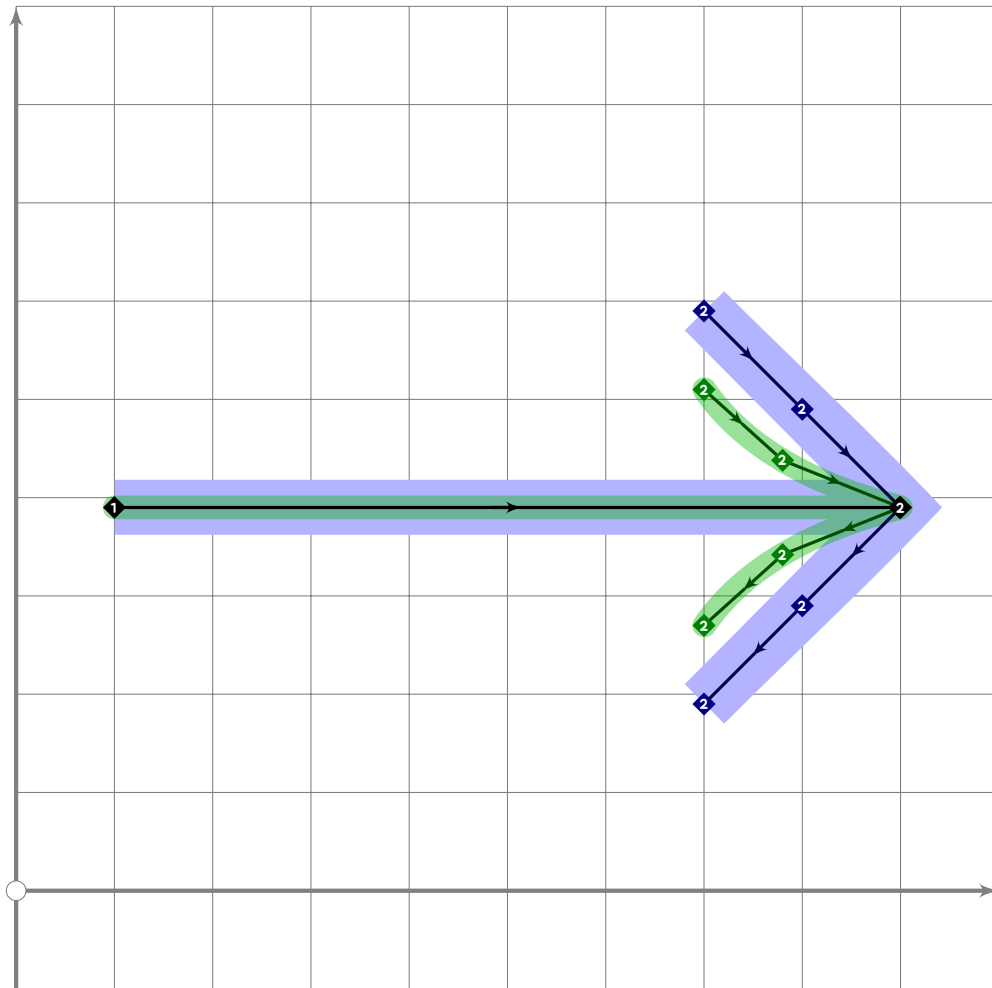
85
86 begint Suglyph("arrowleft",144);
87   tsu_curve.arrow(180);

```

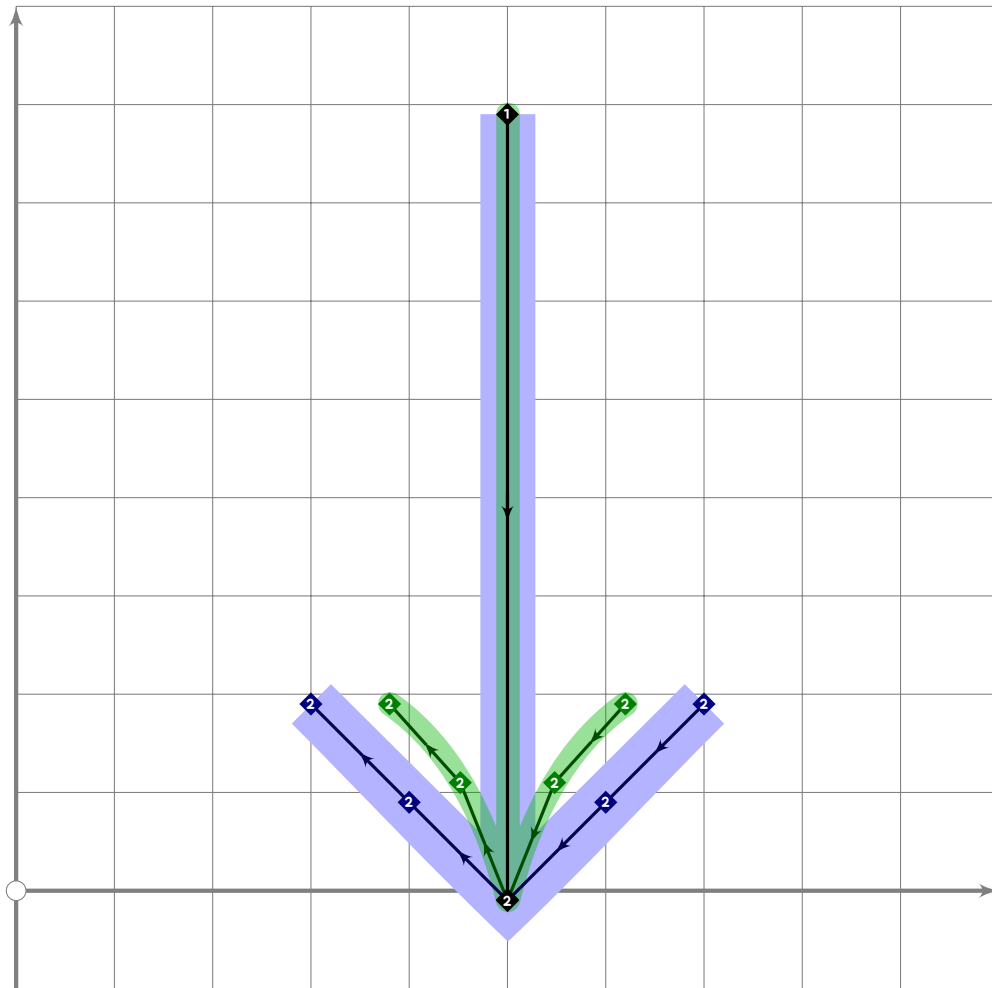
```
88 tsu_render;  
89 endtsuglyph;
```



```
90  
91 begintuglyph("arrowup",145);  
92 tsu_curve.arrow(90);  
93 tsu_render;  
94 endtsuglyph;
```



```
95  
96 begintsuglyph("arrowright";146);  
97 tsu_curve.arrow(0);  
98 tsu_render;  
99 endsuglyph;
```



```
100  
101 begintsuglyph("arrowdown",147);  
102 tsu_curve.arrow(270);  
103 tsu_render;  
104 endtsuglyph;  
105  
106 _____  
107  
108 endfont;  
109  
110 _____
```

# tsuku-24.mp

```
1 %
2 % Unicode page 24 (Enclosed Numerics) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

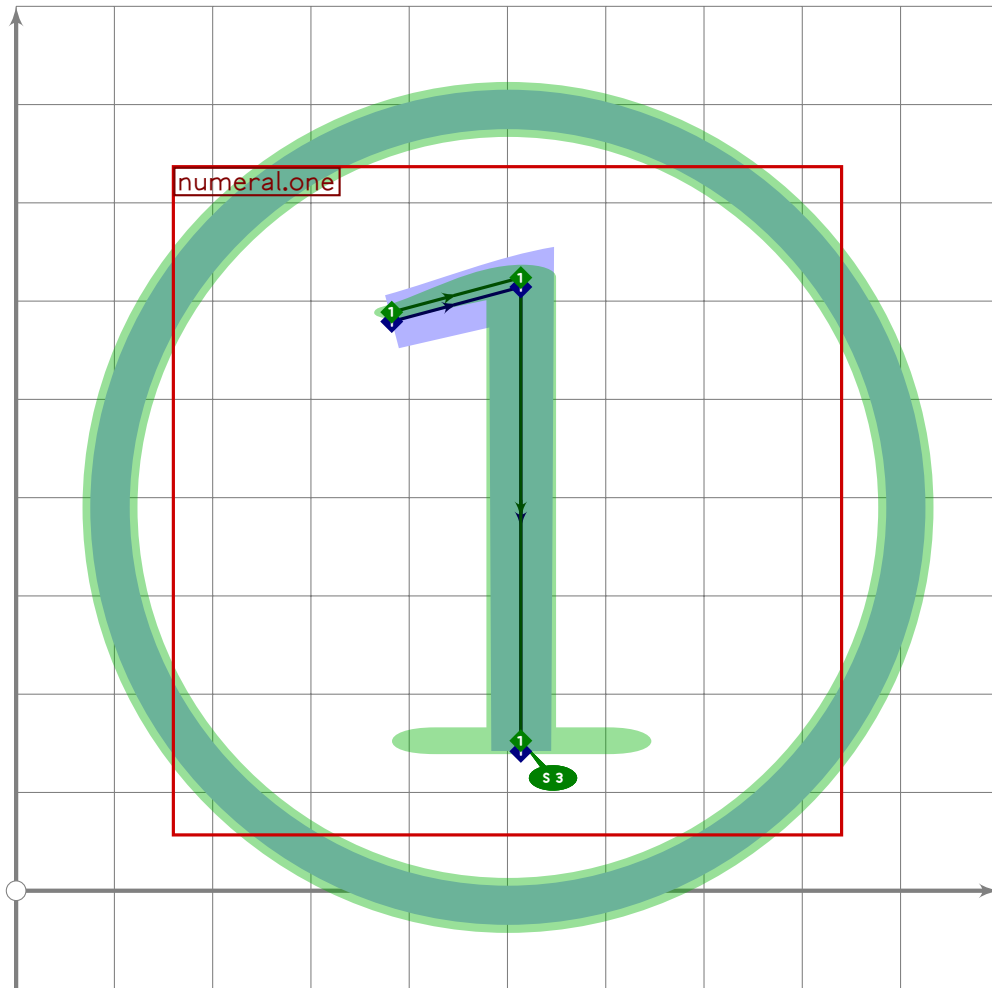

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input enclosed.mp;
39 input latin.mp;
40 input numerals.mp;
41
42 

---


43
```

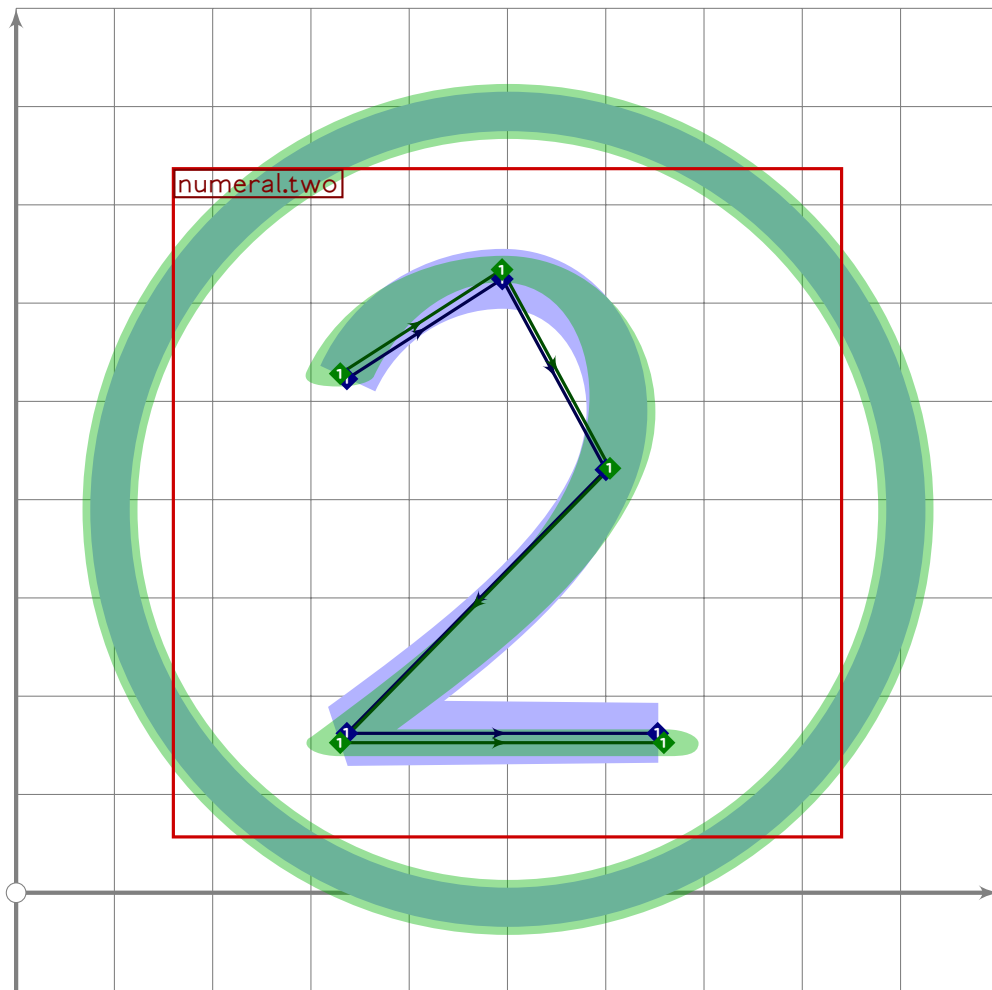
## Circled Numerals

```
44 % CIRCLED NUMERALS
45
```

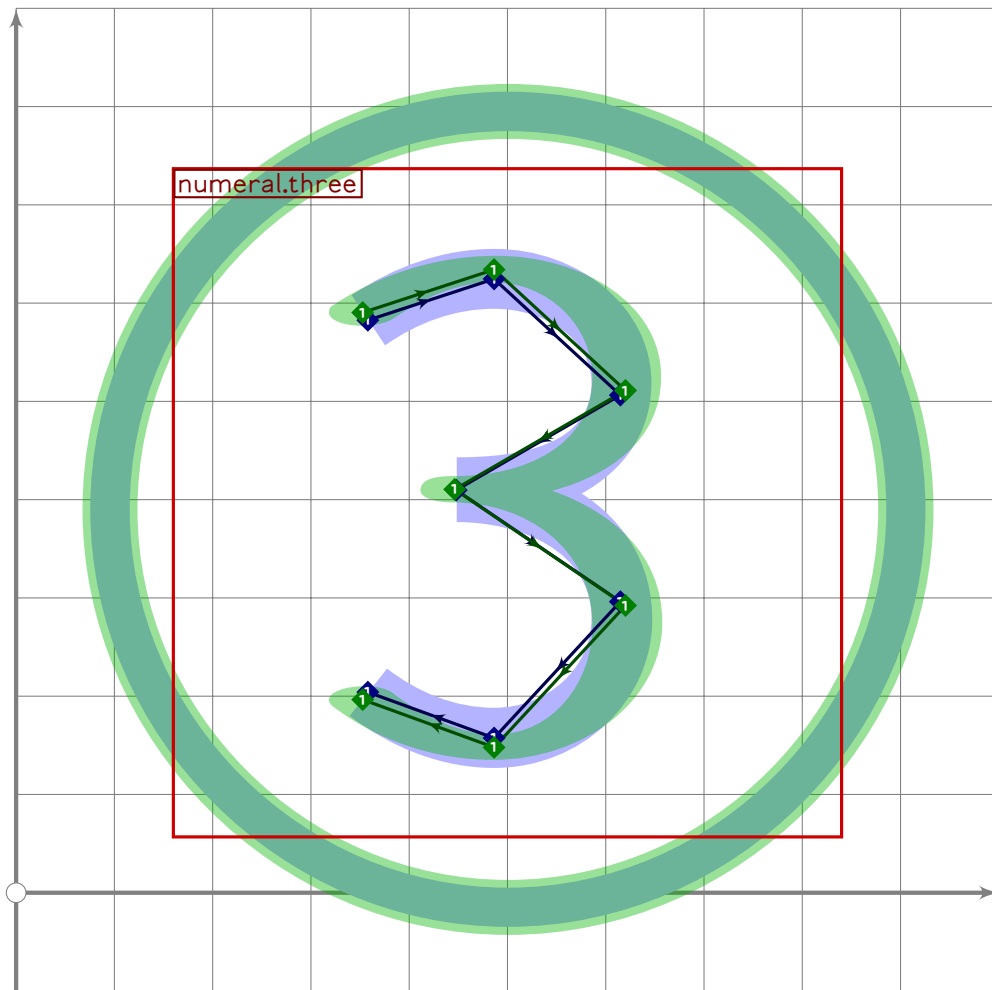


```
46 % 1
47 beginsuglyph("uni2460";96);
48 tsu_curve.circle.single;
49 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.one);
50 tsu_render;
51 endsuglyph;
52
```

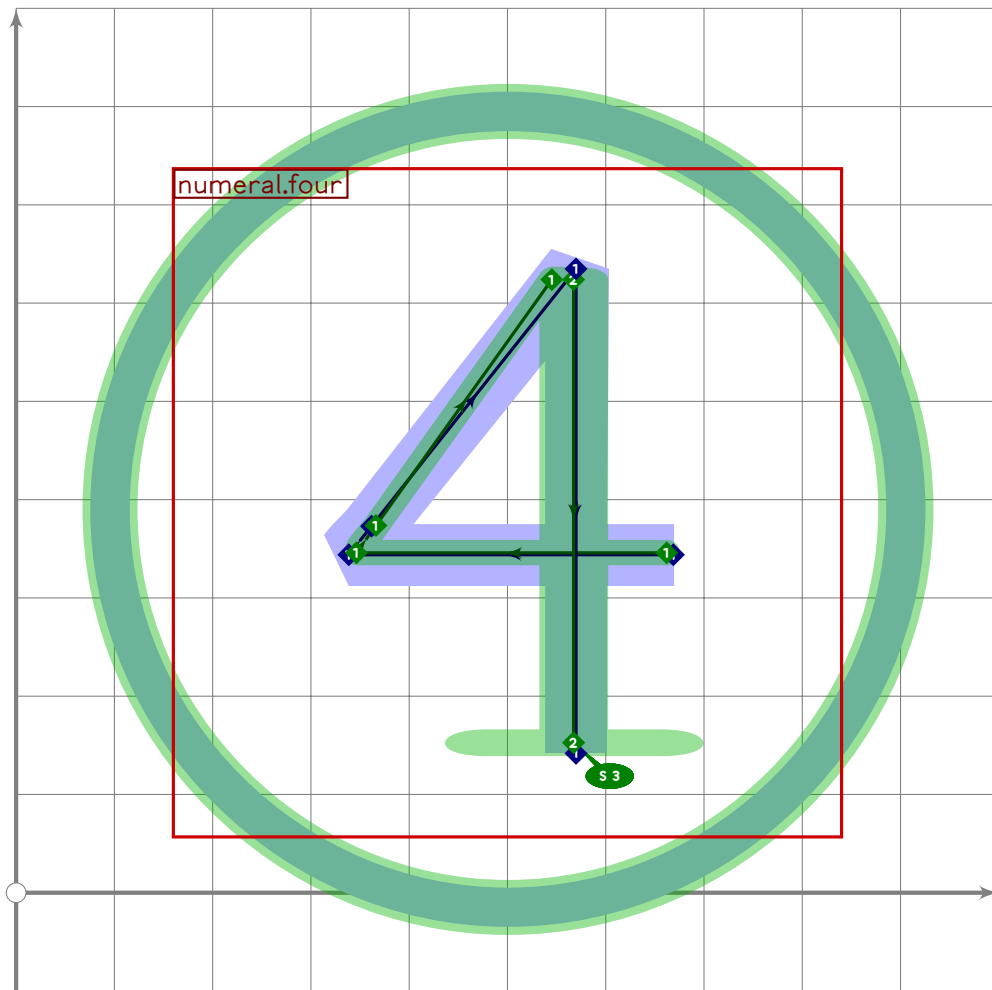




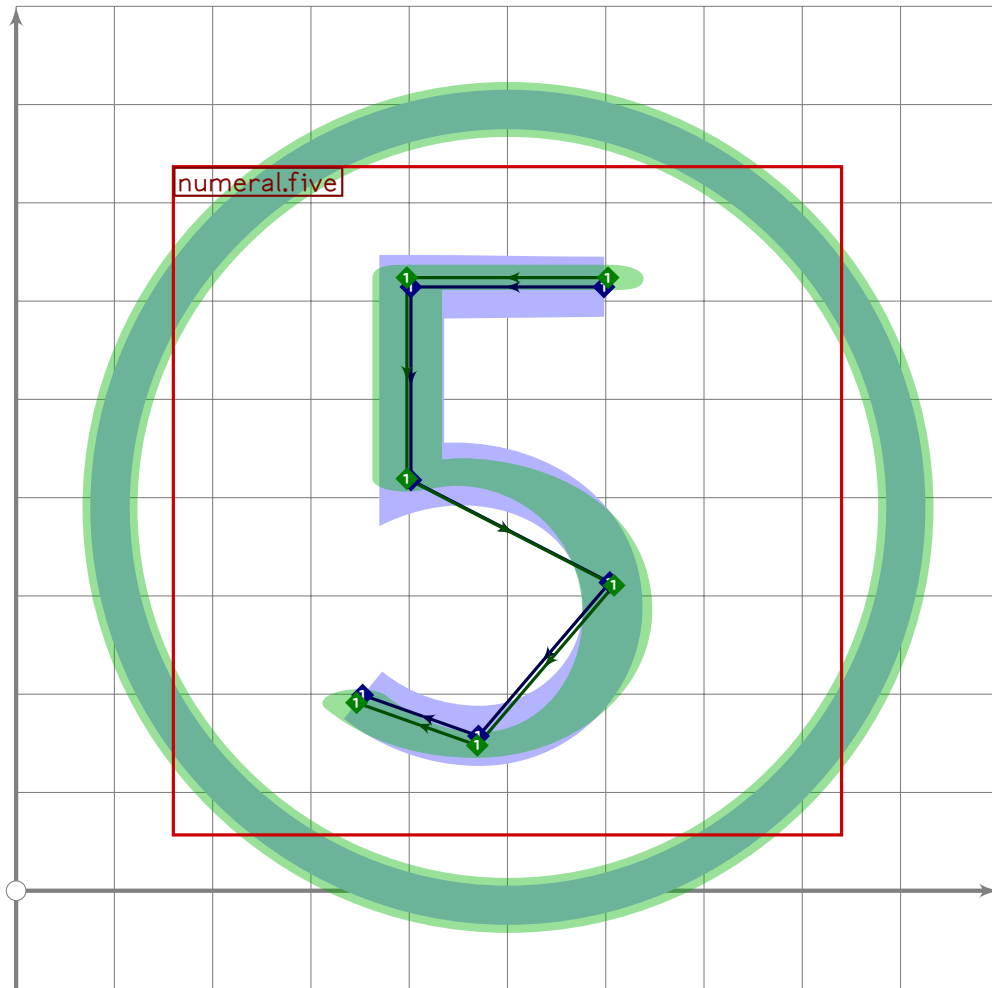
```
53 % 2
54 beginsuglyph("uni2461";97);
55   tsu_curve.circle.single;
56   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.two);
57   tsu_render;
58 endsuglyph;
59
```



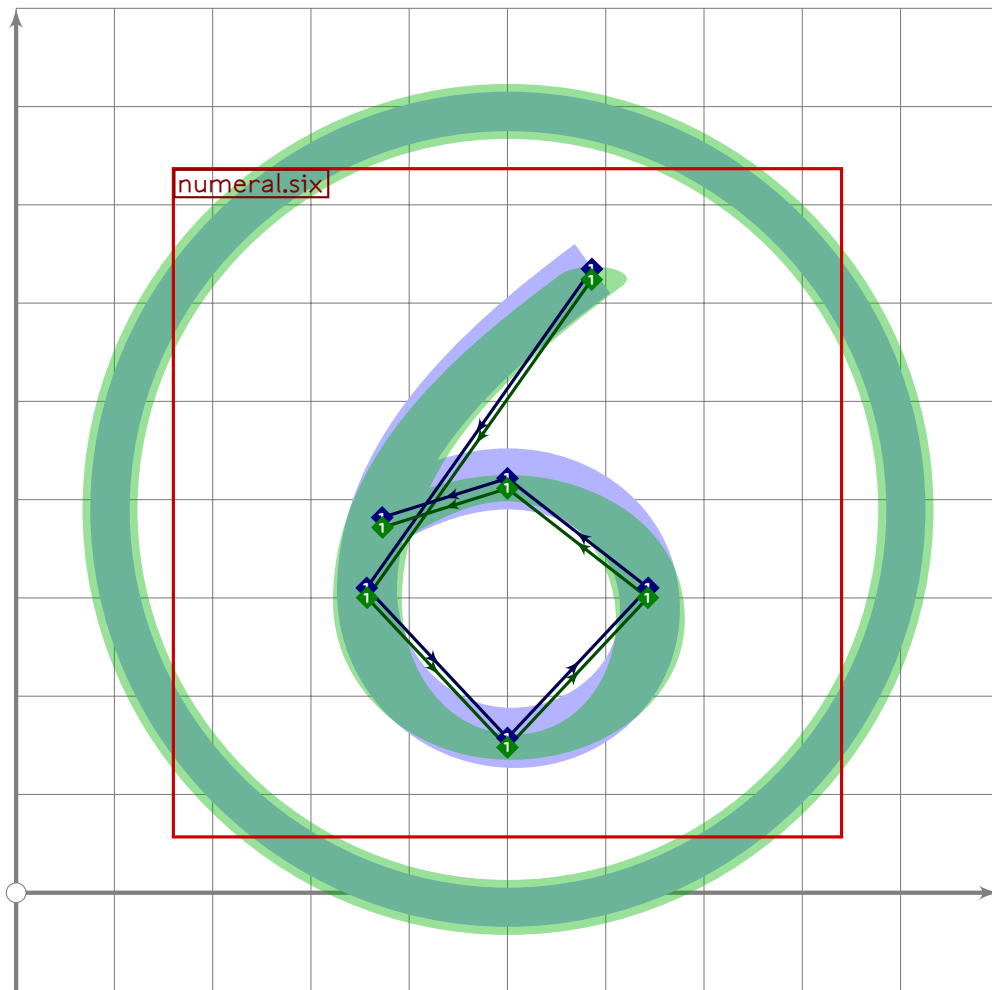
```
60 % 3
61 begint Suglyph("uni2462";98);
62 tsu_curve.circle.single;
63 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.three);
64 tsu_render;
65 endsuglyph;
66
```



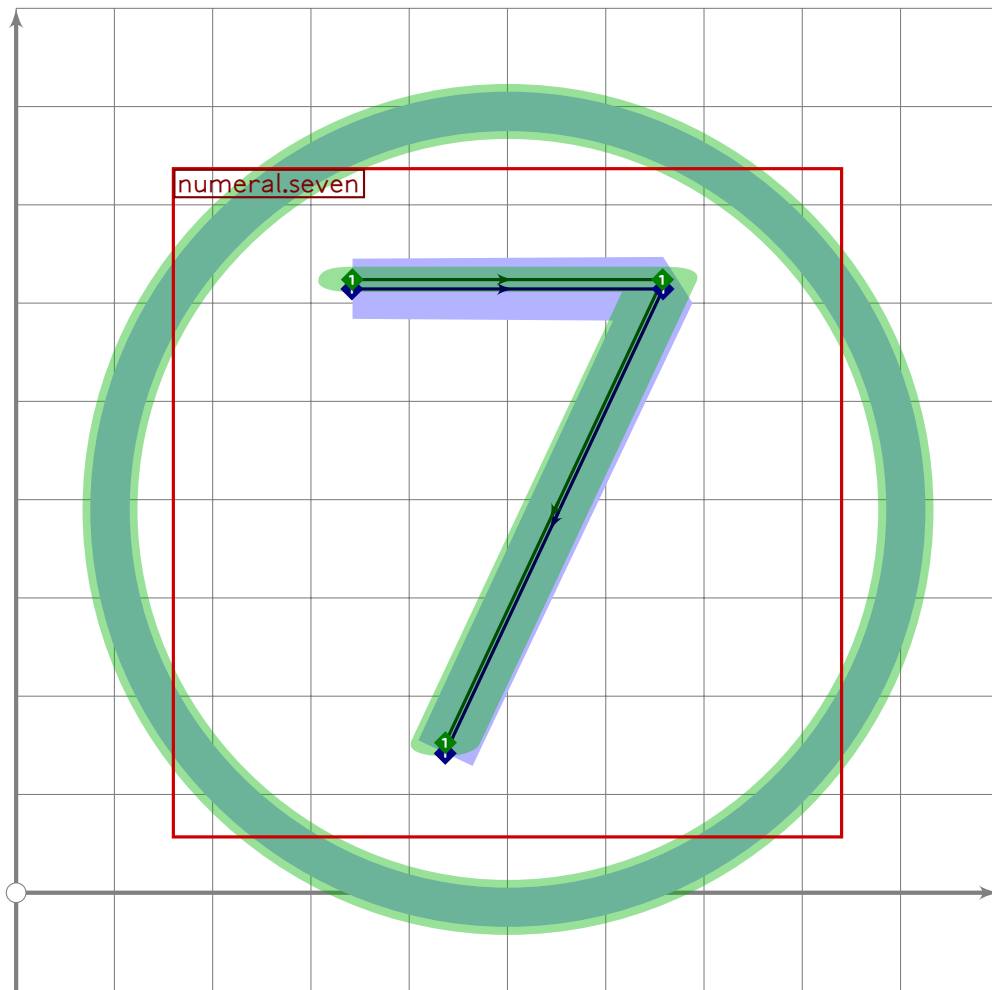
```
67 % 4
68 beginsuglyph("uni2463";99);
69 tsu_curve.circle.single;
70 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.four);
71 tsu_render;
72 endsuglyph;
73
```



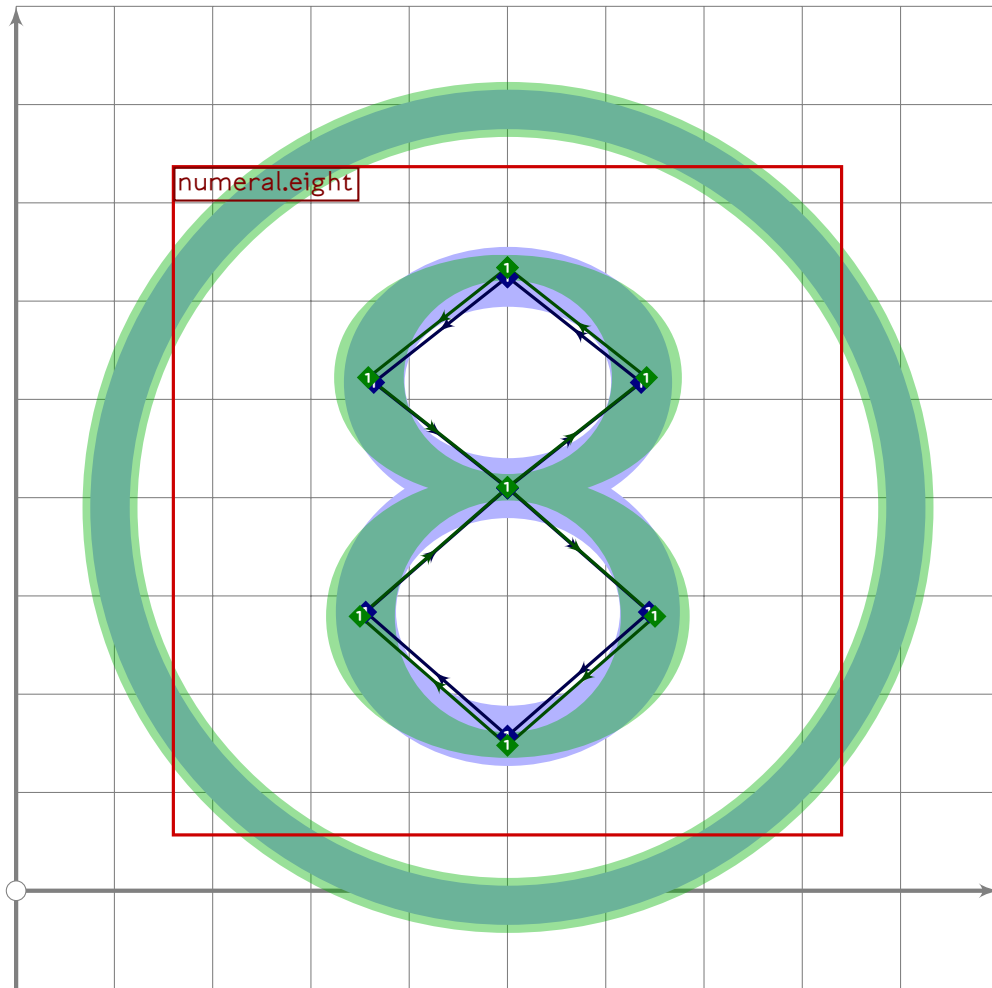
```
74 % 5
75 beginsuglyph("uni2464",100);
76 tsu_curve.circle.single;
77 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.five);
78 tsu_render;
79 endsuglyph;
80
```



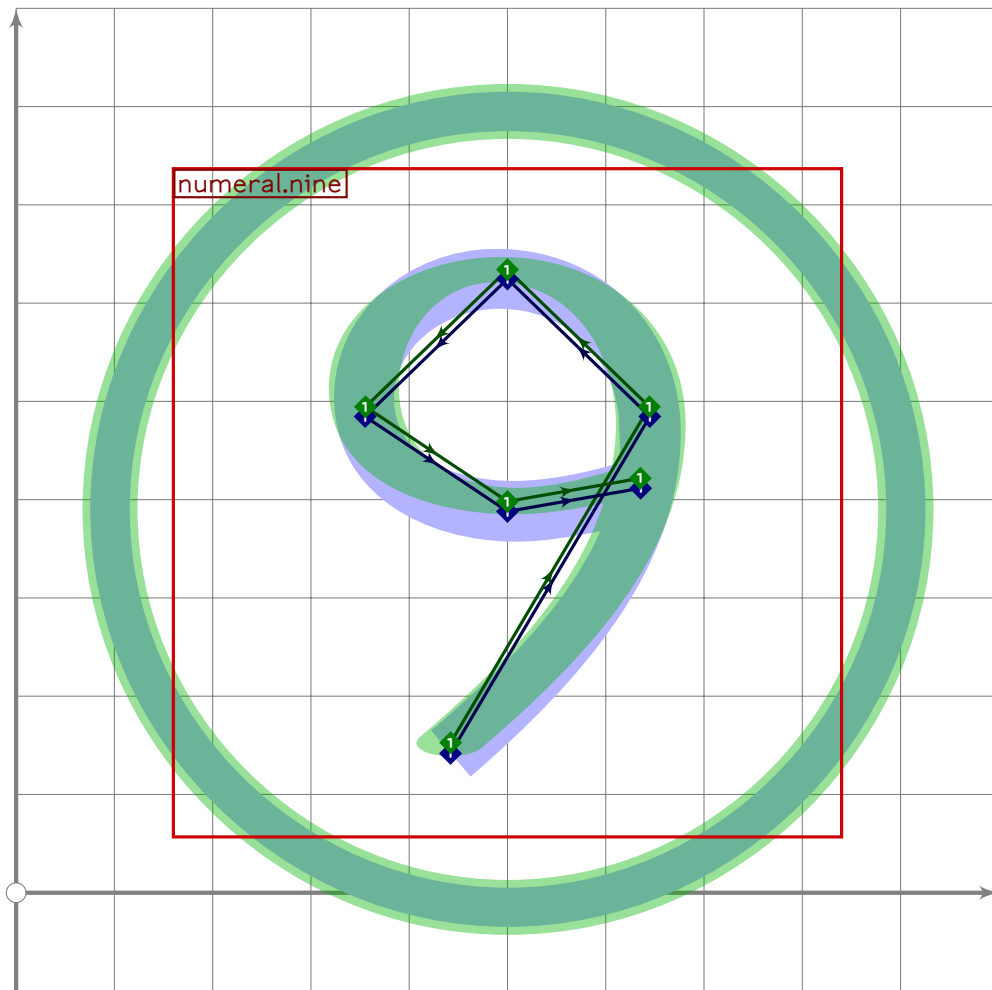
```
81 % 6  
82 begint Suglyph("uni2465",101);  
83   tsu_curve.circle.single;  
84   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.six);  
85   tsu_render;  
86 endtsuglyph;  
87
```



```
88 % 7
89 begint Suglyph("uni2466",102);
90 tsu_curve.circle.single;
91 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.seven);
92 tsu_render;
93 endsuglyph;
94
```

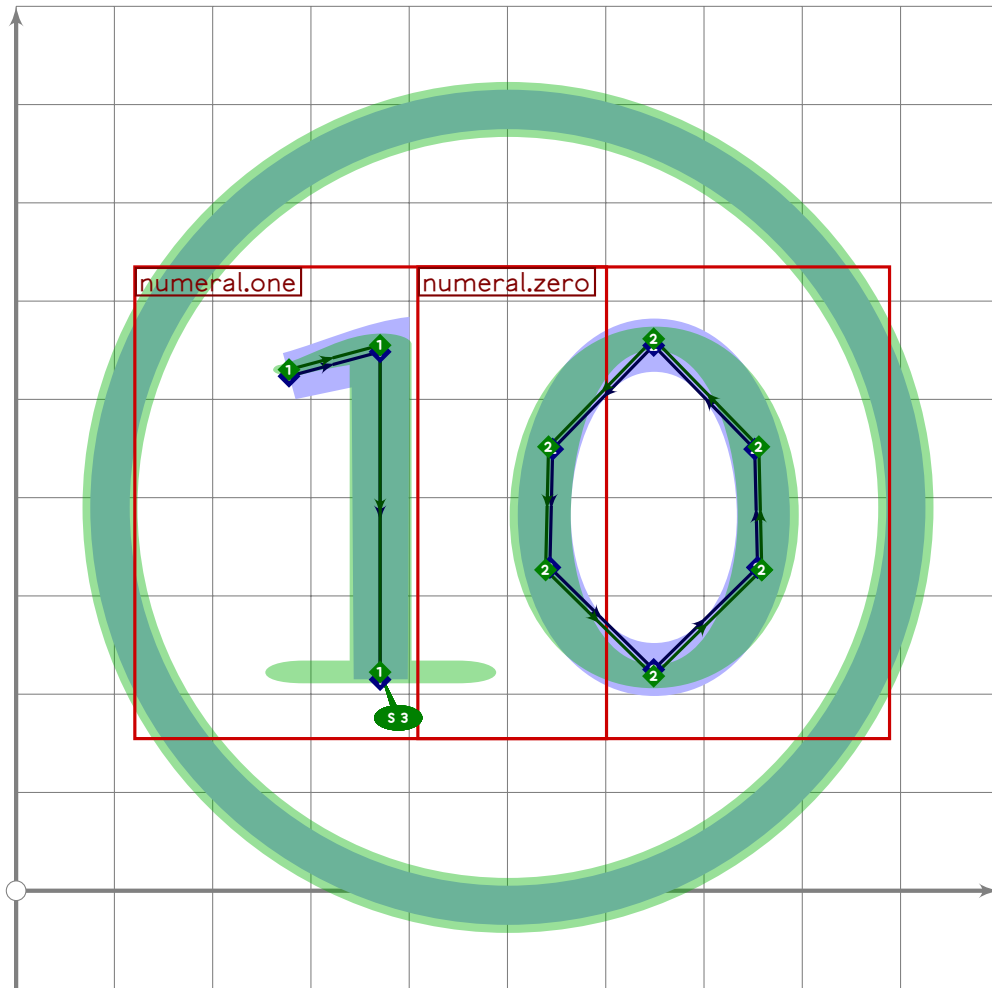


```
95 % 8
96 begint Suglyph("uni2467",103);
97   tsu_curve.circle.single;
98   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.eight);
99   tsu_render;
100 endsuglyph;
101
```



```
102 % 9
103 begint Suglyph("uni2468",104);
104 tsu_curve.circle.single;
105 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.nine);
106 tsu_render;
107 endtsuglyph;
108
```

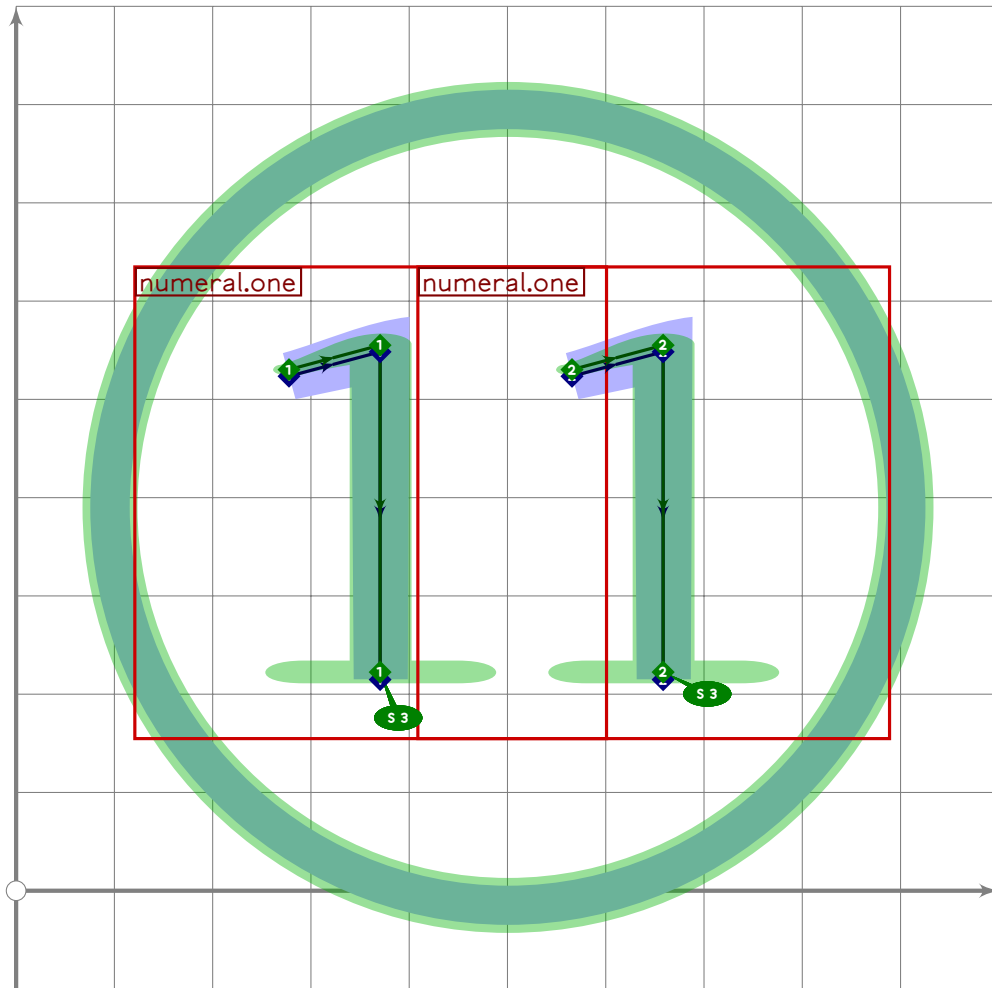




```

109 % 10
110 beginsuglyph("uni2469",105);
111   tsu_curve.circle.single;
112   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
113   numeric x[],y[];
114   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
115   tsu_render;
116 endsuglyph;
117

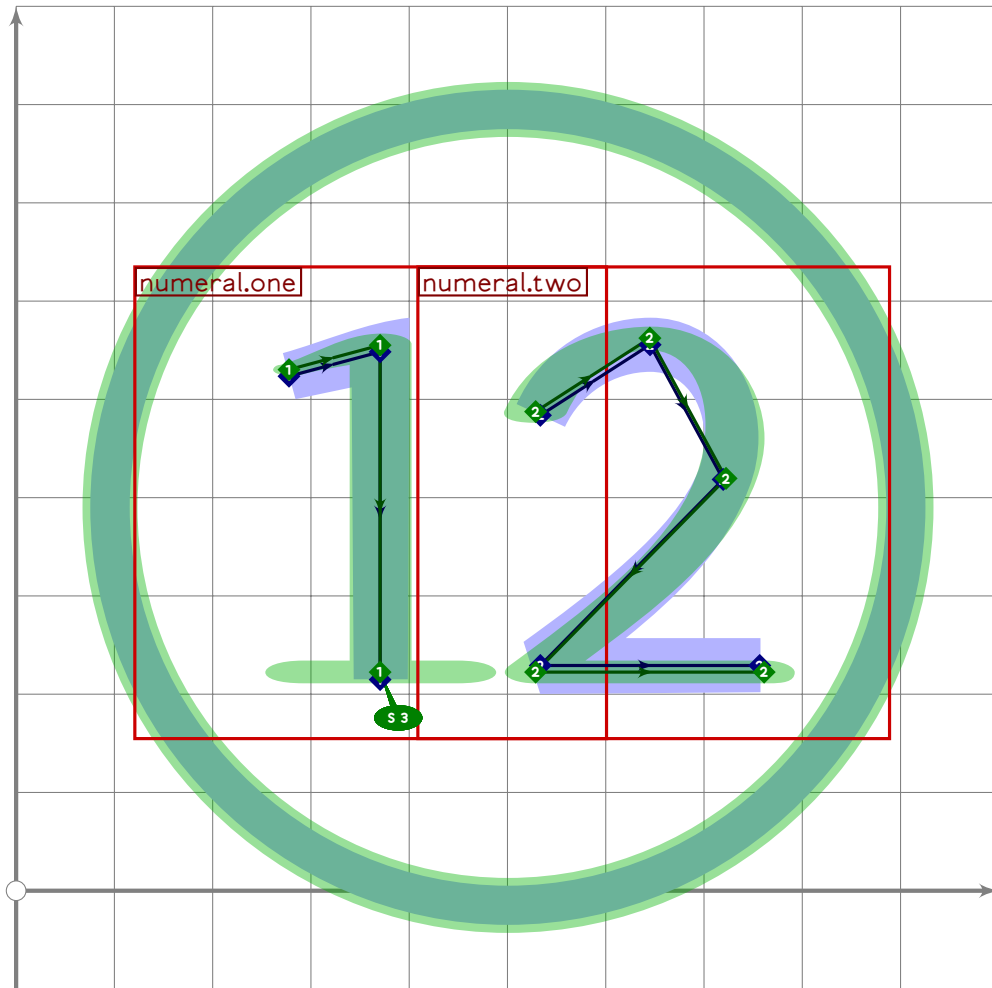
```



```

118 % 11
119 begint Suglyph("uni246A",106);
120 tsu_curve.circle.single;
121 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
122 numeric x[],y[];
123 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.one);
124 tsu_render;
125 endtsuglyph;
126

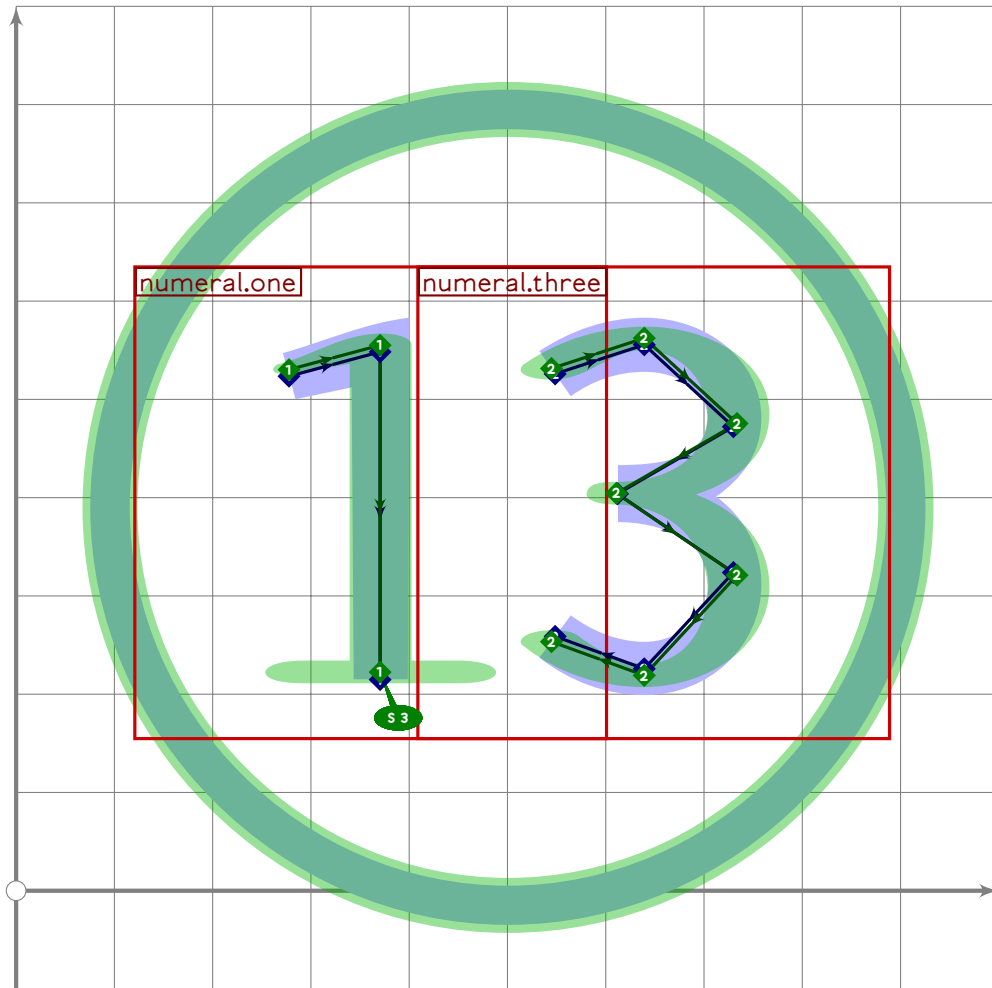
```



```

127 % 12
128 begint Suglyph("uni246B",107);
129 tsu_curve.circle.single;
130 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
131 numeric x[],y[];
132 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.two);
133 tsu_render;
134 endtsuglyph;
135

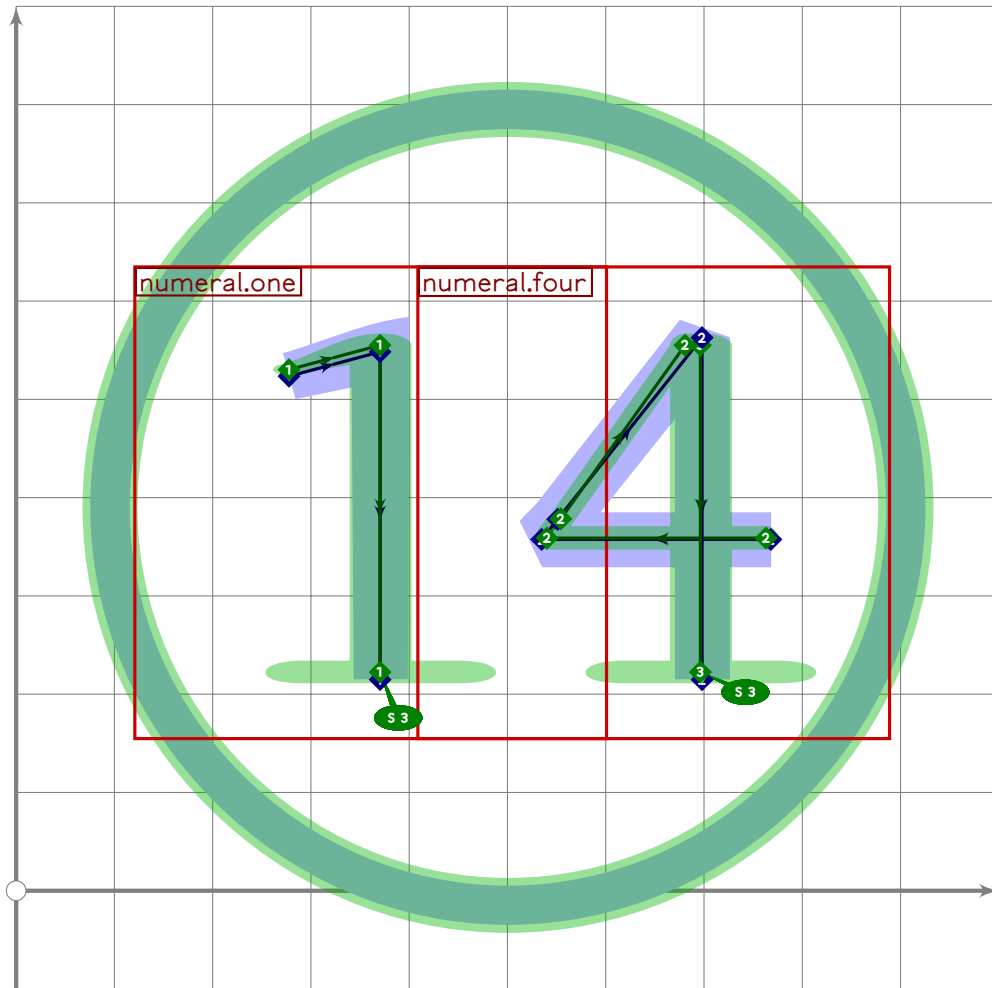
```



```

136 % 13
137 begint Suglyph("uni246C";108);
138   tsu_curve.circle.single;
139   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
140   numeric x[],y[];
141   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.three);
142   tsu_render;
143 endtsuglyph;
144

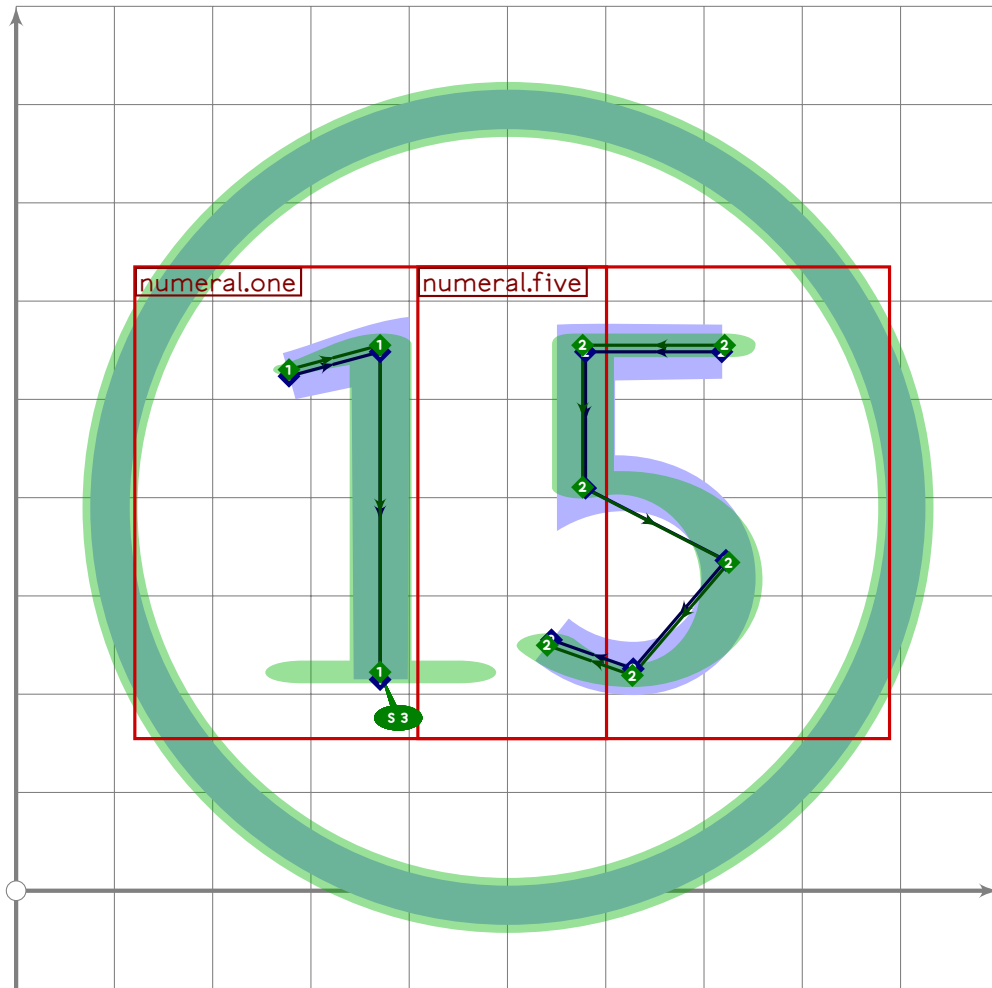
```



```

145 % 14
146 begint Suglyph("uni246D";109);
147   tsu_curve.circle.single;
148   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
149   numeric x[],y[];
150   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.four);
151   tsu_render;
152 endtsuglyph;
153

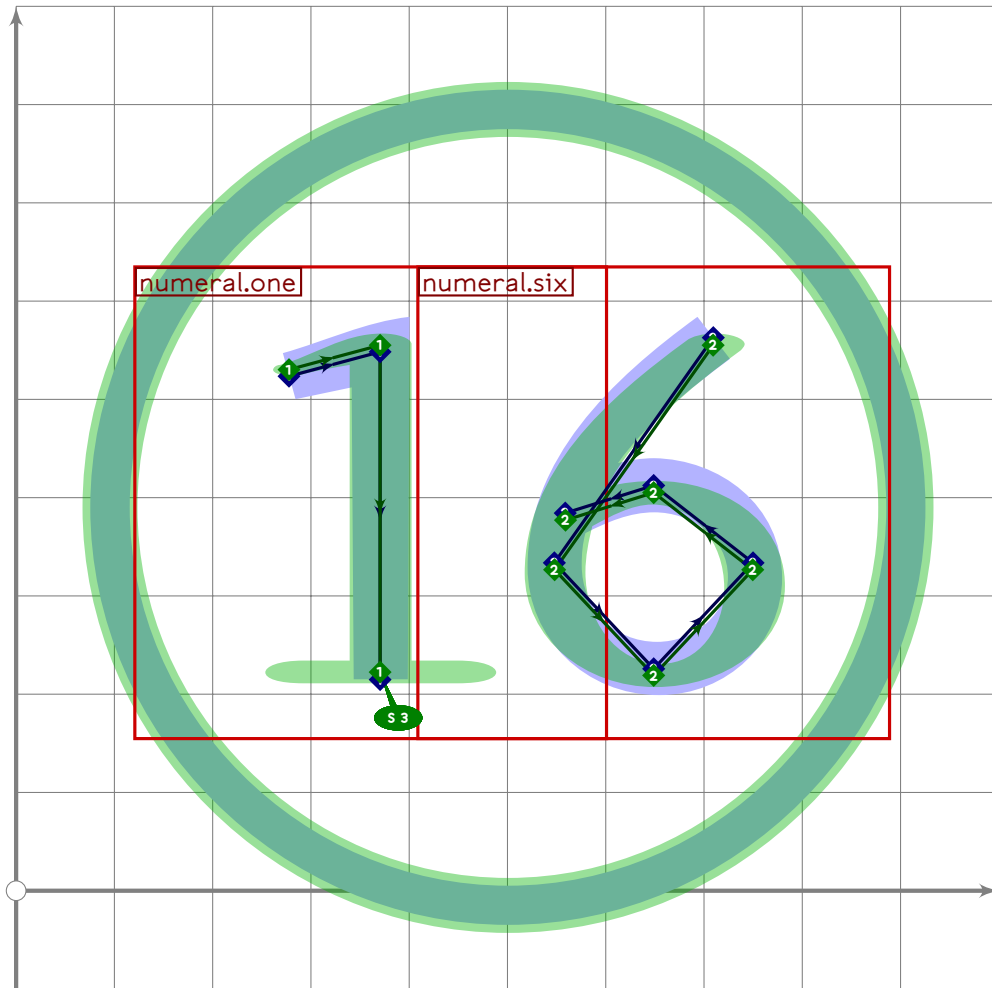
```



```

154 % 15
155 begint Suglyph("uni246E",110);
156 tsu_curve.circle.single;
157 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
158 numeric x[],y[];
159 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.five);
160 tsu_render;
161 endtsuglyph;
162

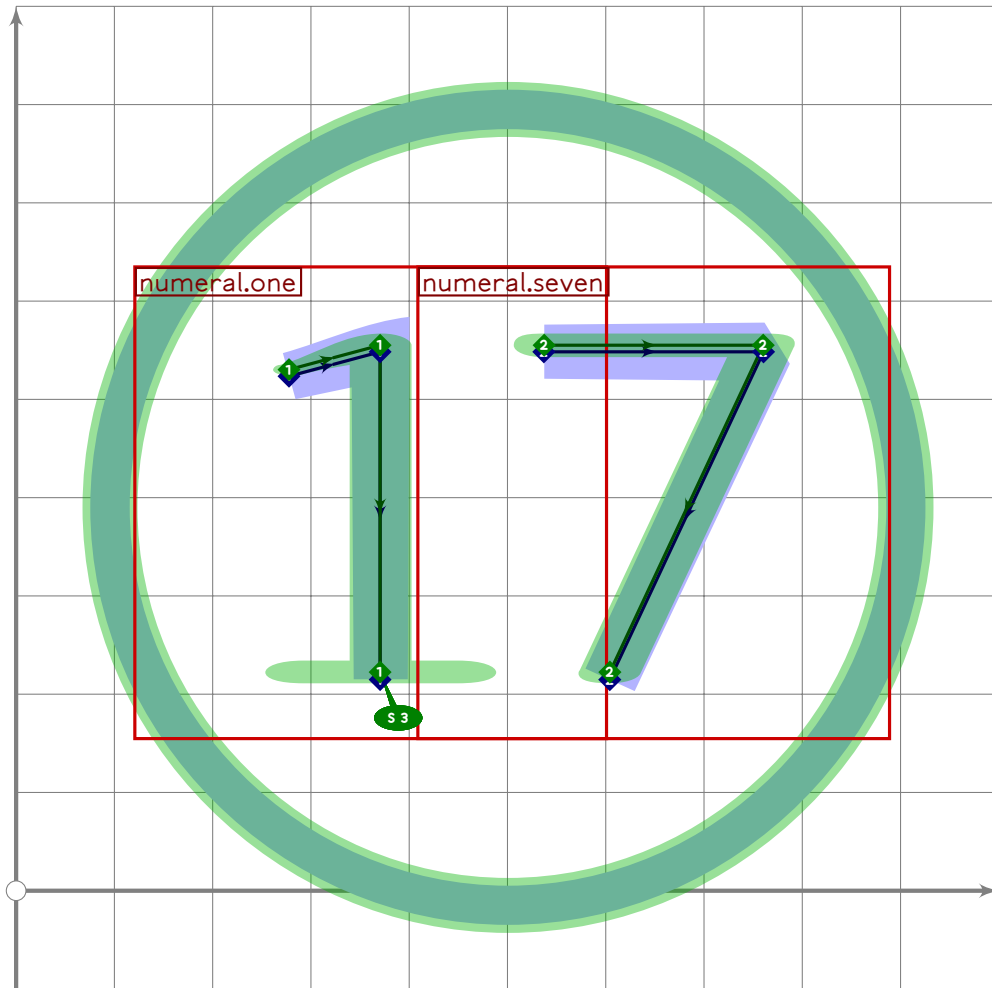
```



```

163 % 16
164 beginsuglyph("uni246F",111);
165   tsu_curve.circle.single;
166   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
167   numeric x[],y[];
168   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.six);
169   tsu_render;
170 endsuglyph;
171

```

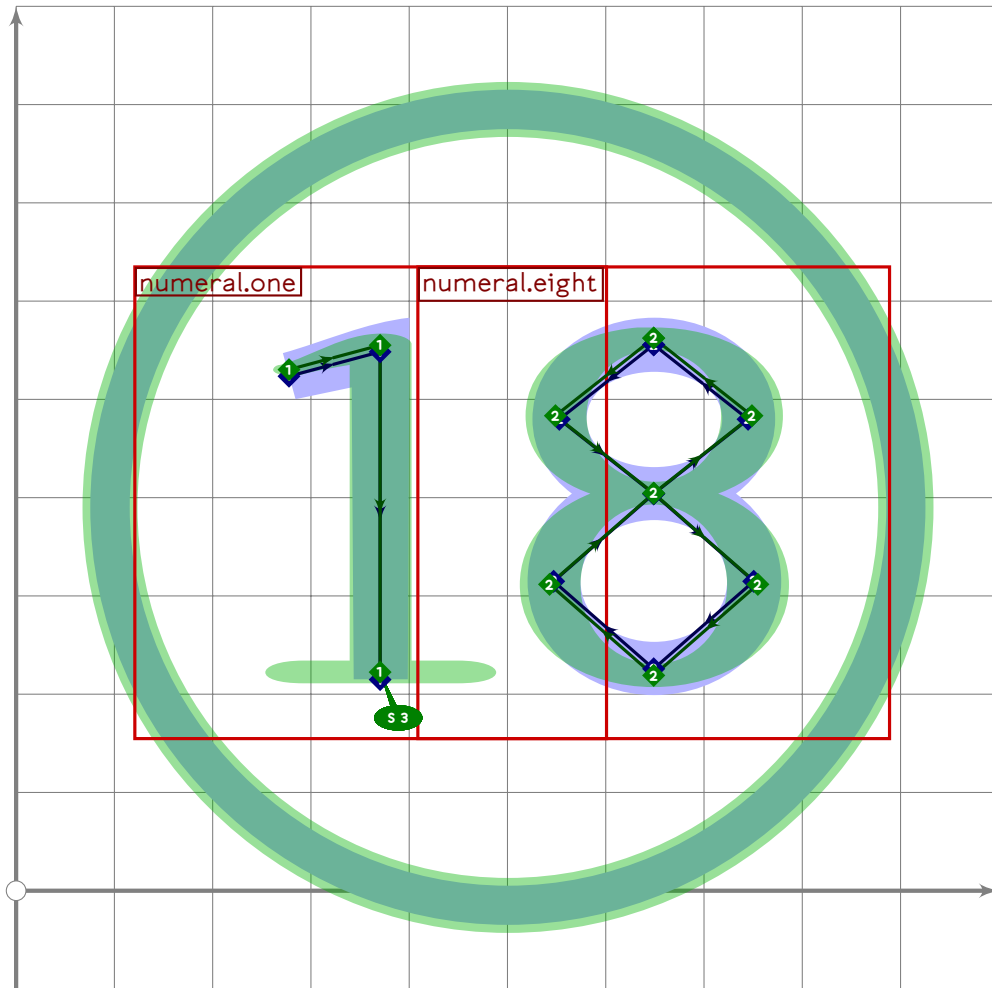


```

172 % 17
173 begint Suglyph("uni2470",112);
174   tsu_curve.circle.single;
175   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
176   numeric x[],y[];
177   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.seven);
178   tsu_render;
179 endtsuglyph;
180

```

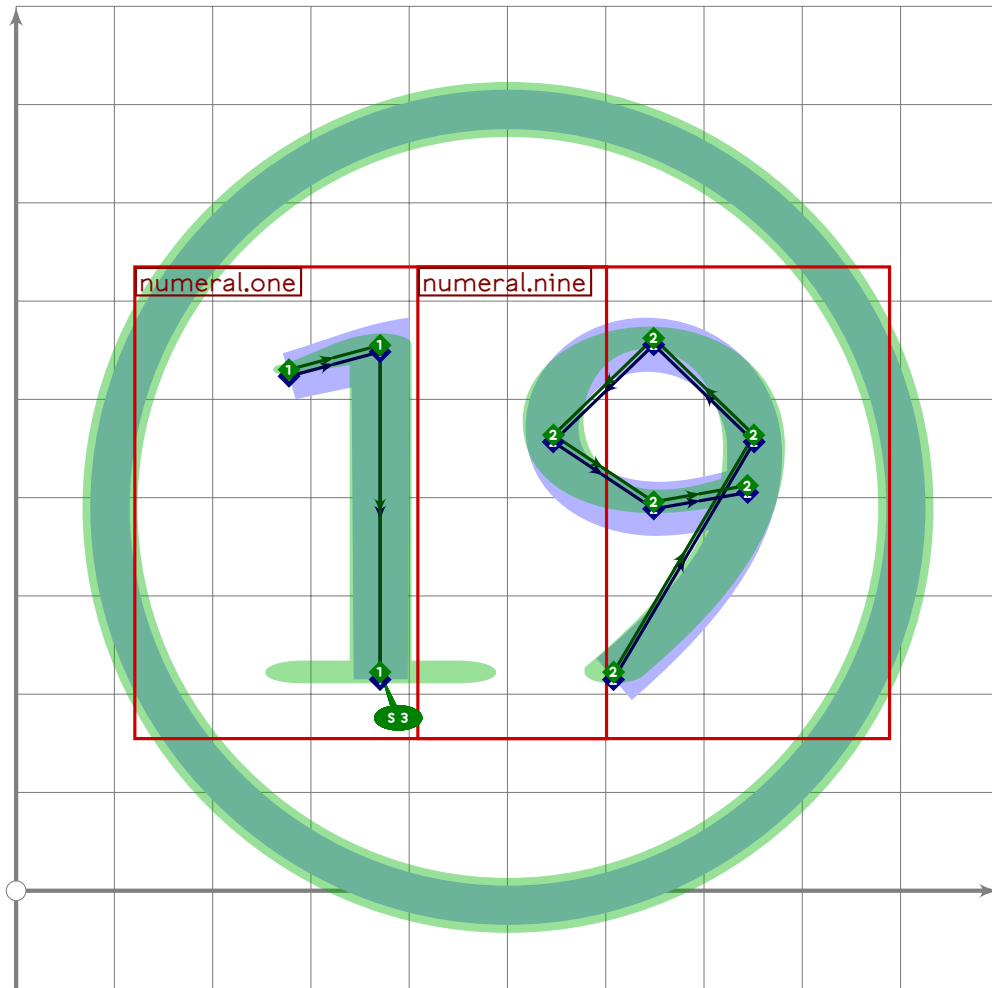




```

181 % 18
182 begint Suglyph("uni2471";113);
183   tsu_curve.circle.single;
184   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
185   numeric x[],y[];
186   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.eight);
187   tsu_render;
188 endtsuglyph;
189

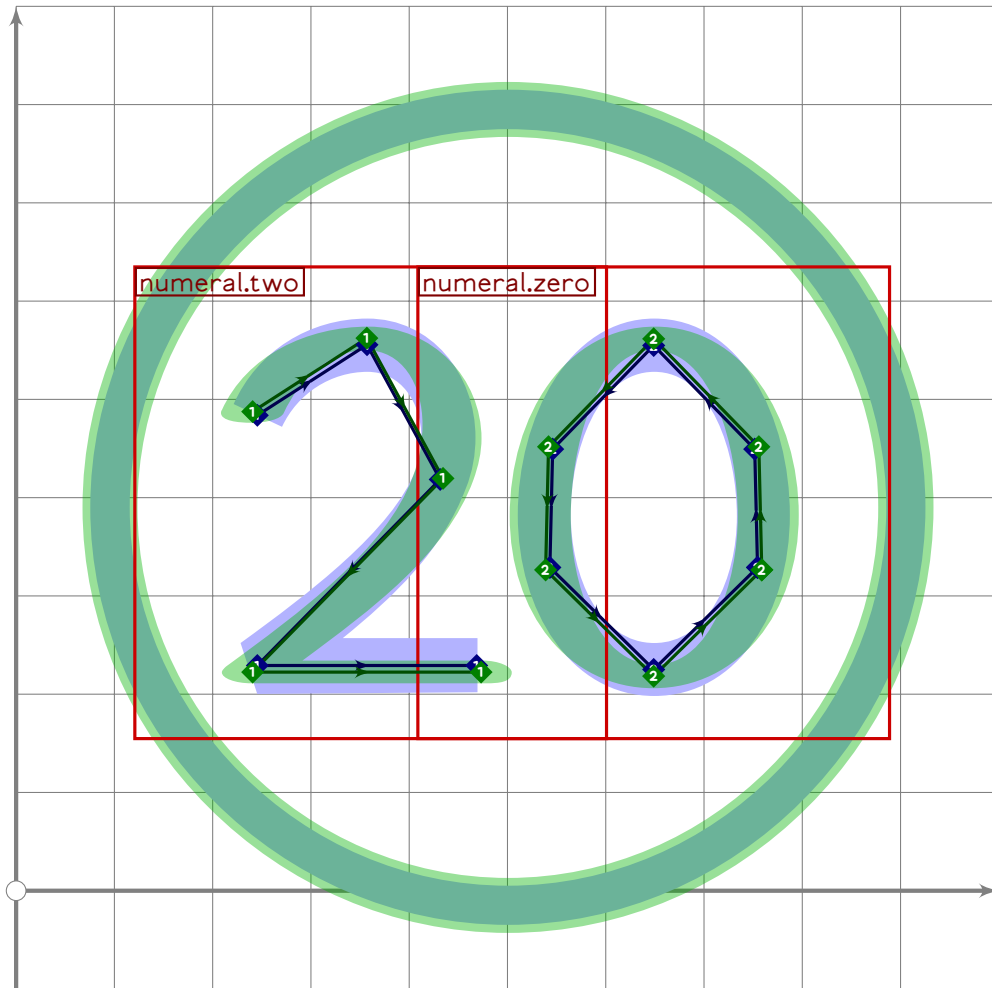
```



```

190 % 19
191 begint Suglyph("uni2472",114);
192   tsu_curve.circle.single;
193   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
194   numeric x[],y[];
195   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.nine);
196   tsu_render;
197 endtsuglyph;
198

```



```

199 % 20
200 beginsuglyph("uni2473";115);
201   tsu_curve.circle.single;
202   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
203   numeric x[],y[];
204   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
205   tsu_render;
206 endsuglyph;
207
208
209

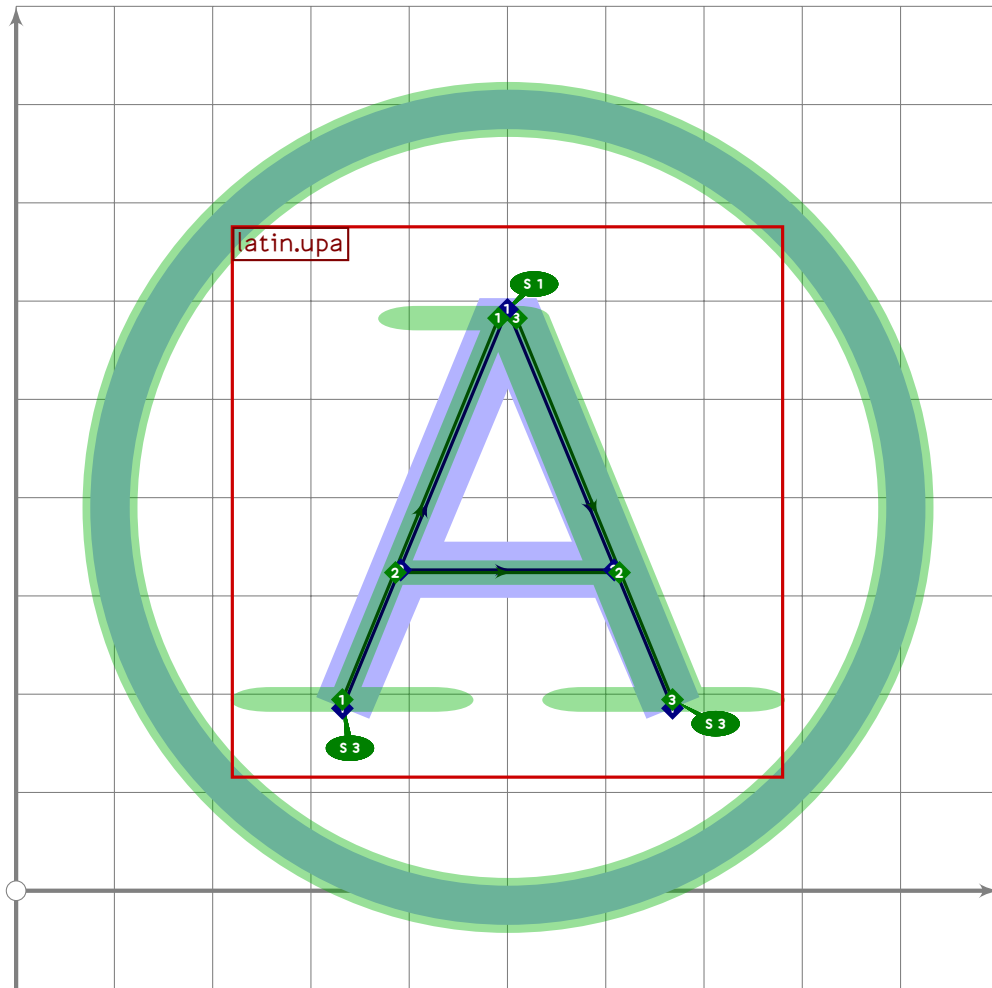
```

## Circled Latin And Zero

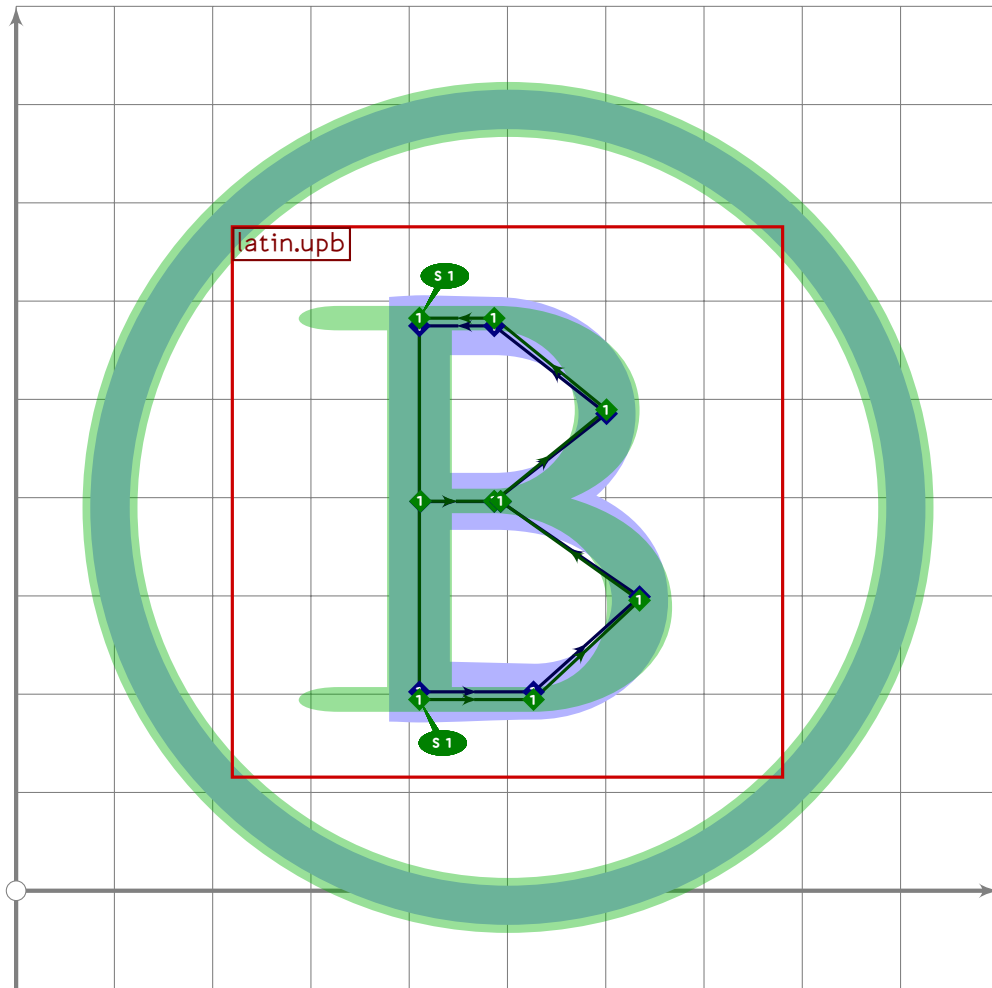
```

210 % CIRCLED LATIN AND ZERO
211

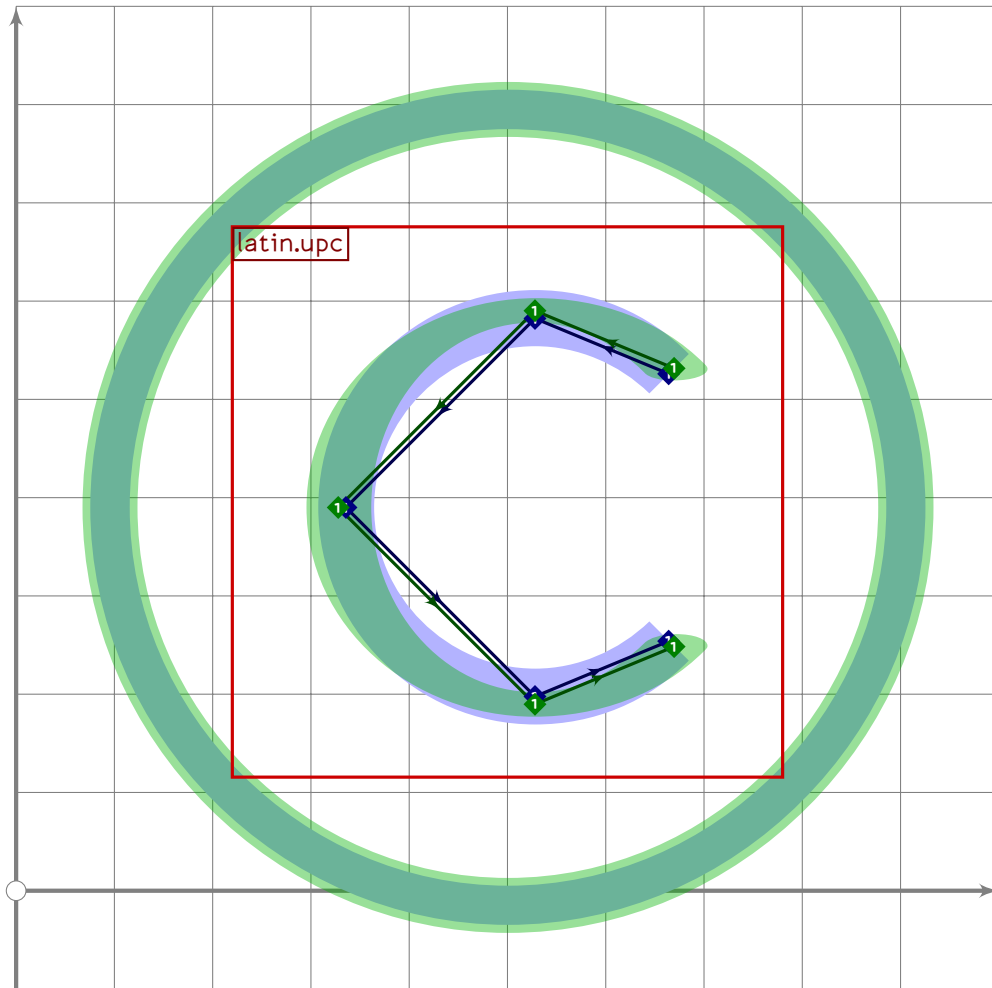
```



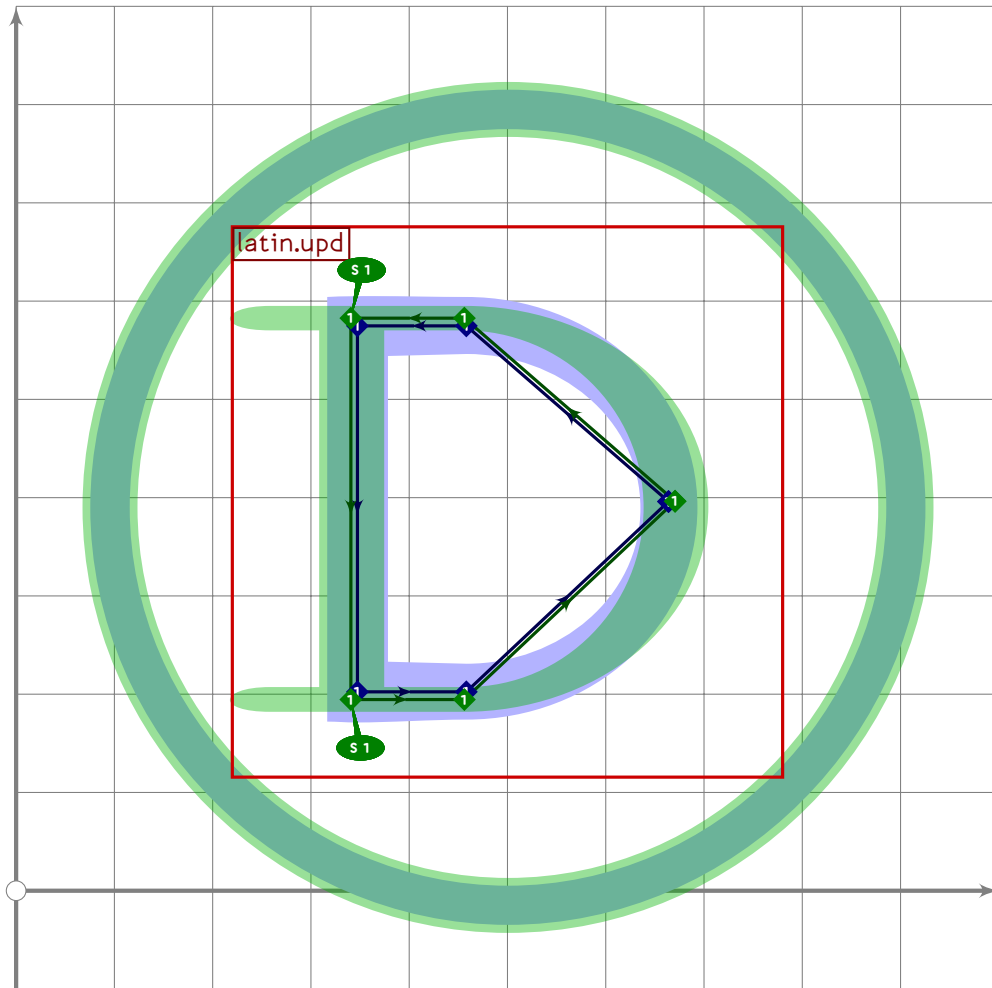
```
212 % A
213 beginsuglyph("uni24B6",182);
214 tsu_curve.circle.single;
215 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upa);
216 tsu_render;
217 endsuglyph;
218
```



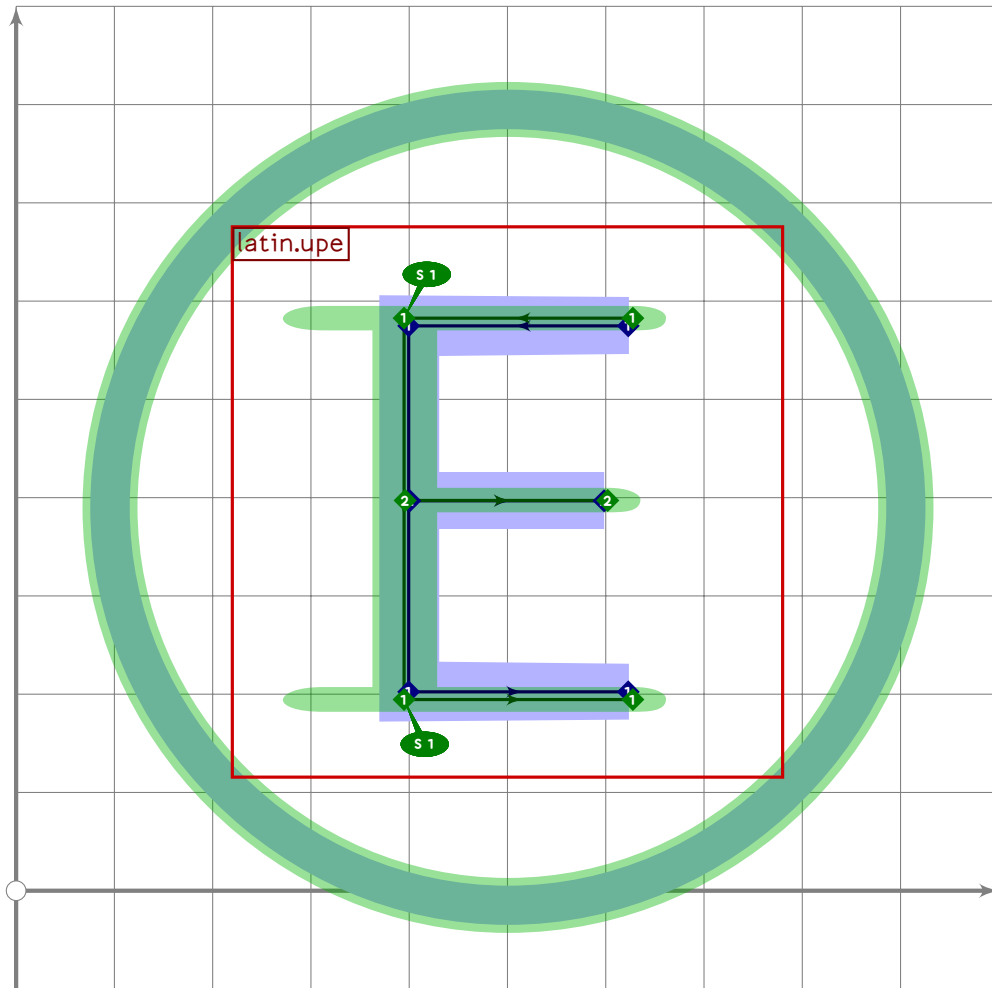
```
219 % B
220 beginsuglyph("uni24B7",183);
221 tsu_curve.circle.single;
222 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upb);
223 tsu_render;
224 endsuglyph;
225
```



```
226 % C
227 begint Suglyph("uni24B8",184);
228 tsu_curve.circle.single;
229 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upc);
230 tsu_render;
231 endsuglyph;
232
```



```
233 % D  
234 begint Suglyph("uni24B9",185);  
235 tsu_curve.circle.single;  
236 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upd);  
237 tsu_render;  
238 endsuglyph;  
239
```

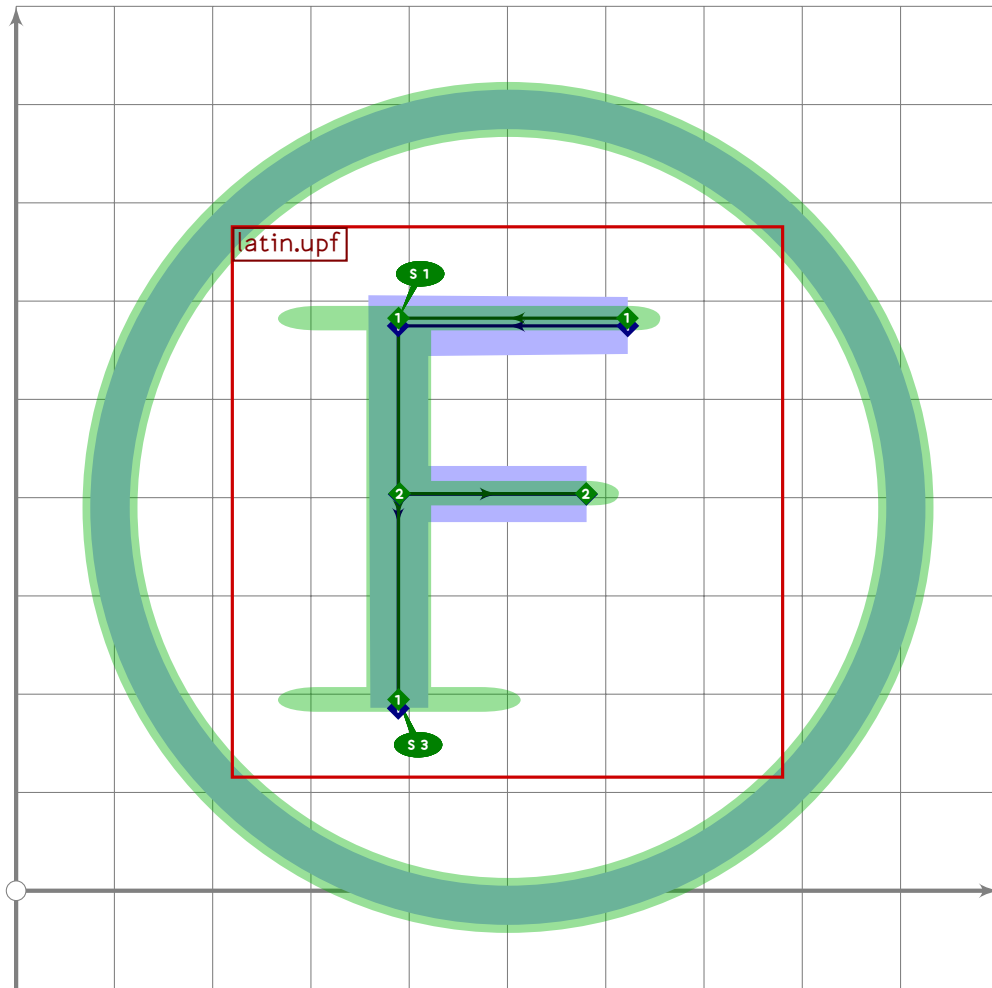


```

240 % E
241 begint Suglyph("uni24BA",186);
242 tsu_curve.circle.single;
243 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upe);
244 tsu_render;
245 endsuglyph;
246

```

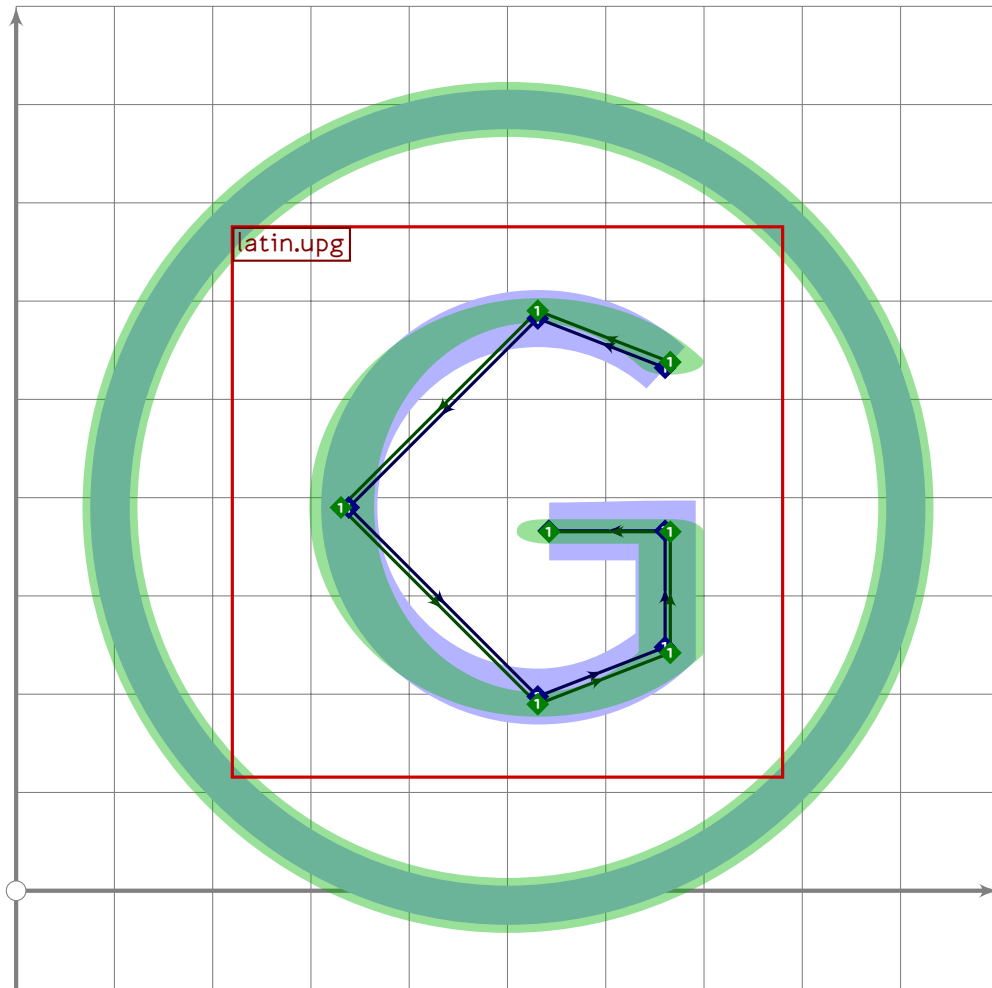




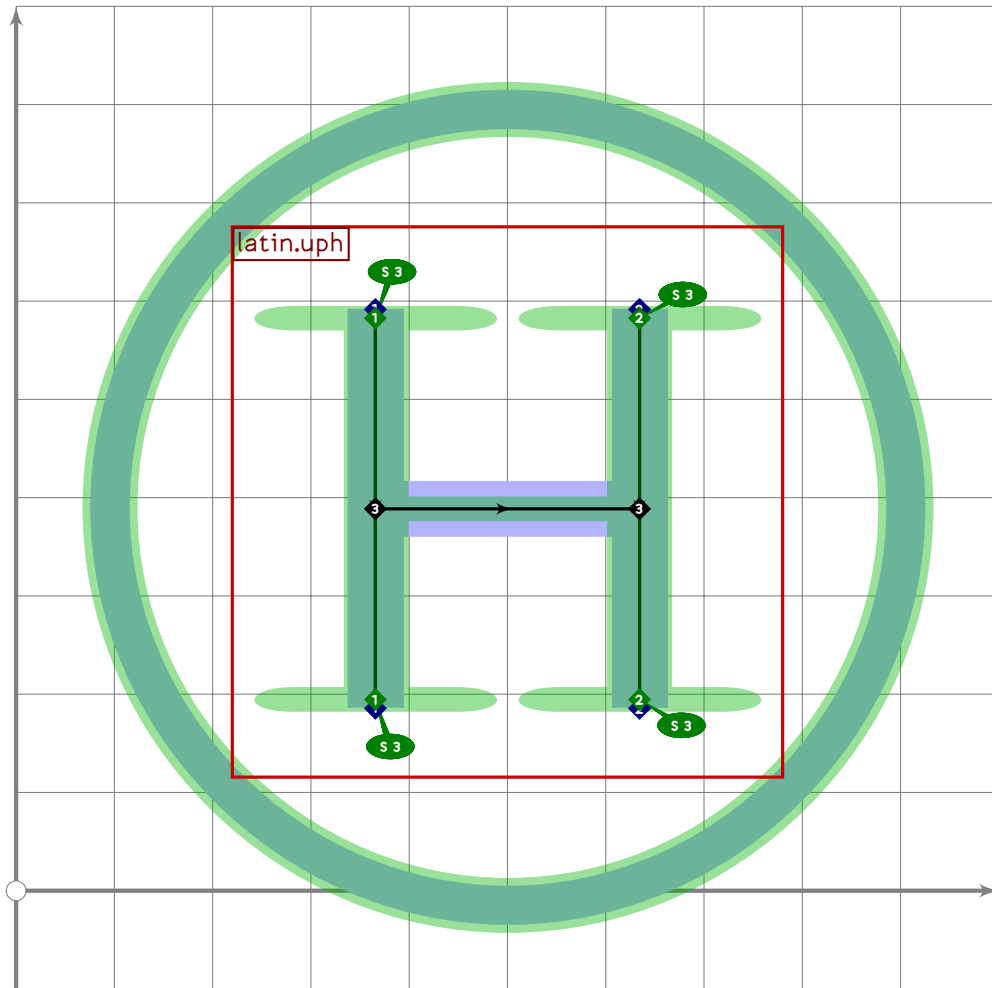
```

247 % F
248 begint Suglyph("uni24BB",187);
249 tsu_curve.circle.single;
250 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upf);
251 tsu_render;
252 endsuglyph;
253

```



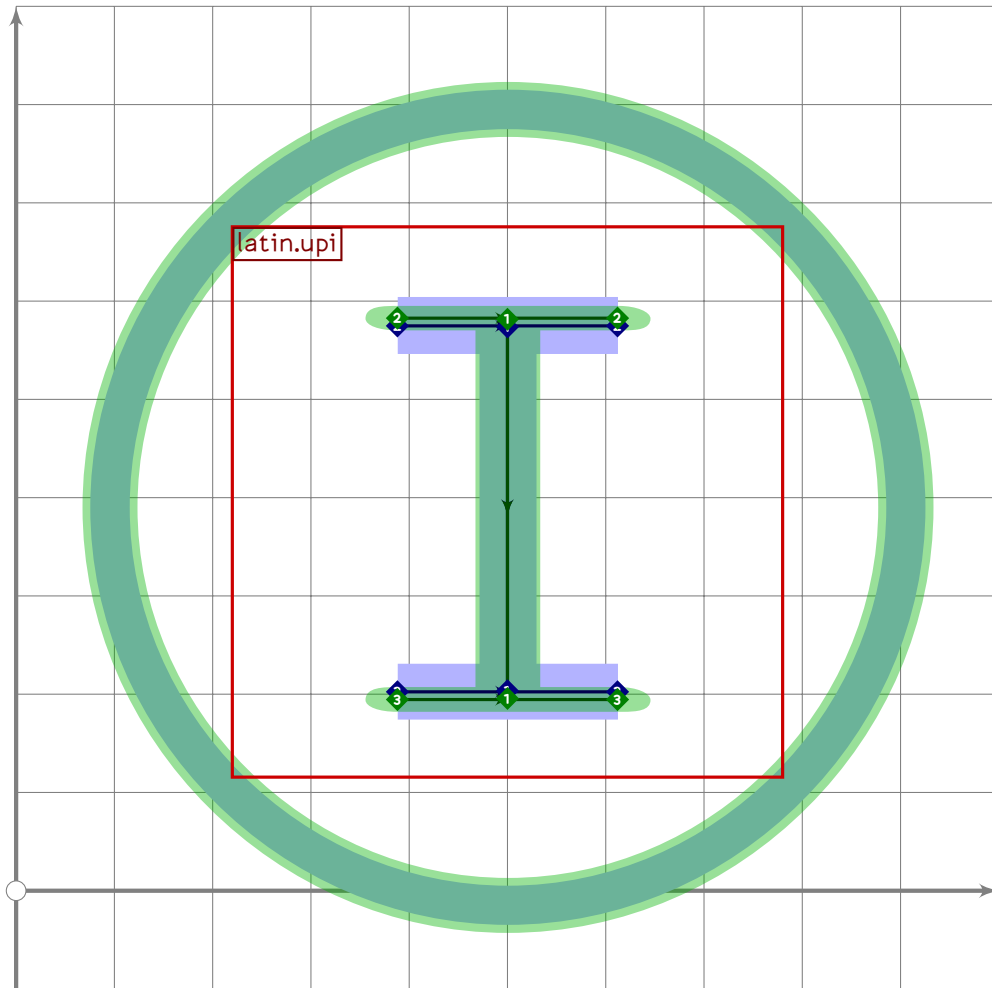
```
254 % G
255 begint Suglyph("uni24BC",188);
256 tsu_curve.circle.single;
257 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upg);
258 tsu_render;
259 endsuglyph;
260
```



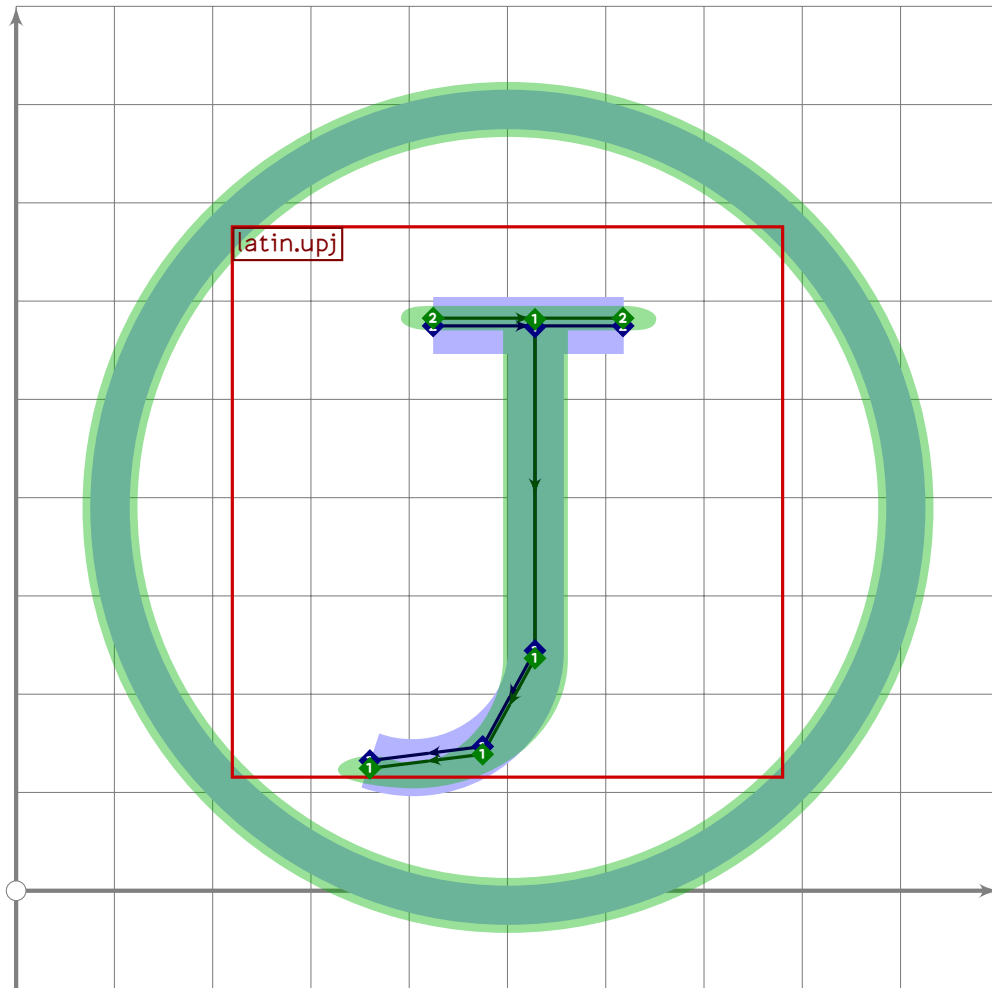
```

261 % H
262 begint Suglyph("uni24BD";189);
263   tsu_curve.circle.single;
264   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.uph);
265   tsu_render;
266 endsuglyph;
267

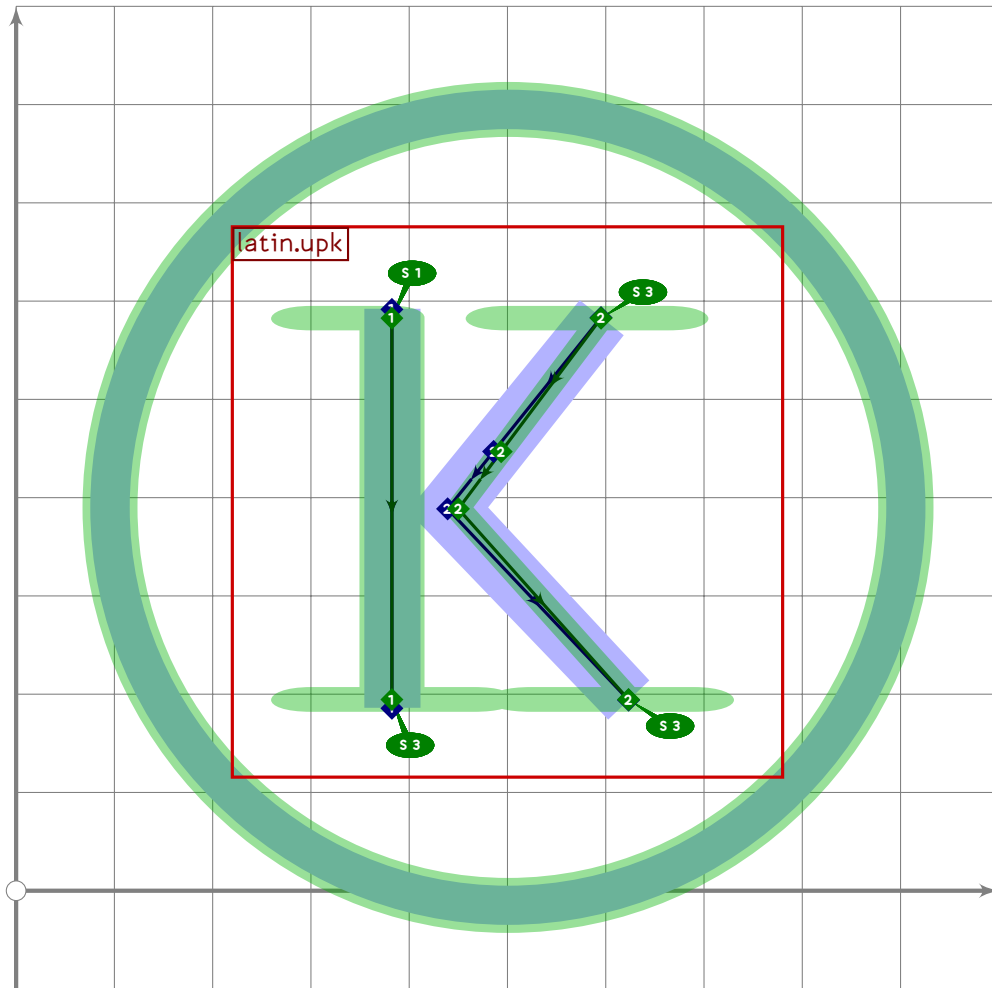
```



```
268 % I
269 begint Suglyph("uni24BE",190);
270 tsu_curve.circle.single;
271 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upi);
272 tsu_render;
273 endsuglyph;
274
```



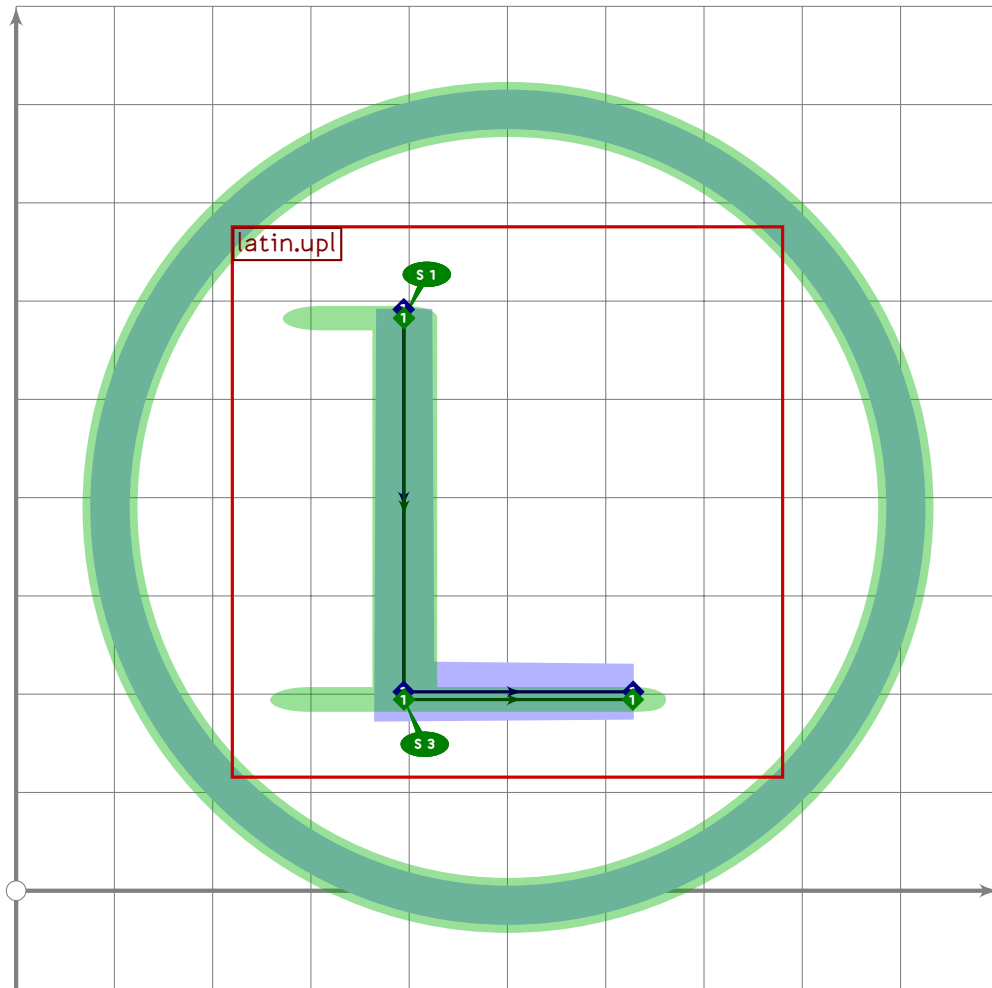
```
275 % J
276 begint Suglyph("uni24BF",191);
277 tsu_curve.circle.single;
278 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upj);
279 tsu_render;
280 endsuglyph;
281
```



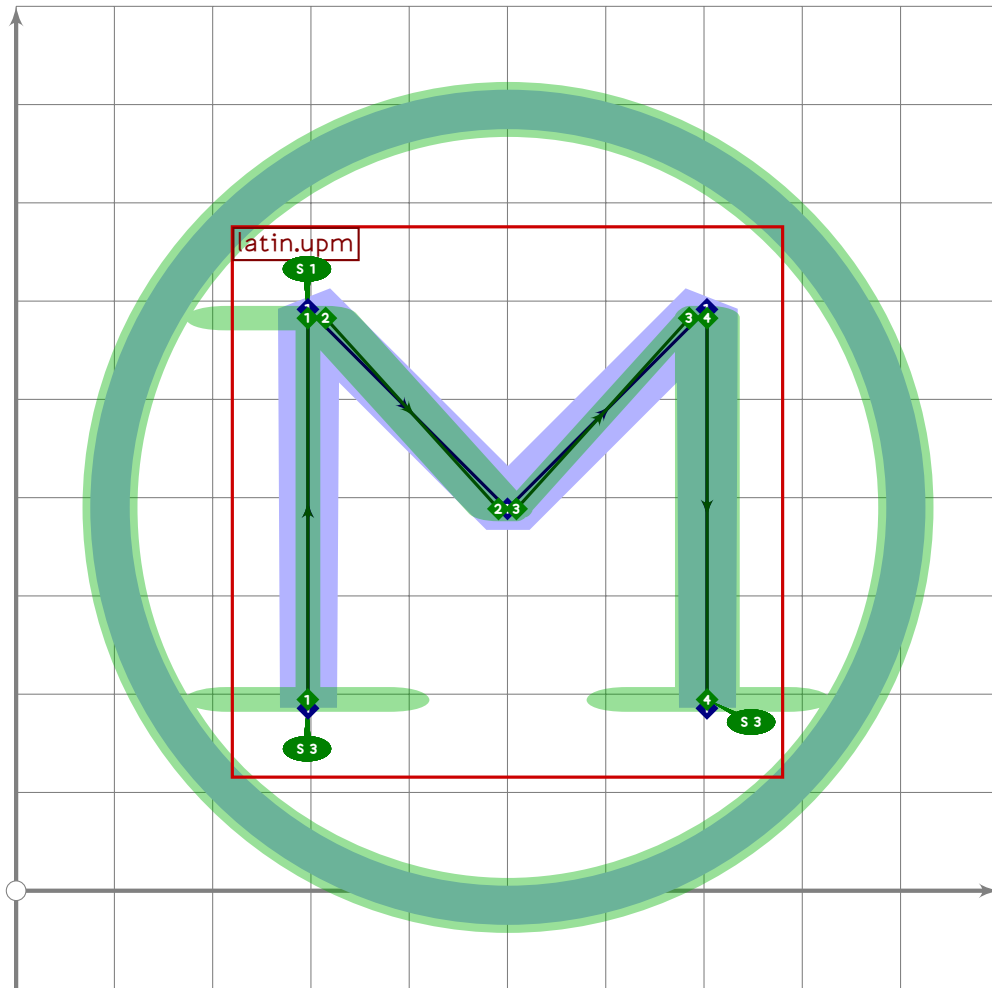
```

282 % K
283 beginsuglyph("uni24C0";192);
284 tsu_curve.circle.single;
285 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upk);
286 tsu_render;
287 endsuglyph;
288

```



```
289 % L
290 beginsuglyph("uni24C1",193);
291 tsu_curve.circle.single;
292 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upl);
293 tsu_render;
294 endsuglyph;
295
```

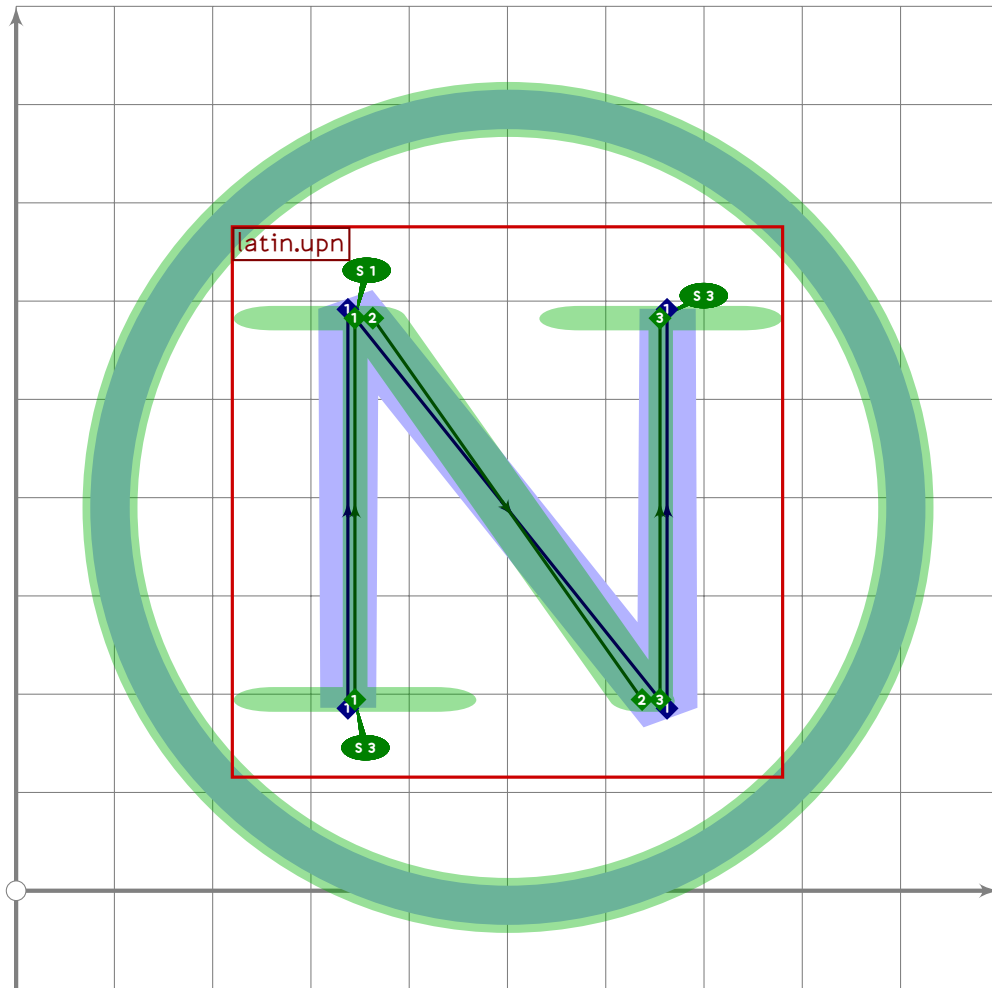


```

296 % M
297 begint Suglyph("uni24C2",194);
298   tsu_curve.circle.single;
299   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upm);
300   tsu_render;
301 endsuglyph;
302

```

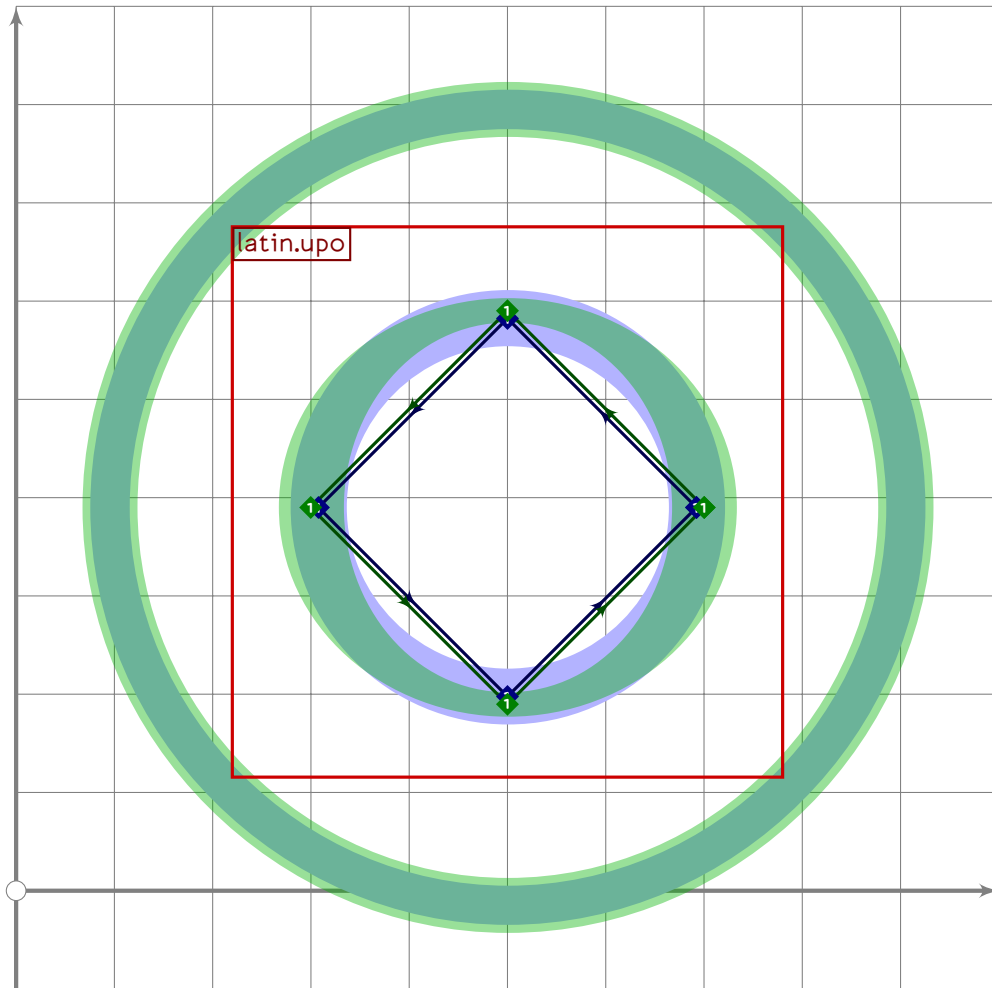




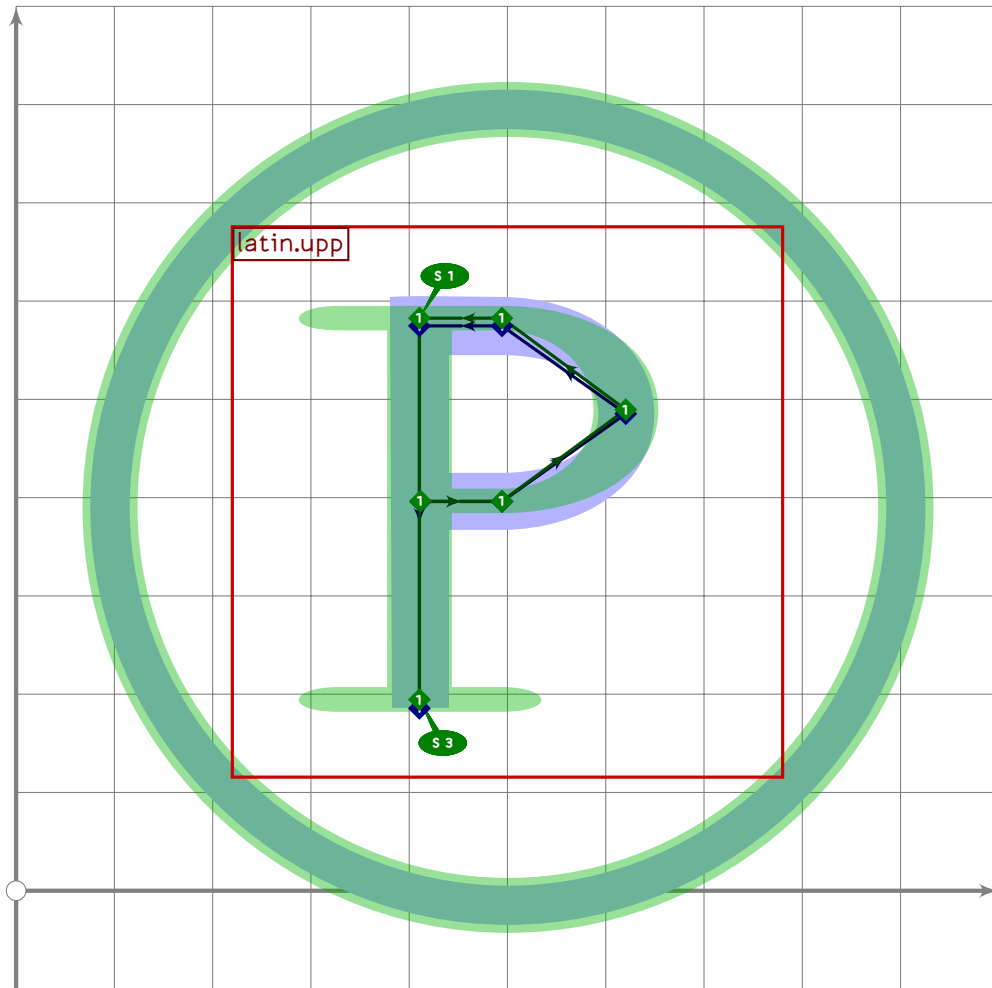
```

303 % N
304 beginsuglyph("uni24C3",195);
305   tsu_curve.circle.single;
306   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upn);
307   tsu_render;
308 endsuglyph;
309

```



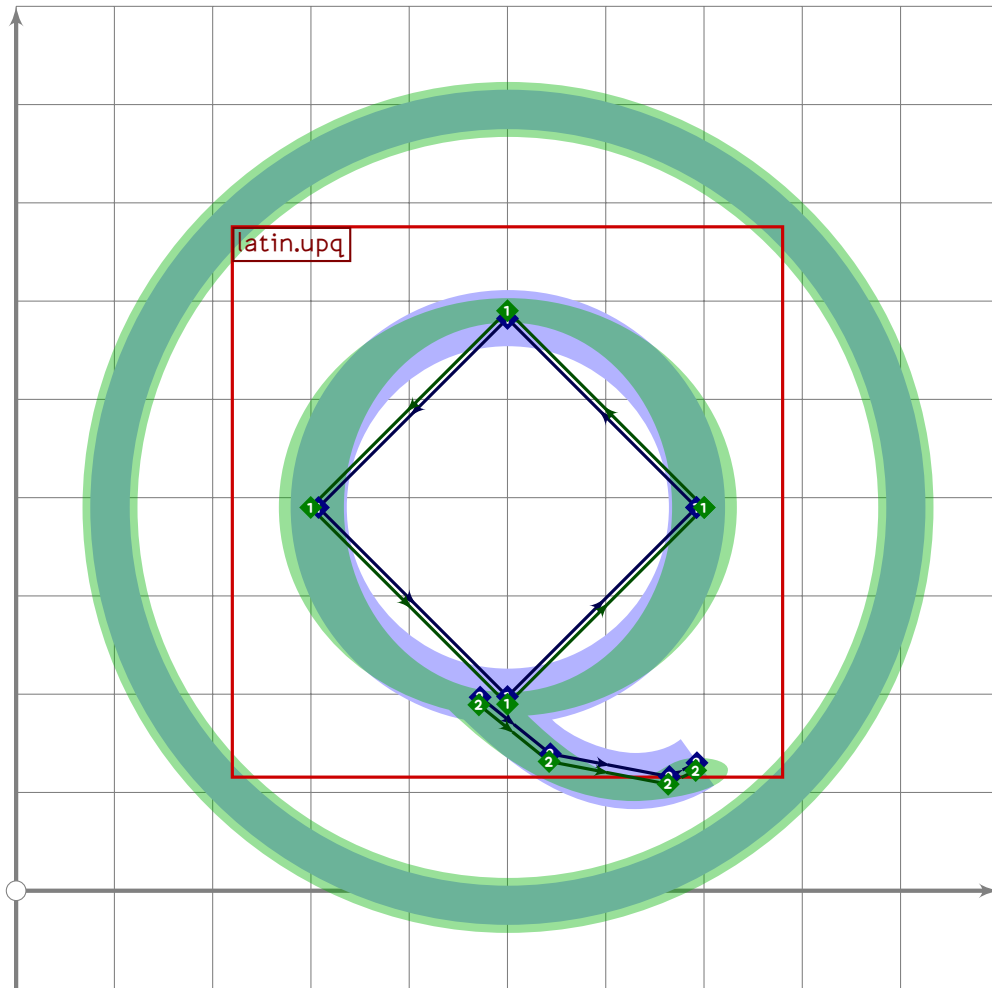
```
310 % O
311 begint Suglyph("uni24C4",196);
312 tsu_curve.circle.single;
313 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upo);
314 tsu_render;
315 endsuglyph;
316
```



```

317 % P
318 begint Suglyph("uni24C5",197);
319   tsu_curve.circle.single;
320   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upp);
321   tsu_render;
322 endsuglyph;
323

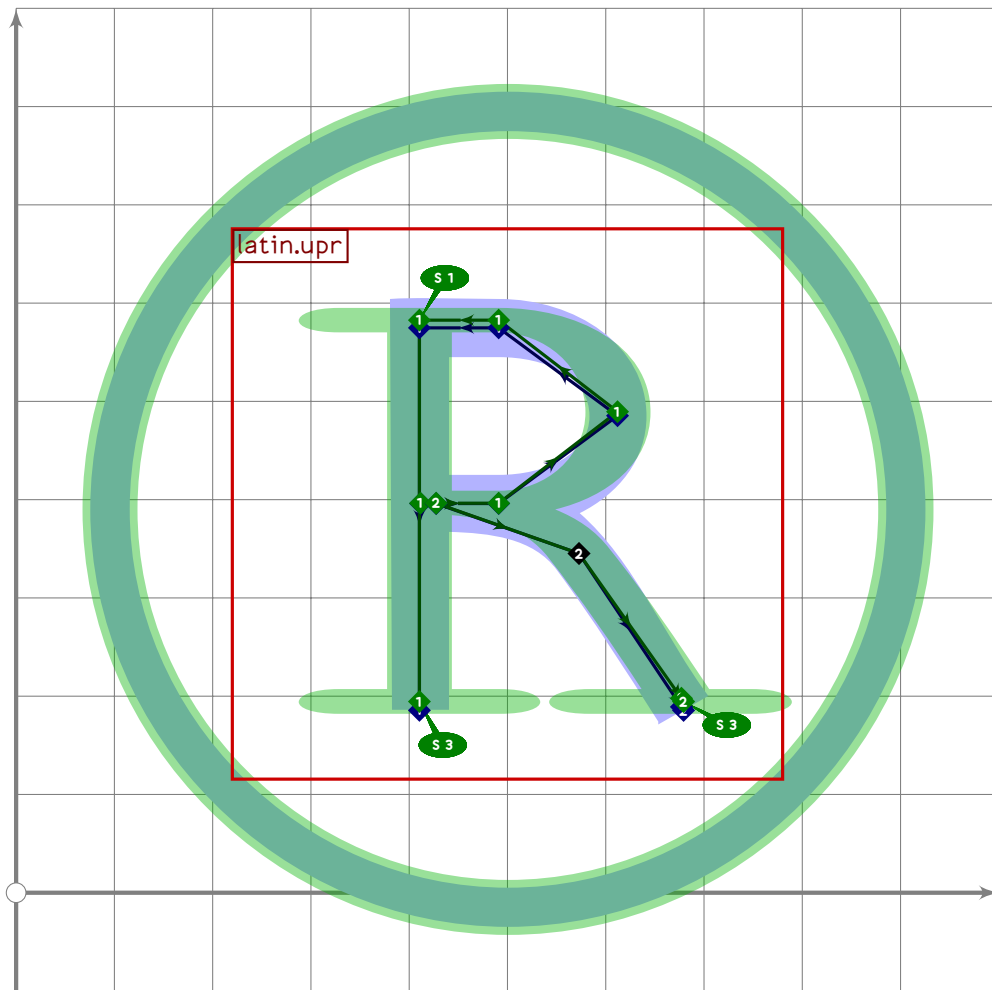
```



```

324 % Q
325 begint Suglyph("uni24C6",198);
326 tsu_curve.circle.single;
327 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upq);
328 tsu_render;
329 endsuglyph;
330

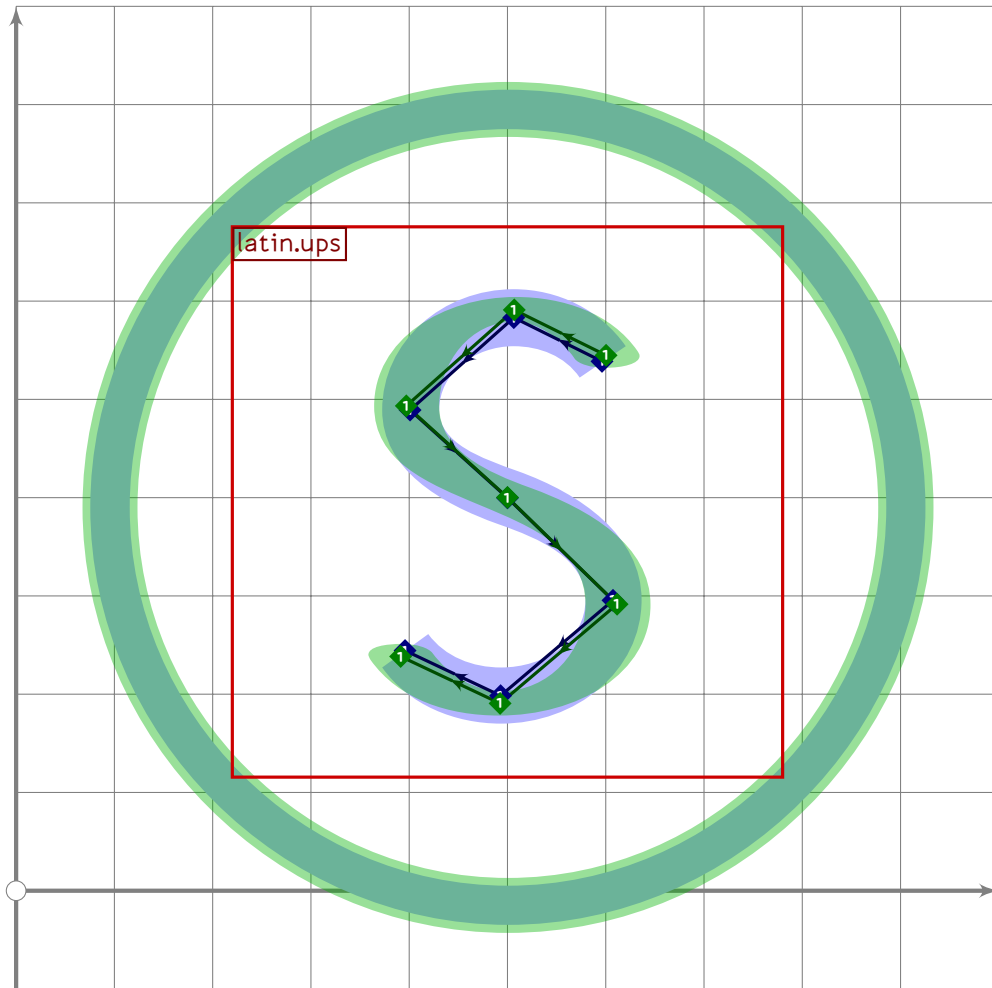
```



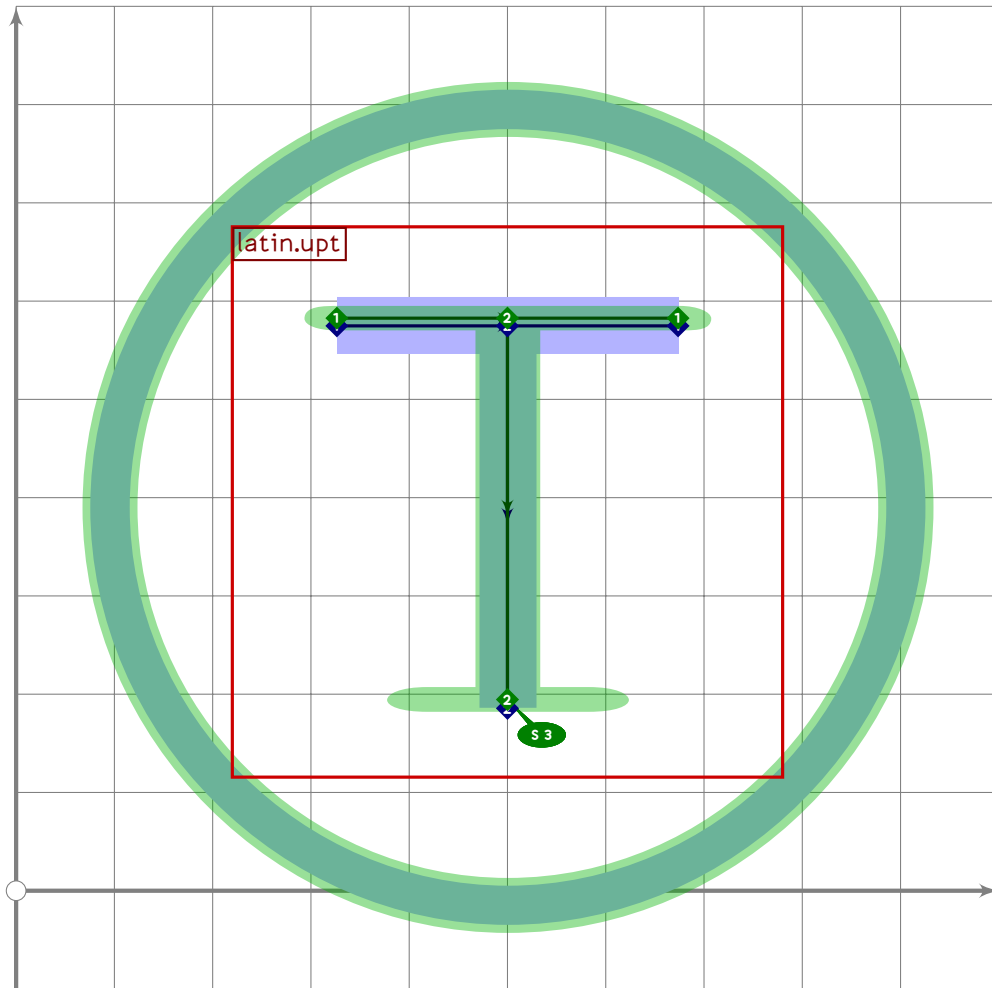
```

331 % R
332 begint Suglyph("uni24C7";199);
333   tsu_curve.circle.single;
334   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upr);
335   tsu_render;
336 endsuglyph;
337

```



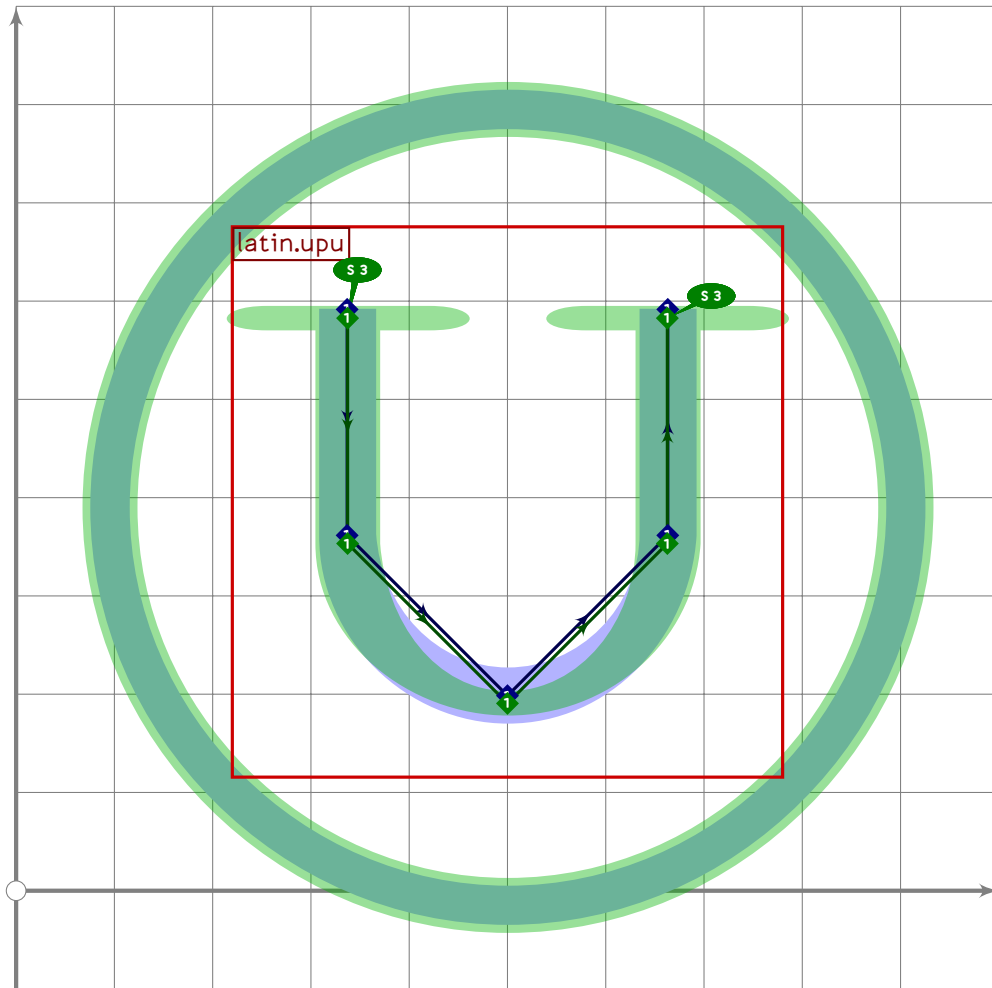
```
338 % S
339 begint Suglyph("uni24C8";200);
340 tsu_curve.circle.single;
341 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.ups);
342 tsu_render;
343 endsuglyph;
344
```



```

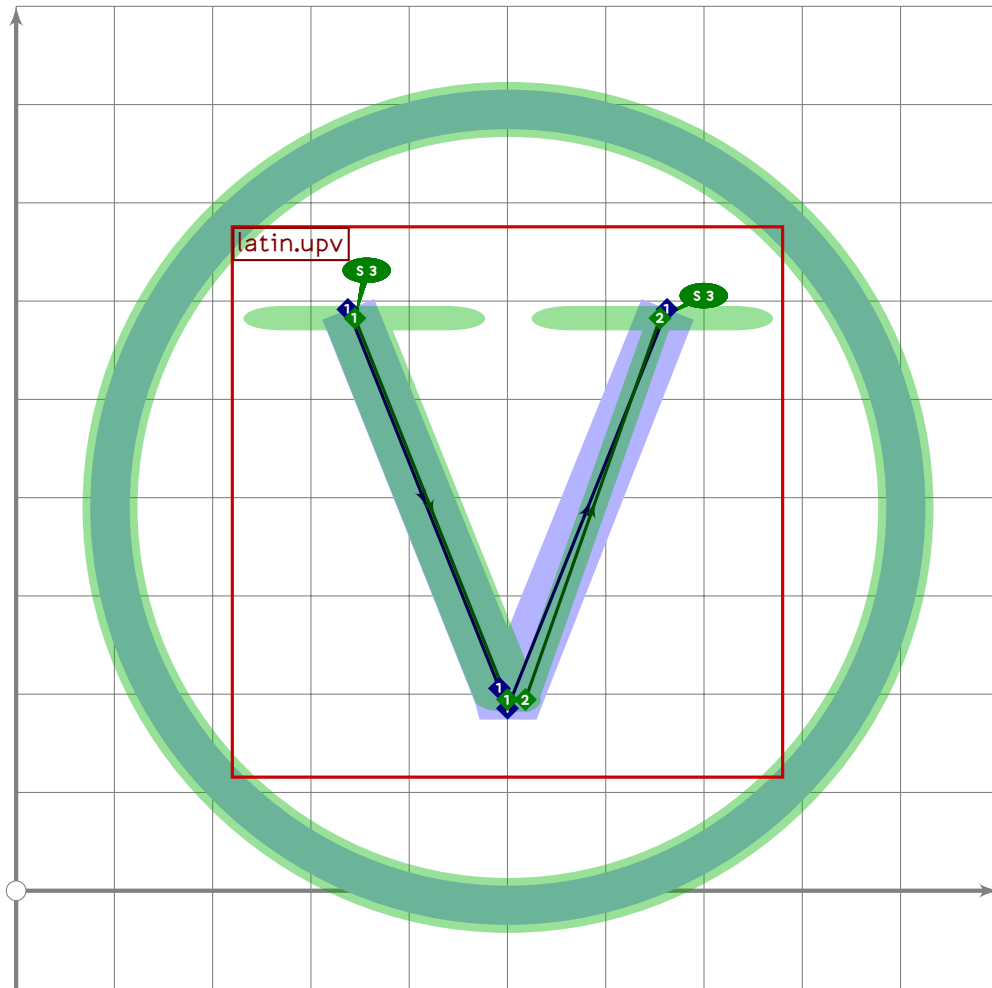
345 % T
346 begint Suglyph("uni24C9";201);
347 tsu_curve.circle.single;
348 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upt);
349 tsu_render;
350 endsuglyph;
351

```



```
352 % U
353 beginsuglyph("uni24CA";202);
354 tsu_curve.circle.single;
355 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upu);
356 tsu_render;
357 endsuglyph;
358
```

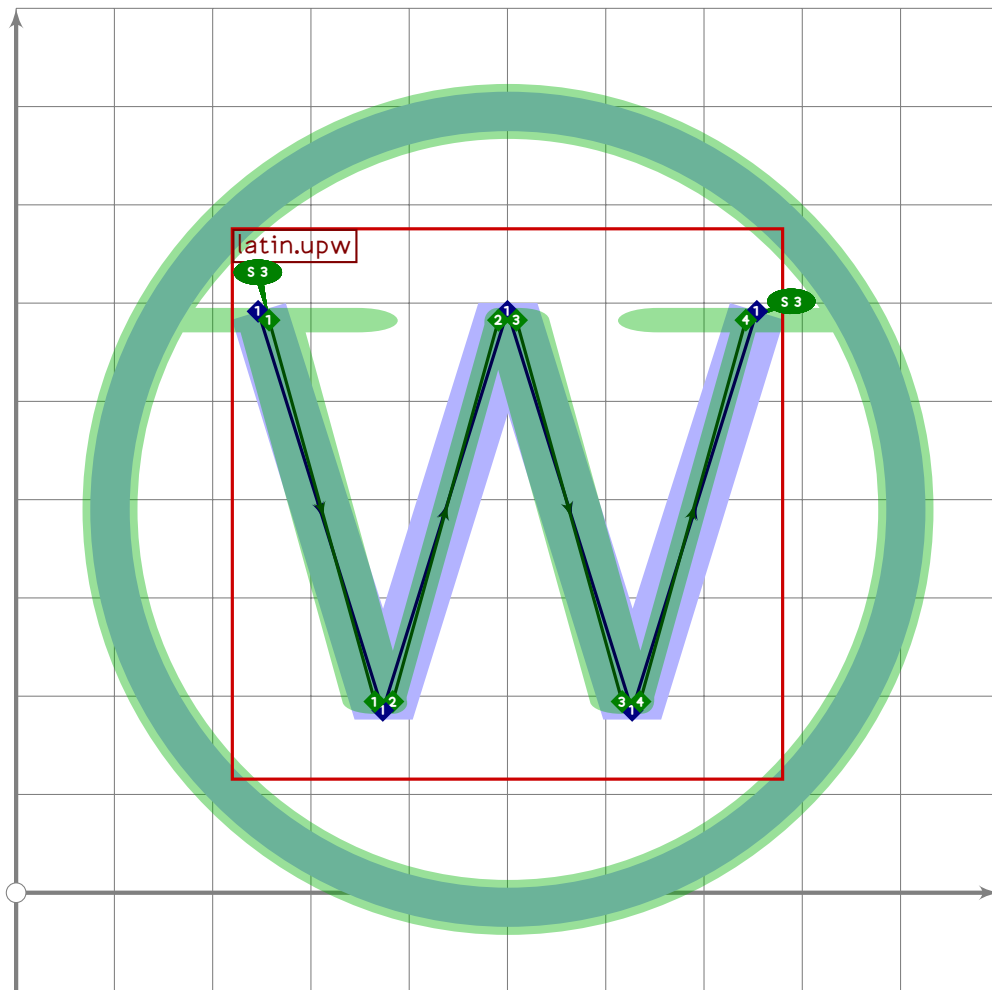




```

359 % V
360 begint Suglyph("uni24CB";203);
361   tsu_curve.circle.single;
362   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upv);
363   tsu_render;
364 endsuglyph;
365

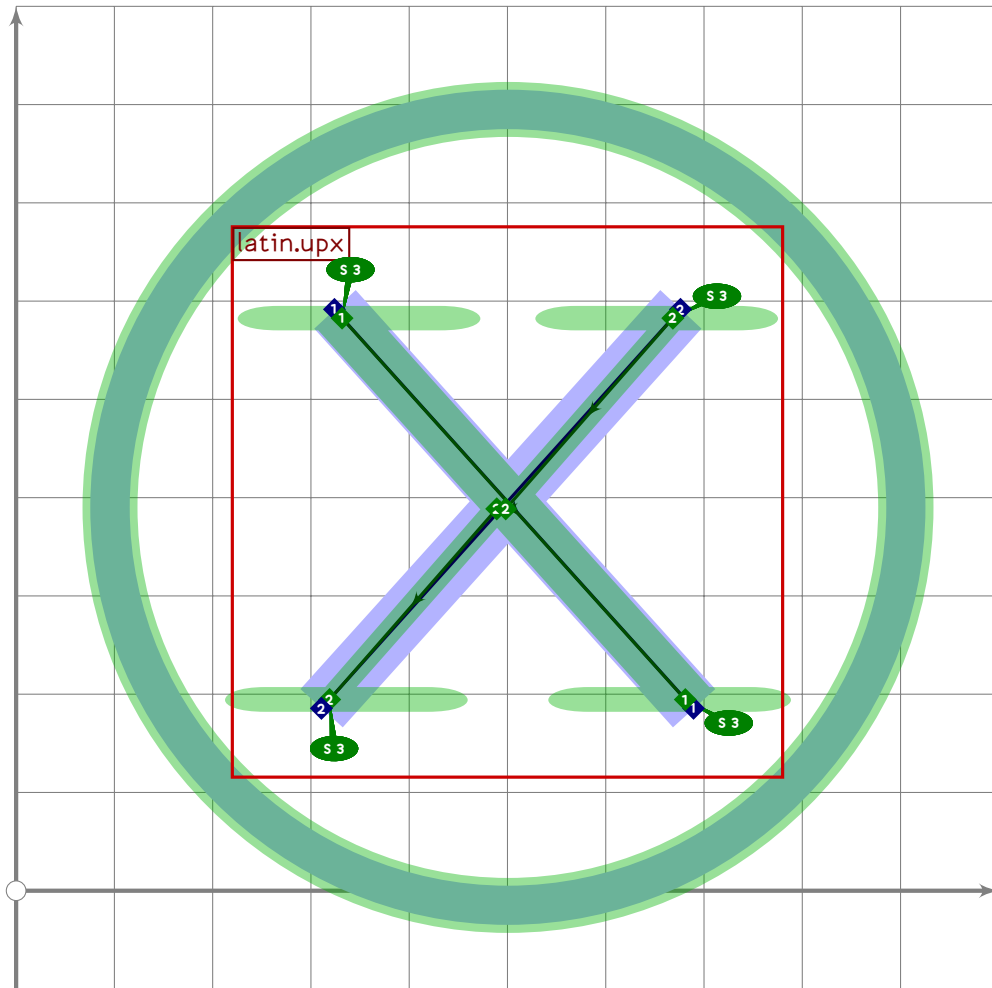
```



```

366 % W
367 begint Suglyph("uni24CC";204);
368   tsu_curve.circle.single;
369   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upw);
370   tsu_render;
371 endsuglyph;
372

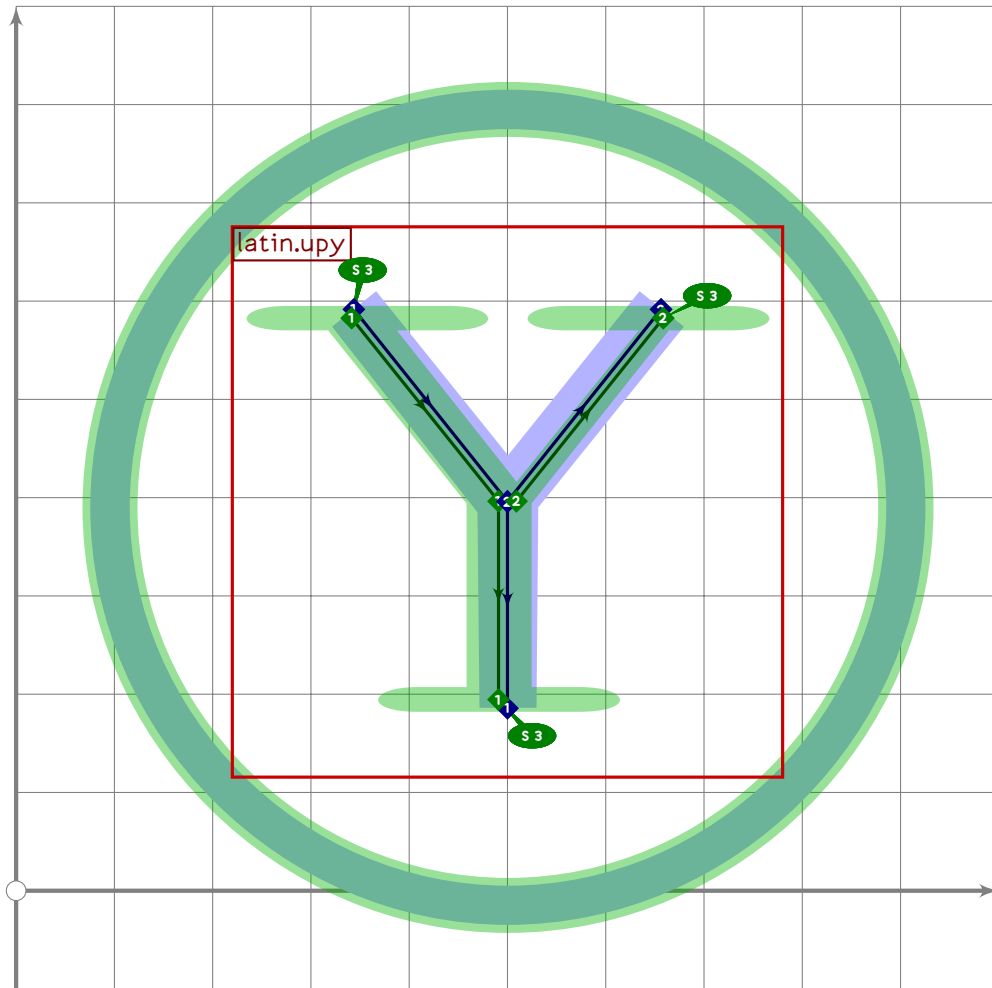
```



```

373 % X
374 begint Suglyph("uni24CD";205);
375   tsu_curve.circle.single;
376   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upx);
377   tsu_render;
378 endsuglyph;
379

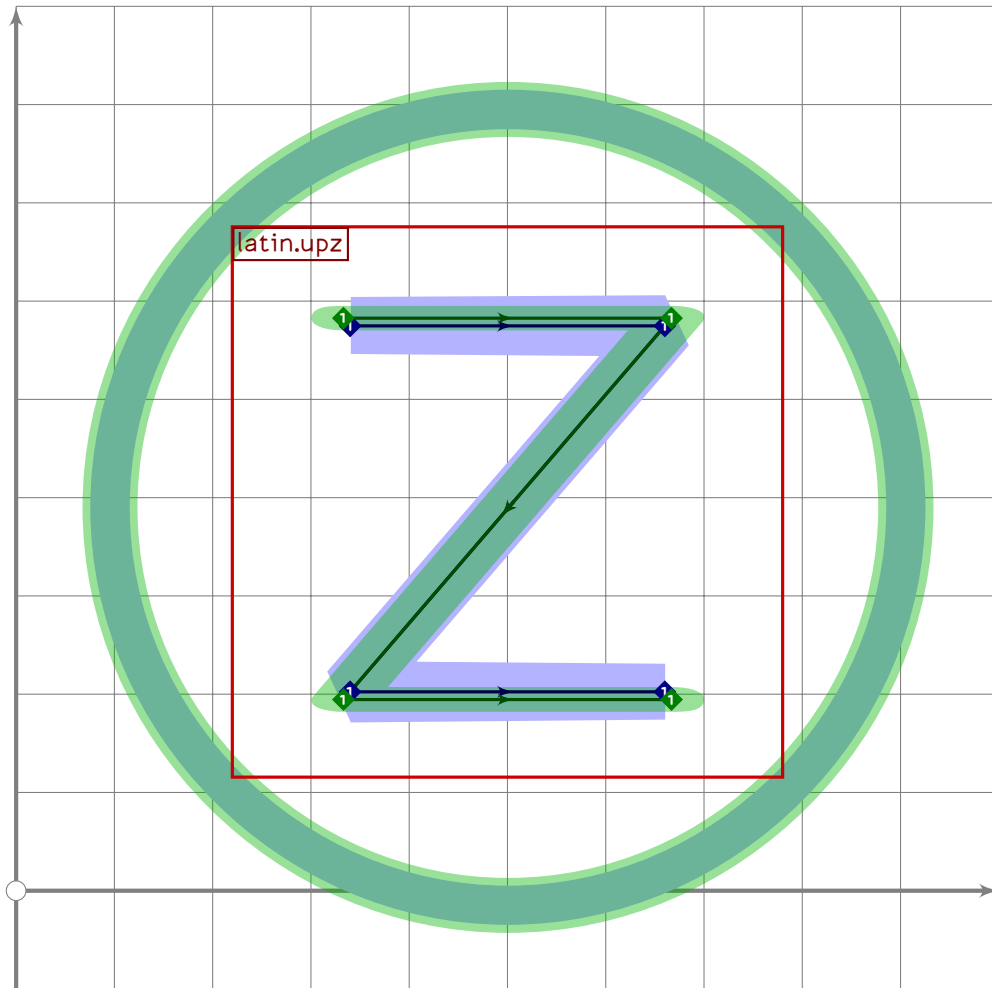
```



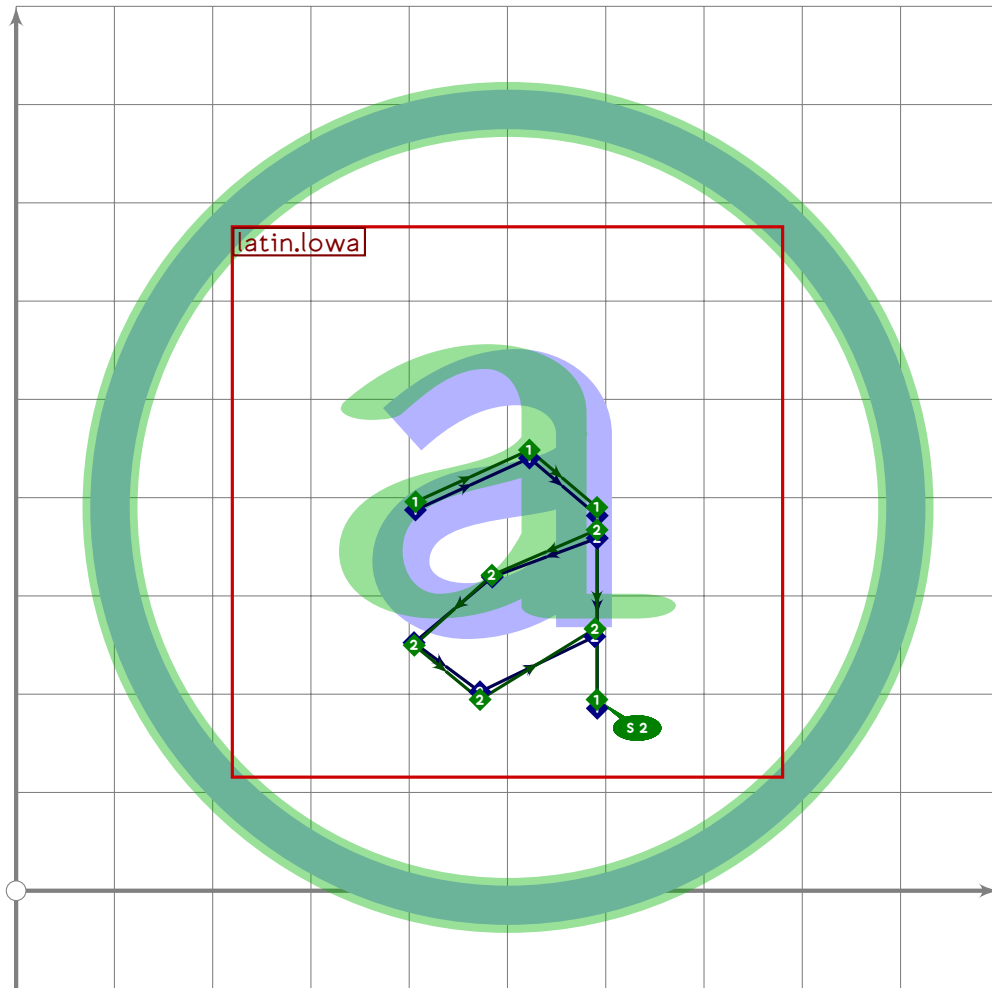
```

380 % Y
381 begint Suglyph("uni24CE";206);
382 tsu_curve.circle.single;
383 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upy);
384 tsu_render;
385 endsuglyph;
386

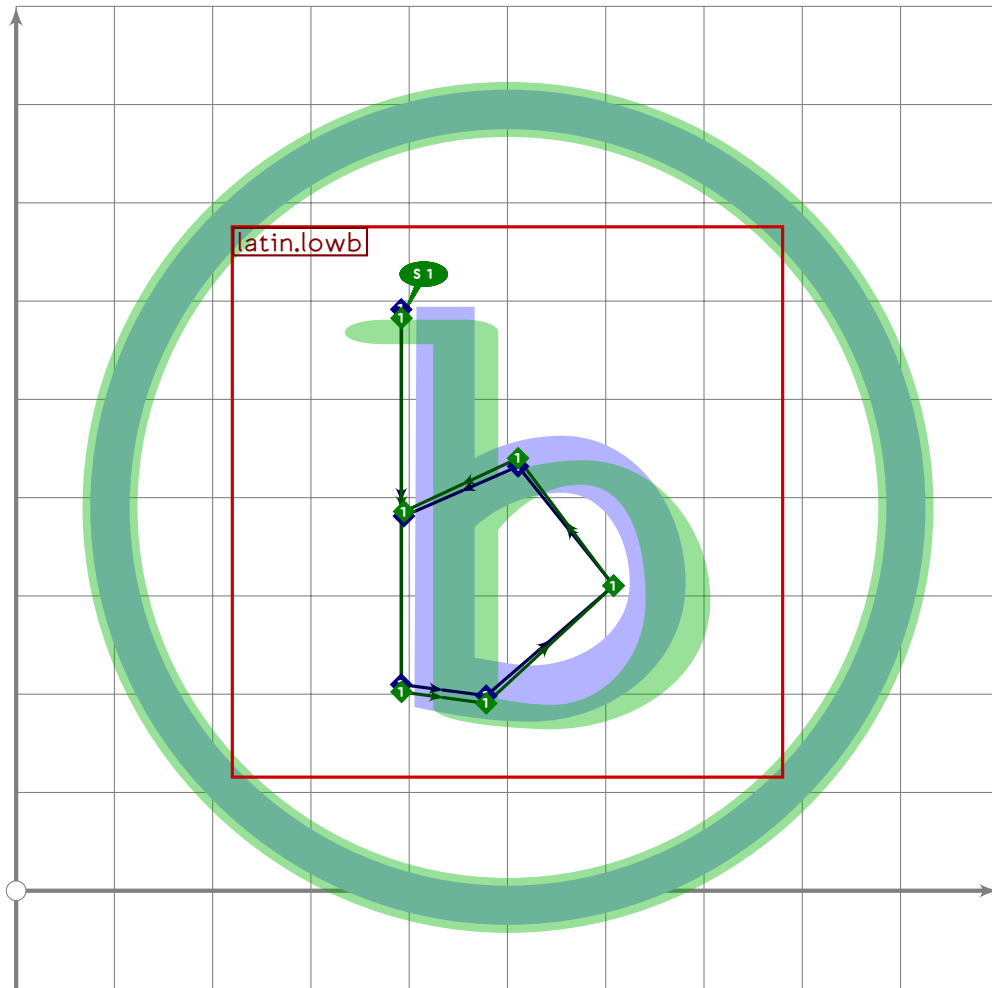
```



```
387 % Z
388 begint Suglyph("uni24CF";207);
389 tsu_curve.circle.single;
390 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upz);
391 tsu_render;
392 endsuglyph;
393
```



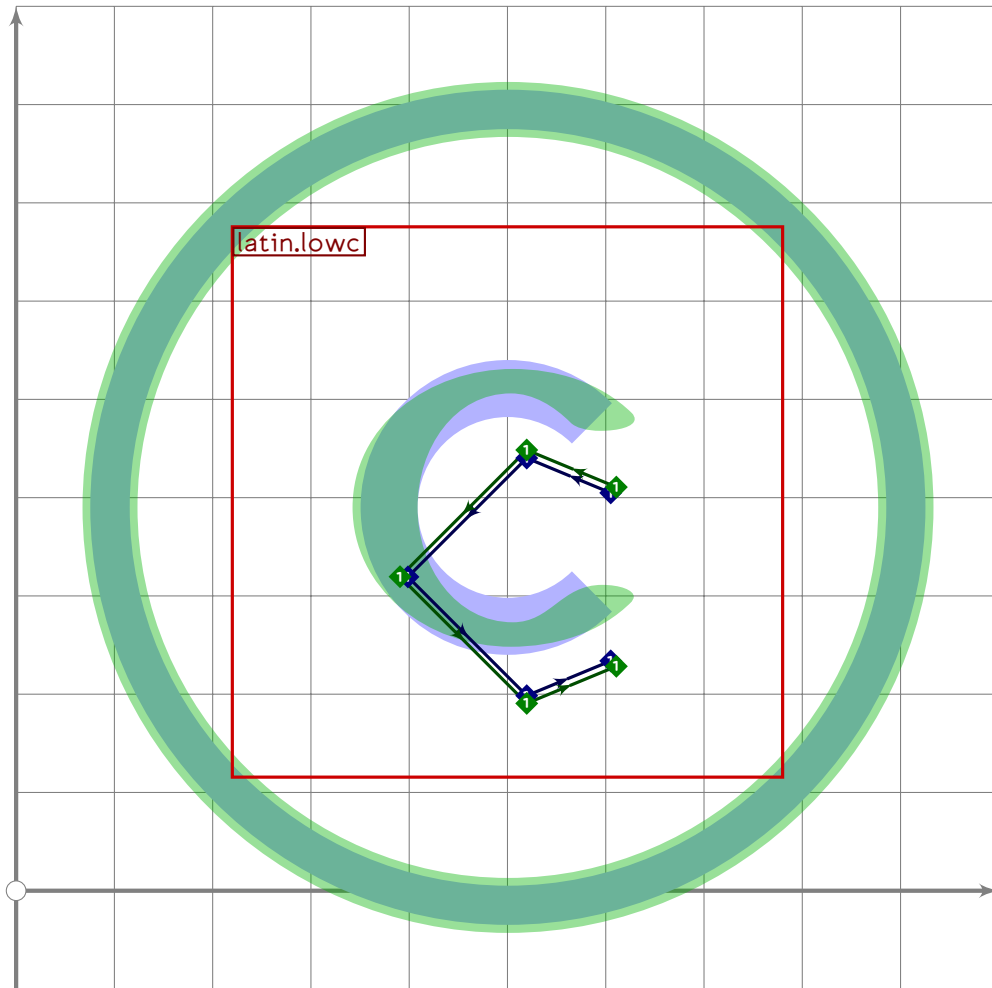
```
394 % a
395 begint Suglyph("uni24D0",208);
396 tsu_curve.circle.single;
397 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowa);
398 tsu_render_in_circle(tsu_xf.cbound);
399 endsuglyph;
400
```



```

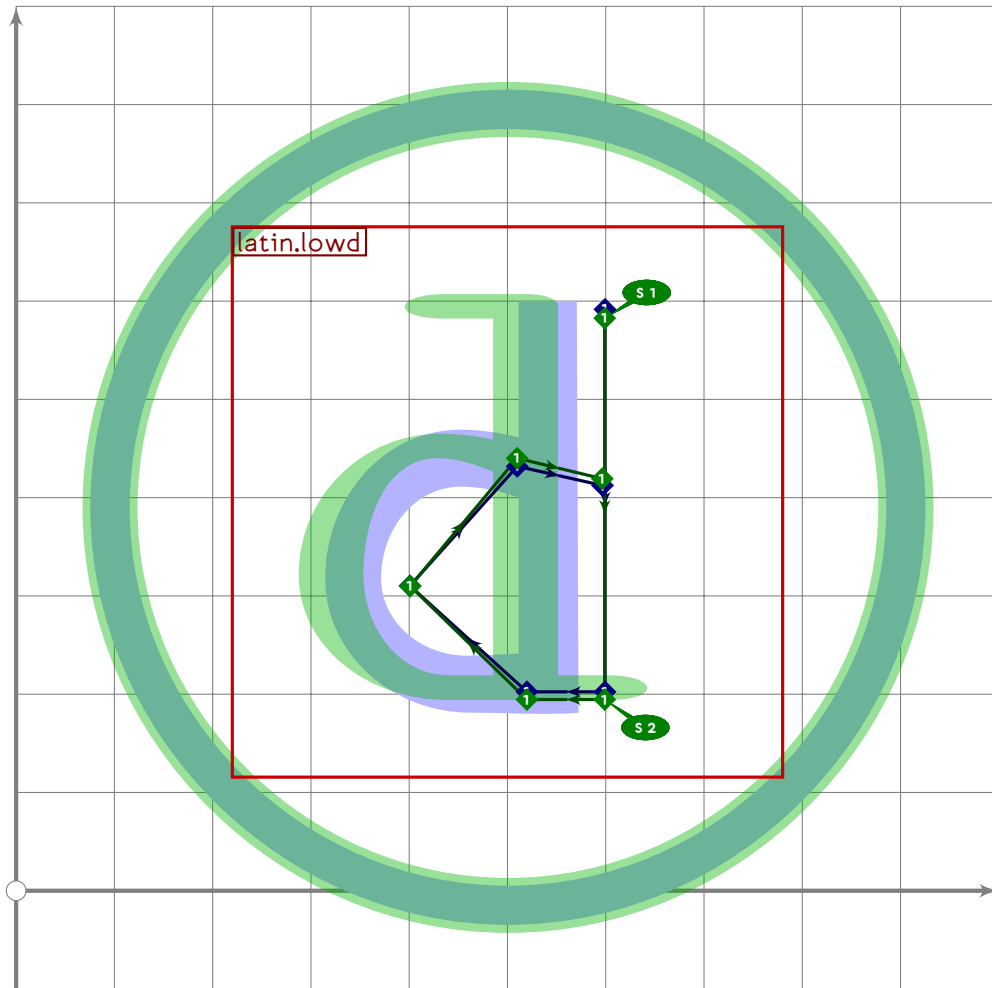
401 % b
402 begint Suglyph("uni24D1",209);
403   tsu_curve.circle.single;
404   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowb);
405   tsu_render_in_circle(tsu_xf.cbound);
406 endsuglyph;
407

```

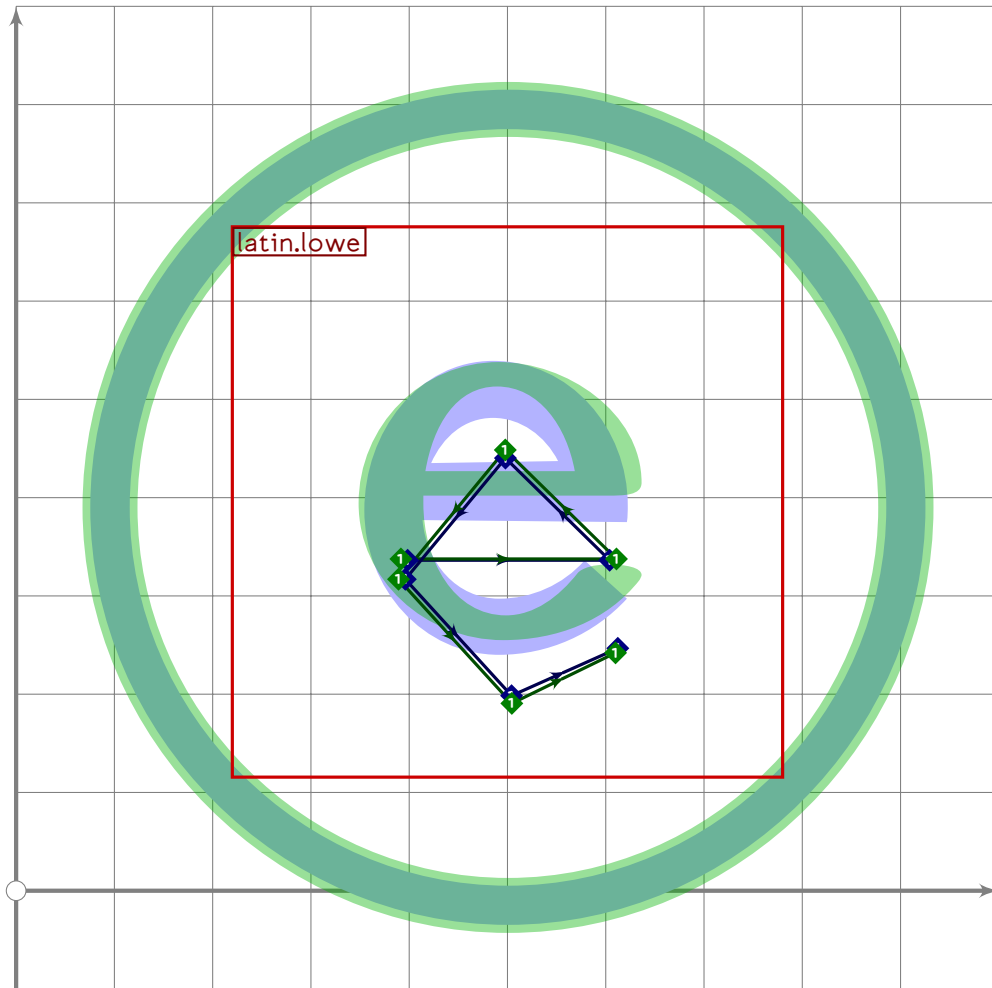


```
408 % c
409 begint Suglyph("uni24D2",210);
410 tsu_curve.circle.single;
411 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowc);
412 tsu_render_in_circle(tsu_xf.cbound);
413 endsuglyph;
414
```

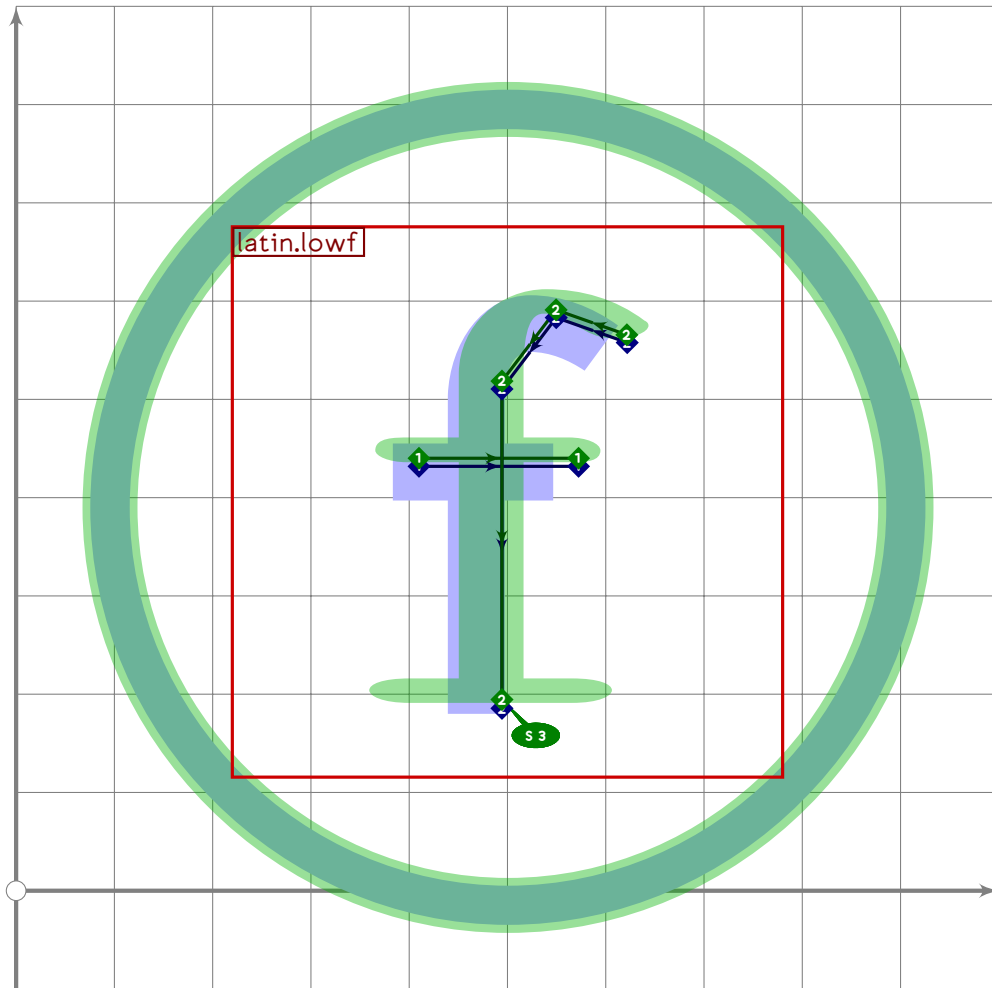




```
415 % d
416 begint Suglyph("uni24D3";211);
417   tsu_curve.circle.single;
418   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowd);
419   tsu_render_in_circle(tsu_xf.cbound);
420 endsuglyph;
421
```



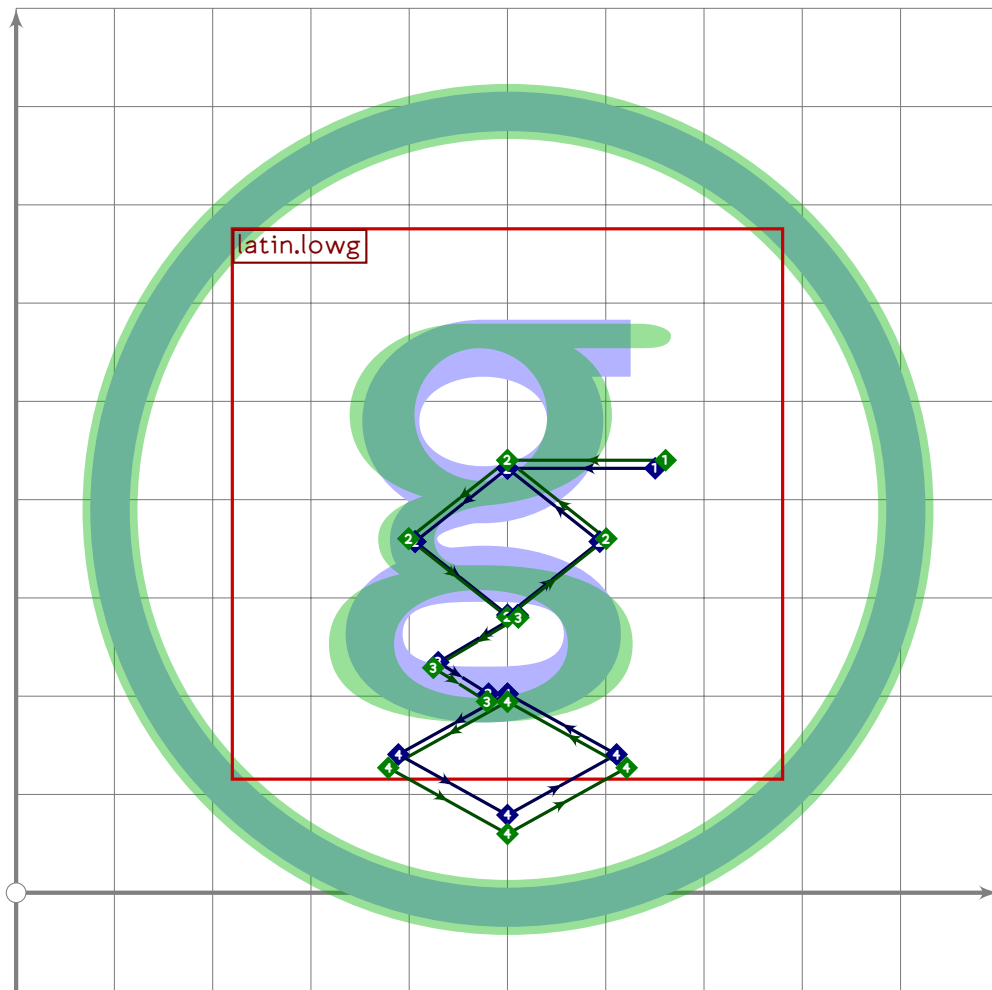
```
422 % e
423 beginsuglyph("uni24D4";212);
424 tsu_curve.circle.single;
425 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowe);
426 tsu_render_in_circle(tsu_xf.cbound);
427 endsuglyph;
428
```



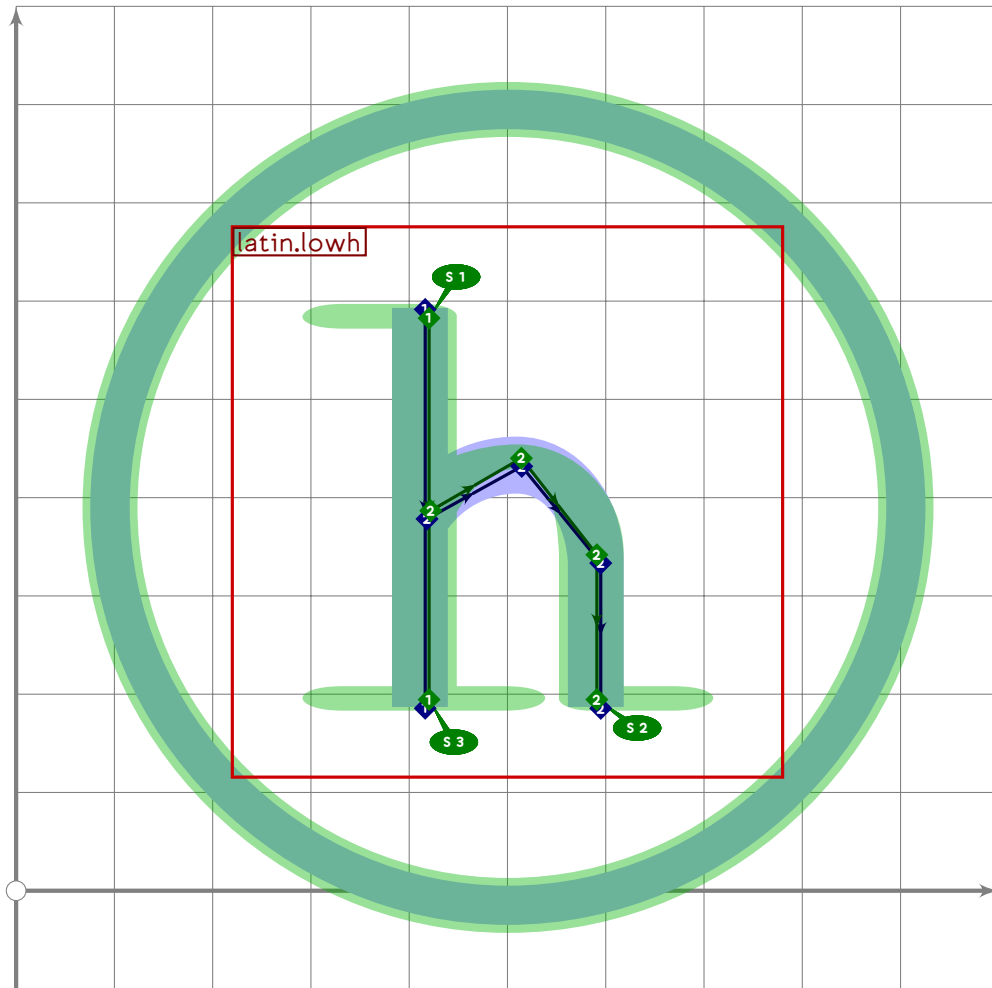
```

429 % f
430 begint Suglyph("uni24D5";213);
431   tsu_curve.circle.single;
432   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowf);
433   tsu_render_in_circle(tsu_xf.cbound);
434 endsuglyph;
435

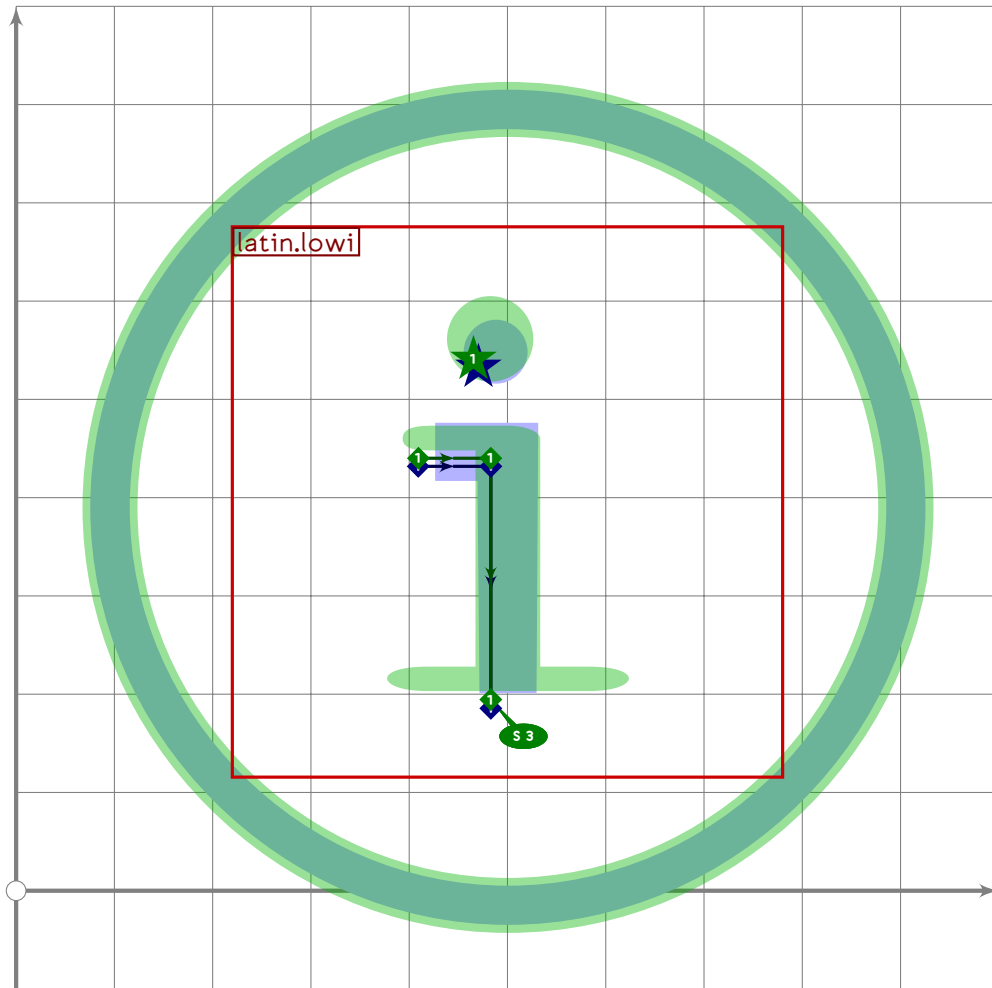
```



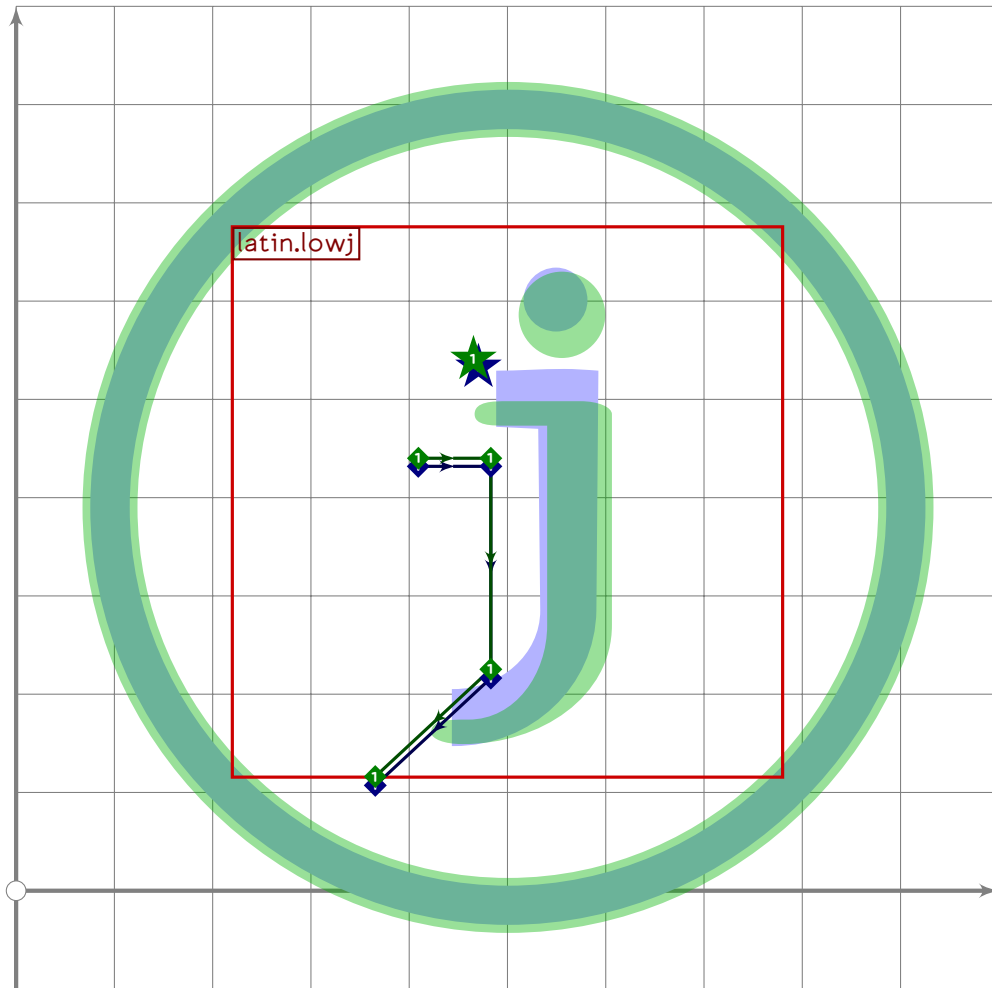
```
436 % g
437 begint Suglyph("uni24D6",214);
438   tsu_curve.circle.single;
439   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowg);
440   tsu_render_in_circle(tsu_xf.cbound);
441 endsuglyph;
442
```



```
443 % h
444 begint Suglyph("uni24D7";215);
445 tsu_curve.circle.single;
446 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowh);
447 tsu_render_in_circle(tsu_xf.cbound);
448 endsuglyph;
449
```



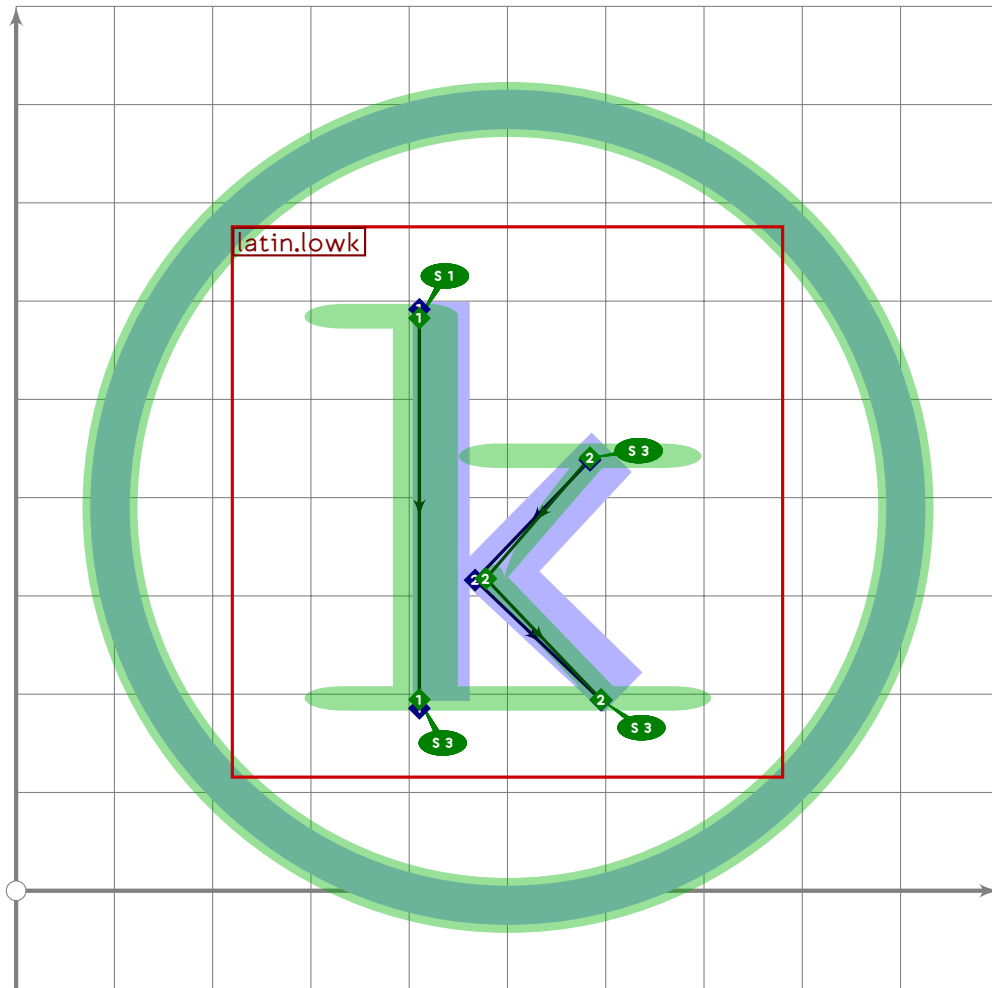
```
450 % i
451 beginsuglyph("uni24D8",216);
452 tsu_curve.circle.single;
453 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowi);
454 tsu_render_in_circle(tsu_xf.cbound);
455 endsuglyph;
456
```



```

457 % j
458 begint Suglyph("uni24D9";217);
459   tsu_curve.circle.single;
460   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowj);
461   tsu_render_in_circle(tsu_xf.cbound);
462 endsuglyph;
463

```

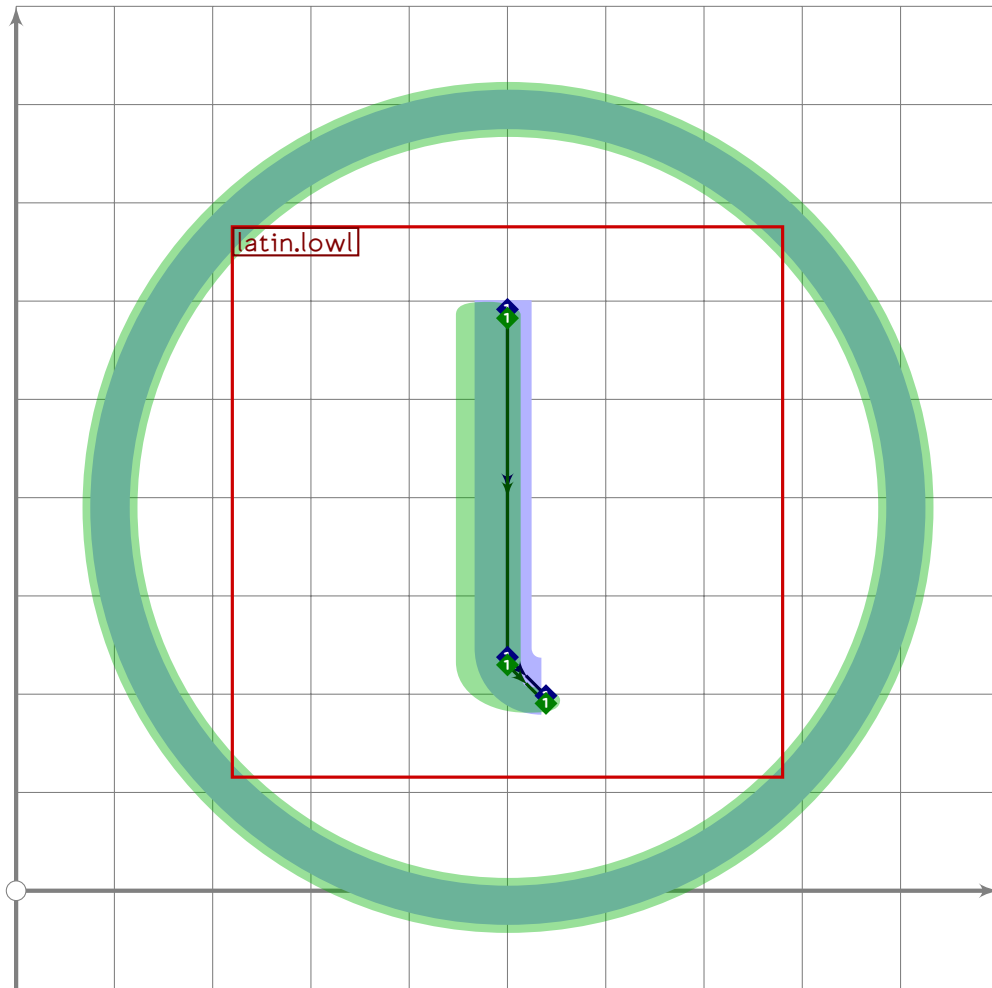


```

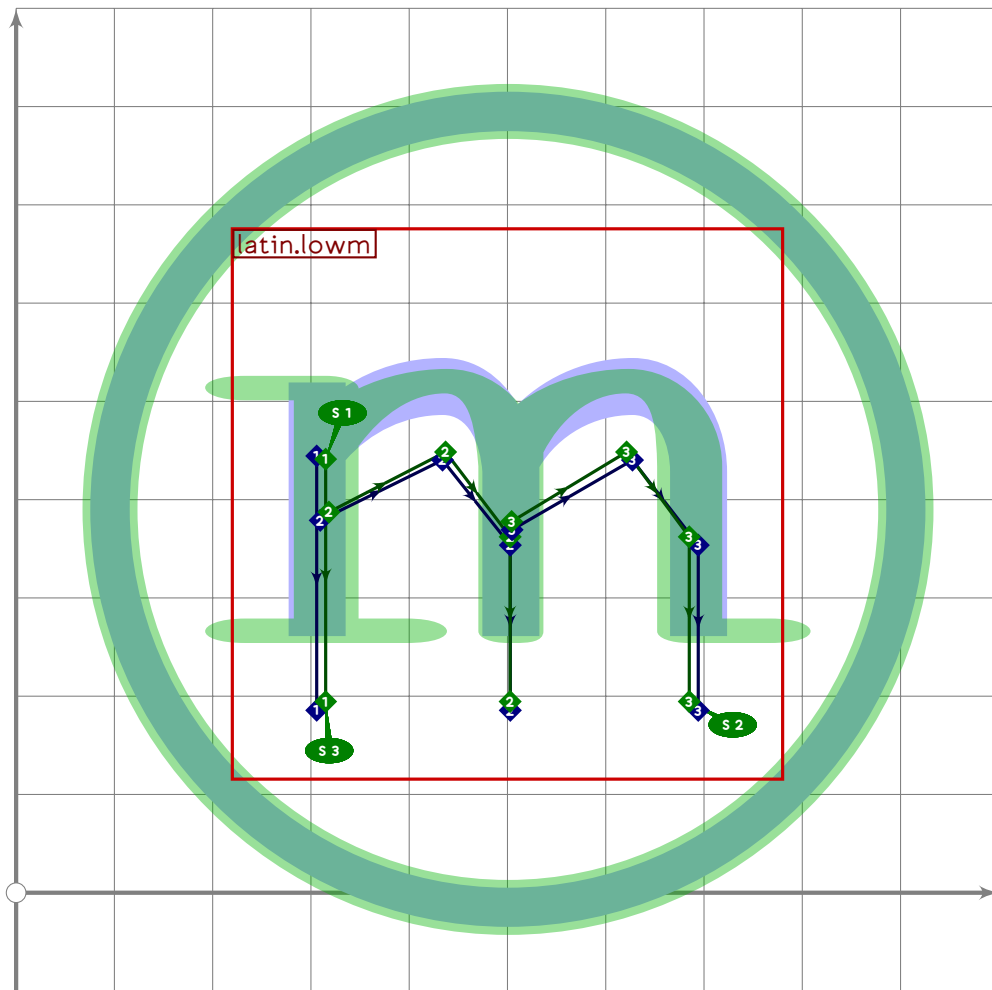
464 % k
465 begint Suglyph("uni24DA";218);
466   tsu_curve.circle.single;
467   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowk);
468   tsu_render_in_circle(tsu_xf.cbound);
469 endsuglyph;
470

```





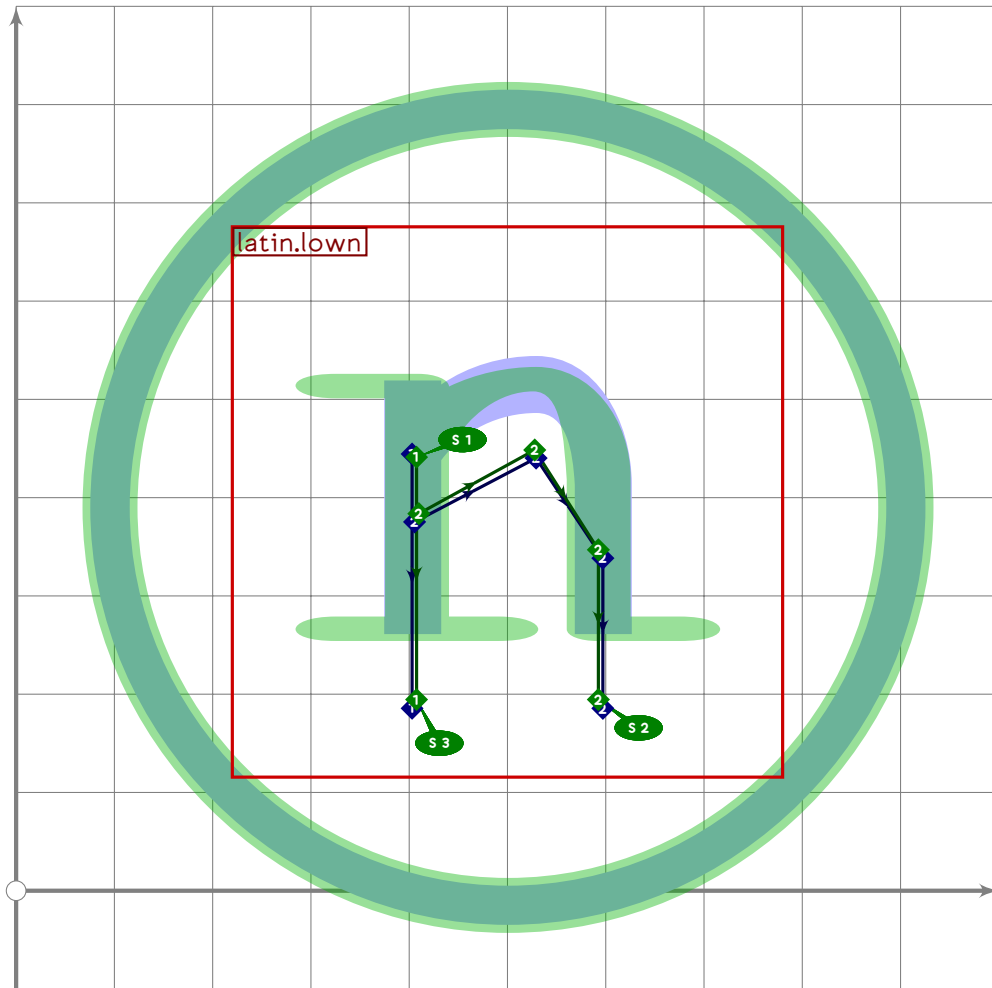
```
471 % l
472 begint Suglyph("uni24DB",219);
473 tsu_curve.circle.single;
474 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowl);
475 tsu_render_in_circle(tsu_xf.cbound);
476 endsuglyph;
477
```



```

478 % m
479 begint Suglyph("uni24DC";220);
480   tsu_curve.circle.single;
481   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowm);
482   tsu_render_in_circle(tsu_xf.cbound);
483 endsuglyph;
484

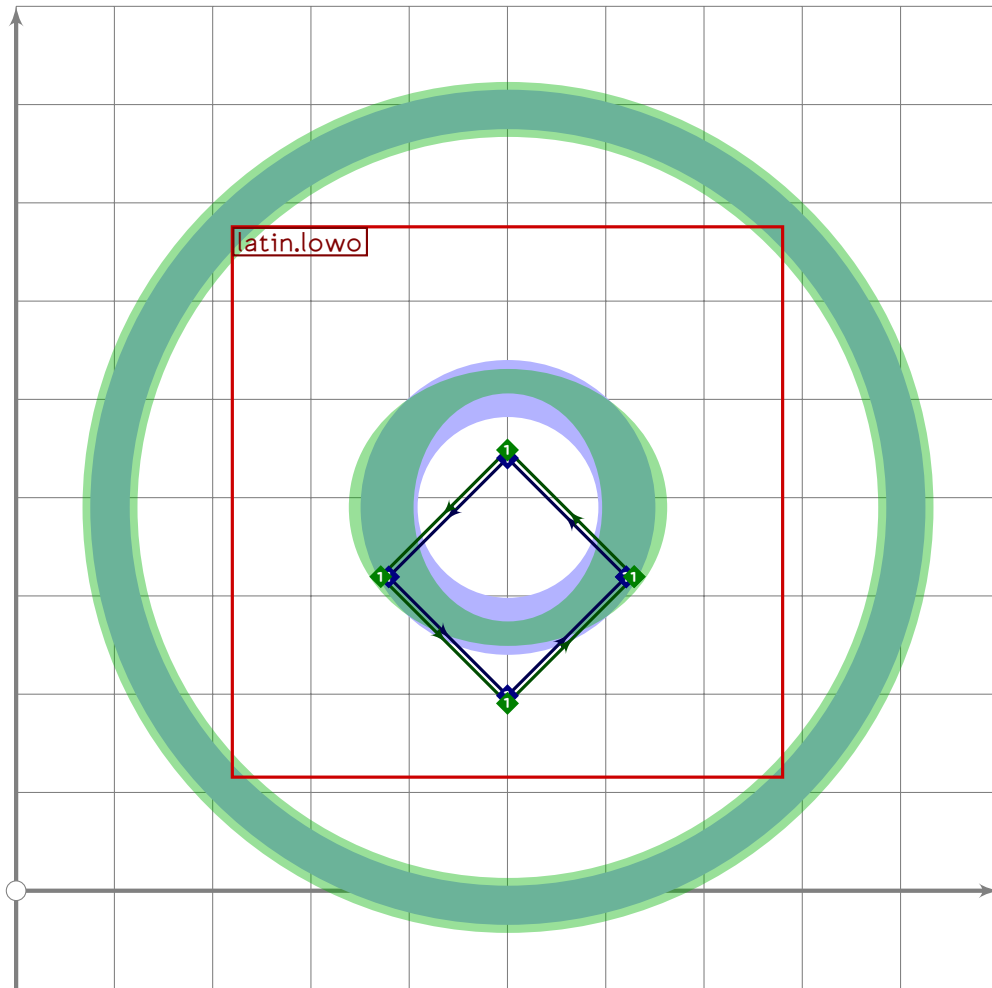
```



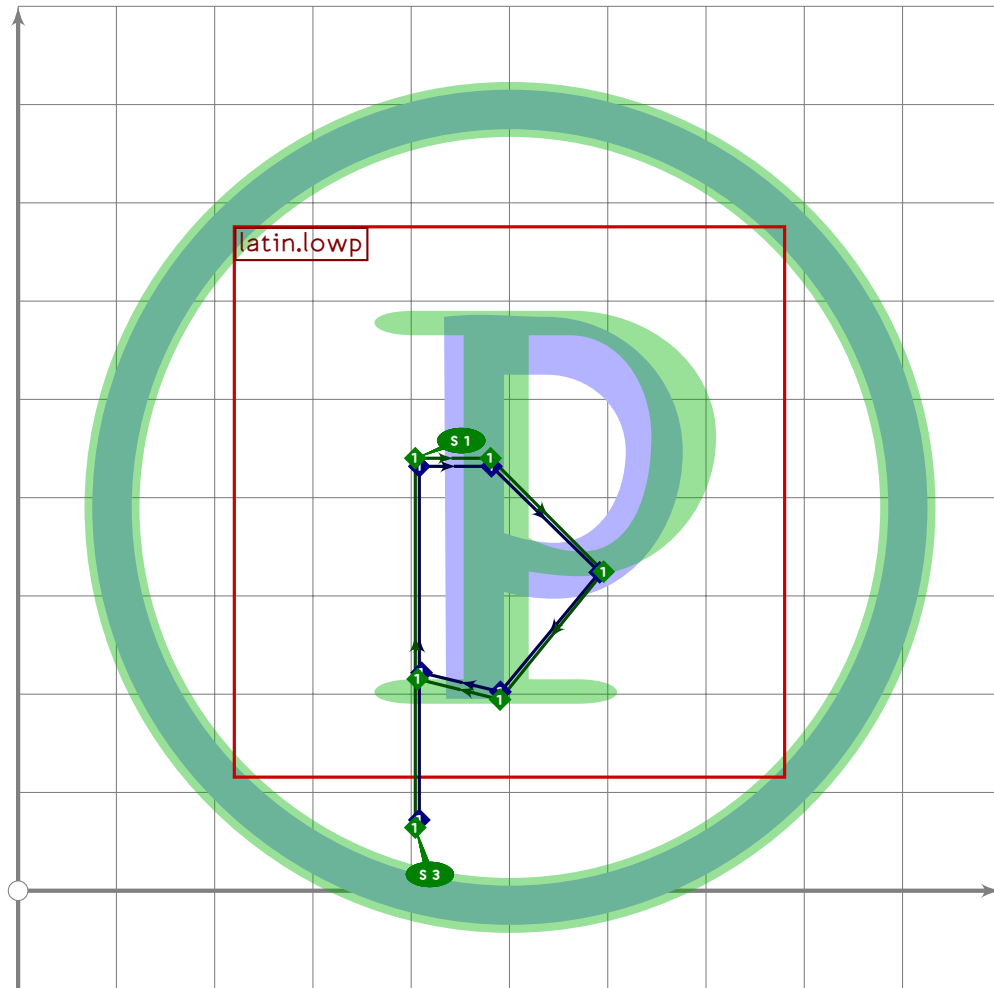
```

485 % n
486 begint Suglyph("uni24DD";221);
487   tsu_curve.circle.single;
488   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lown);
489   tsu_render_in_circle(tsu_xf.cbound);
490 endsuglyph;
491

```



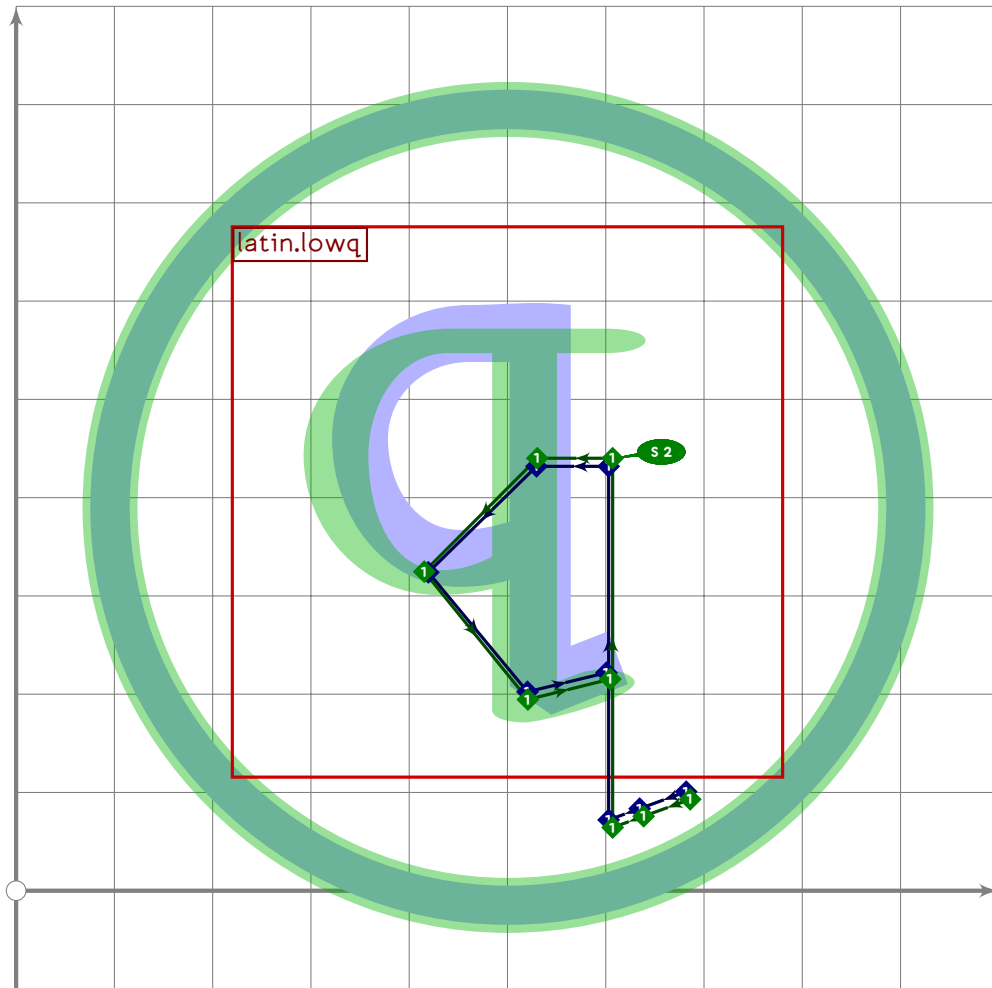
```
492 % o
493 begint Suglyph("uni24DE";222);
494   tsu_curve.circle.single;
495   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowo);
496   tsu_render_in_circle(tsu_xf.cbound);
497 endsuglyph;
498
```



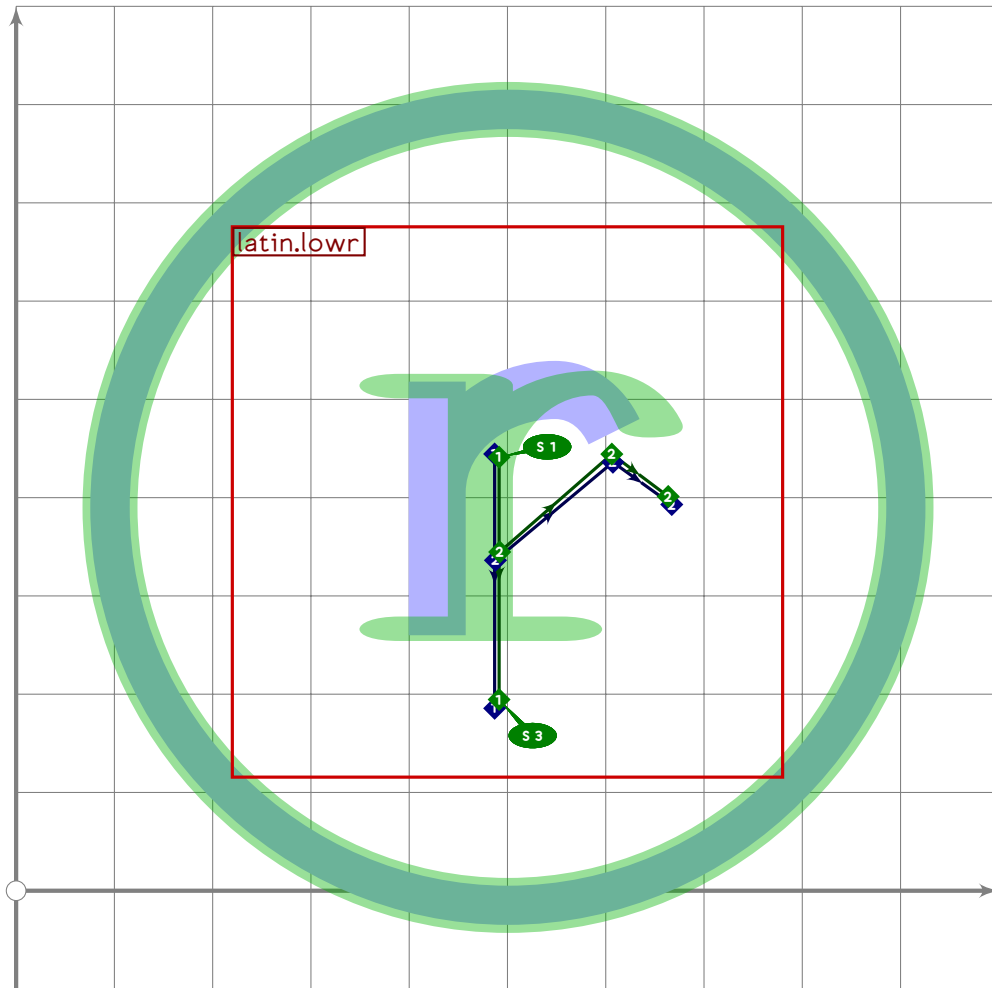
```

499 % p
500 beginsuglyph("uni24DF";223);
501   tsu_curve.circle.single;
502   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowp);
503   tsu_render_in_circle(tsu_xf.cbound);
504 endsuglyph;
505

```



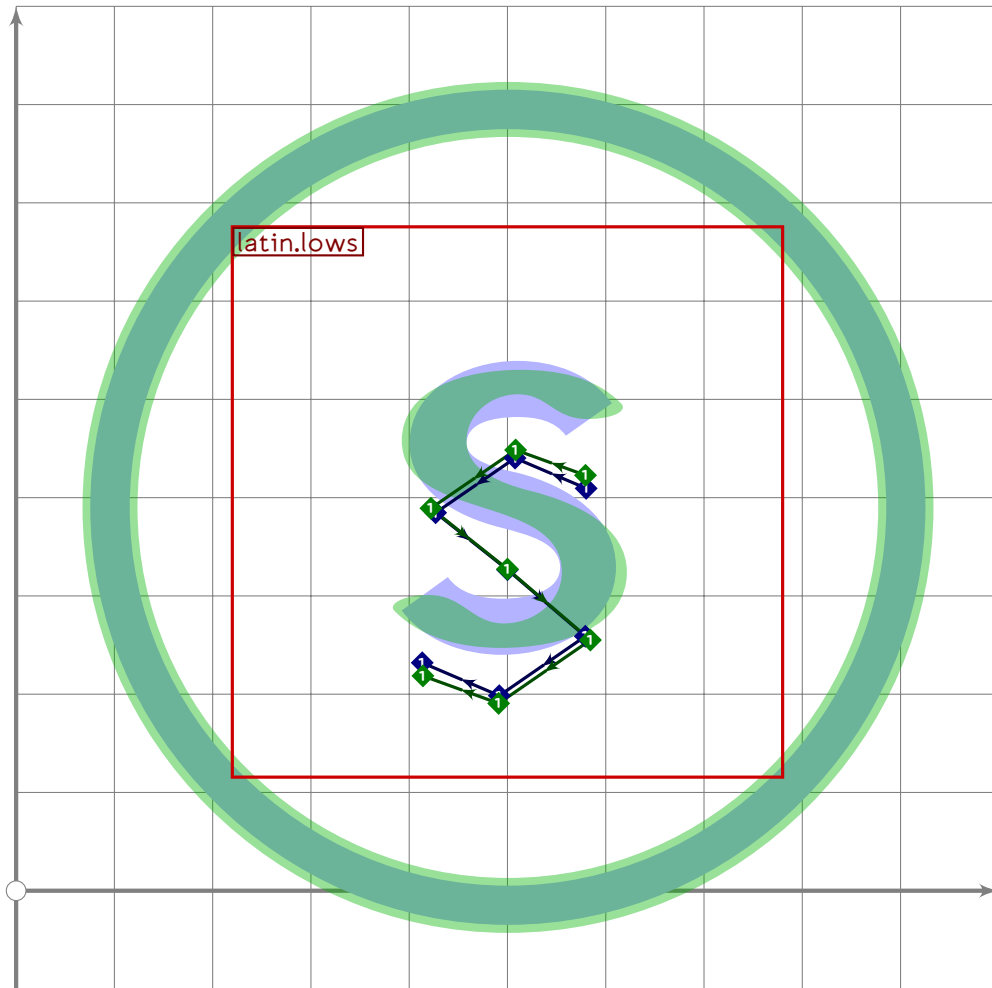
```
506 % q
507 begint Suglyph("uni24E0";224);
508   tsu_curve.circle.single;
509   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowq);
510   tsu_render_in_circle(tsu_xf.cbound);
511 endsuglyph;
512
```



```

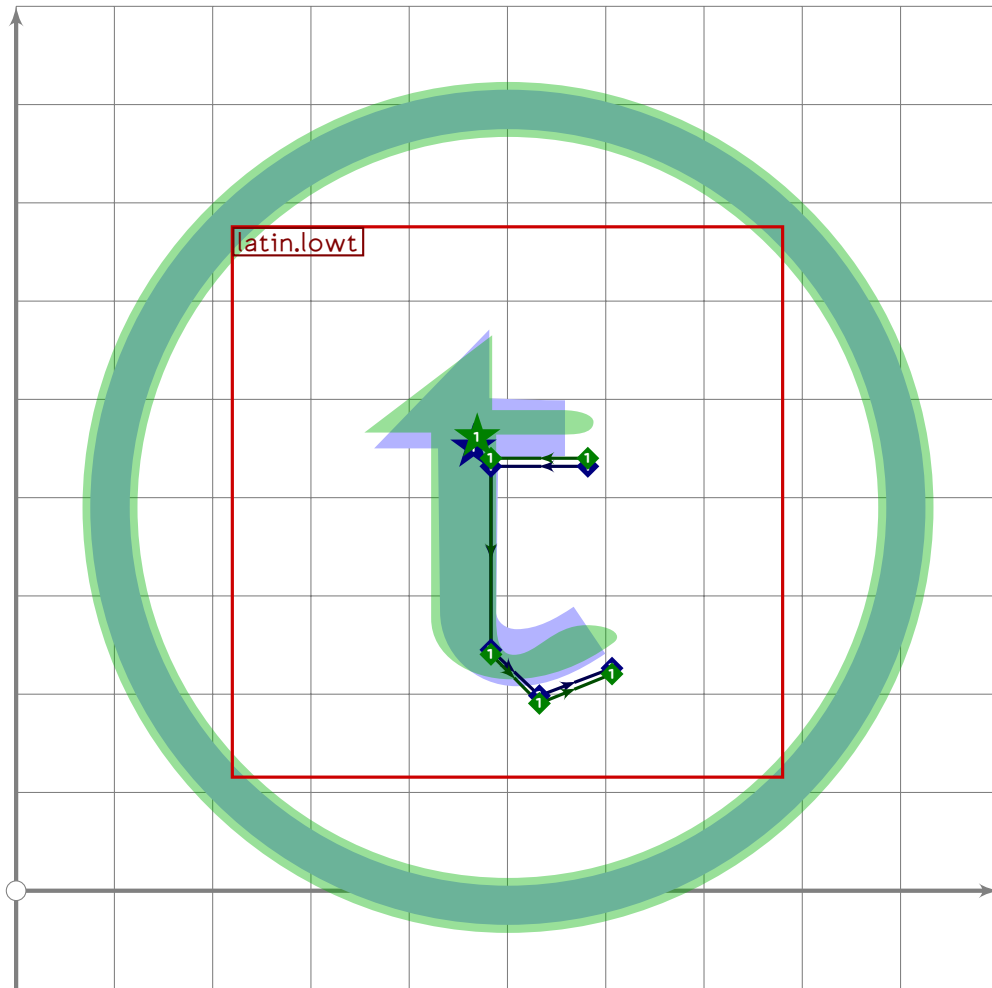
513 % r
514 begint Suglyph("uni24E1";225);
515   tsu_curve.circle.single;
516   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowr);
517   tsu_render_in_circle(tsu_xf.cbound);
518 endsuglyph;
519

```

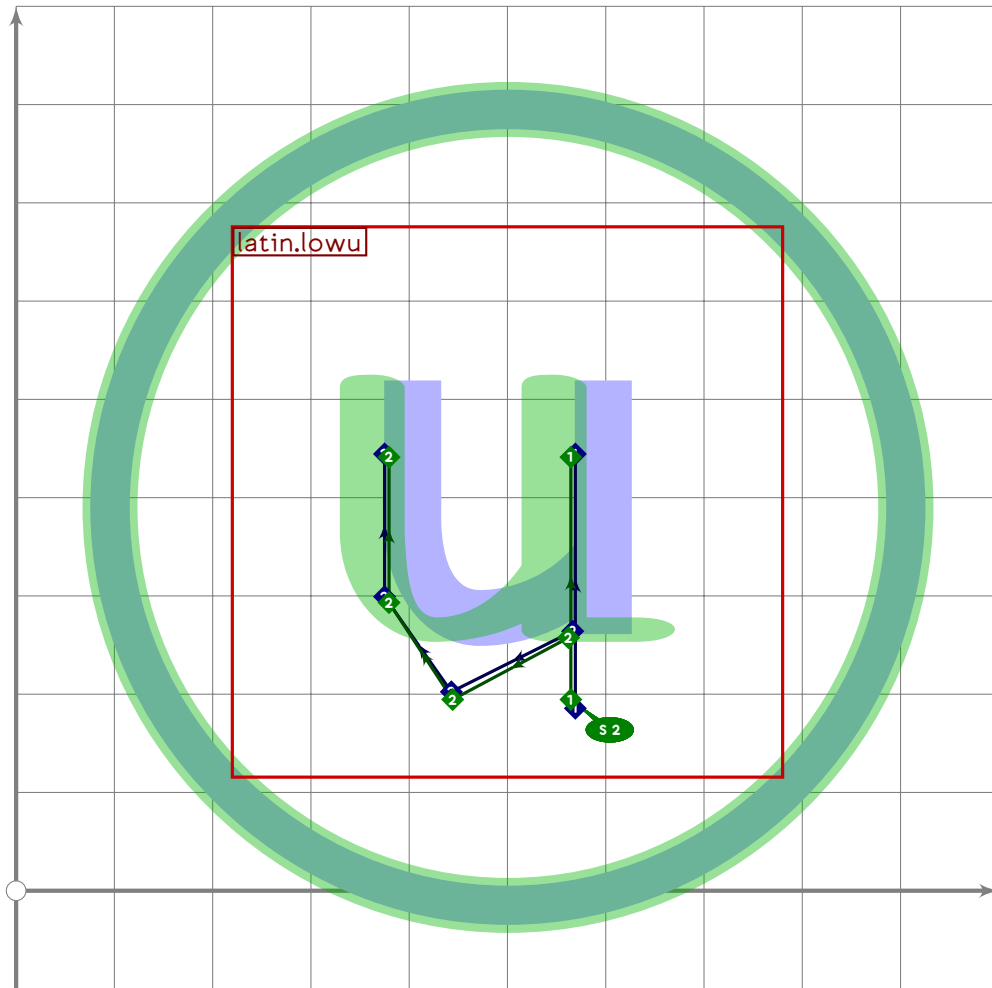


```
520 % s
521 begint Suglyph("uni24E2",226);
522 tsu_curve.circle.single;
523 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lows);
524 tsu_render_in_circle(tsu_xf.cbound);
525 endsuglyph;
526
```

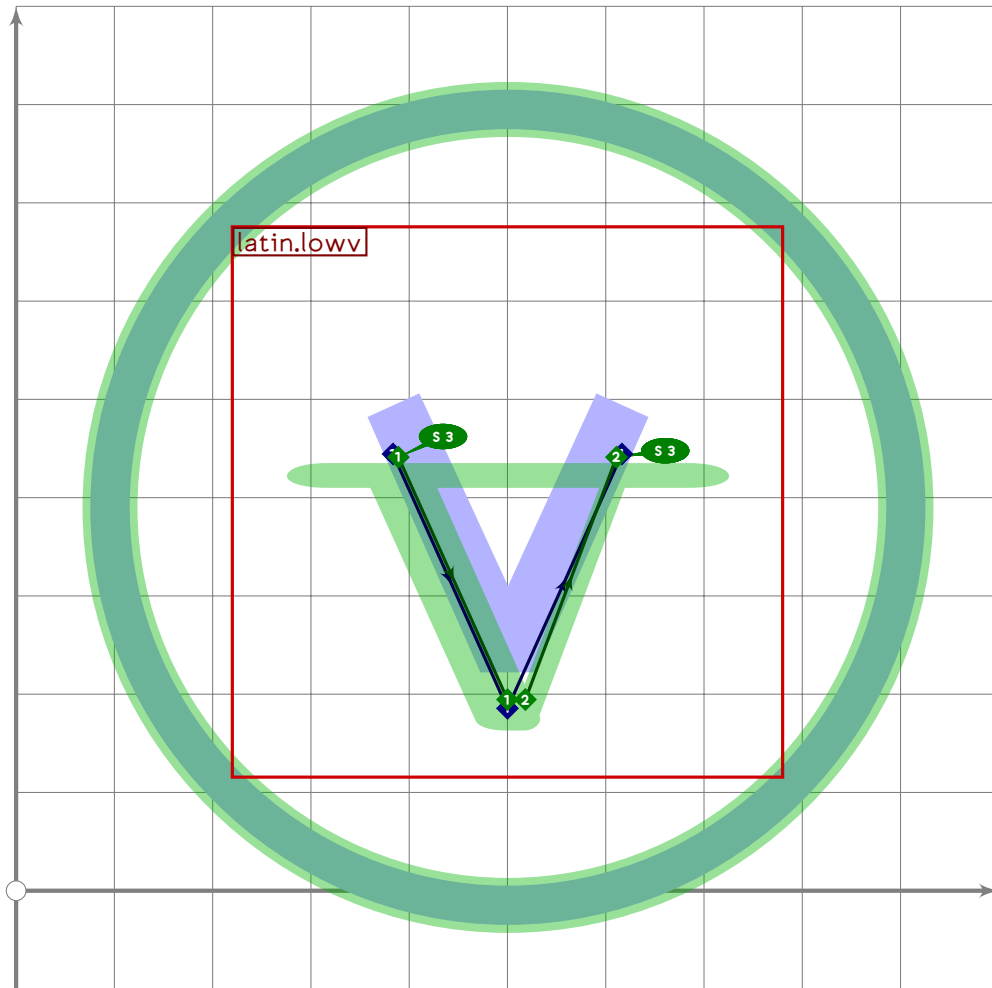




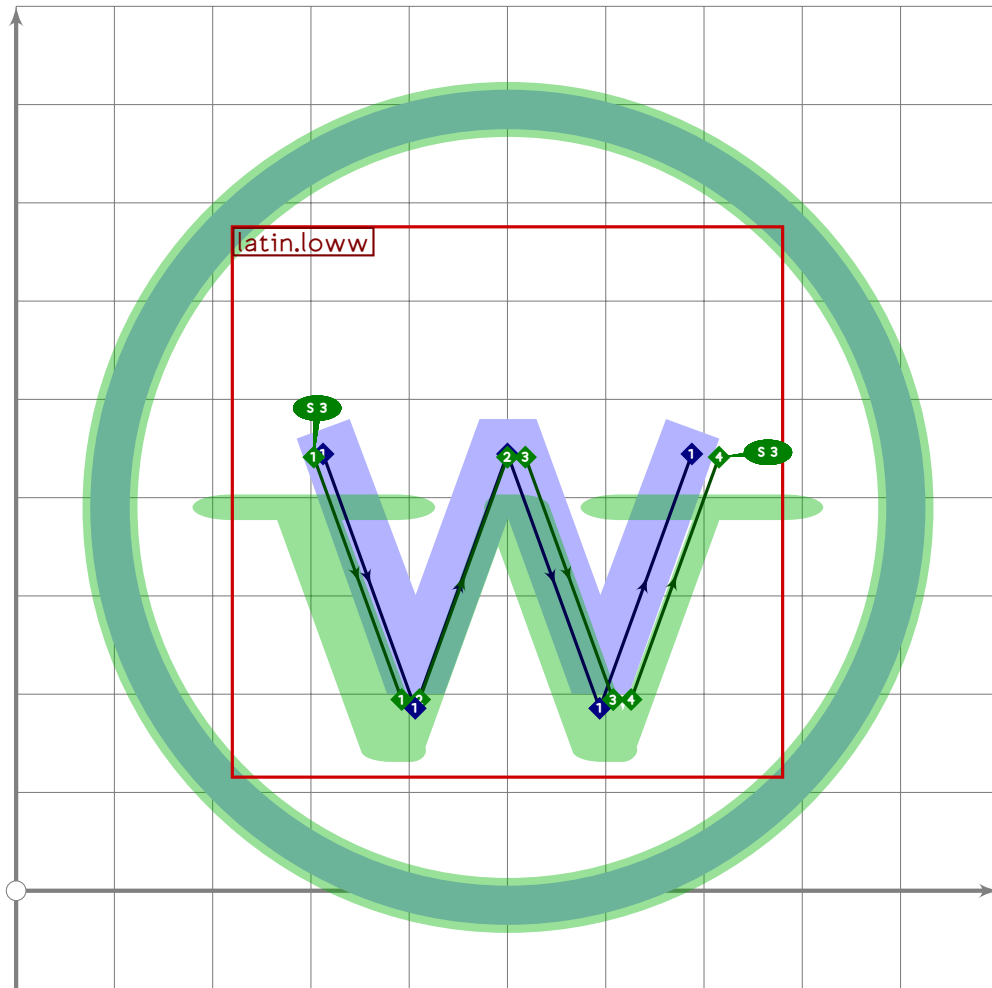
```
527 % t
528 begint Suglyph("uni24E3",227);
529   tsu_curve.circle.single;
530   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowt);
531   tsu_render_in_circle(tsu_xf.cbound);
532 endsuglyph;
533
```



```
534 % u
535 begint Suglyph("uni24E4",228);
536 tsu_curve.circle.single;
537 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowu);
538 tsu_render_in_circle(tsu_xf.cbound);
539 endsuglyph;
540
```



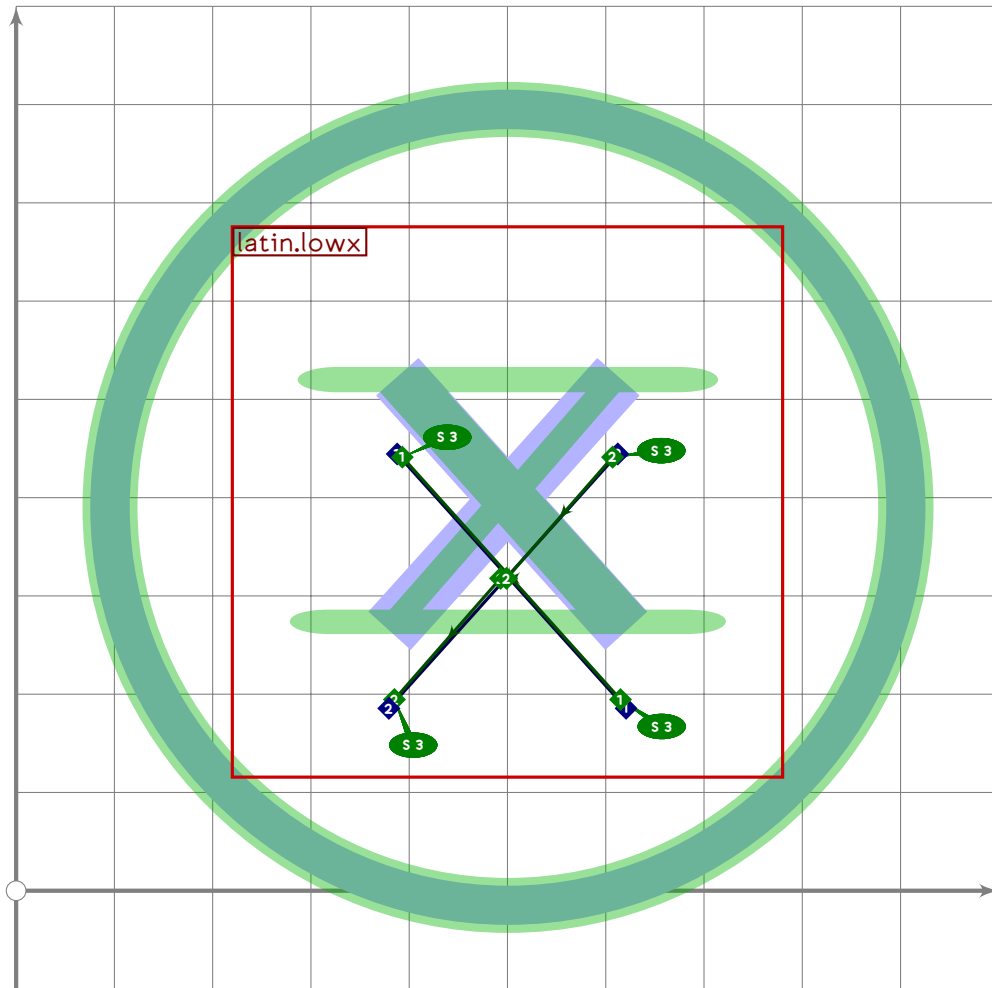
```
541 % v
542 begint Suglyph("uni24E5",229);
543 tsu_curve.circle.single;
544 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowv);
545 tsu_render_in_circle(tsu_xf.cbound);
546 endsuglyph;
547
```



```

548 % w
549 begint Suglyph("uni24E6";230);
550 tsu_curve.circle.single;
551 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.loww);
552 tsu_render_in_circle(tsu_xf.cbound);
553 endsuglyph;
554

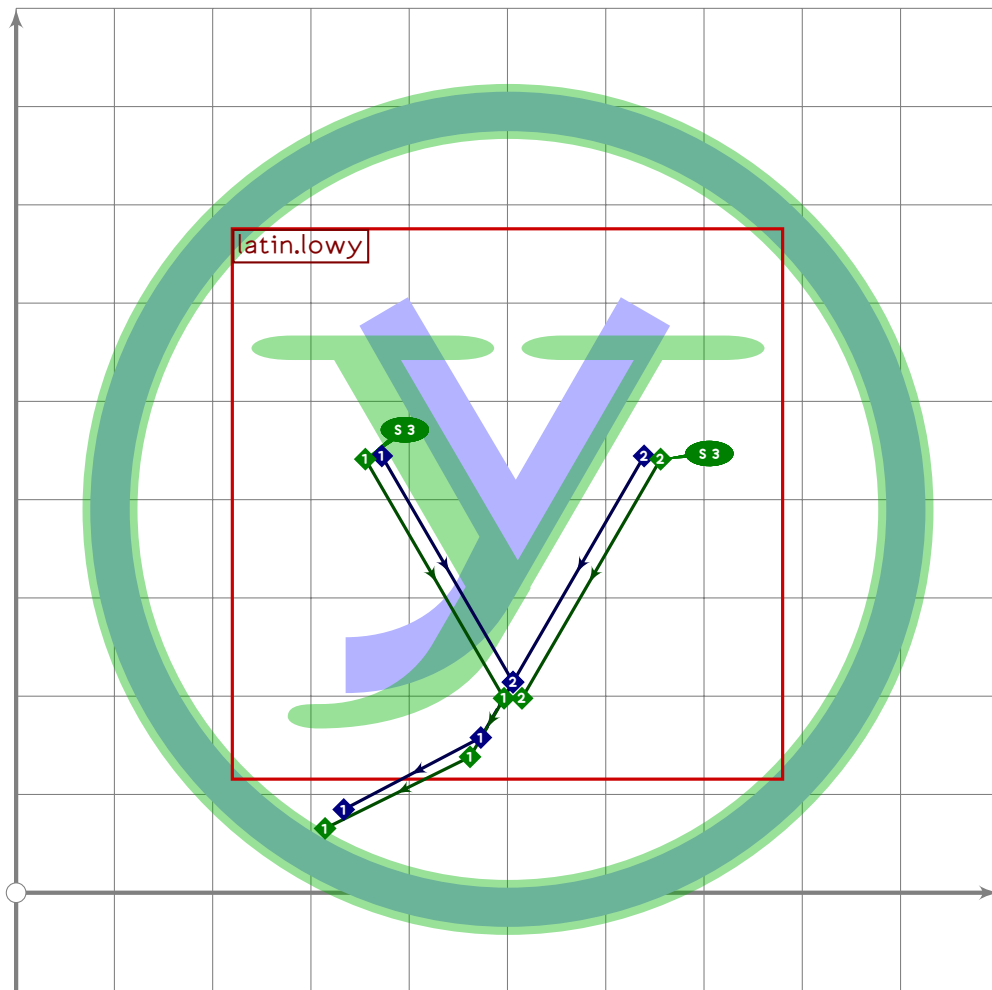
```



```

555 % x
556 begint Suglyph("uni24E7",231);
557   tsu_curve.circle.single;
558   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowx);
559   tsu_render_in_circle(tsu_xf.cbound);
560 endsuglyph;
561

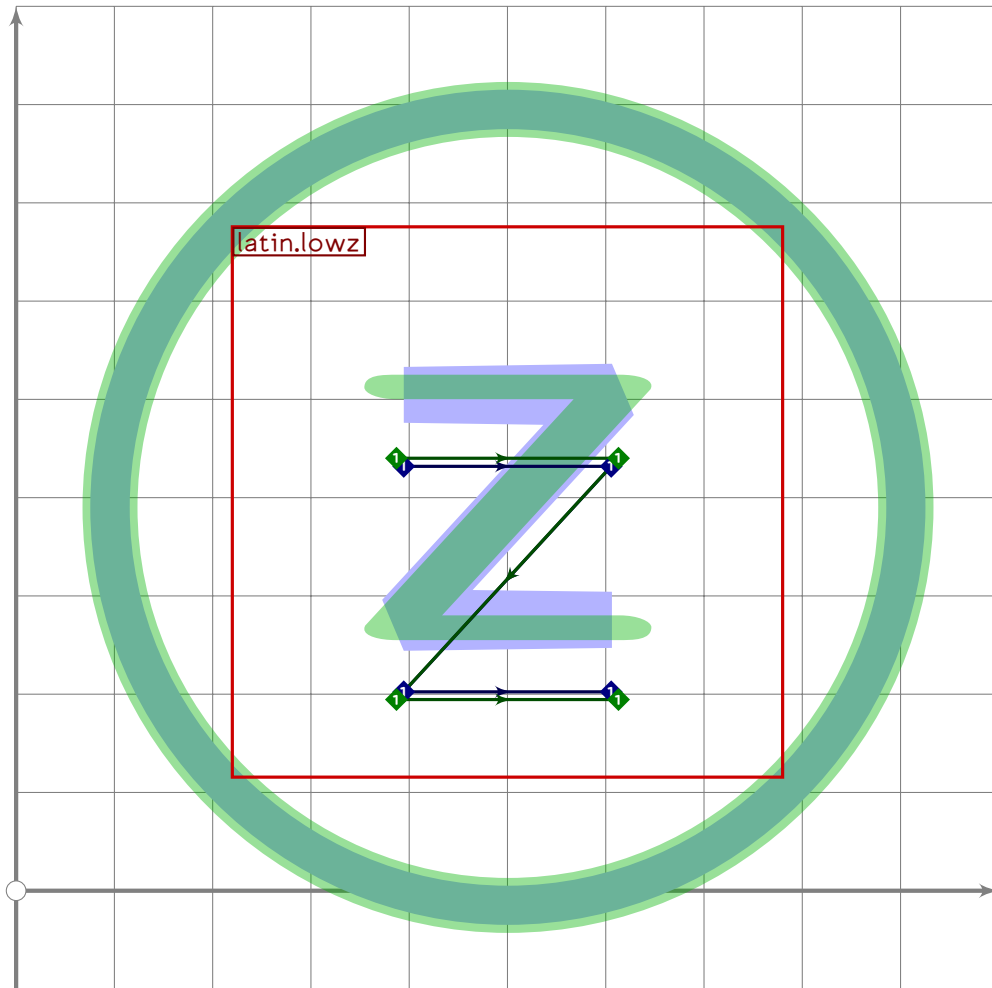
```



```

562 % y
563 begint Suglyph("uni24E8",232);
564 tsu_curve.circle.single;
565 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowy);
566 tsu_render_in_circle(tsu_xf.cbound);
567 endsuglyph;
568

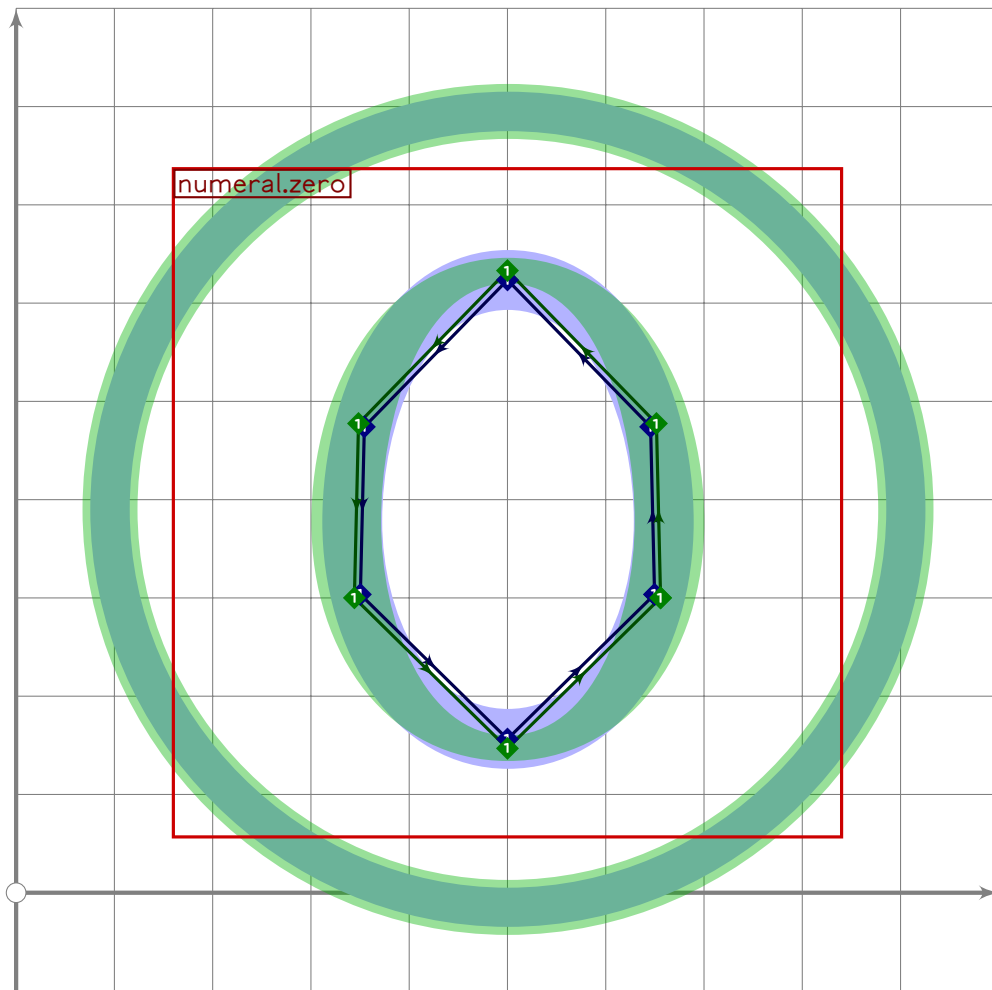
```



```

569 % z
570 begint Suglyph("uni24E9",233);
571   tsu_curve.circle.single;
572   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.lowz);
573   tsu_render_in_circle(tsu_xf.cbound);
574 endsuglyph;
575

```



```

576 % 0
577 begint Suglyph("uni24EA",234);
578   tsu_curve.circle.single;
579   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.zero);
580   tsu_render;
581 endsuglyph;
582
583
584

```

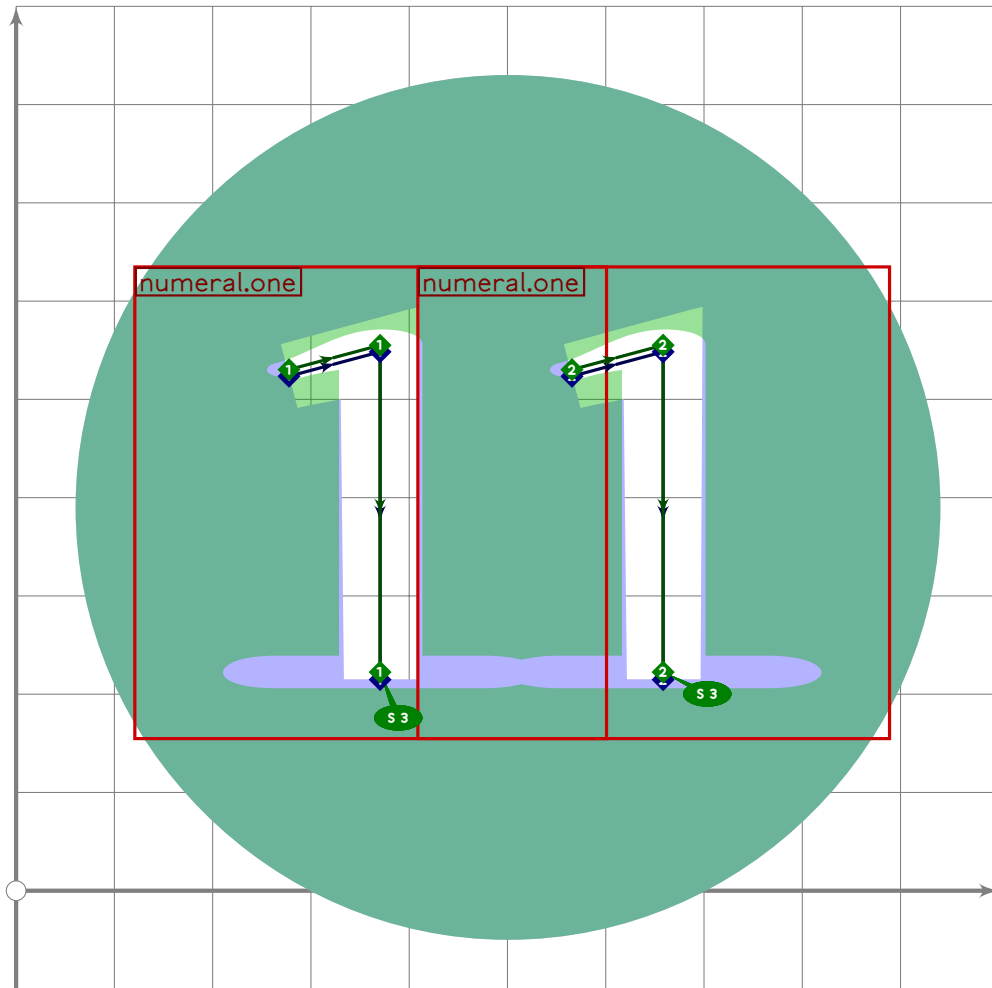
## Inverted Circled Numerals

```

585 % INVERTED CIRCLED NUMERALS
586

```

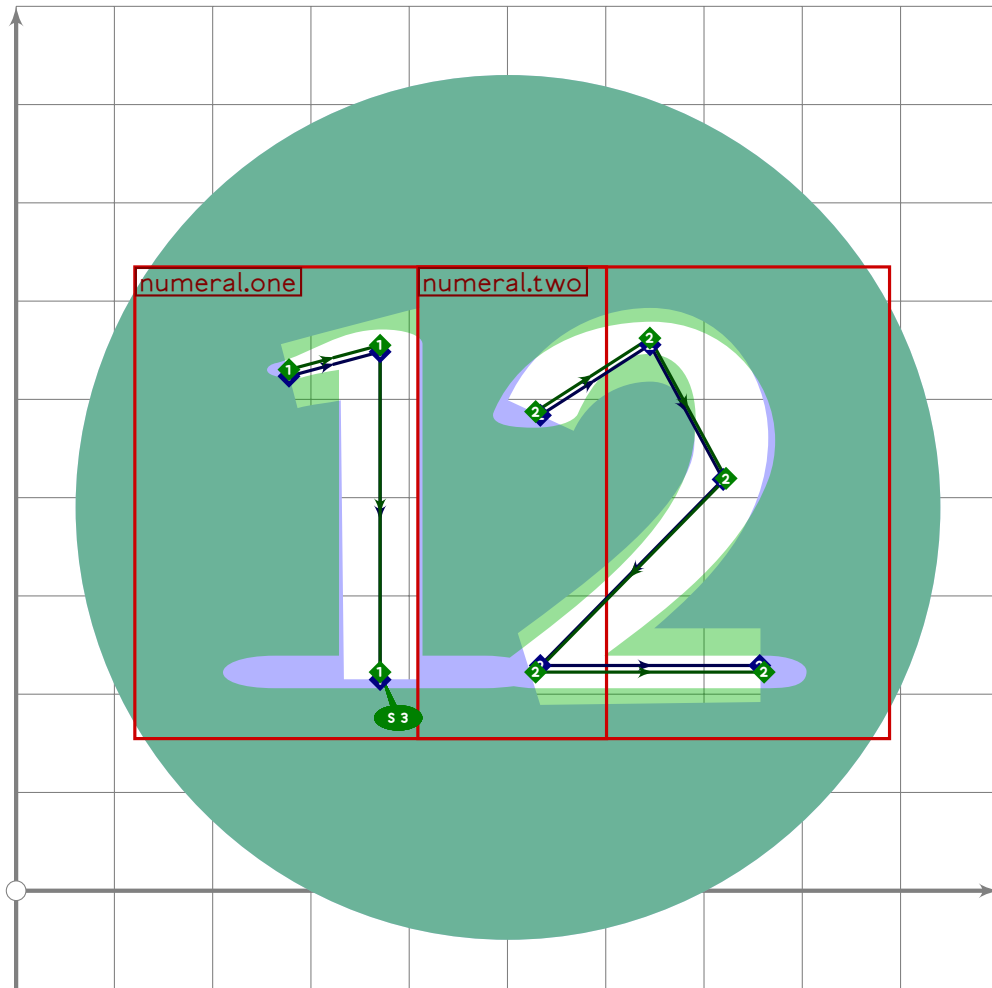




```

587 % 11
588 % BACKGROUND 25CF
589 beginsuglyph("uni24EB";235);
590 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
591 numeric x[],y[];
592 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.one);
593 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
594 tsu_render;
595 endsuglyph;
596

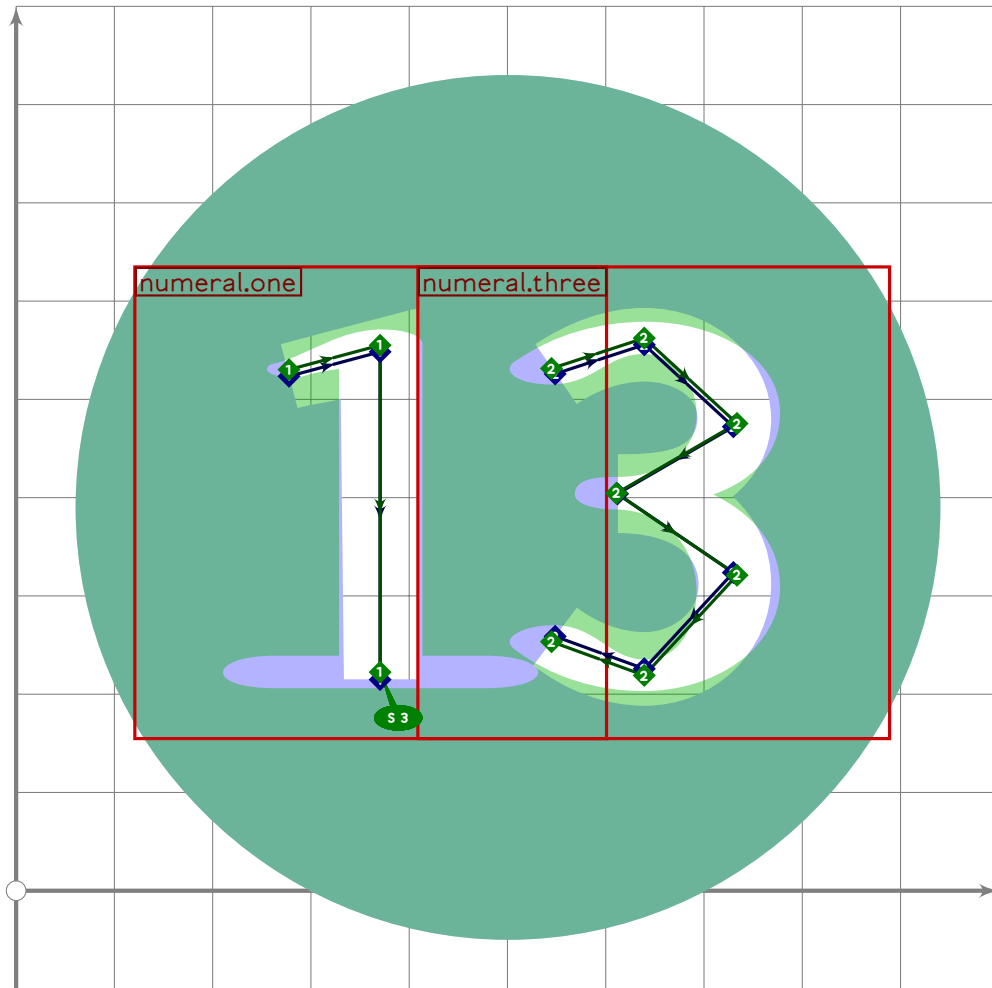
```



```

597 % 12
598 % BACKGROUND 25CF
599 beginsuglyph("uni24EC";236);
600 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
601 numeric x[],y[];
602 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.two);
603 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
604 tsu_render;
605 endsuglyph;
606

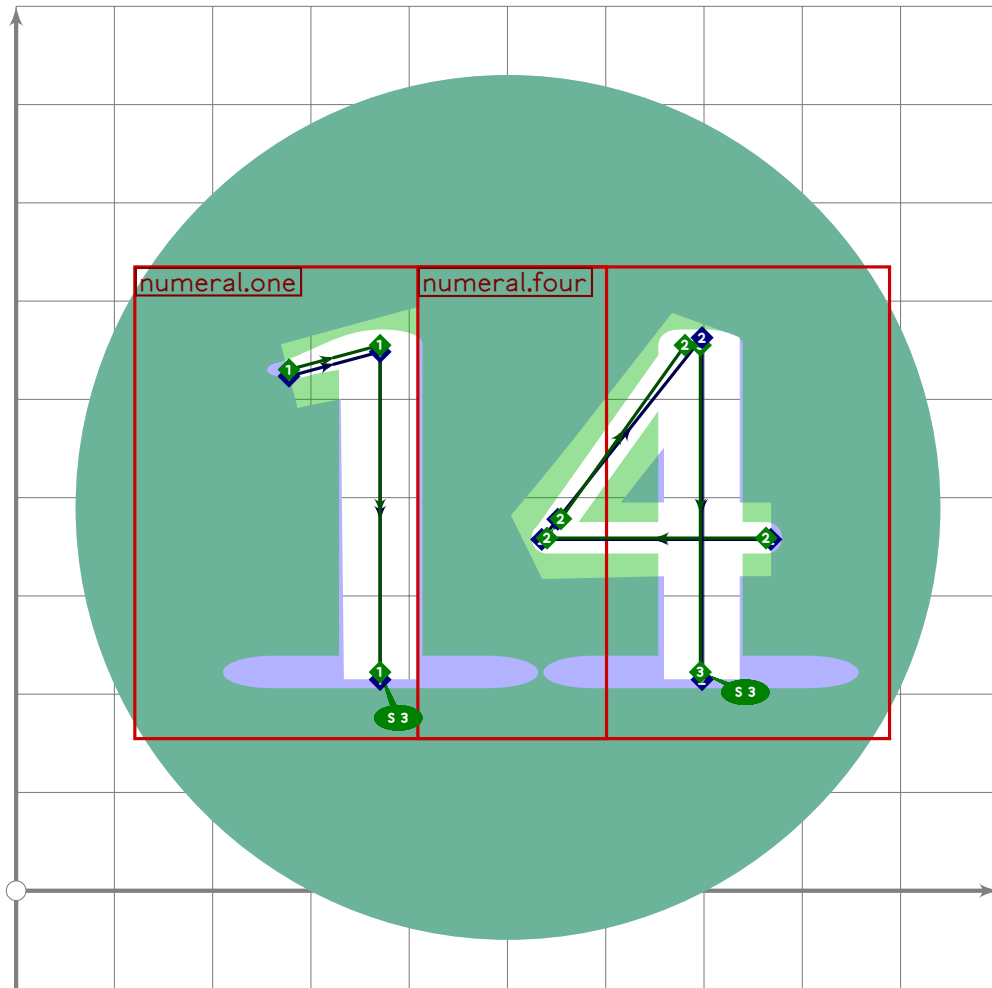
```



```

607 % 13
608 % BACKGROUND 25CF
609 beginsuglyph("uni24ED";237);
610 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
611 numeric x[],y[];
612 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.three);
613 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
614 tsu_render;
615 endsuglyph;
616

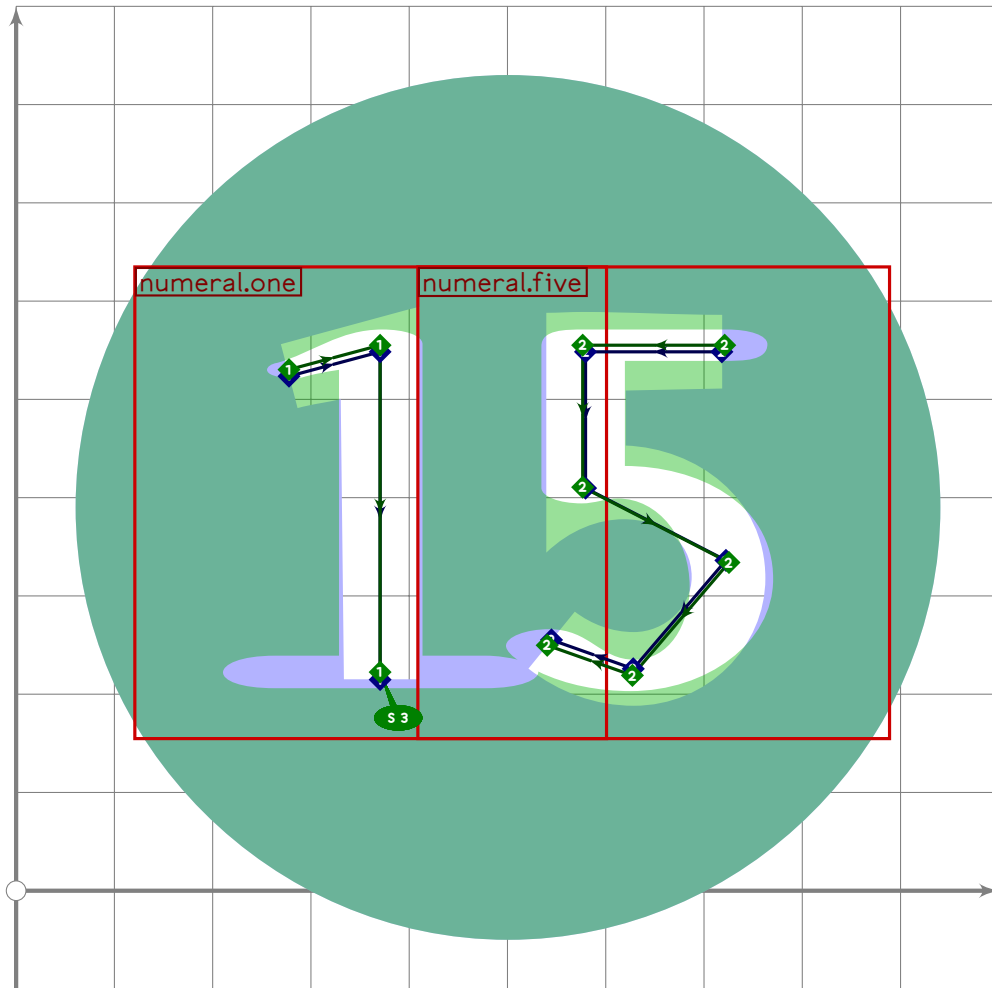
```



```

617 % 14
618 % BACKGROUND 25CF
619 beginsuglyph("uni24EE";238);
620 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
621 numeric x[],y[];
622 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.four);
623 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
624 tsu_render;
625 endsuglyph;
626

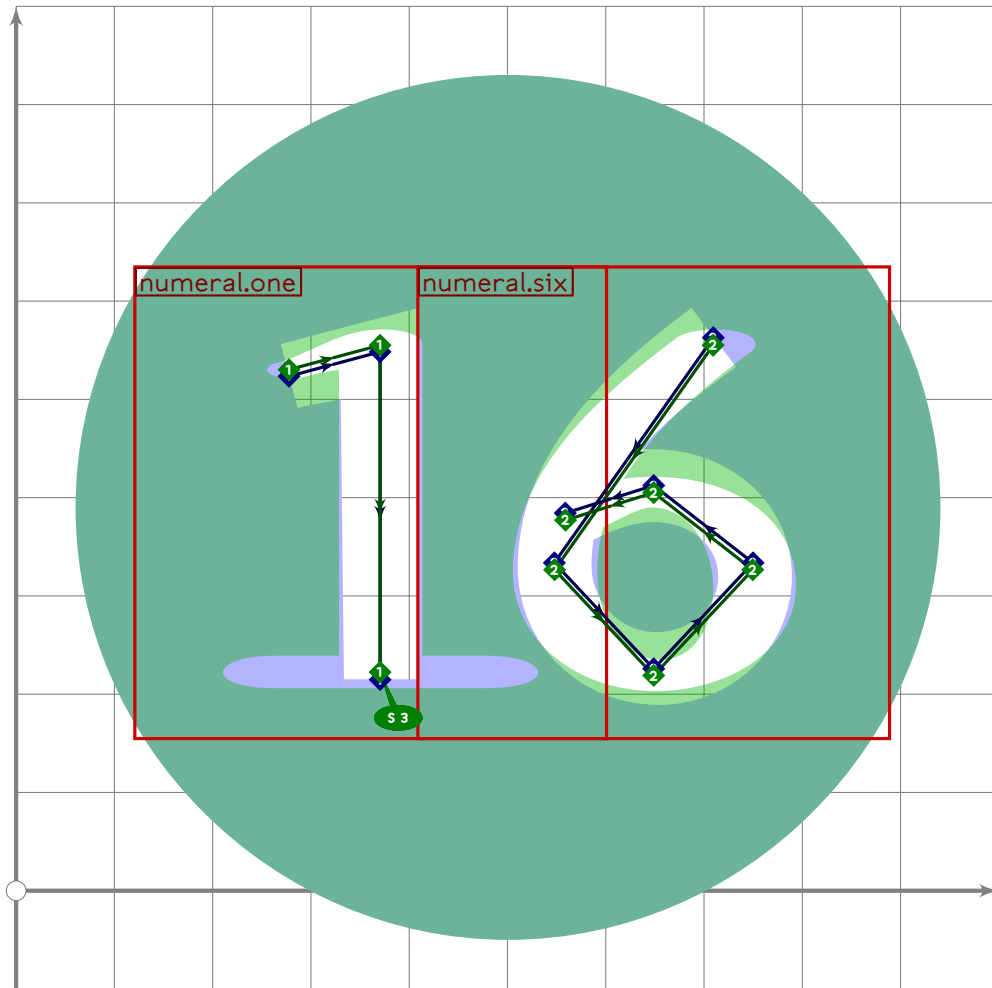
```



```

627 % 15
628 % BACKGROUND 25CF
629 beginsuglyph("uni24EF";239);
630 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
631 numeric x[],y[];
632 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.five);
633 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
634 tsu_render;
635 endsuglyph;
636

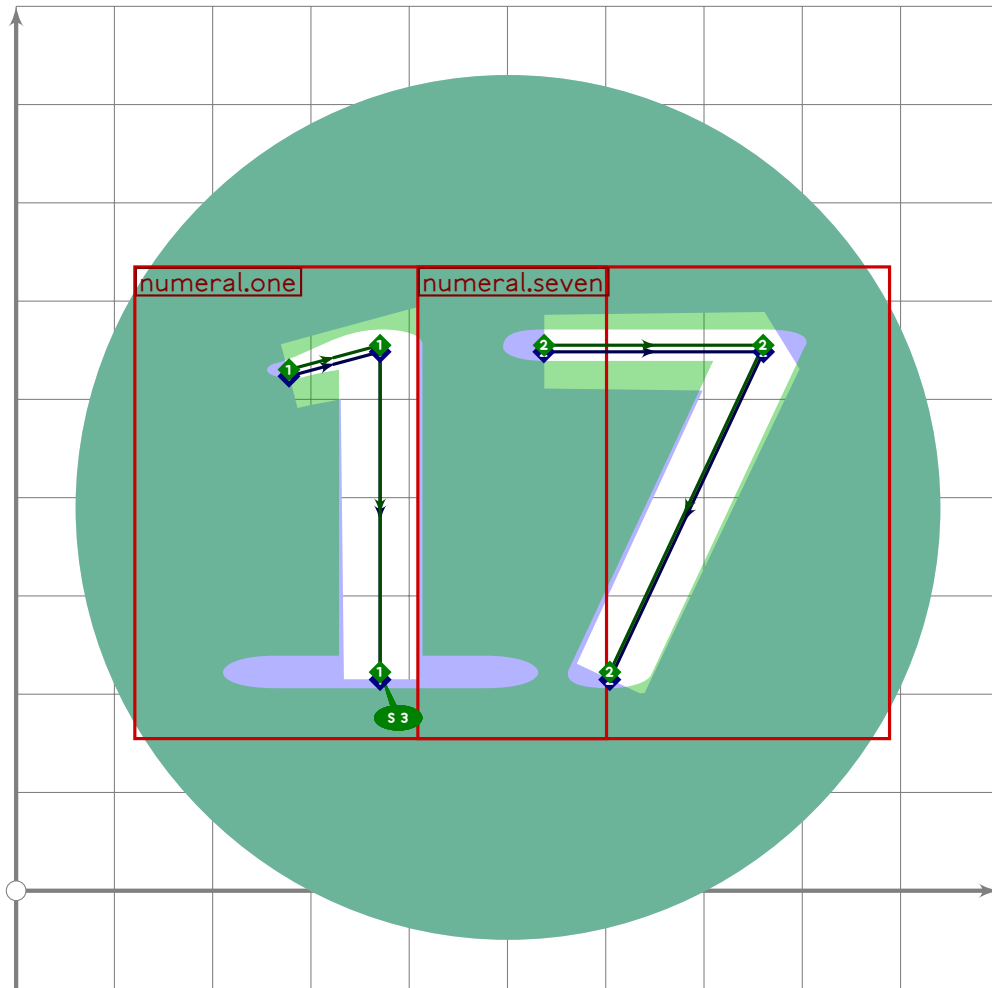
```



```

637 % 16
638 % BACKGROUND 25CF
639 beginsuglyph("uni24F0";240);
640 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
641 numeric x[],y[];
642 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.six);
643 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
644 tsu_render;
645 endsuglyph;
646

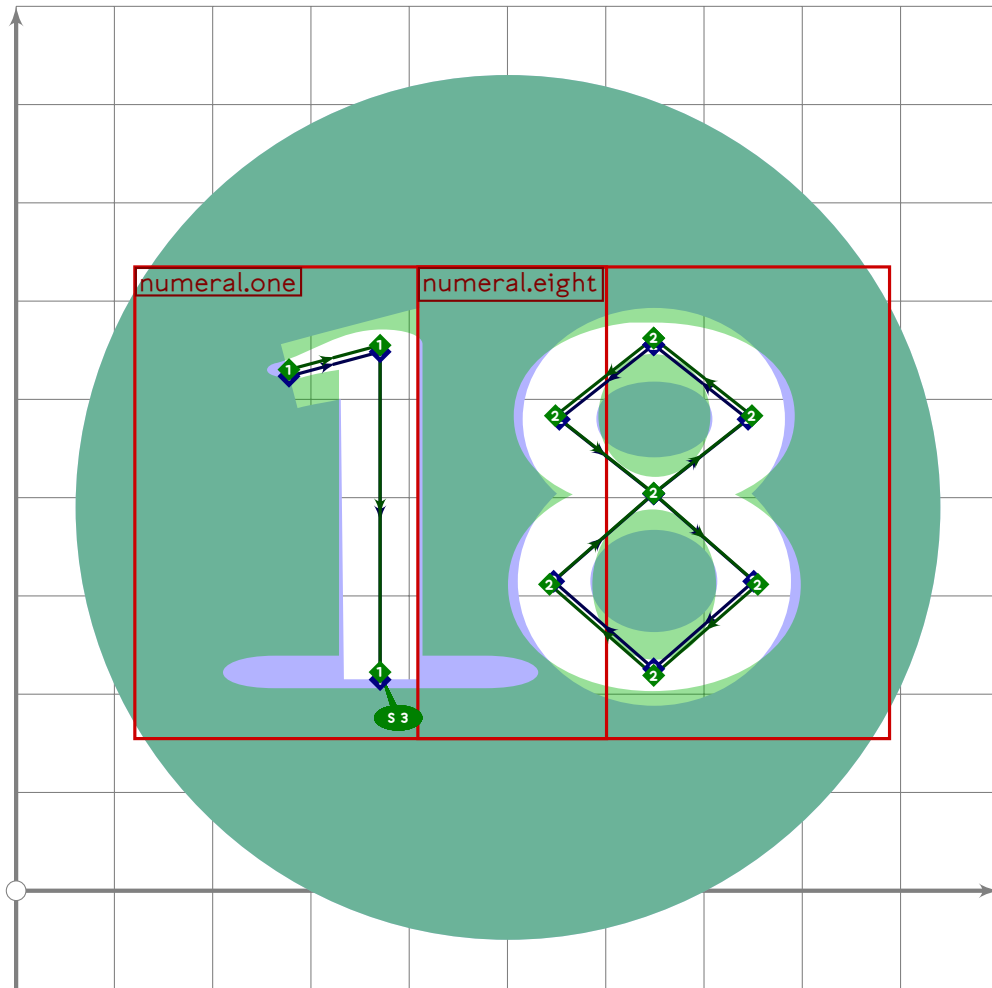
```



```

647 % 17
648 % BACKGROUND 25CF
649 beginsuglyph("uni24F1";241);
650 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
651 numeric x[],y[];
652 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.seven);
653 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
654 tsu_render;
655 endsuglyph;
656

```

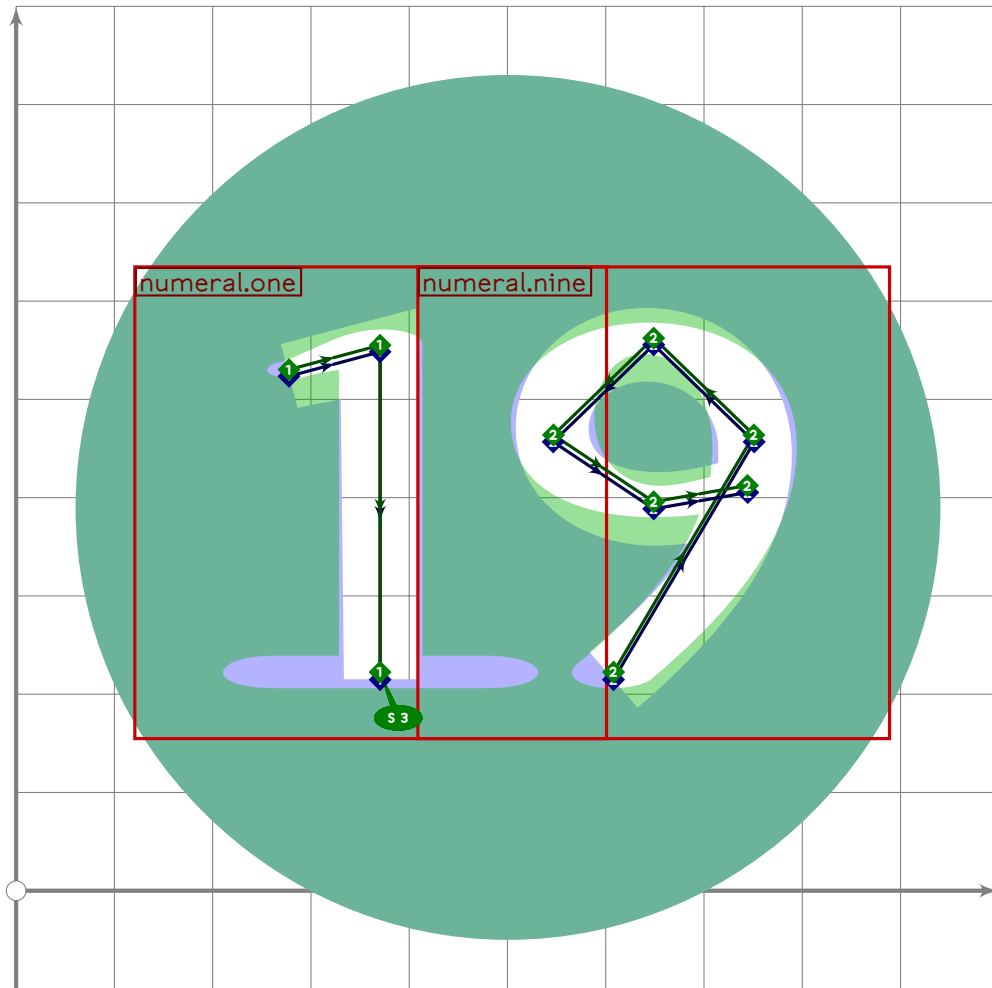


```

657 % 18
658 % BACKGROUND 25CF
659 beginsuglyph("uni24F2";242);
660 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
661 numeric x[],y[];
662 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.eight);
663 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
664 tsu_render;
665 endsuglyph;
666

```

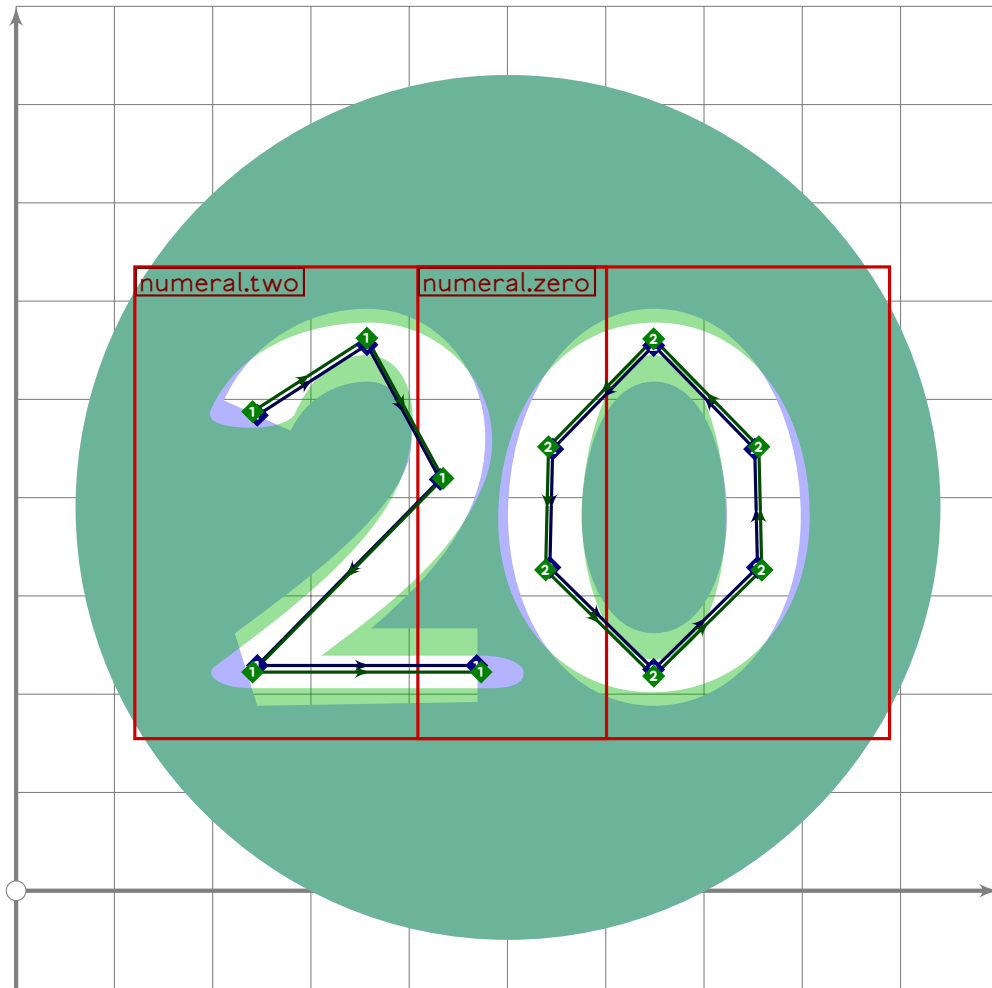




```

667 % 19
668 % BACKGROUND 25CF
669 beginsuglyph("uni24F3",243);
670 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
671 numeric x[],y[];
672 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.nine);
673 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
674 tsu_render;
675 endsuglyph;
676

```



```

677 % 20
678 % BACKGROUND 25CF
679 begint Suglyph("uni24F4",244);
680 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
681 numeric x[],y[];
682 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
683 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
684 tsu_render;
685 endtsuglyph;
686
687
688

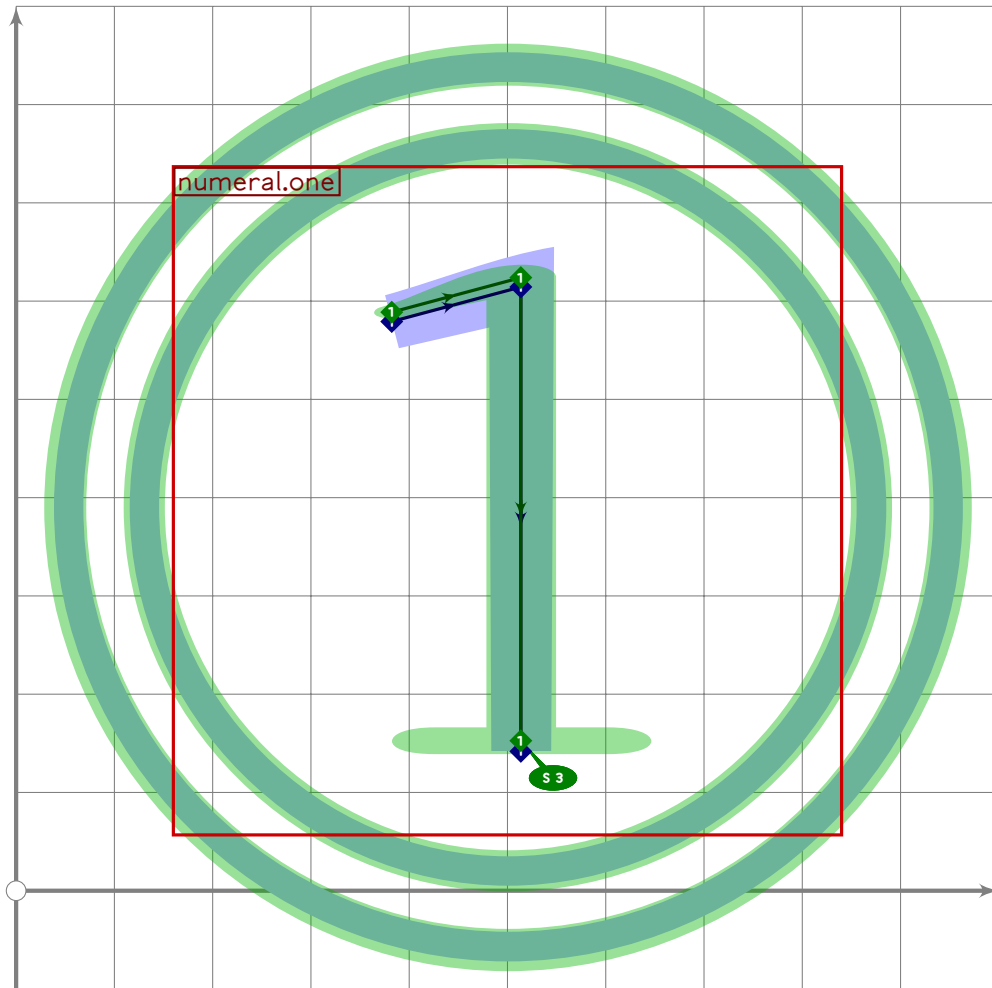
```

## Doubly Circled Numerals

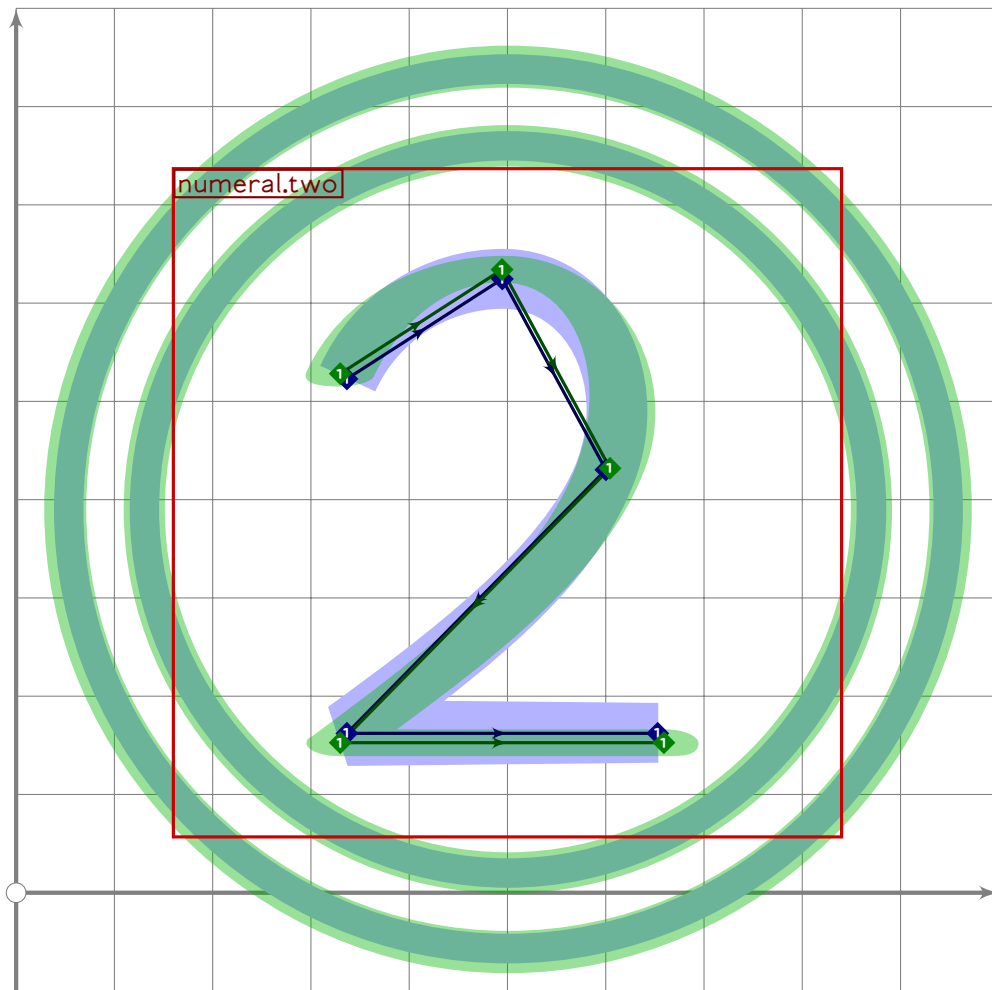
```

689 % DOUBLY CIRCLED NUMERALS
690

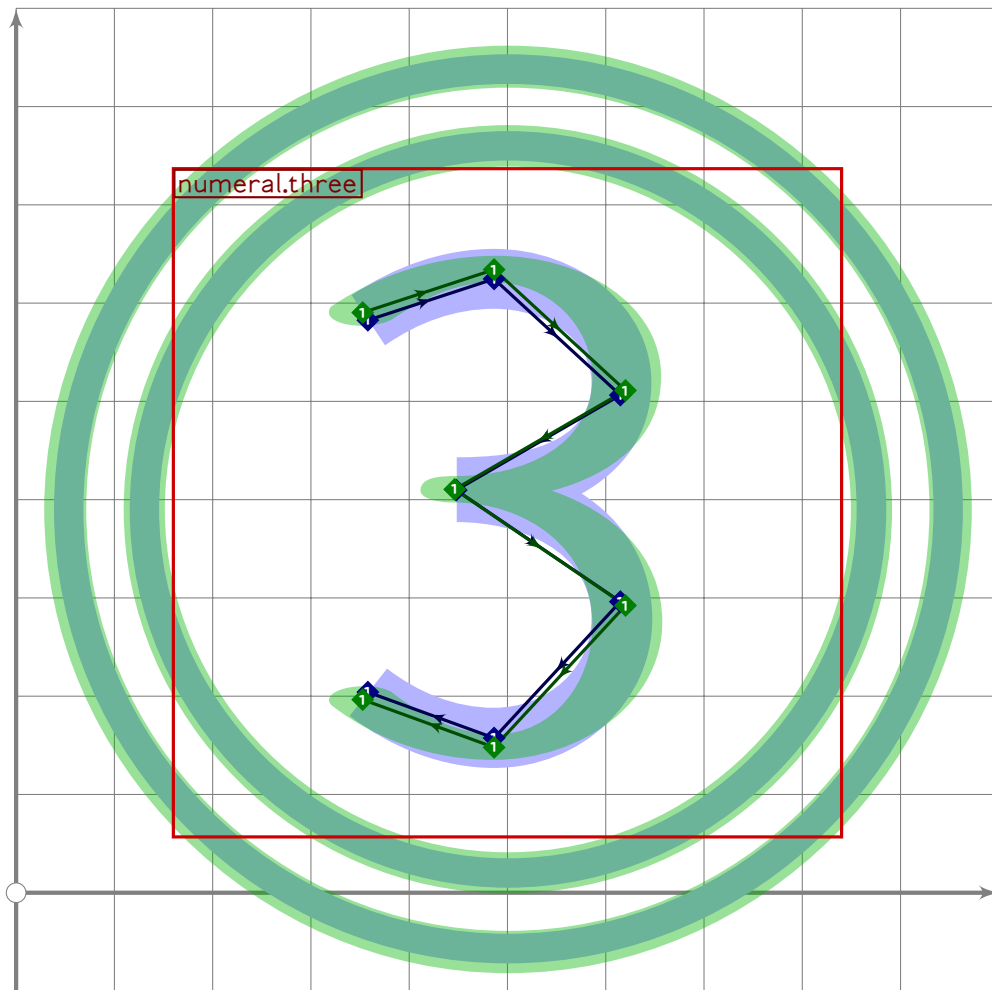
```



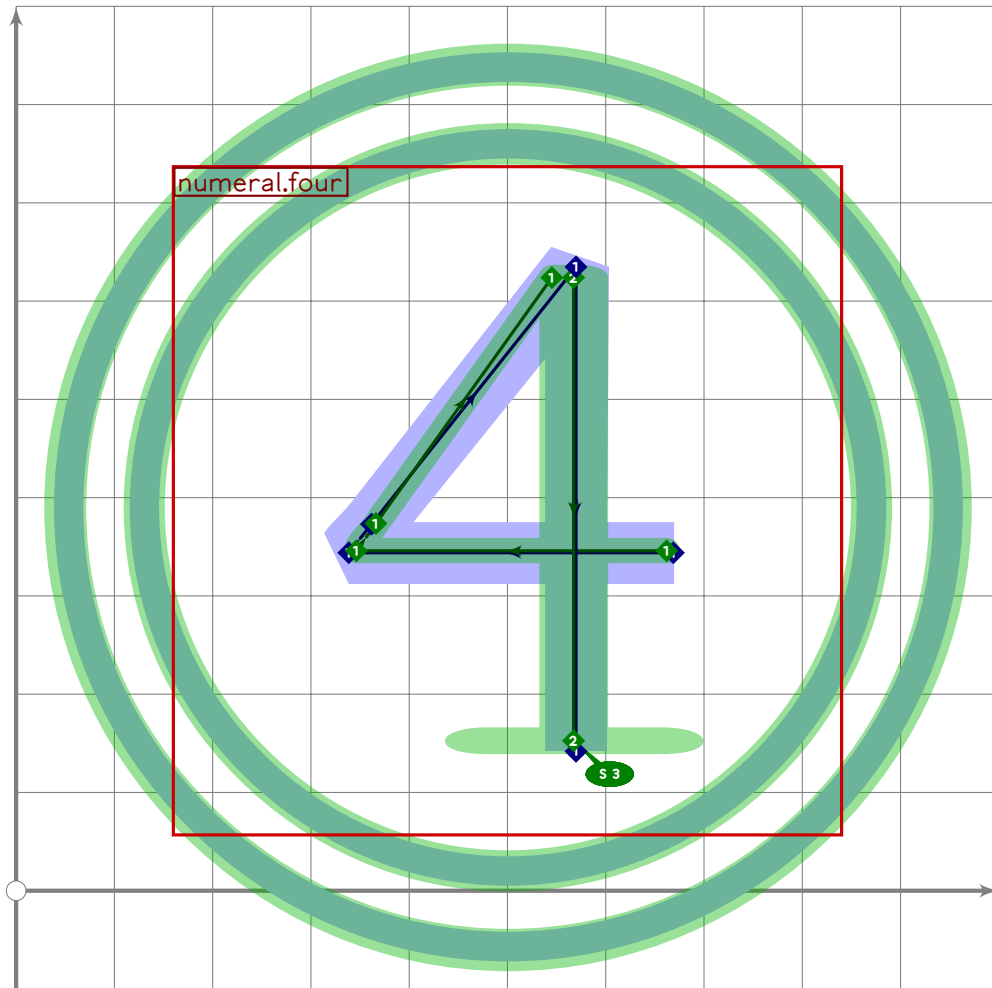
```
691 % 1
692 beginsuglyph("uni24F5";245);
693   tsu_curve.circle.double;
694   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.one);
695   tsu_render;
696 endsuglyph;
697
```



```
698 % 2
699 begintsuglyph("uni24F6";246);
700 tsu_curve.circle.double;
701 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.two);
702 tsu_render;
703 endsuglyph;
704
```



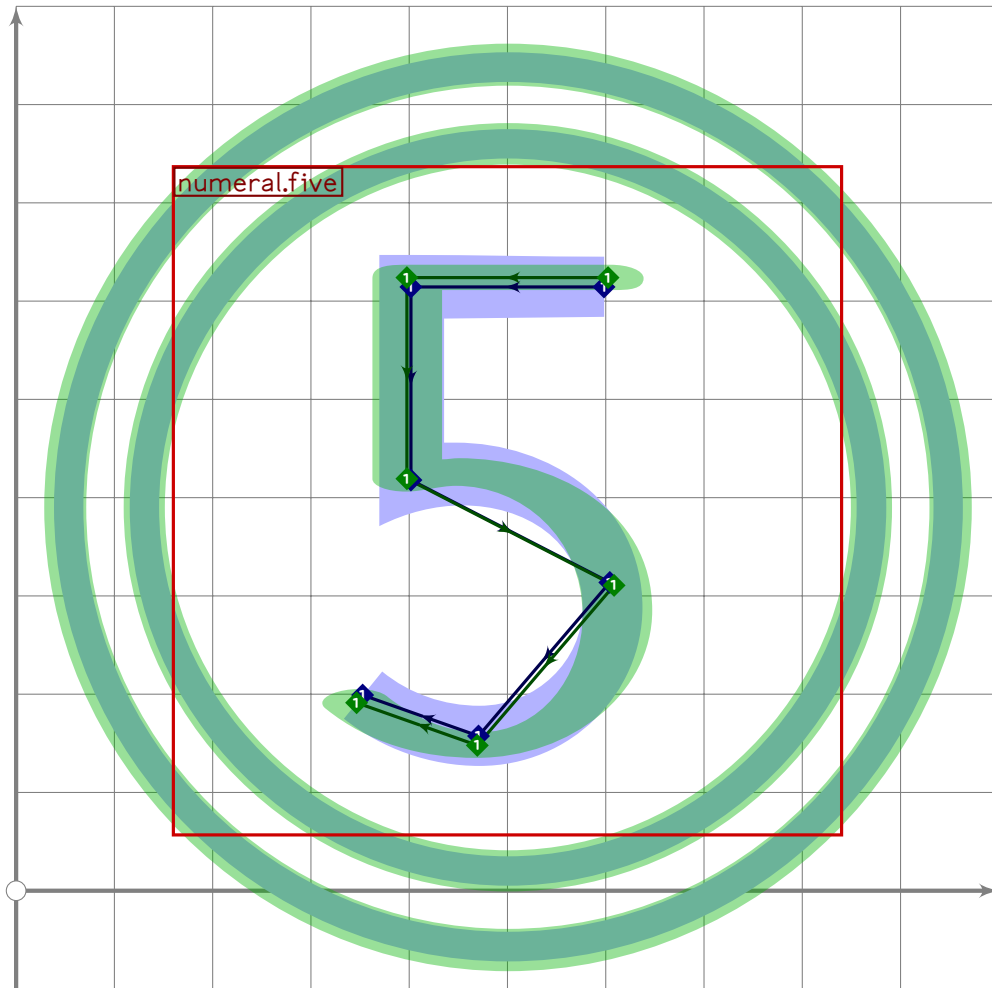
```
705 % 3
706 beginsuglyph("uni24F7",247);
707   tsu_curve.circle.double;
708   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.three);
709   tsu_render;
710 endsuglyph;
711
```



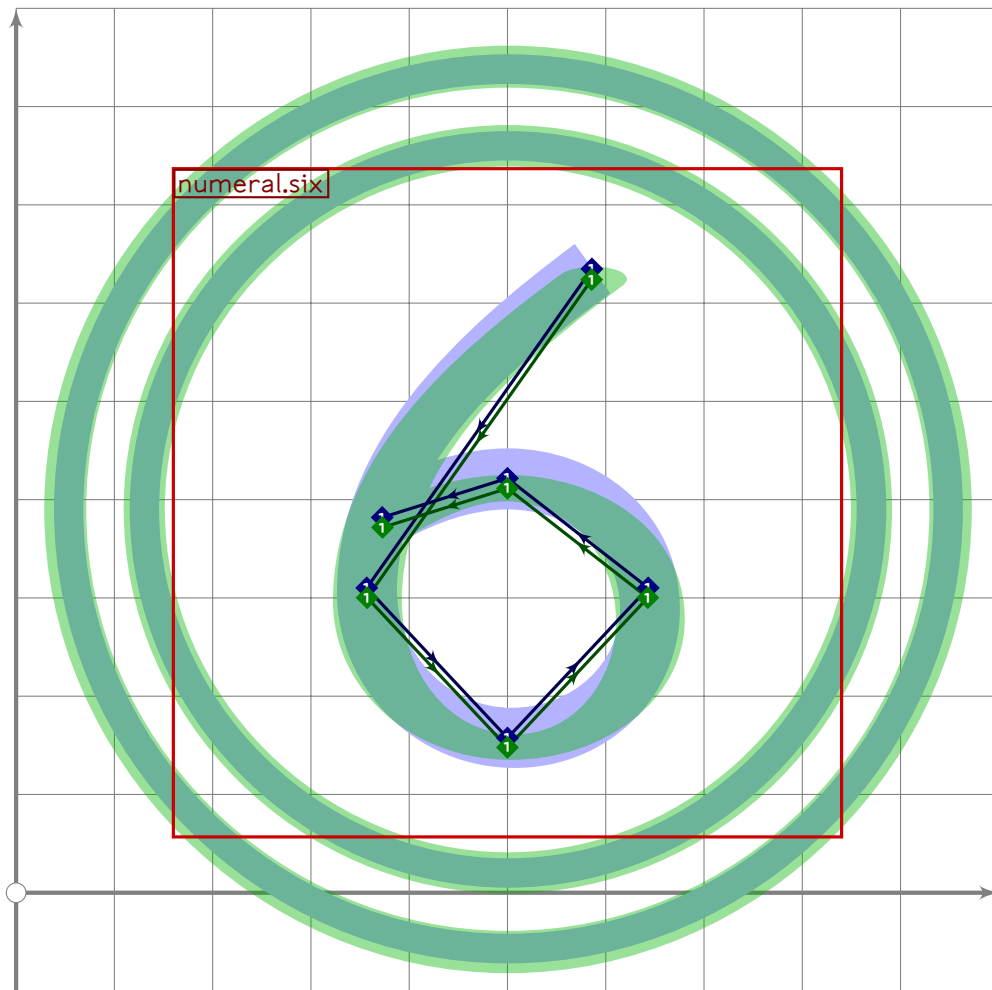
```

712 % 4
713 begint Suglyph("uni24F8",248);
714   tsu_curve.circle.double;
715   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.four);
716   tsu_render;
717 endsuglyph;
718

```

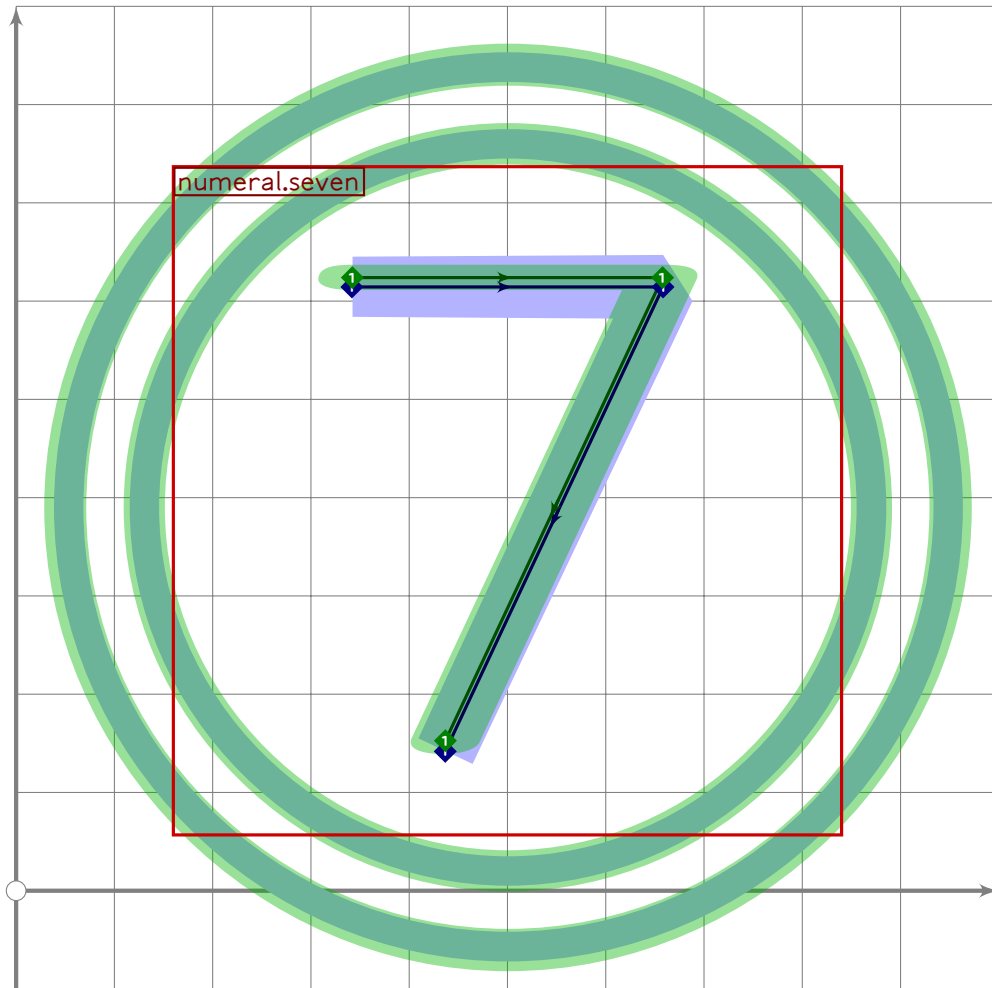


```
719 % 5
720 begint Suglyph("uni24F9",249);
721   tsu_curve.circle.double;
722   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.five);
723   tsu_render;
724 endsuglyph;
725
```

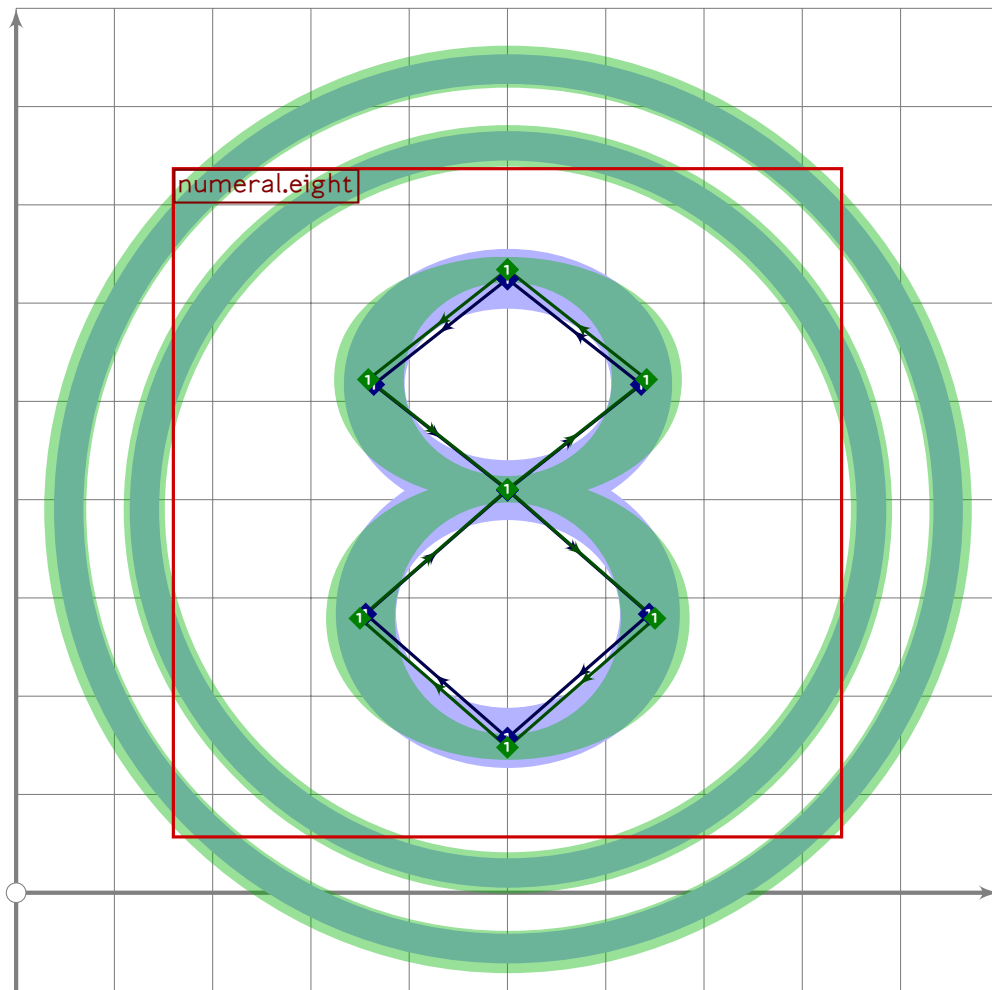


```
726 % 6
727 begint Suglyph("uni24FA";250);
728   tsu_curve.circle.double;
729   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.six);
730   tsu_render;
731 endsuglyph;
732
```





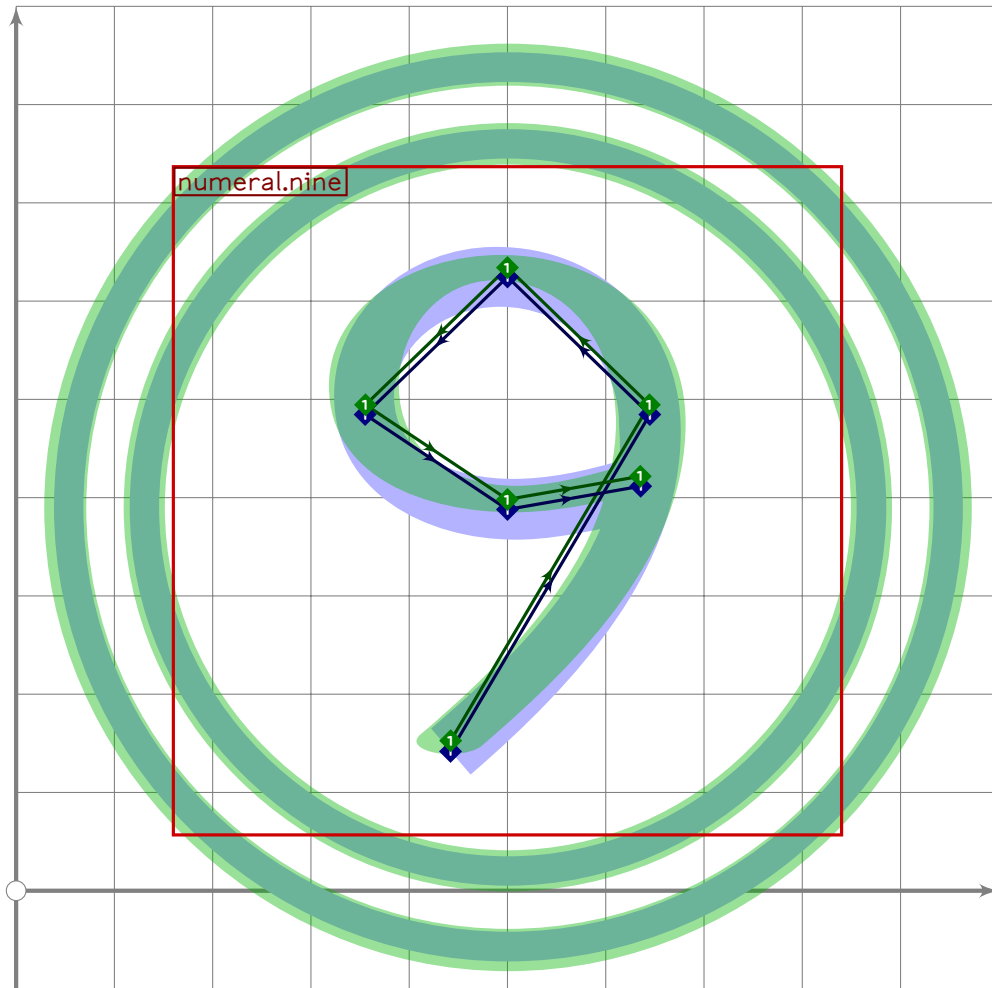
```
733 % 7
734 begint Suglyph("uni24FB",251);
735   tsu_curve.circle.double;
736   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.seven);
737   tsu_render;
738 endsuglyph;
739
```



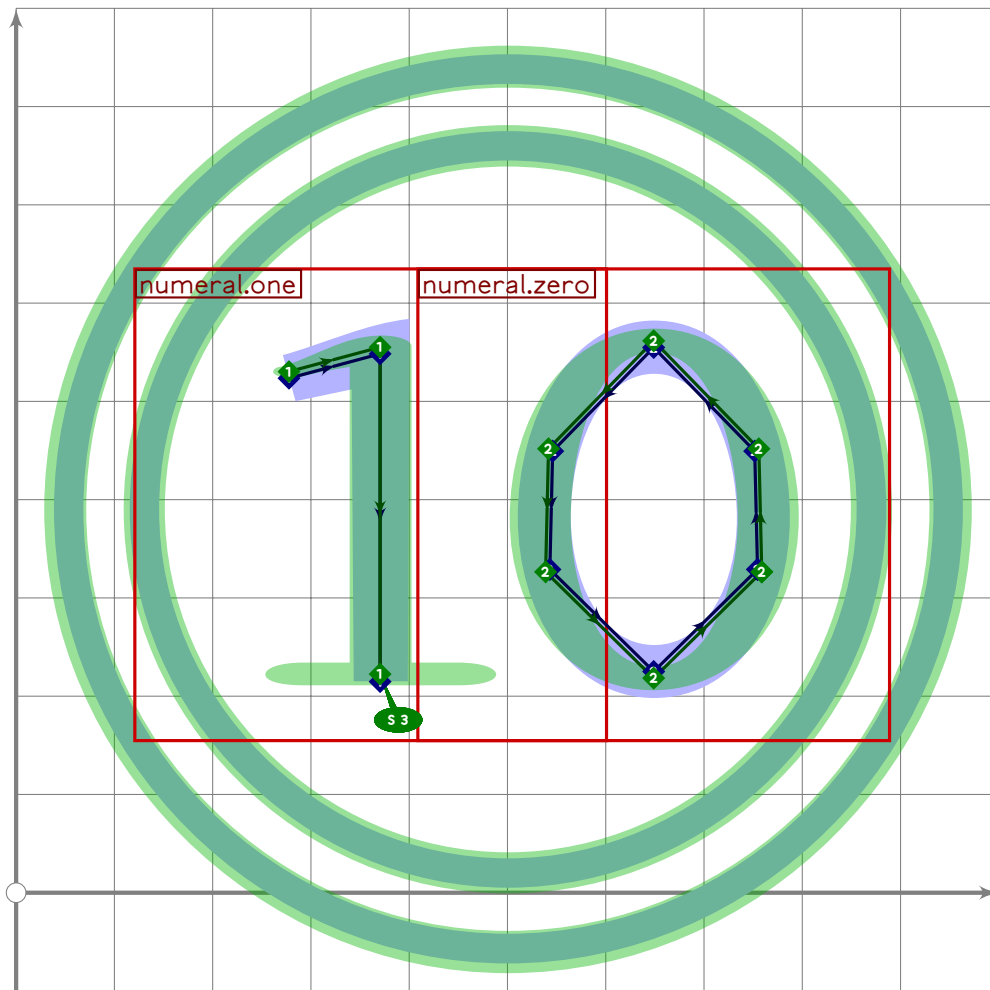
```

740 % 8
741 begint Suglyph("uni24FC";252);
742   tsu_curve.circle.double;
743   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.eight);
744   tsu_render;
745 endsuglyph;
746

```



```
747 % 9
748 begint Suglyph("uni24FD";253);
749 tsu_curve.circle.double;
750 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.nine);
751 tsu_render;
752 endsuglyph;
753
```



```

754 % 10
755 beginstuglyph("uni24FE",254);
756   tsu_curve.circle.double;
757   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
758   numeric x[],y[];
759   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
760   tsu_render;
761 endstuglyph;
762
763
764

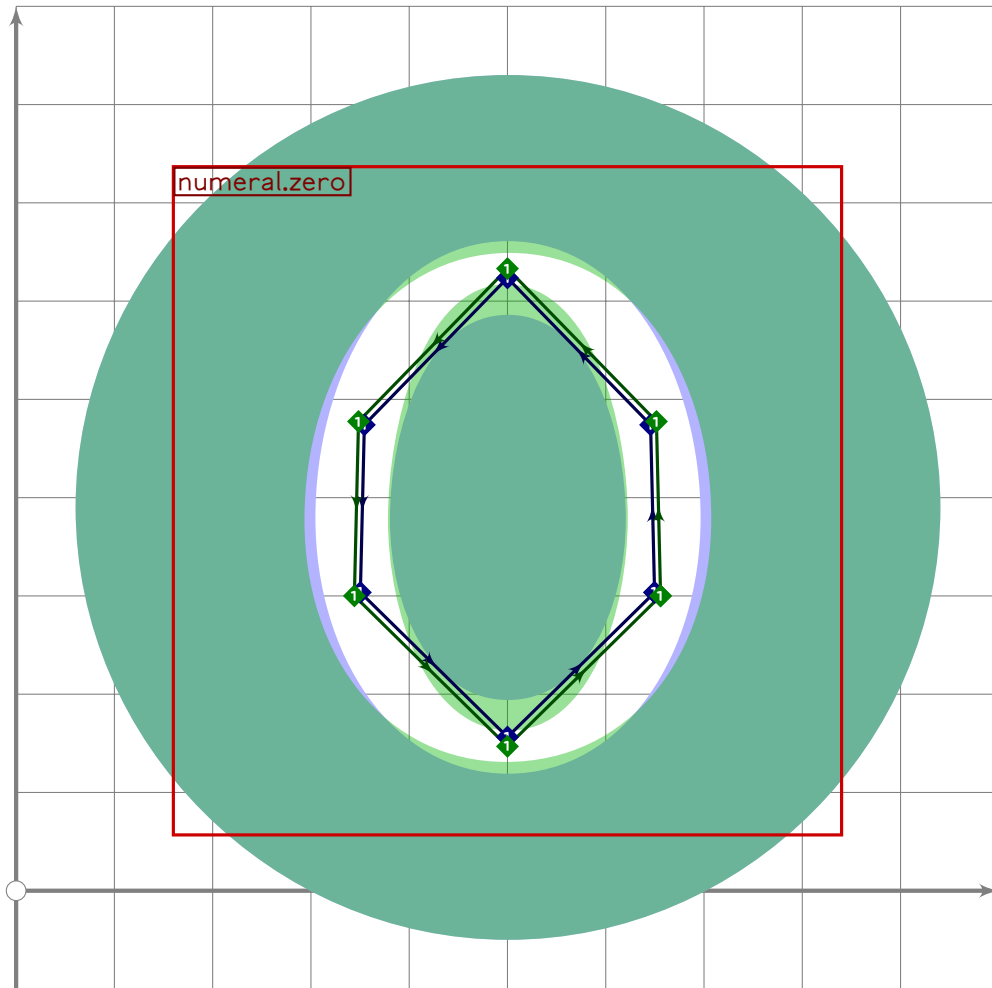
```

## One More Inverted Circled Numeral

```

765 % ONE MORE INVERTED CIRCLED NUMERAL
766

```



```

767 % 9
768 % BACKGROUND 25CF
769 begintsuglyph("uni24FF";255);
770 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.zero);
771 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
772 tsu_render;
773 endtsuglyph;
774
775 _____
776
777 endfont;
778
779 _____

```

# tsuku-25.mp

1 %

2 % Unicode page 24 (Geometric Shapes) for Tsukurimashou

3 % Copyright (C) 2011 Matthew Skala

4 %

5-29 [Standard copyright notice]

30

31

32

33 beginfont

34

35 % AUTODEPS

36

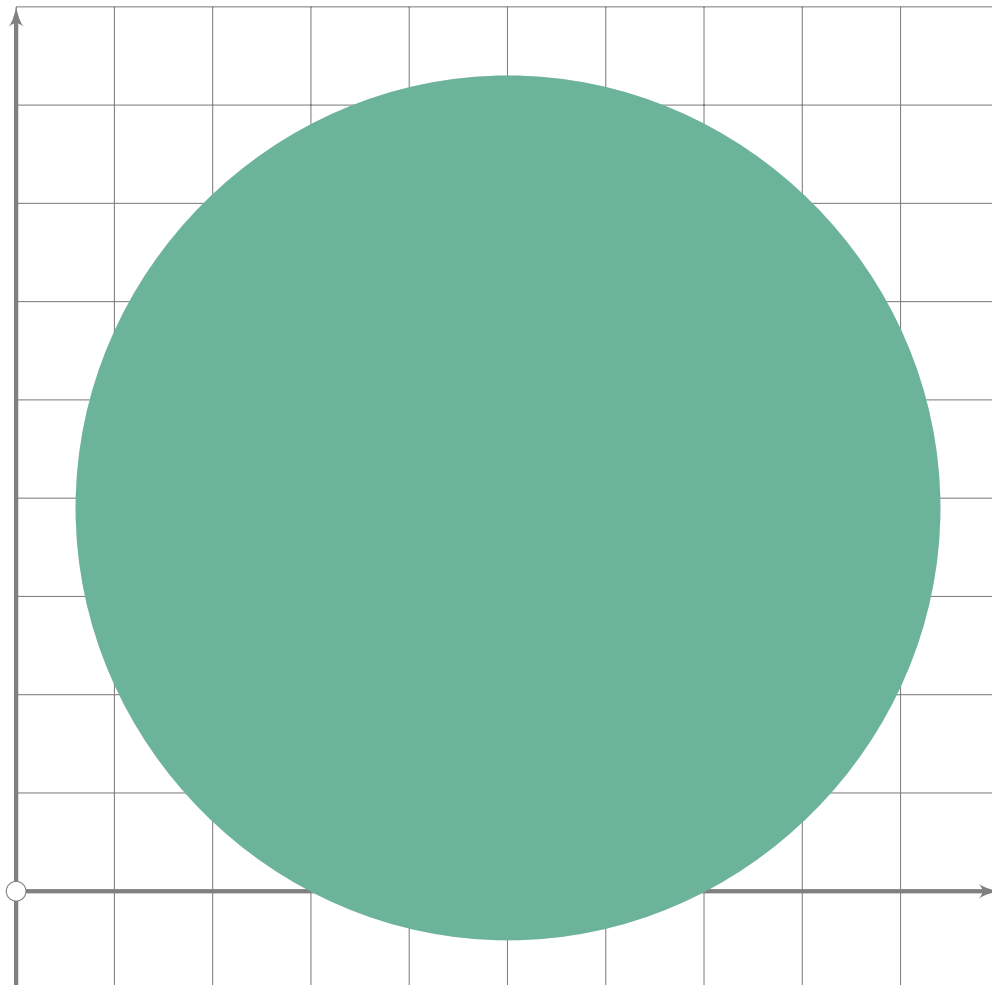
37

38

## Geometric Shapes

39 % GEOMETRIC SHAPES

40



41 % black circle - used as background for inverted dingbats

```
42 begintsuglyph("uni25CF",207);  
43   Fill fullcircle scaled 880 shifted centre_pt;  
44 endsuglyph;  
45  
46 

---

  
47  
48 endfont;  
49  
50 

---


```

# tsuku-26.mp

```
1 %
2 % Unicode page 26 (Misc. Symbols) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input iching.mp;
39
40 

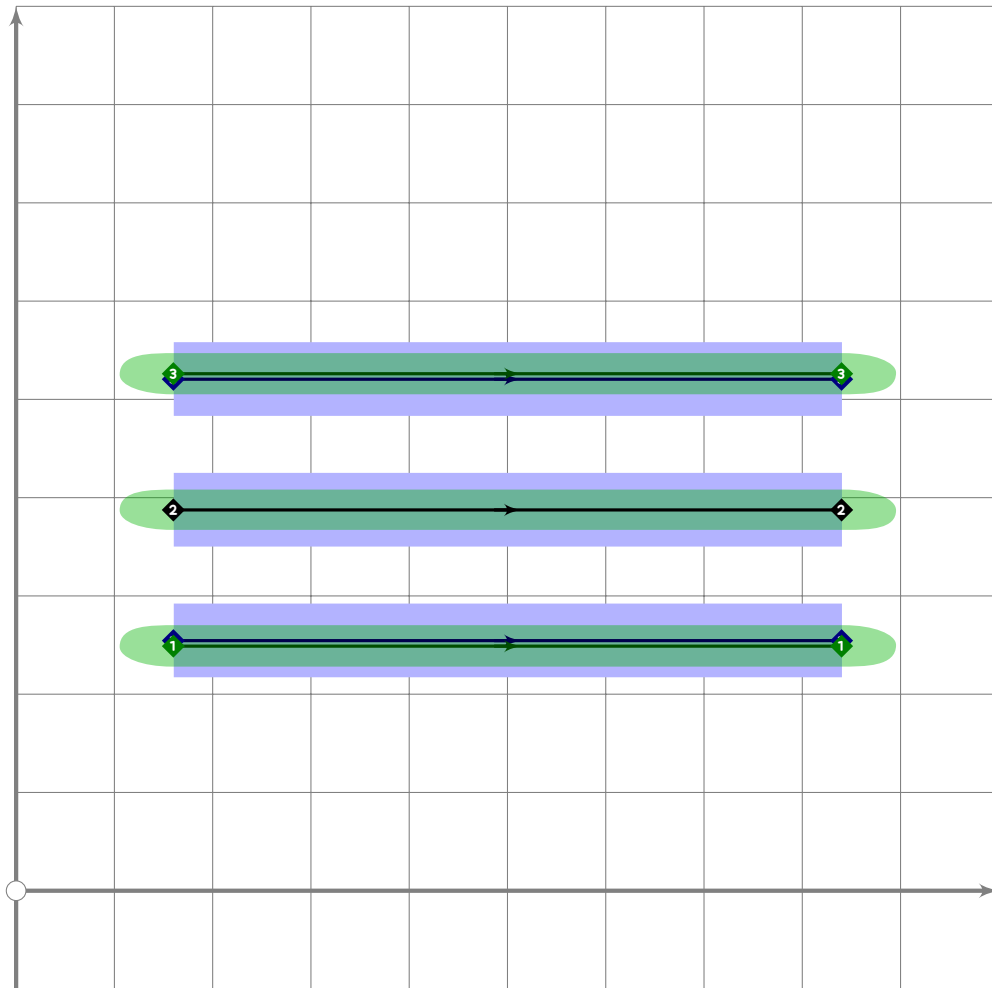
---


41
```

## I Ching

```
42 % I CHING
```

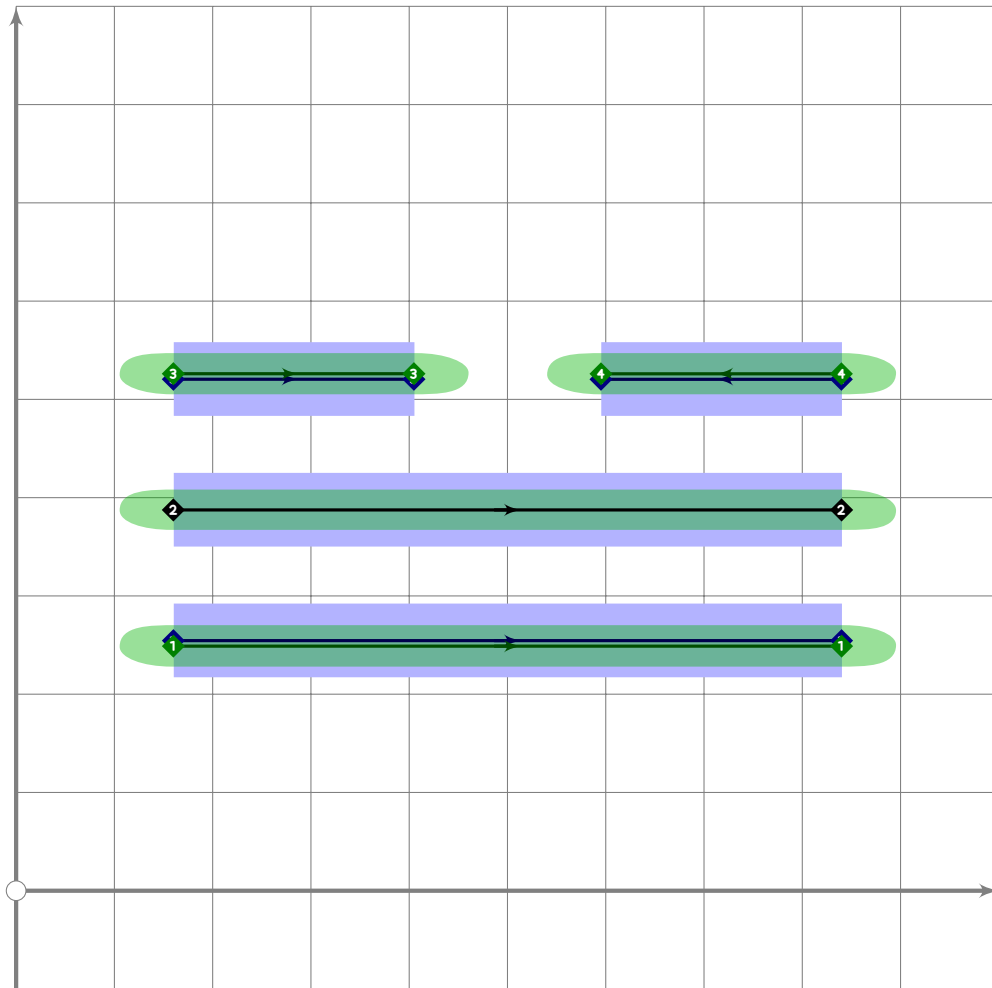




```

43
44 begintsuglyph("ichingtri1",48);
45 tsu_curve.iching.line(1,3,1);
46 tsu_curve.iching.line(2,3,1);
47 tsu_curve.iching.line(3,3,1);
48 tsu_render;
49 endtsuglyph;

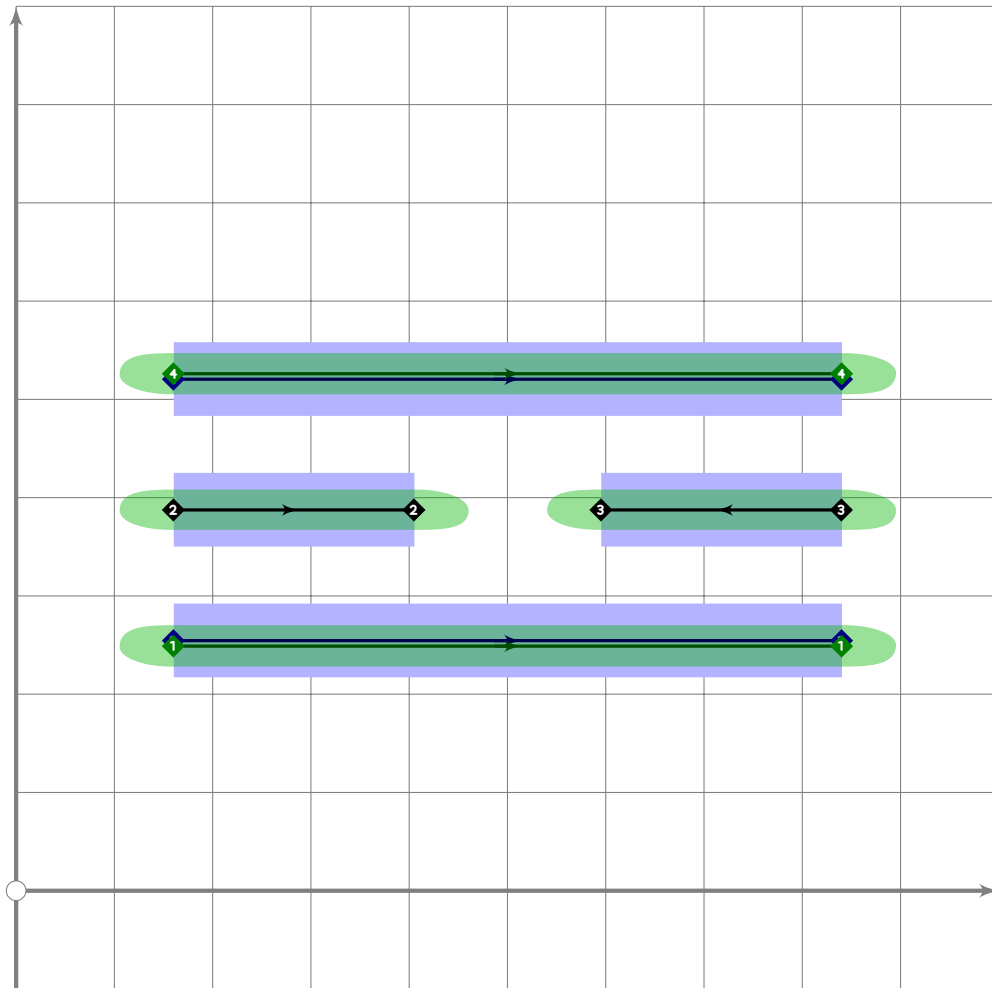
```



```

50
51 begint Suglyph("ichingtri2";49);
52 tsu_curve.iching.line(1,3,1);
53 tsu_curve.iching.line(2,3,1);
54 tsu_curve.iching.line(3,3,0);
55 tsu_render;
56 endtsuglyph;

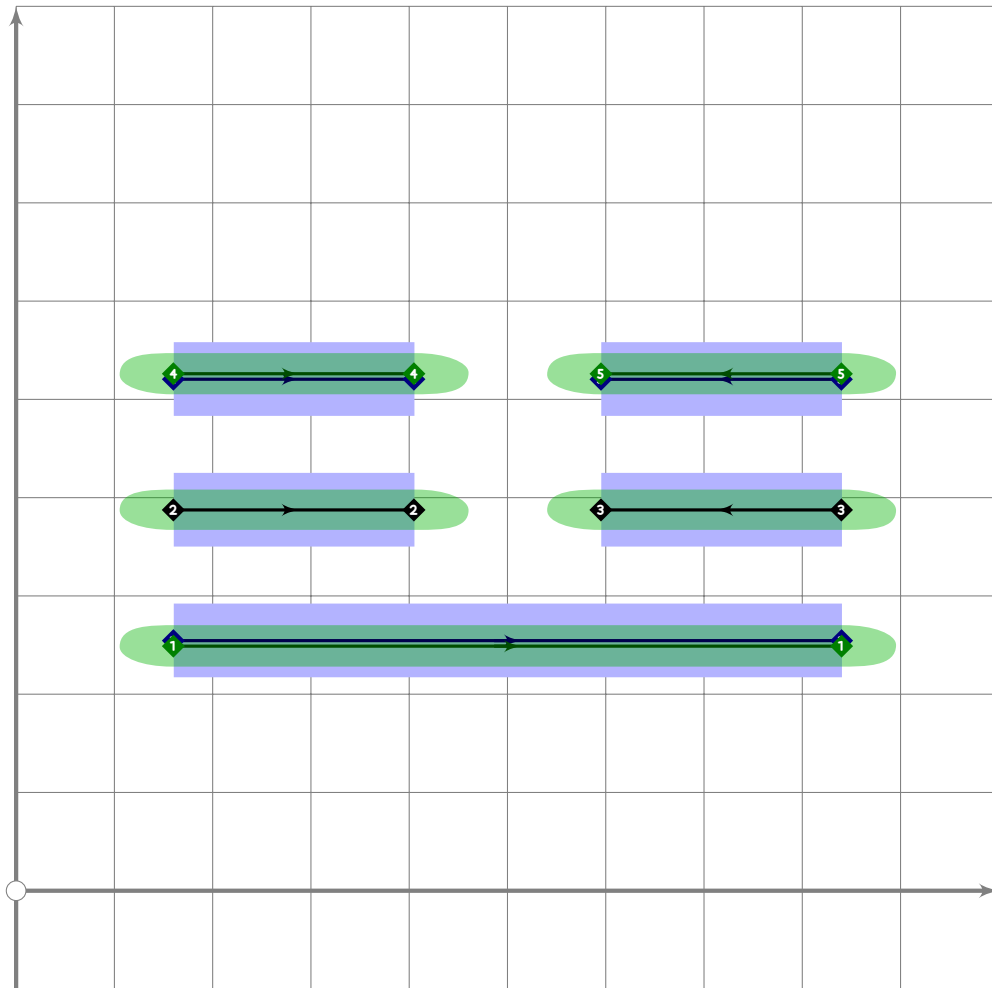
```



```

57
58 begint Suglyph("ichingtri3",50);
59   tsu_curve.iching.line(1,3,1);
60   tsu_curve.iching.line(2,3,0);
61   tsu_curve.iching.line(3,3,1);
62   tsu_render;
63 endtsuglyph;

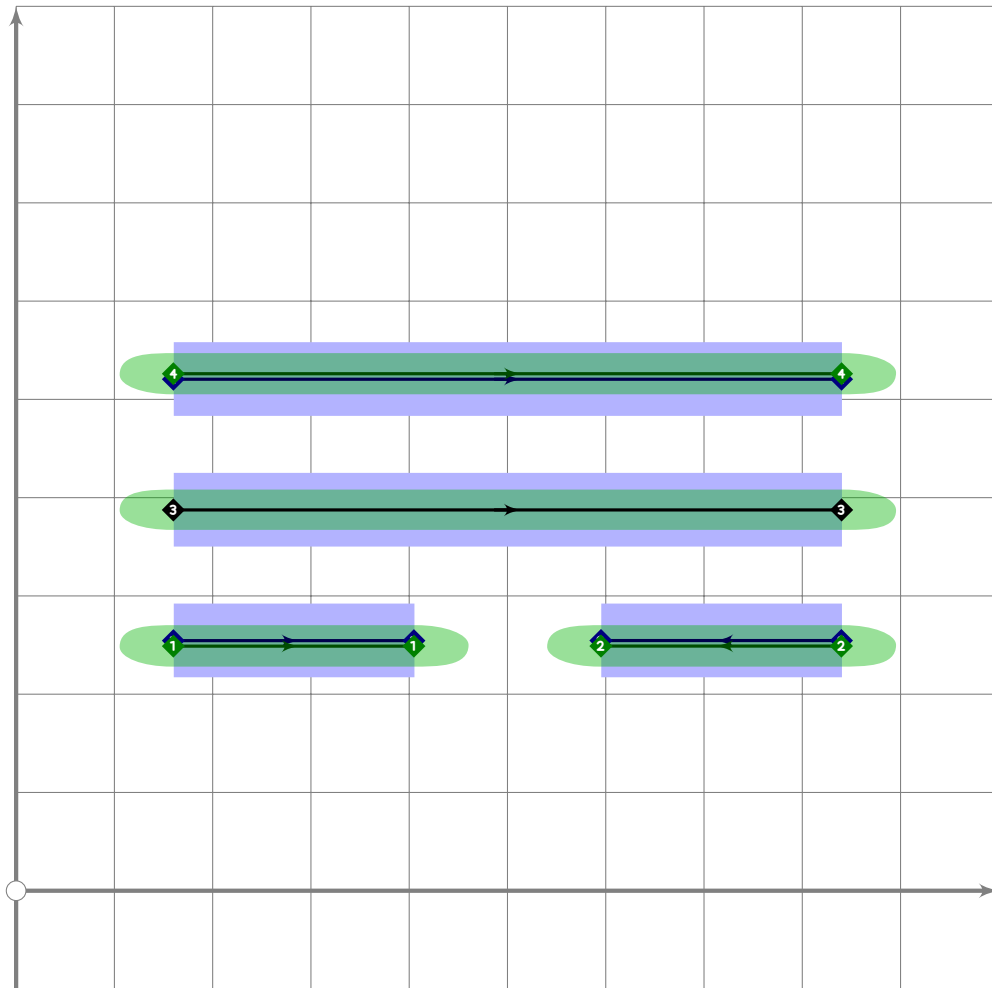
```



```

64
65 begint Suglyph("ichingtri4";51);
66 tsu_curve.iching.line(1,3,1);
67 tsu_curve.iching.line(2,3,0);
68 tsu_curve.iching.line(3,3,0);
69 tsu_render;
70 endtsuglyph;

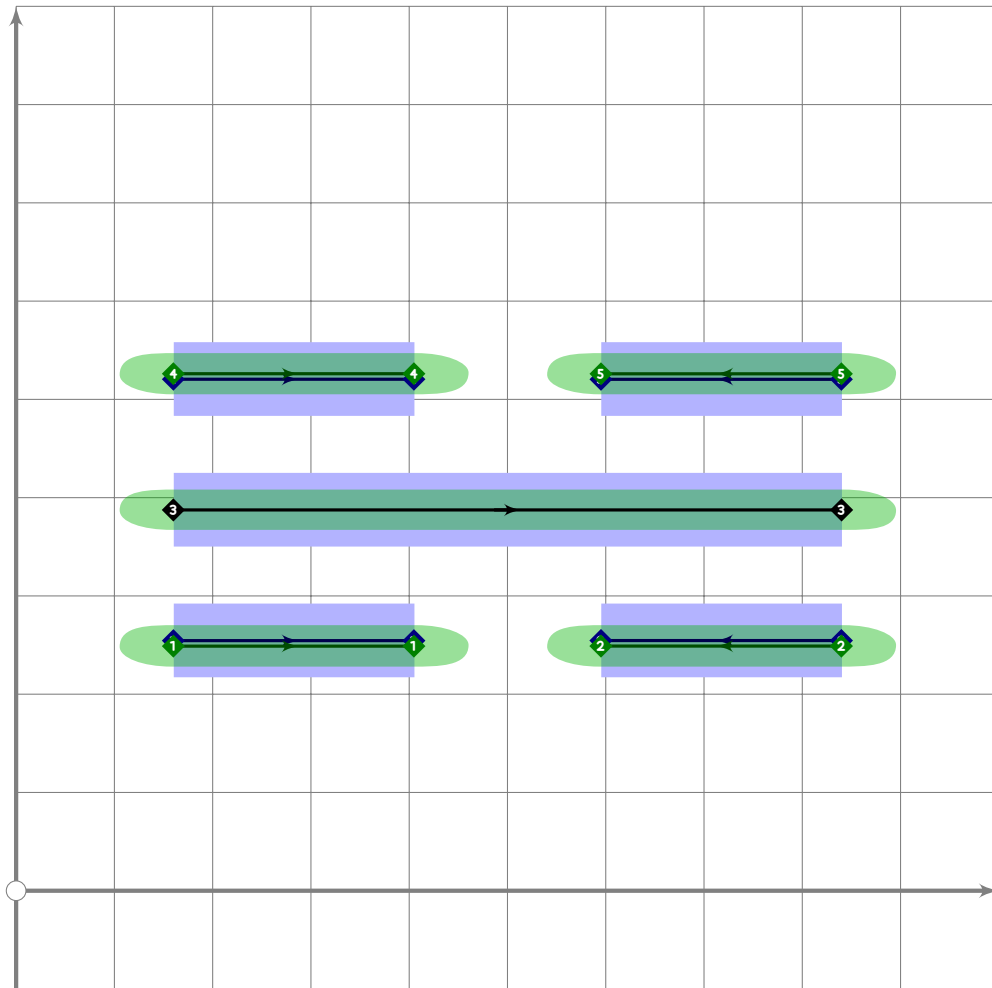
```



```

71
72 begint Suglyph("ichingtri5";52);
73   tsu_curve.iching.line(1,3,0);
74   tsu_curve.iching.line(2,3,1);
75   tsu_curve.iching.line(3,3,1);
76   tsu_render;
77 endtsuglyph;

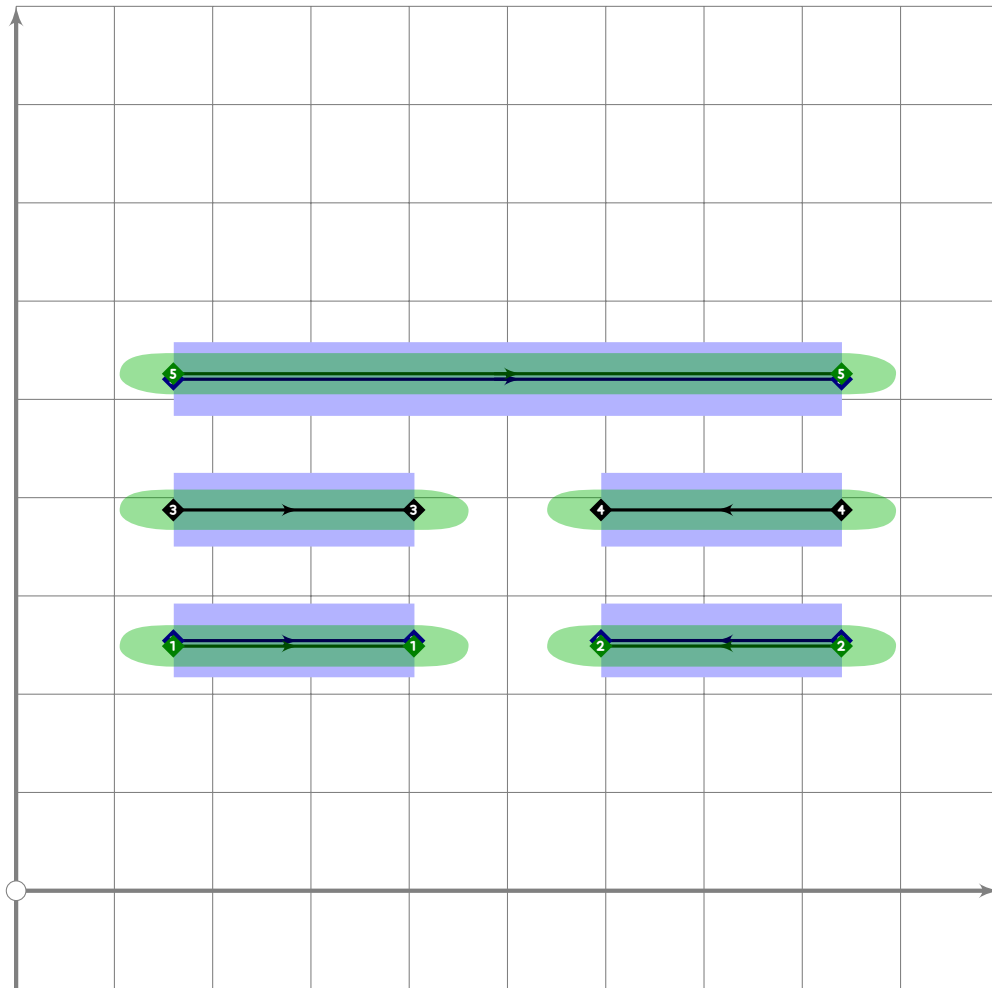
```



```

78
79 begint Suglyph("ichingtri6";53);
80 tsu_curve.iching.line(1,3,0);
81 tsu_curve.iching.line(2,3,1);
82 tsu_curve.iching.line(3,3,0);
83 tsu_render;
84 endtsuglyph;

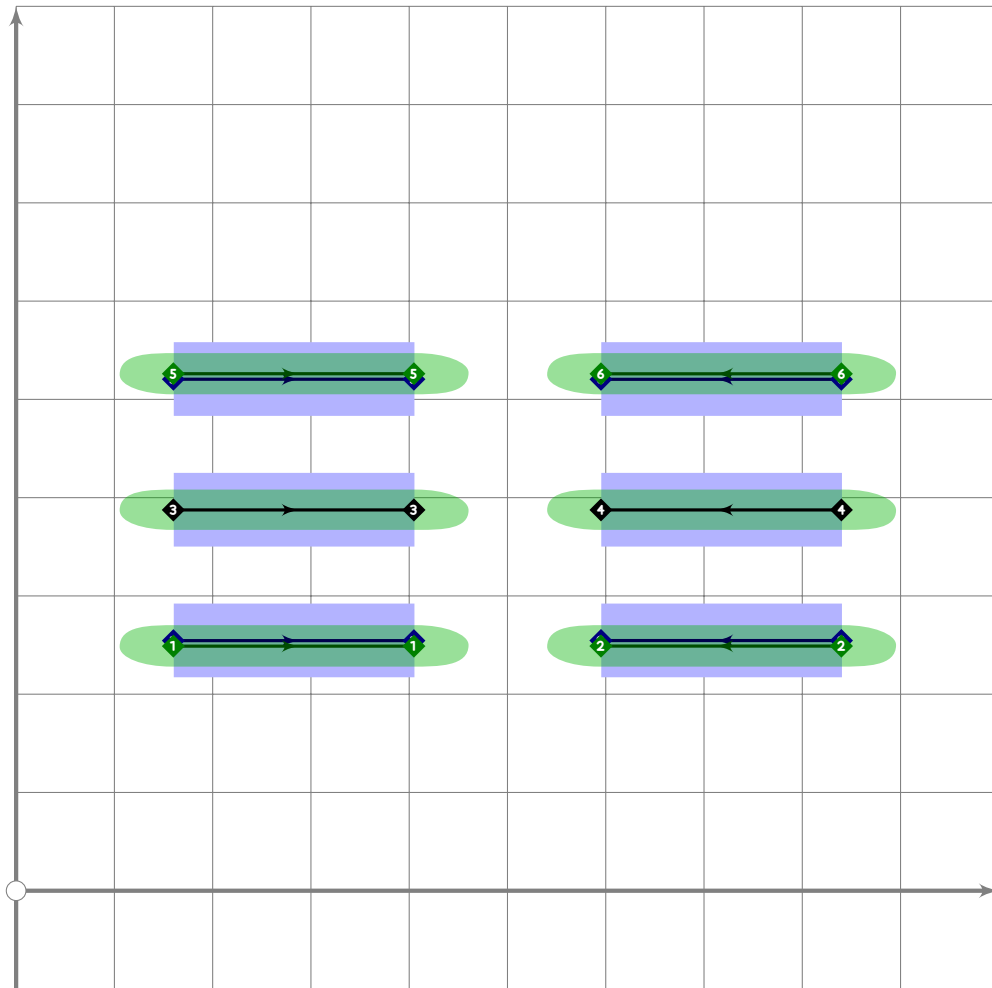
```



```

85
86 begint Suglyph("ichingtri7",54);
87   tsu_curve.iching.line(1,3,0);
88   tsu_curve.iching.line(2,3,0);
89   tsu_curve.iching.line(3,3,1);
90   tsu_render;
91 endtsuglyph;

```

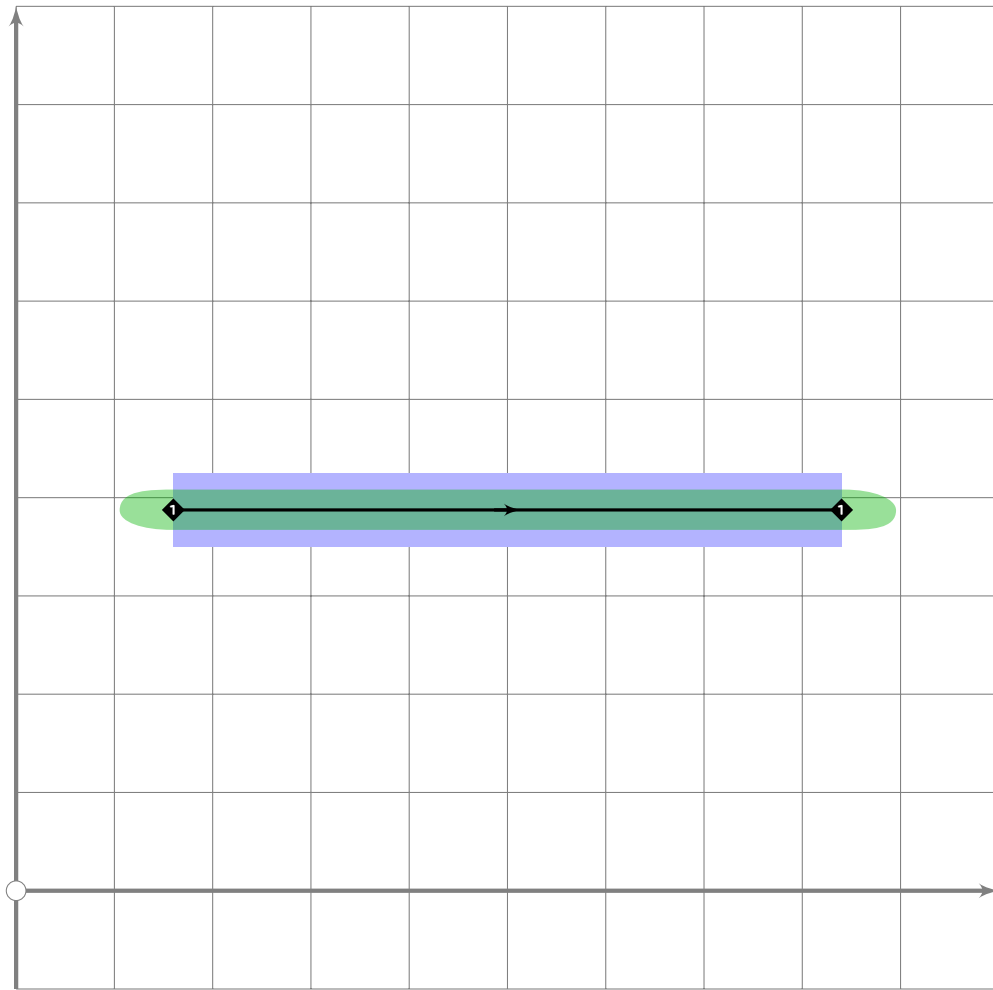


```

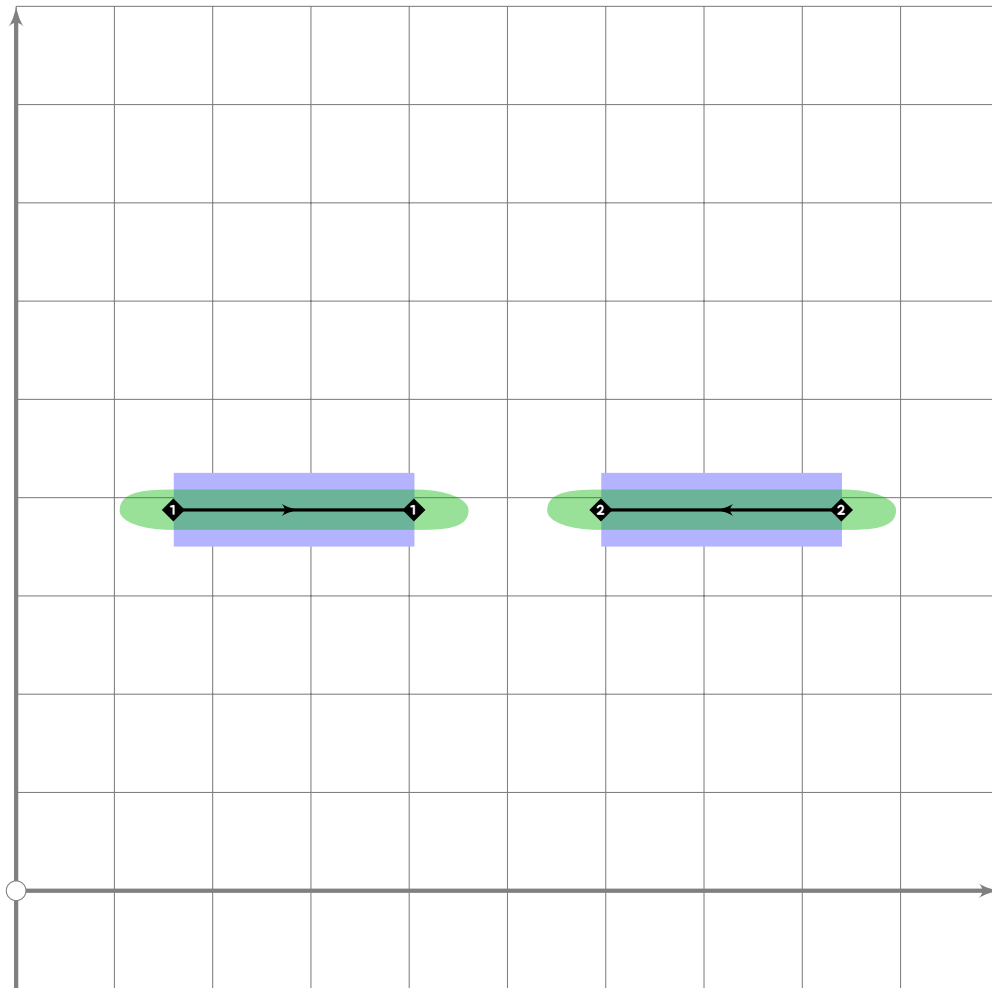
92
93 begint Suglyph("ichingtri8";55);
94 tsu_curve.iching.line(1,3,0);
95 tsu_curve.iching.line(2,3,0);
96 tsu_curve.iching.line(3,3,0);
97 tsu_render;
98 endtsuglyph;

```





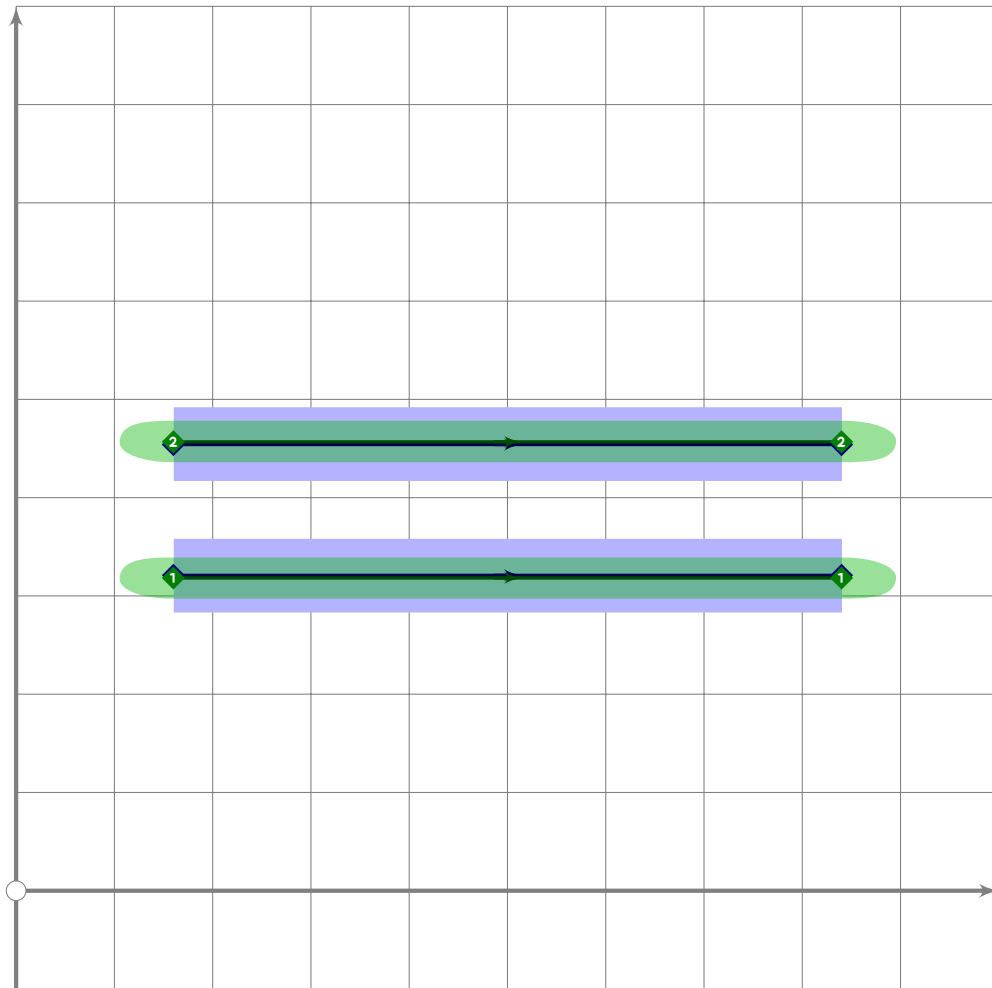
```
99  
100 begintsuglyph("ichingmono1",138);  
101 tsu_curve.iching.line(1,1);  
102 tsu_render;  
103 endsuglyph;
```



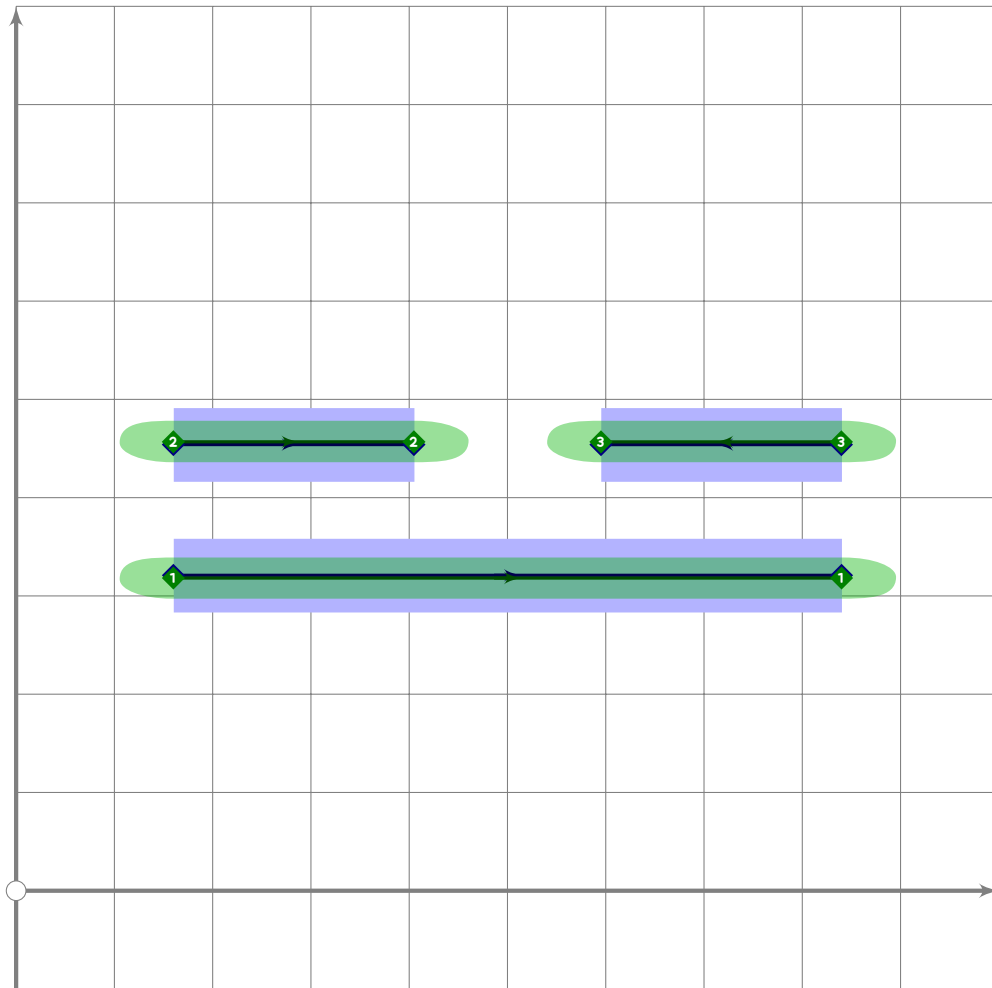
```

104
105 begintsuglyph("ichingmono2",139);
106 tsu_curve.iching.line(1,1,0);
107 tsu_render;
108 endsuglyph;

```



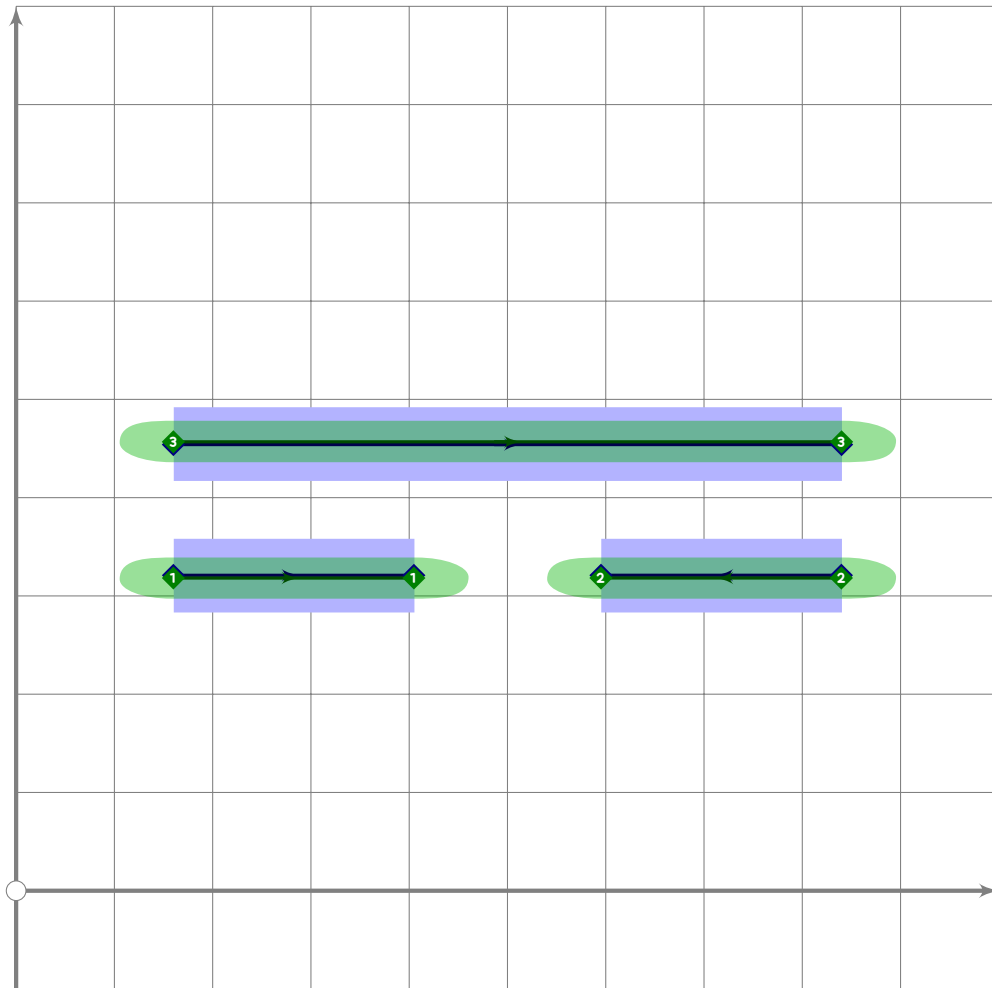
```
109  
110 begintsuglyph("ichingdi1";140);  
111 tsu_curve.iching.line(1,2,1);  
112 tsu_curve.iching.line(2,2,1);  
113 tsu_render;  
114 endsuglyph;
```



```

115
116 begintsuglyph("ichingdi2",141);
117 tsu_curve.iching.line(1,2,1);
118 tsu_curve.iching.line(2,2,0);
119 tsu_render;
120 endsuglyph;

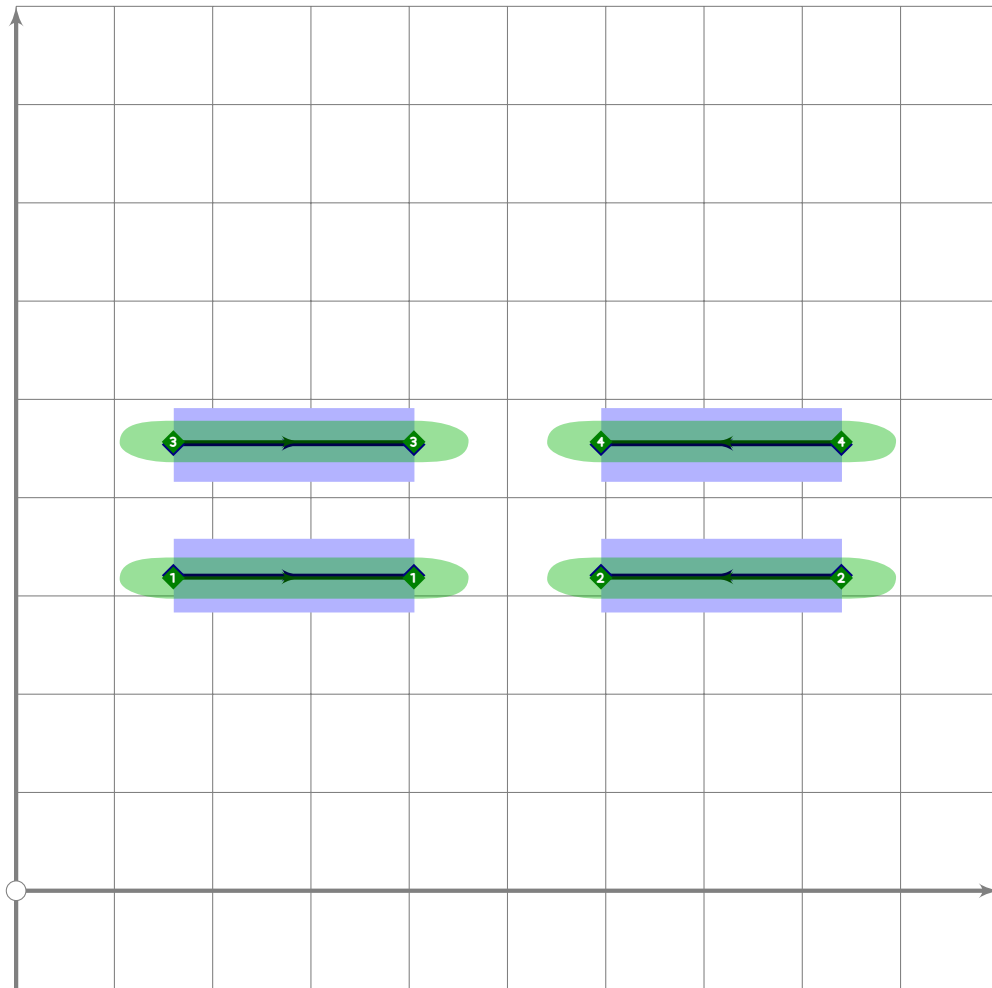
```



```

121
122 begintsuglyph("ichingdi3",142);
123 tsu_curve.iching.line(1,2,0);
124 tsu_curve.iching.line(2,2,1);
125 tsu_render;
126 endsuglyph;

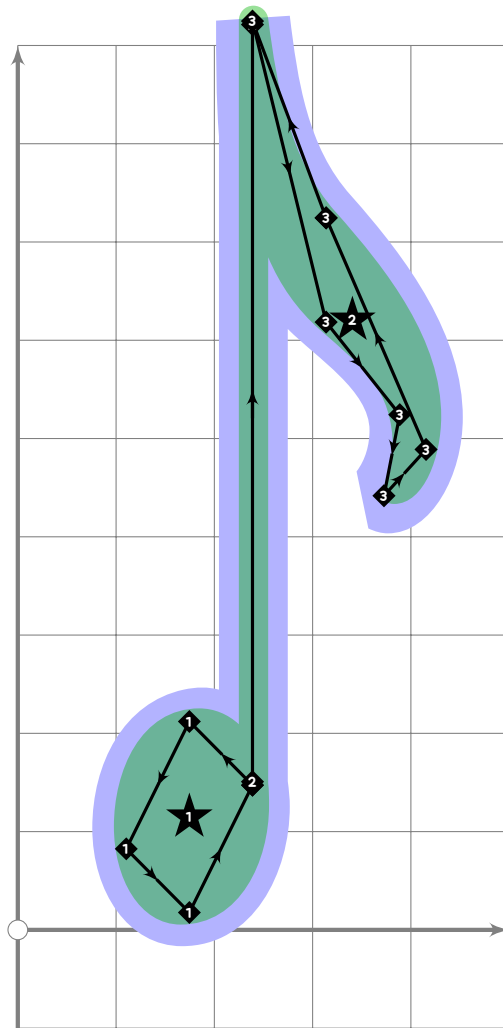
```



```

127
128 begintsuglyph("ichingdi4",143);
129 tsu_curve.iching.line(1,2,0);
130 tsu_curve.iching.line(2,2,0);
131 tsu_render;
132 endsuglyph;
133
134 _____
135
136 % musical eighth note, required for MES-1
137 tsu_rescale_half;

```



```

138 begintsuglyph("musicalnote",106);
139 bp[sp]:=(500,150)..(380,205)..(260,95)..(380,40)..cycle;
140 bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1.4,1.4)-(1.4,1.4)-cycle;
141 bo_alterate[sp]:=true;
142 bp[sp*1]:=(500,153)-(500,807);
143 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
144 bo_alterate[sp*1]:=true;
145 bp[sp*2]:=(640,640)..{curl 1}(500,810){down}..(640,550)..(780,470)..
146   {curl 1}(750,400){curl 1}..(830,440)..cycle;
147 bq[sp*2]:=(1.3,1.3)-(1.6,1.6)-(1.3,1.3)-(1.3,1.3)-(1,1)-(1.3,1.3);
148 bo_tip[sp*2][1]:=0;
149 bo_tip[sp*2][4]:=0;
150 bo_alterate[sp*2]:=true;
151 if tsu_pbrush_size>=30:
152   lcblob1:=bp[sp];
153   lcblob2:=bp[sp*2];
154 fi;
155 sp:=sp*3;
156 tsu_render;
157 endtsuglyph;

```

158

159

---

160

161 **endfont;**

162

163

---



# tsuku-27.mp

```
1 %
2 % Unicode page 27 (Zapfian Dingbats) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

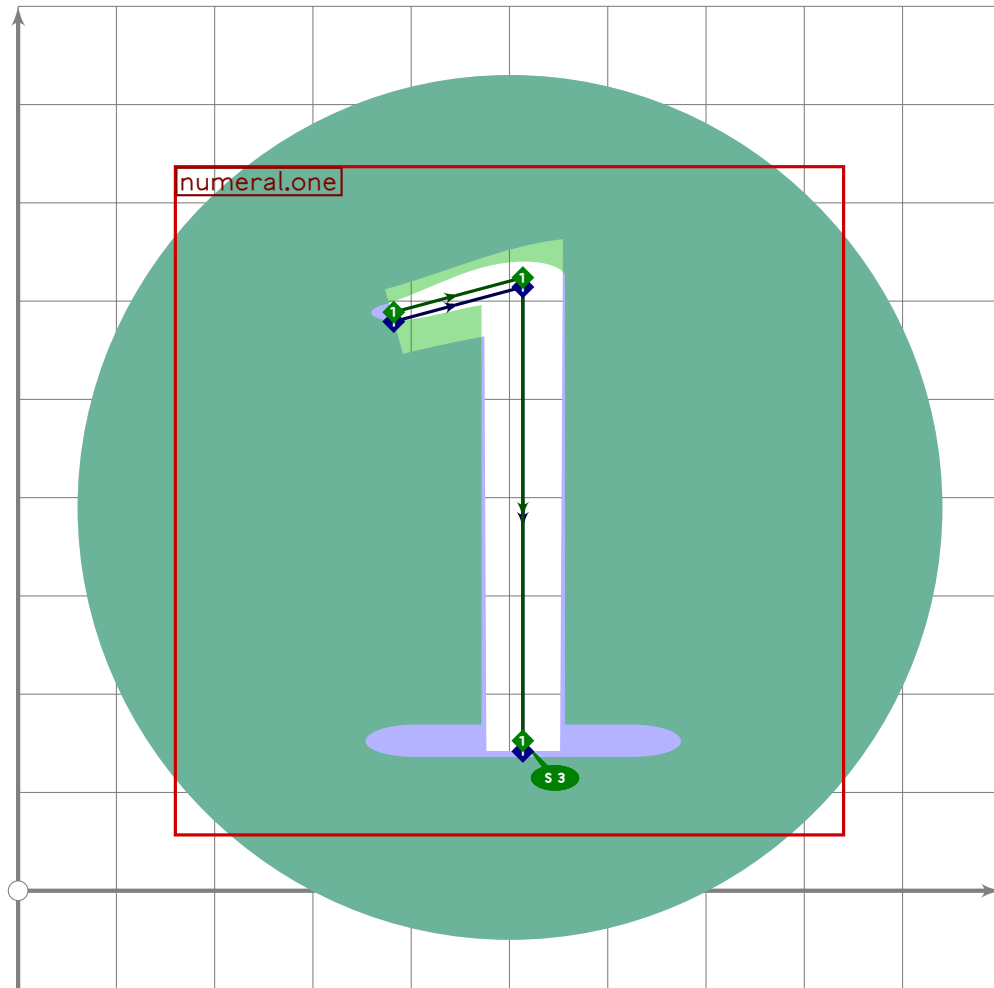

32
33 beginfont
34
35 input latin-intro.mp;
36 input enclosed.mp;
37
38 % AUTODEPS
39 input numerals.mp;
40
41 

---

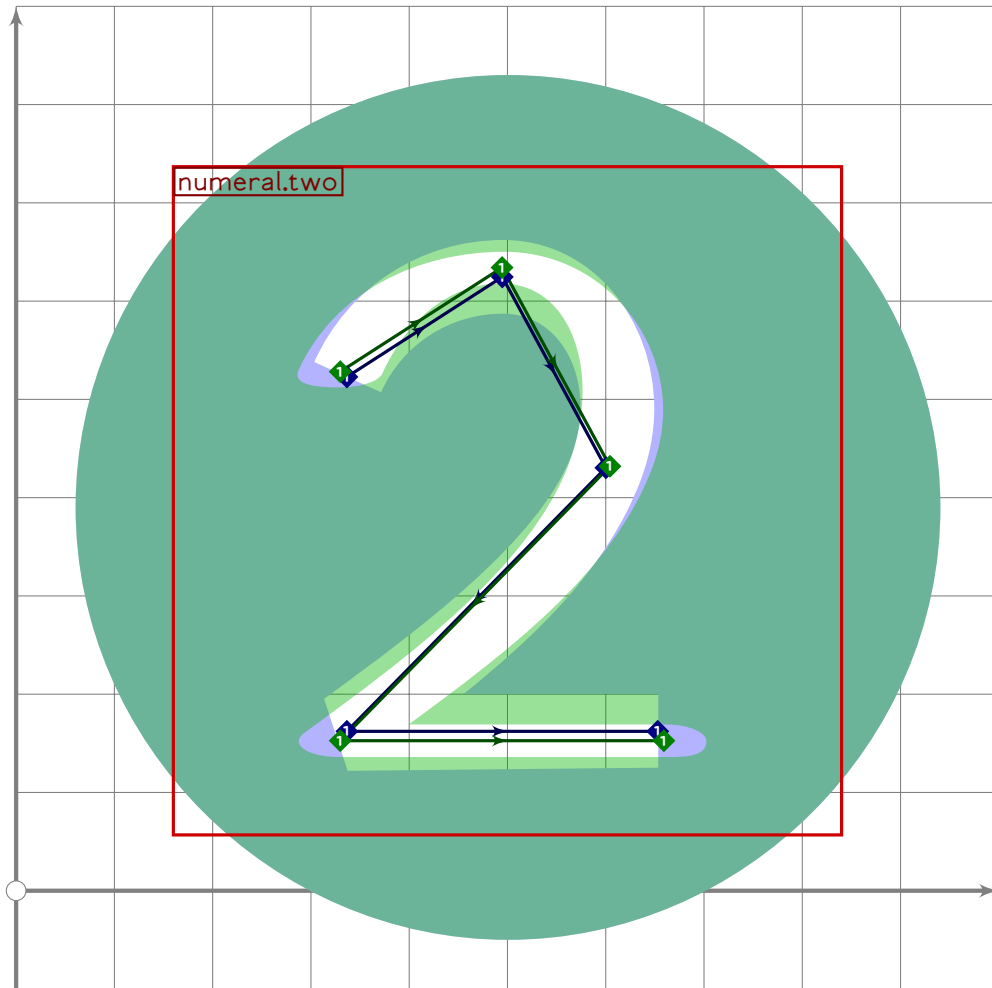

42
```

## Inverted Circled Numerals

```
43 % INVERTED CIRCLED NUMERALS
44
```



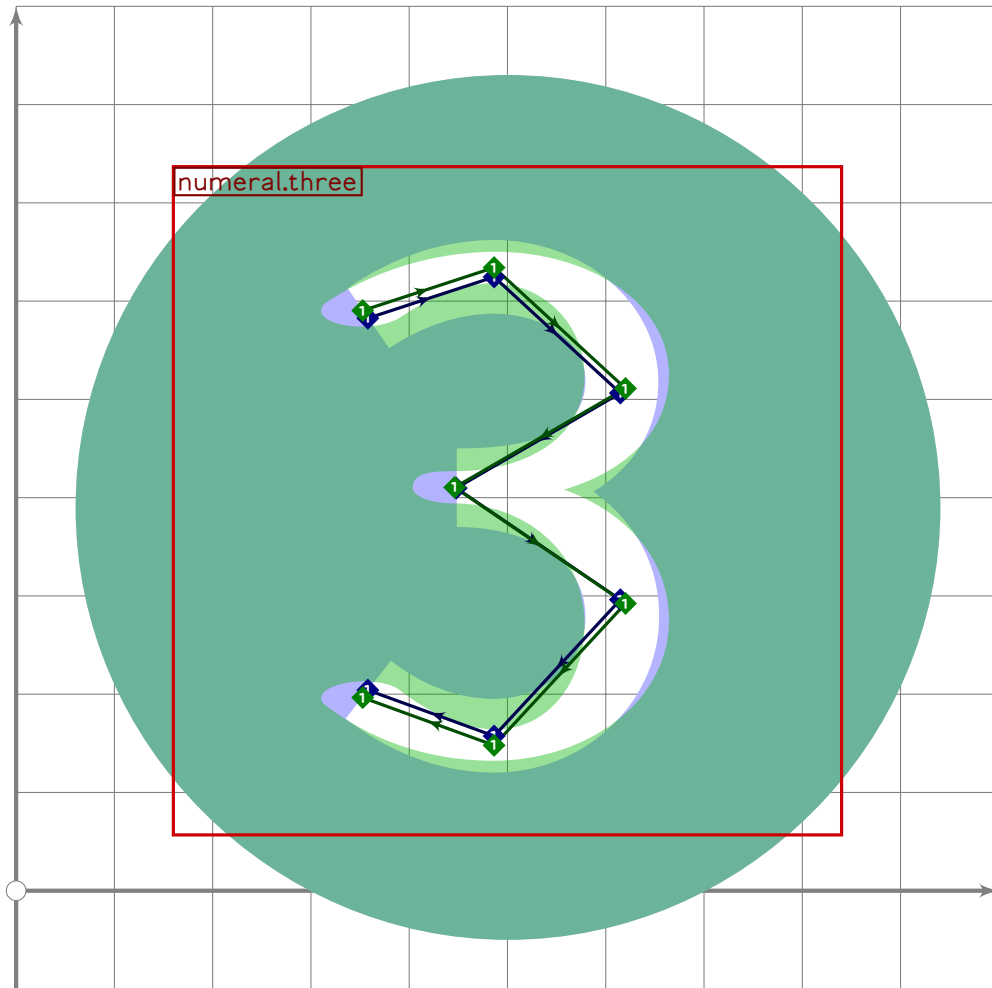
```
45 % 1
46 % BACKGROUND 25CF
47 begint Suglyph("uni2776",118);
48   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.one);
49   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
50   tsu_render;
51 endtsuglyph;
52
```



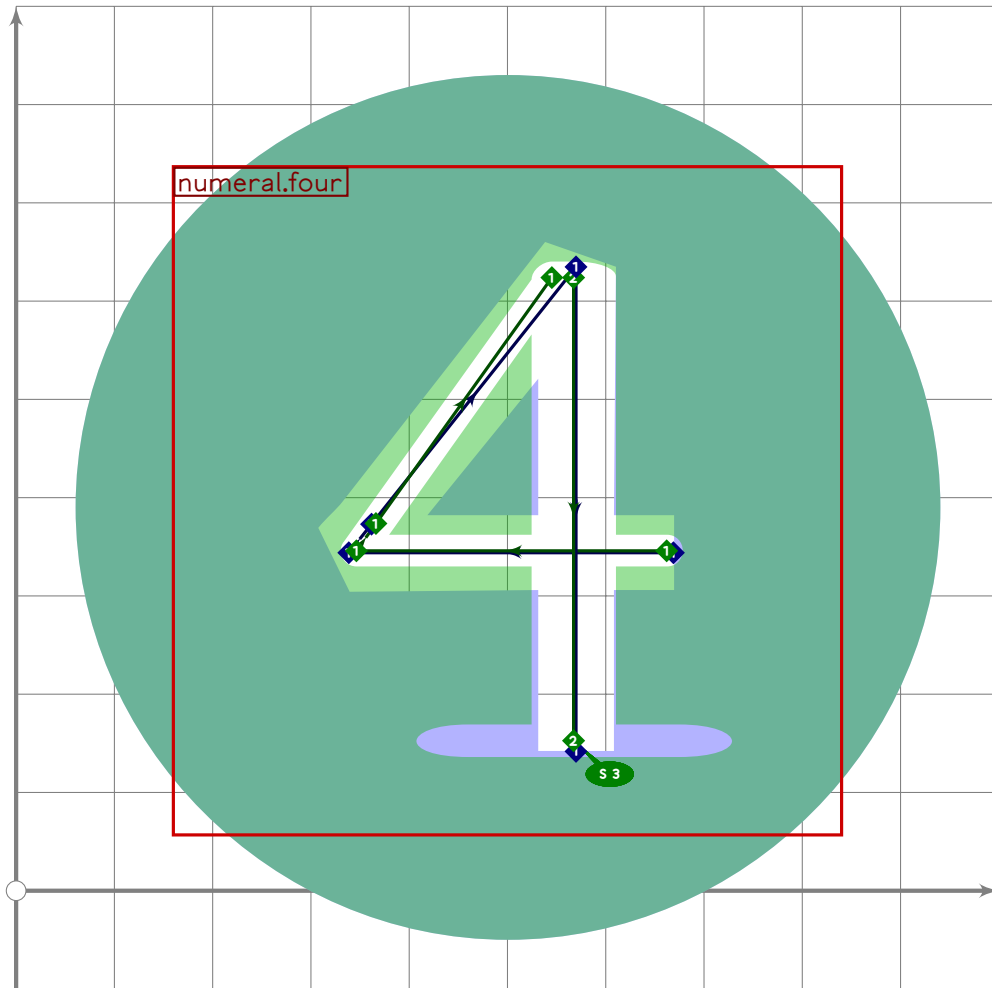
```

53 % 2
54 % BACKGROUND 25CF
55 beginsuglyph("uni2777";119);
56 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.two);
57 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
58 tsu_render;
59 endsuglyph;
60

```



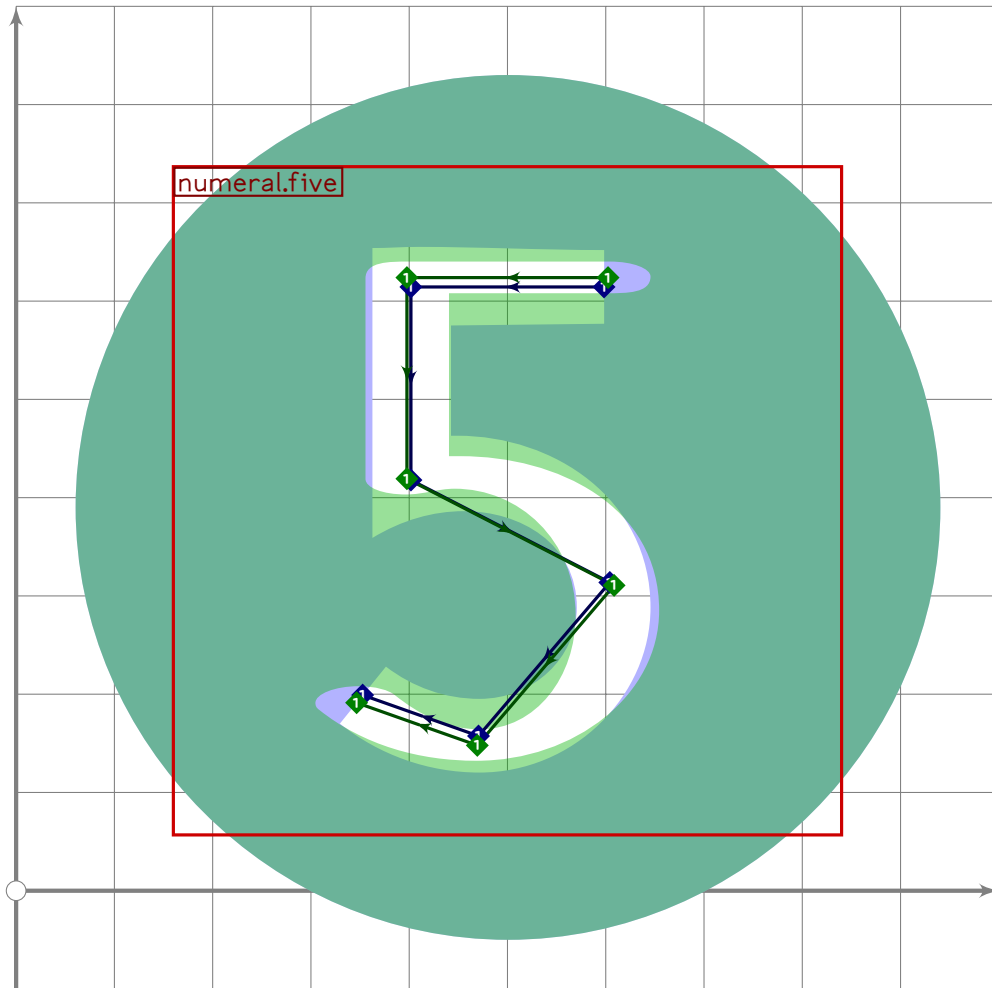
```
61 % 3
62 % BACKGROUND 25CF
63 beginsuglyph("uni2778",120);
64 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.three);
65 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
66 tsu_render;
67 endsuglyph;
68
```



```

69 % 4
70 % BACKGROUND 25CF
71 begint Suglyph("uni2779";121);
72 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.four);
73 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
74 tsu_render;
75 endtsuglyph;
76

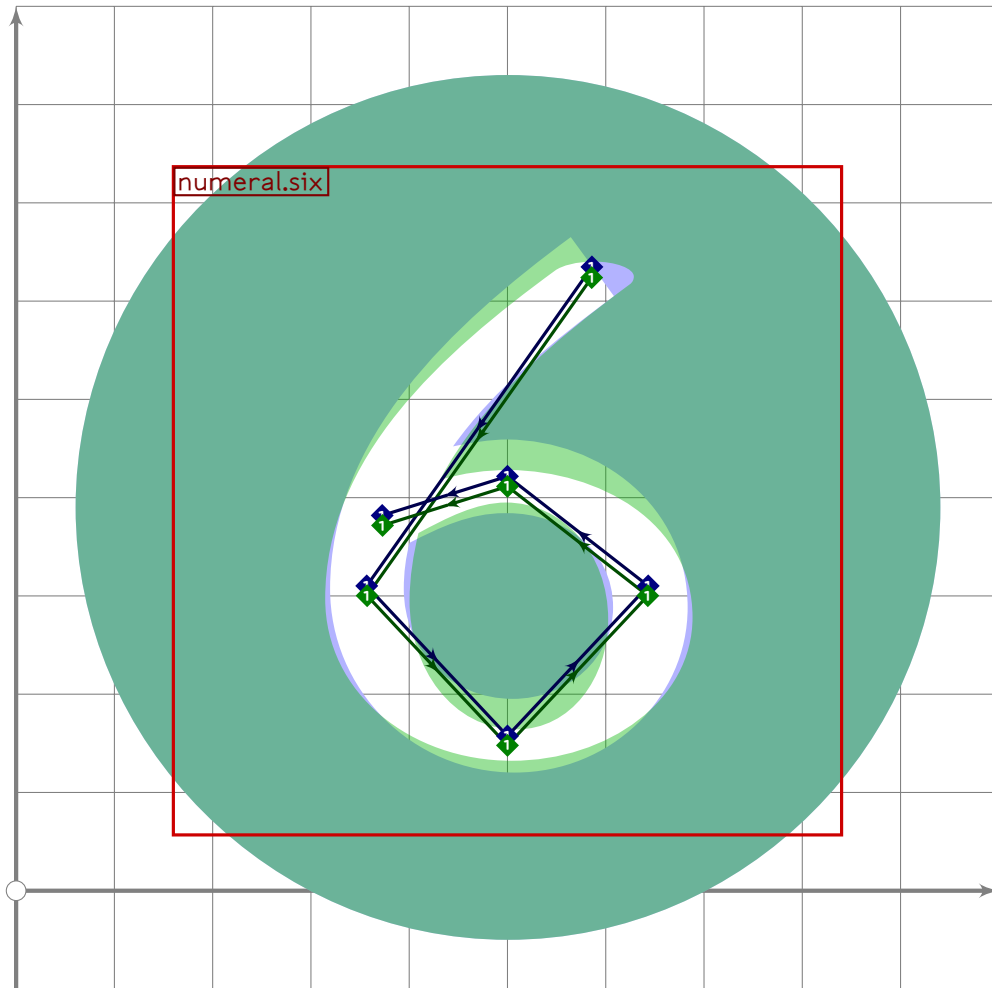
```



```

77 % 5
78 % BACKGROUND 25CF
79 beginsuglyph("uni277A";122);
80 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.five);
81 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
82 tsu_render;
83 endsuglyph;
84

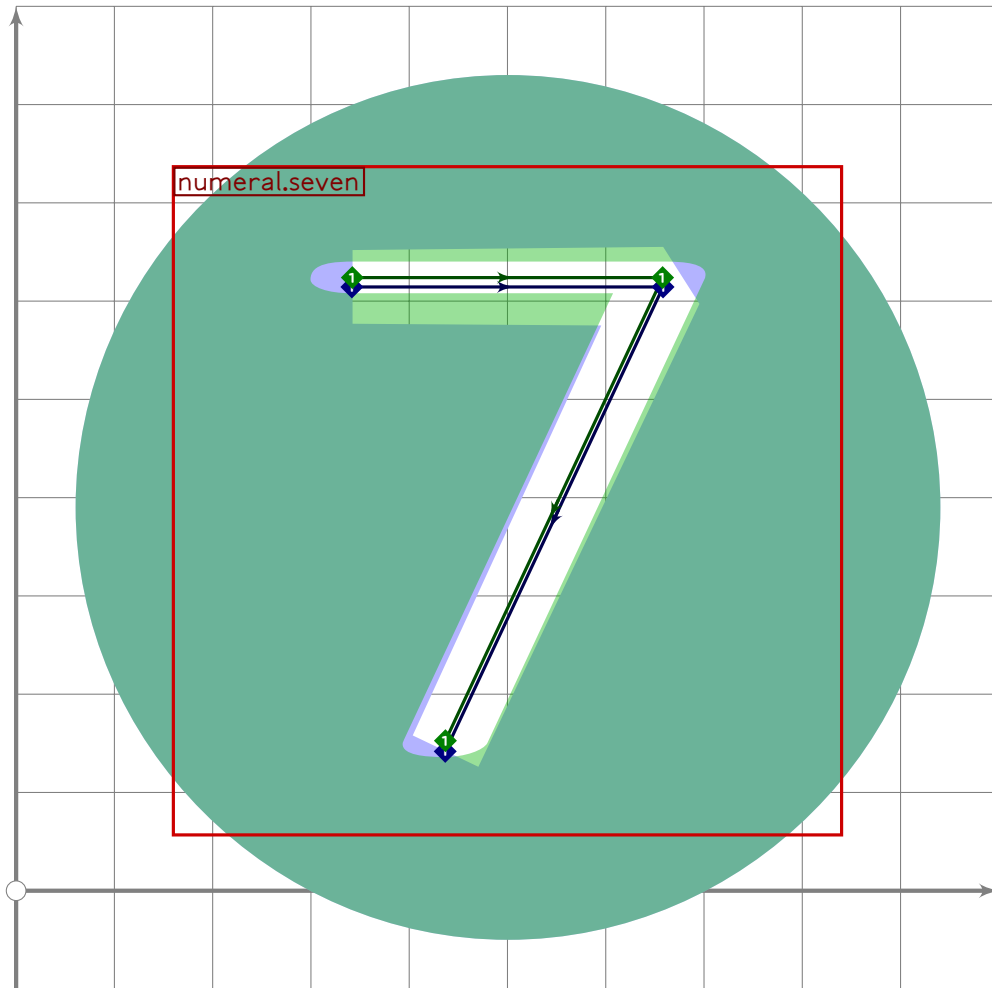
```



```

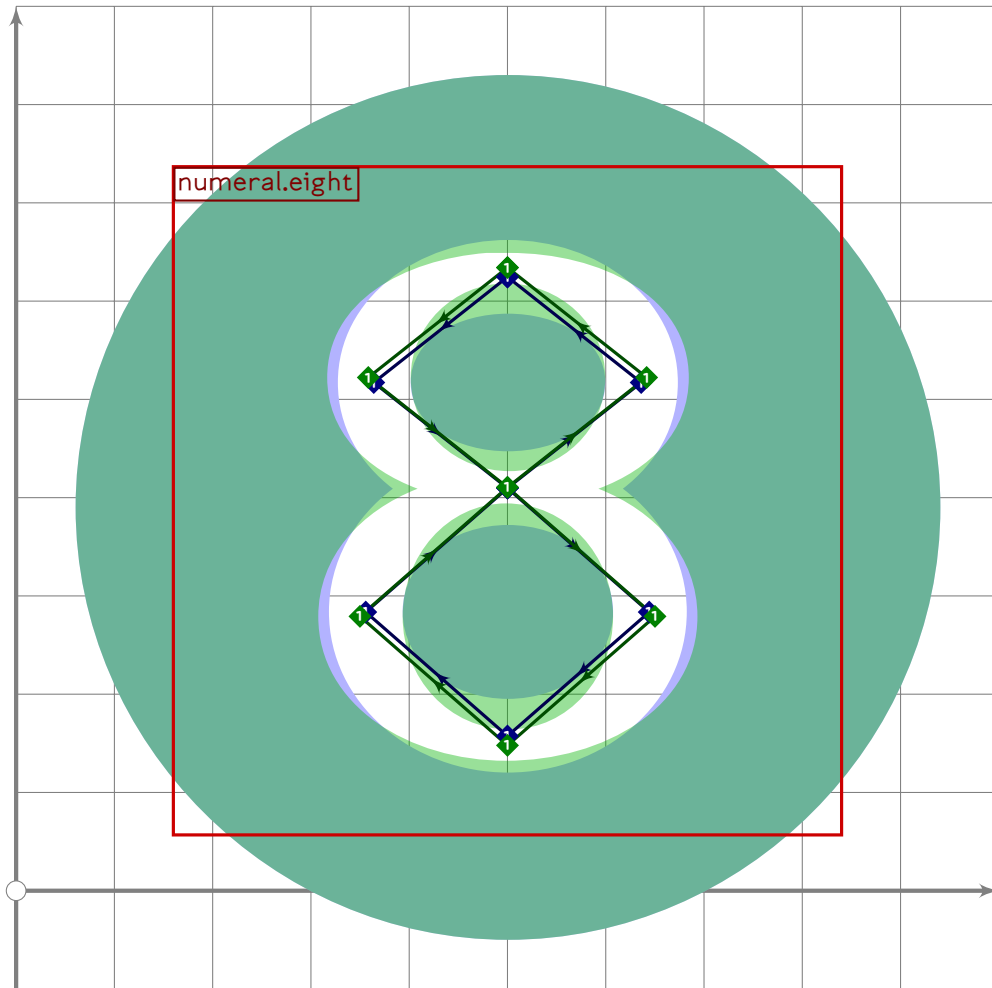
85 % 6
86 % BACKGROUND 25CF
87 beginsuglyph("uni277B",123);
88   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.six);
89   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
90   tsu_render;
91 endsuglyph;
92

```



```
93 % 7
94 % BACKGROUND 25CF
95 beginsuglyph("uni277C";124);
96 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.seven);
97 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
98 tsu_render;
99 endsuglyph;
100
```

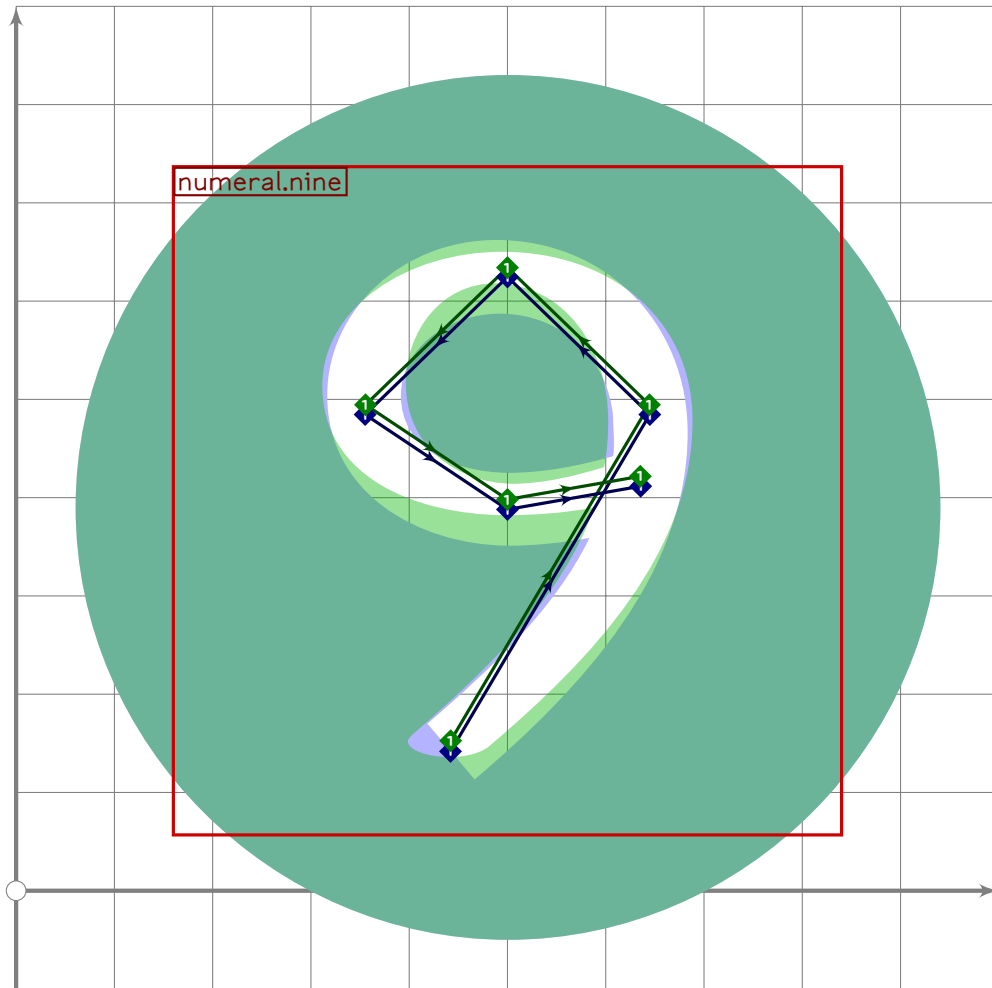




```

101 % 8
102 % BACKGROUND 25CF
103 beginsuglyph("uni277D";125);
104   tsu_xform(tsu_xf.circled)(tsu_curve.numeral.eight);
105   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
106   tsu_render;
107 endsuglyph;
108

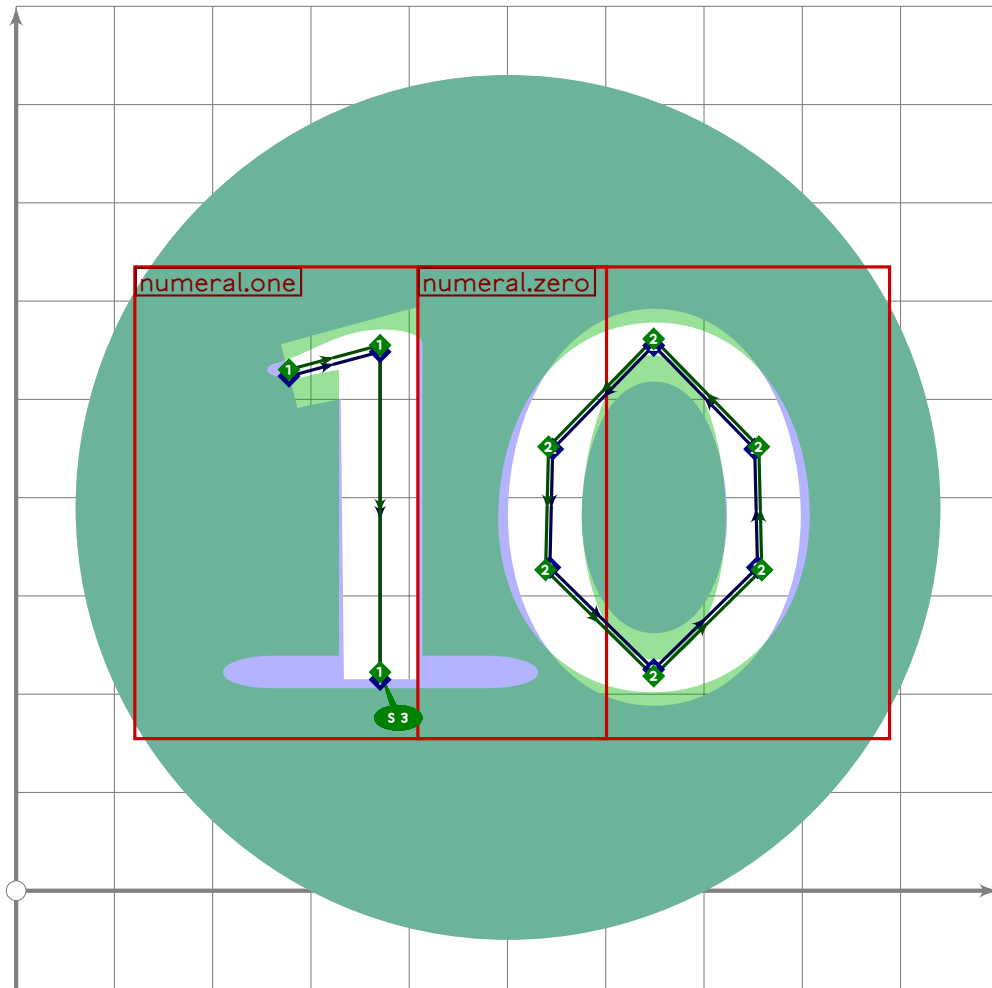
```



```

109 % 9
110 % BACKGROUND 25CF
111 beginsuglyph("uni277E",126);
112 tsu_xform(tsu_xf.circled)(tsu_curve.numeral.nine);
113 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
114 tsu_render;
115 endsuglyph;
116

```



```

117 % 10
118 % BACKGROUND 25CF
119 beginsuglyph("uni277F";127);
120 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.one);
121 numeric x[],y[];
122 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
123 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
124 tsu_render;
125 endsuglyph;
126
127 _____
128
129 endfont;
130
131 _____

```

Part III

U+3000 to U+4DFF

# tsuku-30.mp

```
1 %
2 % Unicode page 30 (Kana) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

---

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

```
36 input dakuten.mp;
```

```
37 input hiragana.mp;
```

```
38 input katakana.mp;
```

```
39 input punct.mp;
```

```
40
```

```
41
```

---

```
42
```

## Ideographic Symbols And Punctuation

```
43 % IDEOGRAPHIC SYMBOLS AND PUNCTUATION
```

```
44
```

```
45 % ideographic comma
```

```
46 begintsuglyph("uni3001",1);
```

[see page [273](#)]

```
47 tsu\_curve.punct.hancomma;
```

```
48 tsu\_render;
```

```
49 endtsuglyph;
```

```
50
```

```
51 % ideographic full stop
```

```
52 begintsuglyph("uni3002",2);
```

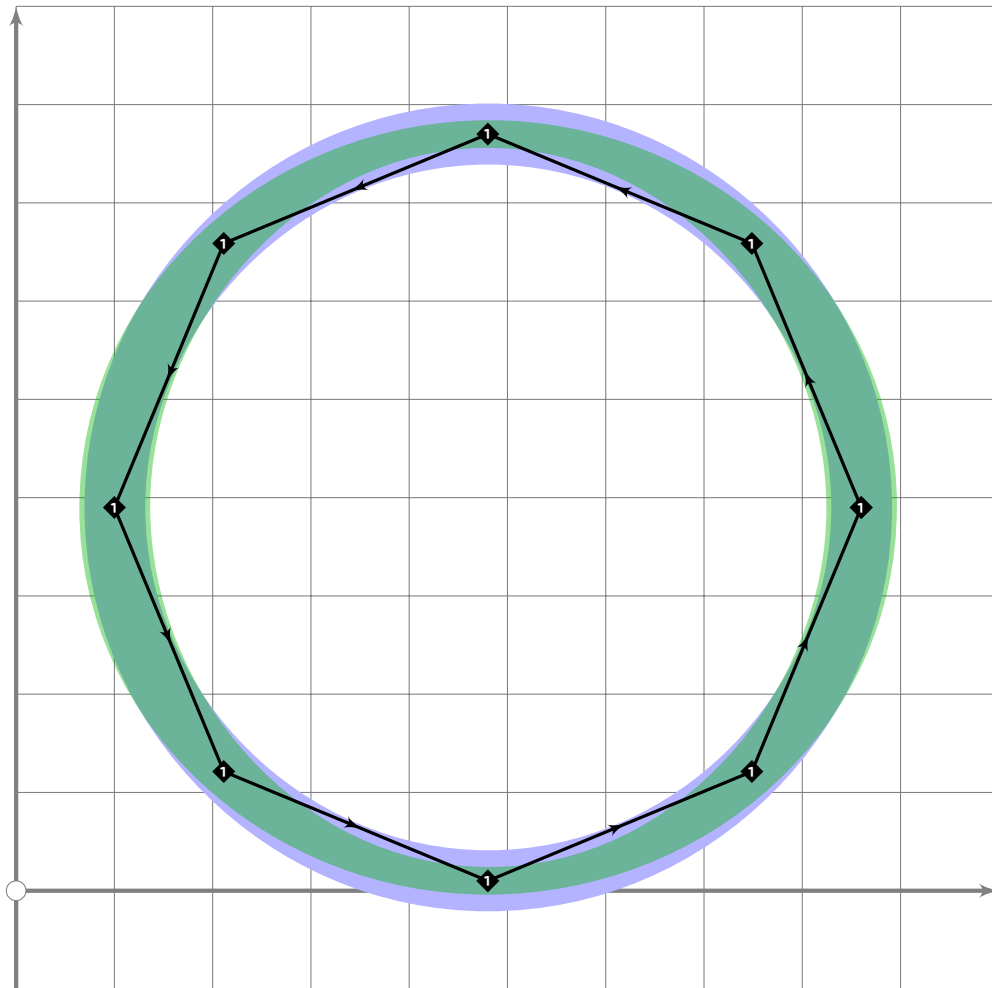
[see page [270](#)]

```
53 tsu\_curve.punct.full\_stop;
```

```
54 tsu\_render;
```

```
55 endtsuglyph;
```

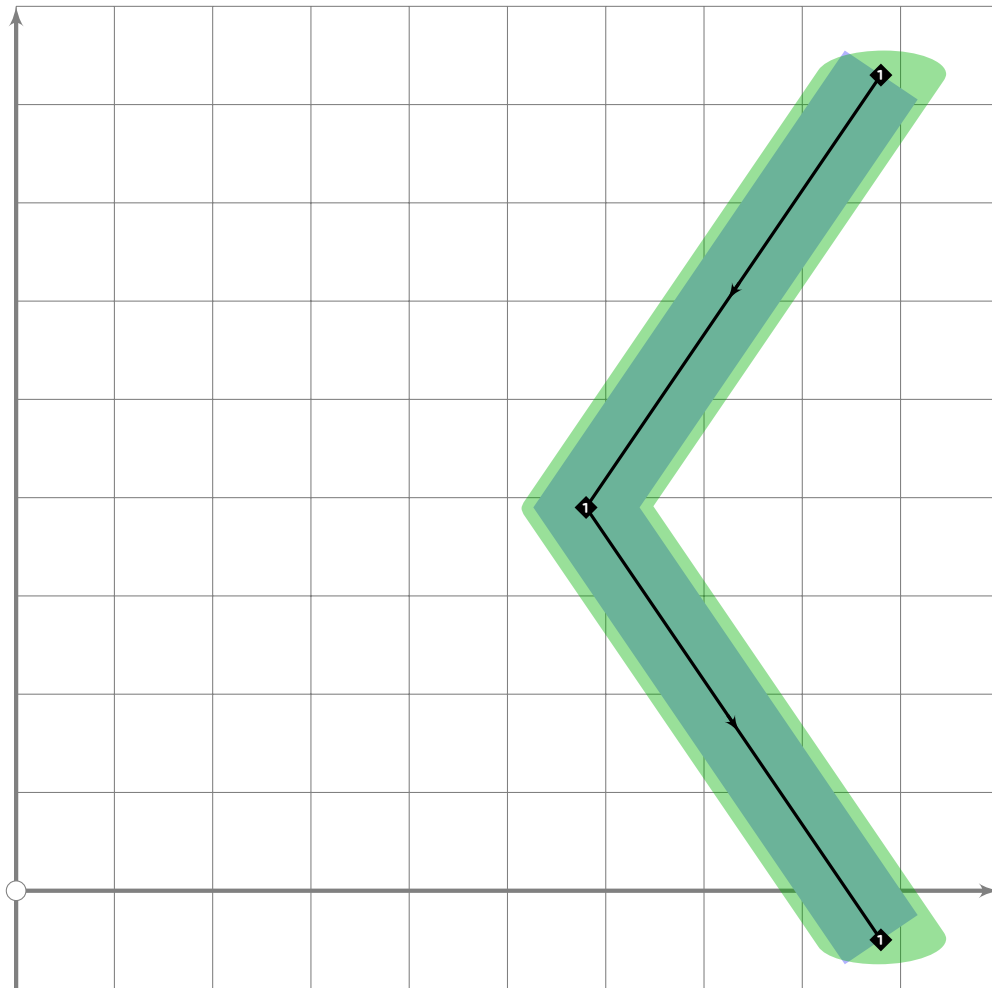
```
56
```



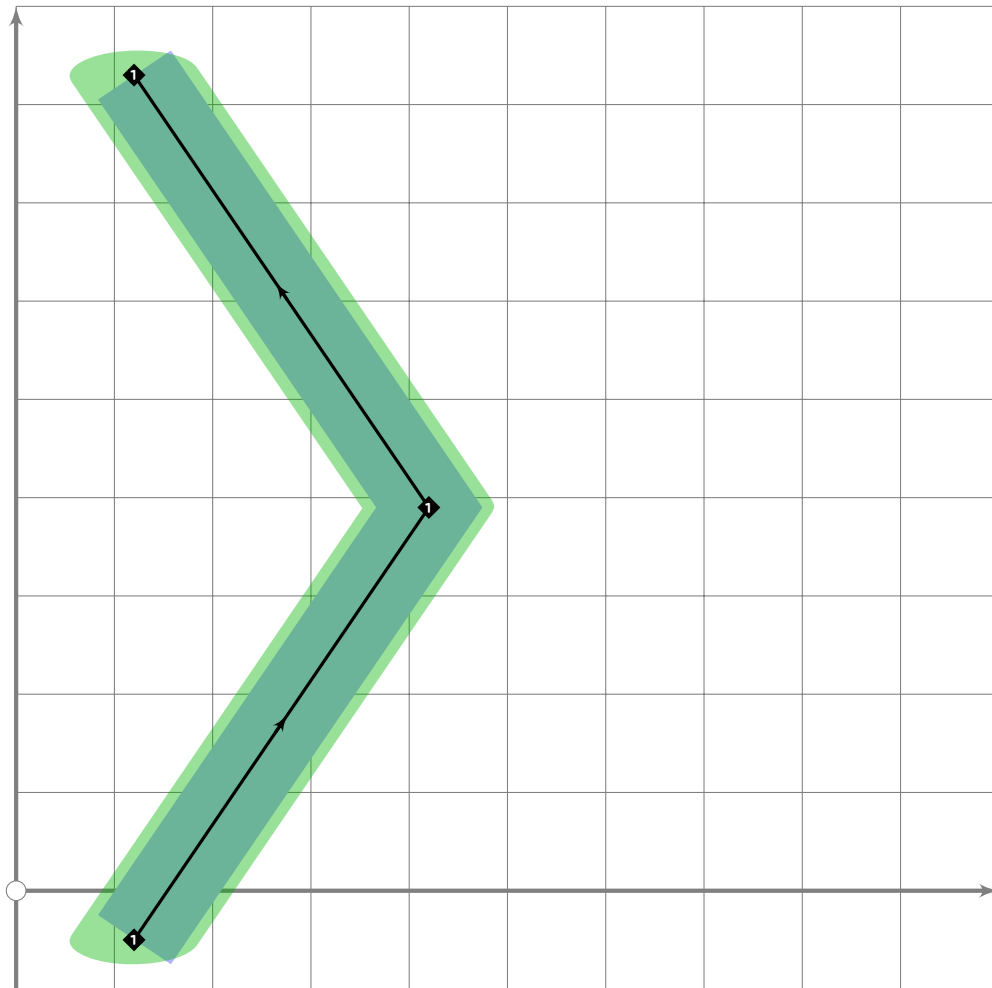
```

57 % kanji zero
58 begintsuglyph("uni3007";7);
59 % letter brush for this so it blends better with other kanji digits;
60 % let's drag the Japanese kicking and screaming into the Sixth Century!
61 bp1:=fullcircle scaled 760 shifted (480,390);
62 bq1:=(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-cycle;
63 bo_size1:=90;
64 sp:=2;
65 tsu_render;
66 endtsuglyph;
67
68 path bracket[];
69
70 % left and right single angle brackets
71 bracket1:=(880,830)-(580,390)-(880,-50);

```



```
72 begintsuglyph("uni3008",8);  
73   bp1=bracket1;  
74   bq1=(2,2)-(2,2)-(2,2);  
75   bo_size1=120;  
76   bo_tip1[1][1]=1;  
77   sp=2;  
78   tsu_render;  
79 endtsuglyph;
```

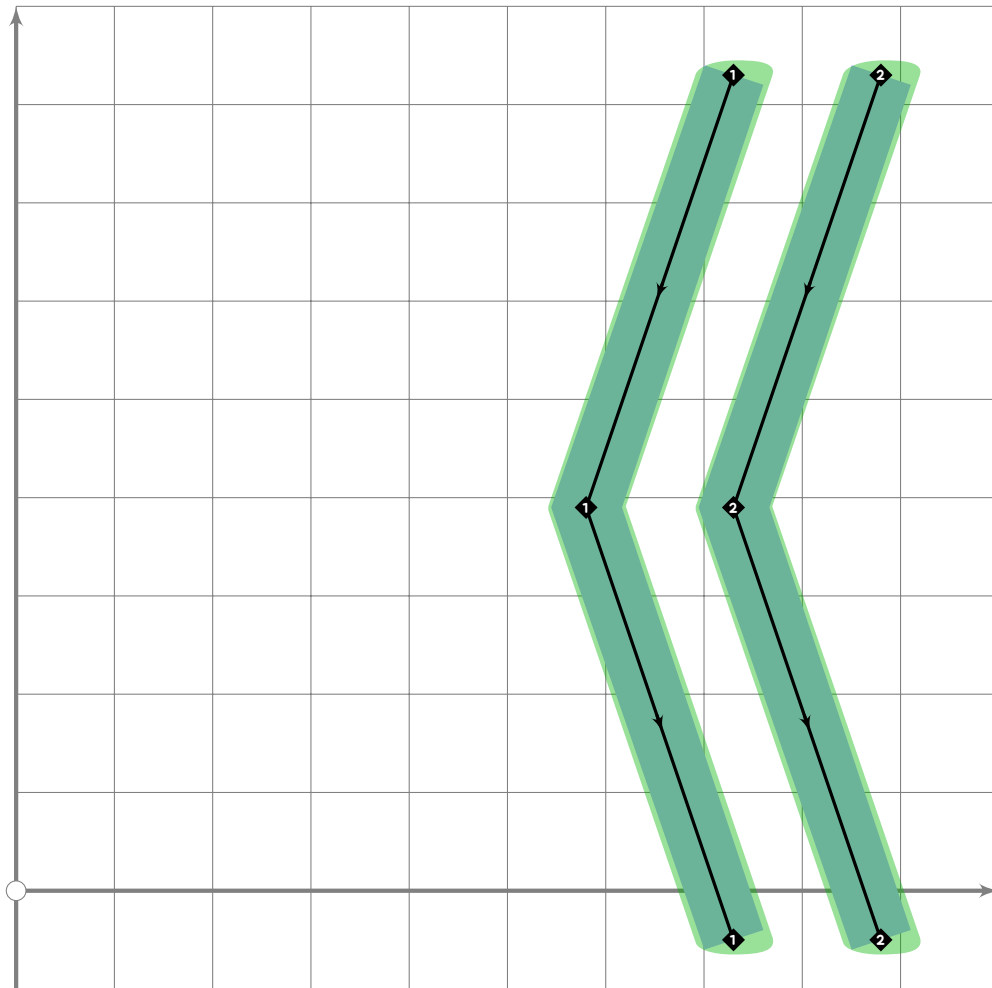


```

80 beginsuglyph("uni3009";9);
81  bp1:=bracket1 rotatedaround (centre_pt,180);
82  bq1:=(2,2)-(2,2)-(2,2);
83  bo_size1:=120;
84  bo_tip[1][1]:=1;
85  sp:=2;
86  tsu_render;
87 endsuglyph;
88
89 % left and right double angle brackets
90 bracket1:=(880-tsu_punct_size*3/2,830)-(580,390)
91  -(880-tsu_punct_size*3/2,-50);
92 bracket2:=(880,830)-(580*tsu_punct_size*3/2,390)-(880,-50);

```

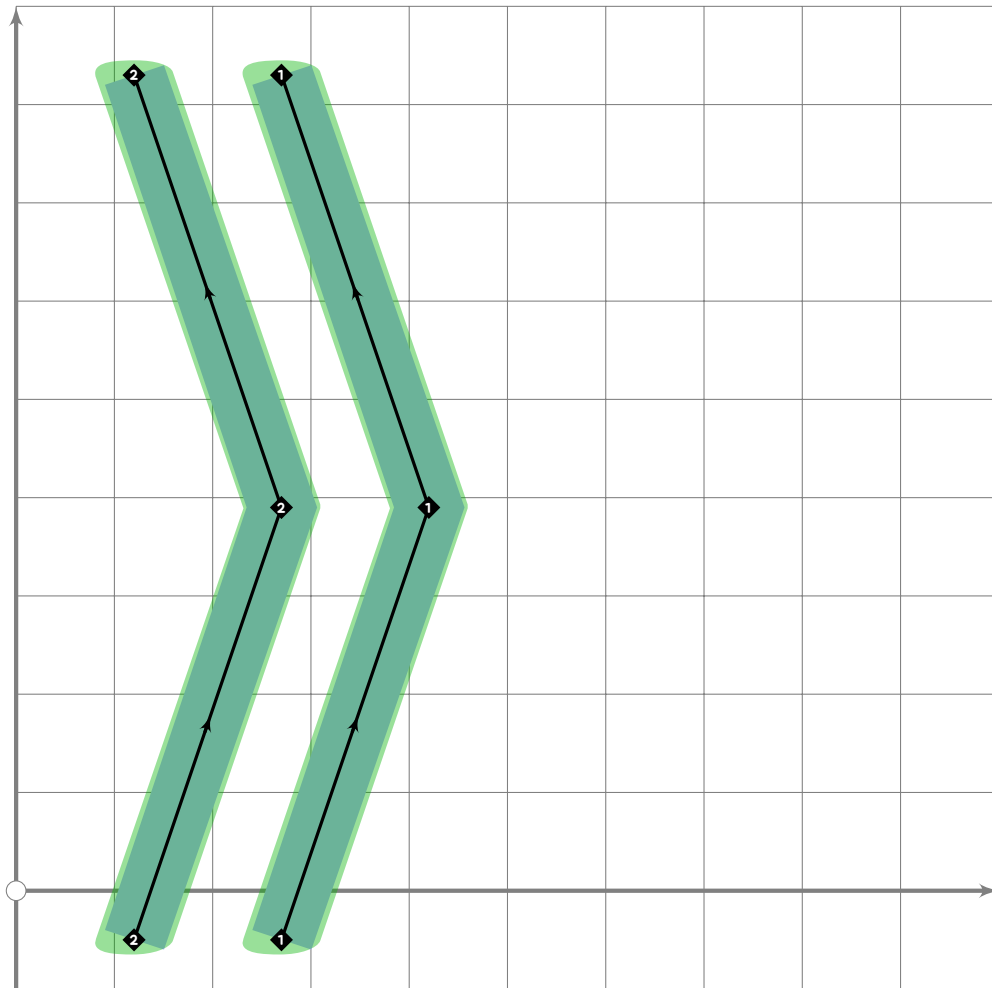




```

93 begintsuglyph("uni300A",10);
94   bp1:=bracket1;
95   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
96   bo_size1:=90;
97   bo_tip[1][1]:=1;
98
99   bp2:=bracket2;
100  bq2:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
101  bo_size2:=90;
102  bo_tip[2][1]:=1;
103
104  sp:=3;
105  tsu_render;
106 endtsuglyph;

```



```

107 begintsuglyph("uni300B";11);
108   bp1:=bracket1 rotatedaround (centre_pt,180);
109   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
110   bo_size1:=90;
111   bo_tip[1][1]:=1;
112
113   bp2:=bracket2 rotatedaround (centre_pt,180);
114   bq2:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
115   bo_size2:=90;
116   bo_tip[2][1]:=1;
117
118   sp:=3;
119   tsu_render;
120 endsuglyph;
121
122 % left and right corner brackets
123 tsu_curve.punct.corner_intro;
124 begintsuglyph("uni300C";12);
125   tsu_curve.punct.corner_left;
126   tsu_render;
127 endsuglyph;

```

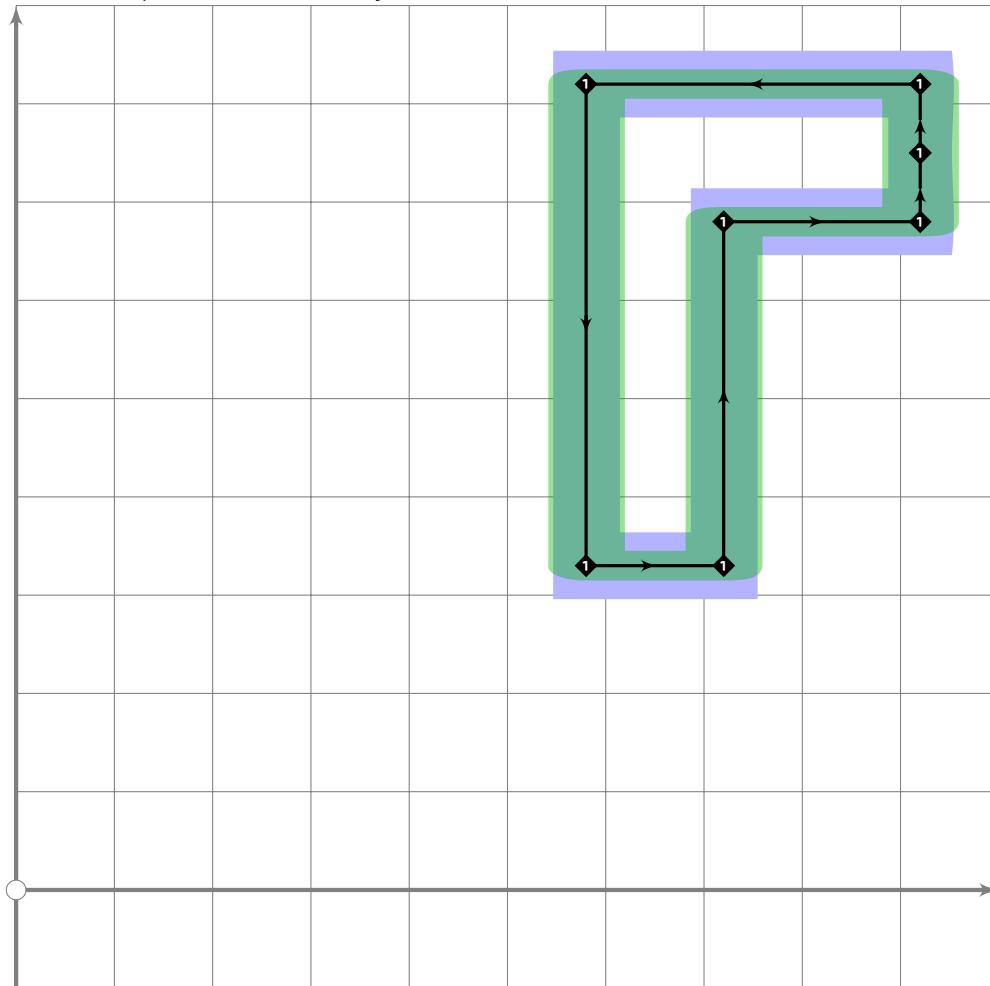
[see page 261]

```

128 begintsuglyph("uni300D";13);
129 tsu_curve.punct.corner_right;
130 tsu_render;
131 endsuglyph;
132
133 % left and right white corner brackets
134 bracket1:=(920,750)-
135 (920,750+tsu_punct_size*0.7)-
136 (650+tsu_punct_size*0.7,750+tsu_punct_size*0.7)-
137 (650+tsu_punct_size*0.7,400+tsu_punct_size*0.7)-
138 (650+tsu_punct_size*0.7,400+tsu_punct_size*0.7)-
139 (650+tsu_punct_size*0.7,750+tsu_punct_size*0.7)-
140 (920,750+tsu_punct_size*0.7)-cycle;

```

[see page 262]



```

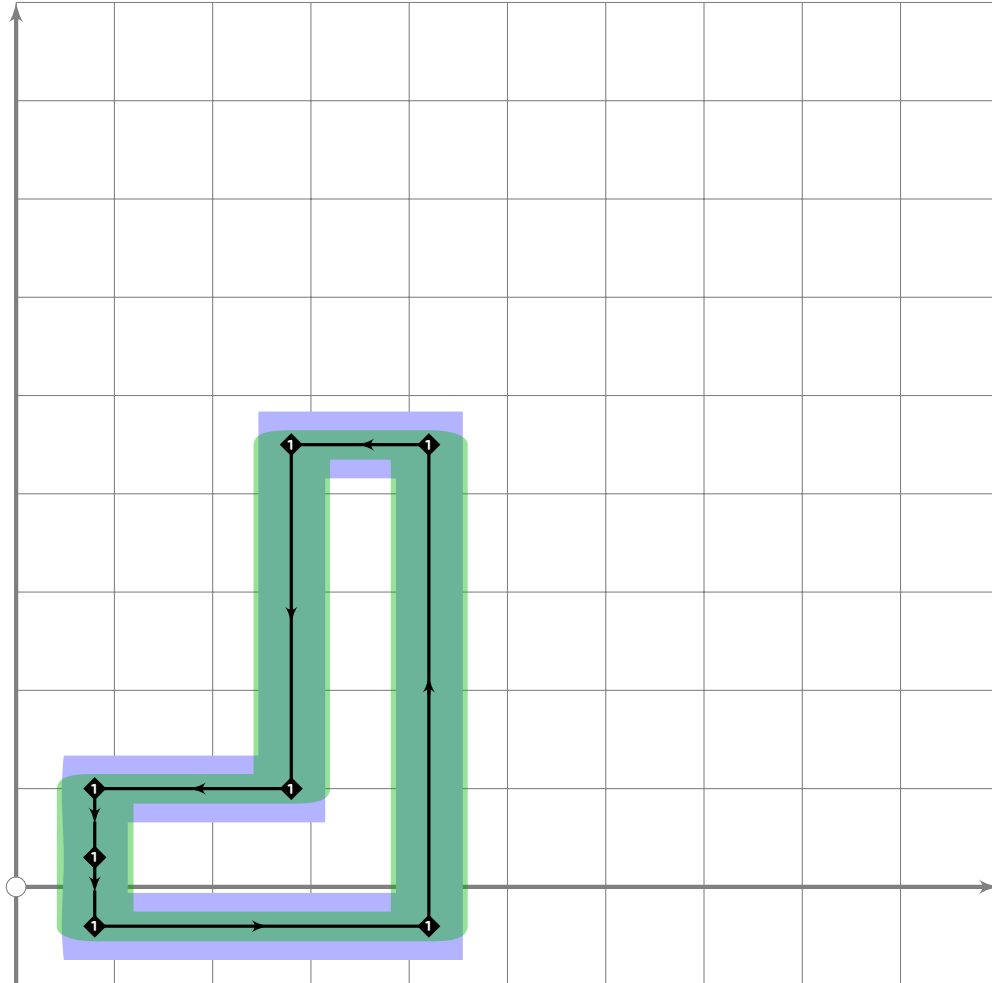
141 begintsuglyph("uni300E";14);
142 bp1:=bracket1;
143 bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
144 (1.7,1.7)-(1.7,1.7)-cycle;
145 bo_size1:=90;
146 bo_tip[1][1]:=1;
147 bo_tip[1][2]:=1;
148 bo_tip[1][3]:=1;

```

```

149 bo_tip[1][4]:=1;
150 bo_tip[1][5]:=1;
151 bo_tip[1][6]:=1;
152 sp:=2;
153 tsu_render;
154 endtsuglyph;

```



```

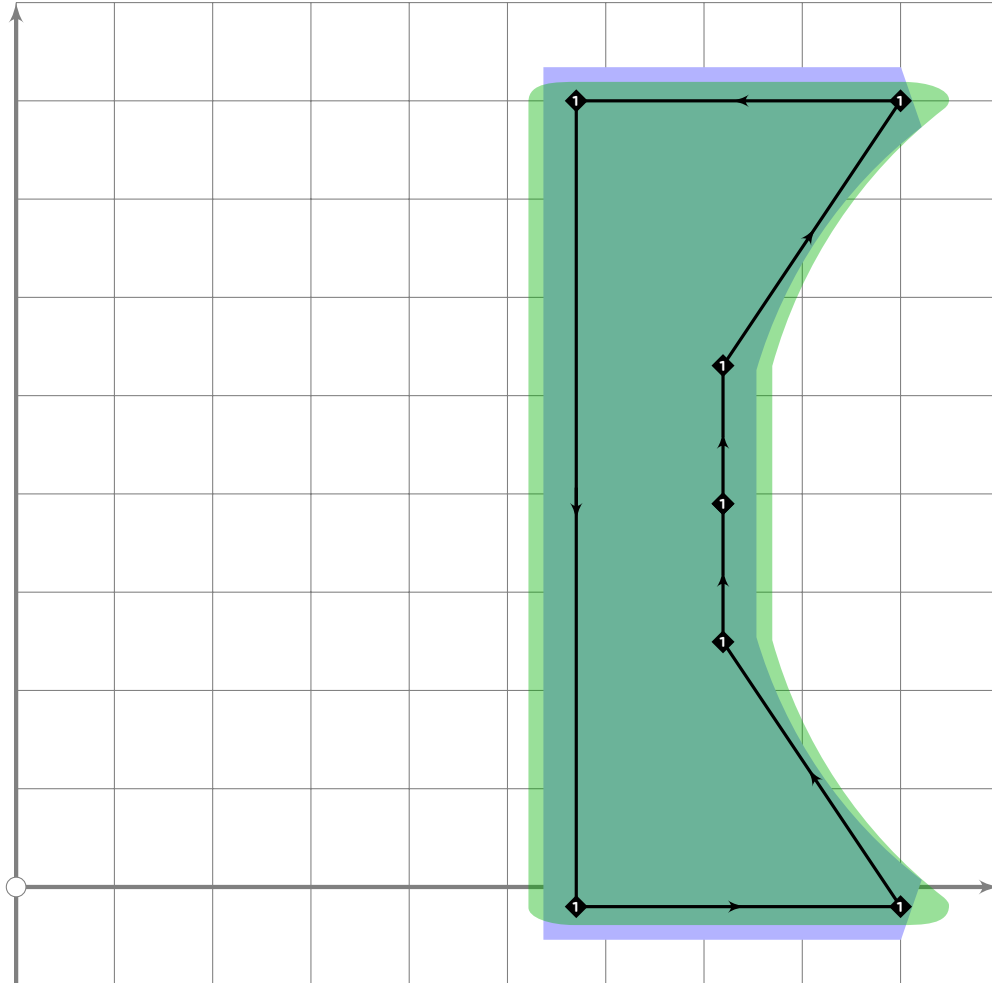
155 begint Suglyph("uni300F",15);
156 bp1:=bracket1 rotatedaround (centre_pt,180);
157 bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
158 (1.7,1.7)-(1.7,1.7)-cycle;
159 bo_size:=90;
160 bo_tip[1][1]:=1;
161 bo_tip[1][2]:=1;
162 bo_tip[1][3]:=1;
163 bo_tip[1][4]:=1;
164 bo_tip[1][5]:=1;
165 bo_tip[1][6]:=1;
166 sp:=2;
167 tsu_render;
168 endtsuglyph;
169

```

```

170 % left and right white and black lenticular brackets
171 % grouped here, out of Unicode sequence, to share the outline
172 bracket1:=(900-2*tsu_punct_size,390){up}..
173   (900,800)-(900-3.3*tsu_punct_size,800)-
174   (900-3.3*tsu_punct_size,-20)-(900,-20)..
175   {up}cycle;
176 bracket1:=(0.5[point 0.3 of bracket1,point 4.7 of bracket1])-
177   subpath (0.3,4.7) of bracket1-cycle;

```

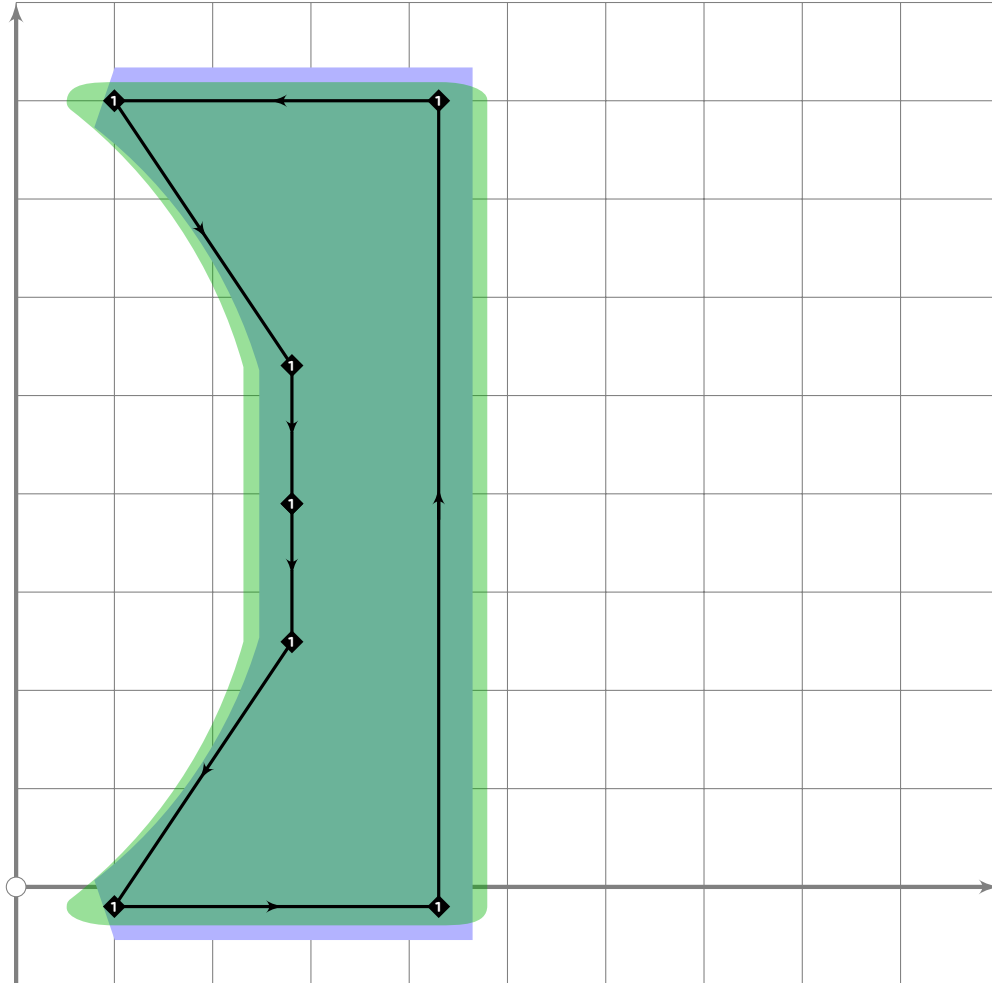


```

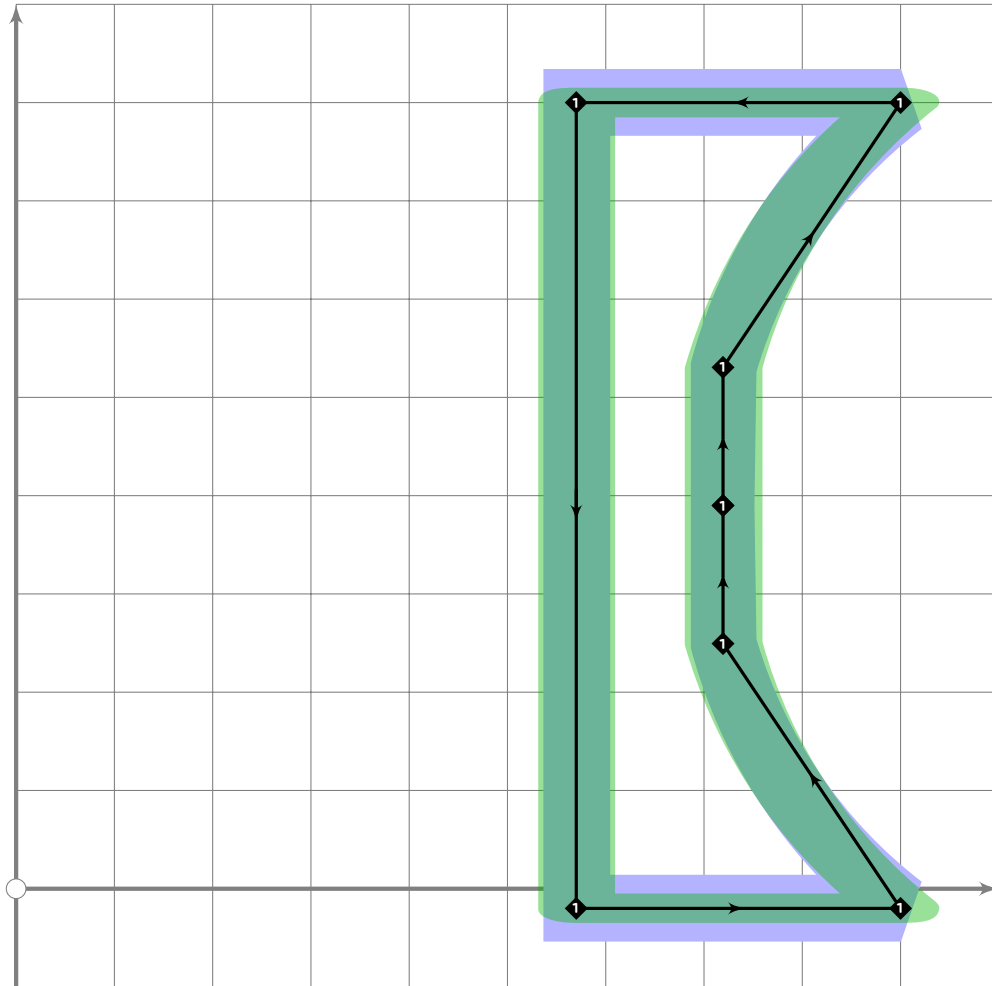
178 begint Suglyph("uni3010";16);
179   bp1:=bracket1;
180   bq1:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-cycle;
181   bo_size1:=90;
182   bo_tip[1][1]:=1;
183   bo_tip[1][2]:=0;
184   bo_tip[1][3]:=1;
185   bo_tip[1][4]:=1;
186   bo_tip[1][5]:=0;
187   bo_tip[1][6]:=1;
188   sp:=2;
189   tsu_render;
190   dangerousFill bp1;

```

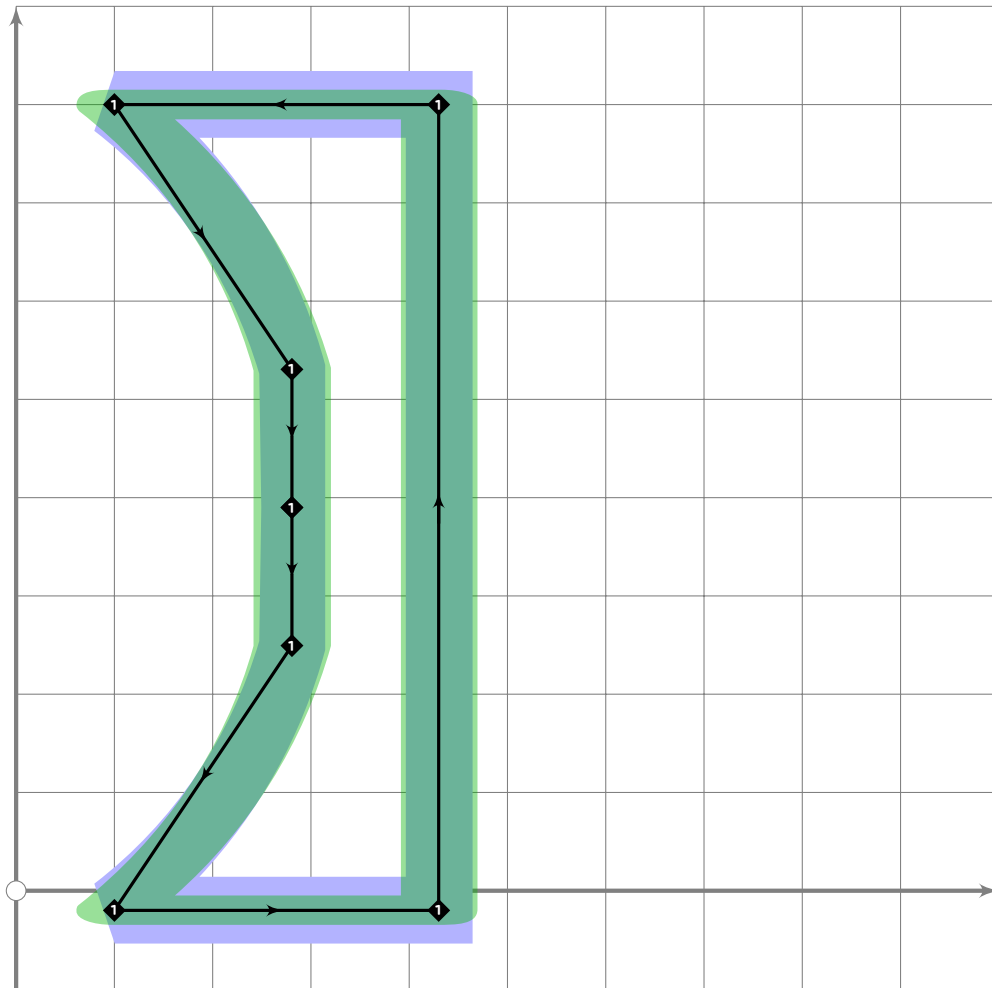
```
191 endtsuglyph;
```



```
192 begint Suglyph("uni3011";17);  
193 bp1:=bracket1 rotatedaround (centre_pt,180);  
194 bq1:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-(2,2)-cycle;  
195 bo_size:=90;  
196 bo_tip[1][1]:=1;  
197 bo_tip[1][2]:=0;  
198 bo_tip[1][3]:=1;  
199 bo_tip[1][4]:=1;  
200 bo_tip[1][5]:=0;  
201 bo_tip[1][6]:=1;  
202 sp:=2;  
203 tsu_render;  
204 dangerousFill bp1;  
205 endtsuglyph;
```



```
206 begintsuglyph("uni3016",22);
207   bpl:=bracket1;
208   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
209     (1.7,1.7)-(1.7,1.7)-cycle;
210   bo_size1:=90;
211   bo_tip[1][1]:=1;
212   bo_tip[1][2]:=0;
213   bo_tip[1][3]:=1;
214   bo_tip[1][4]:=1;
215   bo_tip[1][5]:=0;
216   bo_tip[1][6]:=1;
217   sp:=2;
218   tsu_render;
219 endtsuglyph;
```

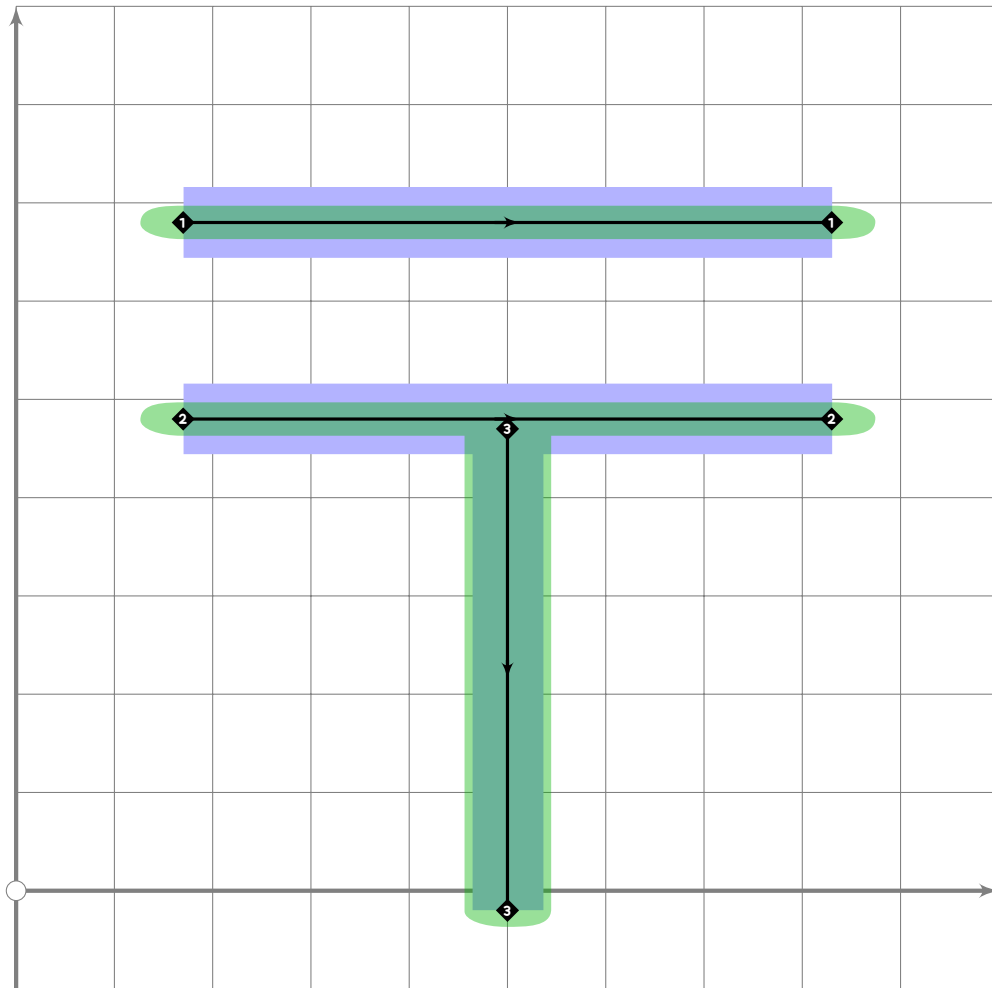


```

220 begintsuglyph("uni3017",23);
221   bp1:=bracket1 rotatedaround (centre_pt,180);
222   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-
223     (1.7,1.7)-(1.7,1.7)-cycle;
224   bo_size1:=90;
225   bo_tip[1][1]:=1;
226   bo_tip[1][2]:=0;
227   bo_tip[1][3]:=1;
228   bo_tip[1][4]:=1;
229   bo_tip[1][5]:=0;
230   bo_tip[1][6]:=1;
231   sp:=2;
232   tsu_render;
233 endtsuglyph;
234

```

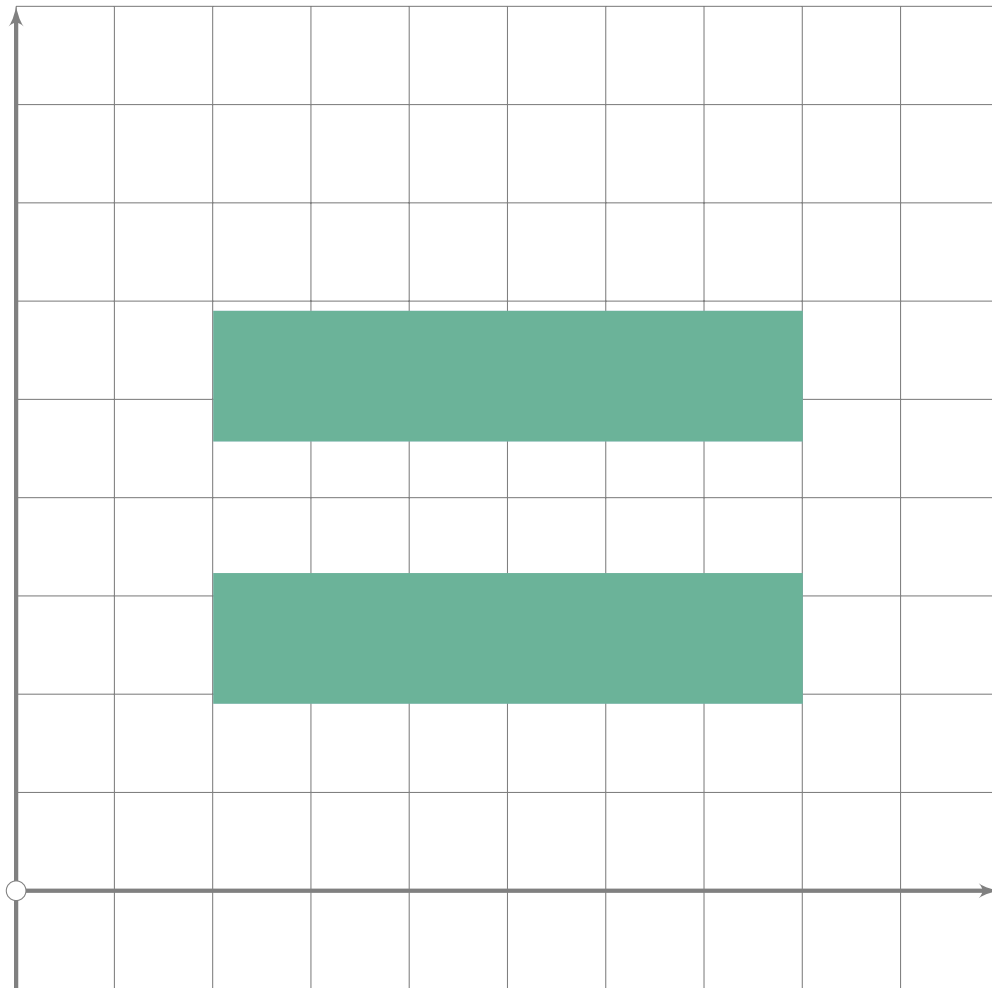




```

235 % Japanese postal mark
236 begintsuglyph("uni3012";18);
237   bp1:=(170,680)-(830,680);
238   bq1:=(1.7,1.7)-(1.7,1.7);
239
240   bp2:=(170,680-2*tsu_punct_size)-(830,680-2*tsu_punct_size);
241   bq2:=(1.7,1.7)-(1.7,1.7);
242
243   bp3:=(500,720-2.5*tsu_punct_size)-(500,20);
244   bq3:=(1.7,1.7)-(1.7,1.7);
245
246   sp:=4;
247   tsu_render;
248 endtsuglyph;
249

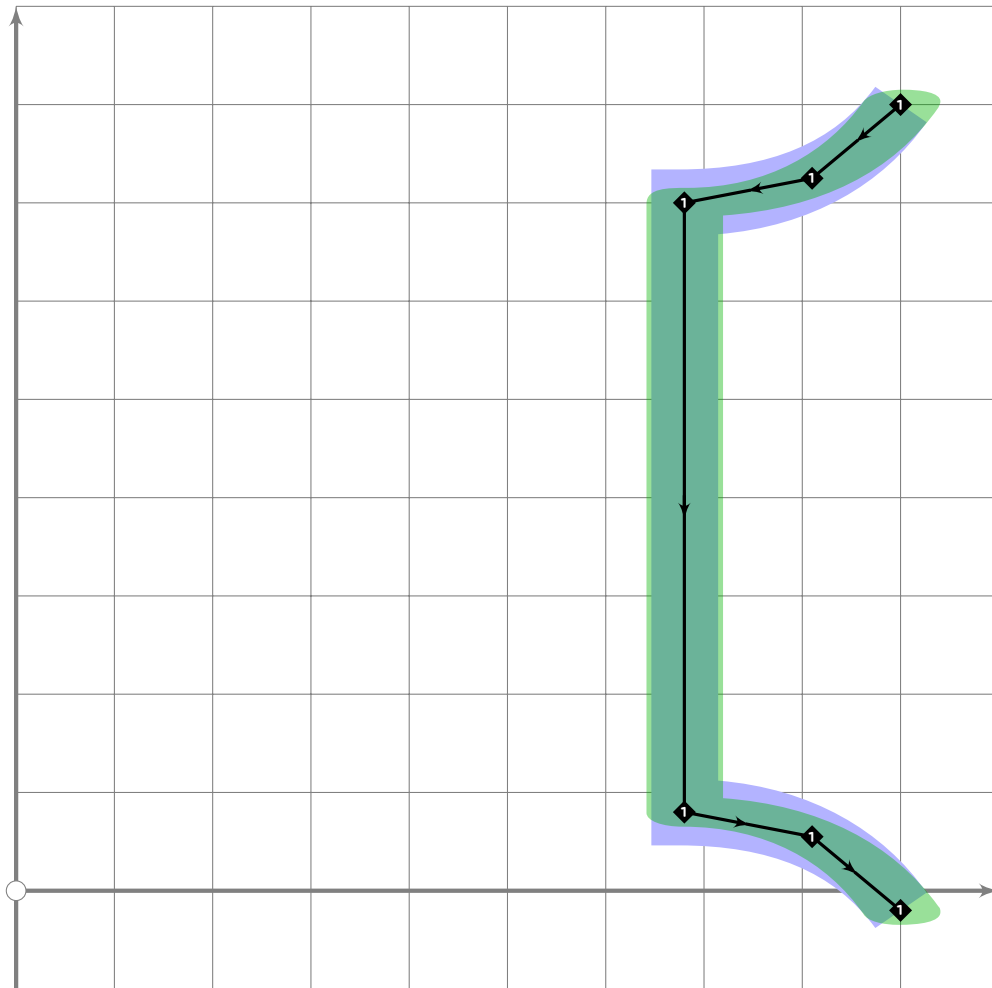
```



```

250 % "geta" or substitute mark
251 begintsuglyph("uni3013";19);
252   x2-x1=6*tsu_punct_size;
253   0.5[x1,x2]=500;
254   y4-y1=4*tsu_punct_size;
255   y2-y1=y3-y2=y4-y3;
256   0.5[y1,y4]=390;
257   bp1=(x1,y4)-(x1,y3)-(x2,y3)-(x2,y4)-cycle;
258   bp2=(x1,y2)-(x1,y1)-(x2,y1)-(x2,y2)-cycle;
259   dangerousFill bp1,bp2;
260 endtsuglyph;
261
262 % left and right plain and white tortoise shell brackets
263 % grouped here, out of Unicode sequence, to share the outline
264 bracket1=(900,800)..
265   (900-tsu_punct_size*0.9,800-tsu_punct_size*3/4)..
266   {left}(900-2.2*tsu_punct_size,800-tsu_punct_size)-
267   (900-2.2*tsu_punct_size,-20*tsu_punct_size){right}..
268   (900-tsu_punct_size*0.9,-20*tsu_punct_size*3/4)..
269   (900,-20);
270 bracket2:=(point 1 of bracket1)-(point 4 of bracket1);

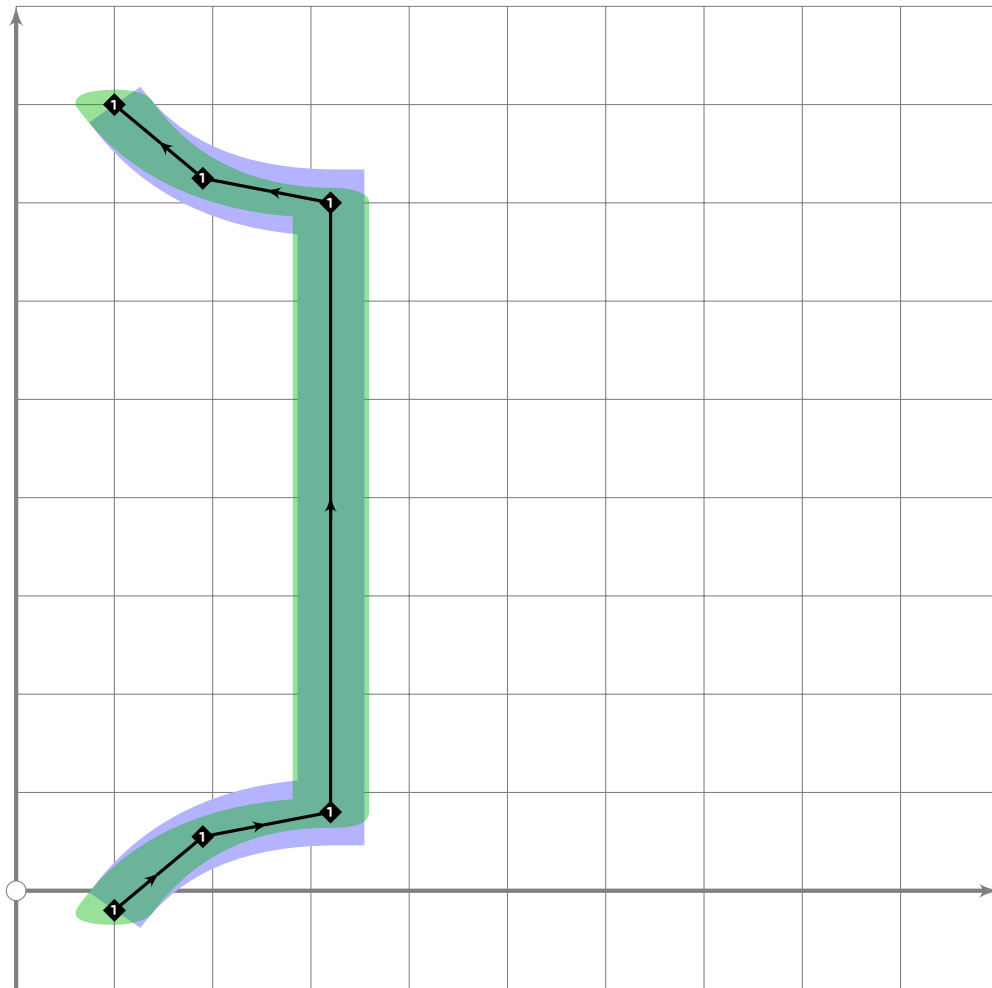
```



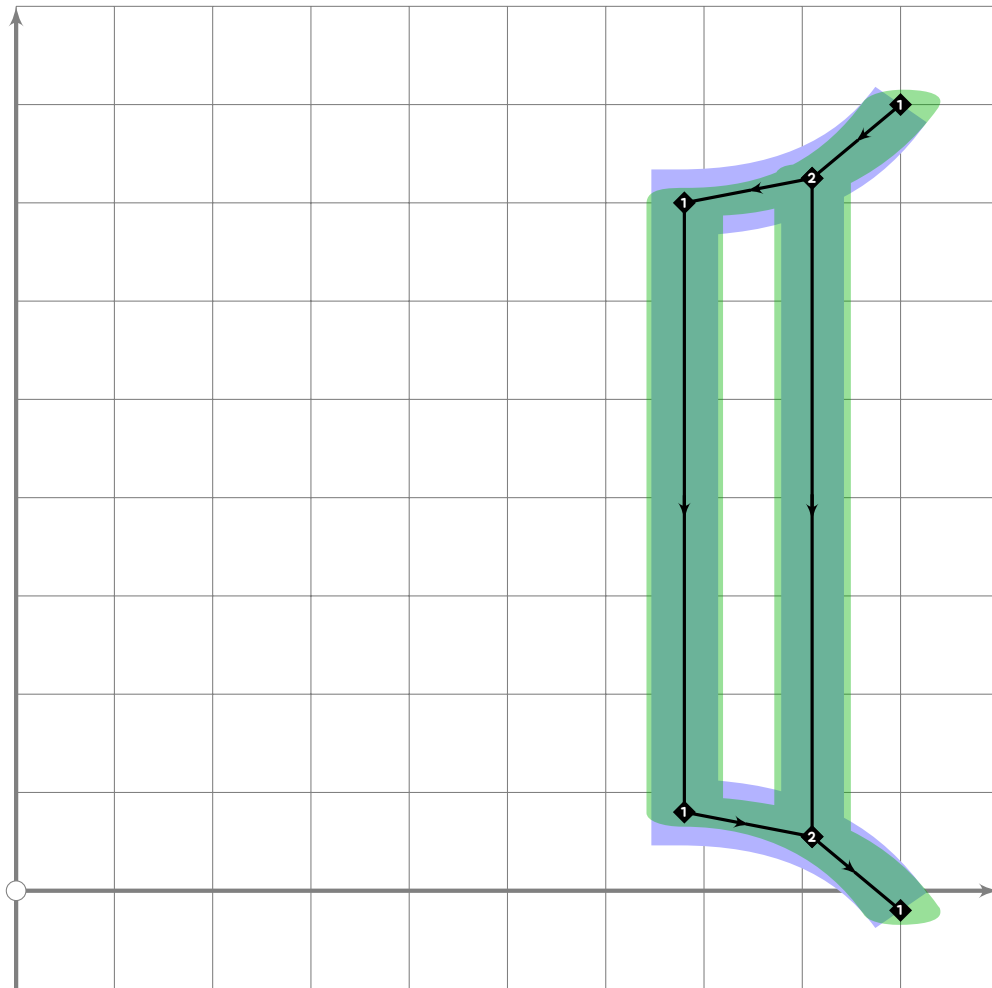
```

271 begint Suglyph("uni3014";20);
272   bp1:=bracket1;
273   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
274   bo_size1:=90;
275   bo_tip[1][2]:=1;
276   bo_tip[1][3]:=1;
277   sp:=2;
278   tsu_render;
279 endtsuglyph;

```



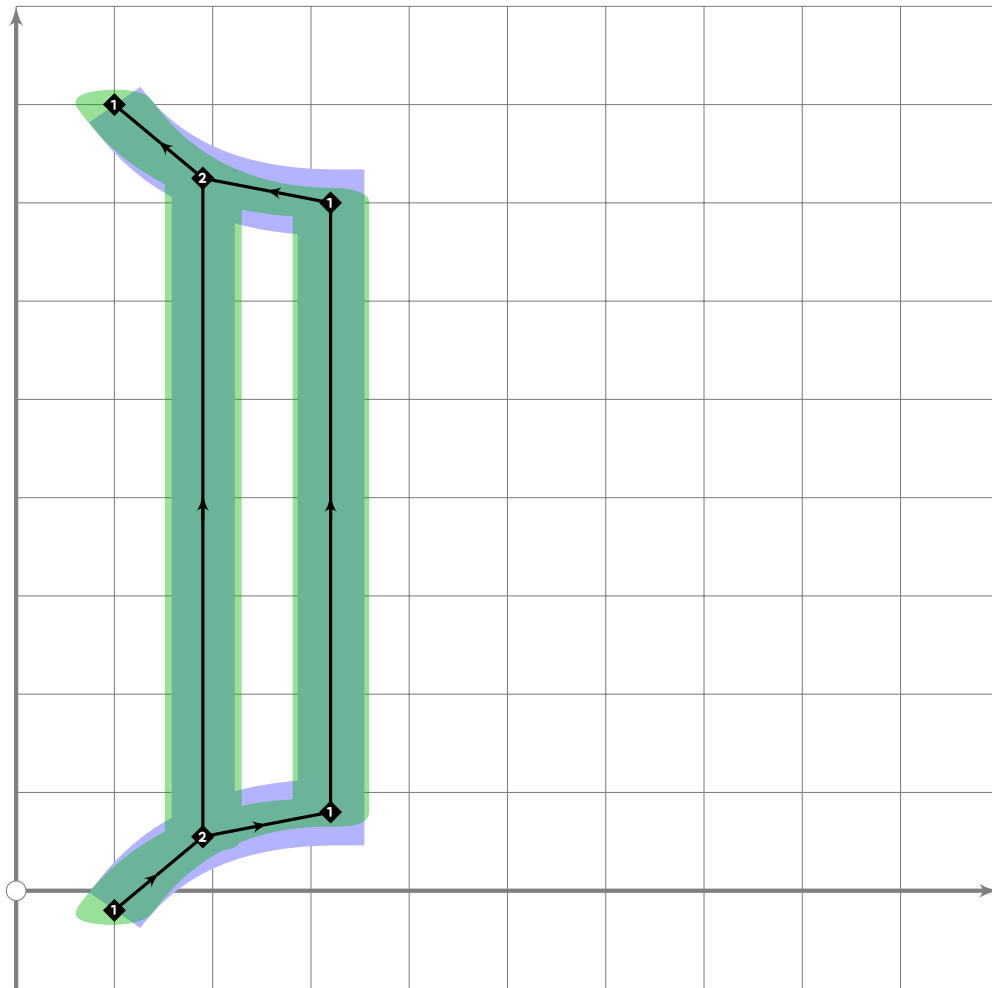
```
280 begintsuglyph("uni3015",21);  
281 bp1=bracket1 rotatedaround (centre_pt,180);  
282 bq1=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);  
283 bo_size1:=90;  
284 bo_tip[1][2]:=1;  
285 bo_tip[1][3]:=1;  
286 sp:=2;  
287 tsu_render;  
288 endtsuglyph;
```



```

289 begintsuglyph("uni3018",24);
290   bp1:=bracket1;
291   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
292   bo_size1:=90;
293   bo_tip[1][2]:=1;
294   bo_tip[1][3]:=1;
295   bp2:=bracket2;
296   bq2:=(1.7,1.7)-(1.7,1.7);
297   bo_size2:=90;
298   sp:=3;
299   tsu_render;
300 endtsuglyph;

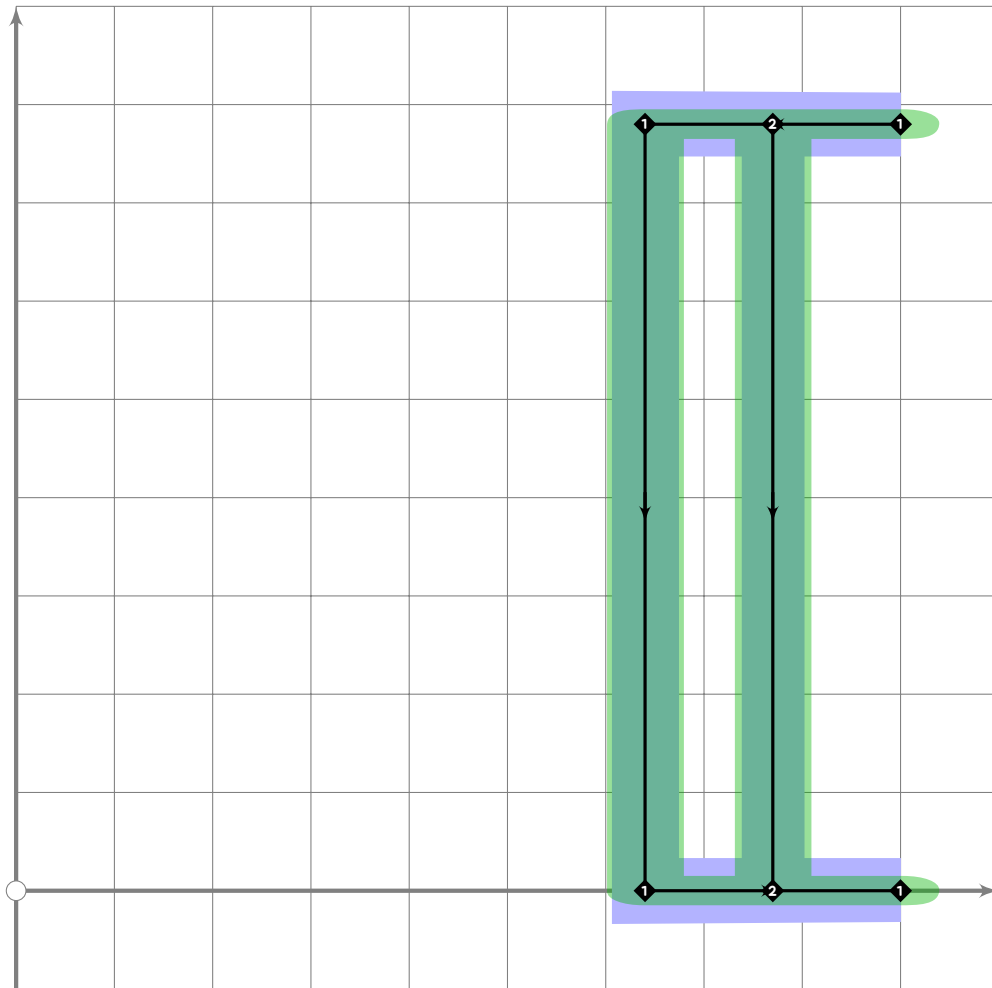
```



```

301 begint Suglyph("uni3019",25);
302 bp1:=bracket1 rotatedaround (centre_pt,180);
303 bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
304 bo_size1:=90;
305 bo_tip[1][2]:=1;
306 bo_tip[1][3]:=1;
307 bp2:=bracket2 rotatedaround (centre_pt,180);
308 bq2:=(1.7,1.7)-(1.7,1.7);
309 bo_size2:=90;
310 sp:=3;
311 tsu_render;
312 endtsuglyph;
313
314 % left and right white square brackets
315 bracket1:=(900,780)-
316 (900-2.6*tsu_punct_size,780)-
317 (900-2.6*tsu_punct_size,0)-
318 (900,0);
319 bracket2:=(point 0.5 of bracket1)-(point 2.5 of bracket1);

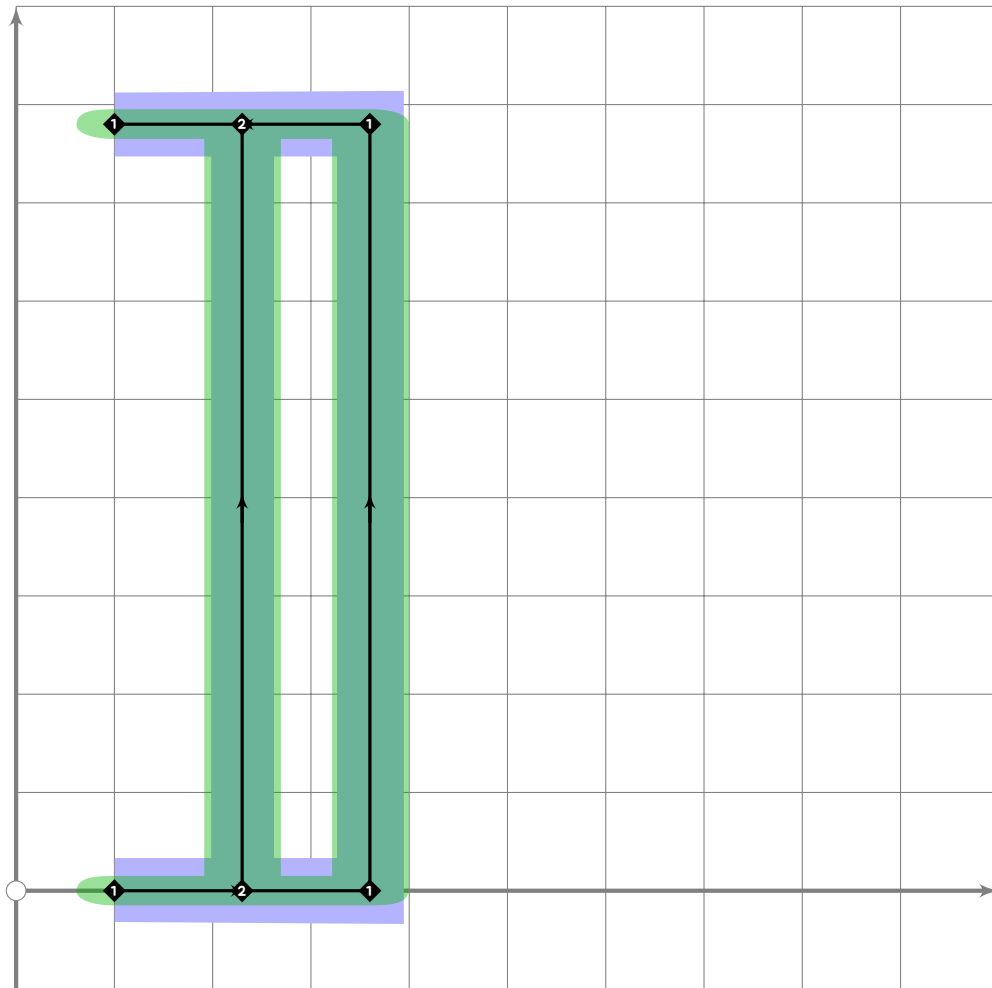
```



```

320 begintsuglyph("uni301A";26);
321   bp1:=bracket1;
322   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
323   bo_size1:=90;
324   bo_tip[1][1]:=1;
325   bo_tip[1][2]:=1;
326   bp2:=bracket2;
327   bq2:=(1.7,1.7)-(1.7,1.7);
328   bo_size2:=90;
329   sp:=3;
330   tsu_render;
331 endtsuglyph;

```

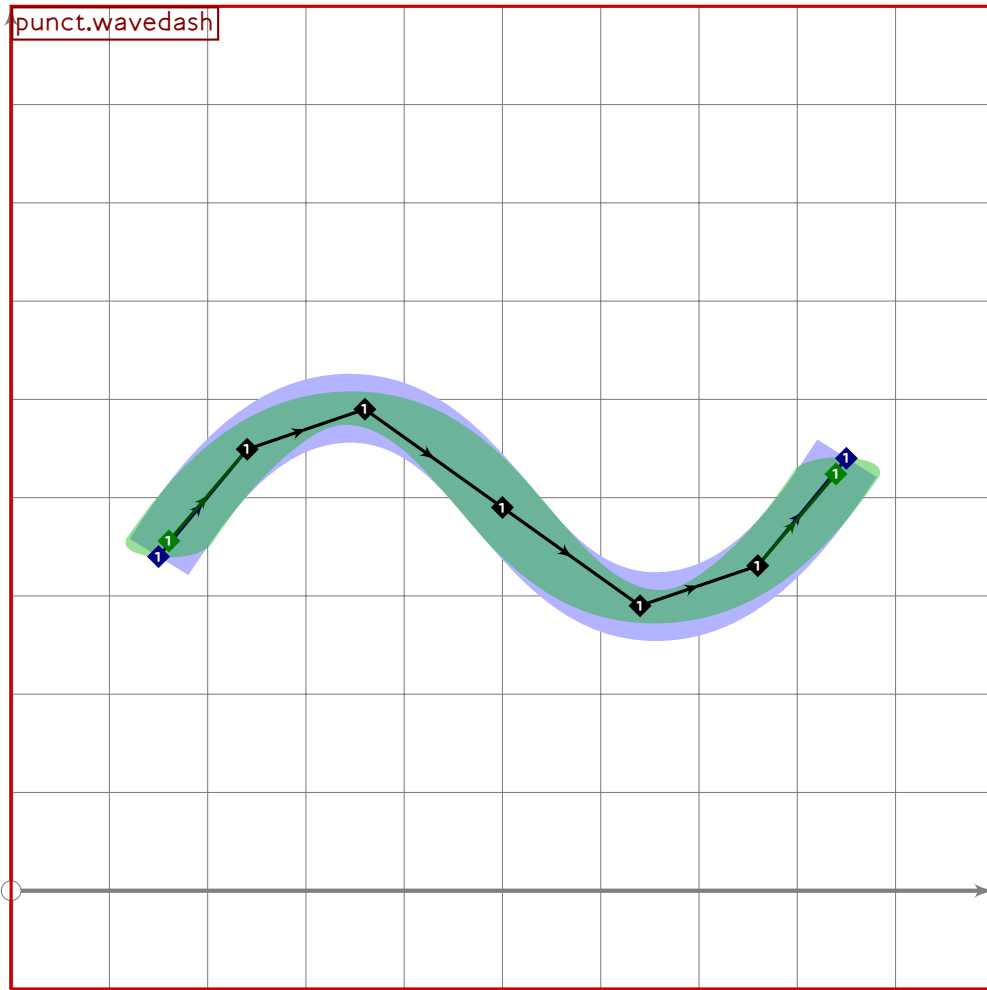


```

332 begintsuglyph("uni301B",27);
333   bp1:=bracket1 rotatedaround (centre_pt,180);
334   bq1:=(1.7,1.7)-(1.7,1.7)-(1.7,1.7)-(1.7,1.7);
335   bo_size1:=90;
336   bo_tip[1][1]:=1;
337   bo_tip[1][2]:=1;
338   bp2:=bracket2 rotatedaround (centre_pt,180);
339   bq2:=(1.7,1.7)-(1.7,1.7);
340   bo_size2:=90;
341   sp:=3;
342   tsu_render;
343 endsuglyph;
344

```





```

345 % "wave dash"
346 begint Suglyph("uni301C",28);
347   tsu_curve.punct.wavedash;
348   bo_serif.a0:=5;
349   bo_serif.a6:=8;
350   tsu_render;
351 endtsuglyph;
352
353
354

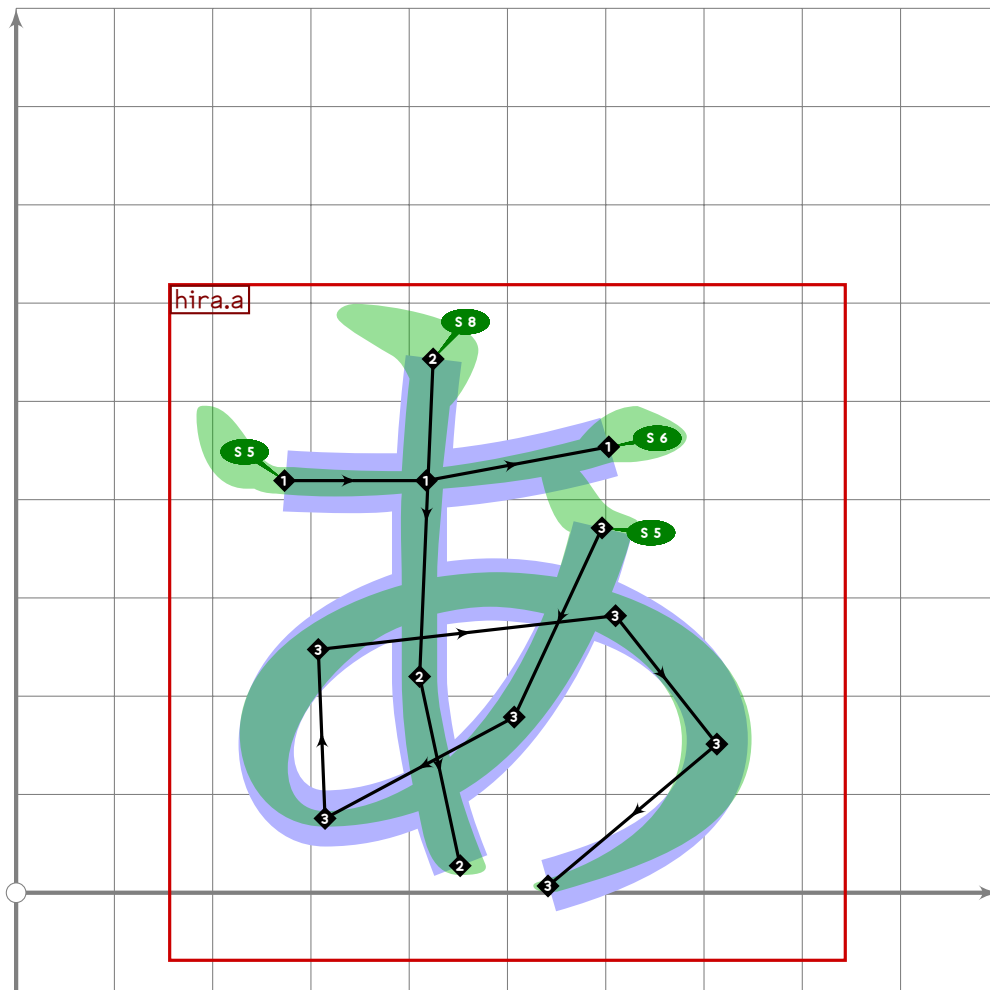
```

## Hiragana

```

355 % HIRAGANA
356

```

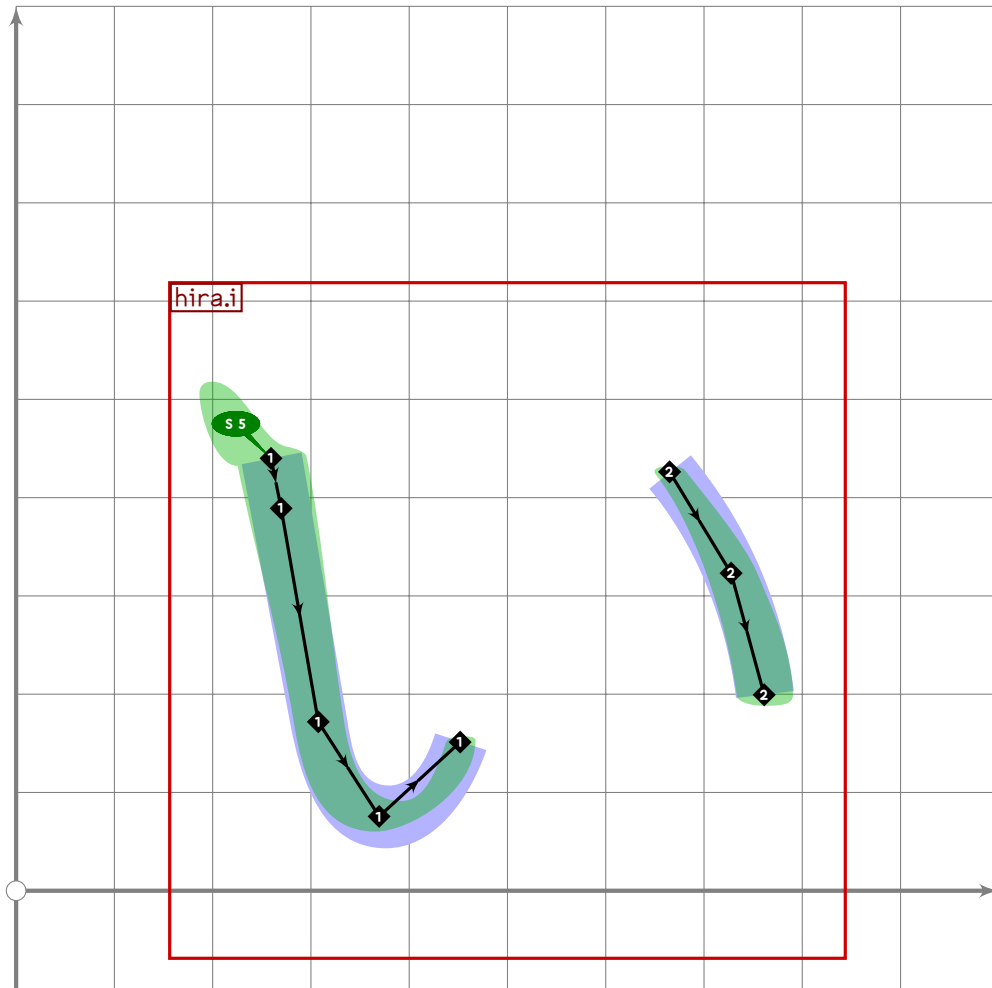


```

357 % hiragana "small a"
358 begint Suglyph("uni3041",65);
359 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.a);
360 tsu_render;
361 endtsuglyph;
362
363 % hiragana "a"
364 begint Suglyph("uni3042",66);
365 tsu_curve.hira.a;
366 tsu_render;
367 endtsuglyph;
368

```

[see page 47]

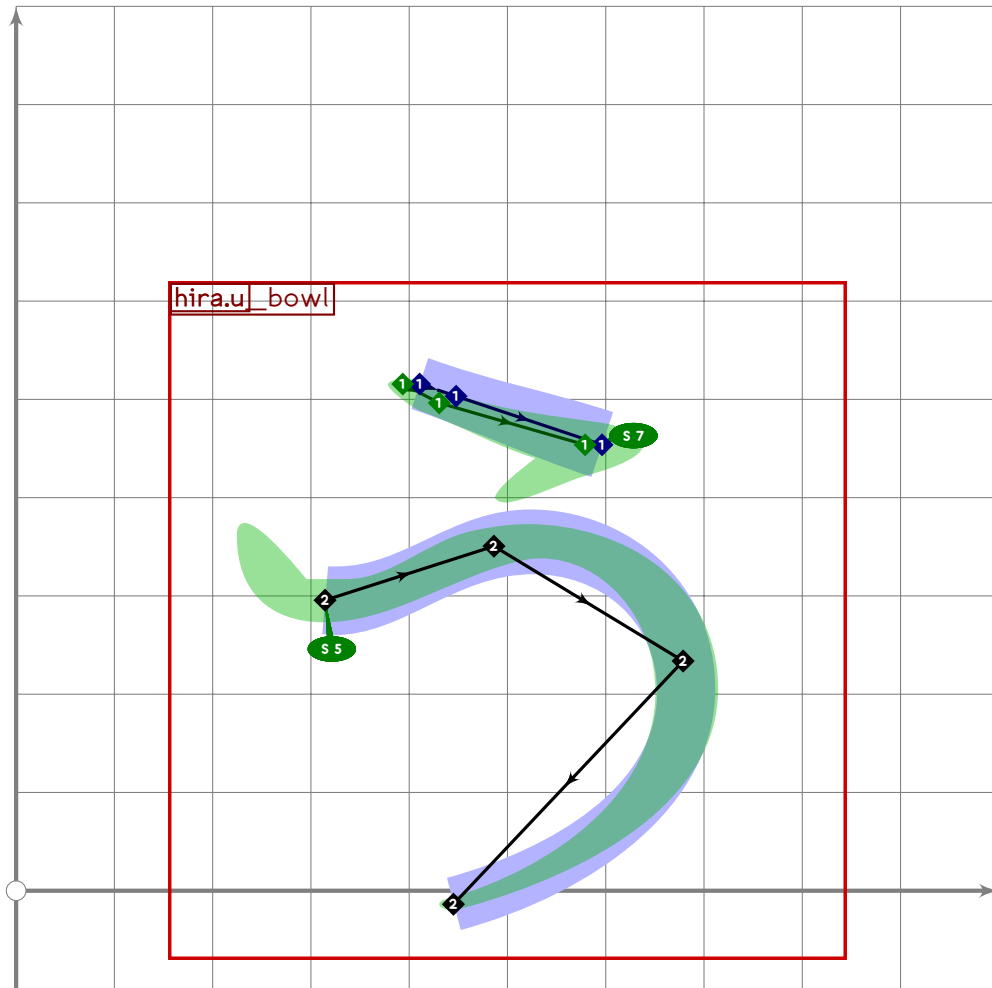


```

369 % hiragana "small i"
370 begint Suglyph("uni3043",67);
371 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.i);
372 tsu_render;
373 endtsuglyph;
374
375 % hiragana "i"
376 begint Suglyph("uni3044",68);
377 tsu_curve.hira.i;
378 tsu_render;
379 endtsuglyph;
380

```

[see page 48]

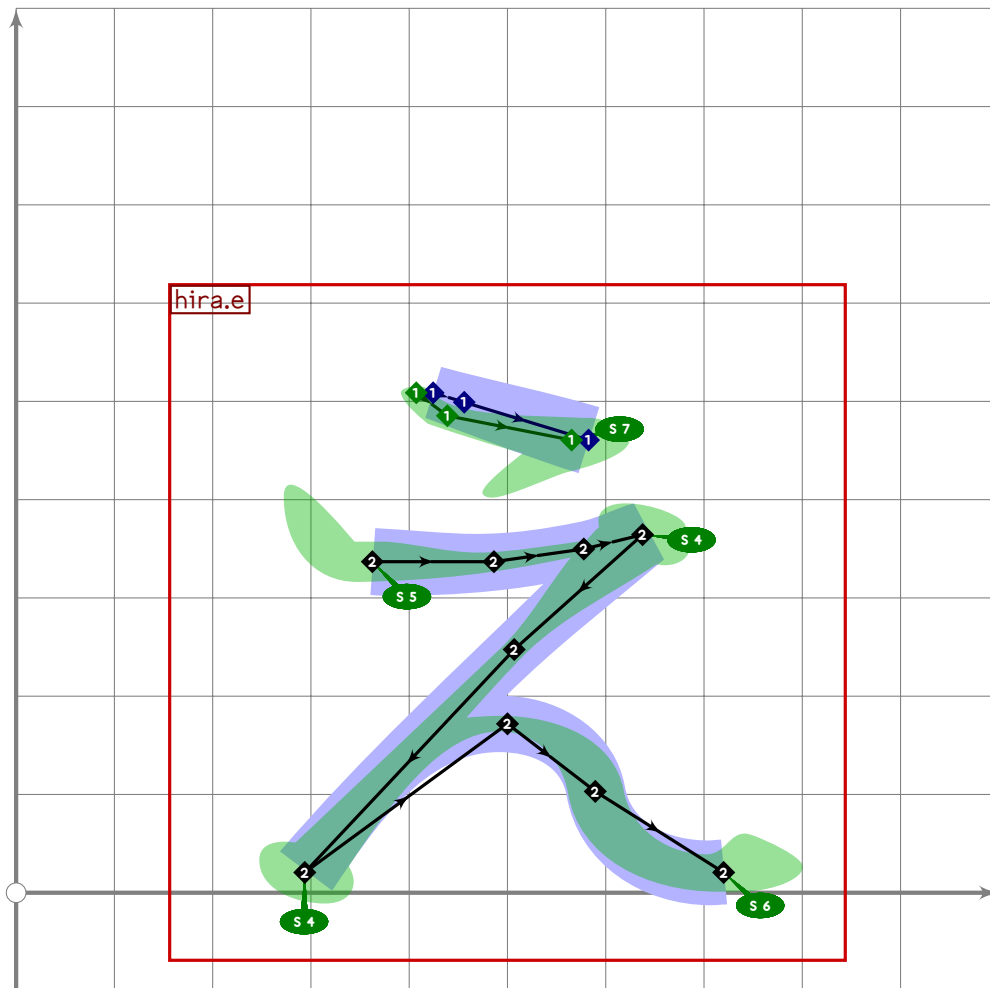


```

381 % hiragana "small u"
382 begint Suglyph("uni3045",69);
383 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.u);
384 tsu_render;
385 endtsuglyph;
386
387 % hiragana "u"
388 begint Suglyph("uni3046",70);
389 tsu_curve.hira.u;
390 tsu_render;
391 endtsuglyph;
392

```

[see page 49]

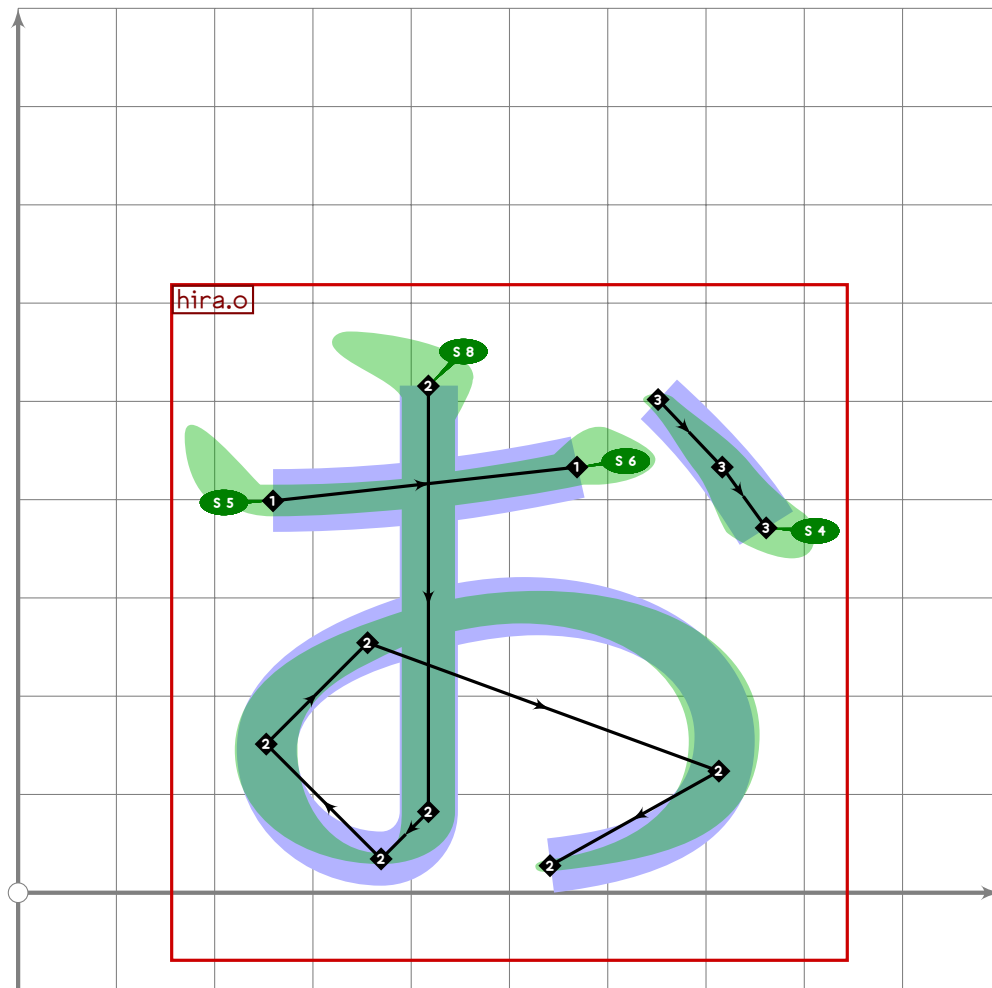


```

393 % hiragana "small e"
394 begint Suglyph("uni3047";71);
395 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.e);
396 tsu_render;
397 endtsuglyph;
398
399 % hiragana "e"
400 begint Suglyph("uni3048";72);
401 tsu_curve.hira.e;
402 tsu_render;
403 endtsuglyph;
404

```

[see page 50]



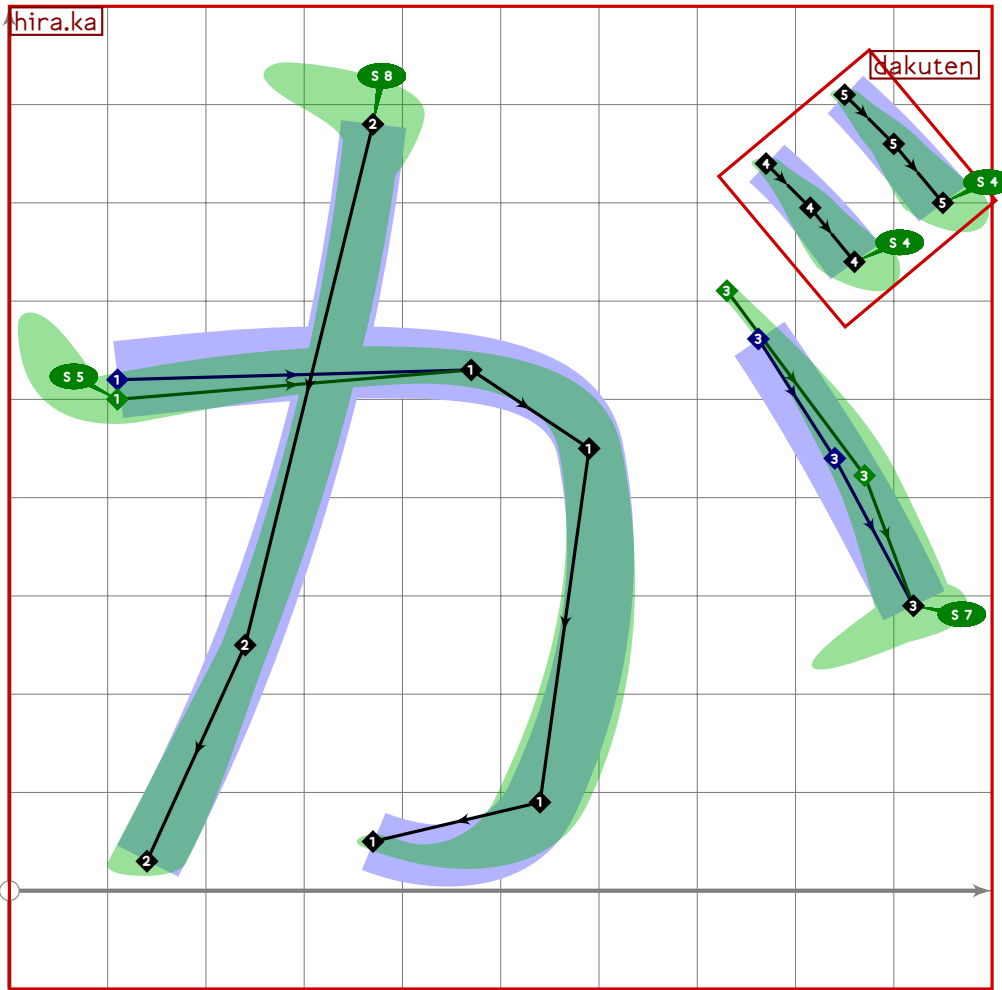
```

405 % hiragana "small o"
406 begintsuglyph("uni3049";73);
407 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.o);
408 tsu_render;
409 endtsuglyph;
410
411 % hiragana "o"
412 begintsuglyph("uni304A";74);
413 tsu_curve.hira.o;
414 tsu_render;
415 endtsuglyph;
416
417 % hiragana "ka"
418 begintsuglyph("uni304B";75);
419 tsu_curve.hira.ka;
420 tsu_render;
421 endtsuglyph;
422

```

[see page 51]

[see page 52]

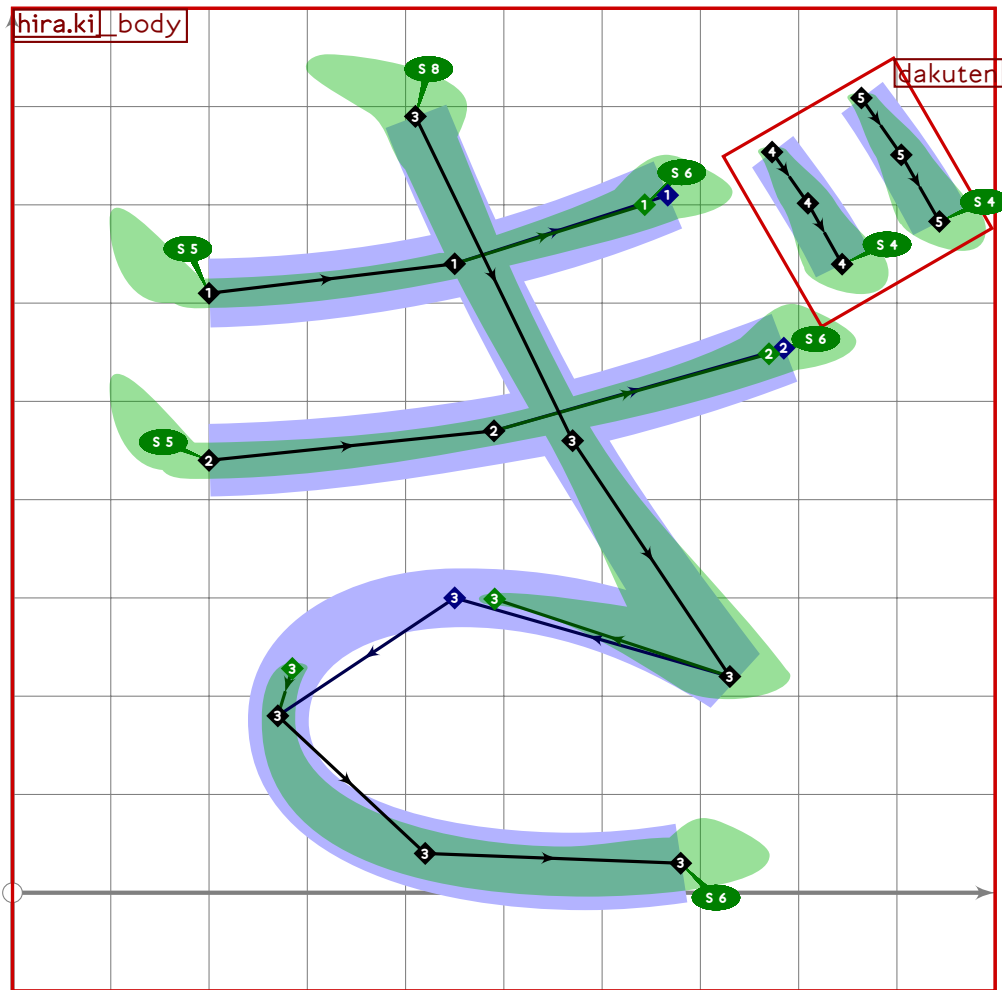


```

423 % hiragana "ga"
424 begintsuglyph("uni304C";76);
425   tsu_curve.hira.ka;
426   tsu_curve.dakuten(identity shifted (850,730));
427   tsu_render;
428 endsuglyph;
429
430 % hiragana "ki"
431 begintsuglyph("uni304D";77);
432   tsu_curve.hira.ki;
433   tsu_render;
434 endsuglyph;
435

```

[see page 53]



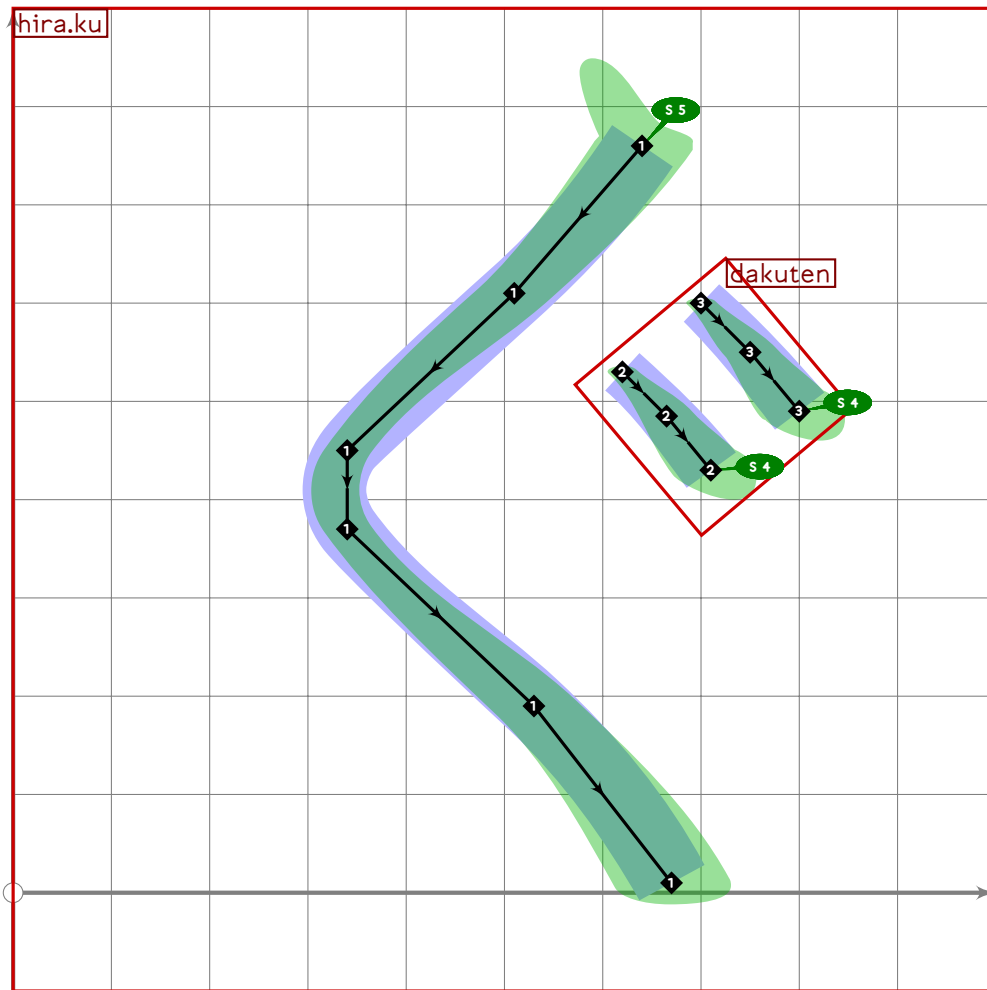
```

436 % hiragana "gi"
437 beginsuglyph("uni304E",78);
438 tsu_curve.hira.ki;
439 bp1:=subpath (0,1,9-0.1*mincho) of bp1;
440 bp2:=subpath (0,1,95-0.05*mincho) of bp2;
441 tsu_curve.dakuten(identity rotated -10 shifted (850,730));
442 tsu_render;
443 endsuglyph;
444
445 % hiragana "ku"
446 beginsuglyph("uni304F",79);
447 tsu_curve.hira.ku;
448 tsu_render;
449 endsuglyph;
450

```

[see page 54]



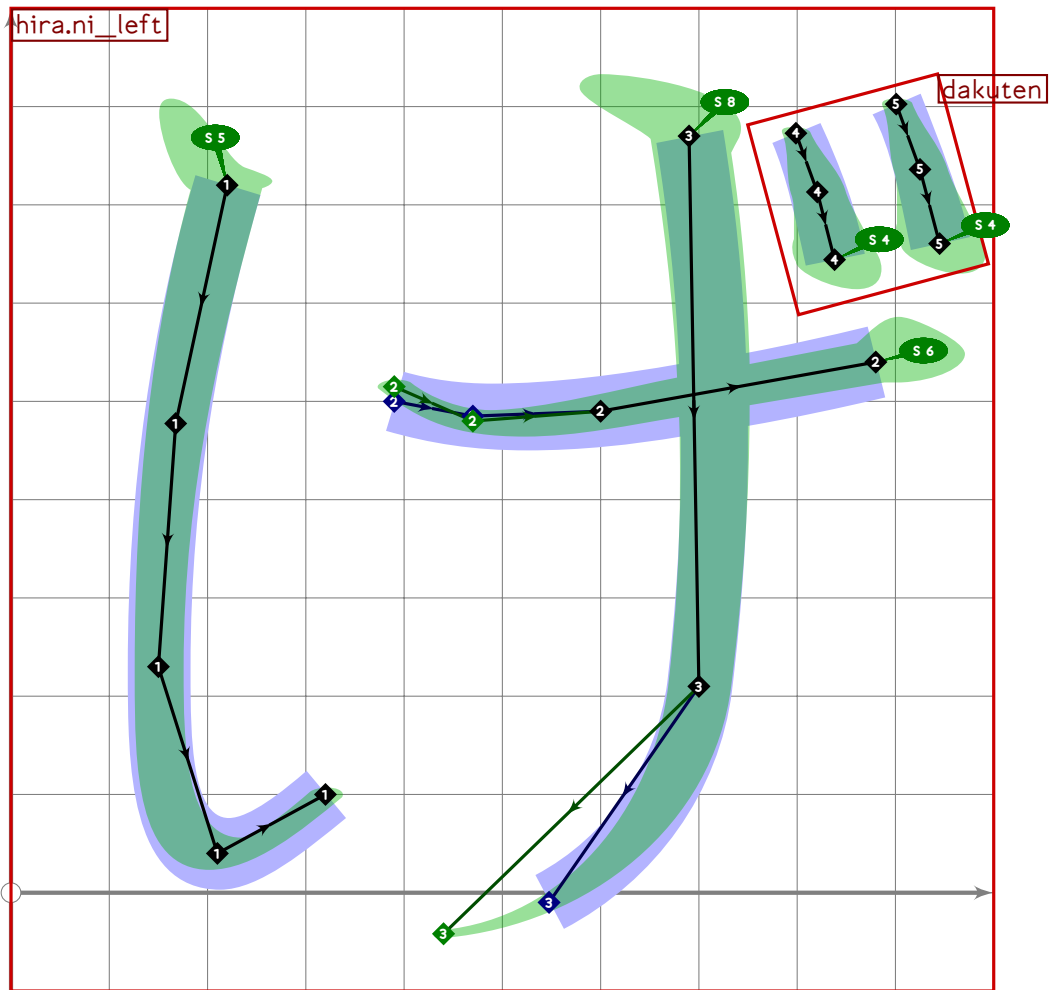


```

451 % hiragana "gu"
452 begint Suglyph("uni3050",80);
453 tsu_curve.hira.ku;
454 tsu_curve.dakuten(identity shifted (700,520));
455 tsu_render;
456 endsuglyph;
457
458 % hiragana "ke"
459 begint Suglyph("uni3051",81);
460 tsu_curve.hira.ke;
461 tsu_render;
462 endsuglyph;
463

```

[see page 55]

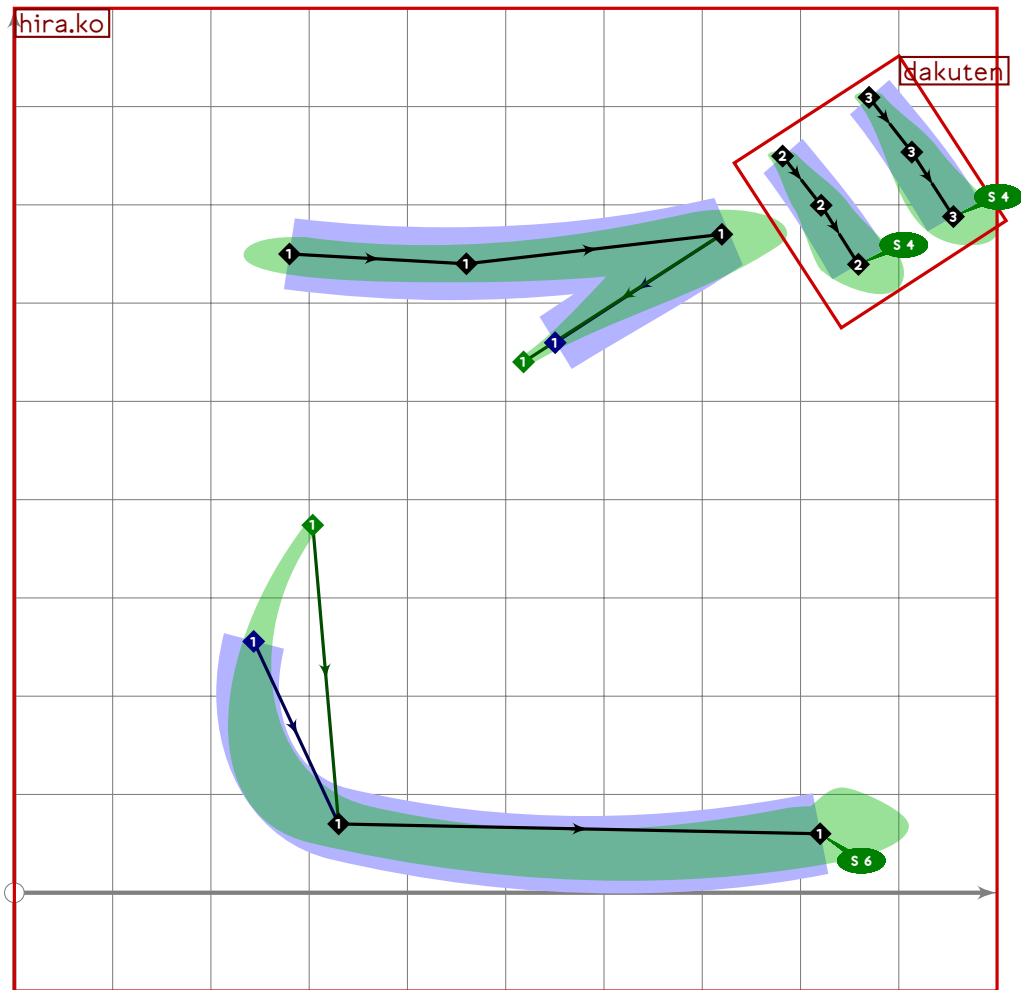


```

464 % hiragana "ge"
465 begint Suglyph("uni3052",82);
466   tsu_curve.hira.ke;
467   tsu_curve.dakuten(identity rotated -25 shifted (867,730));
468   tsu_render;
469 endsuglyph;
470
471 % hiragana "ko"
472 begint Suglyph("uni3053",83);
473   tsu_curve.hira.ko;
474   tsu_render;
475 endsuglyph;
476

```

[see page 56]

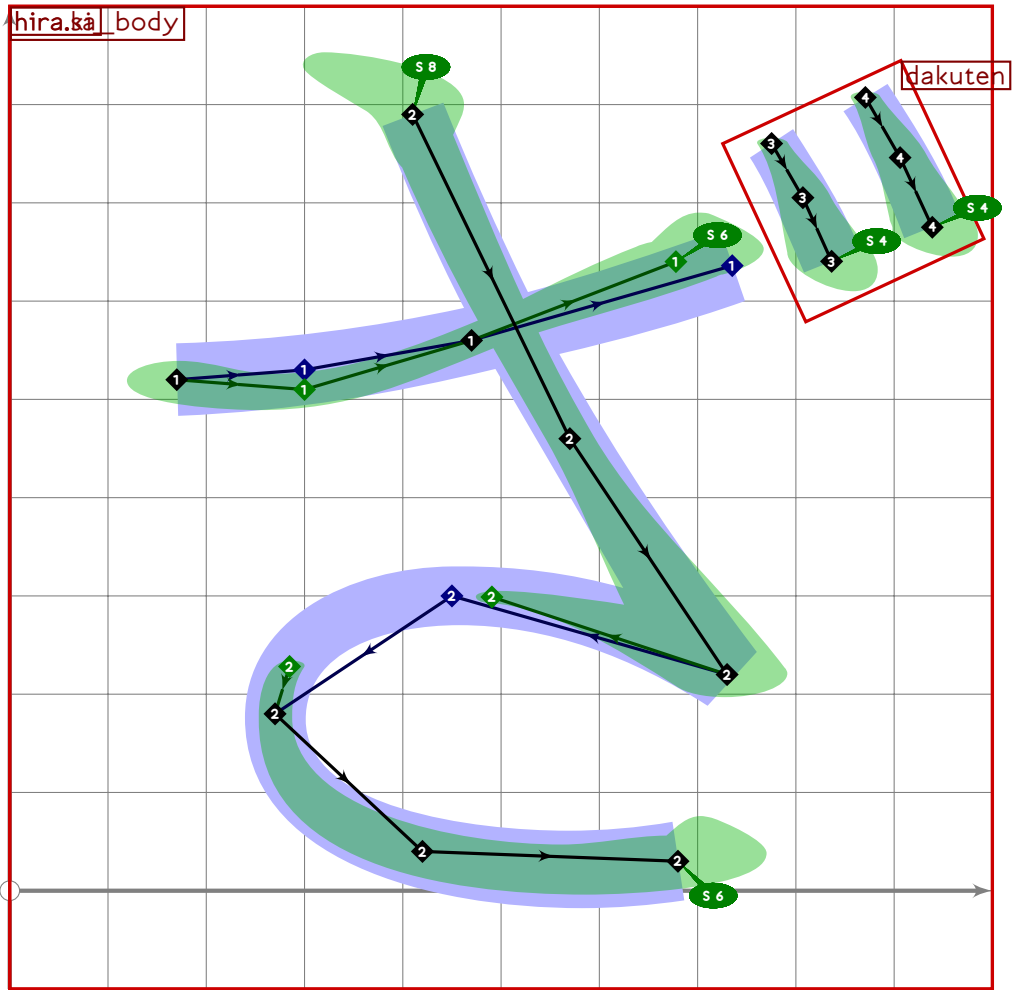


```

477 % hiragana "go"
478 begint Suglyph("uni3054",84);
479 tsu_curve.hira.ko;
480 tsu_curve.dakuten(identity rotated -7 shifted (860,730));
481 tsu_render;
482 endsuglyph;
483
484 % hiragana "sa"
485 begint Suglyph("uni3055",85);
486 tsu_curve.hira.sa;
487 tsu_render;
488 endsuglyph;
489

```

[see page 57]

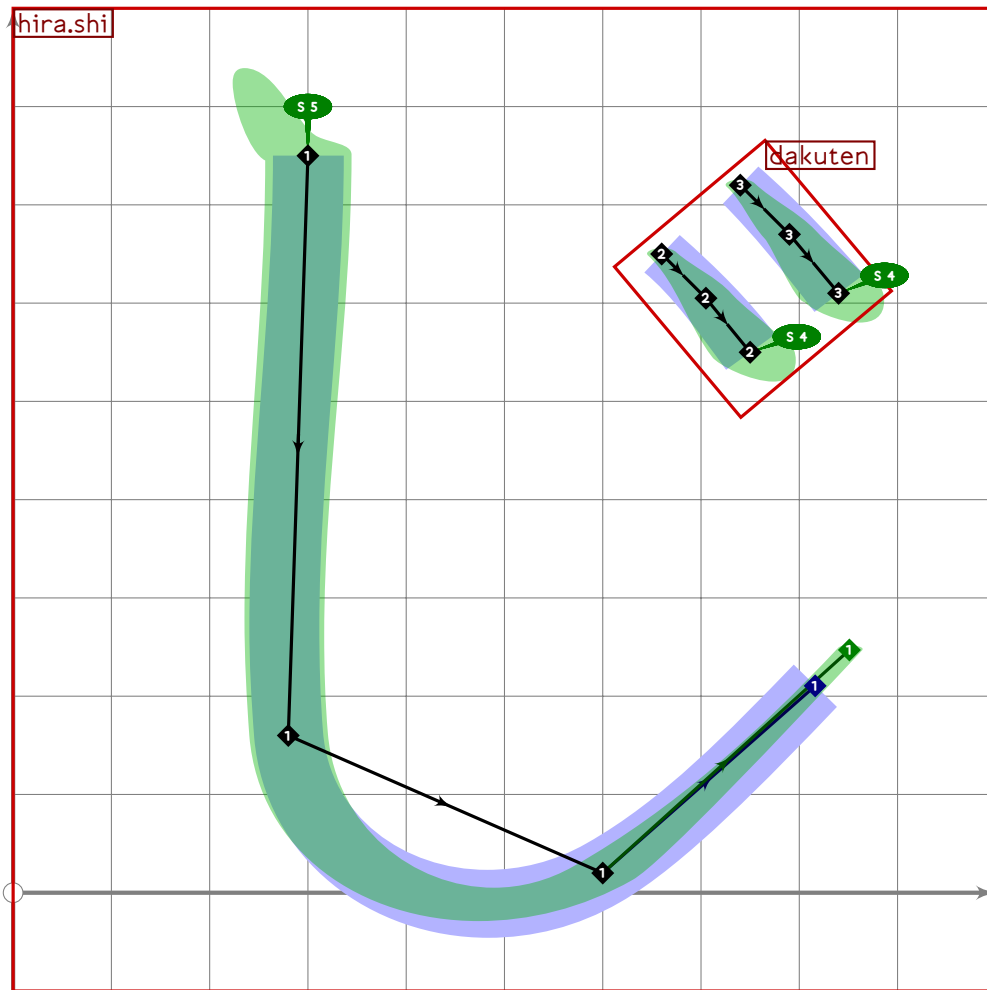


```

490 % hiragana "za"
491 begint Suglyph("uni3056";86);
492 tsu_curve.hira.sa;
493 bp1:=subpath (0,2.8) of bp1;
494 tsu_curve.dakuten(identity rotated -15 shifted (850,730));
495 tsu_render;
496 endtsuglyph;
497
498 % hiragana "shi"
499 begint Suglyph("uni3057";87);
500 tsu_curve.hira.shi;
501 tsu_render;
502 endtsuglyph;
503

```

[see page 58]

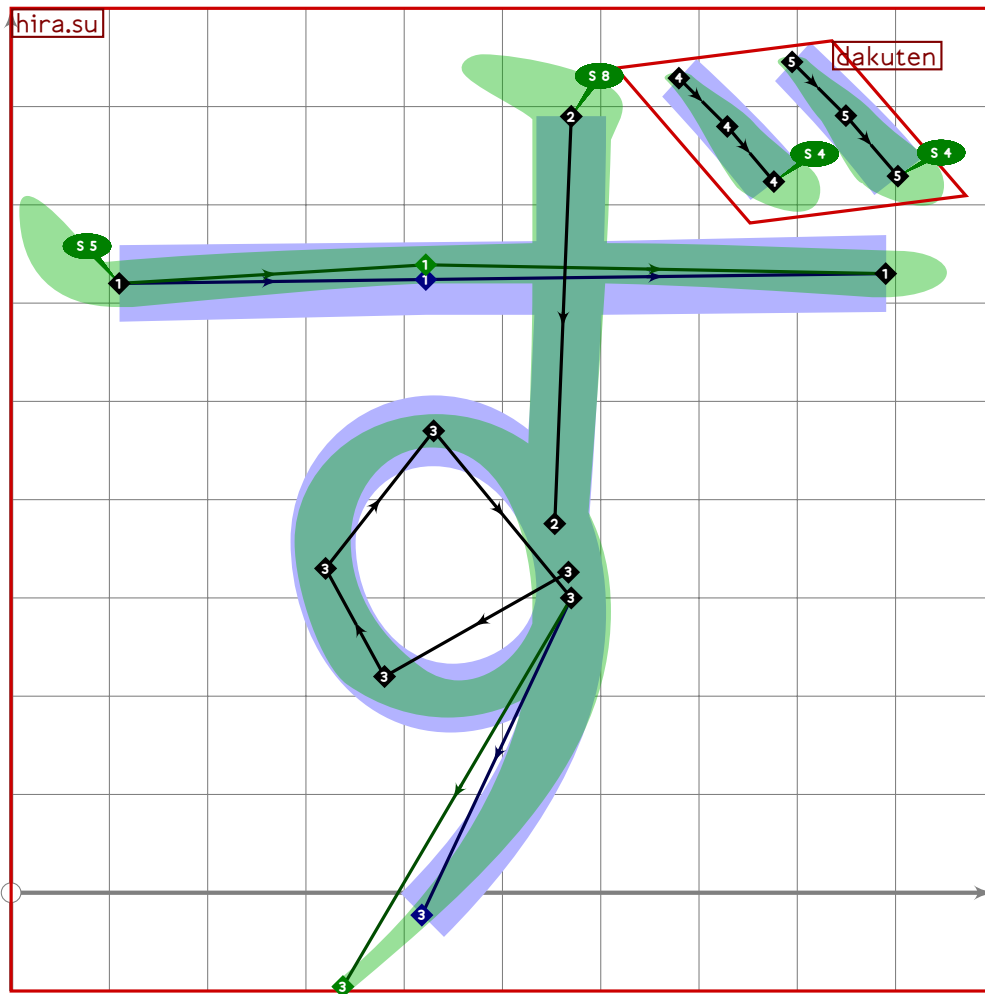


```

504 % hiragana "ji"
505 begint Suglyph("uni3058",88);
506 tsu_curve.hira.shi;
507 tsu_curve.dakuten(identity shifted (740,640));
508 tsu_render;
509 endtsuglyph;
510
511 % hiragana "su"
512 begint Suglyph("uni3059",89);
513 tsu_curve.hira.su;
514 tsu_render;
515 endtsuglyph;
516

```

[see page 59]

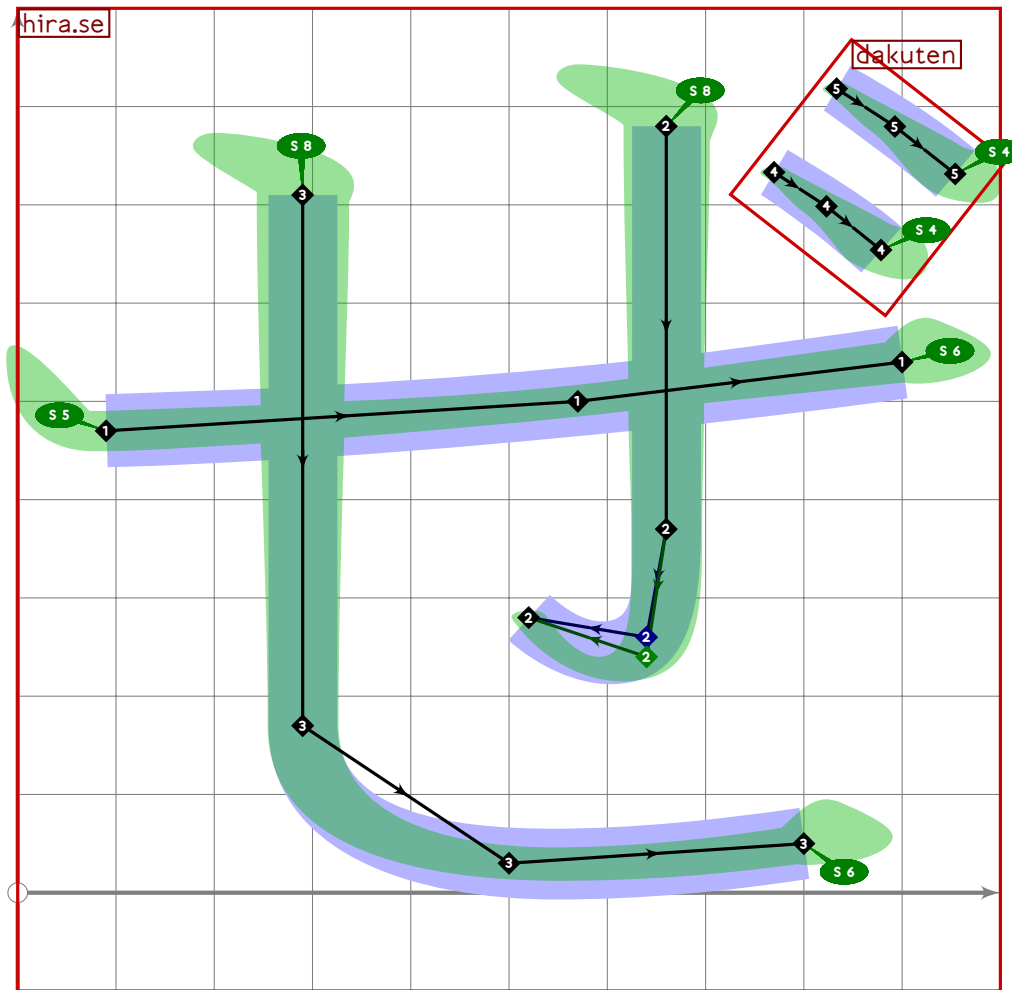


```

517 % hiragana "zu"
518 begintsuglyph("uni305A";90);
519 tsu_curve.hira.su;
520 tsu_curve.dakuten(identity rotated -30 slanted -0.4 xyscaled (1.2,0.8)
521   shifted (780,790));
522 tsu_render;
523 endtsuglyph;
524
525 % hiragana "se"
526 begintsuglyph("uni305B";91);
527 tsu_curve.hira.se;
528 tsu_render;
529 endtsuglyph;
530

```

[see page 60]

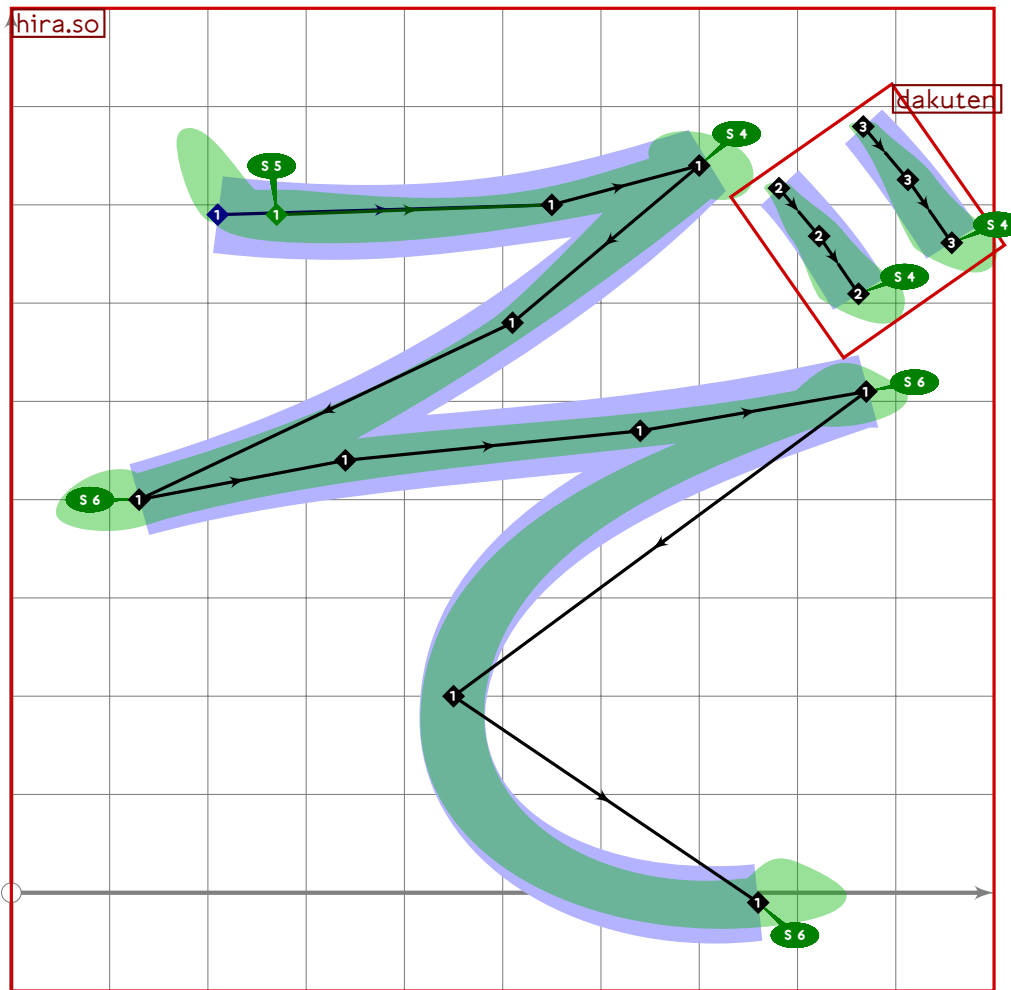


```

531 % hiragana "ze"
532 begintsuglyph("uni305C";92);
533   tsu_curve.hira.se;
534   tsu_curve.dakuten(identity rotated 12 shifted (850,740));
535   tsu_render;
536 endsuglyph;
537
538 % hiragana "so"
539 begintsuglyph("uni305D";93);
540   tsu_curve.hira.so;
541   tsu_render;
542 endsuglyph;
543

```

[see page 61]



```

544 % hiragana "zo"
545 begint Suglyph("uni305E";94);
546 tsu_curve.hira.so;
547 tsu_curve.dakuten(identity rotated -5 shifted (860,700));
548 tsu_render;
549 endtsuglyph;

```

550

```

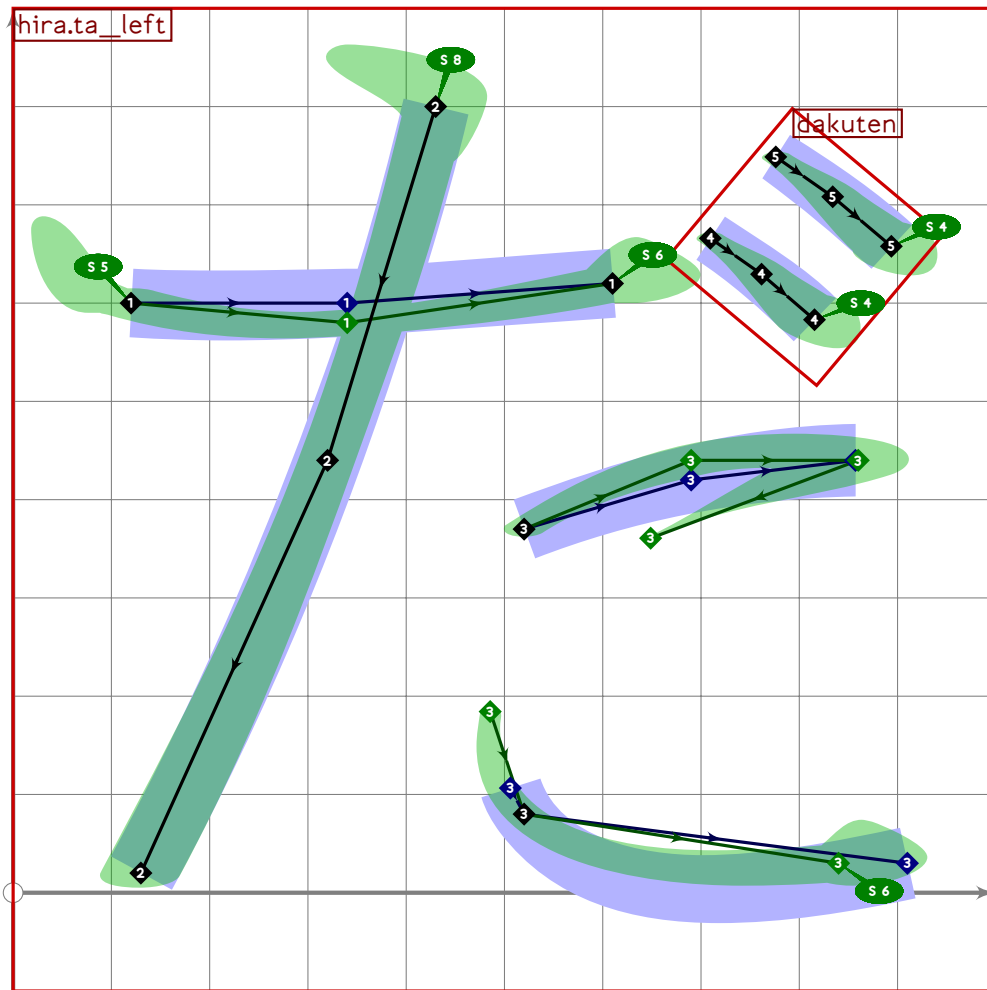
551 % hiragana "ta"
552 begint Suglyph("uni305F";95);
553 tsu_curve.hira.ta;
554 tsu_render;
555 endtsuglyph;

```

556

[see page 62]



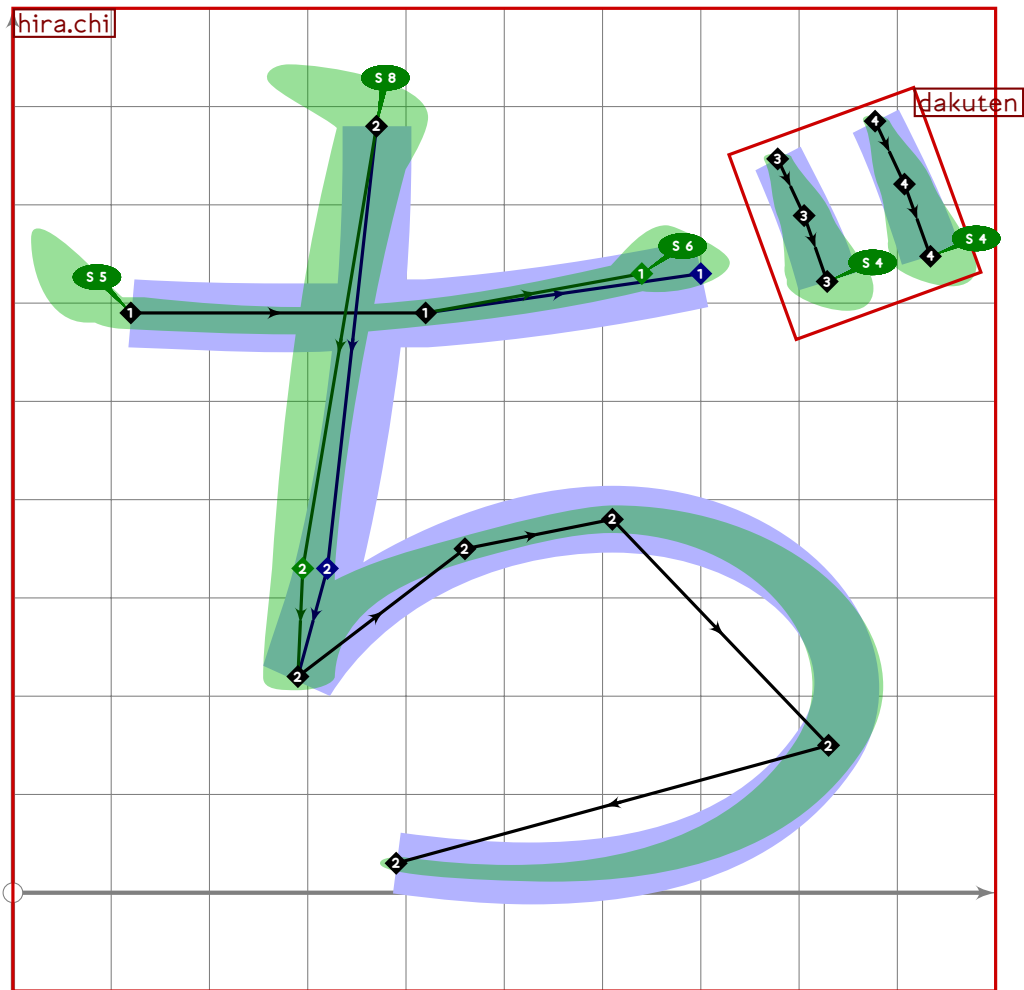


```

557 % hiragana "da"
558 begintsuglyph("uni3060";96);
559 tsu_curve.hira.ta;
560 tsu_curve.dakuten(identity rotated 10 shifted (790,670));
561 tsu_render;
562 endsuglyph;
563
564 % hiragana "chi"
565 begintsuglyph("uni3061";97);
566 tsu_curve.hira.chi;
567 tsu_render;
568 endsuglyph;
569

```

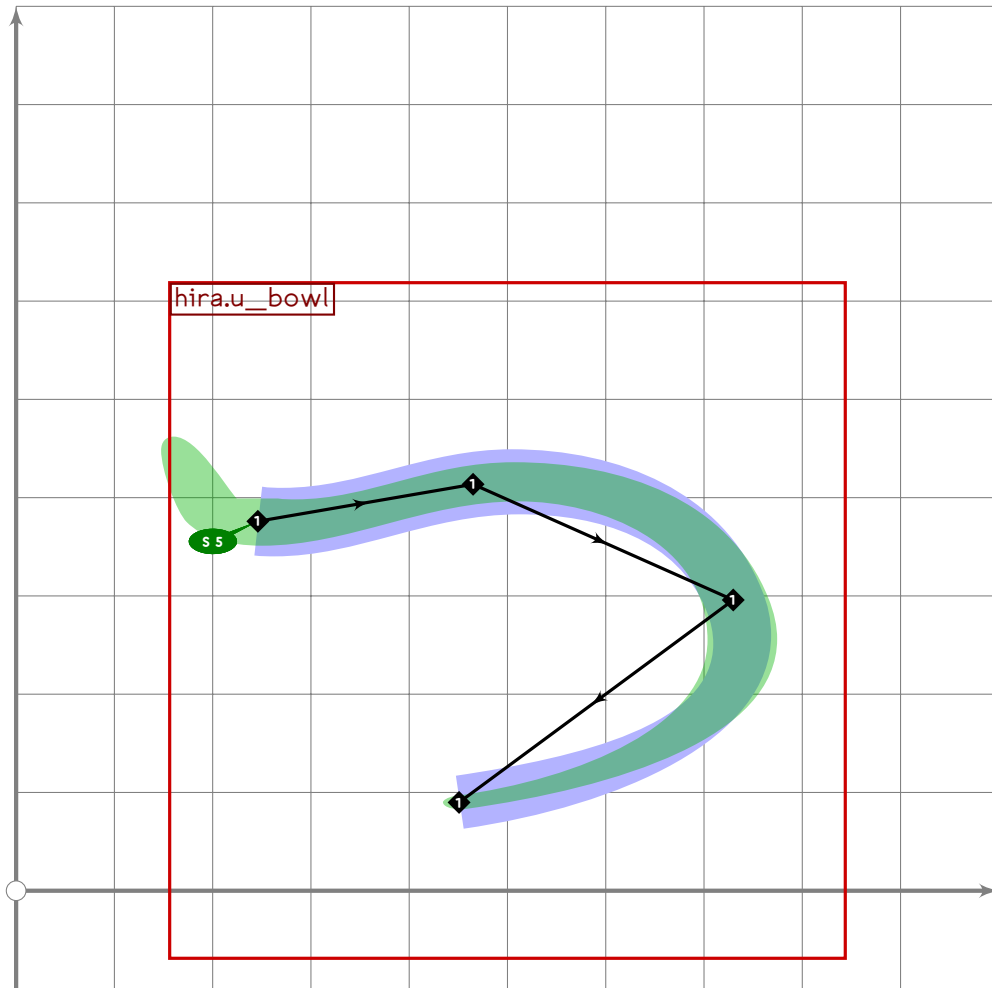
[see page 63]



```

570 % hiragana "chi"
571 begint Suglyph("uni3062";98);
572 tsu_curve.hira.chi;
573 tsu_curve.dakuten(identity rotated -20 shifted (850,710));
574 tsu_render;
575 endsuglyph;
576

```

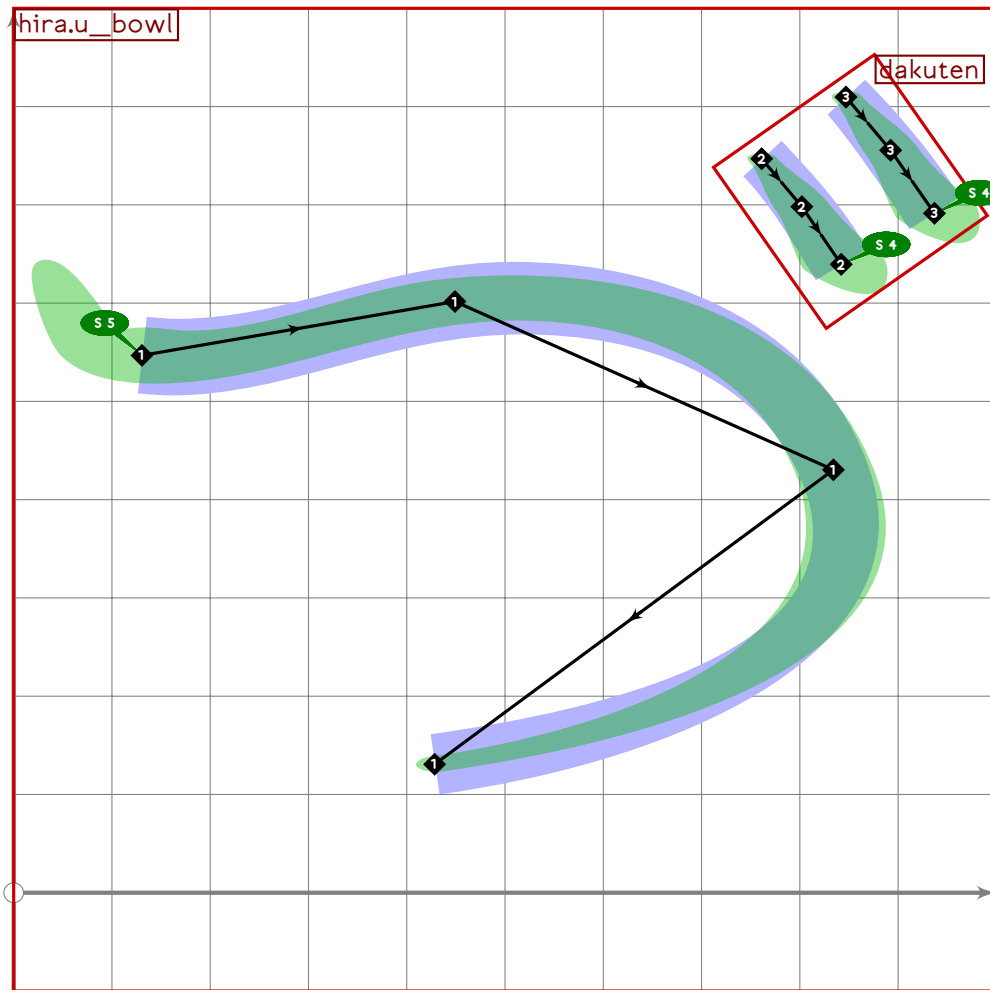


```

577 % hiragana "small tsu"
578 begint Suglyph("uni3063";99);
579 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.tsu);
580 tsu_render;
581 endtsuglyph;
582
583 % hiragana "tsu"
584 begint Suglyph("uni3064";100);
585 tsu_curve.hira.tsu;
586 tsu_render;
587 endtsuglyph;
588

```

[see page 64]

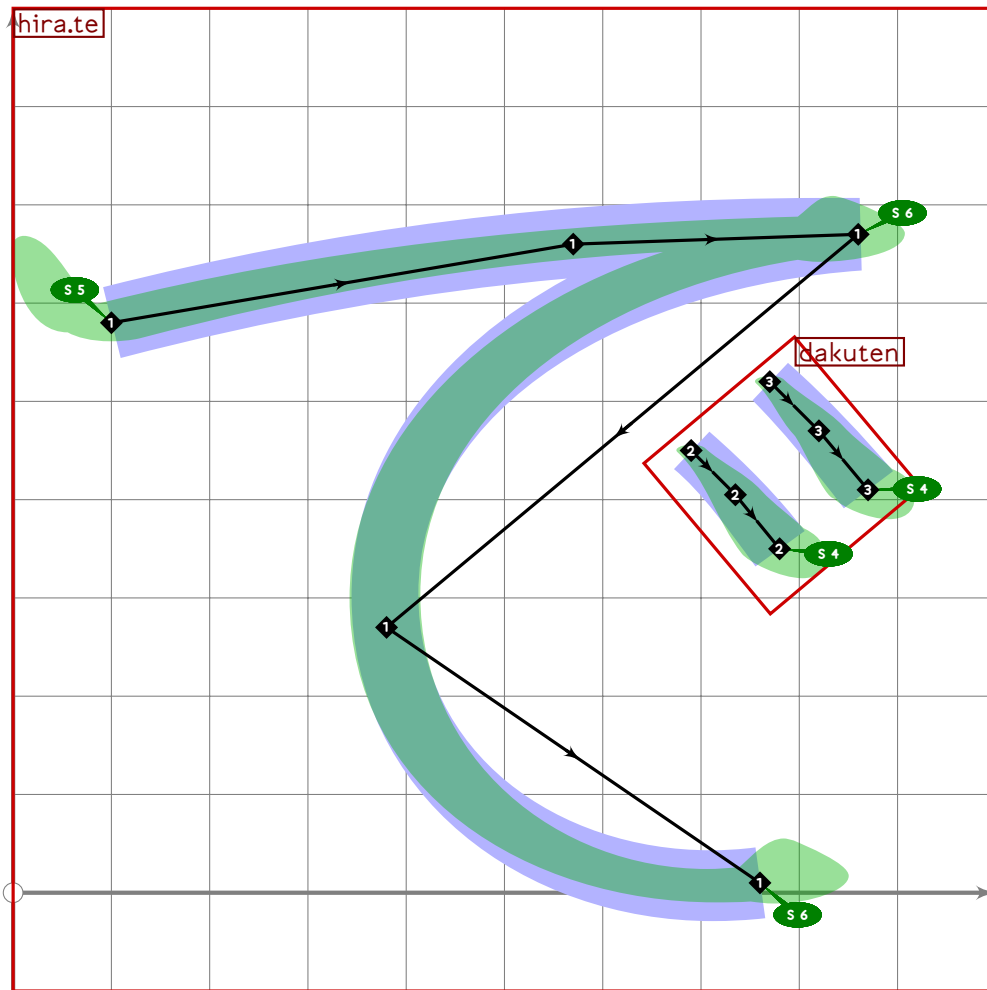


```

589 % hiragana "dzu"
590 begint Suglyph("uni3065",101);
591   tsu_curve.hira.tsu;
592   tsu_curve.dakuten(identity rotated -5 shifted (840,730));
593   tsu_render;
594 endtsuglyph;
595
596 % hiragana "te"
597 begint Suglyph("uni3066",102);
598   tsu_curve.hira.te;
599   tsu_render;
600 endtsuglyph;
601

```

[see page 65]

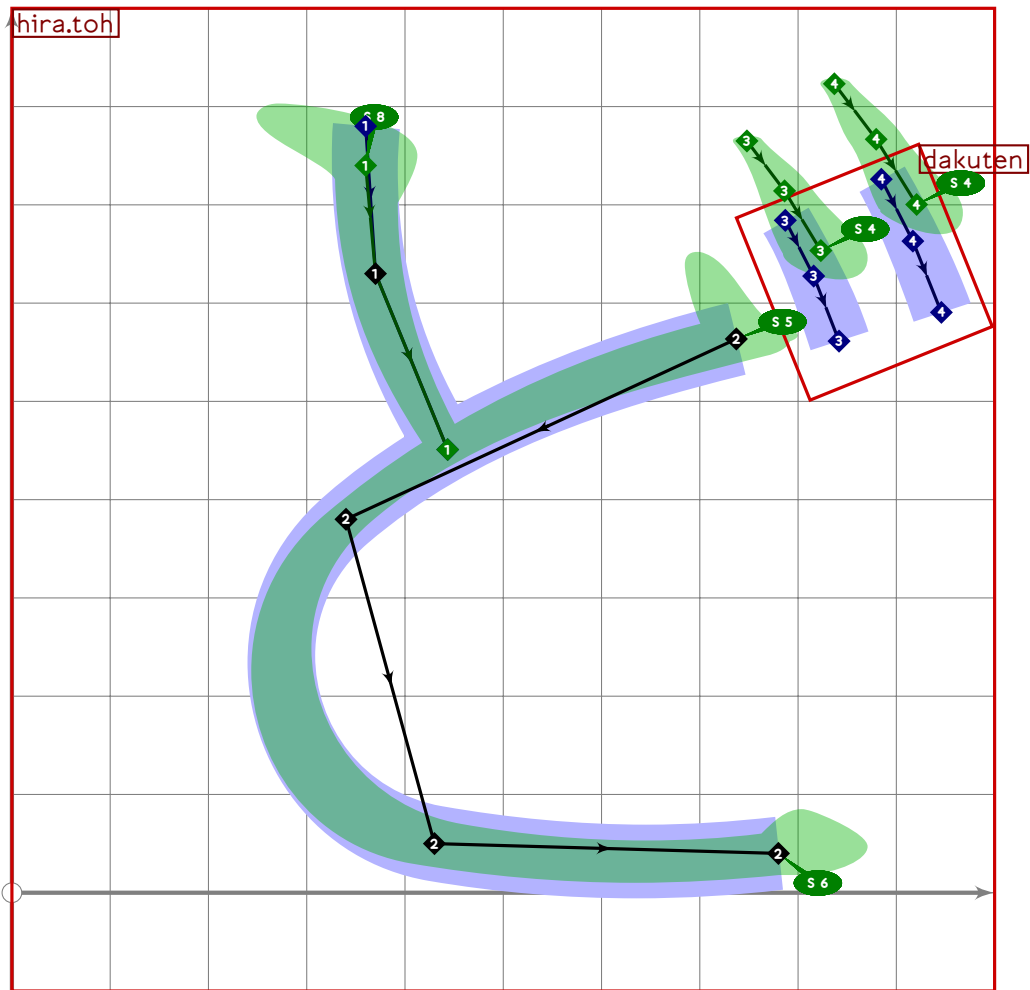


```

602 % hiragana "de"
603 begint Suglyph("uni3067";103);
604 tsu_curve.hira.te;
605 tsu_curve.dakuten(identity shifted (770,440));
606 tsu_render;
607 endtsuglyph;
608
609 % hiragana "to"
610 begint Suglyph("uni3068";104);
611 tsu_curve.hira.toh;
612 tsu_render;
613 endtsuglyph;
614

```

[see page 66]



```

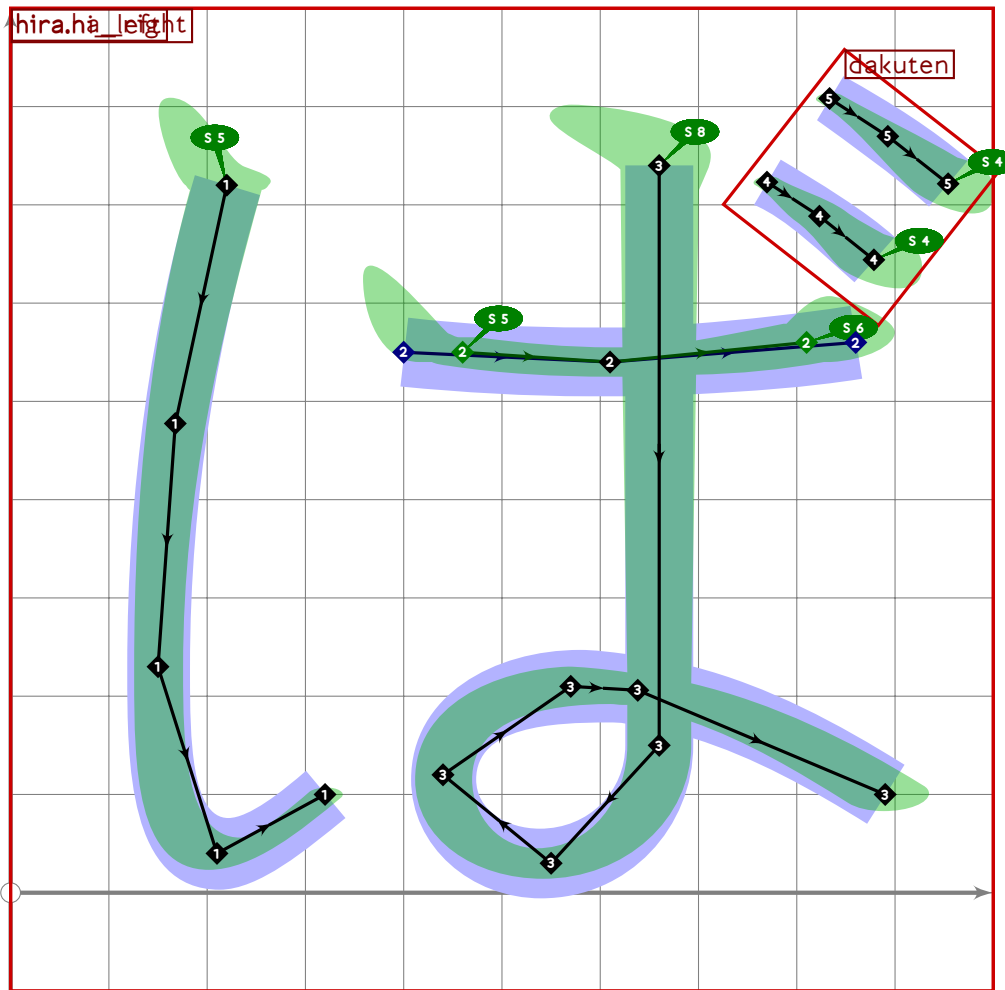
615 % hiragana "do"
616 begintsuglyph("uni3069",105);
617 tsu_curve.hira.toh;
618 bp2:=subpath (0,1,infinity) of bp2;
619 tsu_curve.dakuten(identity rotated (-18*10*mincho)
620   shifted ((860,650) shifted (100*mincho*(dir 110)))));
621 tsu_render;
622 endtsuglyph;
623
624 % hiragana "na"
625 begintsuglyph("uni306A",106);
626 tsu_curve.hira.na;
627 tsu_render;
628 endtsuglyph;
629
630 % hiragana "ni"
631 begintsuglyph("uni306B",107);
632 tsu_curve.hira.ni;
633 tsu_render;
634 endtsuglyph;
635

```

[see page 67]

[see page 68]

```
636 % hiragana "nu"
637 begintsuglyph("uni306C";108); [see page 69]
638 tsu_curve.hira.nu;
639 tsu_render;
640 endsuglyph;
641
642 % hiragana "ne"
643 begintsuglyph("uni306D";109); [see page 70]
644 tsu_curve.hira.ne;
645 tsu_render;
646 endsuglyph;
647
648 % hiragana "no"
649 begintsuglyph("uni306E";110); [see page 71]
650 tsu_curve.hira.no;
651 tsu_render;
652 endsuglyph;
653
654 % hiragana "na"
655 begintsuglyph("uni306F";111); [see page 72]
656 tsu_curve.hira.na;
657 tsu_render;
658 endsuglyph;
659
```

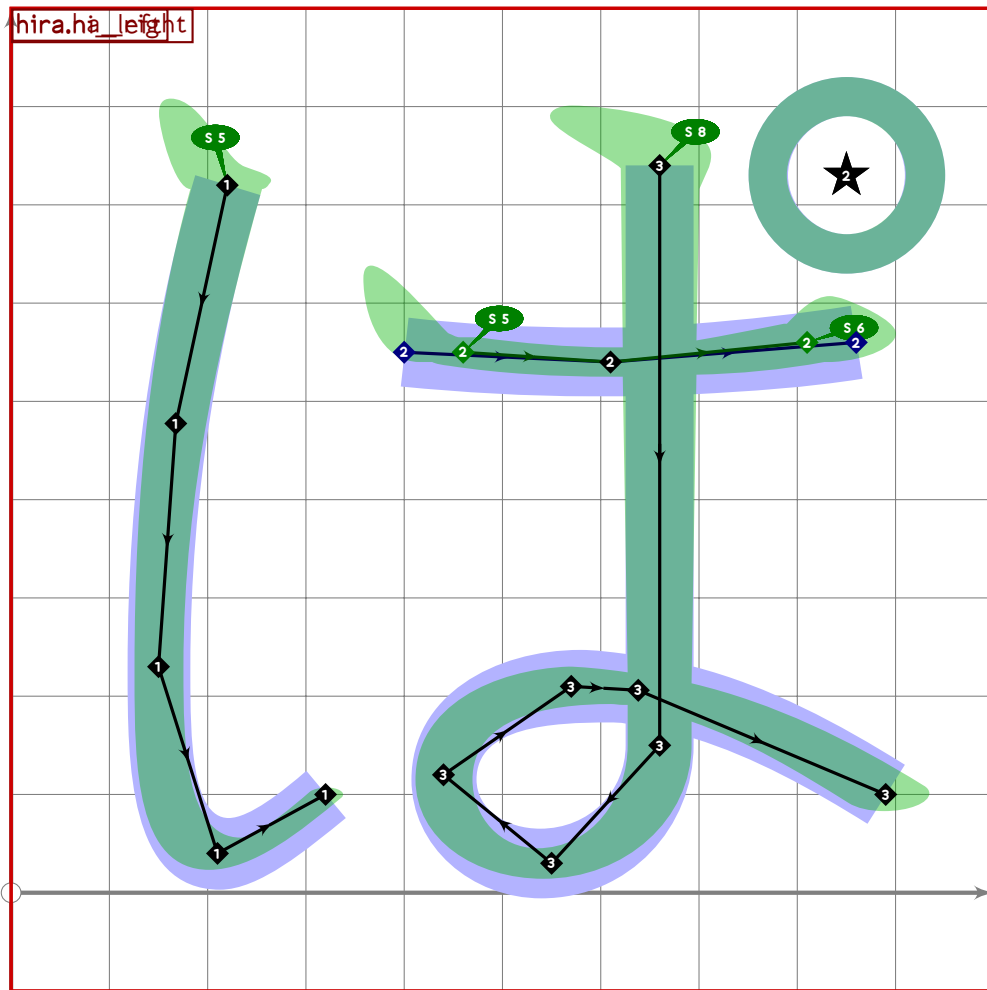


```

660 % hiragana "ba"
661 begint Suglyph("uni3070",112);
662 tsu_curve.hira.ha;
663 tsu_curve.dakuten(identity rotated 12 shifted (850,730));
664 tsu_render;
665 endsuglyph;
666

```



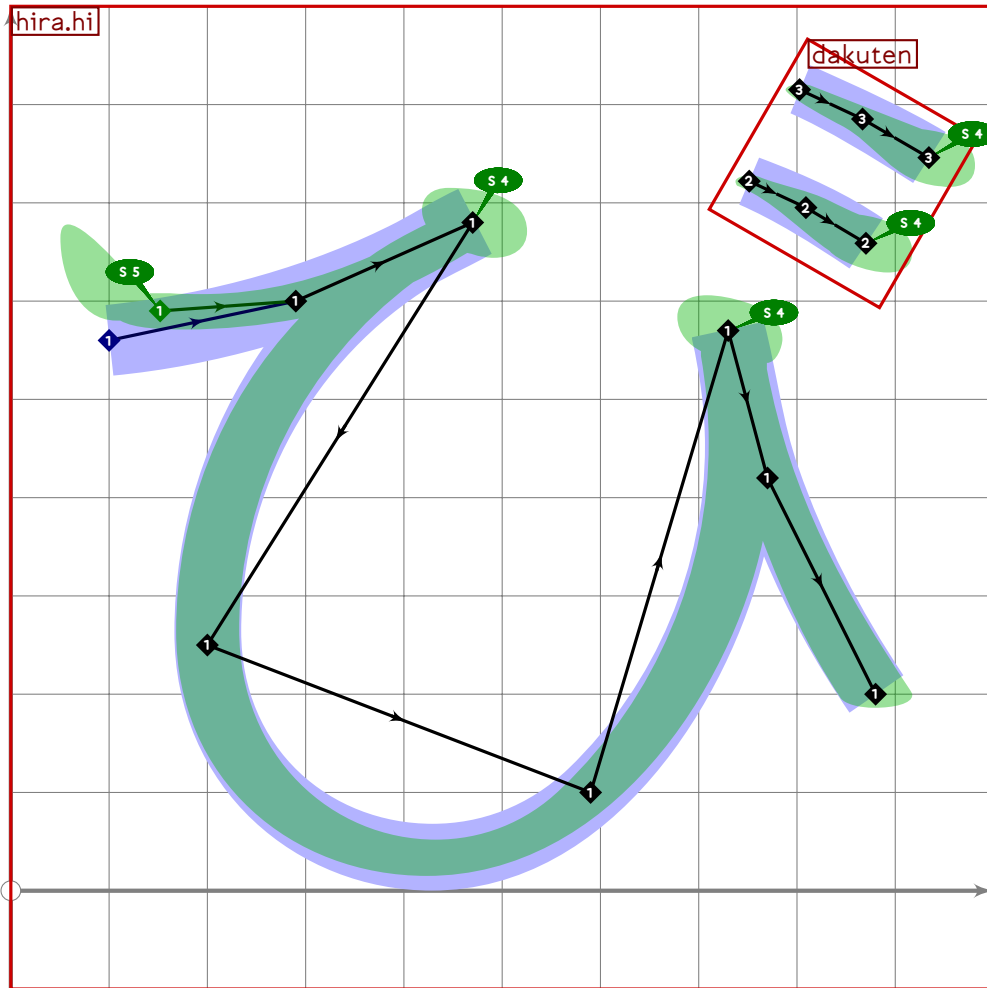


```

667 % hiragana "pa"
668 begint Suglyph("uni3071";113);
669 tsu_curve.hira.ha;
670 tsu_curve.handakuten((850,730));
671 tsu_render;
672 endsuglyph;
673
674 % hiragana "hi"
675 begint Suglyph("uni3072";114);
676 tsu_curve.hira.hi;
677 tsu_render;
678 endsuglyph;
679

```

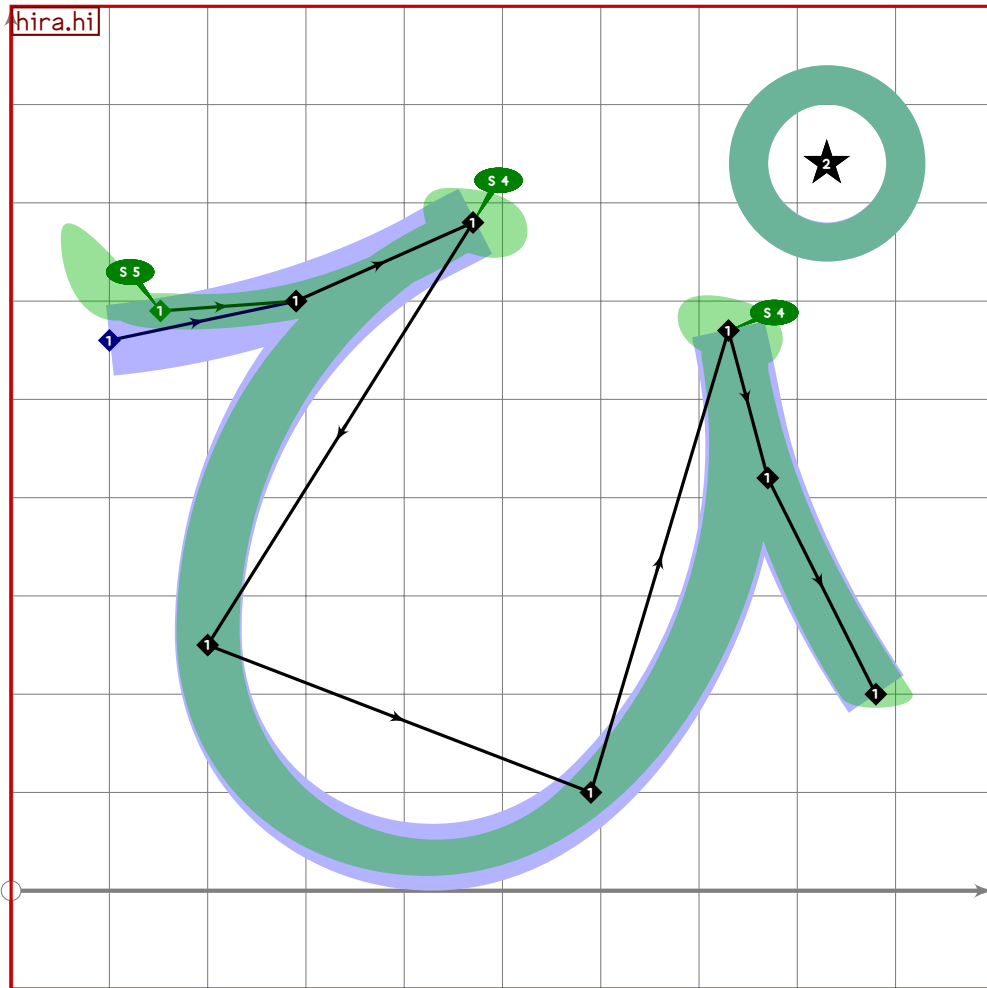
[see page 73]



```

680 % hiragana "bi"
681 begint Suglyph("uni3073",115);
682 tsu_curve.hira.hi;
683 tsu_curve.dakuten(identity rotated 20 shifted (830,740));
684 tsu_render;
685 endsuglyph;
686

```

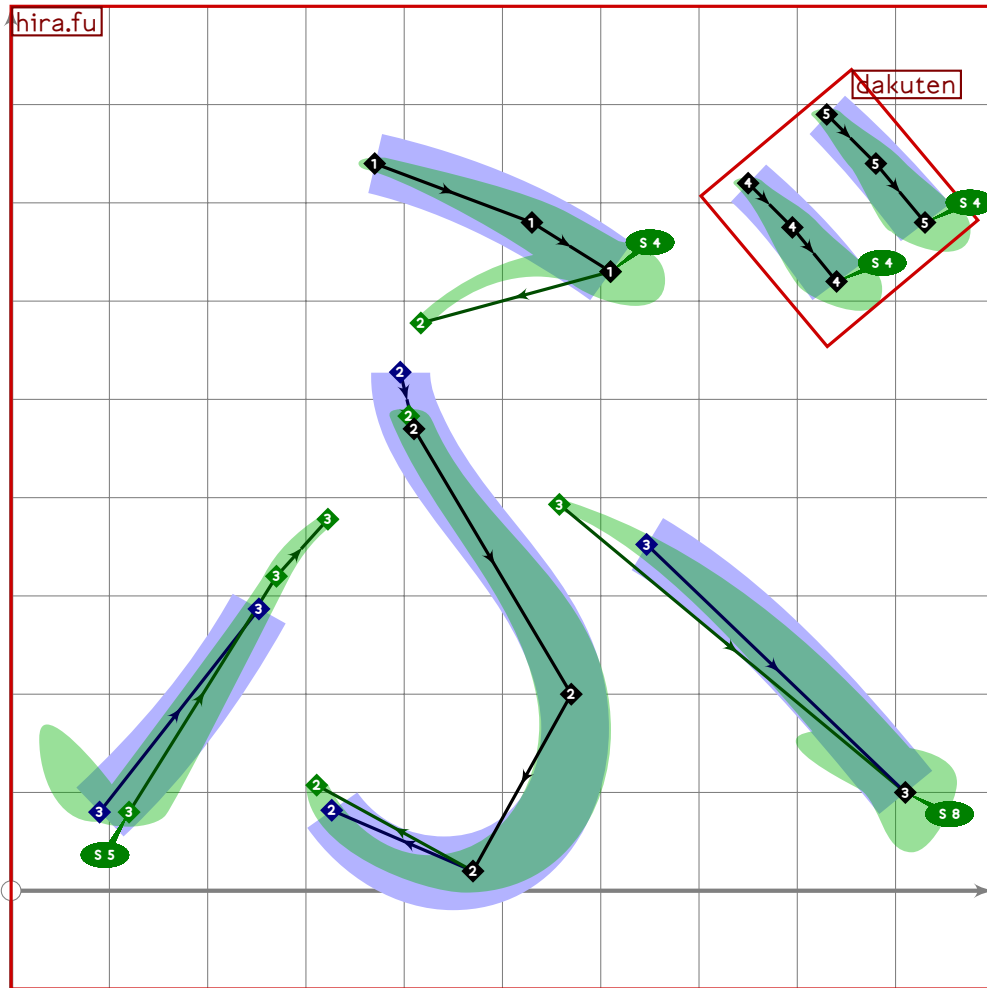


```

687 % hiragana "pi"
688 begint Suglyph("uni3074",116);
689 tsu_curve.hira.hi;
690 tsu_curve.handakuten((830,740));
691 tsu_render;
692 endsuglyph;
693
694 % hiragana "fu"
695 begint Suglyph("uni3075",117);
696 tsu_curve.hira.fu;
697 tsu_render;
698 endsuglyph;
699

```

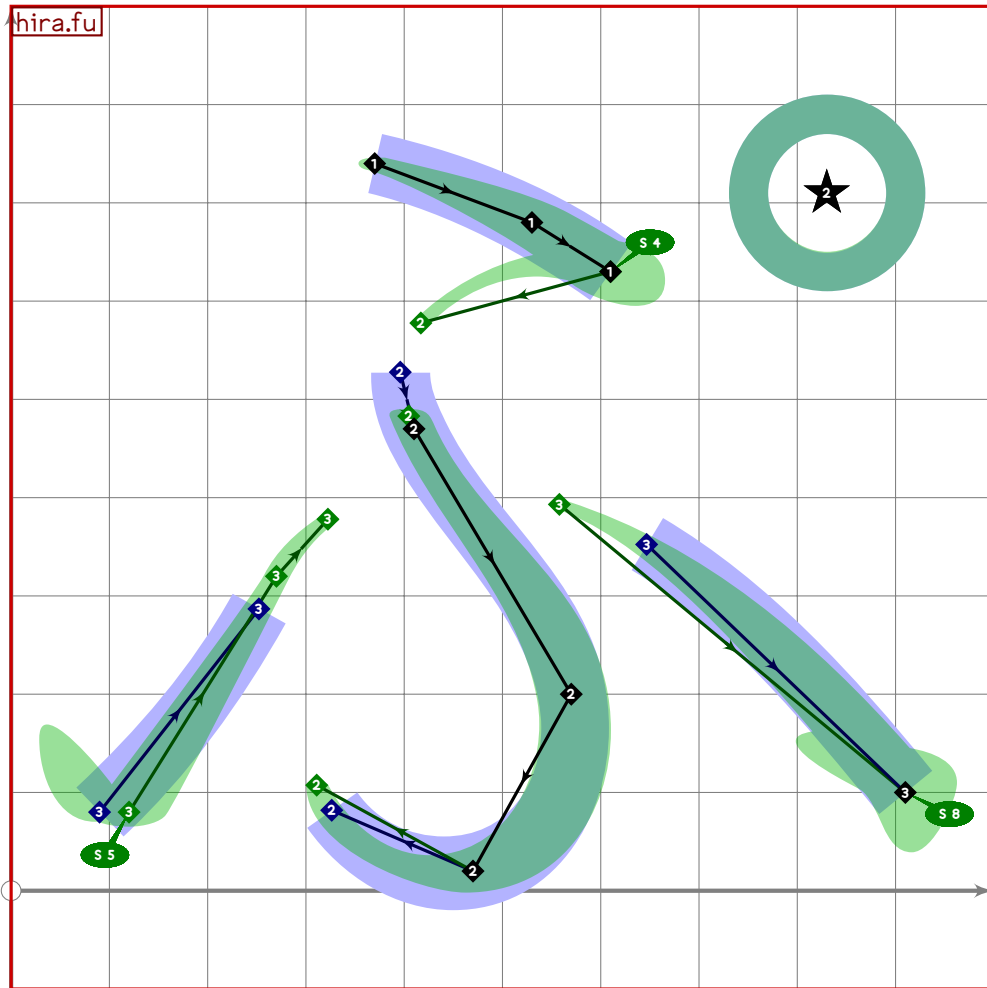
[see page 74]



```

700 % hiragana "bu"
701 begint Suglyph("uni3076";118);
702 tsu_curve.hira.fu;
703 tsu_curve.dakuten(identity shifted (830,710));
704 tsu_render;
705 endsuglyph;
706

```

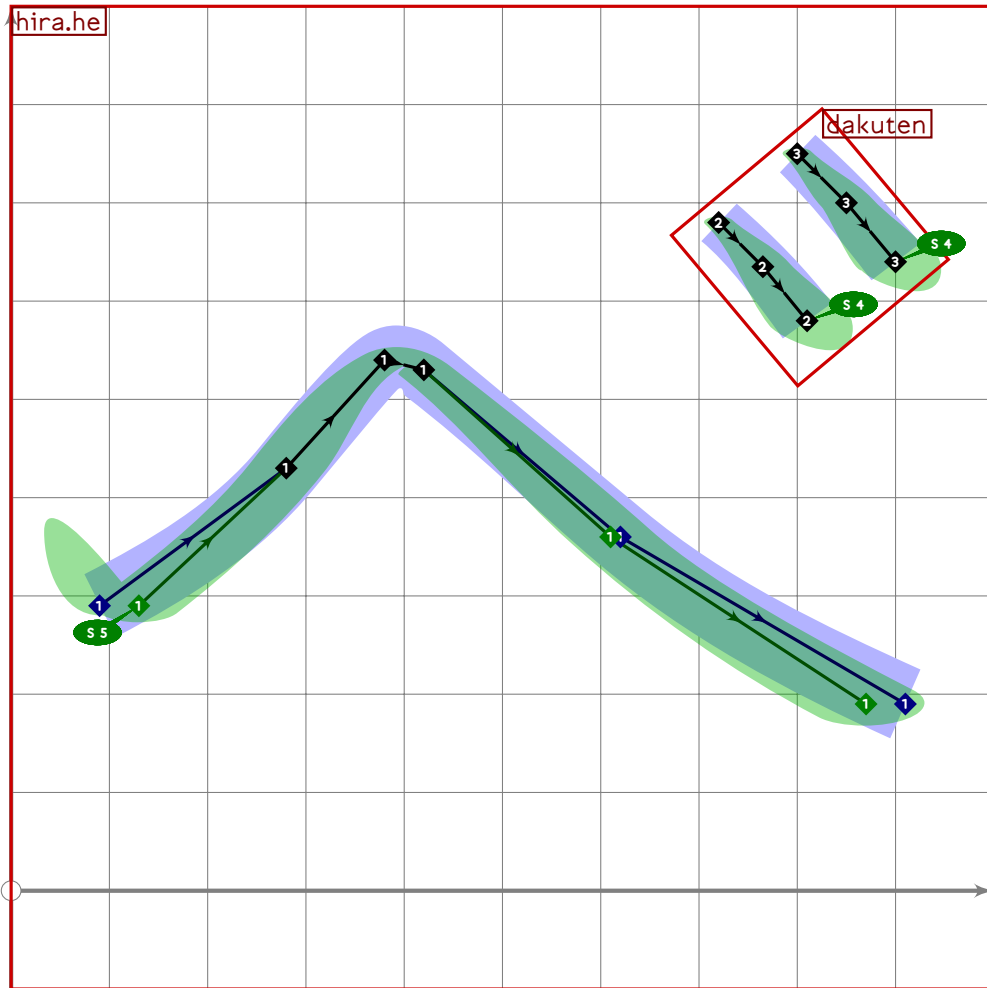


```

707 % hiragana "pu"
708 begint Suglyph("uni3077",119);
709 tsu_curve.hira.fu;
710 tsu_curve.handakuten((830,710));
711 tsu_render;
712 endtsuglyph;
713
714 % hiragana "he"
715 begint Suglyph("uni3078",120);
716 tsu_curve.hira.he;
717 tsu_render;
718 endtsuglyph;
719

```

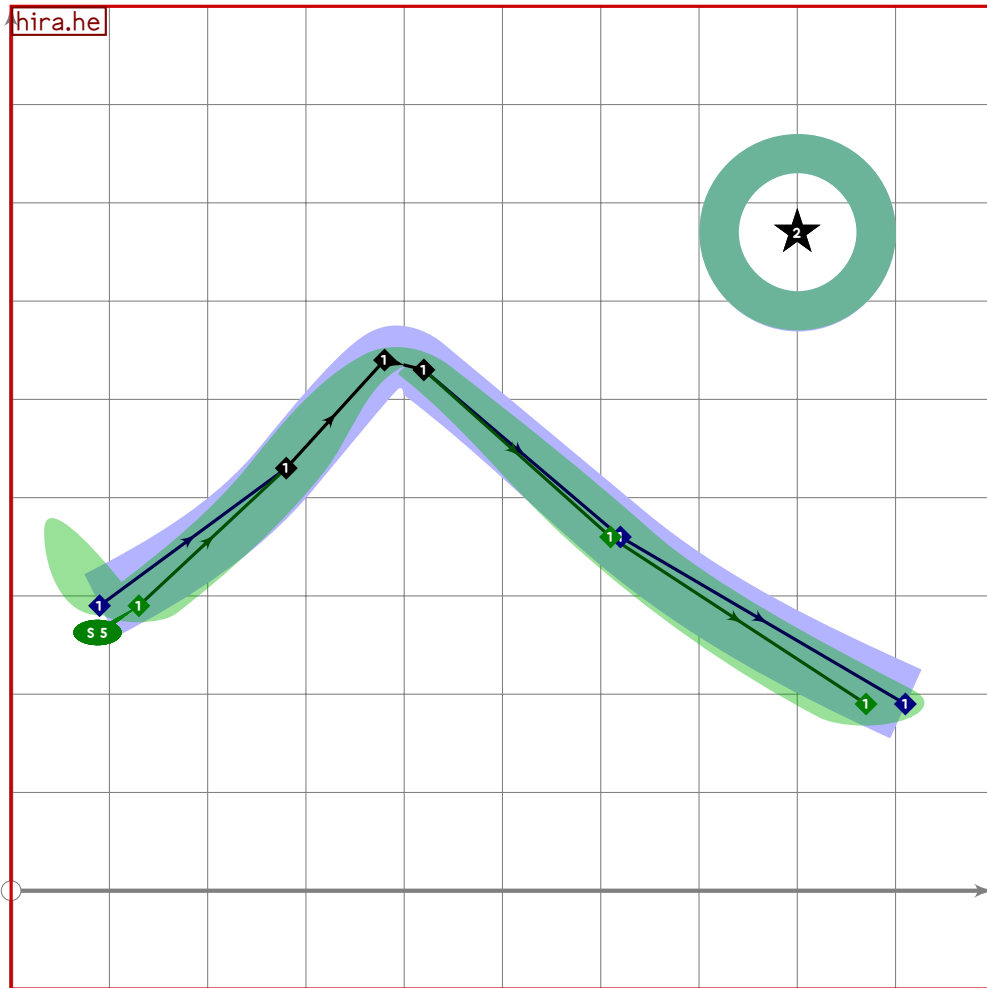
[see page 75]



```

720 % hiragana "be"
721 begint Suglyph("uni3079",121);
722 tsu_curve.hira.he;
723 tsu_curve.dakuten(identity shifted (800,670));
724 tsu_render;
725 endsuglyph;
726

```

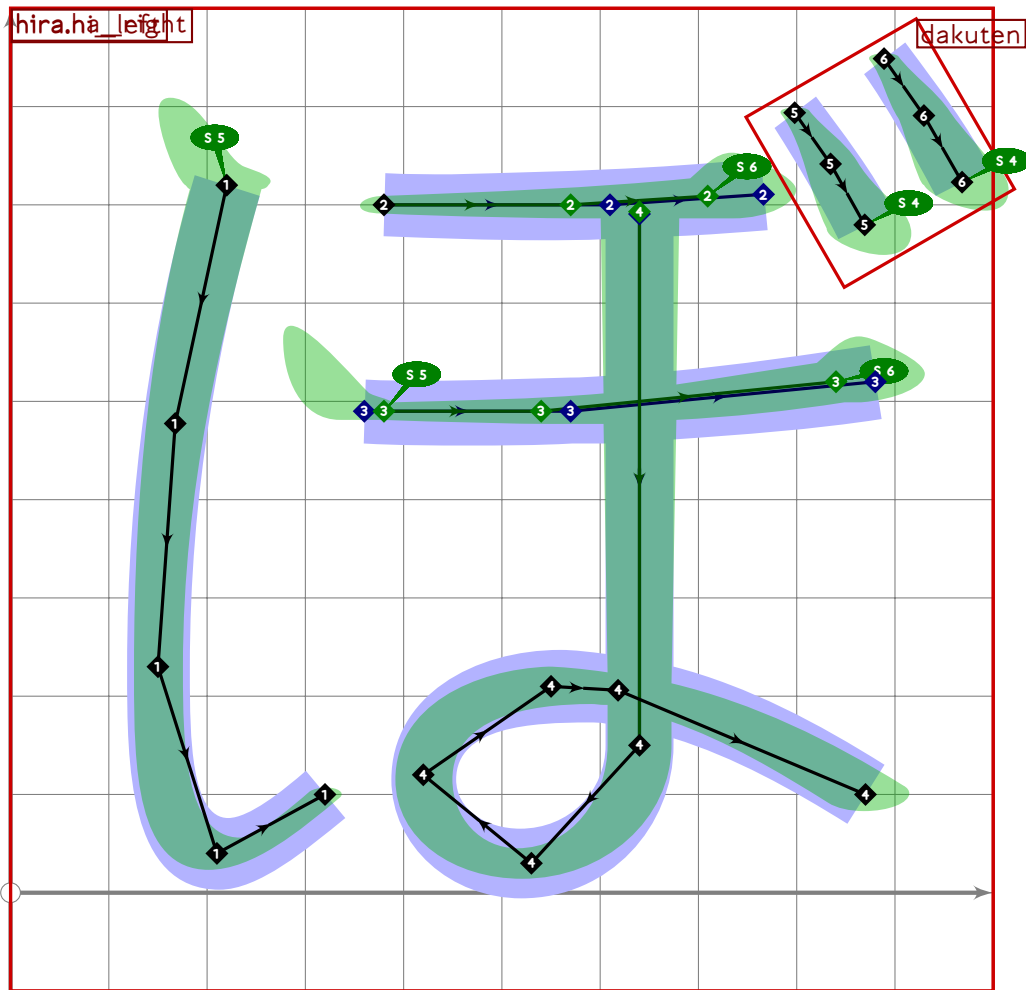


```

727 % hiragana "pe"
728 begint Suglyph("uni307A",122);
729   tsu_curve.hira.he;
730   tsu_curve.handakuten((800,670));
731   tsu_render;
732 endsuglyph;
733
734 % hiragana "ho"
735 begint Suglyph("uni307B",123);
736   tsu_curve.hira.ho;
737   tsu_render;
738 endsuglyph;
739

```

[see page 76]

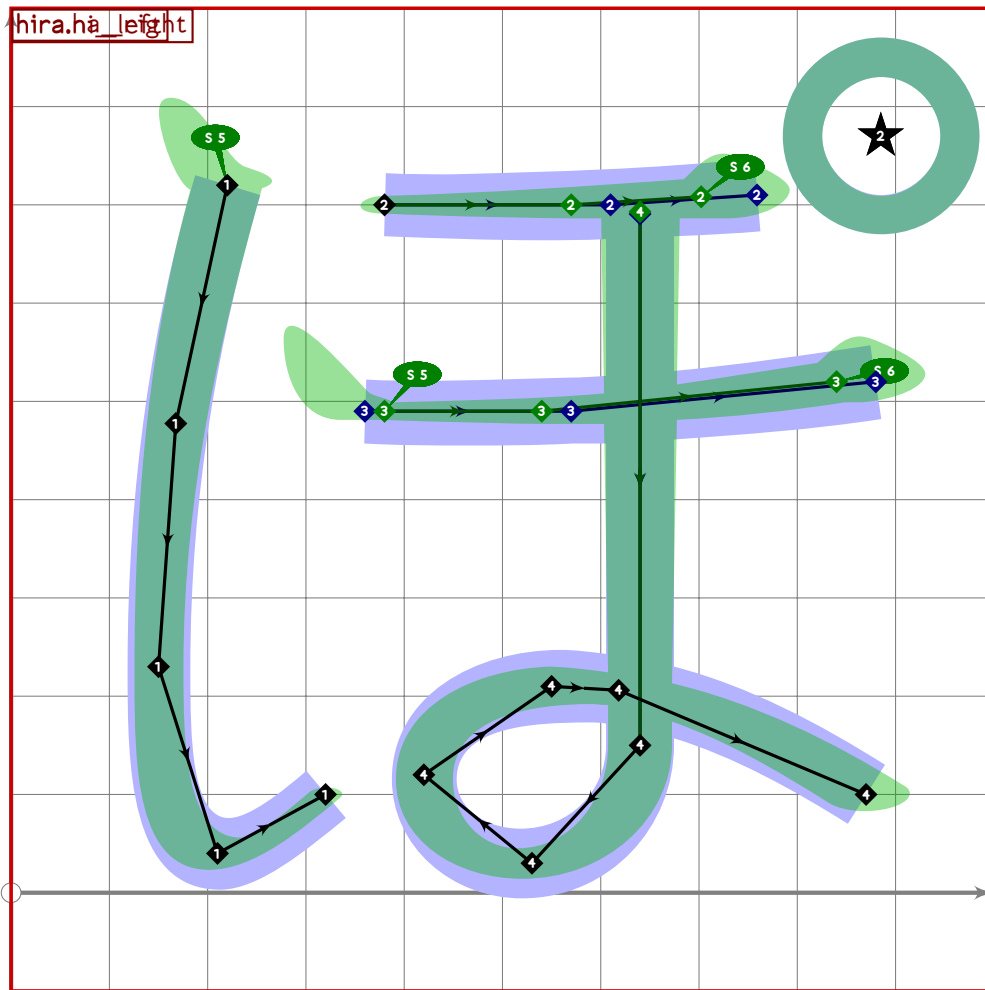


```

740 % hiragana "bo"
741 beginsuglyph("uni307C",124);
742 tsu_curve.hira.ho;
743 bp2:=subpath (0,1.65-0.07*mincho) of bp2;
744 bp4:=bp4 shifted (-20,0);
745 tsu_curve.dakuten(identity rotated -10 shifted (875,770));
746 tsu_render;
747 endsuglyph;
748

```





```

749 % hiragana "po"
750 begintsuglyph("uni307D",125);
751 tsu_curve.hira.ho;
752 bp2:=subpath (0,1.62-0.07*mincho) of bp2;
753 bp4:=bp4 shifted (-20,0);
754 tsu_curve.handakuten((885,770));
755 tsu_render;
756 endtsuglyph;
757
758 % hiragana "ma"
759 begintsuglyph("uni307E",126);
760 tsu_curve.hira.ma;
761 tsu_render;
762 endtsuglyph;
763
764 % hiragana "mi"
765 begintsuglyph("uni307F",127);
766 tsu_curve.hira.mi;
767 tsu_render;
768 endtsuglyph;
769

```

[see page 77]

[see page 79]

```

770 % hiragana "mu"
771 begintsuglyph("uni3080";128);
772 tsu_curve.hira.mu;
773 tsu_render;
774 endtsuglyph;

```

[see page 80]

```

775
776 % hiragana "me"
777 begintsuglyph("uni3081";129);
778 tsu_curve.hira.me;
779 tsu_render;
780 endtsuglyph;

```

[see page 81]

```

781
782 % hiragana "mo"
783 begintsuglyph("uni3082";130);
784 tsu_curve.hira.mo;
785 tsu_render;
786 endtsuglyph;

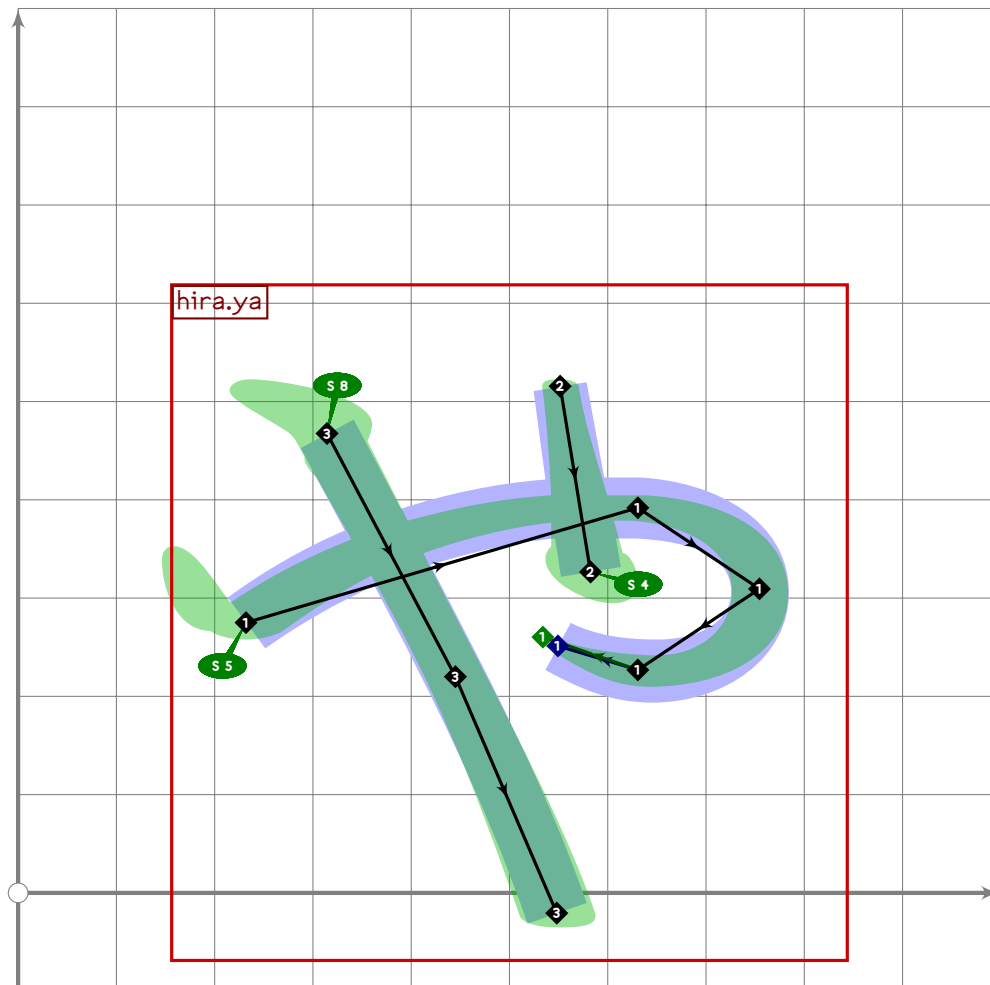
```

[see page 82]

```

787

```



```

788 % hiragana "small ya"
789 begintsuglyph("uni3083";131);
790 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.ya);

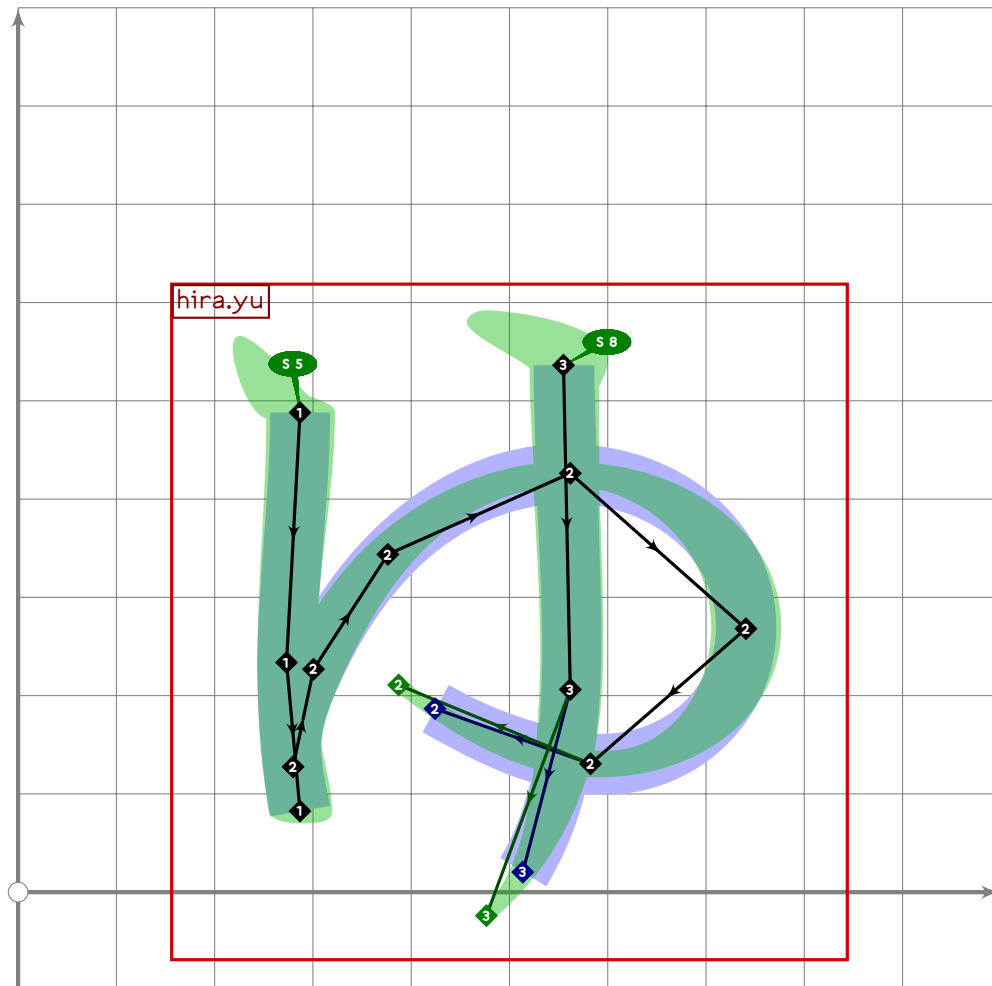
```

```

791 tsu_render;
792 endtsuglyph;
793
794 % hiragana "ya"
795 begintsuglyph("uni3084",132);
796 tsu_curve.hira.ya;
797 tsu_render;
798 endtsuglyph;
799

```

[see page 83]

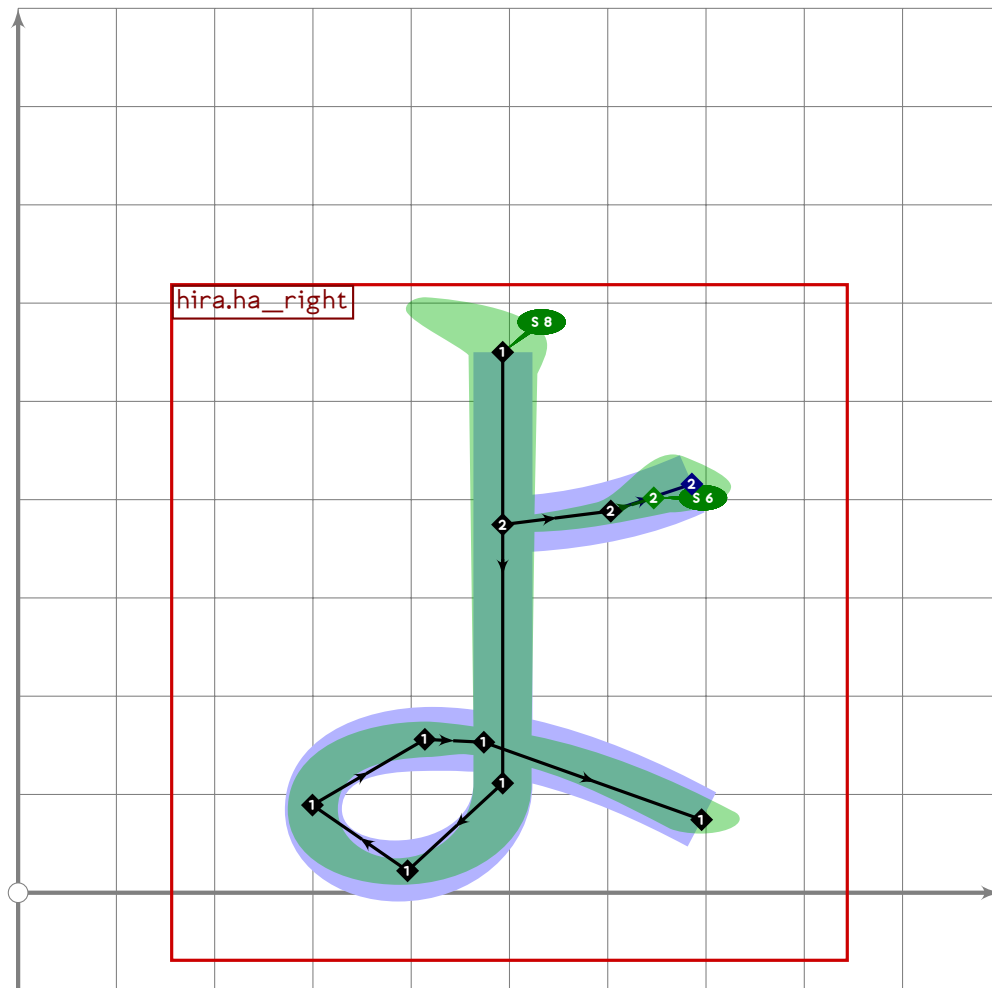


```

800 % hiragana "small yu"
801 begintsuglyph("uni3085",133);
802 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.yu);
803 tsu_render;
804 endtsuglyph;
805
806 % hiragana "yu"
807 begintsuglyph("uni3086",134);
808 tsu_curve.hira.yu;
809 tsu_render;
810 endtsuglyph;
811

```

[see page 84]



```

812 % hiragana "small yo"
813 begintsuglyph("uni3087";135);
814 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.yo);
815 tsu_render;
816 endtsuglyph;

```

817

```

818 begintsuglyph("uni3088";136);
819 tsu_curve.hira.yo;
820 tsu_render;
821 endtsuglyph;

```

[see page 85]

822

```

823 % hiragana "ra"
824 begintsuglyph("uni3089";137);
825 tsu_curve.hira.ra;
826 tsu_render;
827 endtsuglyph;

```

[see page 86]

828

```

829 % hiragana "ri"
830 begintsuglyph("uni308A";138);
831 tsu_curve.hira.ri;
832 tsu_render;

```

[see page 87]

```

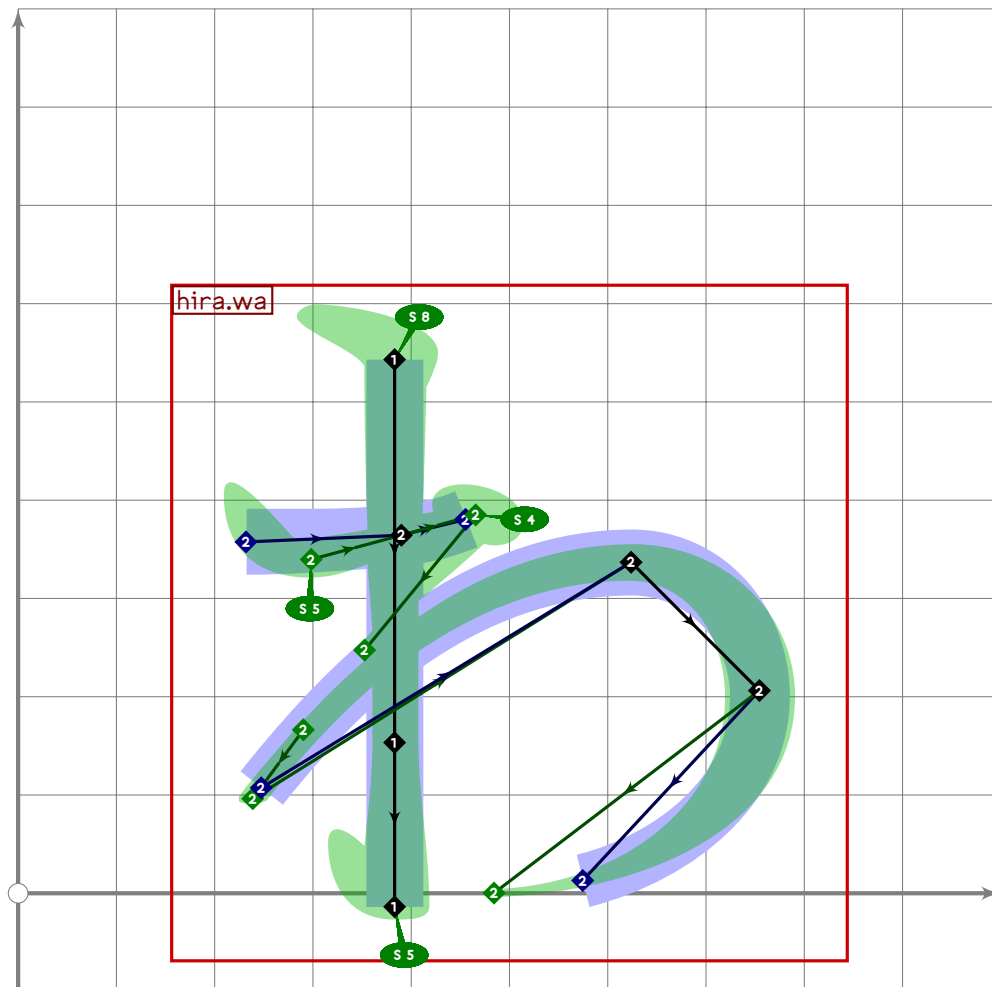
833 endtsuglyph;
834
835 % hiragana "ru"
836 begintsuglyph("uni308B";139);
837 tsu_curve.hira.ru;
838 tsu_render;
839 endtsuglyph;
840
841 % hiragana "re"
842 begintsuglyph("uni308C";140);
843 tsu_curve.hira.re;
844 tsu_render;
845 endtsuglyph;
846
847 % hiragana "ro"
848 begintsuglyph("uni308D";141);
849 tsu_curve.hira.ro;
850 tsu_render;
851 endtsuglyph;
852

```

[see page 88]

[see page 89]

[see page 90]



```

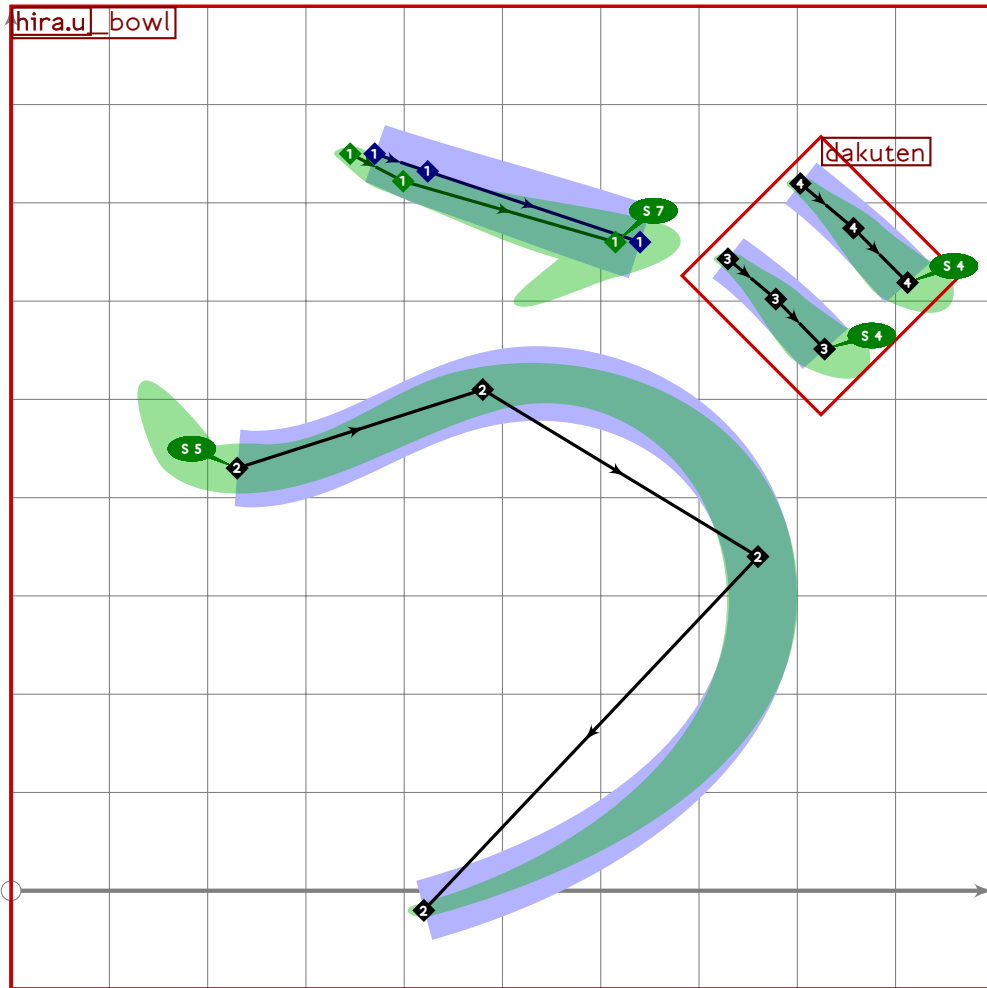
853 % hiragana "small wa"

```

```

854 begintsuglyph("uni308E",142);
855 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.wa);
856 tsu_render;
857 endtsuglyph;
858
859 % hiragana "wa"
860 begintsuglyph("uni308F",143); [see page 91]
861 tsu_curve.hira.wa;
862 tsu_render;
863 endtsuglyph;
864
865 % obsolete hiragana "wi"
866 begintsuglyph("uni3090",144); [see page 92]
867 tsu_curve.hira.wi;
868 tsu_render;
869 endtsuglyph;
870
871 % obsolete hiragana "we"
872 begintsuglyph("uni3091",145); [see page 93]
873 tsu_curve.hira.we;
874 tsu_render;
875 endtsuglyph;
876
877 % hiragana "wo"
878 begintsuglyph("uni3092",146); [see page 94]
879 tsu_curve.hira.wo;
880 tsu_render;
881 endtsuglyph;
882
883 % hiragana "n"
884 begintsuglyph("uni3093",147); [see page 95]
885 tsu_curve.hira.n;
886 tsu_render;
887 endtsuglyph;
888

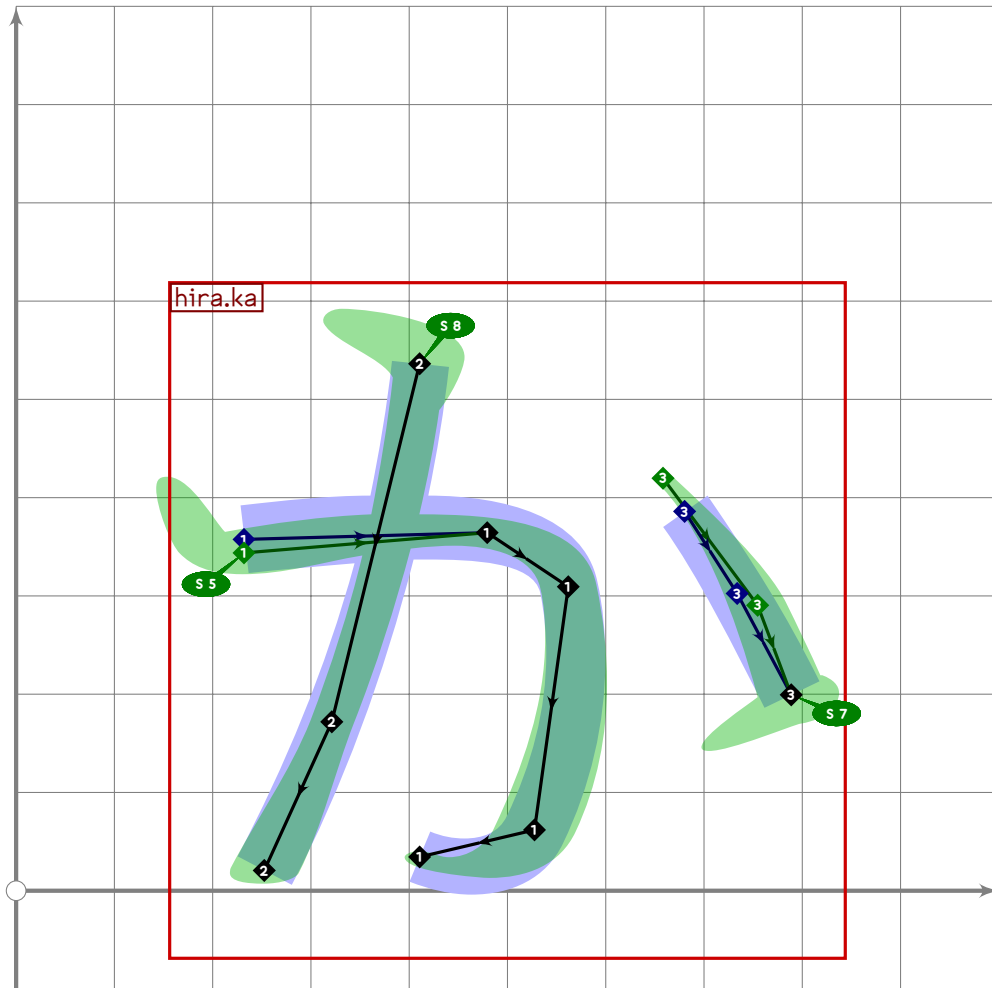
```



```

889 % hiragana "vu"
890 begint Suglyph("uni3094",148);
891   tsu_curve.hira.u;
892   tsu_curve.dakuten(identity rotated 5 shifted (810,640));
893   tsu_render;
894 endsuglyph;
895

```

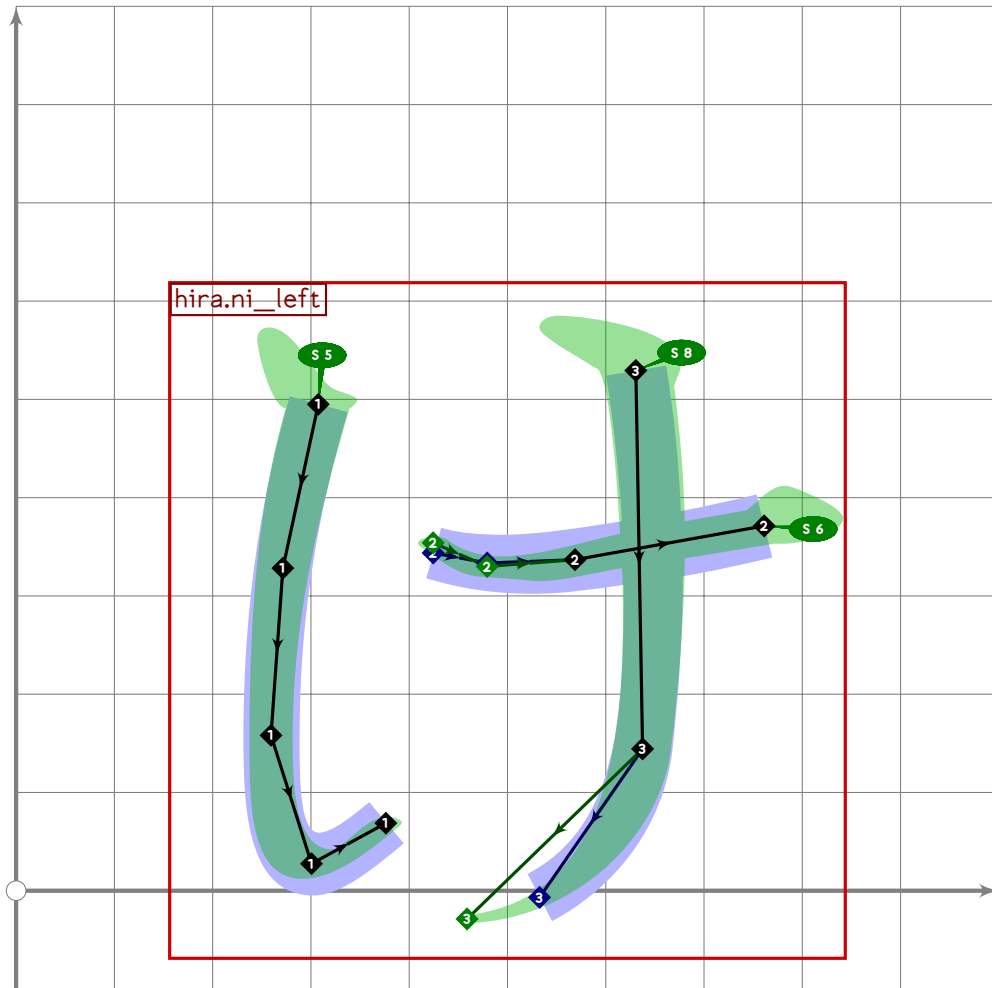


```

896 % hiragana "small ka"
897 begint Suglyph("uni3095";149);
898 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.ka);
899 tsu_render;
900 endsuglyph;
901

```





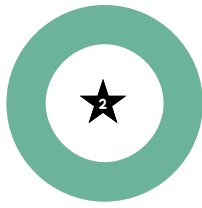
```

902 % hiragana "small ke"
903 begint Suglyph("uni3096",150);
904 tsu_xform(tsu_xf.smallkana)(tsu_curve.hira.ke);
905 tsu_render;
906 endsuglyph;
907
908 % WARNING changing rescale setting
909 tsu_rescale_native_zero;
910

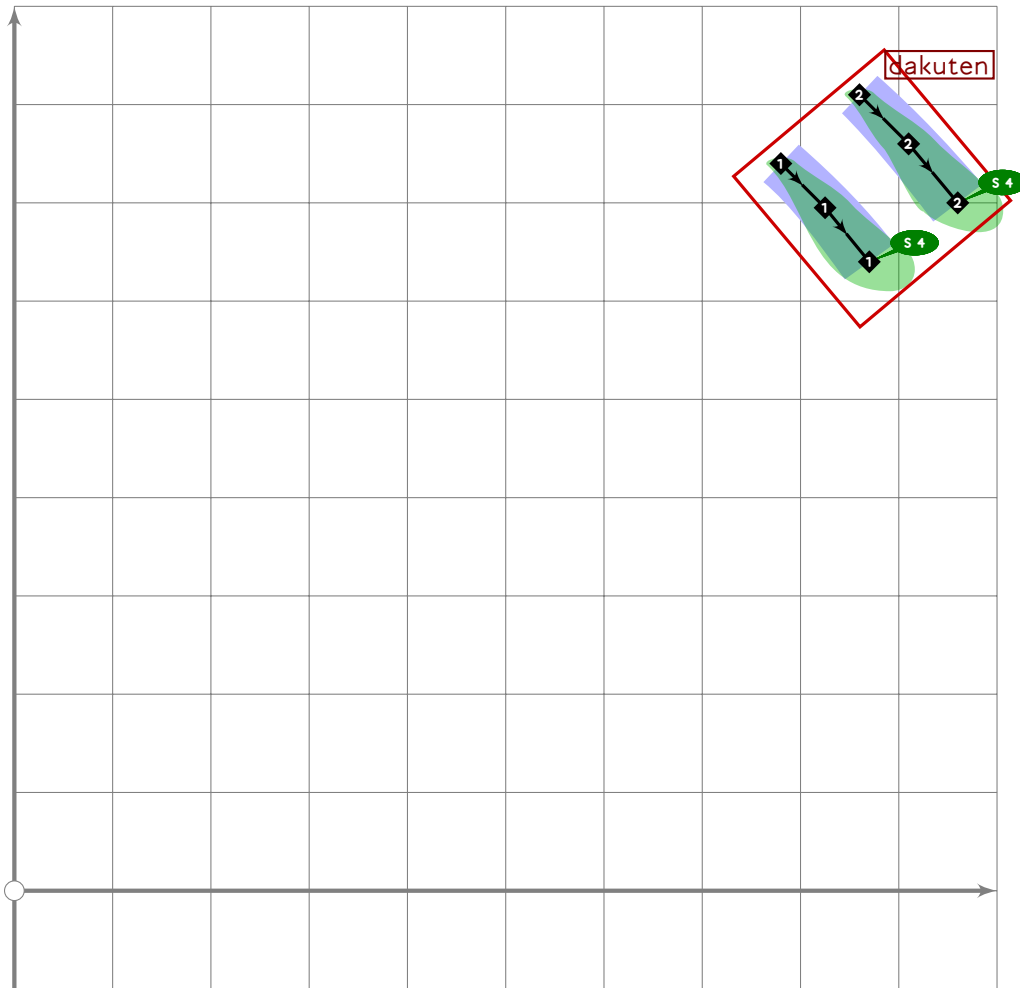
```



```
911 % combining dakuten
912 begintsuglyph("uni3099",153);
913 tsu_curve.dakuten(identity shifted (-140,730));
914 tsu_render;
915 endsuglyph;
916
```



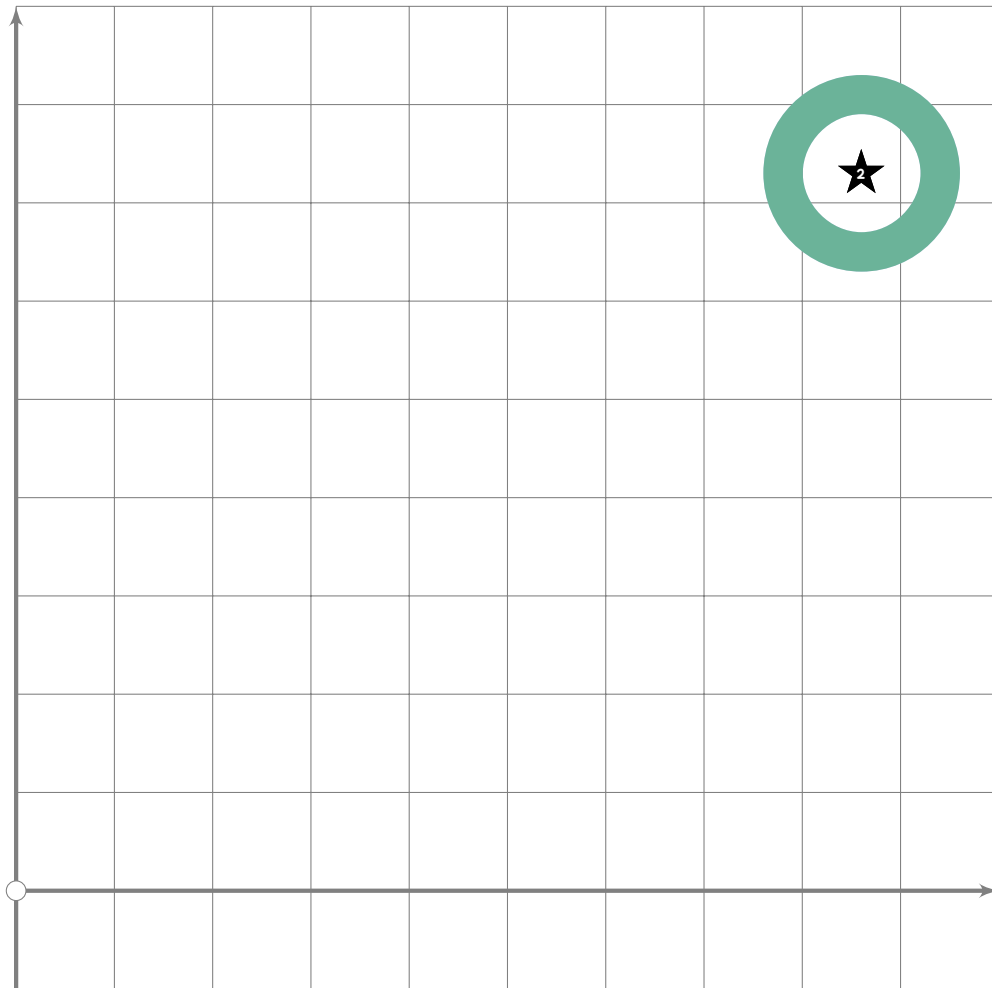
```
917 % combining handakuten
918 begintsuglyph("uni309A",154);
919 tsu_curve.handakuten((-140,730));
920 tsu_render;
921 endsuglyph;
922
923 % WARNING changing rescale setting
924 tsu_rescale_full;
925
```



```

926 % dakuten alone
927 begint Suglyph("uni309B",155);
928   tsu_curve.dakuten(identity shifted (860,730));
929   tsu_render;
930 endsuglyph;
931

```

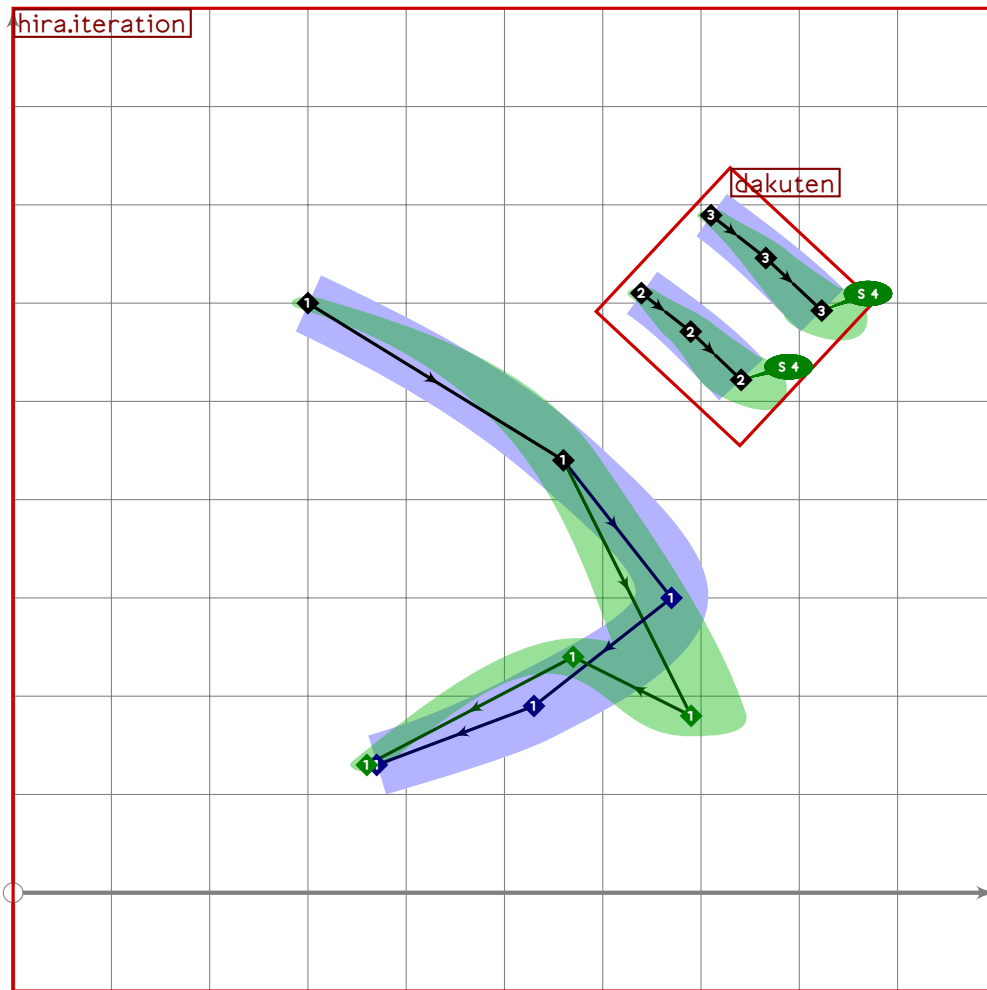


```

932 % handakuten alone
933 begintsuglyph("uni309C";156);
934 tsu_curve.handakuten((860,730));
935 tsu_render;
936 endsuglyph;
937
938 % hiragana "iteration mark"
939 begintsuglyph("uni309D";157);
940 tsu_curve.hira.iteration;
941 tsu_render;
942 endsuglyph;
943

```

[see page 96]



```

944 % hiragana "voiced iteration mark"
945 begintsuglyph("uni309E",158);
946 tsu_curve.hira.iteration;
947 tsu_curve.dakuten(identity rotated 7 shifted (720,610));
948 tsu_render;
949 endsuglyph;

```

950

```

951 % hiragana "yori ligature"
952 begintsuglyph("uni309F",159);
953 tsu_curve.hira.yori;
954 tsu_render;
955 endsuglyph;

```

[see page 97]

956

957

958

## Katakana

```

959 % KATAKANA
960
961 % katakana double hyphen
962 begintsuglyph("uni30A0",160);

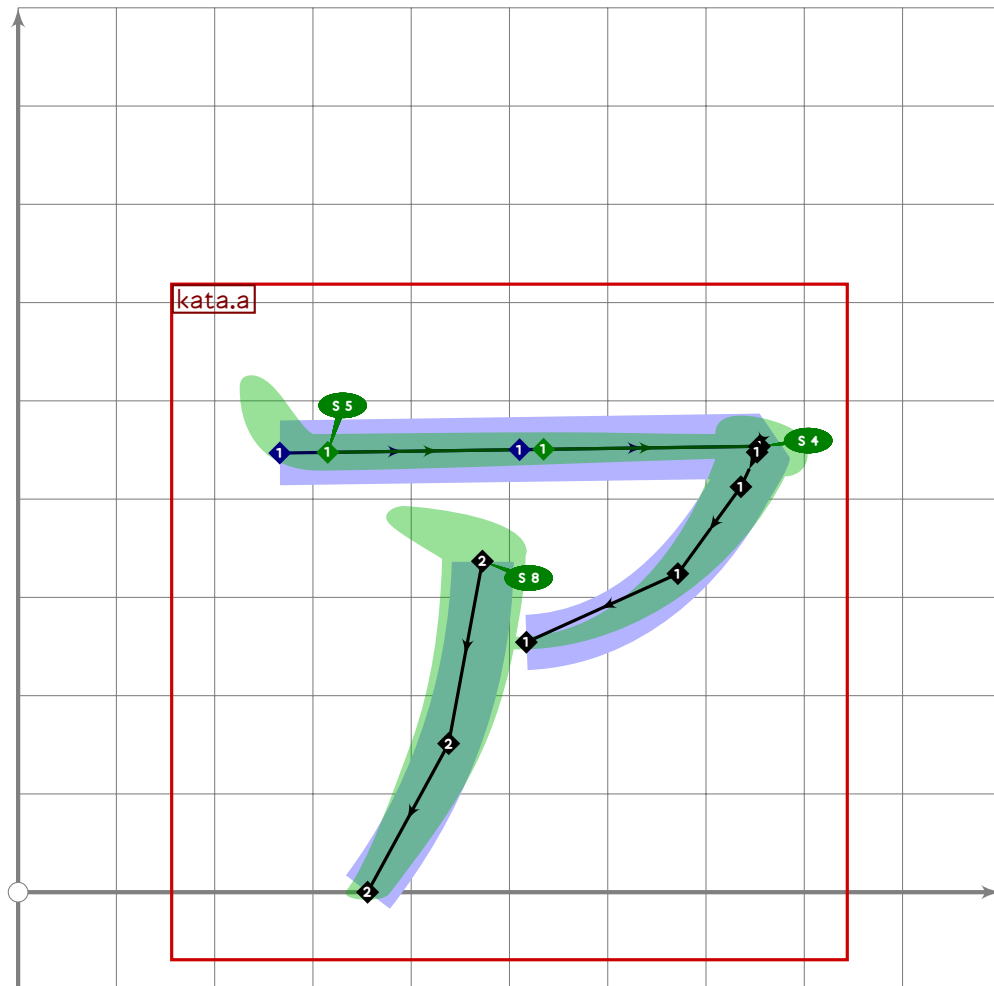
```

[see page 264]

```

963 tsu_curve.punct.dash.double_hyphen;
964 tsu_render;
965 endtsuglyph;
966

```

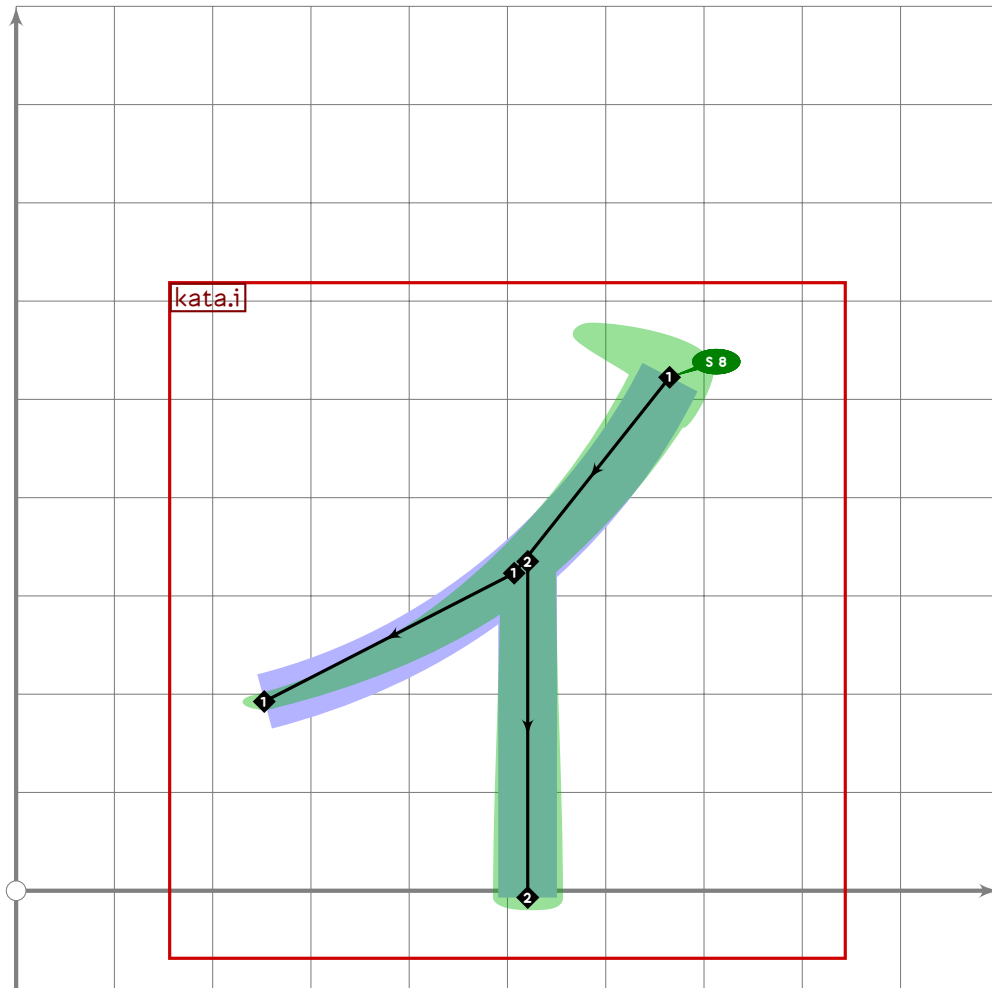


```

967 % katakana "small a"
968 begintsuglyph("uni30A1";161);
969 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.a);
970 tsu_render;
971 endtsuglyph;
972
973 % katakana "a"
974 begintsuglyph("uni30A2";162);
975 tsu_curve.kata.a;
976 tsu_render;
977 endtsuglyph;
978

```

[see page 100]



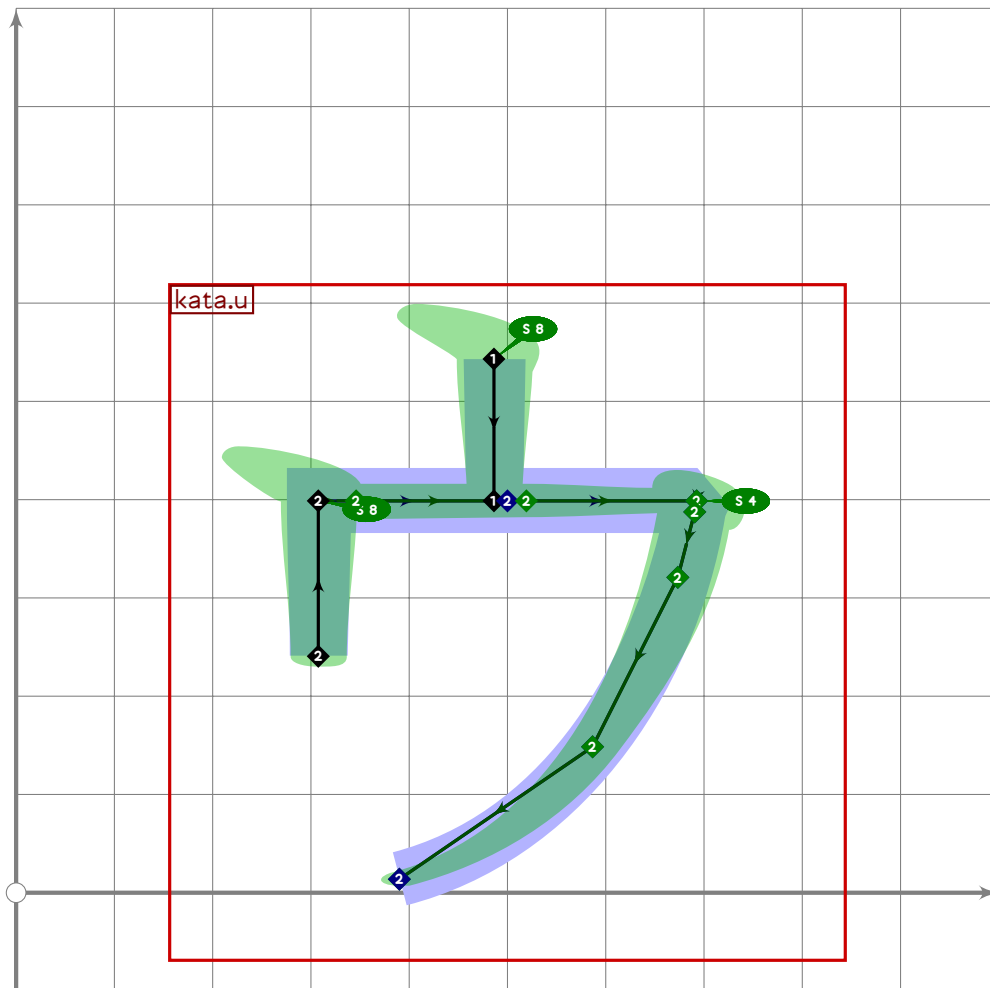
```

979 % katakana "small i"
980 begintsuglyph("uni30A3",163);
981 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.i);
982 tsu_render;
983 endtsuglyph;
984
985 % katakana "i"
986 begintsuglyph("uni30A4",164);
987 tsu_curve.kata.i;
988 tsu_render;
989 endtsuglyph;
990

```

[see page 101]



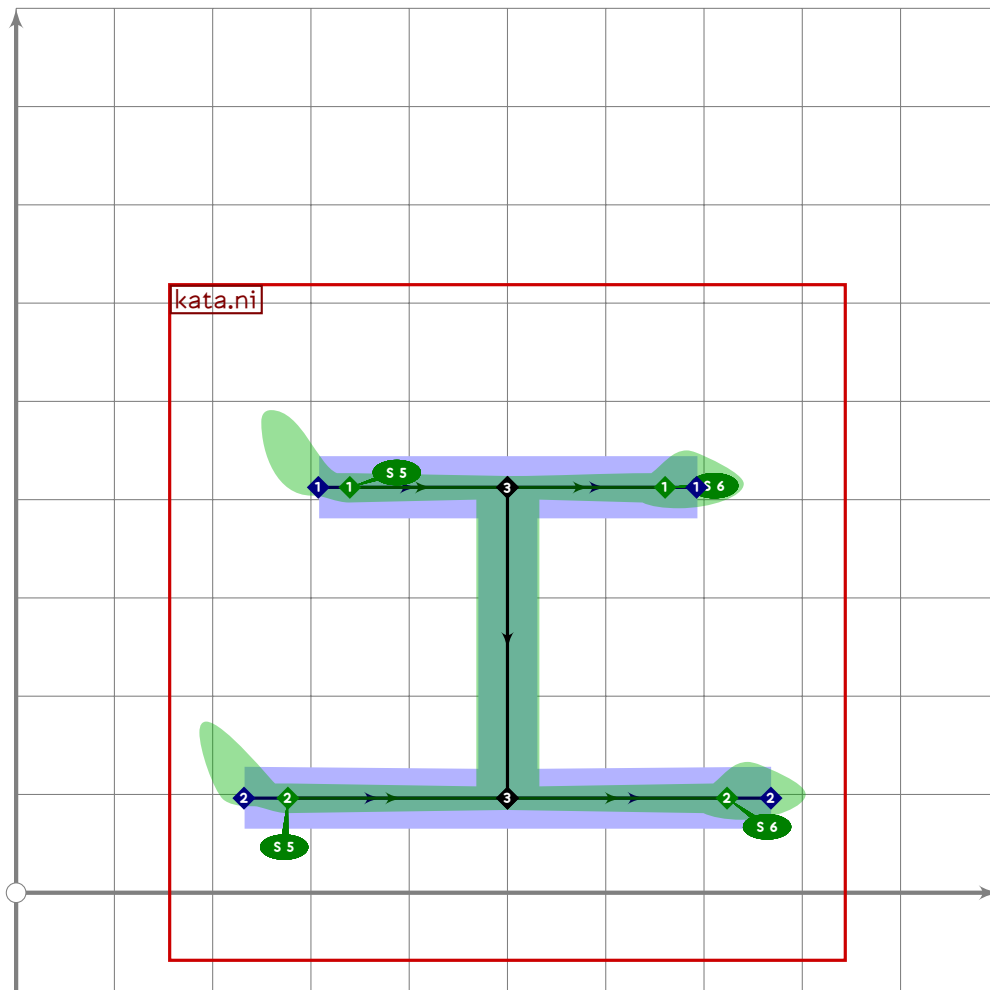


```

991 % katakana "small u"
992 begintsuglyph("uni30A5",165);
993 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.u);
994 tsu_render;
995 endtsuglyph;
996
997 % katakana "u"
998 begintsuglyph("uni30A6",166);
999 tsu_curve.kata.u;
1000 tsu_render;
1001 endtsuglyph;
1002

```

[see page 102]

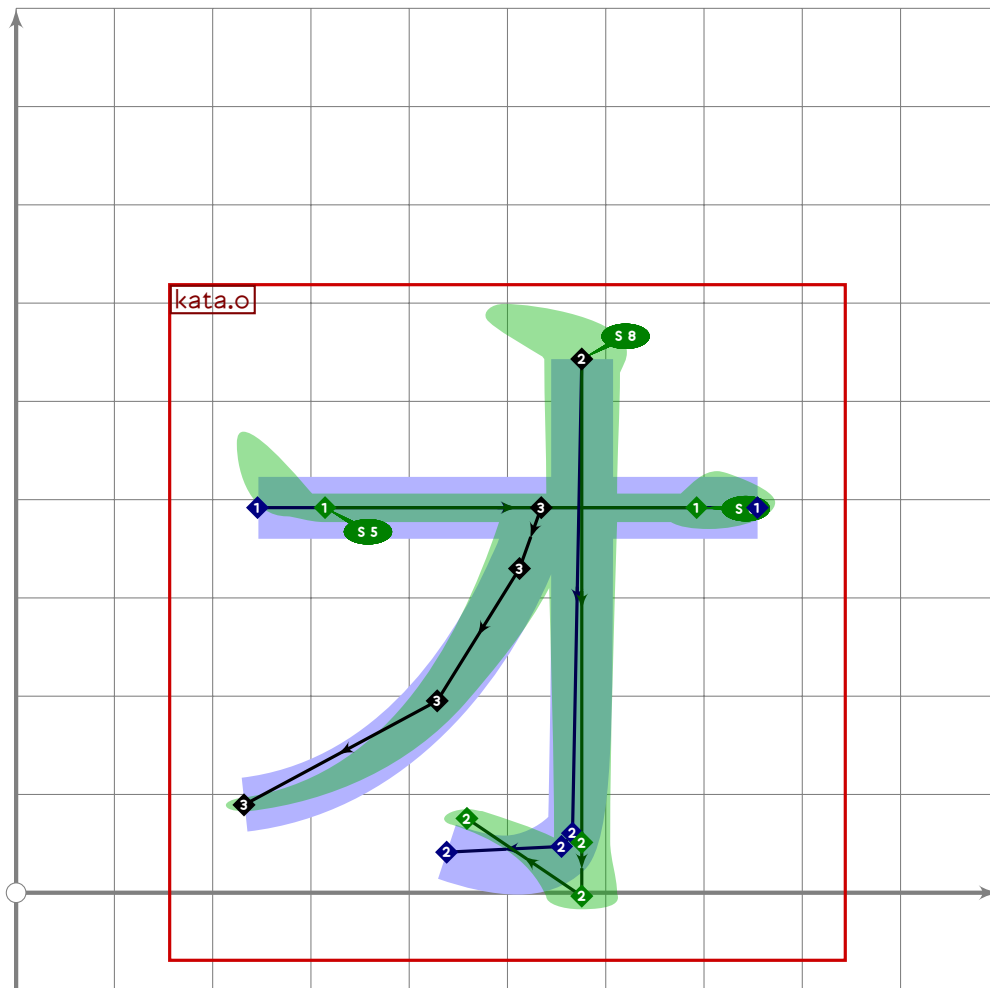


```

1003 % katakana "small e"
1004 begintsuglyph("uni30A7",167);
1005 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.e);
1006 tsu_render;
1007 endtsuglyph;
1008
1009 % katakana "e"
1010 begintsuglyph("uni30A8",168);
1011 tsu_curve.kata.e;
1012 tsu_render;
1013 endtsuglyph;
1014

```

[see page 103]



```

1015 % katakana "small o"
1016 begintsuglyph("uni30A9",169);
1017 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.o);
1018 tsu_render;
1019 endtsuglyph;

```

1020

```

1021 % katakana "o"
1022 begintsuglyph("uni30AA",170);
1023 tsu_curve.kata.o;
1024 tsu_render;
1025 endtsuglyph;

```

[see page 104]

1026

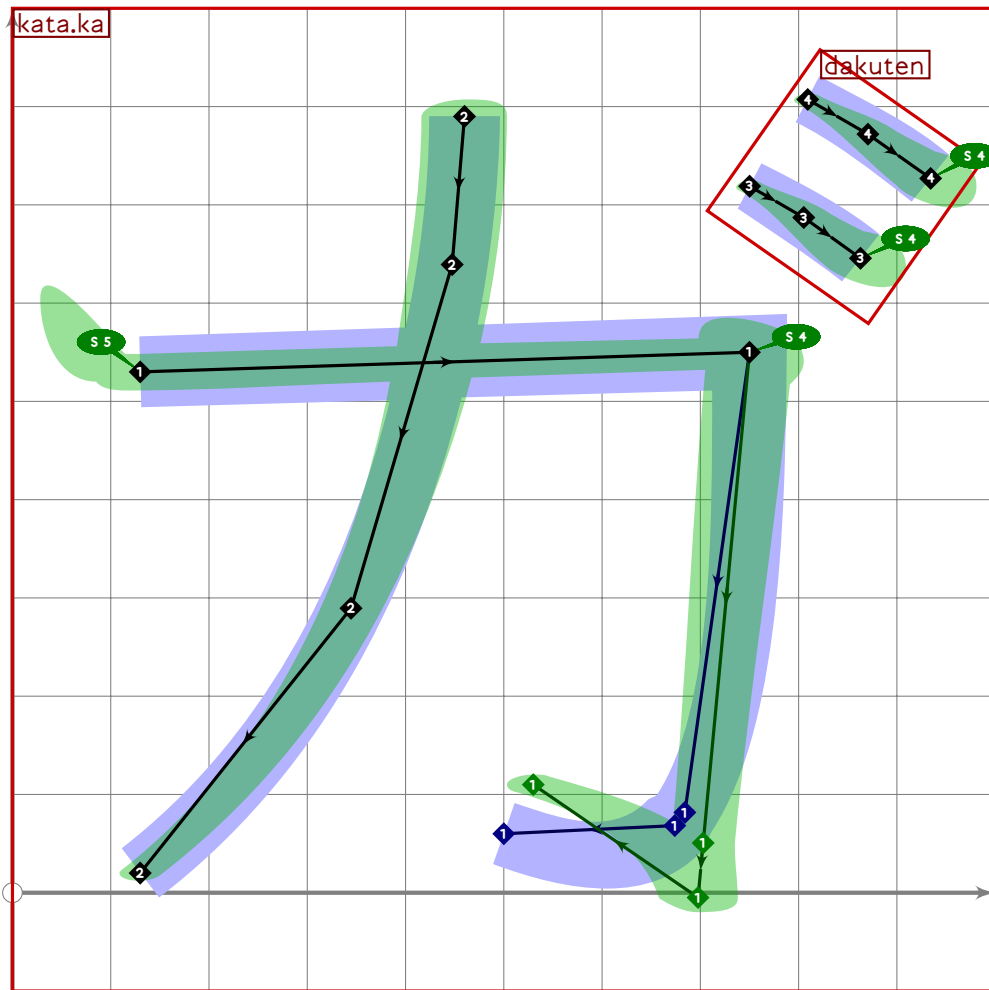
```

1027 % katakana "ka"
1028 begintsuglyph("uni30AB",171);
1029 tsu_curve.kata.ka;
1030 tsu_render;
1031 endtsuglyph;

```

[see page 105]

1032

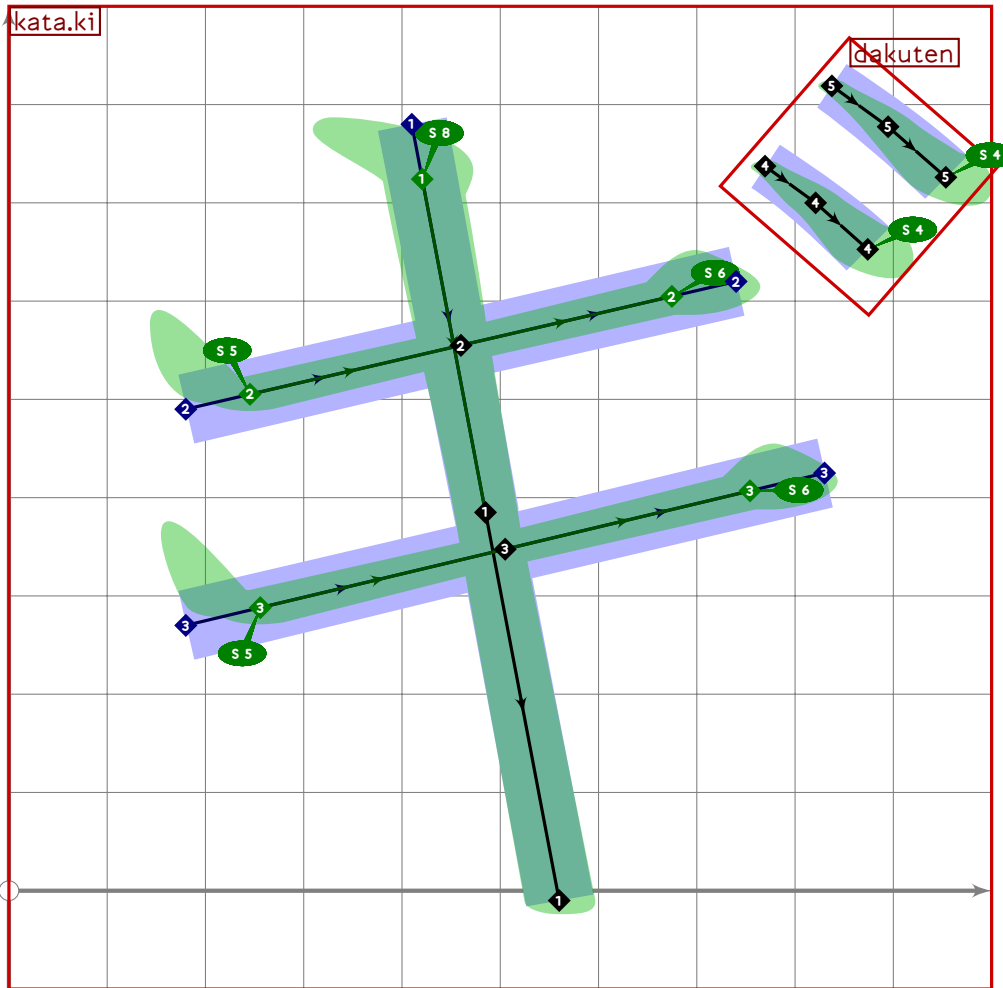


```

1033 % katakana "ga"
1034 begintsuglyph("uni30AC";172);
1035 tsu_curve.kata.ka;
1036 tsu_curve.dakuten(identity rotated 15 shifted (830,730));
1037 tsu_render;
1038 endsuglyph;
1039
1040 % katakana "ki"
1041 begintsuglyph("uni30AD";173);
1042 tsu_curve.kata.ki;
1043 tsu_render;
1044 endsuglyph;
1045

```

[see page 106]

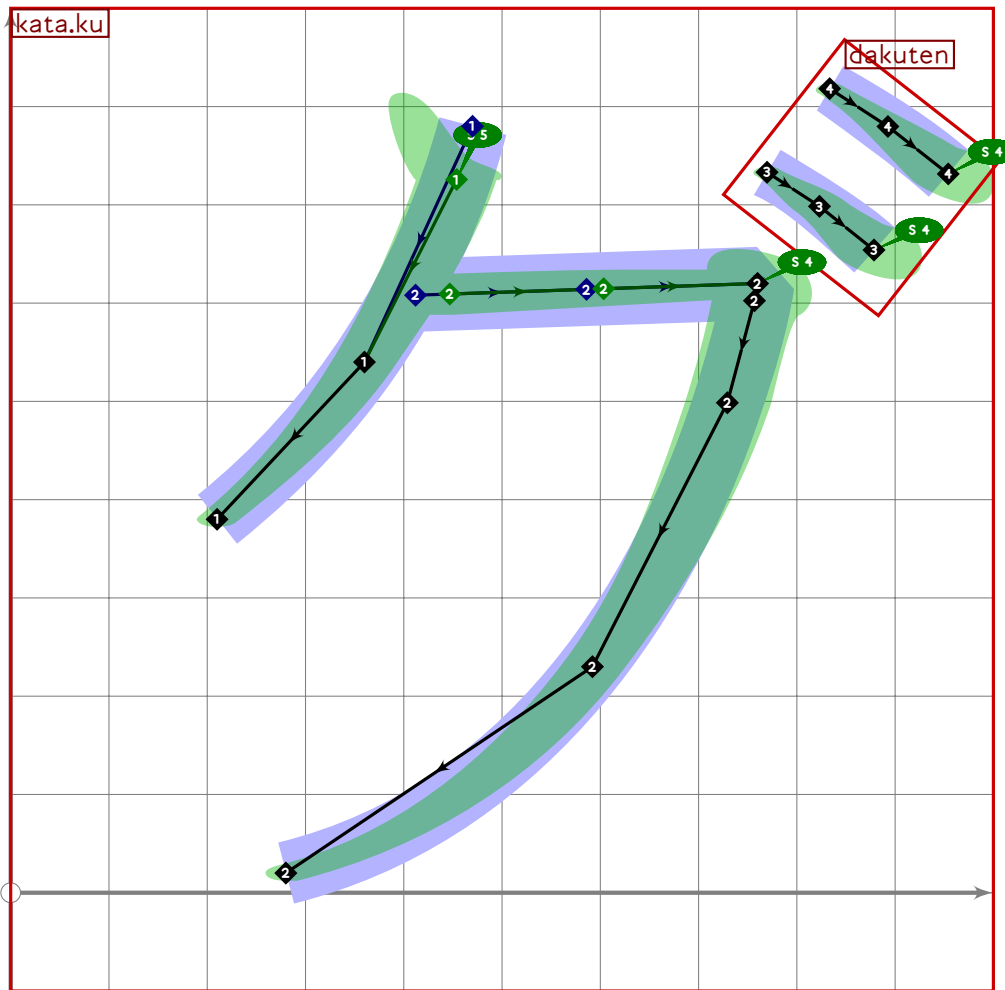


```

1046 % katakana "gi"
1047 begint Suglyph("uni30AE";174);
1048   tsu_curve.kata.ki;
1049   tsu_curve.dakuten(identity rotated 9 shifted (850,740));
1050   tsu_render;
1051 endsuglyph;
1052
1053 % katakana "ku"
1054 begint Suglyph("uni30AF";175);
1055   tsu_curve.kata.ku;
1056   tsu_render;
1057 endsuglyph;
1058

```

[see page 107]

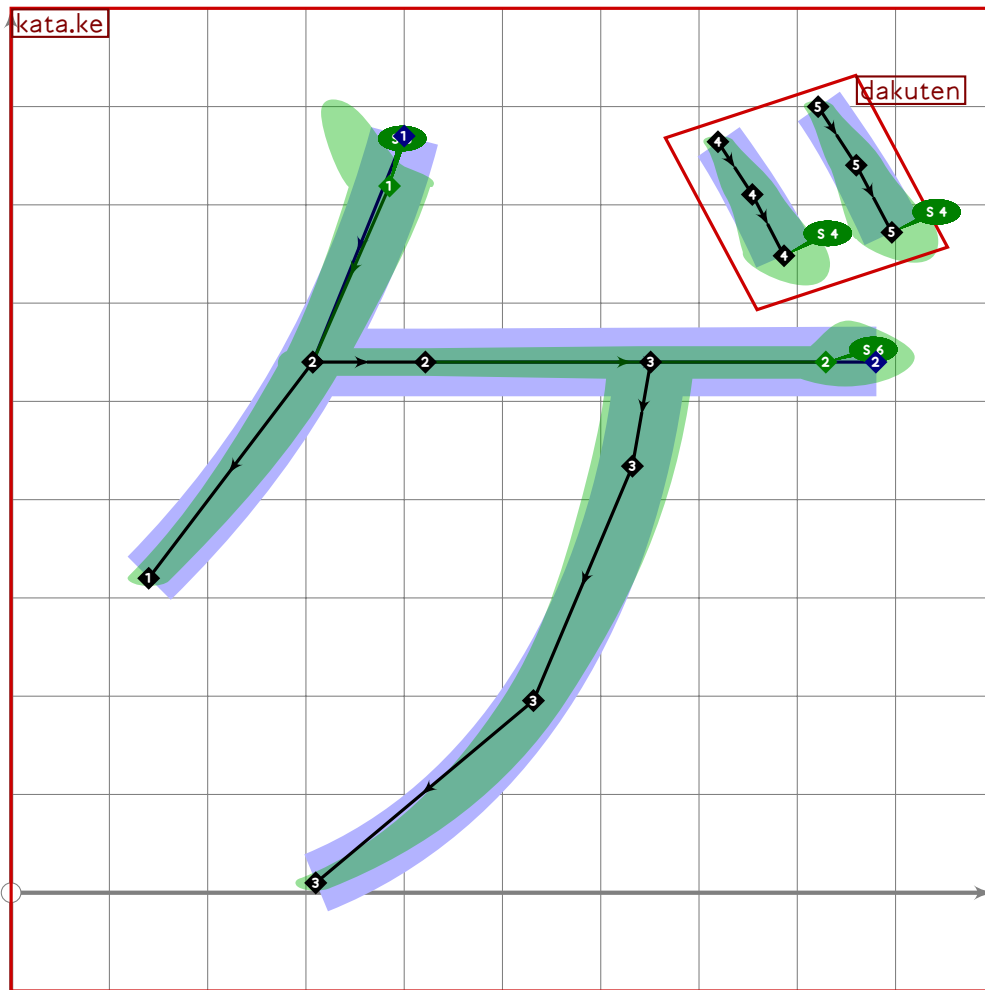


```

1059 % katakana "gu"
1060 begint Suglyph("uni30B0";176);
1061 tsu_curve.kata.ku;
1062 tsu_curve.dakuten(identity rotated 12 shifted (850,740));
1063 tsu_render;
1064 endsuglyph;
1065
1066 % katakana "ke"
1067 begint Suglyph("uni30B1";177);
1068 tsu_curve.kata.ke;
1069 tsu_render;
1070 endsuglyph;
1071

```

[see page 108]

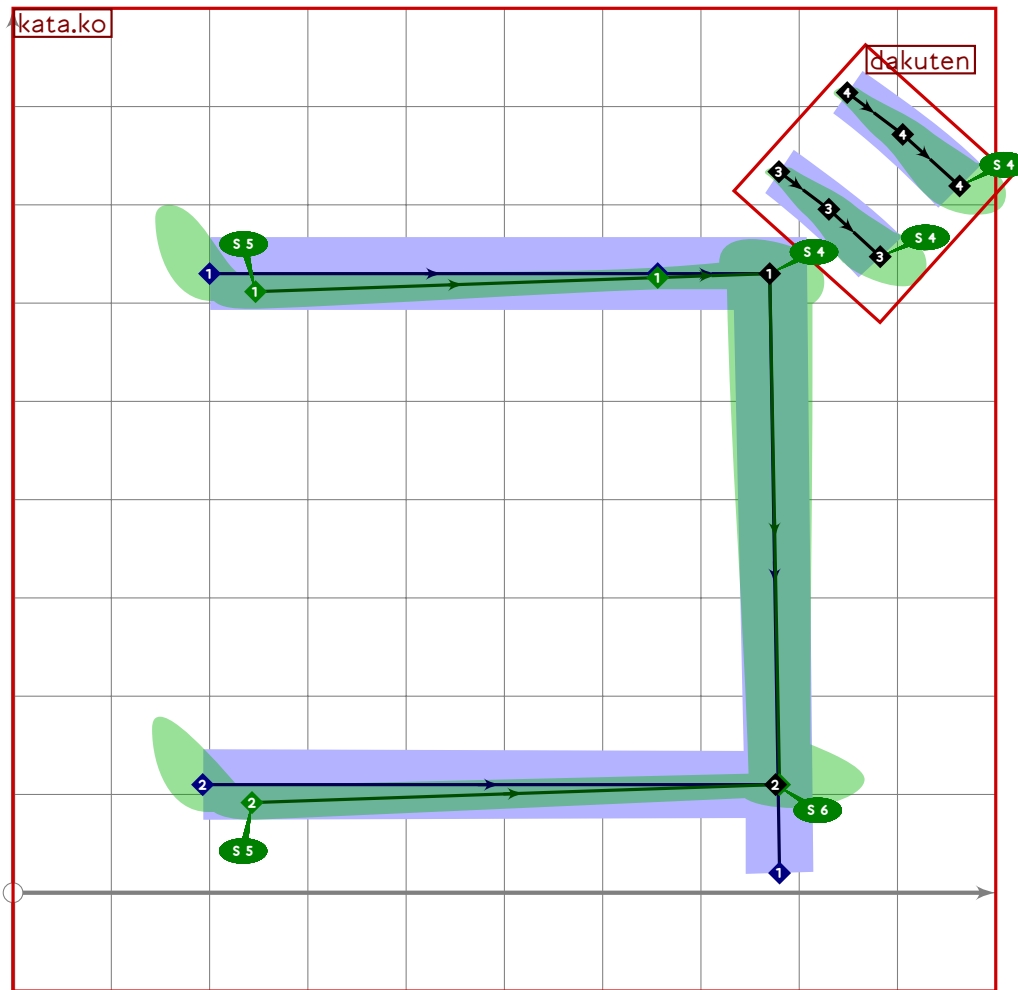


```

1072 % katakana "ge"
1073 begint Suglyph("uni30B2",178);
1074 tsu_curve.kata.ke;
1075 tsu_curve.dakuten(identity
1076     rotated -20 slanted -0.1 xyscaled (1.07,0.93) shifted (800,730));
1077 tsu_render;
1078 endtsuglyph;
1079
1080 % katakana "ko"
1081 begint Suglyph("uni30B3",179);
1082 tsu_curve.kata.ko;
1083 tsu_render;
1084 endtsuglyph;
1085

```

[see page 109]



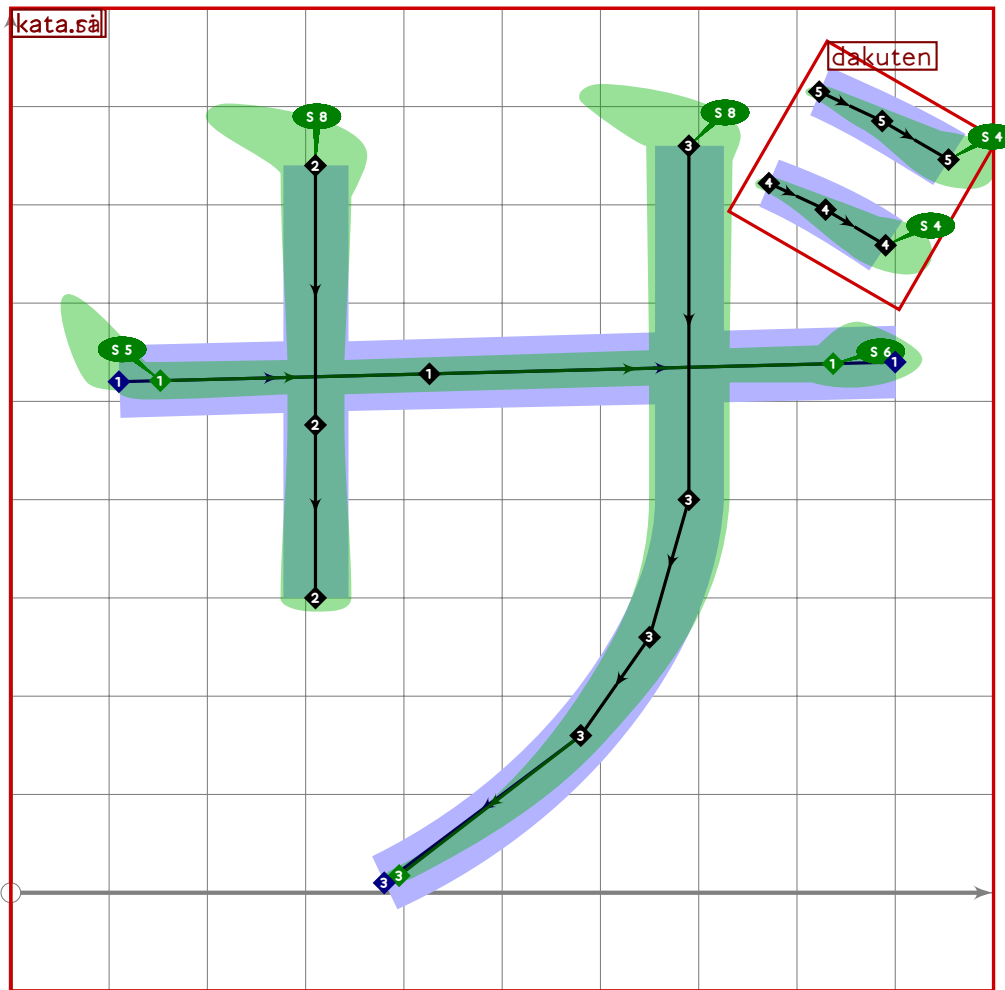
```

1086 % katakana "gō"
1087 begint Suglyph("uni30B4",180);
1088   tsu_curve.kata.ko;
1089   bo_tip1[1]=0;
1090   tsu_curve.dakuten(identity rotated 8 shifted (860,735));
1091   tsu_render;
1092 endtsuglyph;
1093
1094 % katakana "sā"
1095 begint Suglyph("uni30B5",181);
1096   tsu_curve.kata.sa;
1097   tsu_render;
1098 endtsuglyph;
1099

```

[see page 110]



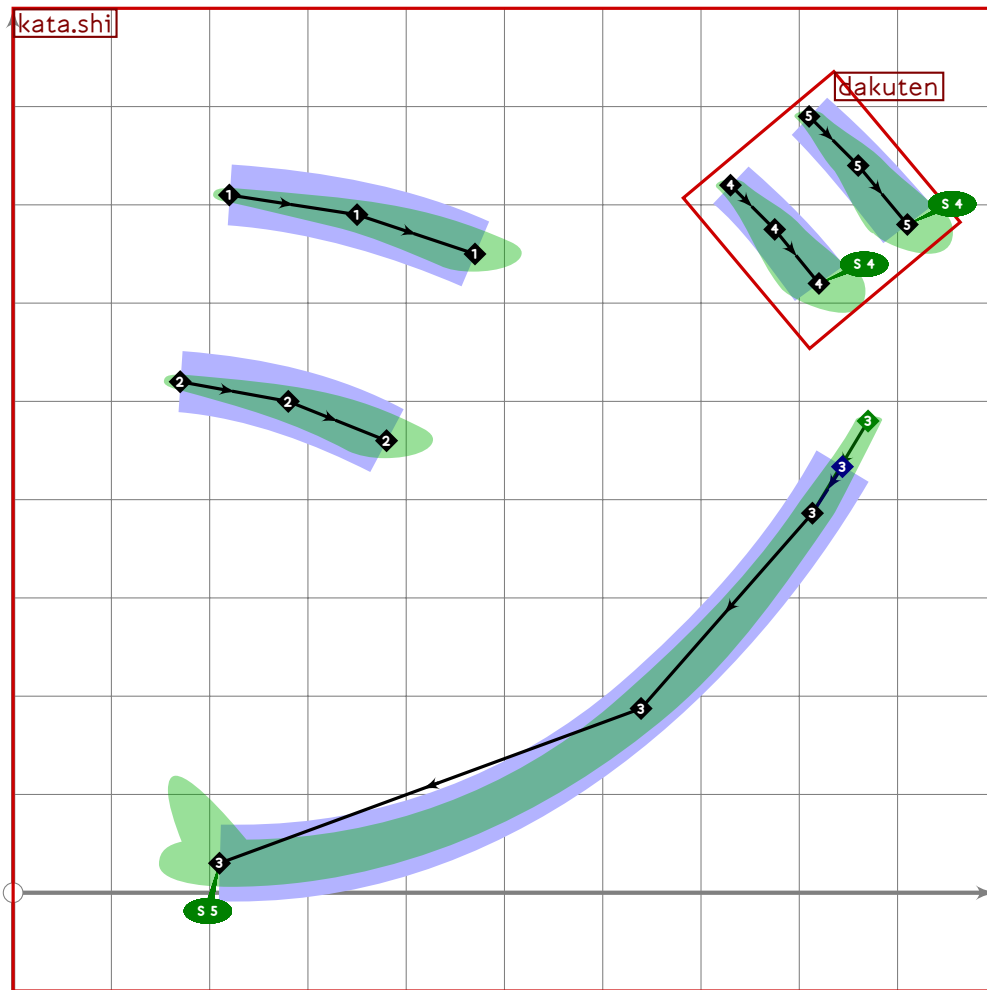


```

1100 % katakana "za"
1101 begint Suglyph("uni30B6",182);
1102 tsu_curve.kata.sa;
1103 tsu_curve.dakuten(identity rotated 20 shifted (850,740));
1104 tsu_render;
1105 endtsuglyph;
1106
1107 % katakana "shi"
1108 begint Suglyph("uni30B7",183);
1109 tsu_curve.kata.shi;
1110 tsu_render;
1111 endtsuglyph;
1112

```

[see page 111]

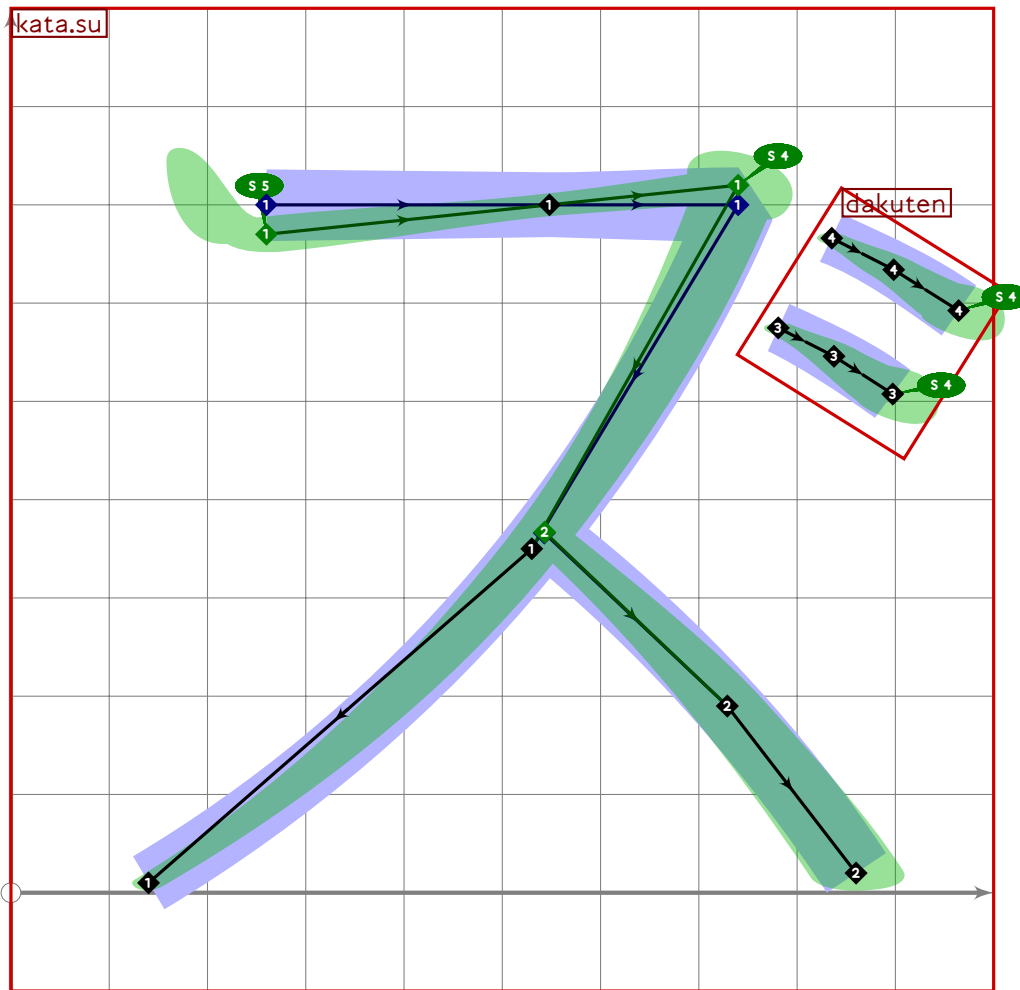


```

1113 % katakana "ji"
1114 begint Suglyph("uni30B8",184);
1115 tsu_curve.kata.shi;
1116 tsu_curve.dakuten(identity shifted (810,710));
1117 tsu_render;
1118 endsuglyph;
1119
1120 % katakana "su"
1121 begint Suglyph("uni30B9",185);
1122 tsu_curve.kata.su;
1123 tsu_render;
1124 endsuglyph;
1125

```

[see page 112]

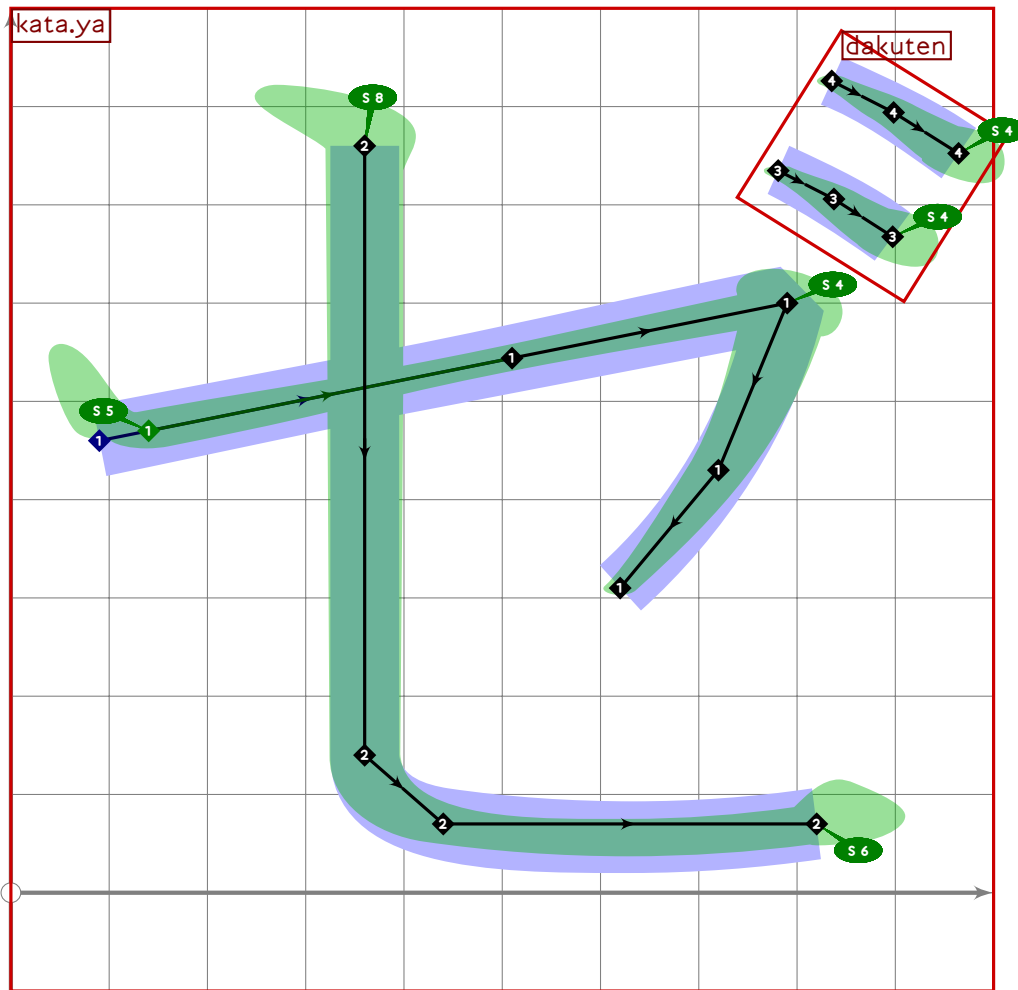


```

1126 % katakana "zu"
1127 beginsuglyph("uni30BA",186);
1128   tsu_curve.kata.su;
1129   tsu_curve.dakuten(identity rotated 18 shifted (860,590));
1130   tsu_render;
1131 endsuglyph;
1132
1133 % katakana "se"
1134 beginsuglyph("uni30BB",187);
1135   tsu_curve.kata.se;
1136   tsu_render;
1137 endsuglyph;
1138

```

[see page 113]

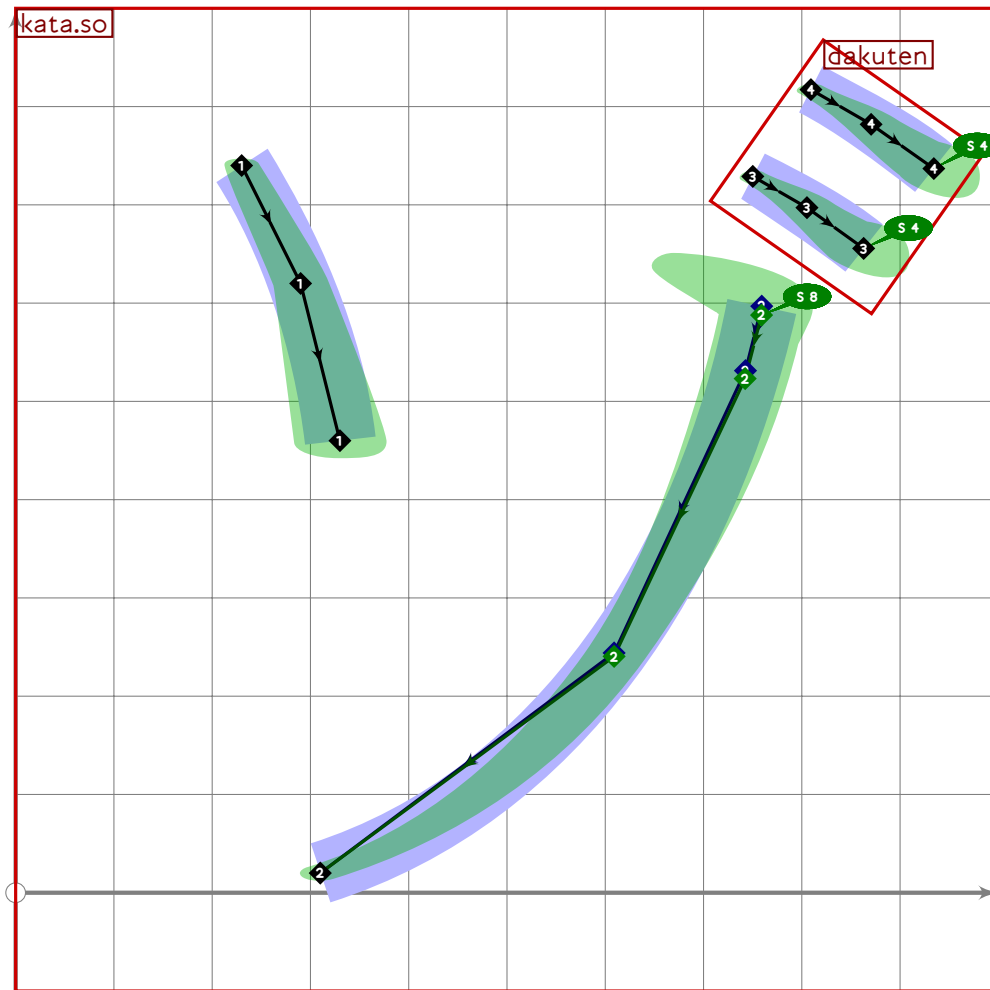


```

1139 % katakana "ze"
1140 begint Suglyph("uni30BC";188);
1141 tsu_curve.kata.se;
1142 tsu_curve.dakuten(identity rotated 18 shifted (860,750));
1143 tsu_render;
1144 endsuglyph;
1145
1146 % katakana "so"
1147 begint Suglyph("uni30BD";189);
1148 tsu_curve.kata.so;
1149 tsu_render;
1150 endsuglyph;
1151

```

[see page 114]

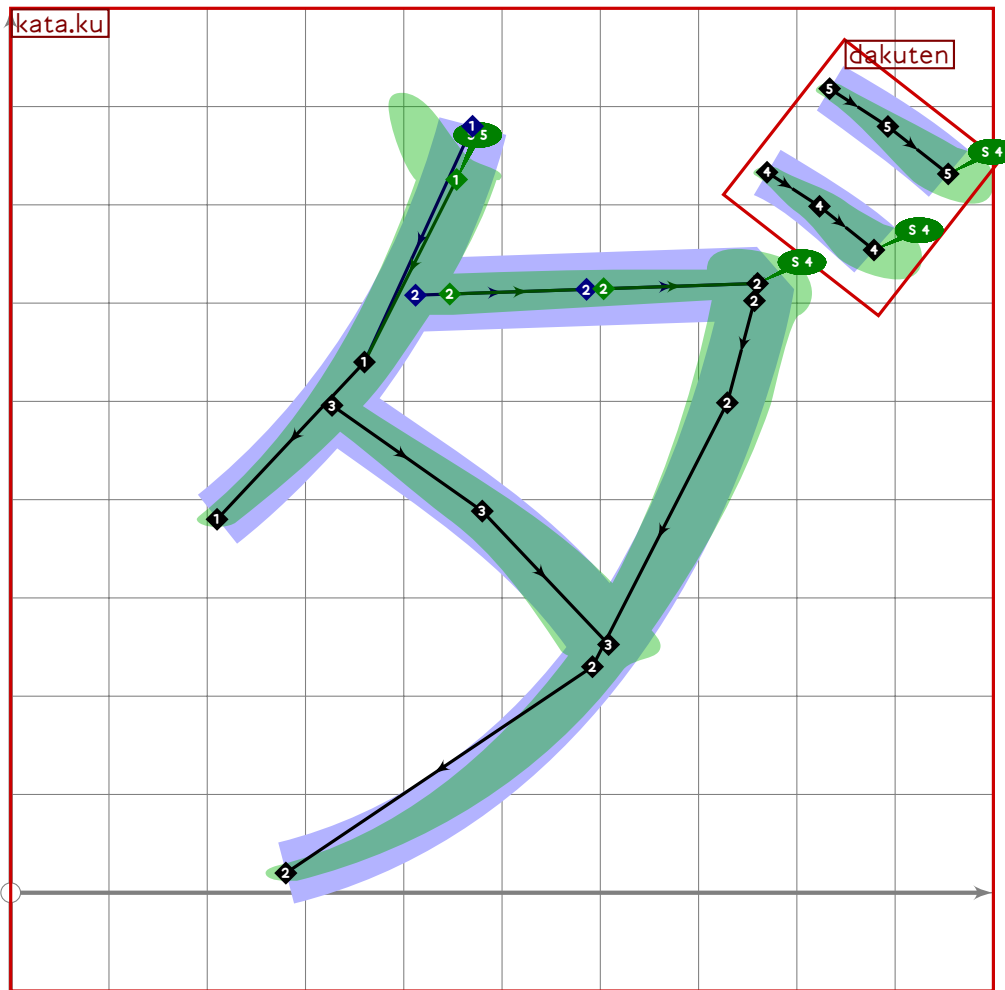


```

1152 % katakana "zo"
1153 begint Suglyph("uni30BE";190);
1154 tsu_curve.kata.so;
1155 bp2:=subpath (0.5,infinity) of bp2;
1156 tsu_curve.dakuten(identity rotated 15 shifted (830,740));
1157 tsu_render;
1158 endtsuglyph;
1159
1160 % katakana "ta"
1161 begint Suglyph("uni30BF";191);
1162 tsu_curve.kata.ta;
1163 tsu_render;
1164 endtsuglyph;
1165

```

[see page 115]

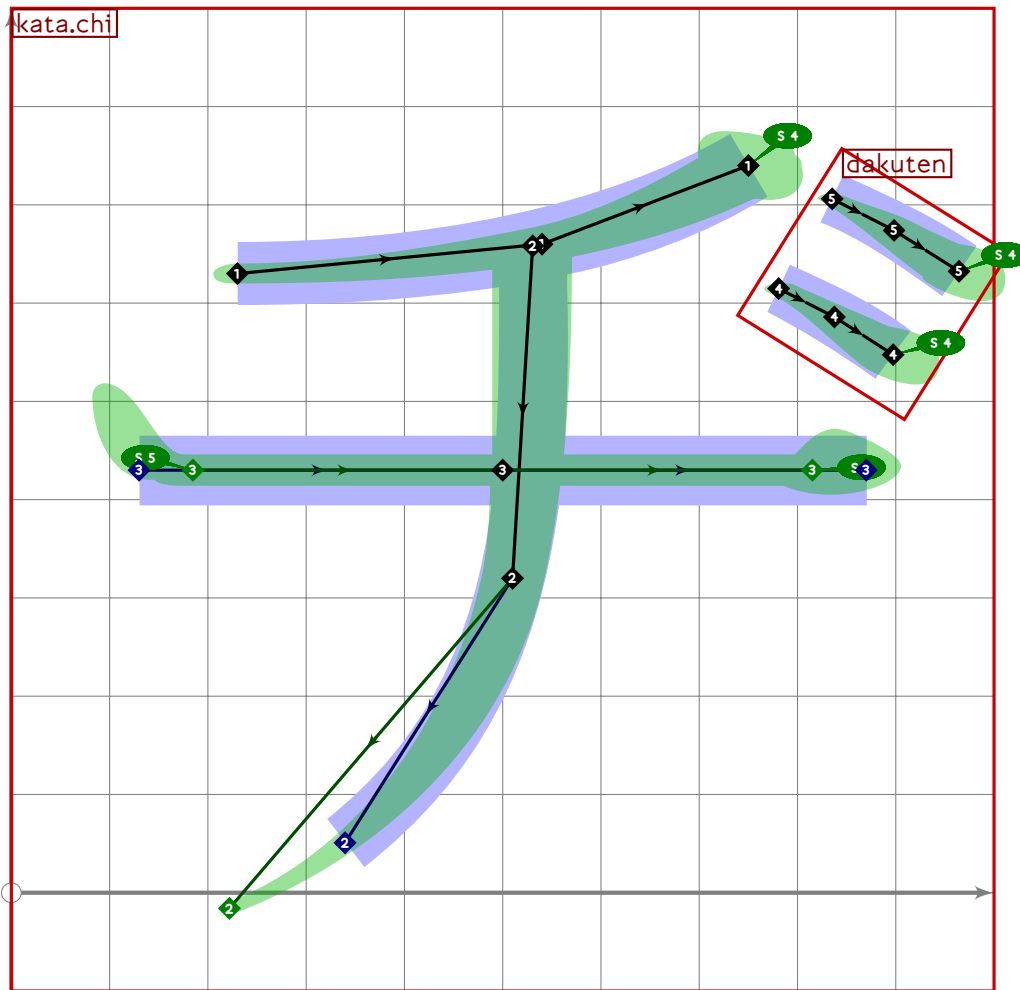


```

1166 % katakana "da"
1167 begint Suglyph("uni30C0";192);
1168 tsu_curve.kata.ta;
1169 tsu_curve.dakuten(identity rotated 12 shifted (850,740));
1170 tsu_render;
1171 endsuglyph;
1172
1173 % katakana "chi"
1174 begint Suglyph("uni30C1";193);
1175 tsu_curve.kata.chi;
1176 tsu_render;
1177 endsuglyph;
1178

```

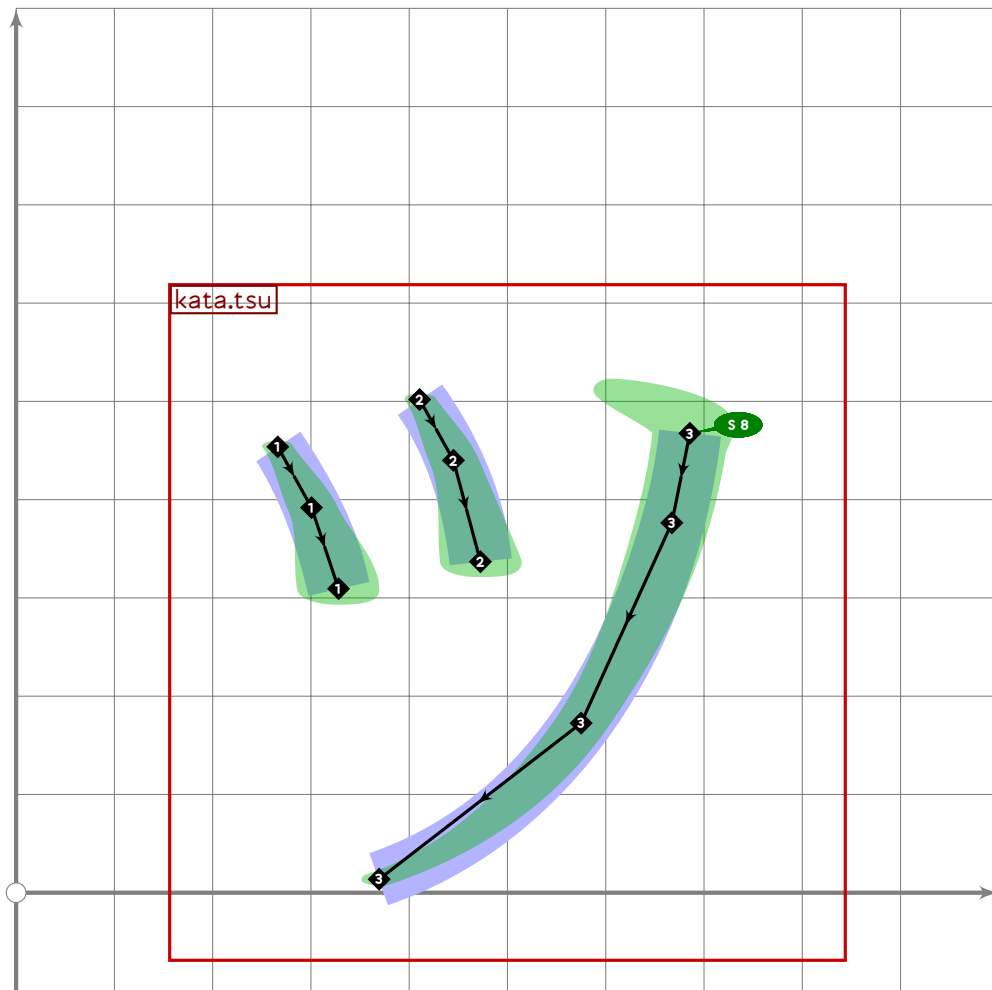
[see page 116]



```

1179 % katakana "dji"
1180 begint Suglyph("uni30C2";194);
1181 tsu_curve.kata.chi;
1182 tsu_curve.dakuten(identity rotated 18 shifted (860,630));
1183 tsu_render;
1184 endsuglyph;
1185

```



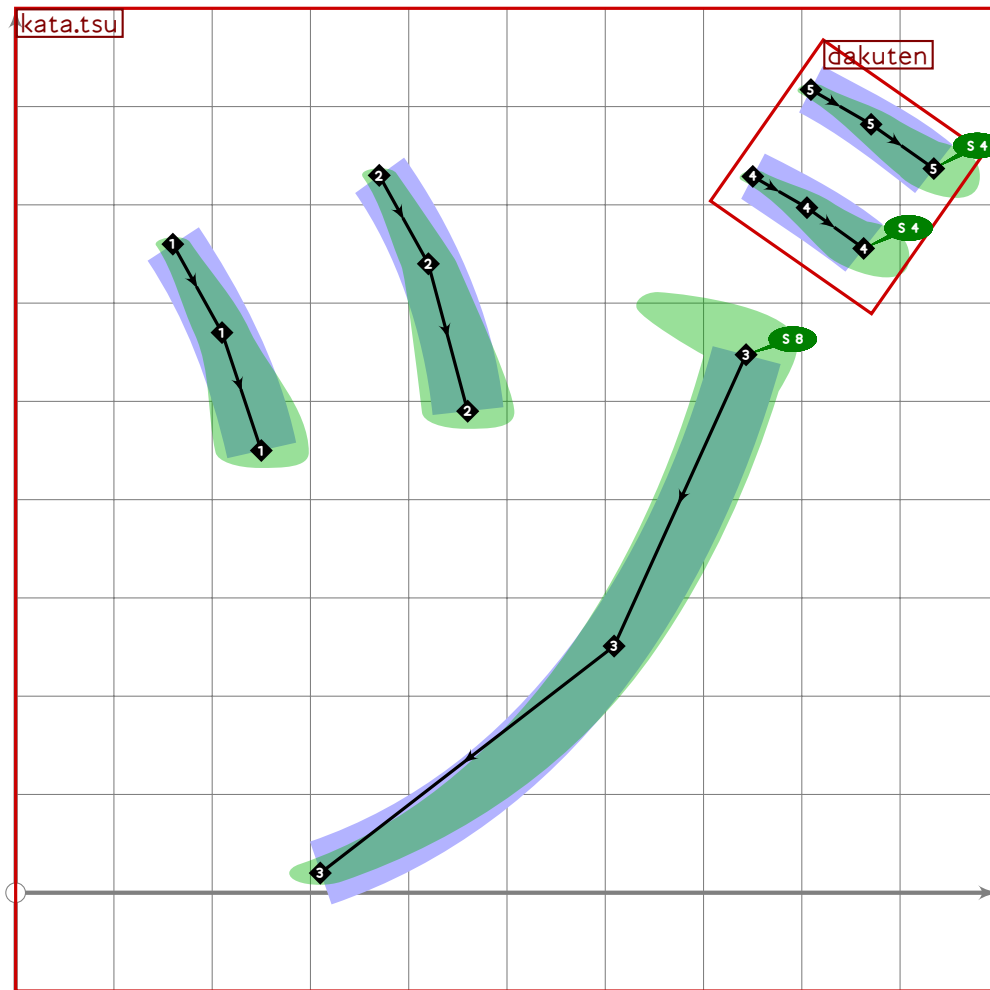
```

1186 % katakana "small tsu"
1187 begintsuglyph("uni30C3";195);
1188 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.tsu);
1189 tsu_render;
1190 endtsuglyph;
1191
1192 % katakana "tsu"
1193 begintsuglyph("uni30C4";196);
1194 tsu_curve.kata.tsu;
1195 tsu_render;
1196 endtsuglyph;
1197

```

[see page 117]



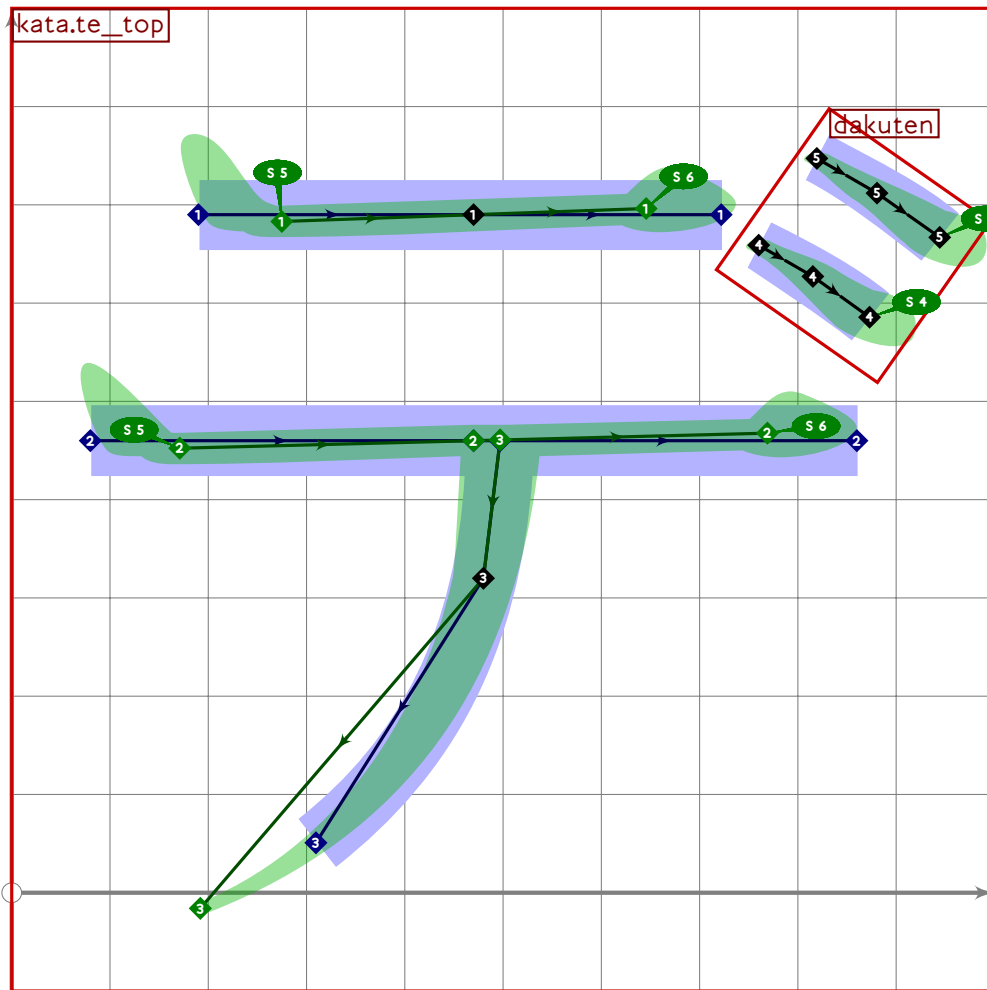


```

1198 % katakana "dzu"
1199 begint Suglyph("uni30C5";197);
1200 tsu_curve.kata.tsu;
1201 bp3:=subpath (1,infinity) of bp3;
1202 tsu_curve.dakuten(identity rotated 15 shifted (830,740));
1203 tsu_render;
1204 endtsuglyph;
1205
1206 % katakana "te"
1207 begint Suglyph("uni30C6";198);
1208 tsu_curve.kata.te;
1209 tsu_render;
1210 endtsuglyph;
1211

```

[see page 118]

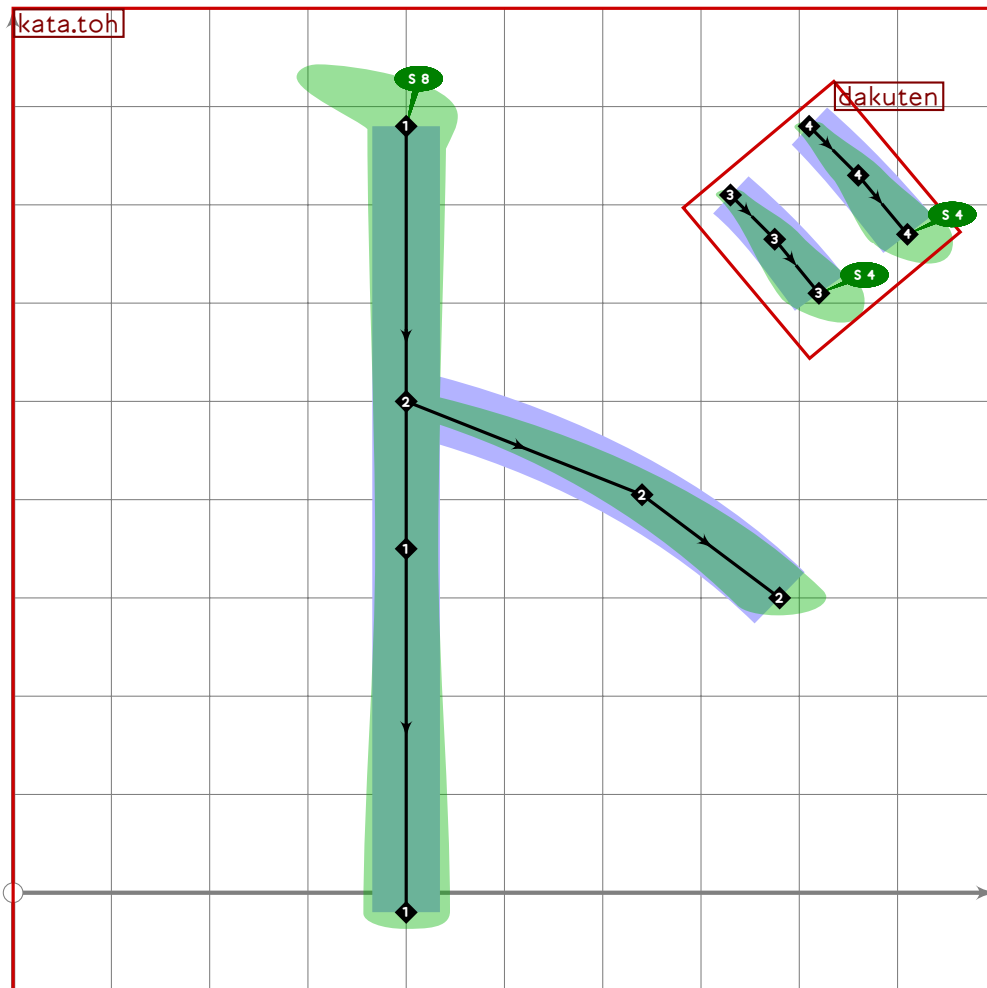


```

1212 % katakana "de"
1213 begintsuglyph("uni30C7";199);
1214 tsu_curve.kata.te;
1215 bp1:=(subpath (0,19) of bp1) shifted (-30,0);
1216 bp2:=bp2 shifted (-30,0);
1217 bp3:=bp3 shifted (-30,0);
1218 tsu_curve.dakuten(identity rotated 15 shifted (840,670));
1219 tsu_render;
1220 endsuglyph;
1221
1222 % katakana "to"
1223 begintsuglyph("uni30C8";200);
1224 tsu_curve.kata.toh;
1225 tsu_render;
1226 endsuglyph;
1227

```

[see page 119]



```

1228 % katakana "do"
1229 begintsuglyph("uni30C9";201);
1230 tsu_curve.kata.toh;
1231 tsu_curve.dakuten(identity shifted (810,700));
1232 tsu_render;
1233 endsuglyph;

```

1234

```

1235 % katakana "na"
1236 begintsuglyph("uni30CA";202);
1237 tsu_curve.kata.na;
1238 tsu_render;
1239 endsuglyph;

```

[see page 120]

1240

```

1241 % katakana "ni"
1242 begintsuglyph("uni30CB";203);
1243 tsu_curve.kata.ni;
1244 tsu_render;
1245 endsuglyph;

```

[see page 121]

1246

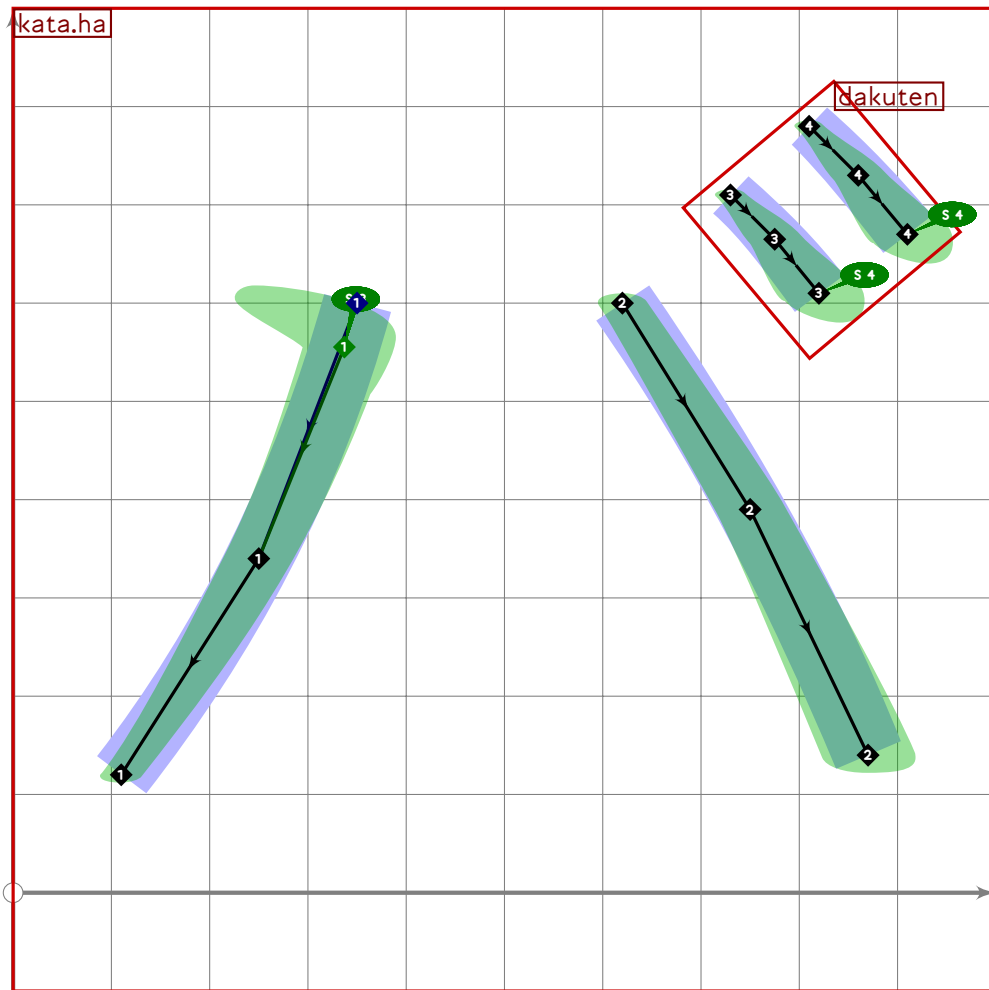
```

1247 % katakana "nu"
1248 begintsuglyph("uni30CC";204);

```

[see page 122]

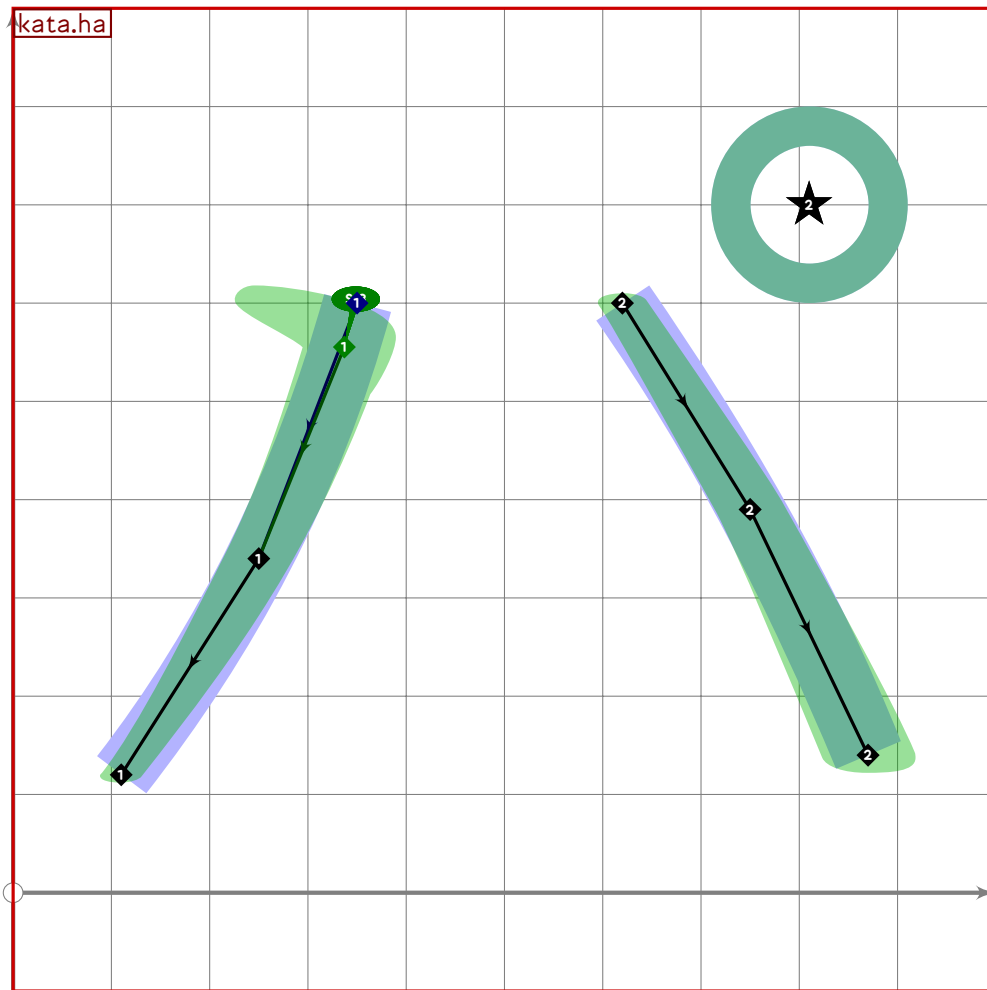
```
1249 tsu_curve.kata.nu;
1250 tsu_render;
1251 endtsuglyph;
1252
1253 % katakana "ne"
1254 begintsuglyph("uni30CD",205); [see page 123]
1255 tsu_curve.kata.ne;
1256 tsu_render;
1257 endtsuglyph;
1258
1259 % katakana "no"
1260 begintsuglyph("uni30CE",206); [see page 124]
1261 tsu_curve.kata.no;
1262 tsu_render;
1263 endtsuglyph;
1264
1265 % katakan "ha"
1266 begintsuglyph("uni30CF",207); [see page 125]
1267 tsu_curve.kata.ha;
1268 tsu_render;
1269 endtsuglyph;
1270
```



```

1271 % katakan "ba"
1272 beginsuglyph("uni30D0";208);
1273 tsu_curve.kata.ha;
1274 tsu_curve.dakuten(identity shifted (810,700));
1275 tsu_render;
1276 endsuglyph;
1277

```

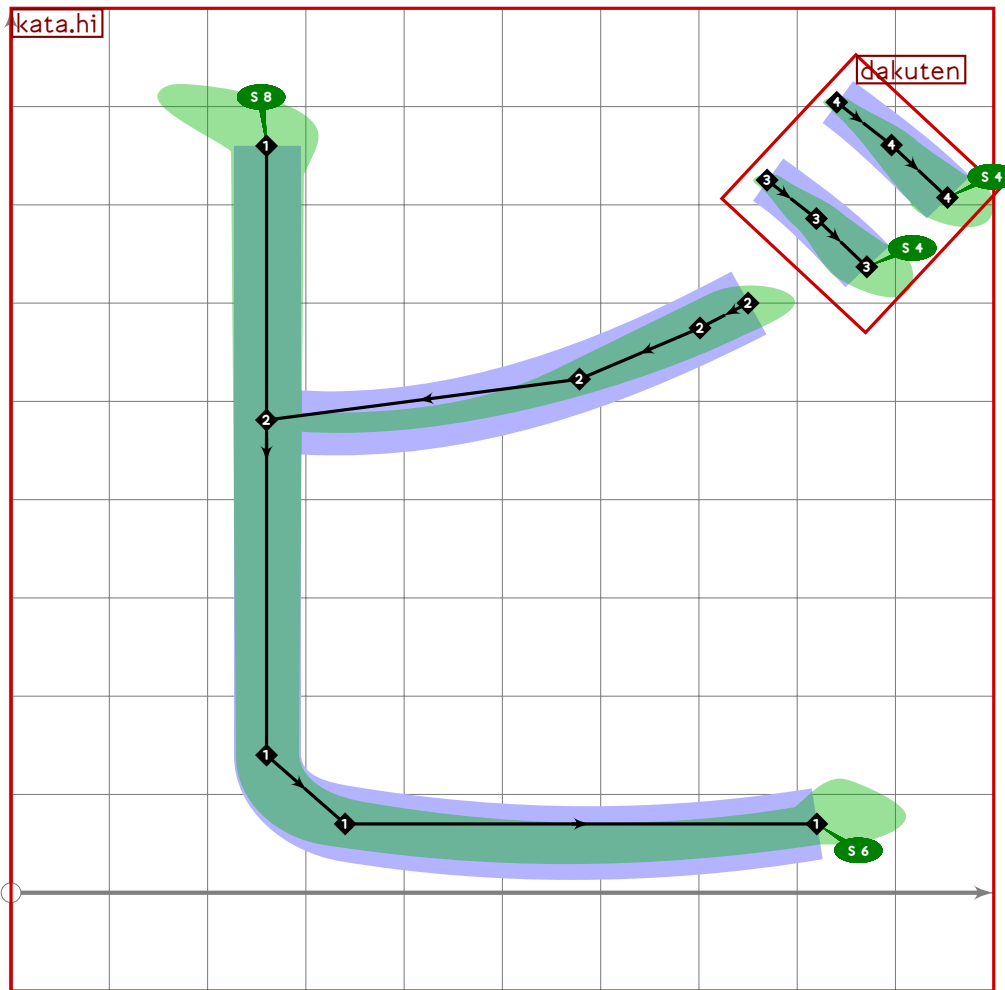


```

1278 % katakan "pa"
1279 begint Suglyph("uni30D1";209);
1280 tsu_curve.kata.ha;
1281 tsu_curve.handakuten((810,700));
1282 tsu_render;
1283 endsuglyph;
1284
1285 % hiragana "hi"
1286 begint Suglyph("uni30D2";210);
1287 tsu_curve.kata.hi;
1288 tsu_render;
1289 endsuglyph;
1290

```

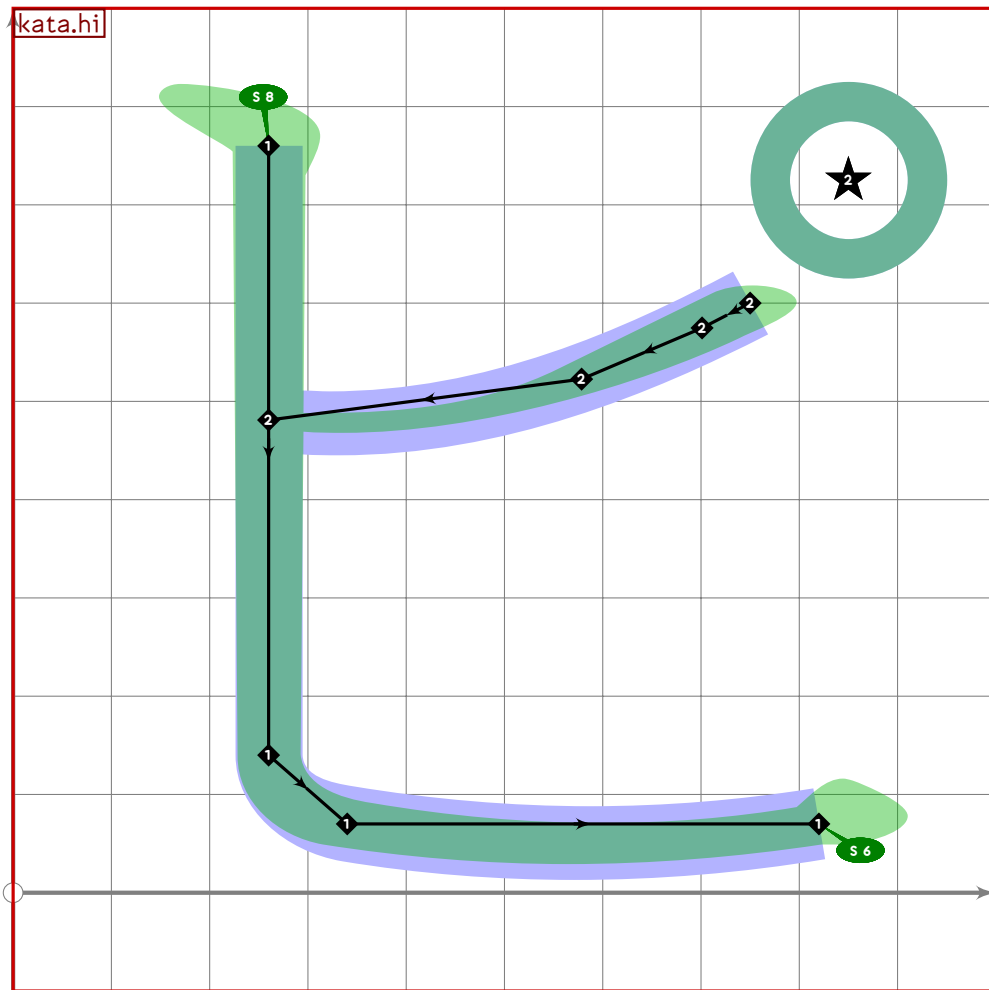
[see page 126]



```

1291 % hiragana "bi"
1292 begint Suglyph("uni30D3";211);
1293 tsu_curve.kata.hi;
1294 tsu_curve.dakuten(identity rotated 7 shifted (850,725));
1295 tsu_render;
1296 endsuglyph;
1297

```



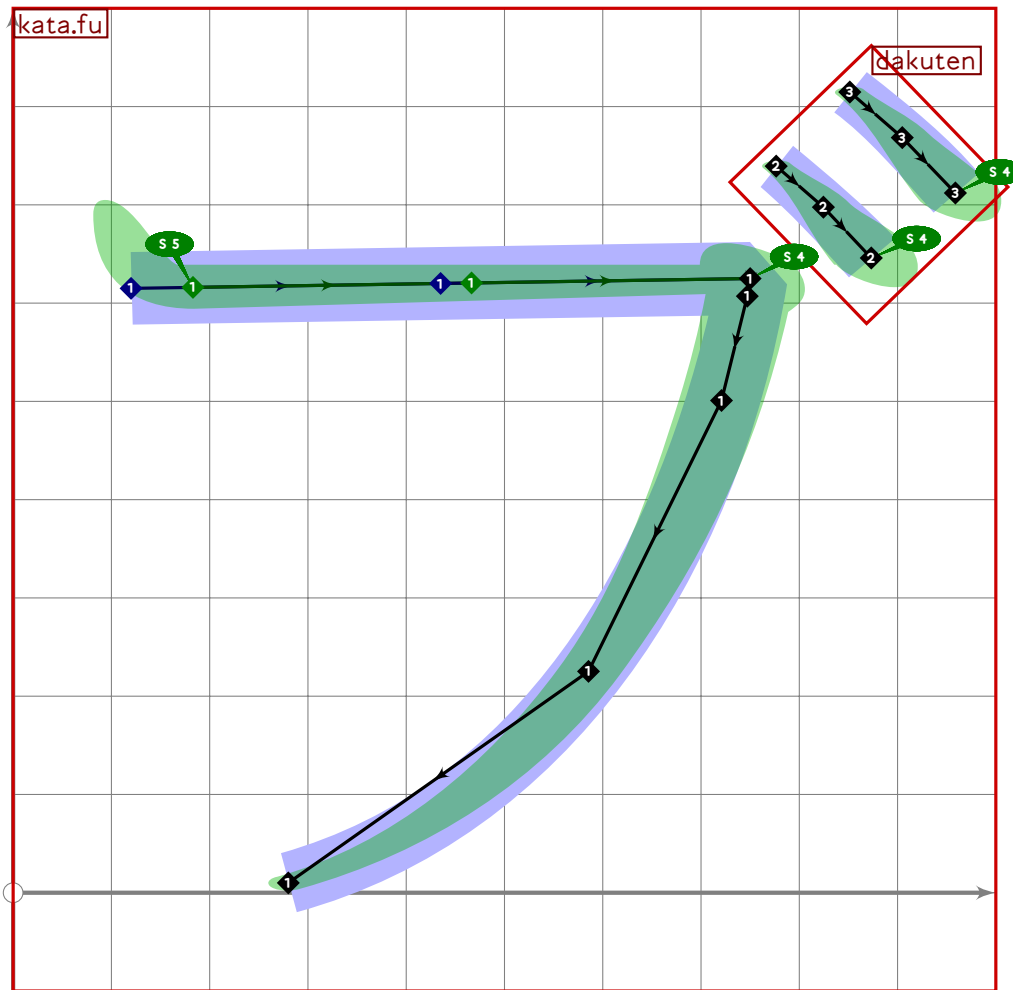
```

1298 % hiragana "pi"
1299 begint Suglyph("uni30D4",212);
1300 tsu_curve.kata.hi;
1301 tsu_curve.handakuten((850,725));
1302 tsu_render;
1303 endtsuglyph;
1304
1305 % katakana "fu"
1306 begint Suglyph("uni30D5",213);
1307 tsu_curve.kata.fu;
1308 tsu_render;
1309 endtsuglyph;
1310

```

[see page 127]

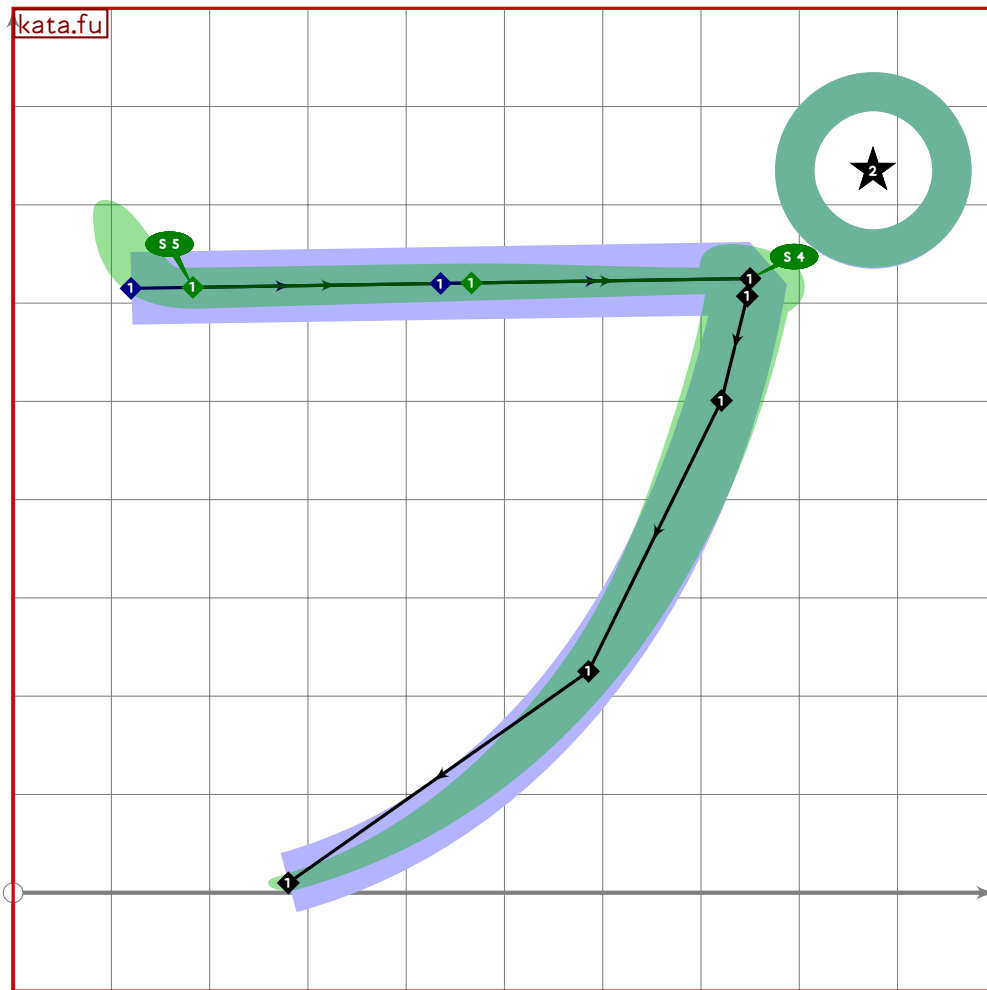




```

1311 % katakana "bu"
1312 beginsuglyph("uni30D6",214);
1313 tsu_curve.kata.fu;
1314 bp1:=bp1 shifted (-40,-10);
1315 tsu_curve.dakuten(identity rotated 4 shifted (857,735));
1316 tsu_render;
1317 endtsuglyph;
1318

```

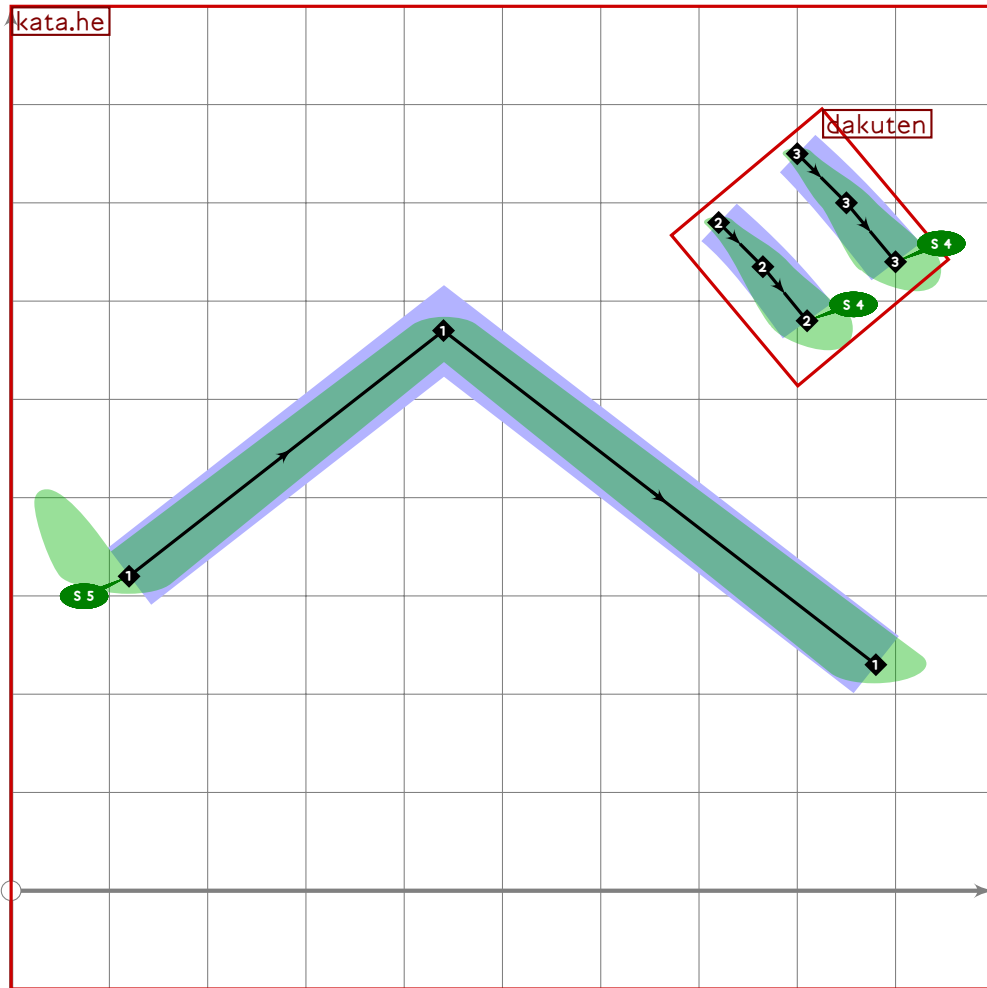


```

1319 % katakana "pu"
1320 beginsuglyph("uni30D7",215);
1321 tsu_curve.kata.fu;
1322 bp1:=bp1 shifted (-40,-10);
1323 tsu_curve.handakuten((875,735));
1324 tsu_render;
1325 endsuglyph;
1326
1327 % katakana "he"
1328 beginsuglyph("uni30D8",216);
1329 tsu_curve.kata.he;
1330 tsu_render;
1331 endsuglyph;
1332

```

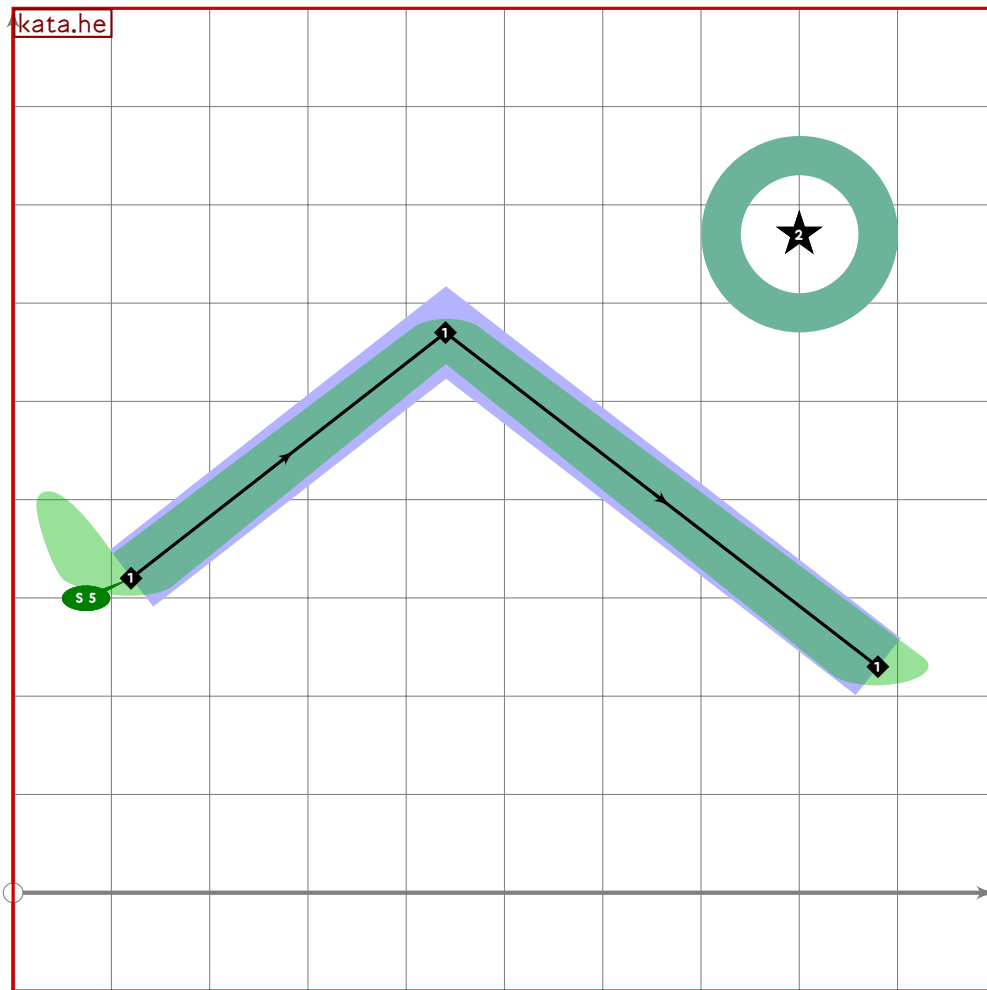
[see page 128]



```

1333 % katakana "be"
1334 begint Suglyph("uni30D9";217);
1335 tsu_curve.kata.he;
1336 tsu_curve.dakuten(identity shifted (800,670));
1337 tsu_render;
1338 endsuglyph;
1339

```

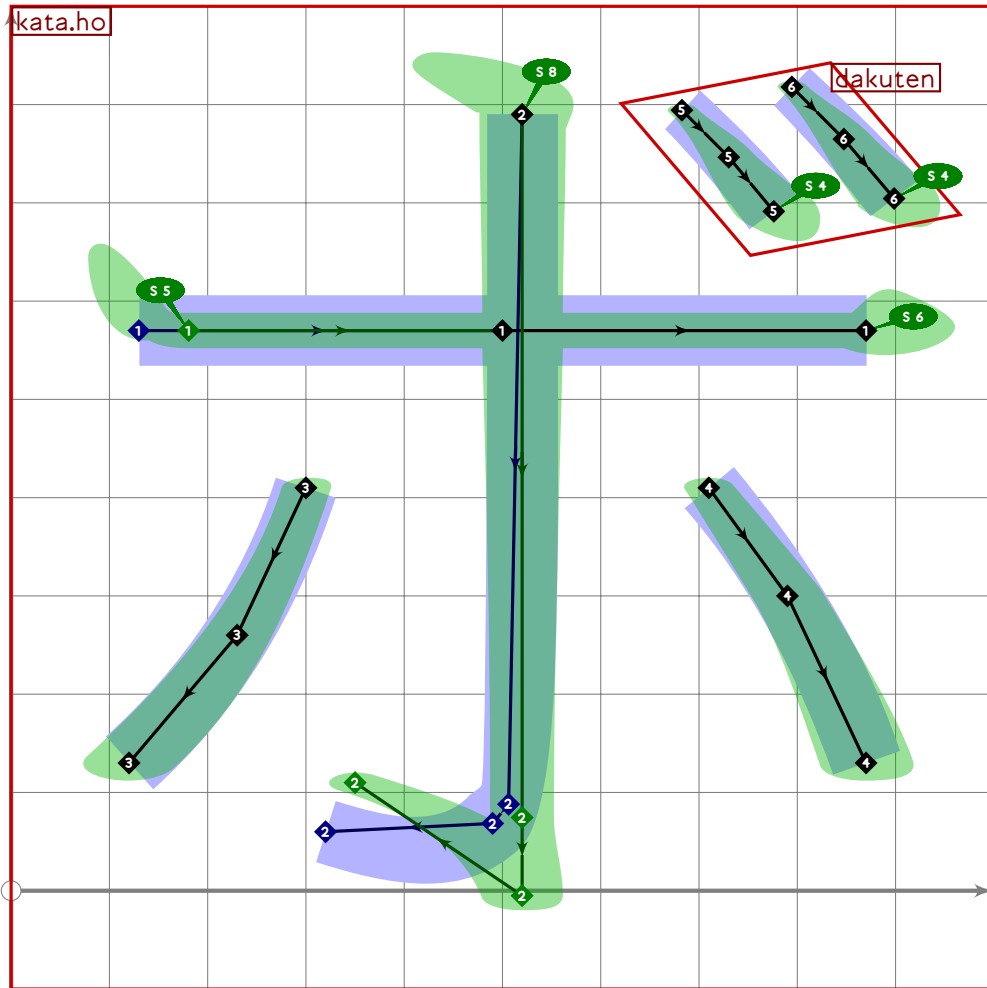


```

1340 % katakana "pe"
1341 begint Suglyph("uni30DA";218);
1342 tsu_curve.kata.he;
1343 tsu_curve.handakuten((800,670));
1344 tsu_render;
1345 endsuglyph;
1346
1347 % katakana "ho"
1348 begint Suglyph("uni30DB";219);
1349 tsu_curve.kata.ho;
1350 tsu_render;
1351 endsuglyph;
1352

```

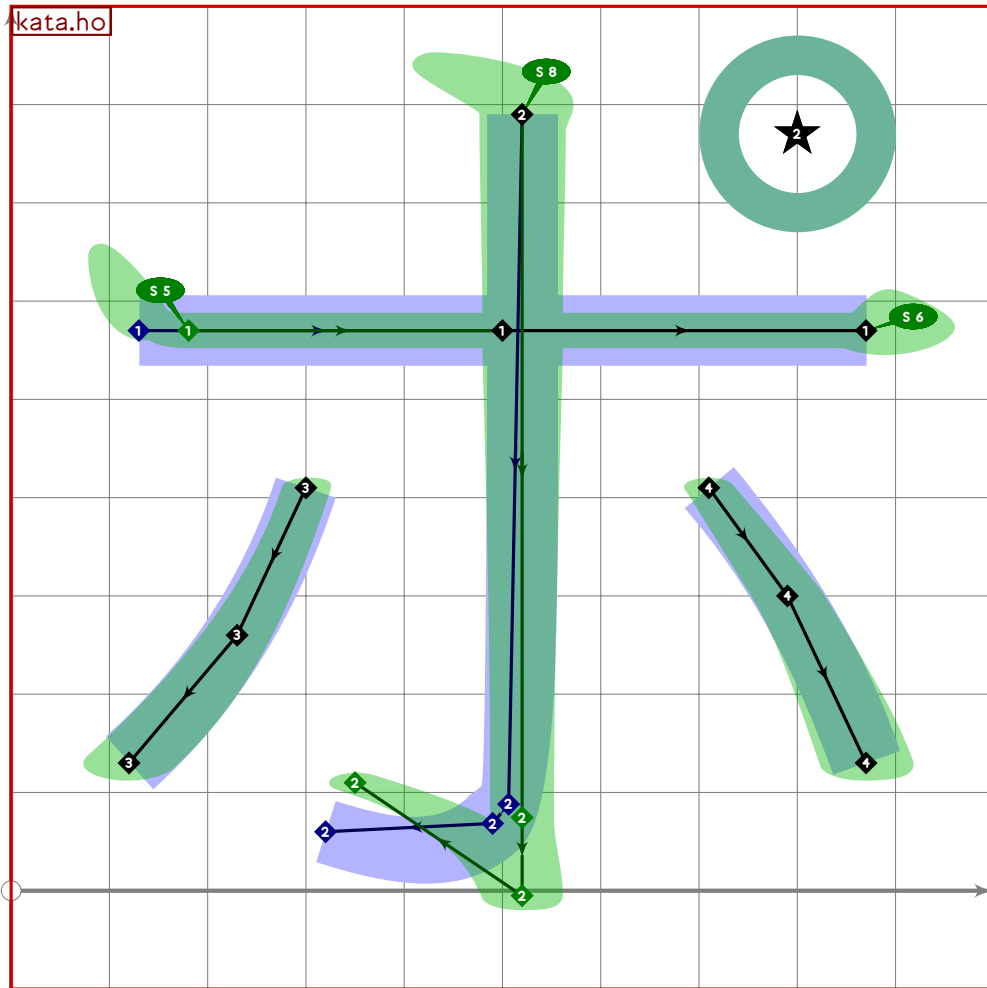
[see page 129]



```

1353 % katakana "bo"
1354 begintsuglyph("uni30DC";220);
1355 tsu_curve.kata.ho;
1356 tsu_curve.dakuten(identity
1357     rotated -25 slanted -0.3 xyscaled (1.2,0.8) shifted (780,760));
1358 tsu_render;
1359 endsuglyph;
1360

```



```

1361 % katakana "po"
1362 begint Suglyph("uni30DD";221);
1363 tsu_curve.kata.ho;
1364 tsu_curve.handakuten((800,770));
1365 tsu_render;
1366 endtsuglyph;

```

1367

```

1368 % katakana "ma"
1369 begint Suglyph("uni30DE";222);
1370 tsu_curve.kata.ma;
1371 tsu_render;
1372 endtsuglyph;

```

[see page 130]

1373

```

1374 % katakana "mi"
1375 begint Suglyph("uni30DF";223);
1376 tsu_curve.kata.mi;
1377 tsu_render;
1378 endtsuglyph;

```

[see page 131]

1379

```

1380 % katakana "mu"
1381 begint Suglyph("uni30E0";224);

```

[see page 132]

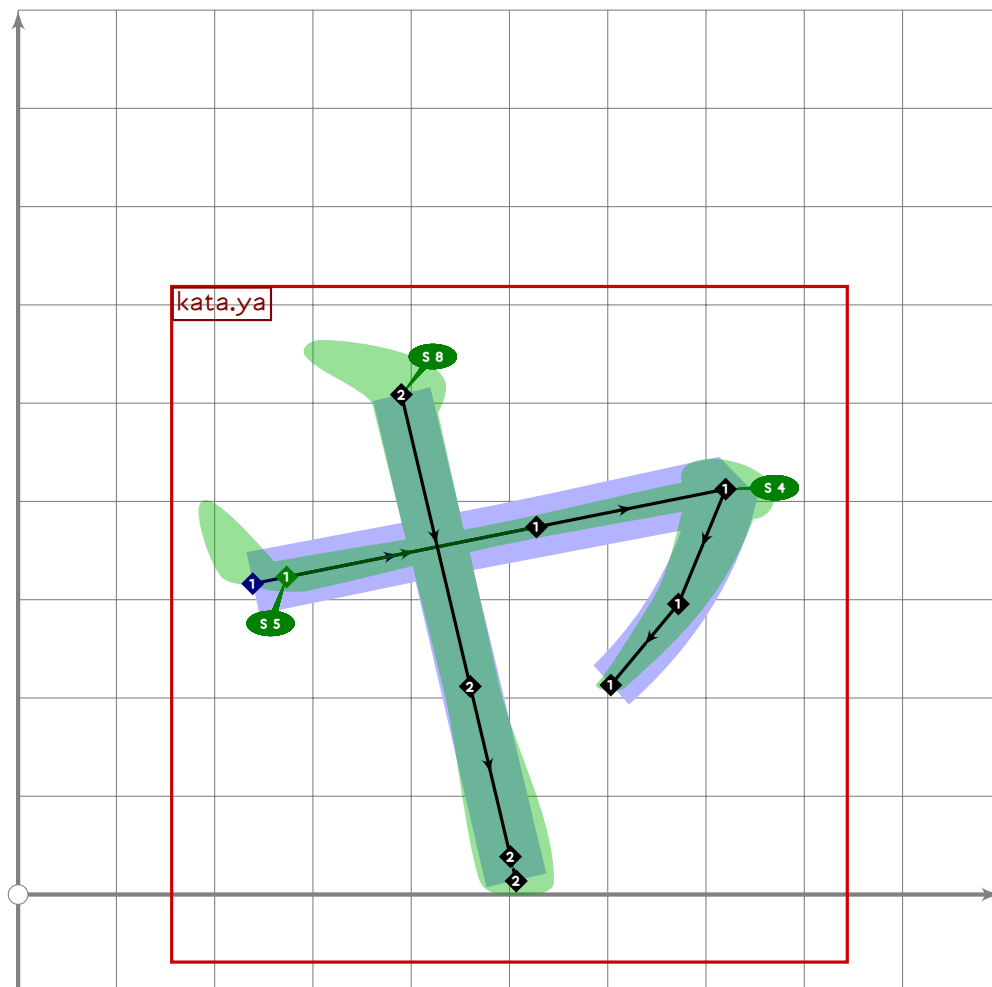
```

1382 tsu_curve.kata.mu;
1383 tsu_render;
1384 endsuglyph;
1385
1386 % katakana "me"
1387 begintsuglyph("uni30E1";225);
1388 tsu_curve.kata.me;
1389 tsu_render;
1390 endsuglyph;
1391
1392 % katakana "mo"
1393 begintsuglyph("uni30E2";226);
1394 tsu_curve.kata.mo;
1395 tsu_render;
1396 endsuglyph;
1397

```

[see page 133]

[see page 134]



```

1398 % katakana "small ya"
1399 begintsuglyph("uni30E3";227);
1400 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ya);
1401 tsu_render;
1402 endsuglyph;

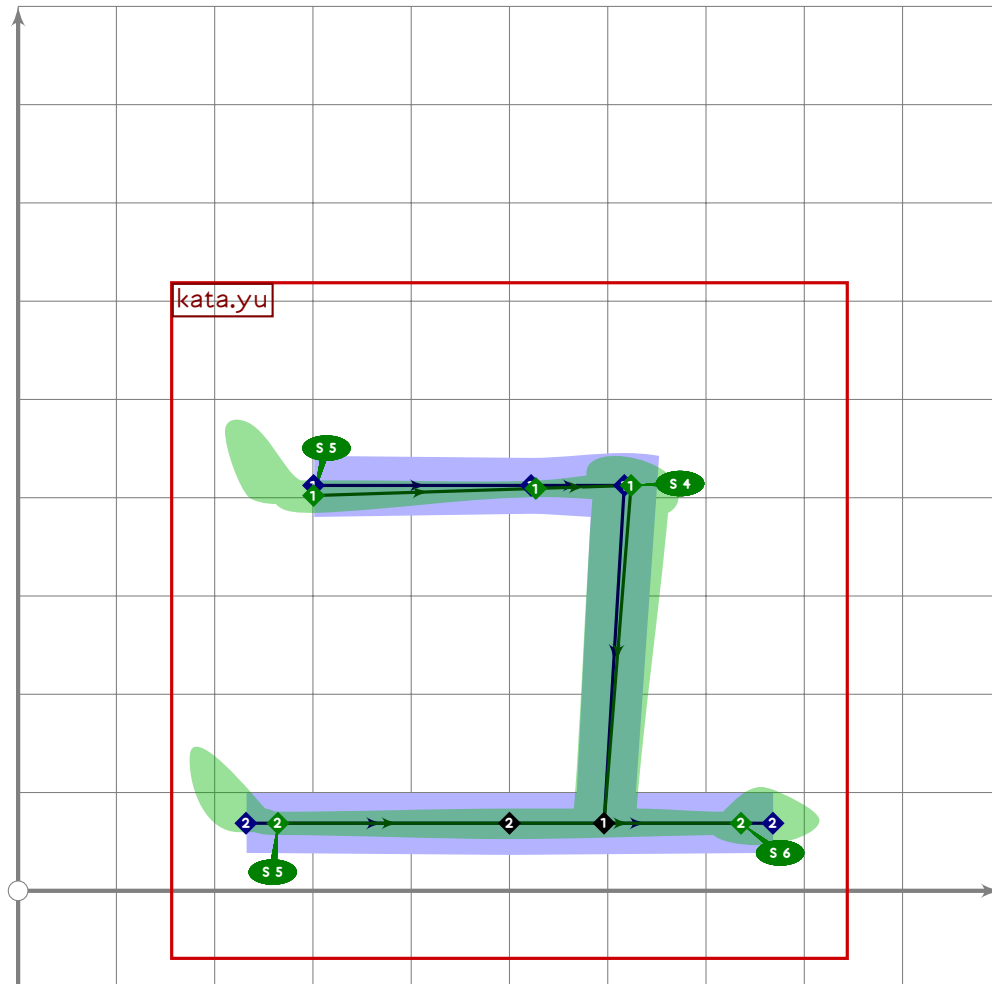
```

```

1403
1404 % katakana "ya"
1405 begintsuglyph("uni30E4",228);
1406 tsu_curve.kata.ya;
1407 tsu_render;
1408 endtsuglyph;
1409

```

[see page 135]



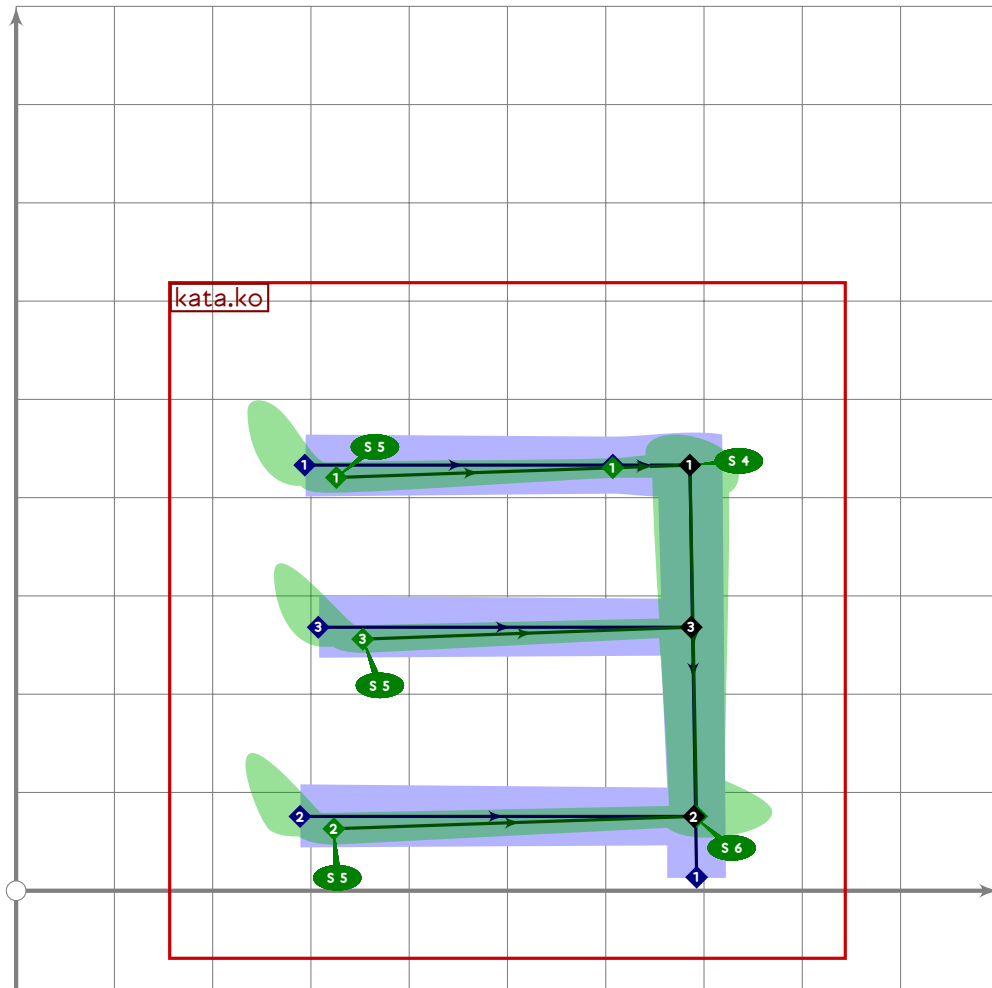
```

1410 % katakana "small yu"
1411 begintsuglyph("uni30E5",229);
1412 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.yu);
1413 tsu_render;
1414 endtsuglyph;
1415
1416 % katakana "yu"
1417 begintsuglyph("uni30E6",230);
1418 tsu_curve.kata.yu;
1419 tsu_render;
1420 endtsuglyph;
1421

```

[see page 136]





```

1422 % katakana "small yo"
1423 begintsuglyph("uni30E7",231);
1424 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.yo);
1425 tsu_render;
1426 endtsuglyph;
1427
1428 % katakana "yo"
1429 begintsuglyph("uni30E8",232);
1430 tsu_curve.kata.yo;
1431 tsu_render;
1432 endtsuglyph;
1433
1434 % katakana "ra"
1435 begintsuglyph("uni30E9",233);
1436 tsu_curve.kata.ra;
1437 tsu_render;
1438 endtsuglyph;
1439
1440 % katakana "ri"
1441 begintsuglyph("uni30EA",234);
1442 tsu_curve.kata.ri;

```

[see page 137]

[see page 138]

[see page 139]

```

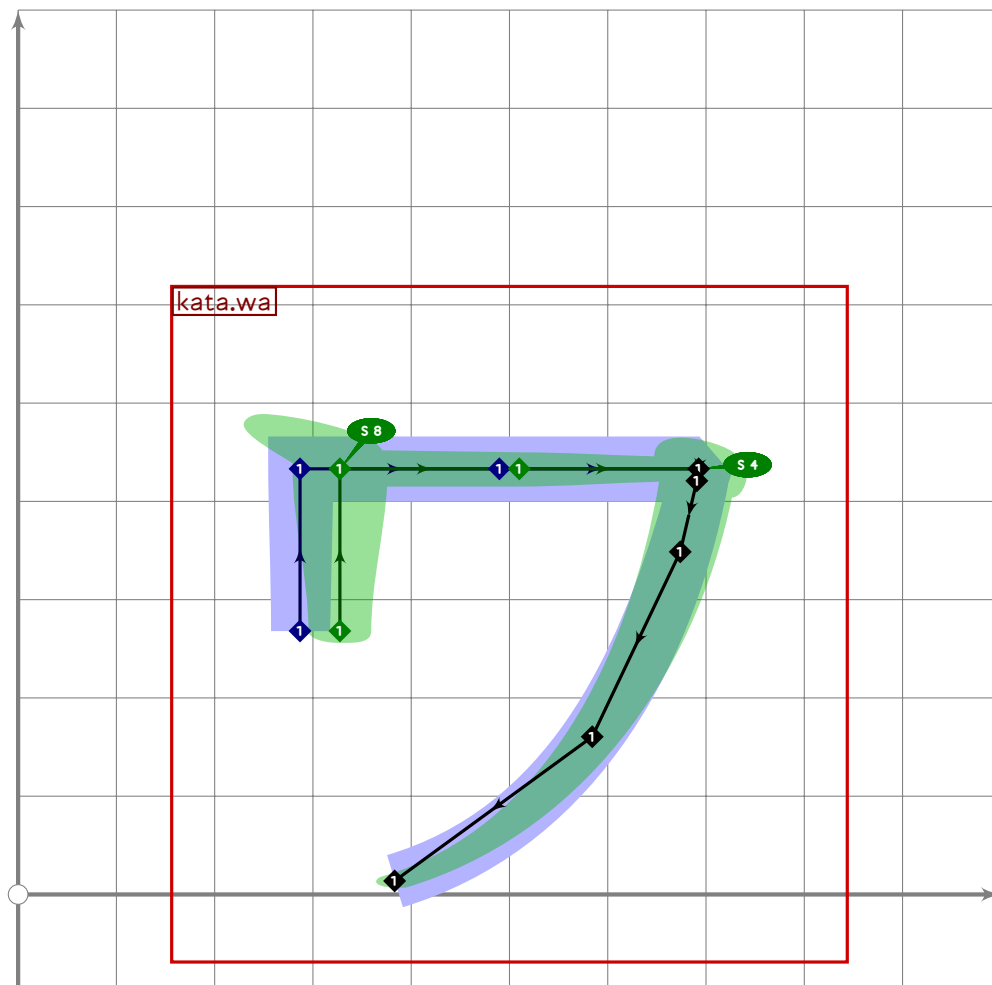
1443 tsu_render;
1444 endtsuglyph;
1445
1446 % katakana "ru"
1447 begintsuglyph("uni30EB";235);
1448 tsu_curve.kata.ru;
1449 tsu_render;
1450 endtsuglyph;
1451
1452 % katakana "re"
1453 begintsuglyph("uni30EC";236);
1454 tsu_curve.kata.re;
1455 tsu_render;
1456 endtsuglyph;
1457
1458 % katakana "ro"
1459 begintsuglyph("uni30ED";237);
1460 tsu_curve.kata.ro;
1461 tsu_render;
1462 endtsuglyph;
1463

```

[see page 140]

[see page 141]

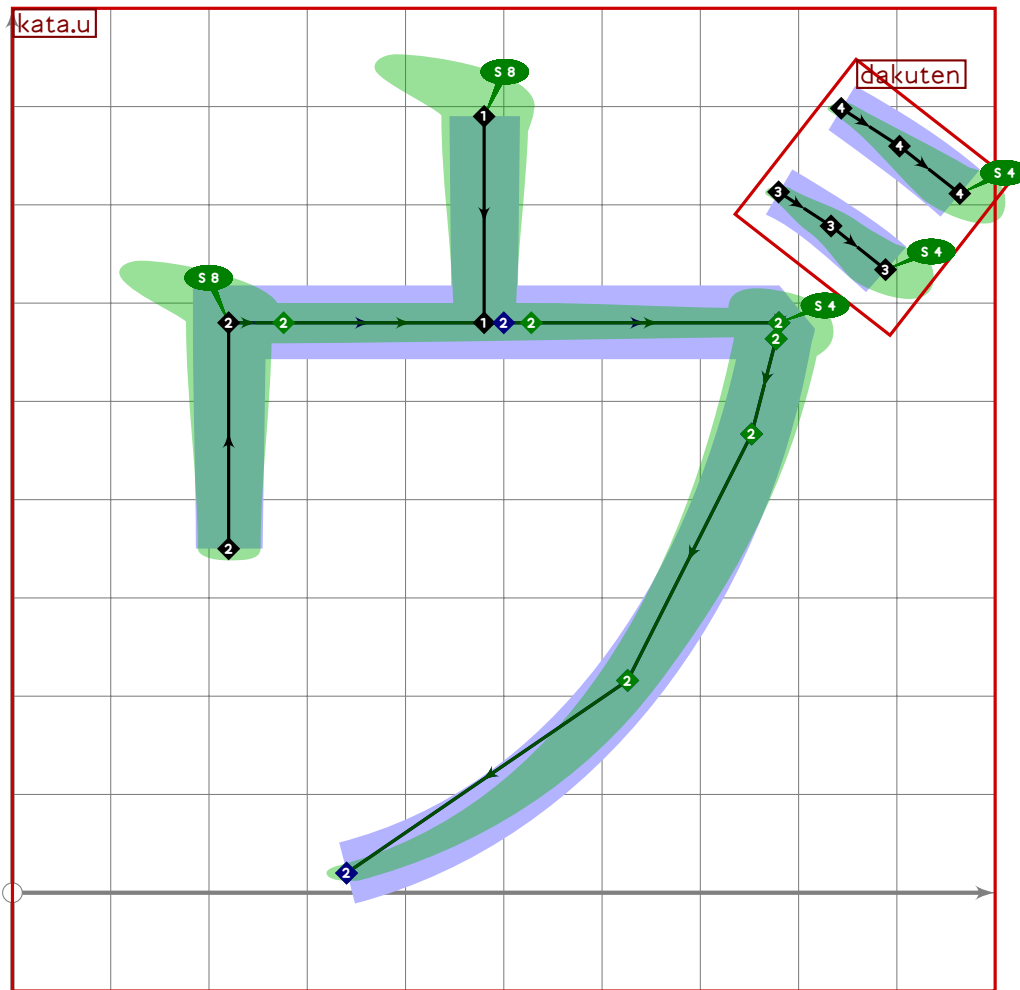
[see page 142]



```

1464 % katakana "small wa"
1465 begintsuglyph("uni30EE",238);
1466 tsu\_xform(tsu_xf.smallkana)(tsu_curve.kata.wa);
1467 tsu\_render;
1468 endtsuglyph;
1469
1470 % katakana "wa"
1471 begintsuglyph("uni30EF",239); \[see page 143\]
1472 tsu\_curve.kata.wa;
1473 tsu\_render;
1474 endtsuglyph;
1475
1476 % katakana "wi"
1477 begintsuglyph("uni30F0",240); \[see page 144\]
1478 tsu\_curve.kata.wi;
1479 tsu\_render;
1480 endtsuglyph;
1481
1482 % katakana "we"
1483 begintsuglyph("uni30F1",241); \[see page 145\]
1484 tsu\_curve.kata.we;
1485 tsu\_render;
1486 endtsuglyph;
1487
1488 % katakana "wo"
1489 begintsuglyph("uni30F2",242); \[see page 146\]
1490 tsu\_curve.kata.wo;
1491 tsu\_render;
1492 endtsuglyph;
1493
1494 % katakana "n"
1495 begintsuglyph("uni30F3",243); \[see page 147\]
1496 tsu\_curve.kata.n;
1497 tsu\_render;
1498 endtsuglyph;
1499

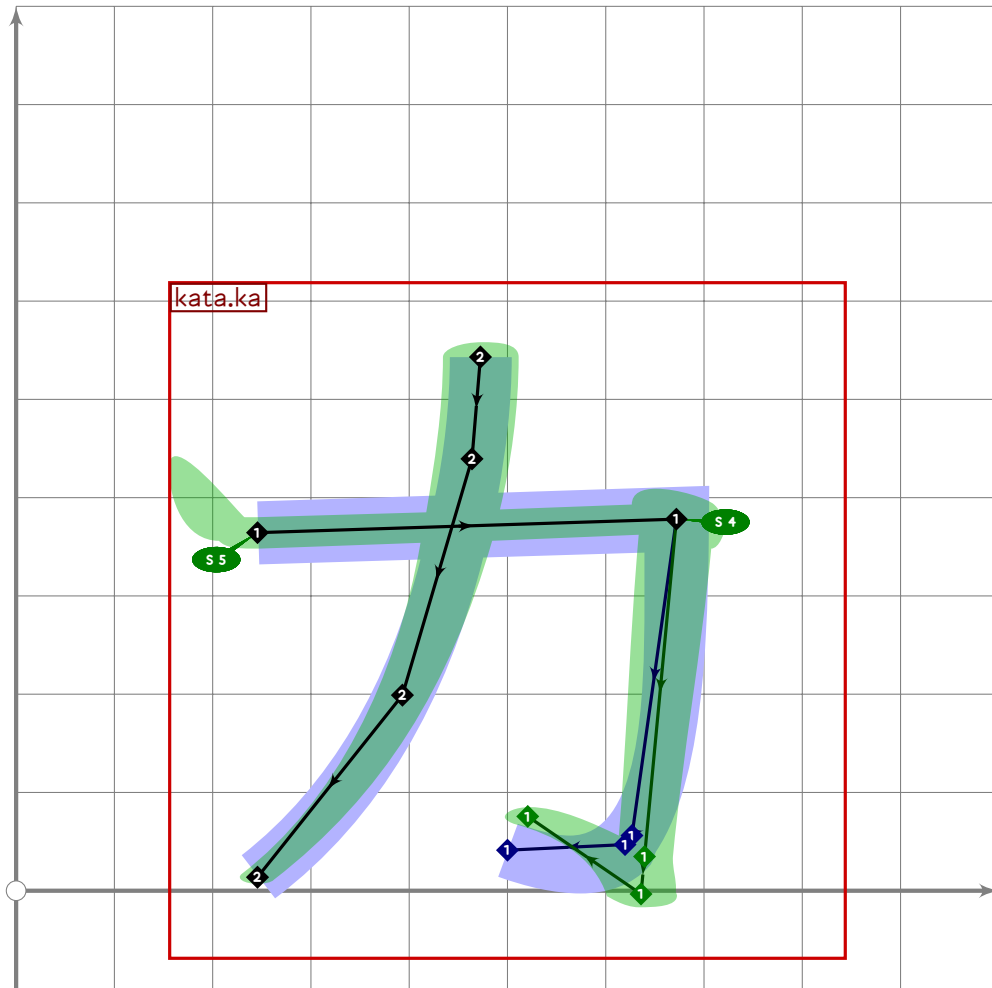
```



```

1500 % katakana "vu"
1501 beginsuglyph("uni30F4",244);
1502 tsu_curve.kata.u;
1503 tsu_curve.dakuten(identity rotated 12 shifted (860,720));
1504 tsu_render;
1505 endsuglyph;
1506

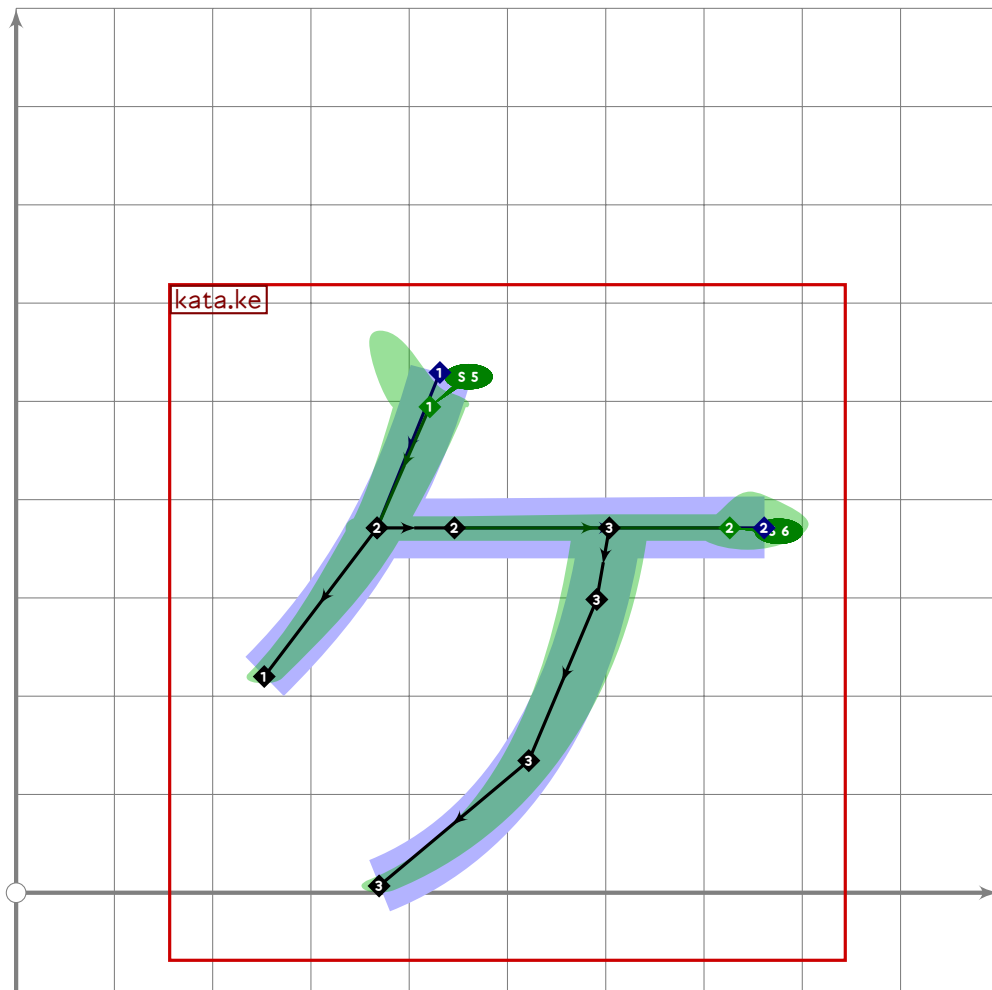
```



```

1507 % katakana "small ka"
1508 begint Suglyph("uni30F5";245);
1509 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ka);
1510 tsu_render;
1511 endtsuglyph;
1512

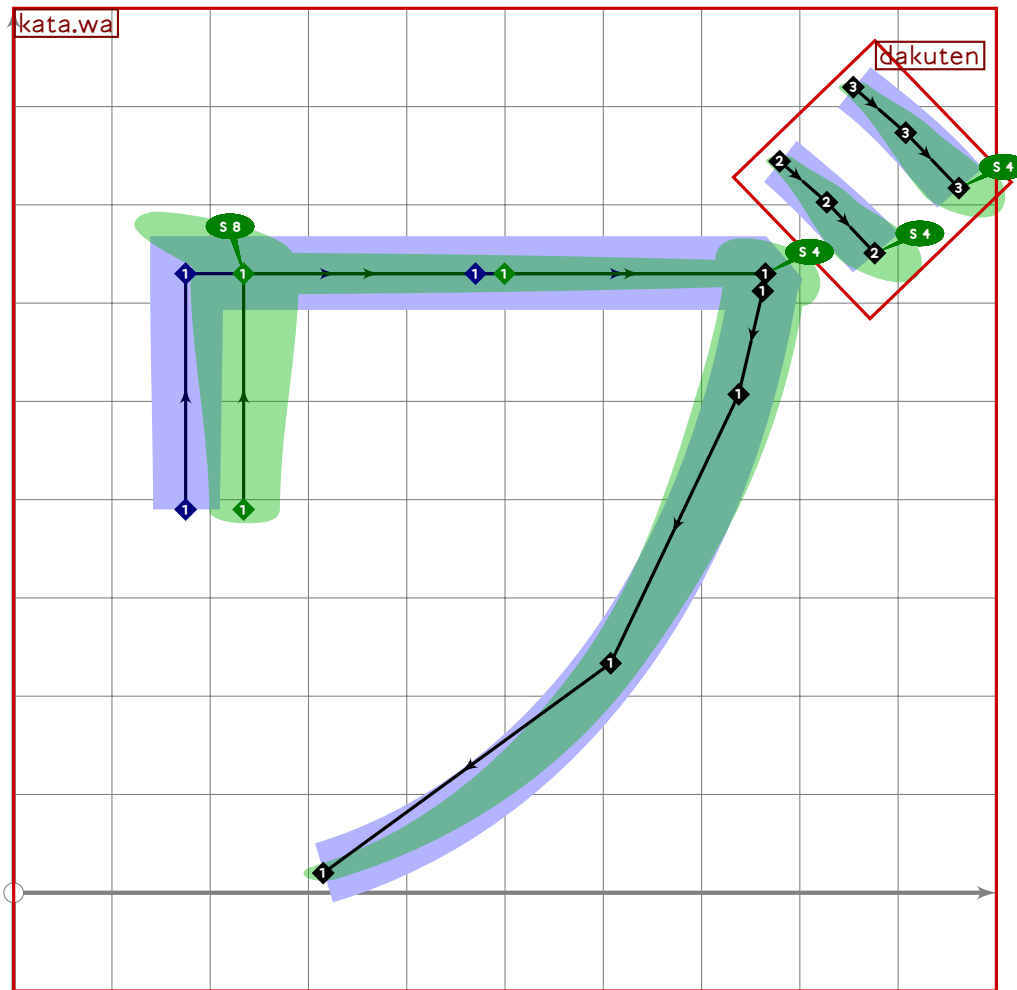
```



```

1513 % katakana "small ke"
1514 begintsuglyph("uni30F6";246);
1515 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ke);
1516 tsu_render;
1517 endsuglyph;
1518

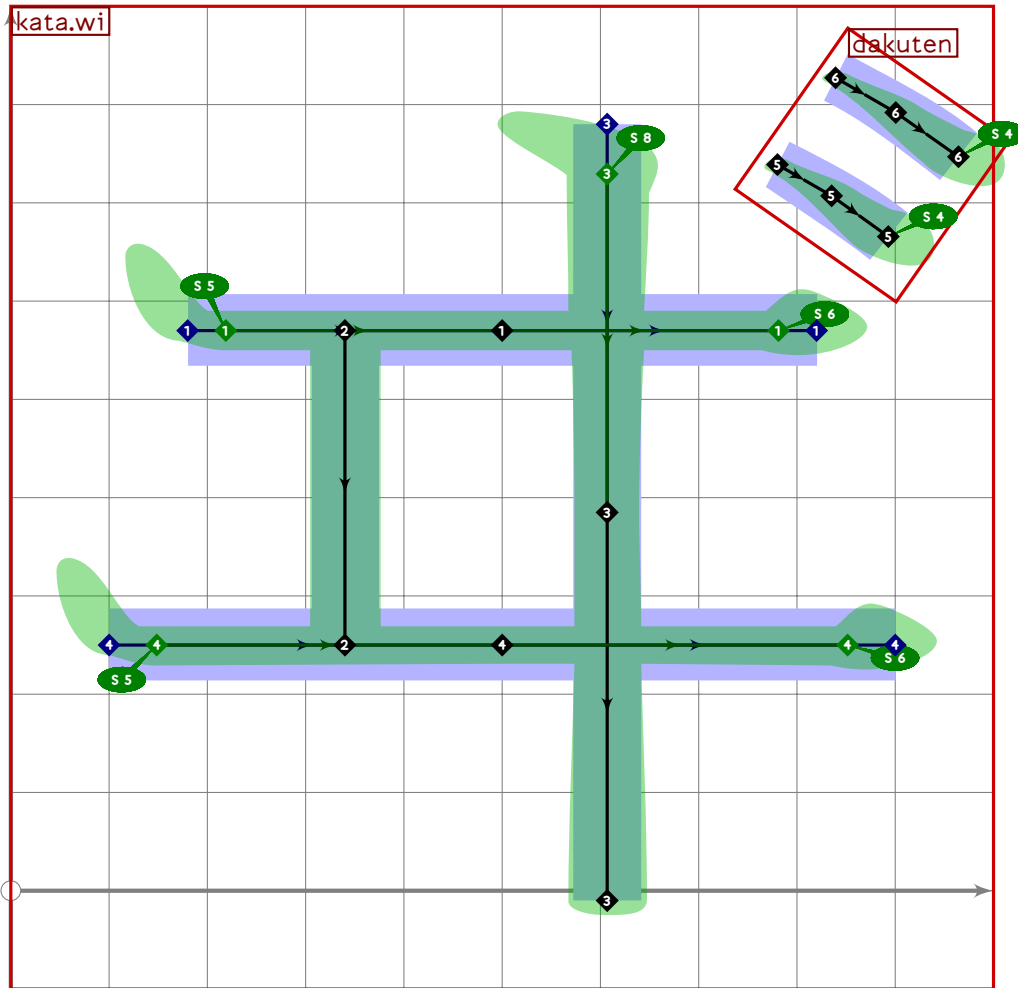
```



```

1519 % katakana "va"
1520 beginsuglyph("uni30F7";247);
1521 tsu_curve.kata.wa;
1522 bp1:=bp1 shifted (-15,0);
1523 tsu_curve.dakuten(identity rotated 4 shifted (860,740));
1524 tsu_render;
1525 endsuglyph;
1526

```

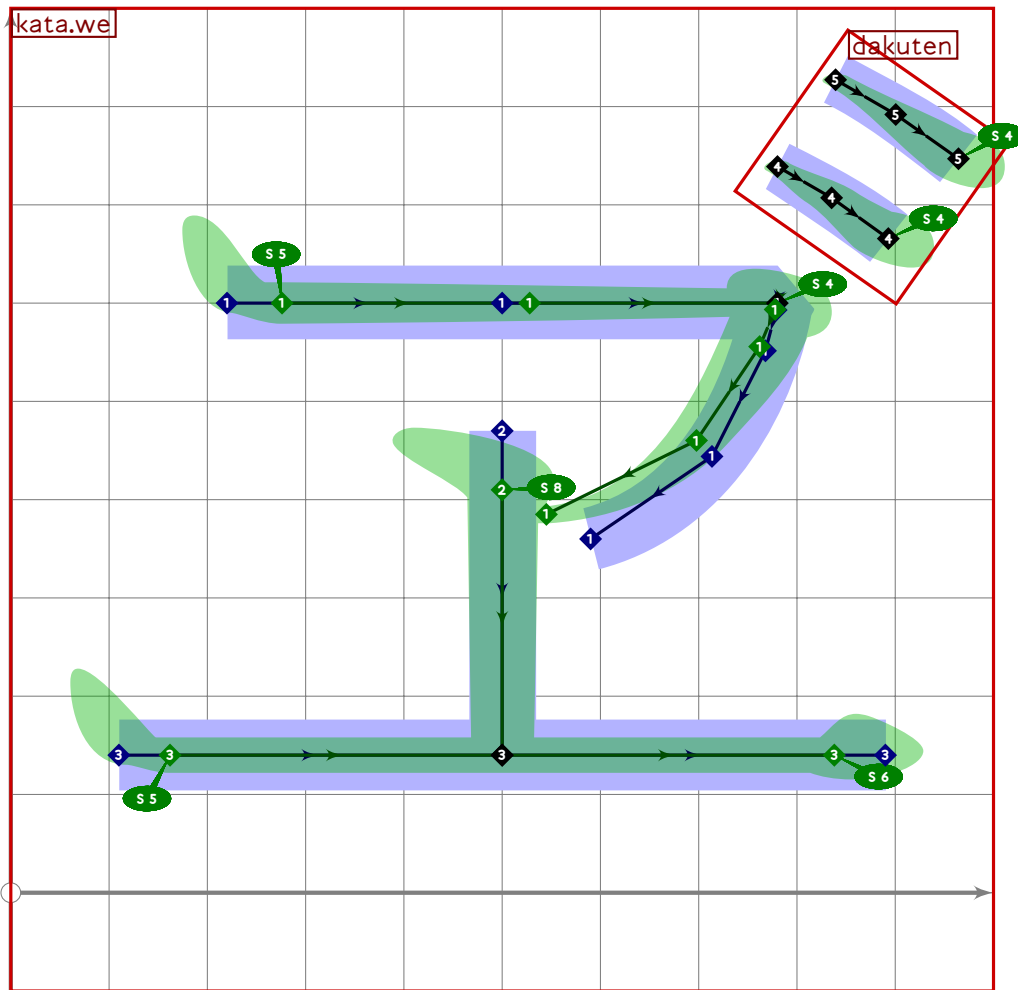


```

1527 % katakana "vi"
1528 begintsuglyph("uni30F8",248);
1529 tsu_curve.kata.wi;
1530 tsu_curve.dakuten(identity rotated 15 shifted (860,750));
1531 tsu_render;
1532 endsuglyph;
1533

```

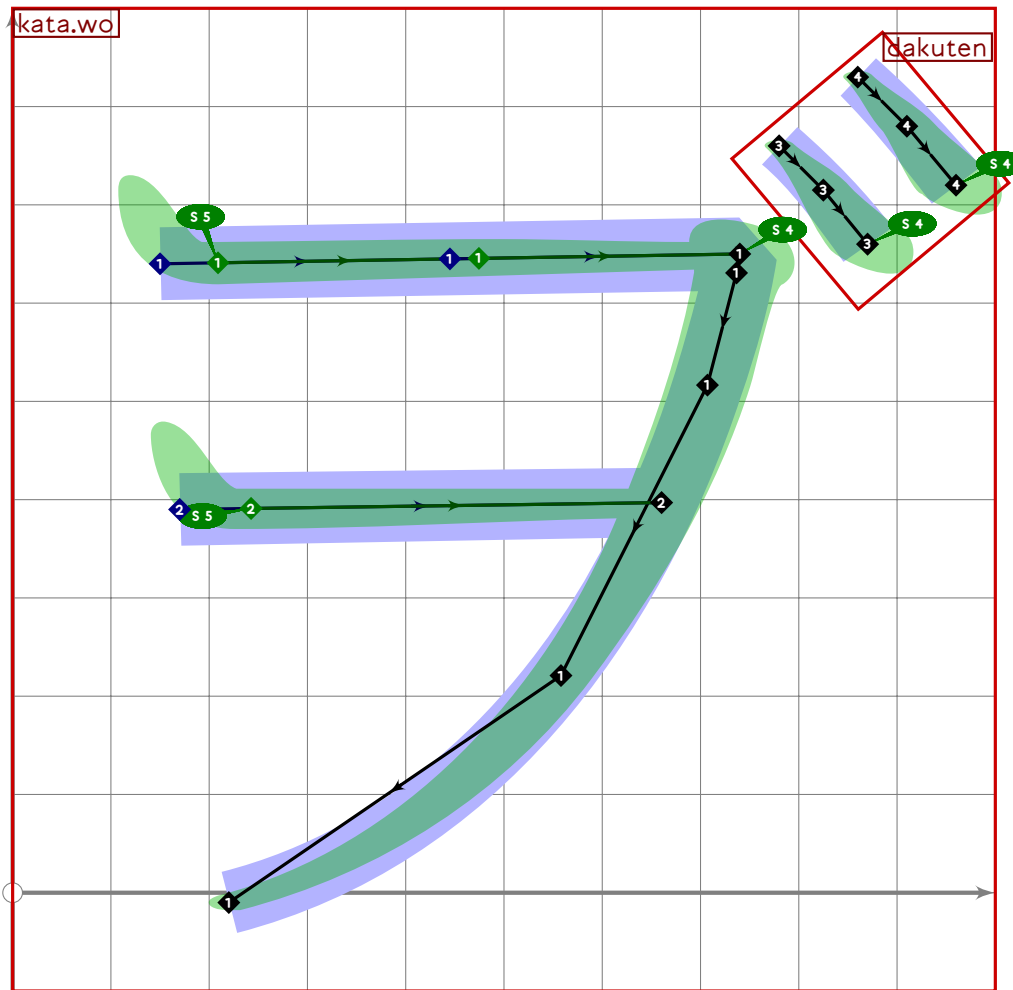




```

1534 % katakana "ve"
1535 begintsuglyph("uni30F9",249);
1536 tsu_curve.kata.we;
1537 tsu_curve.dakuten(identity rotated 15 shifted (860,750));
1538 tsu_render;
1539 endsuglyph;
1540

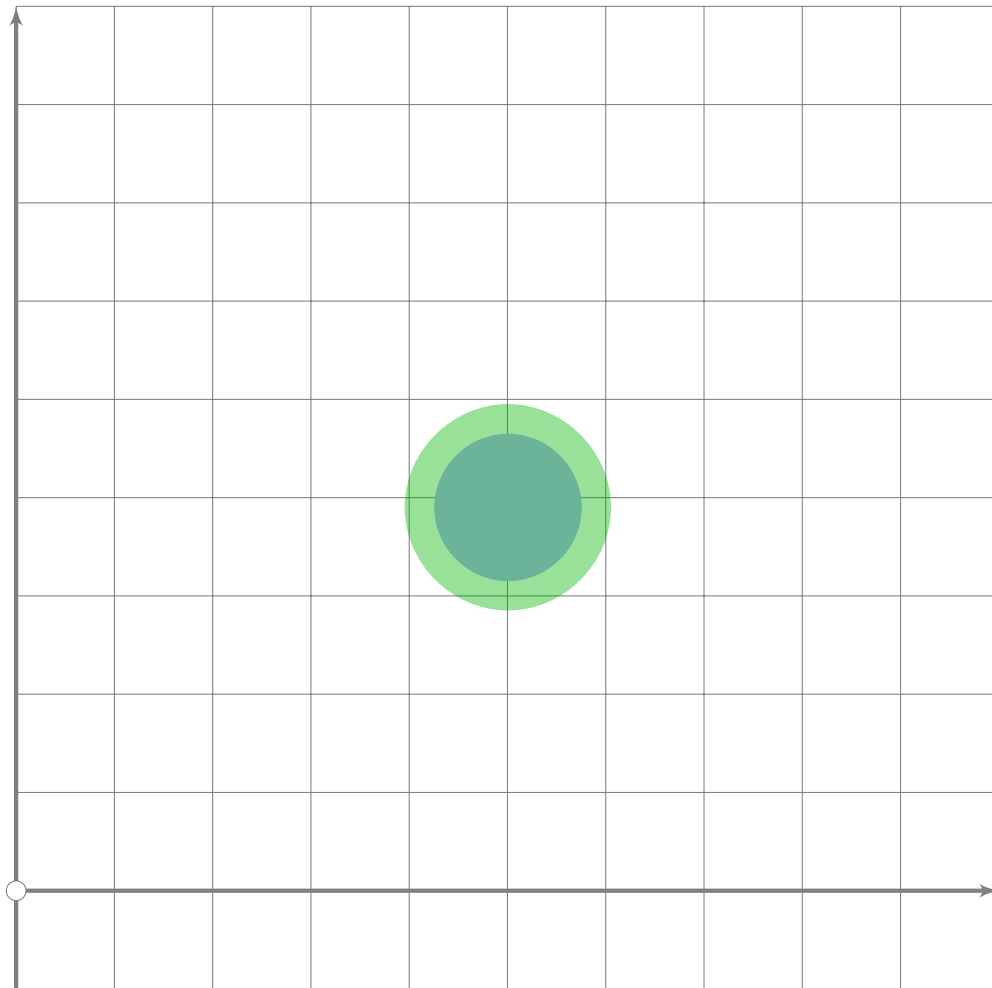
```



```

1541 % katakana "vo"
1542 beginsuglyph("uni30FA";250);
1543 tsu_curve.kata.wo;
1544 bp1:=bp1 shifted (-40,30);
1545 bp2:=bp2 shifted (-40,30);
1546 tsu_curve.dakuten(identity shifted (860,750));
1547 tsu_render;
1548 endsuglyph;
1549

```



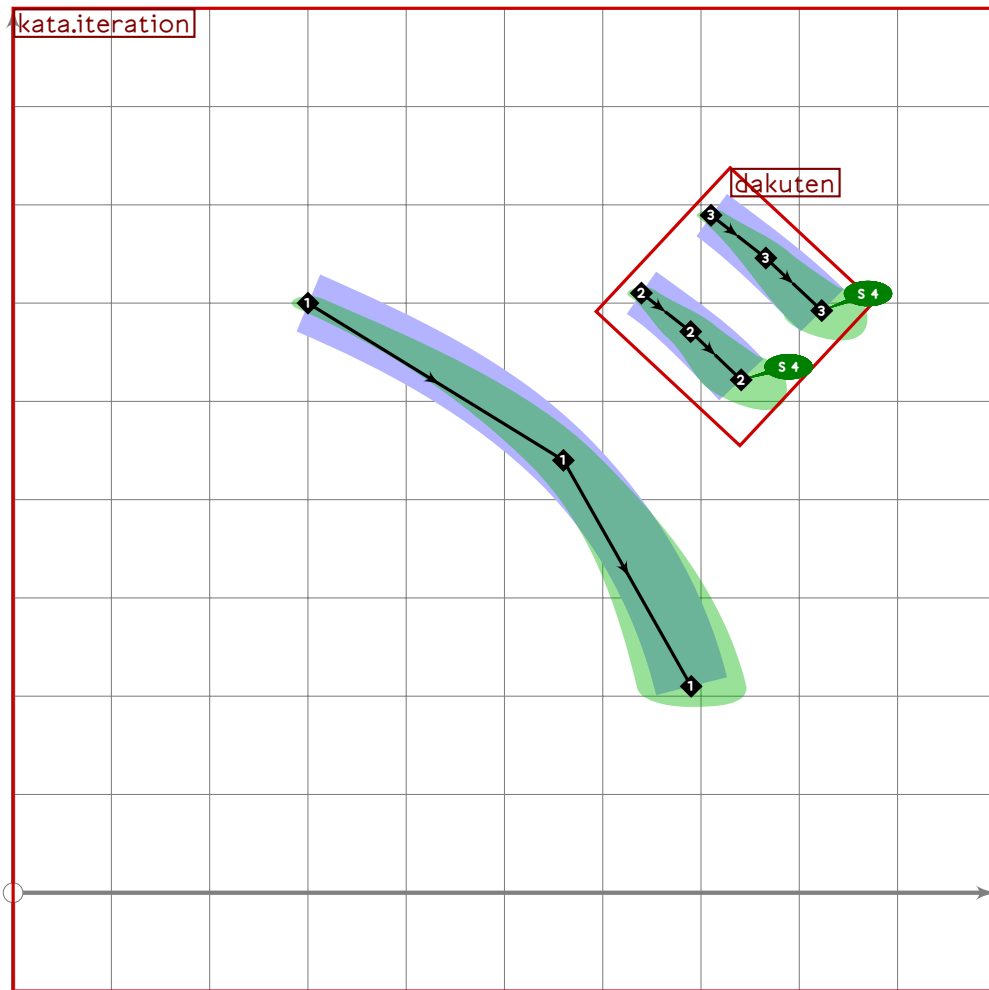
```

1550 % katakana middle dot
1551 begintsuglyph("uni30FB",251);
1552 Fill fullcircle scaled (200*tsu_brush_max) shifted centre_pt;
1553 endsuglyph;
1554
1555 % hira/kata "prolonged sound mark"
1556 begintsuglyph("uni30FC",252);
1557 tsu_curve.punct.psound;
1558 tsu_render;
1559 endsuglyph;
1560
1561 % katakana "iteration mark"
1562 begintsuglyph("uni30FD",253);
1563 tsu_curve.kata.iteration;
1564 tsu_render;
1565 endsuglyph;
1566

```

[see page 285]

[see page 148]



```

1567 % katakana "voiced iteration"
1568 begintsuglyph("uni30FE";254);
1569 tsu_curve.kata.iteration;
1570 tsu_curve.dakuten(identity rotated 7 shifted (720,610));
1571 tsu_render;
1572 endsuglyph;
1573
1574 _____
1575
1576 endfont;
1577
1578 _____

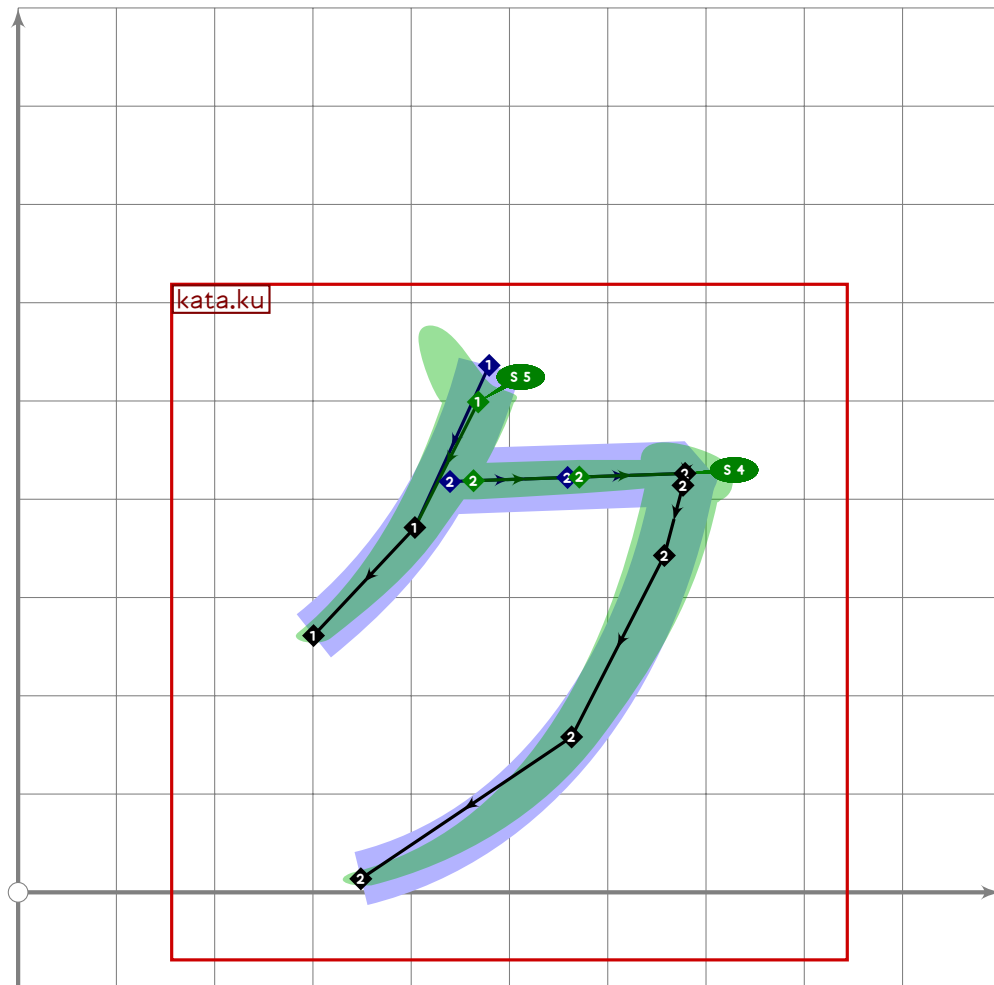
```

# tsuku-31.mp

```
1 %  
2 % Unicode page 31 (Katakana Phonetic Extensions) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input katakana.mp;  
37  
38 _____  
39
```

## Phonetic Extensions For Ainu

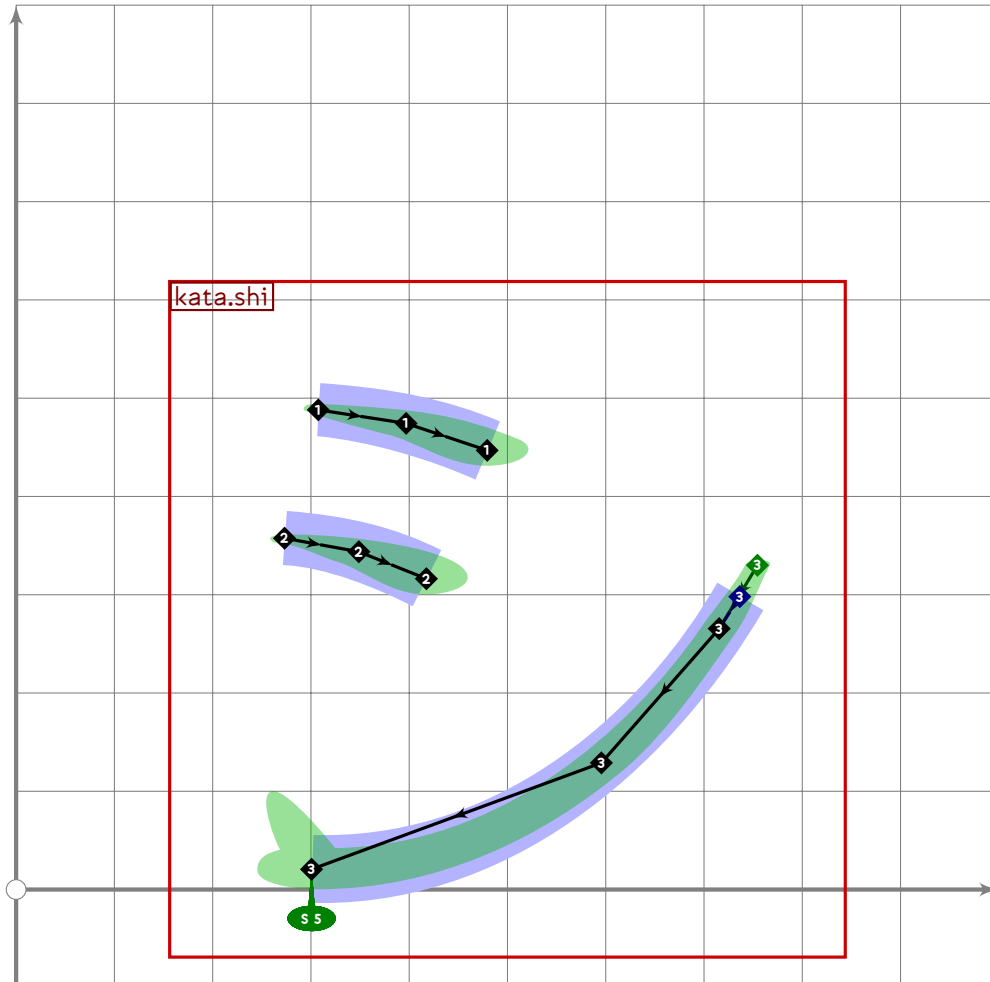
```
40 % PHONETIC EXTENSIONS FOR AINU  
41
```



```

42 % katakana "ku"
43 begintsuglyph("uni31F0";240);
44 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ku);
45 tsu_render;
46 endsuglyph;
47

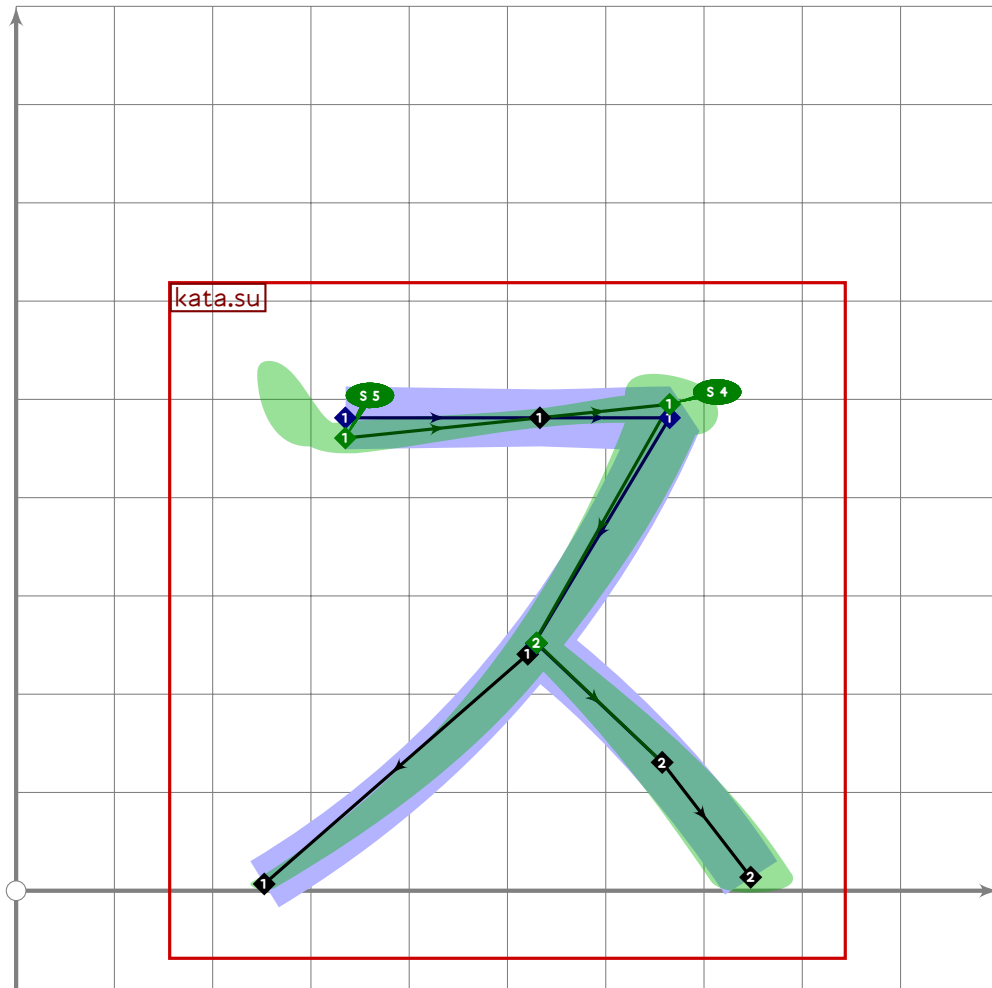
```



```

48 % katakana "shi"
49 begintsuglyph("uni31F1";241);
50 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.shi);
51 tsu_render;
52 endsuglyph;
53

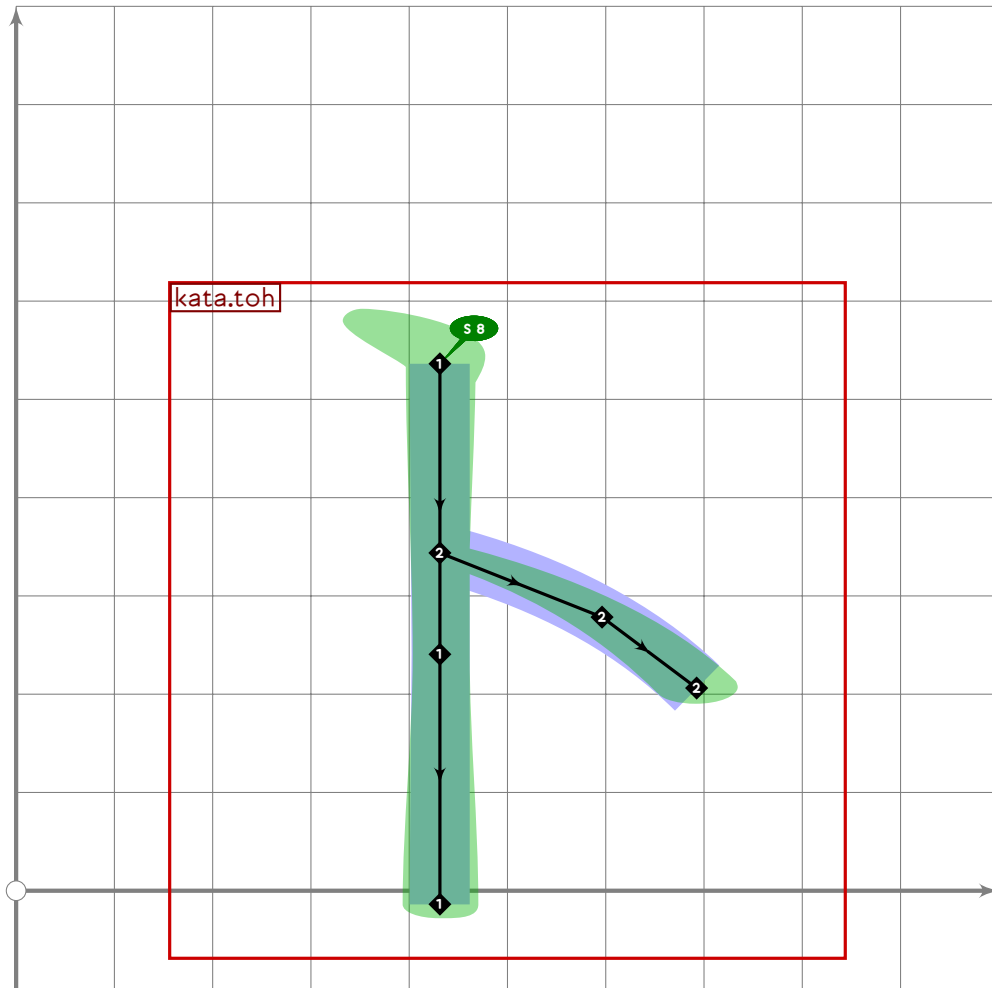
```



```

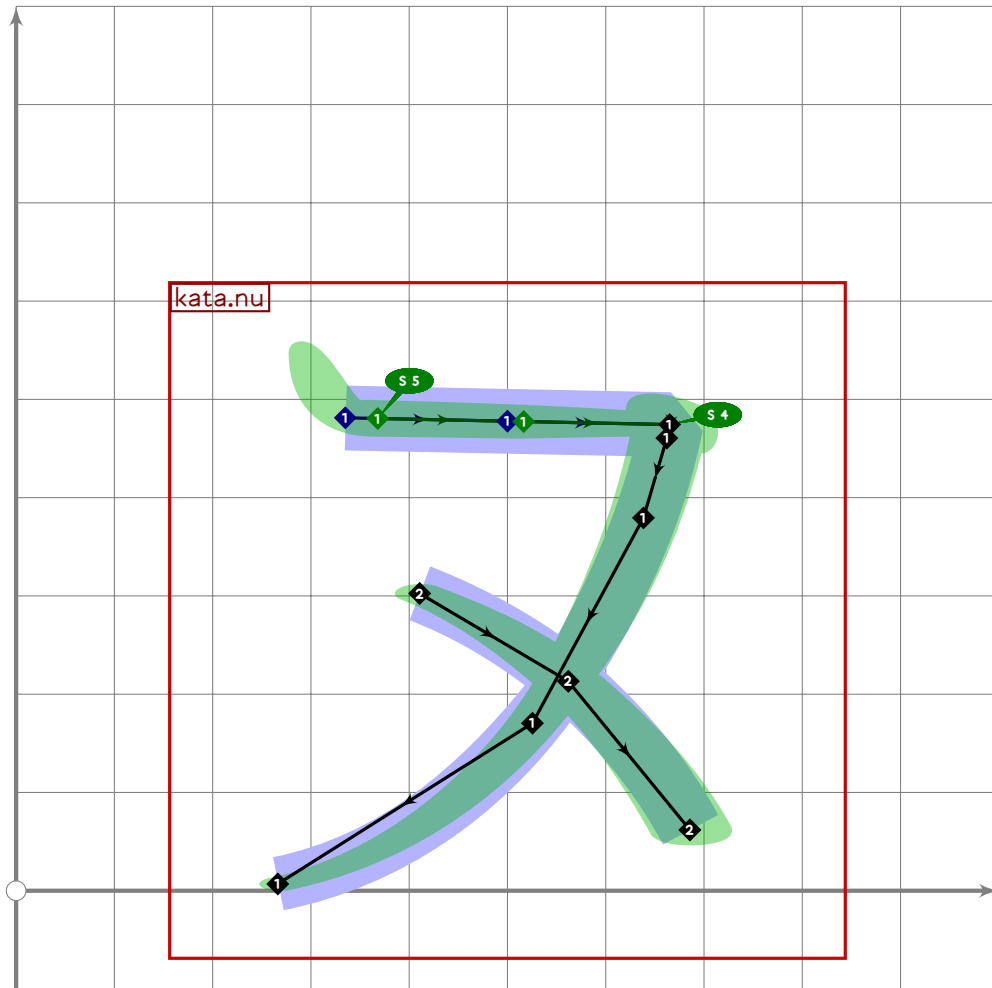
54 % katakana "su"
55 begint Suglyph("uni31F2";242);
56 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.su);
57 tsu_render;
58 endtsuglyph;
59

```



```
60 % katakana "to"  
61 beginsuglyph("uni31F3";243);  
62 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.toh);  
63 tsu_render;  
64 endsuglyph;  
65
```

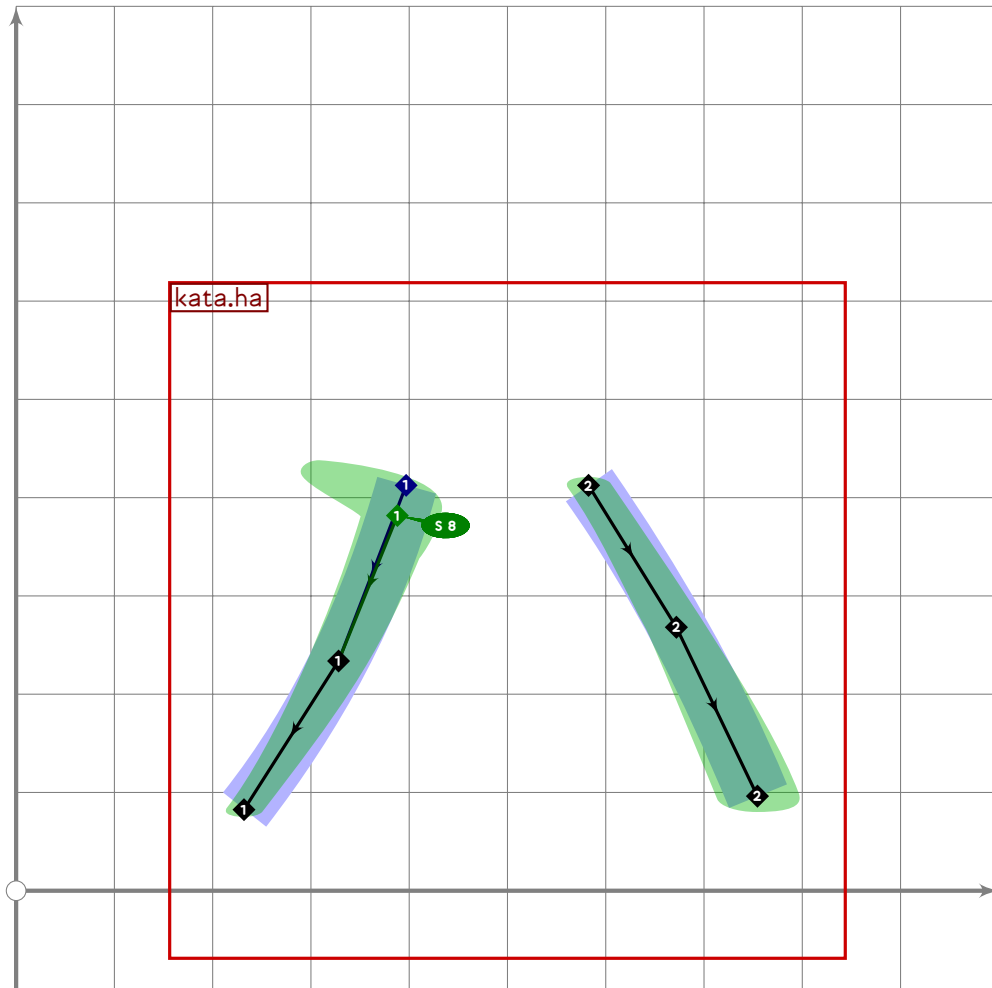




```

66 % katakana "nu"
67 beginsuglyph("uni31F4";244);
68 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.nu);
69 tsu_render;
70 endsuglyph;
71

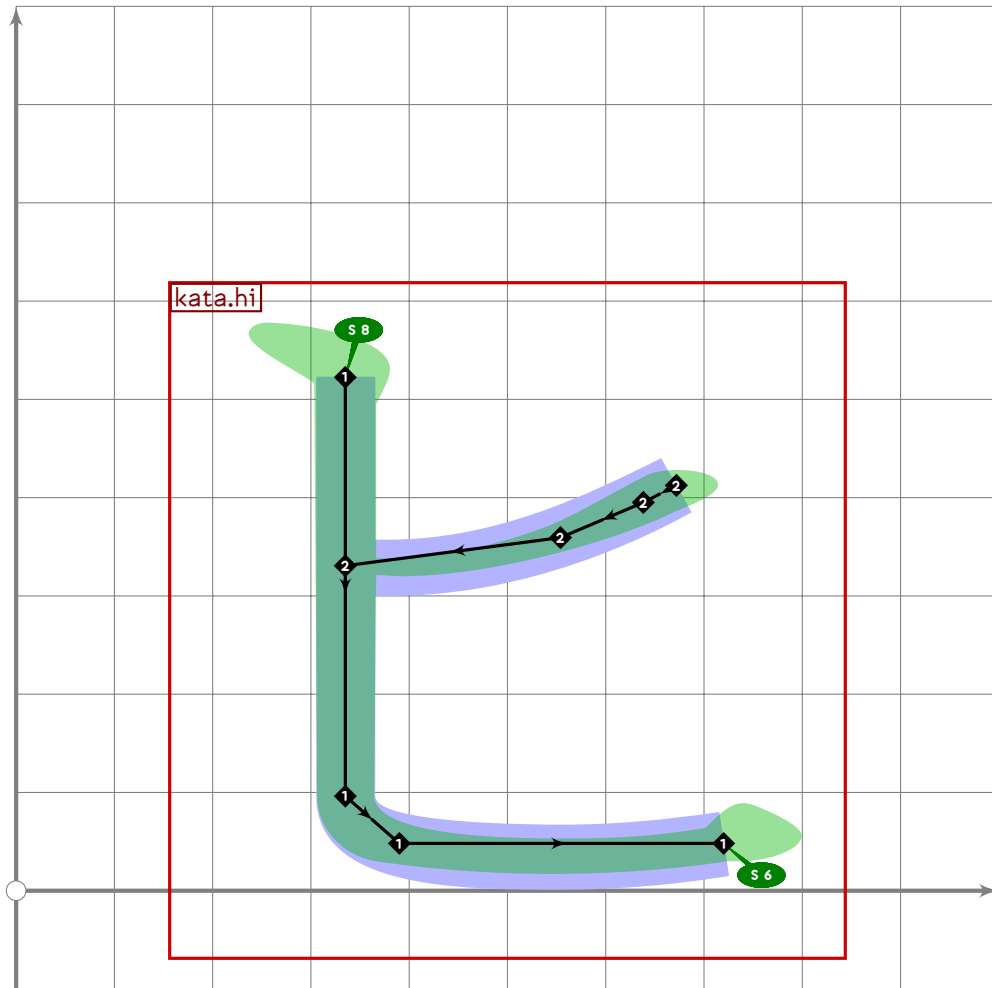
```



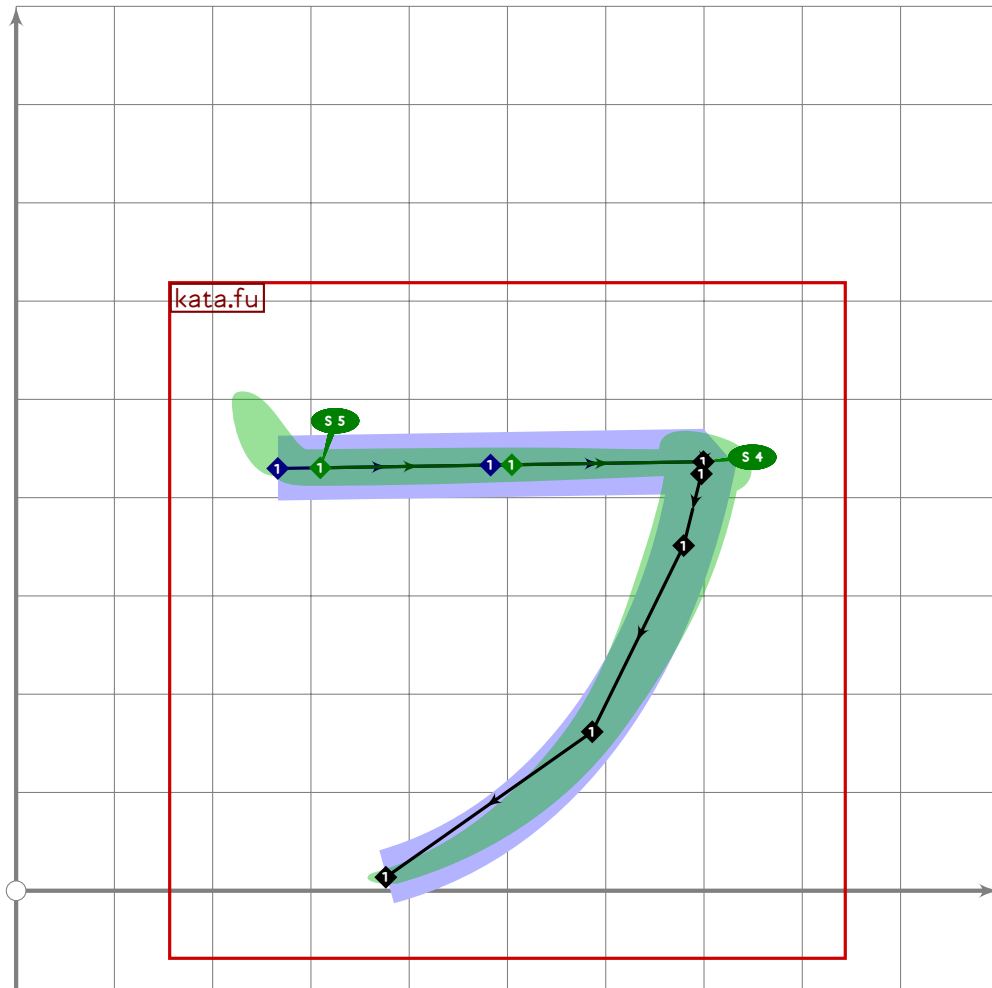
```

72 % katakan "ha"
73 beginsuglyph("uni31F5";245);
74 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ha);
75 tsu_render;
76 endsuglyph;
77

```



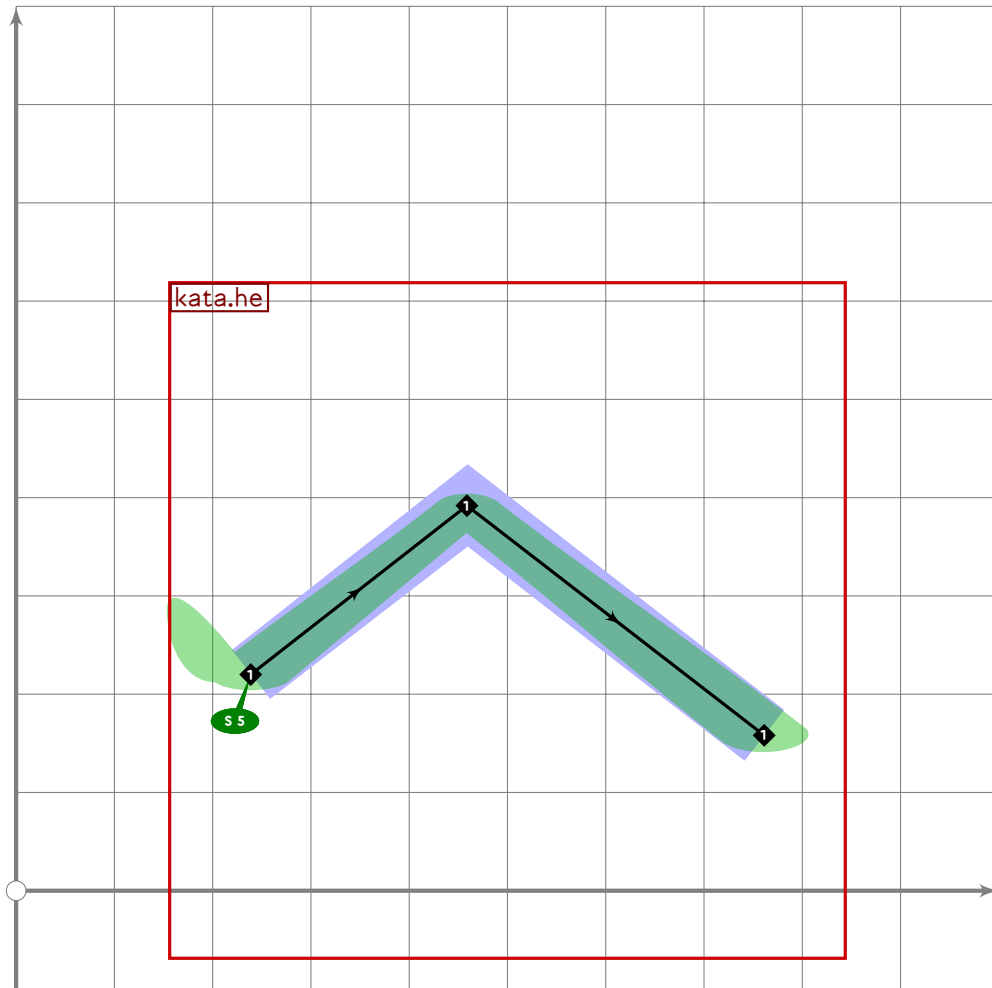
```
78 % hiragana "hi"  
79 begintsuglyph("uni31F6",246);  
80 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.hi);  
81 tsu_render;  
82 endsuglyph;  
83
```



```

84 % katakana "fu"
85 begint Suglyph("uni31F7";247);
86 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.fu);
87 tsu_render;
88 endtsuglyph;
89

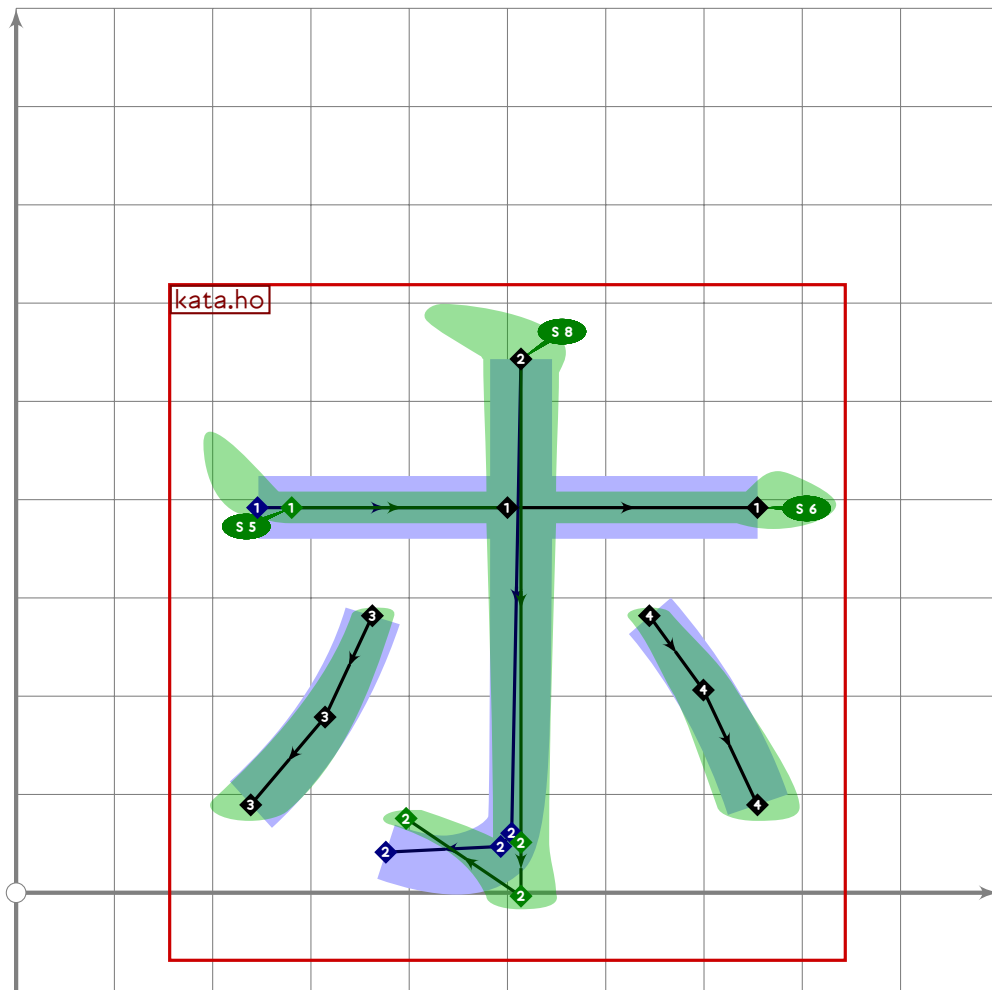
```



```

90 % katakana "he"
91 beginsuglyph("uni31F8";248);
92 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.he);
93 tsu_render;
94 endsuglyph;
95

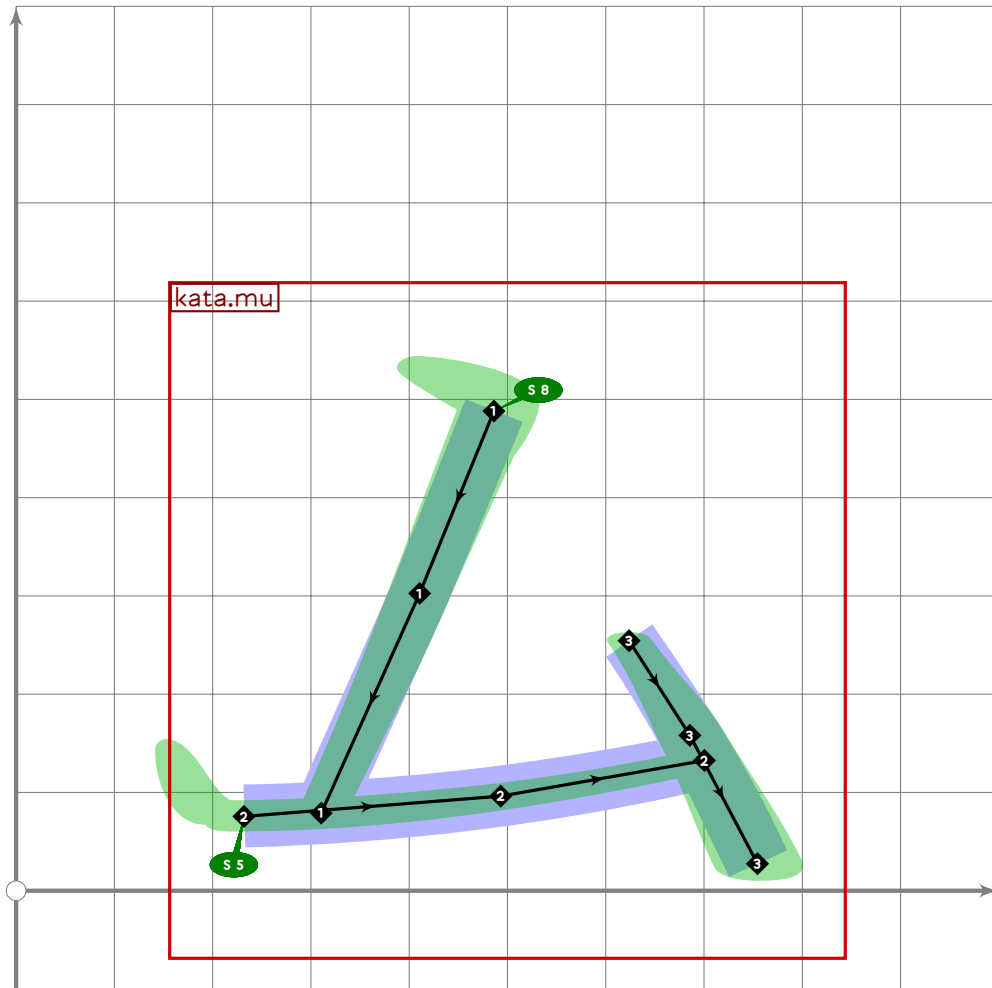
```



```

96 % katakana "ho"
97 beginsuglyph("uni31F9";249);
98 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ho);
99 tsu_render;
100 endsuglyph;
101

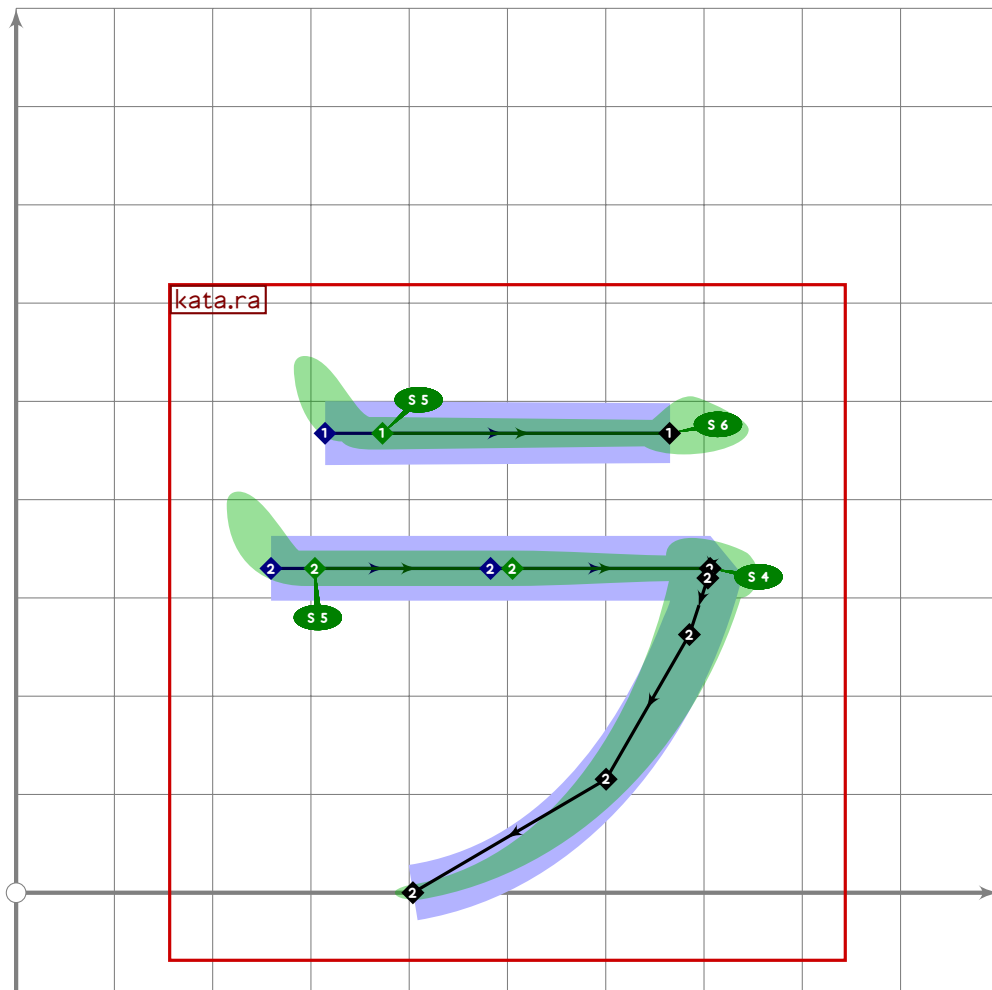
```



```

102 % katakana "mu"
103 beginsuglyph("uni31FA";250);
104 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.mu);
105 tsu_render;
106 endsuglyph;
107

```

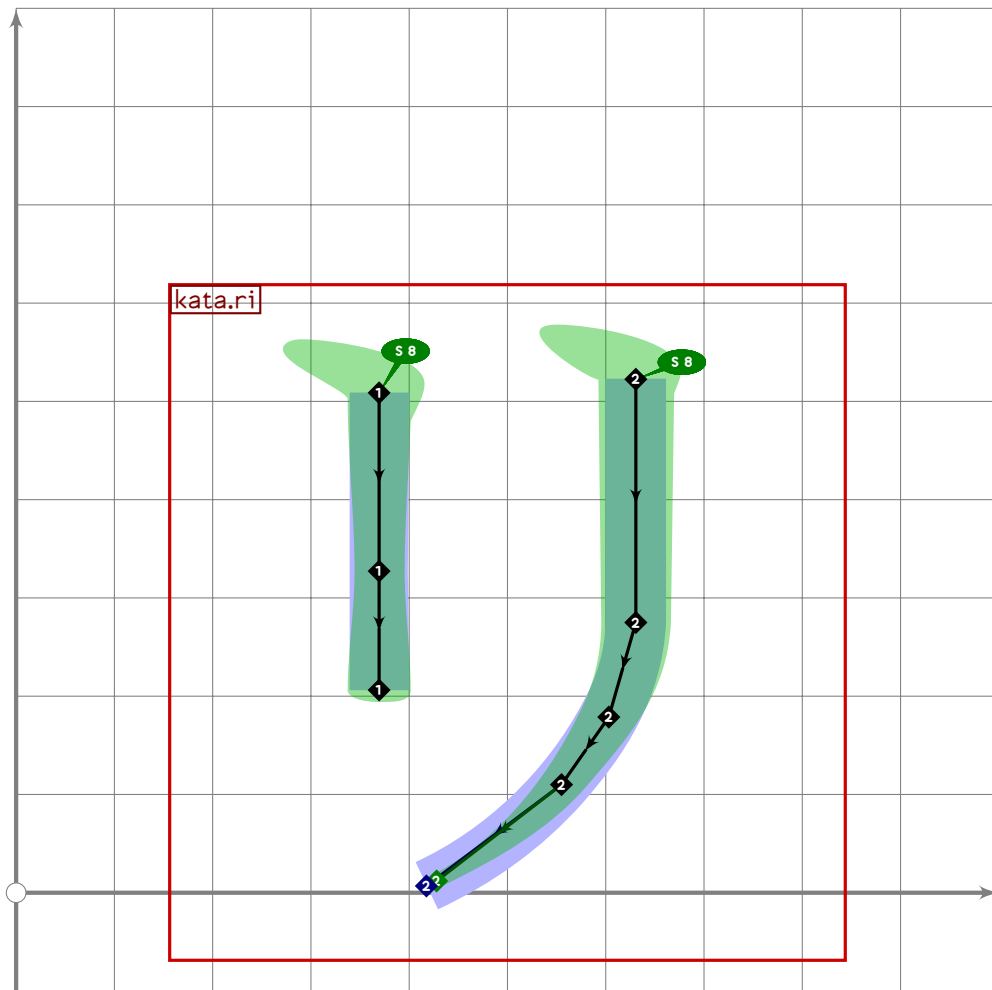


```

108 % katakana "ra"
109 begint Suglyph("uni31FB";251);
110 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ra);
111 tsu_render;
112 endtsuglyph;
113

```

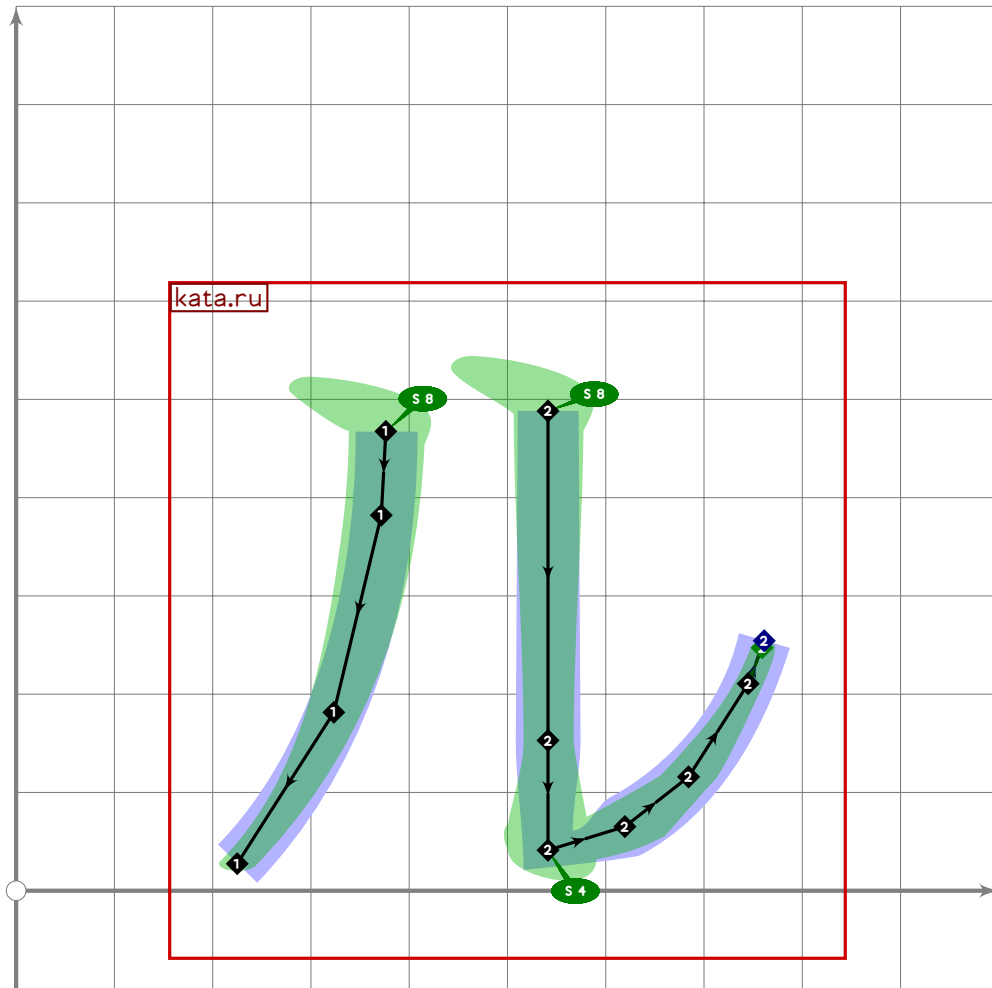




```

114 % katakana "ri"
115 beginsuglyph("uni31FC";252);
116 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ri);
117 tsu_render;
118 endsuglyph;
119

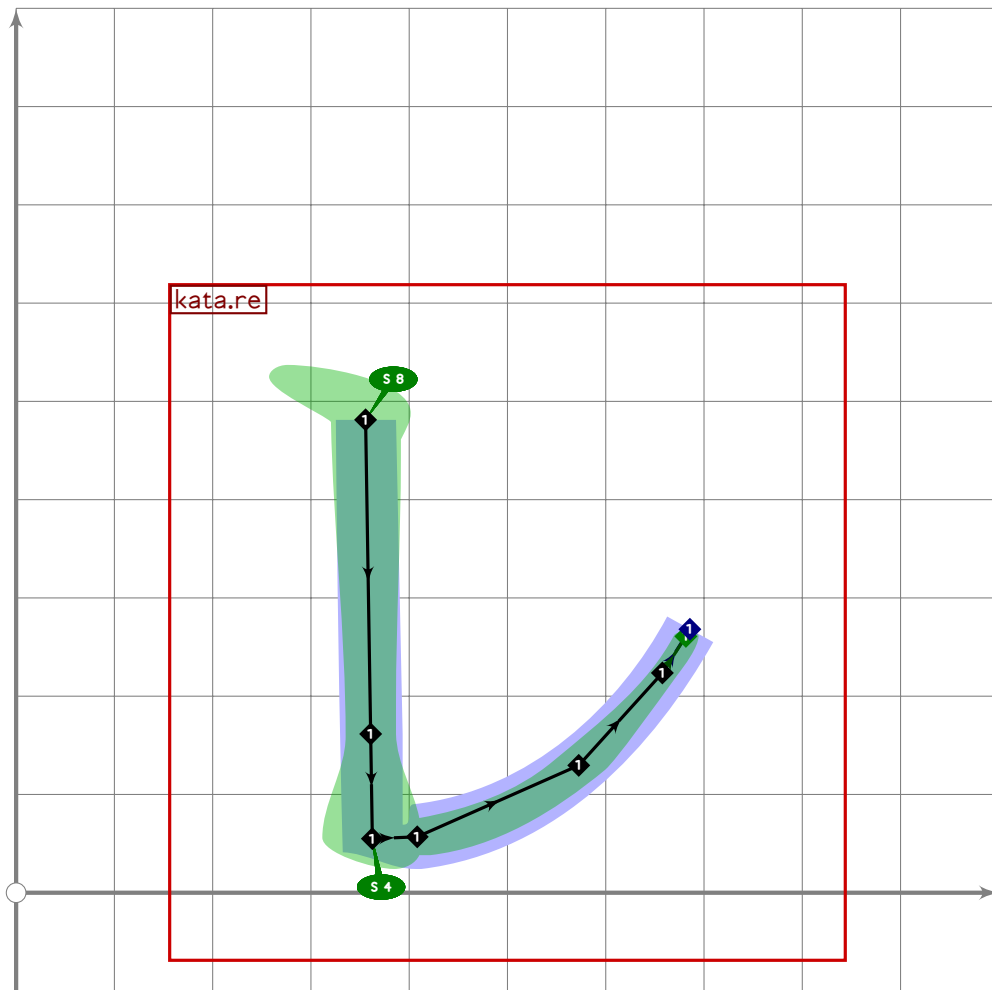
```



```

120 % katakana "ru"
121 begint Suglyph("uni31FD";253);
122 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ru);
123 tsu_render;
124 endtsuglyph;
125

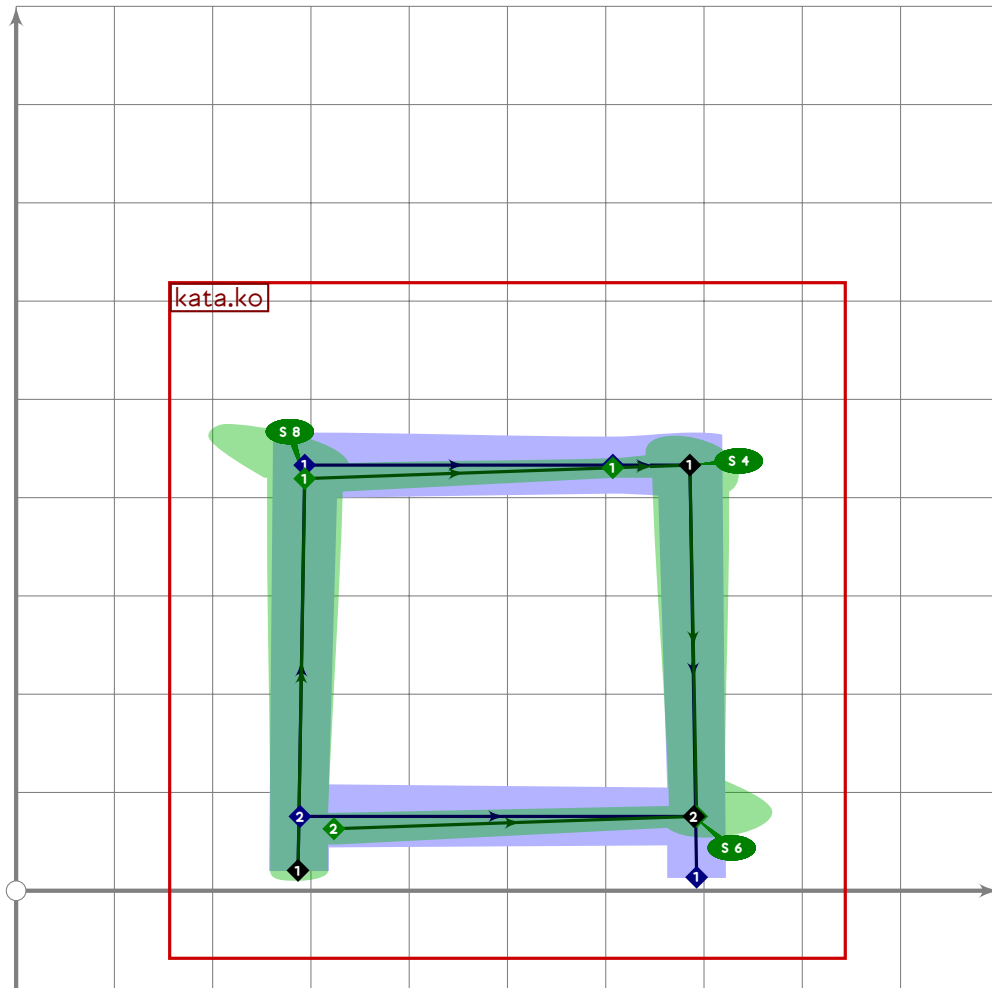
```



```

126 % katakana "re"
127 begint Suglyph("uni31FE";254);
128 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.re);
129 tsu_render;
130 endtsuglyph;
131

```



```

132 % katakana "ro"
133 beginsuglyph("uni31FF";255);
134 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ro);
135 tsu_render;
136 endsuglyph;
137
138 _____
139
140 endfont;
141
142 _____

```

# tsuku-32.mp

```
1 %
2 % Unicode page 32 (Enclosed Alpha and Katakana) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

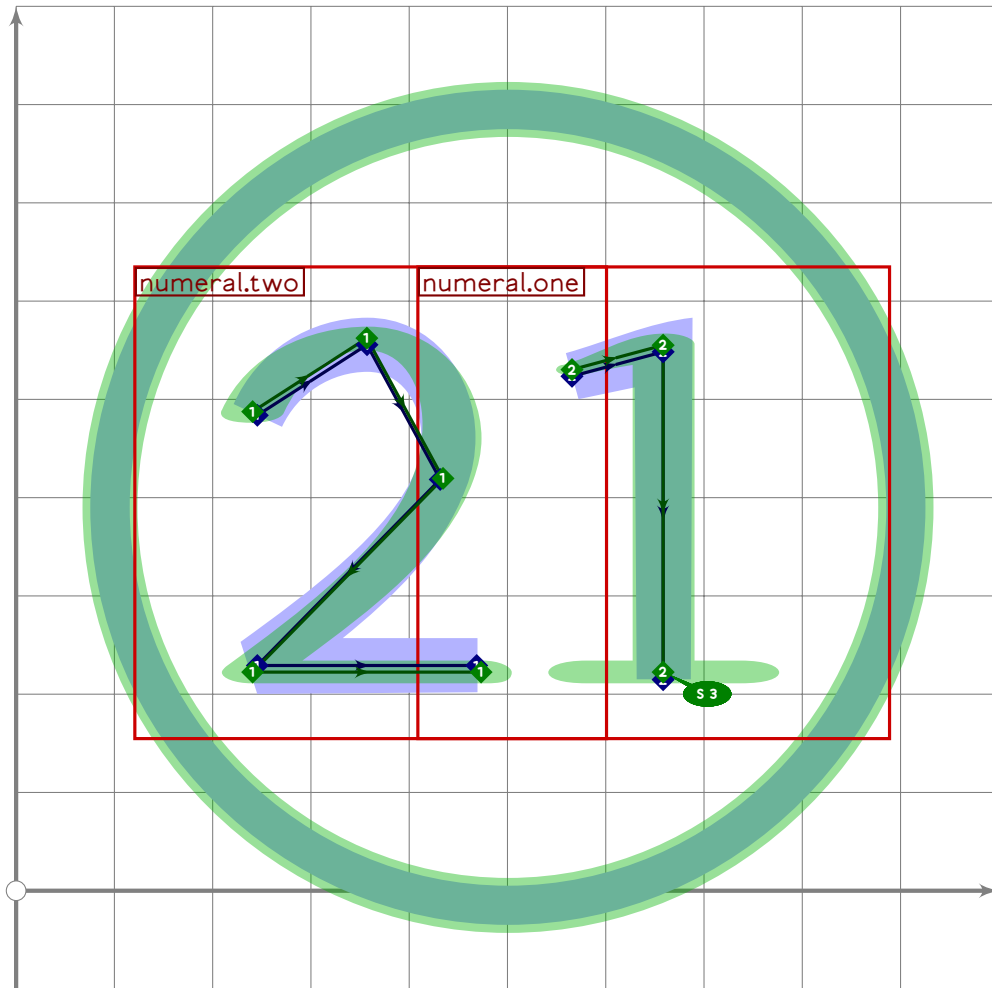

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input enclosed.mp;
39 input katakana.mp;
40 input numerals.mp;
41
42 

---


43
```

## Circled Numerals

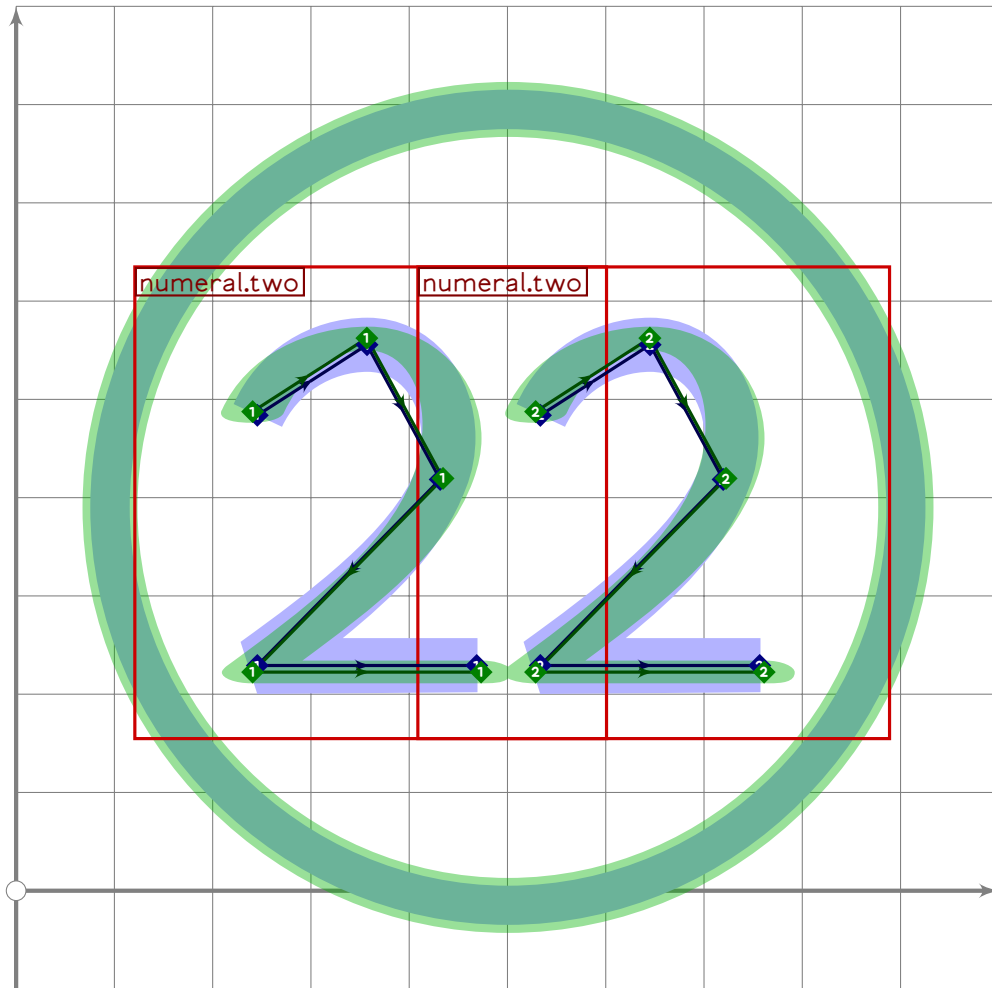
```
44 % CIRCLED NUMERALS
45
```



```

46 % 21
47 begint Suglyph("uni3251",81);
48 tsu_curve.circle.single;
49 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
50 numeric x[],y[];
51 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.one);
52 tsu_render;
53 endtsuglyph;
54

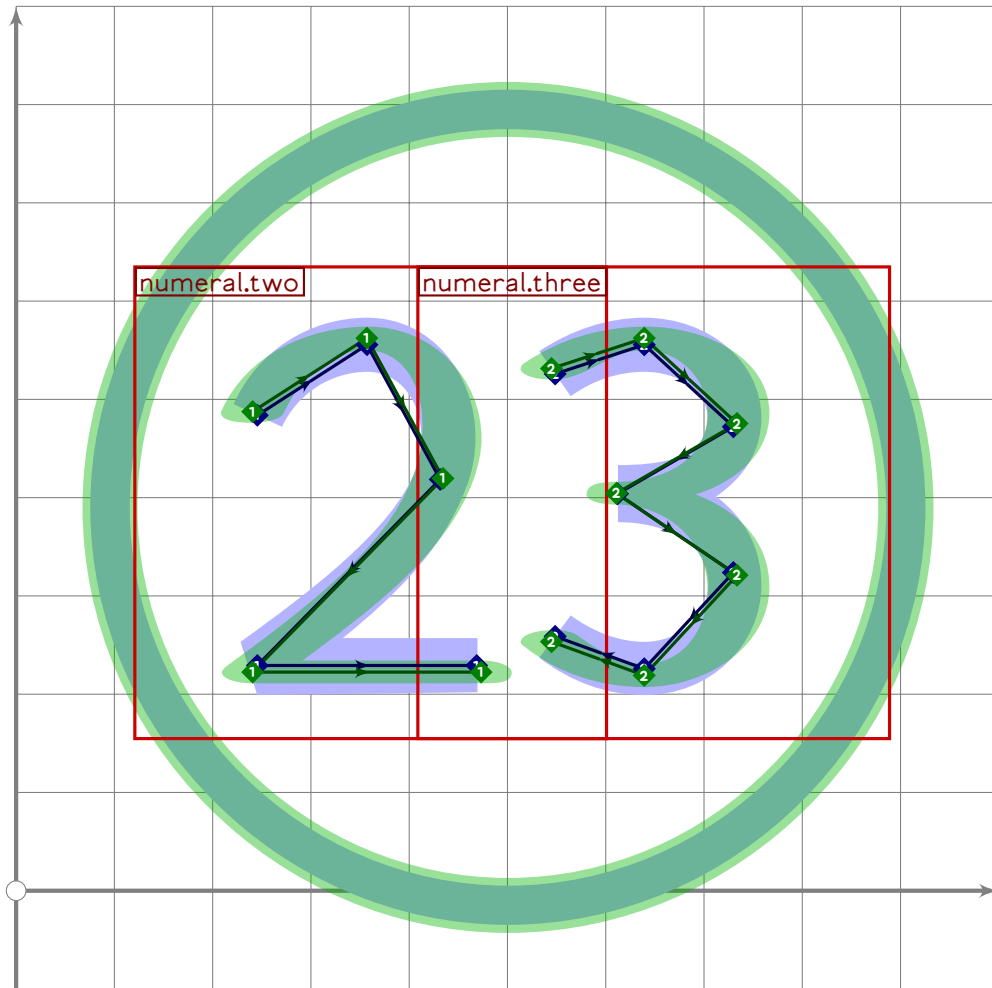
```



```

55 % 22
56 begint Suglyph("uni3252",82);
57 tsu_curve.circle.single;
58 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
59 numeric x[],y[];
60 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.two);
61 tsu_render;
62 endsuglyph;
63

```

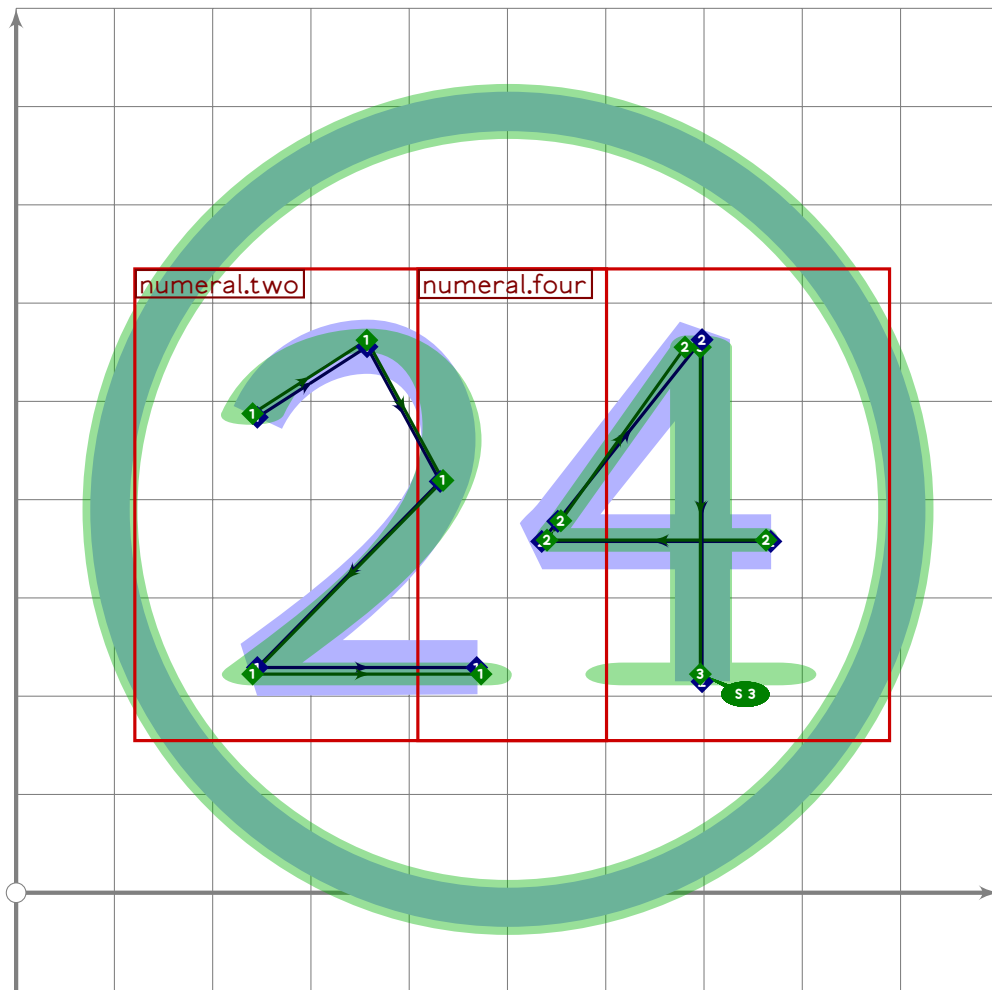


```

64 % 23
65 begint Suglyph("uni3253",83);
66 tsu_curve.circle.single;
67 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
68 numeric x[],y[];
69 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.three);
70 tsu_render;
71 endtsuglyph;
72

```

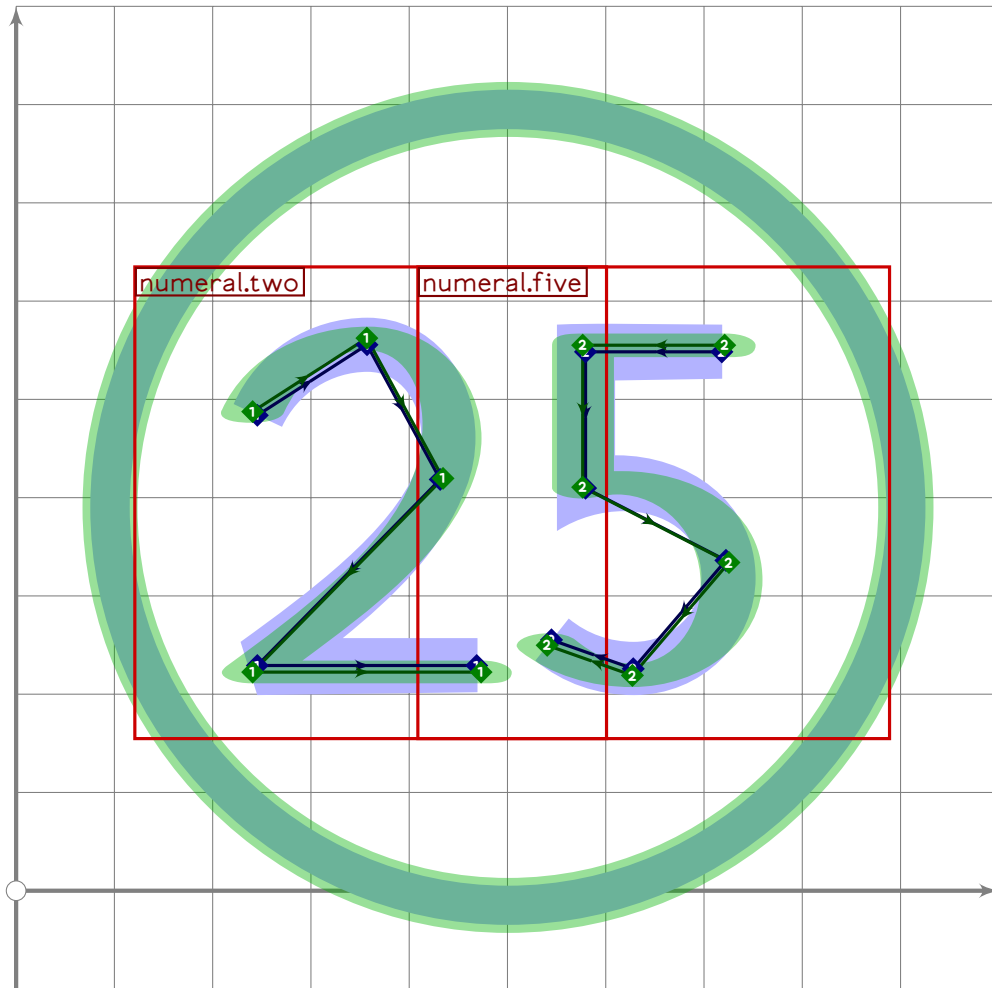




```

73 % 24
74 begint Suglyph("uni3254",84);
75   tsu_curve.circle.single;
76   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
77   numeric x[],y[];
78   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.four);
79   tsu_render;
80 endsuglyph;
81

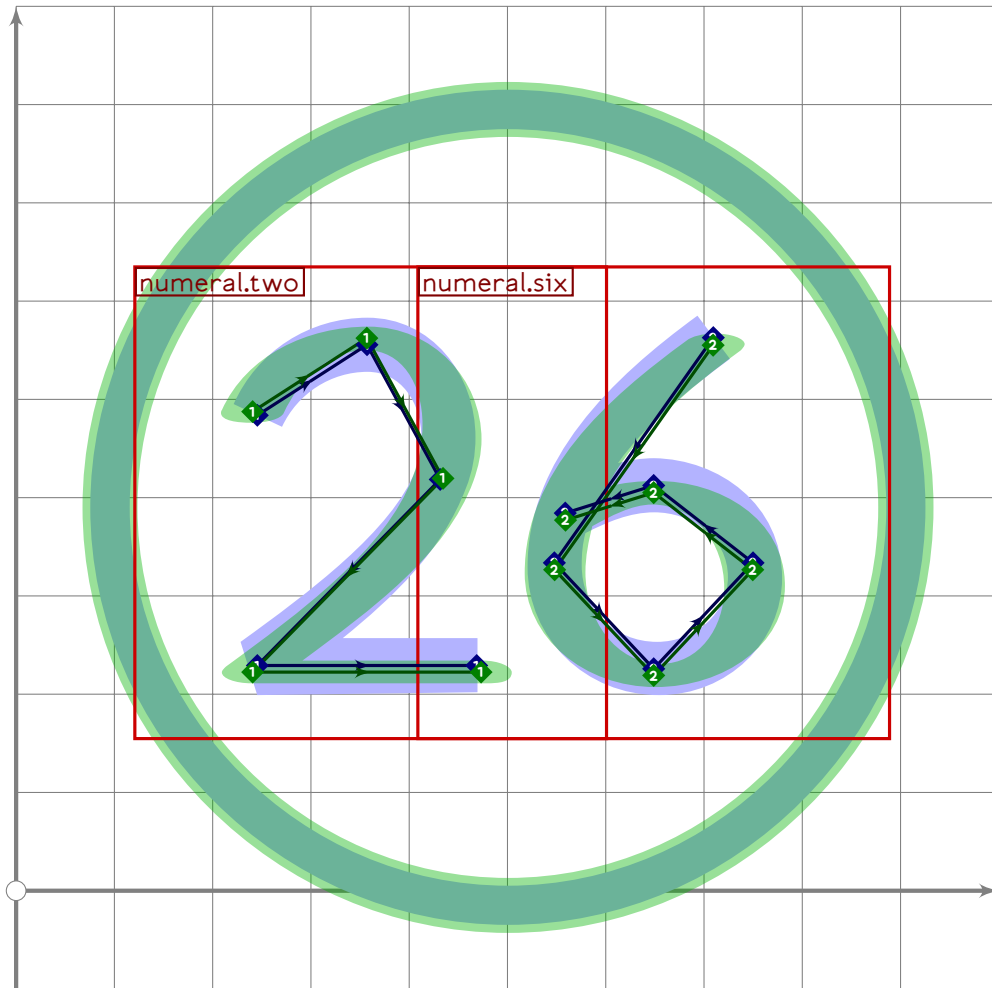
```



```

82 % 25
83 begint Suglyph("uni3255";85);
84 tsu_curve.circle.single;
85 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
86 numeric x[],y[];
87 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.five);
88 tsu_render;
89 endtsuglyph;
90

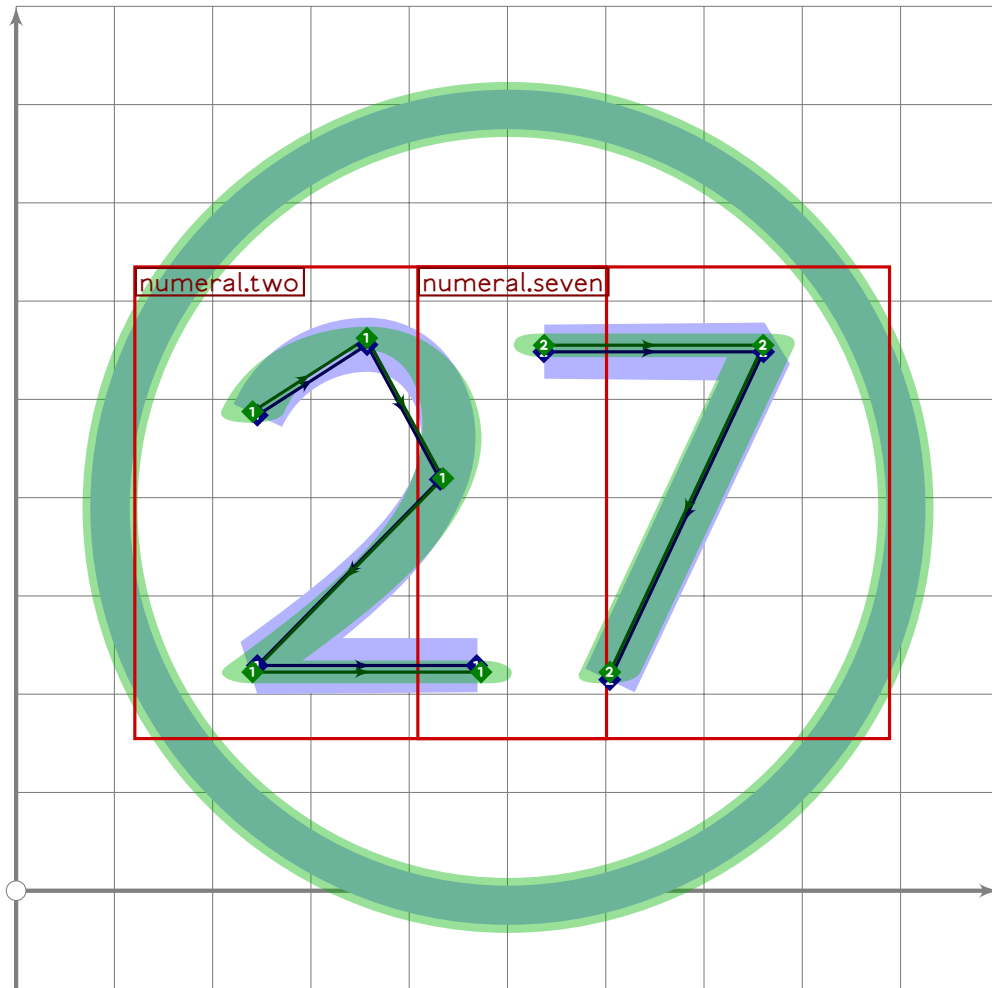
```



```

91 % 26
92 begint Suglyph("uni3256",86);
93   tsu_curve.circle.single;
94   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
95   numeric x[],y[];
96   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.six);
97   tsu_render;
98 endtsuglyph;
99

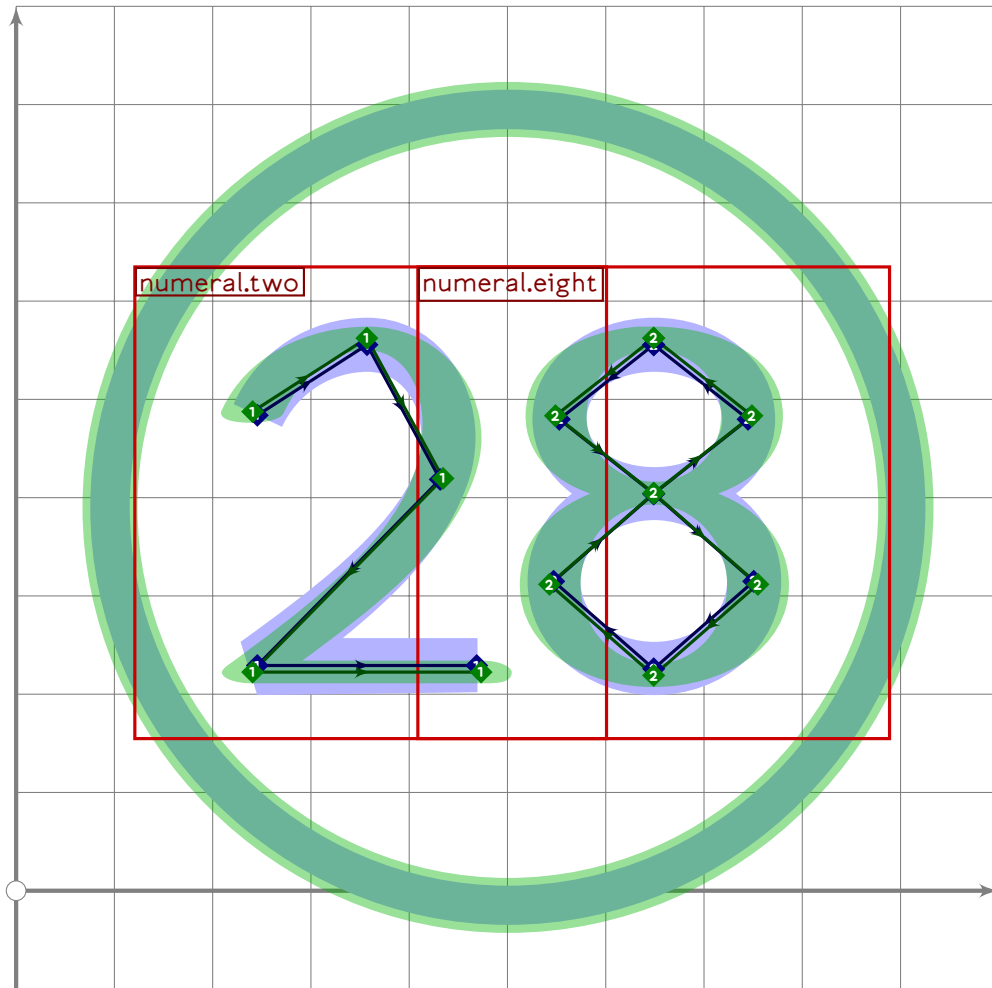
```



```

100 % 27
101 begint Suglyph("uni3257",87);
102   tsu_curve.circle.single;
103   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
104   numeric x[],y[];
105   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.seven);
106   tsu_render;
107 endtsuglyph;
108

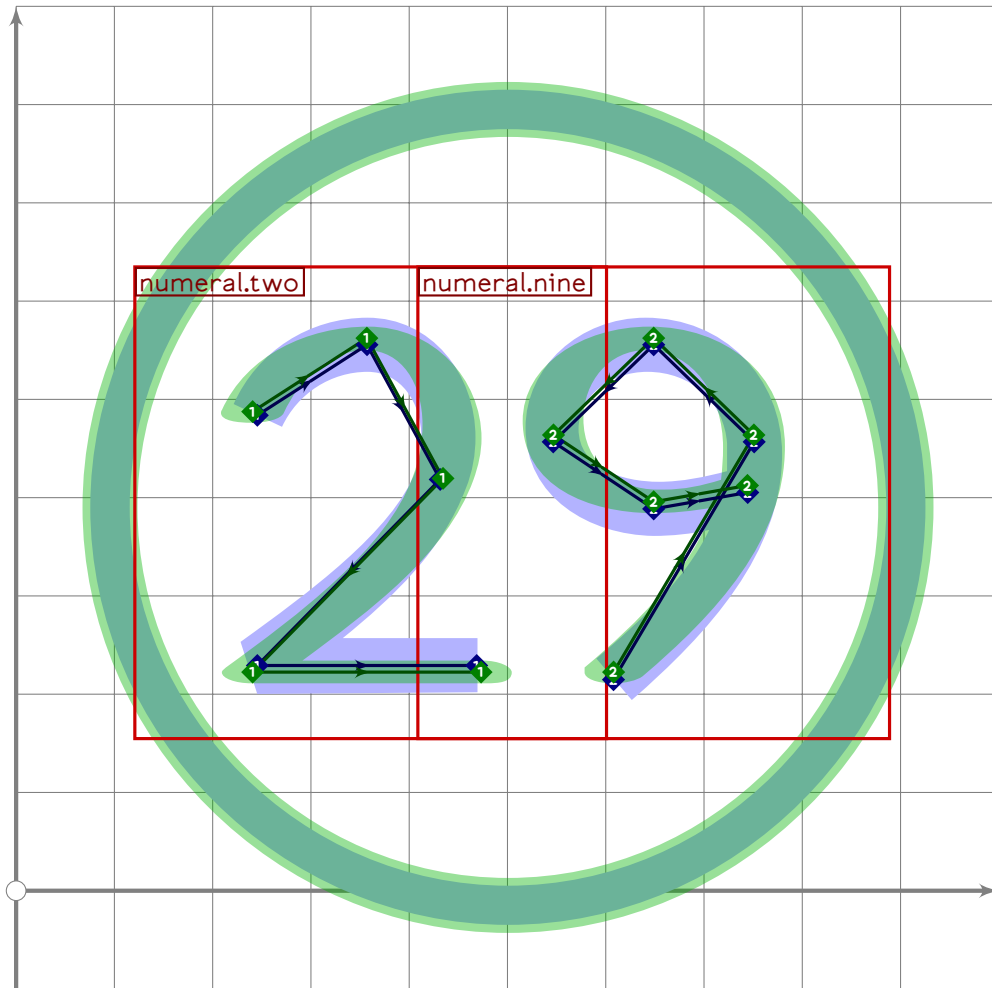
```



```

109 % 28
110 begintsuglyph("uni3258",88);
111 tsu_curve.circle.single;
112 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
113 numeric x[],y[];
114 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.eight);
115 tsu_render;
116 endtsuglyph;
117

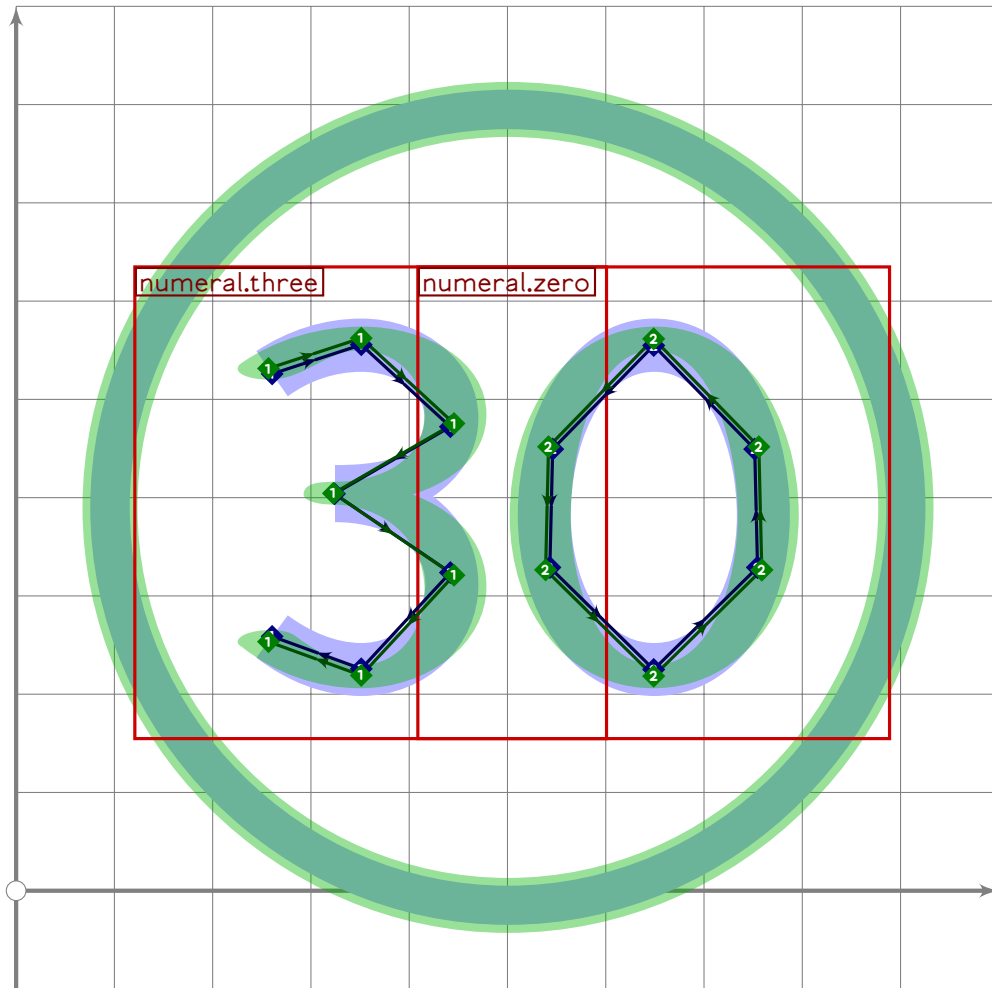
```



```

118 % 29
119 begint Suglyph("uni3259";89);
120 tsu_curve.circle.single;
121 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.two);
122 numeric x[],y[];
123 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.nine);
124 tsu_render;
125 endtsuglyph;
126

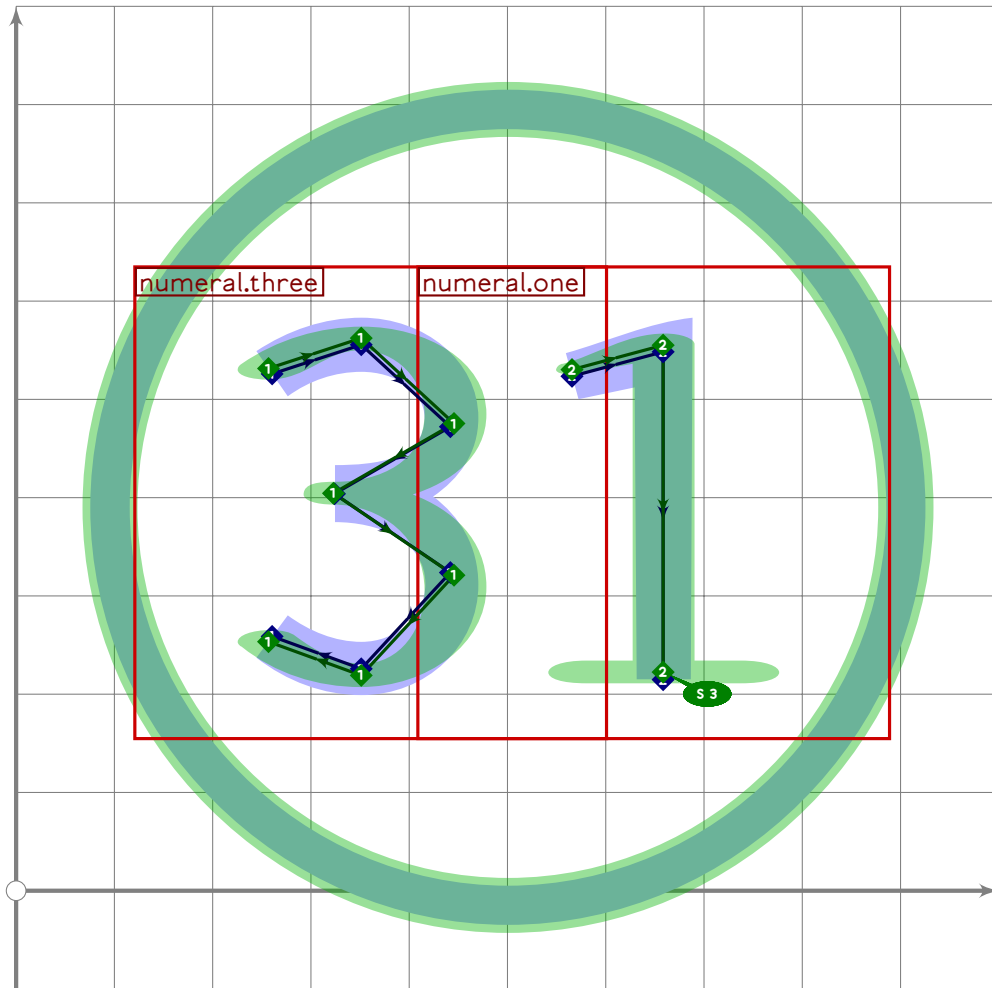
```



```

127 % 30
128 begint Suglyph("uni325A";90);
129   tsu_curve.circle.single;
130   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
131   numeric x[],y[];
132   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
133   tsu_render;
134 endtsuglyph;
135

```

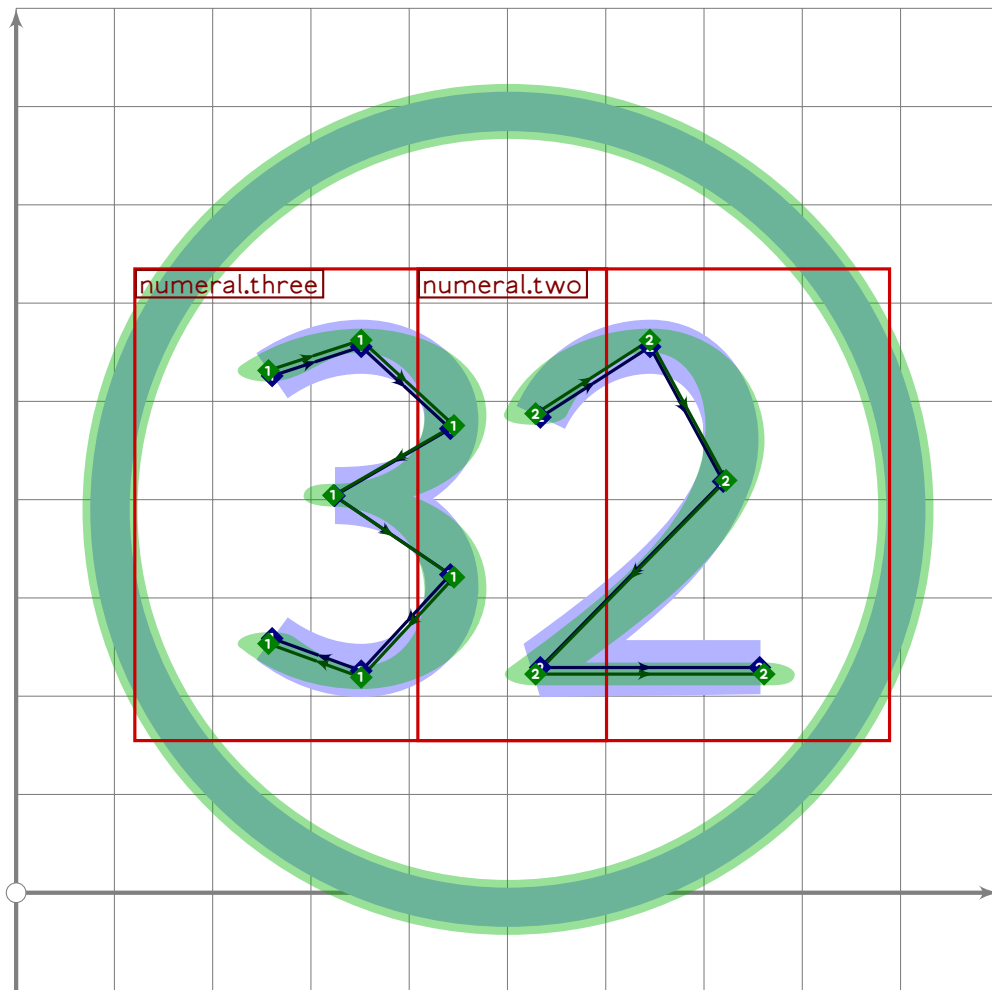


```

136 % 31
137 begint Suglyph("uni325B";91);
138   tsu_curve.circle.single;
139   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
140   numeric x[],y[];
141   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.one);
142   tsu_render;
143 endtsuglyph;
144

```

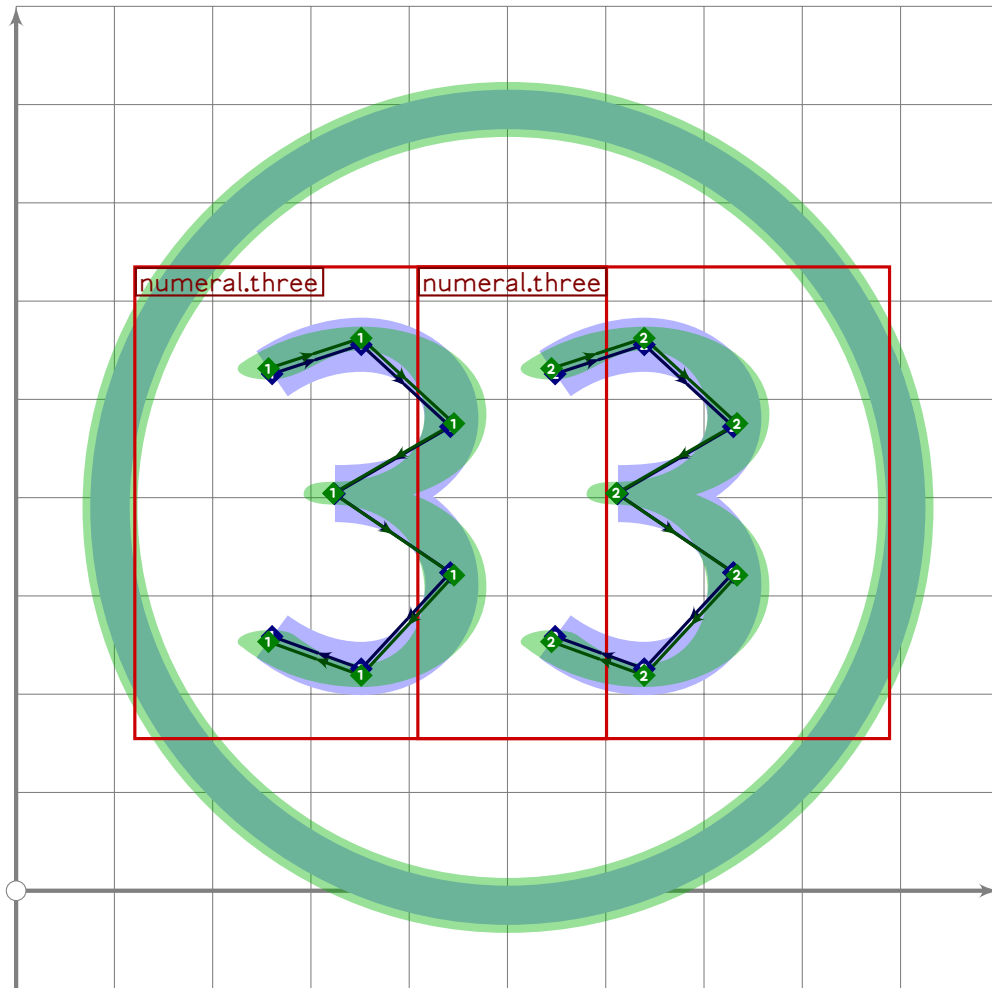




```

145 % 32
146 begint Suglyph("uni325C";92);
147   tsu_curve.circle.single;
148   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
149   numeric x[],y[];
150   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.two);
151   tsu_render;
152 endtsuglyph;
153

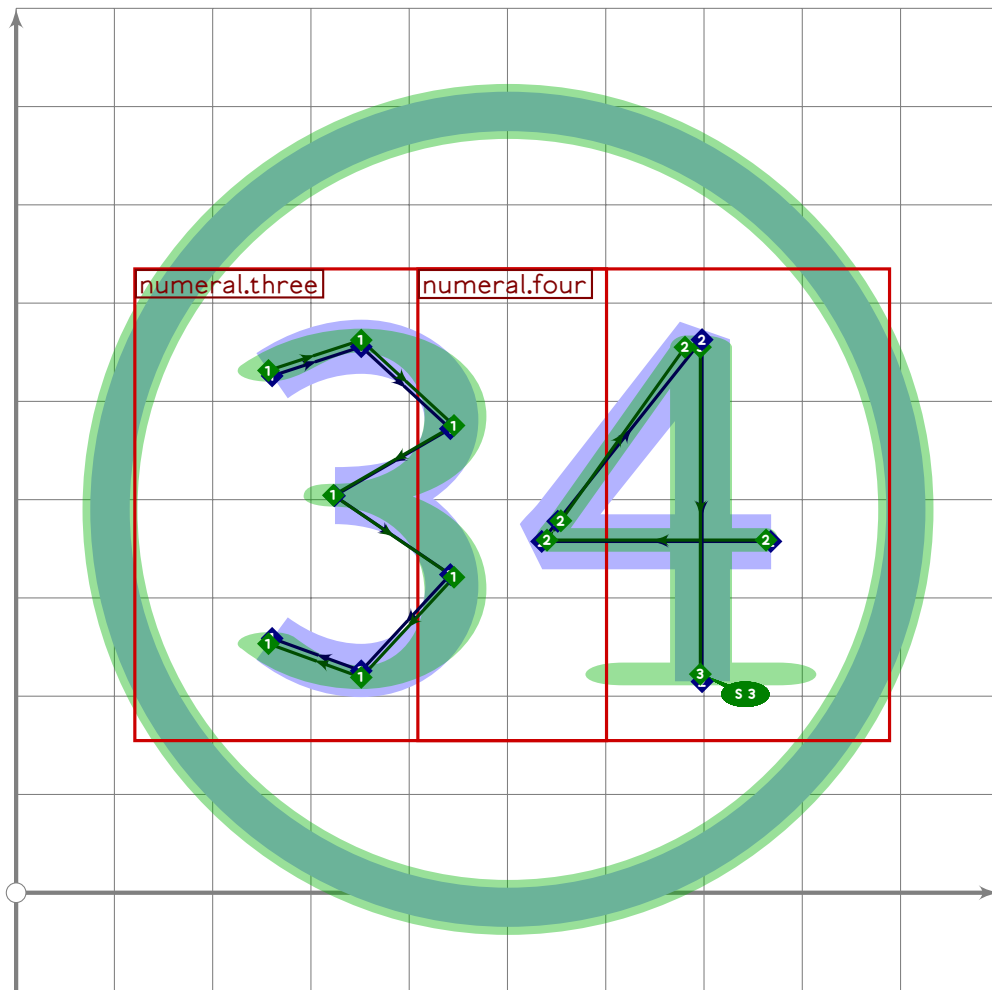
```



```

154 % 33
155 begint Suglyph("uni325D";93);
156   tsu_curve.circle.single;
157   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
158   numeric x[],y[];
159   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.three);
160   tsu_render;
161 endtsuglyph;
162

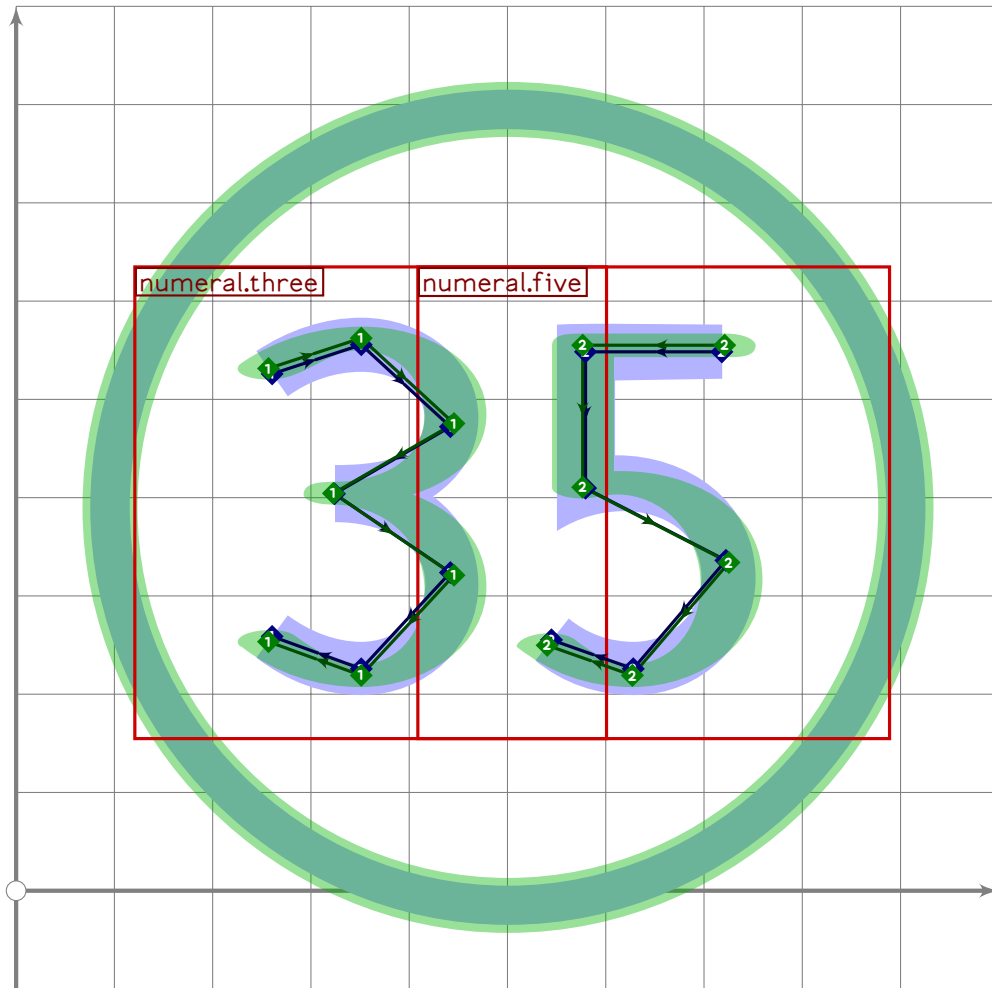
```



```

163 % 34
164 begint Suglyph("uni325E";94);
165   tsu_curve.circle.single;
166   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
167   numeric x[],y[];
168   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.four);
169   tsu_render;
170 endtsuglyph;
171

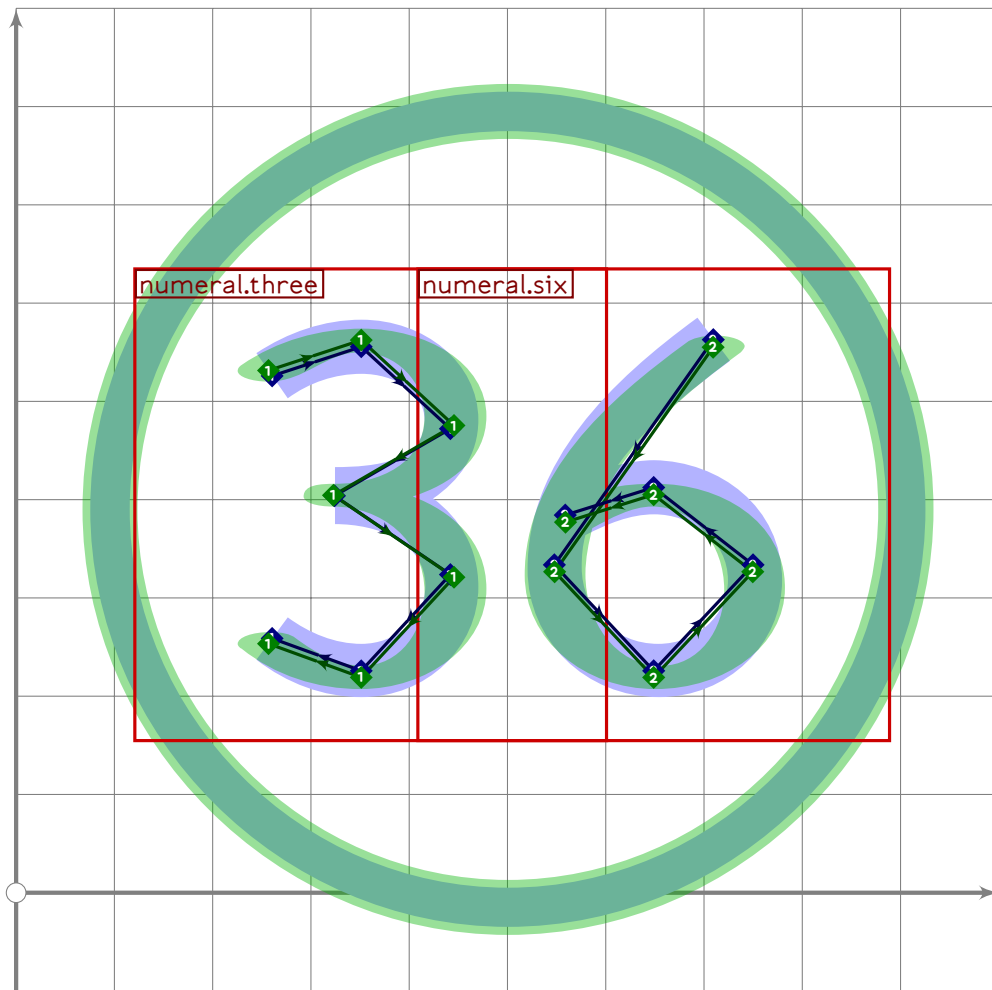
```



```

172 % 35
173 begint Suglyph("uni325F";95);
174 tsu_curve.circle.single;
175 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
176 numeric x[],y[];
177 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.five);
178 tsu_render;
179 endtsuglyph;
180
181 % WARNING discontinuous
182

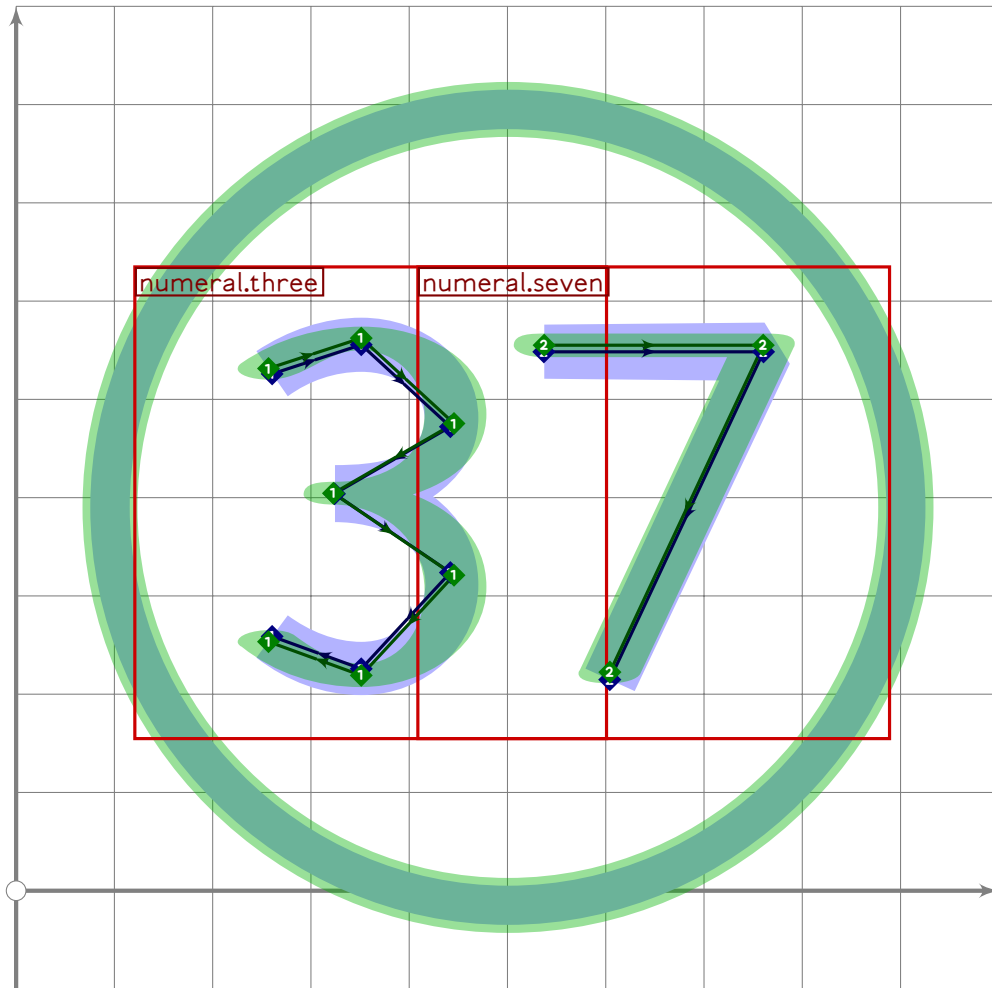
```



```

183 % 36
184 begint Suglyph("uni32B1";177);
185   tsu_curve.circle.single;
186   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
187   numeric x[],y[];
188   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.six);
189   tsu_render;
190 endtsuglyph;
191

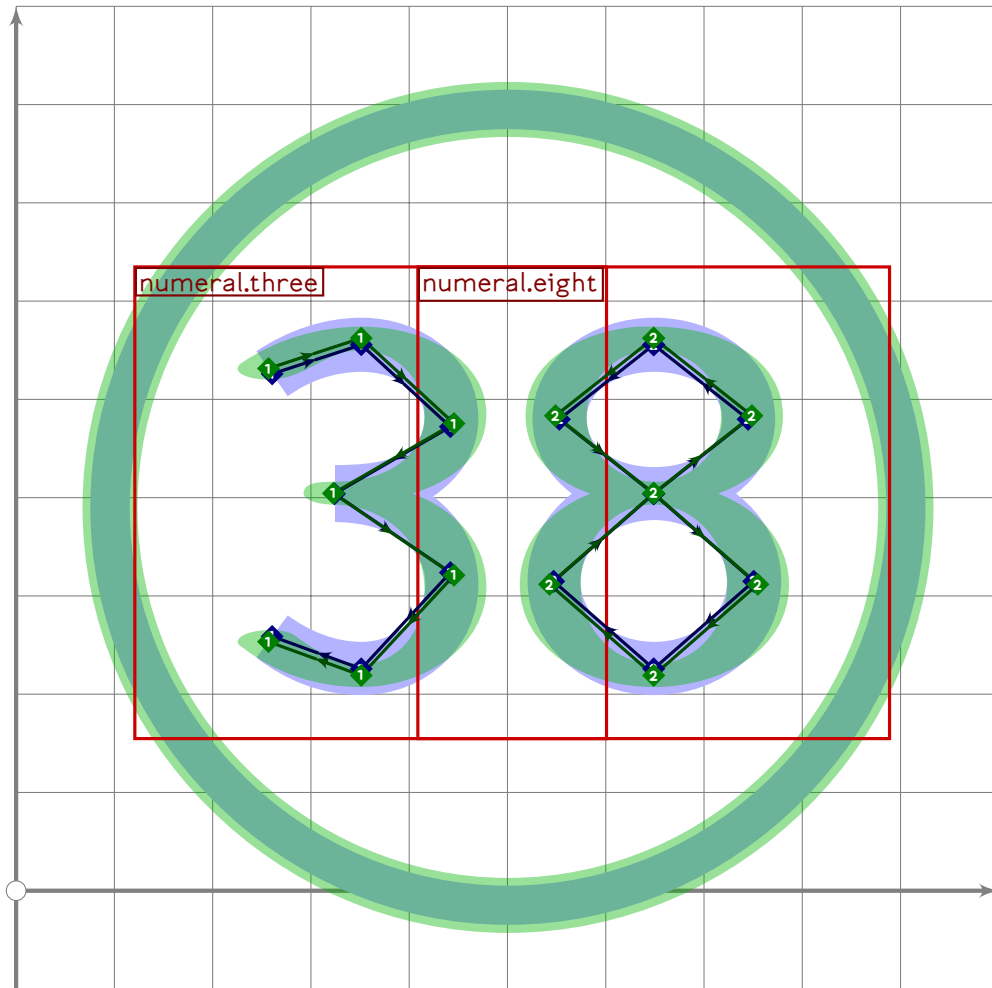
```



```

192 % 37
193 begint Suglyph("uni32B2",178);
194   tsu_curve.circle.single;
195   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
196   numeric x[],y[];
197   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.seven);
198   tsu_render;
199   endtsuglyph;
200

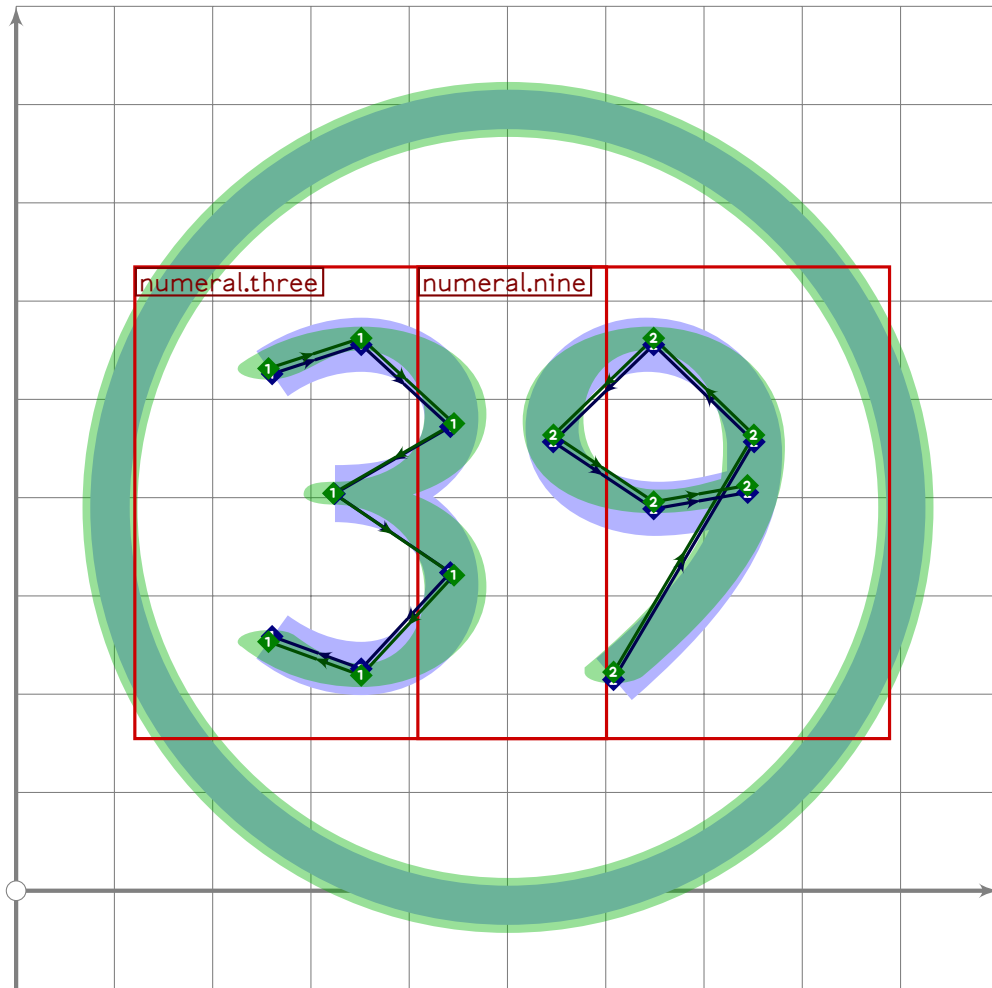
```



```

201 % 38
202 beginsuglyph("uni32B3";179);
203   tsu_curve.circle.single;
204   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
205   numeric x[],y[];
206   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.eight);
207   tsu_render;
208 endsuglyph;
209

```

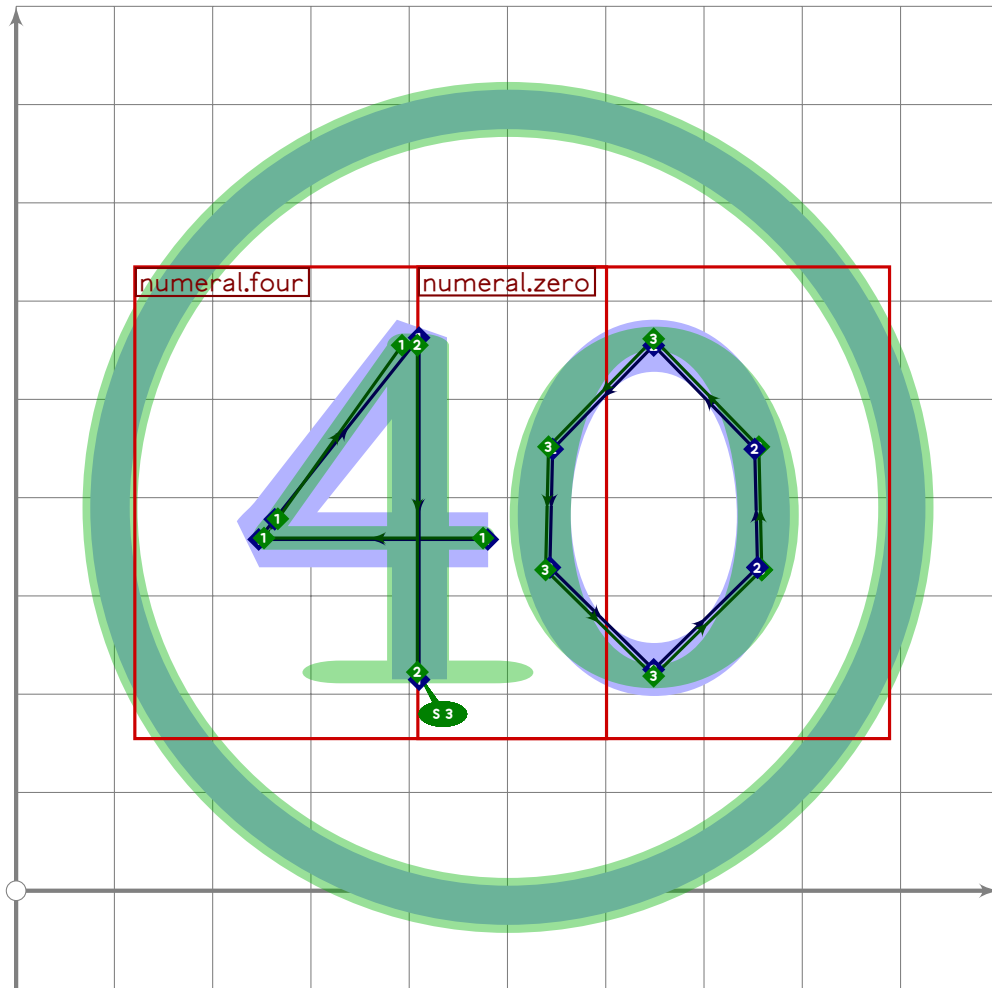


```

210 % 39
211 begint Suglyph("uni32B4",180);
212   tsu_curve.circle.single;
213   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.three);
214   numeric x[],y[];
215   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.nine);
216   tsu_render;
217 endtsuglyph;
218

```

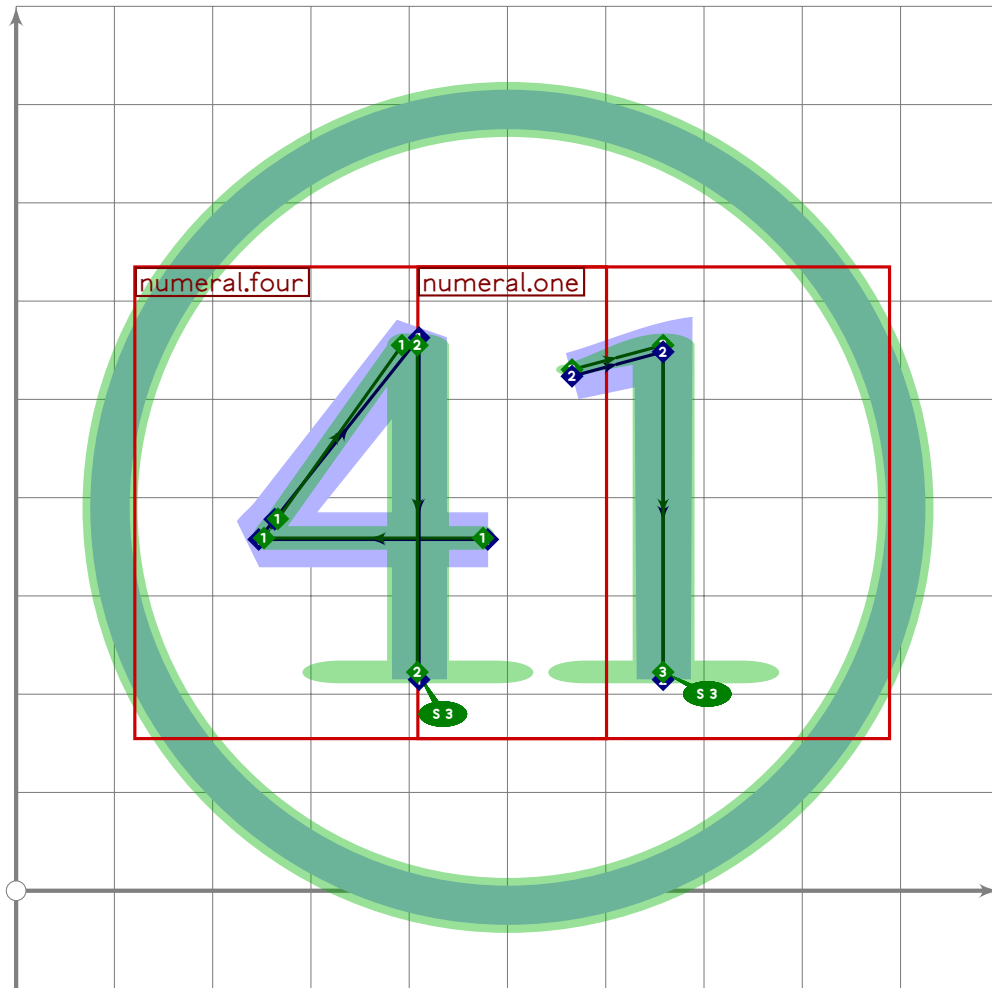




```

219 % 40
220 begint Suglyph("uni32B5",181);
221   tsu_curve.circle.single;
222   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
223   numeric x[],y[];
224   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
225   tsu_render;
226 endtsuglyph;
227

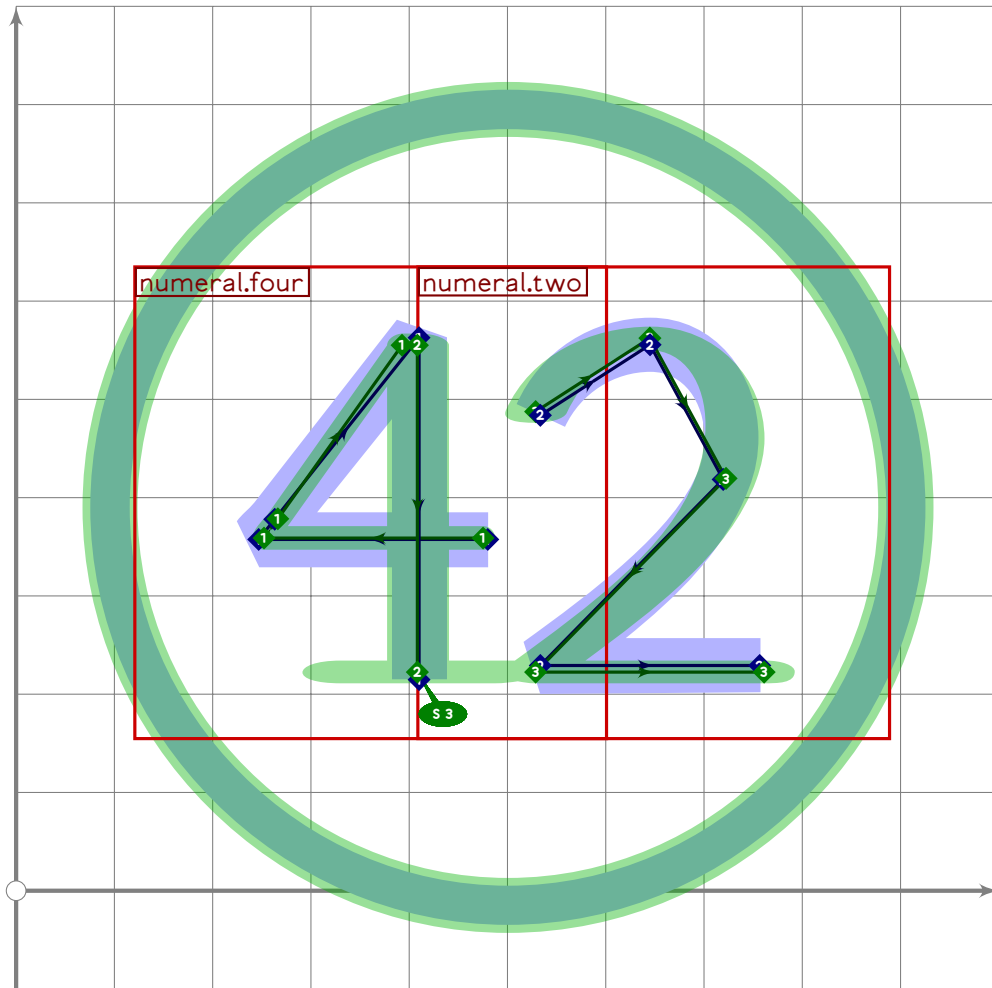
```



```

228 % 41
229 beginsuglyph("uni32B6",182);
230 tsu_curve.circle.single;
231 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
232 numeric x[],y[];
233 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.one);
234 tsu_render;
235 endsuglyph;
236

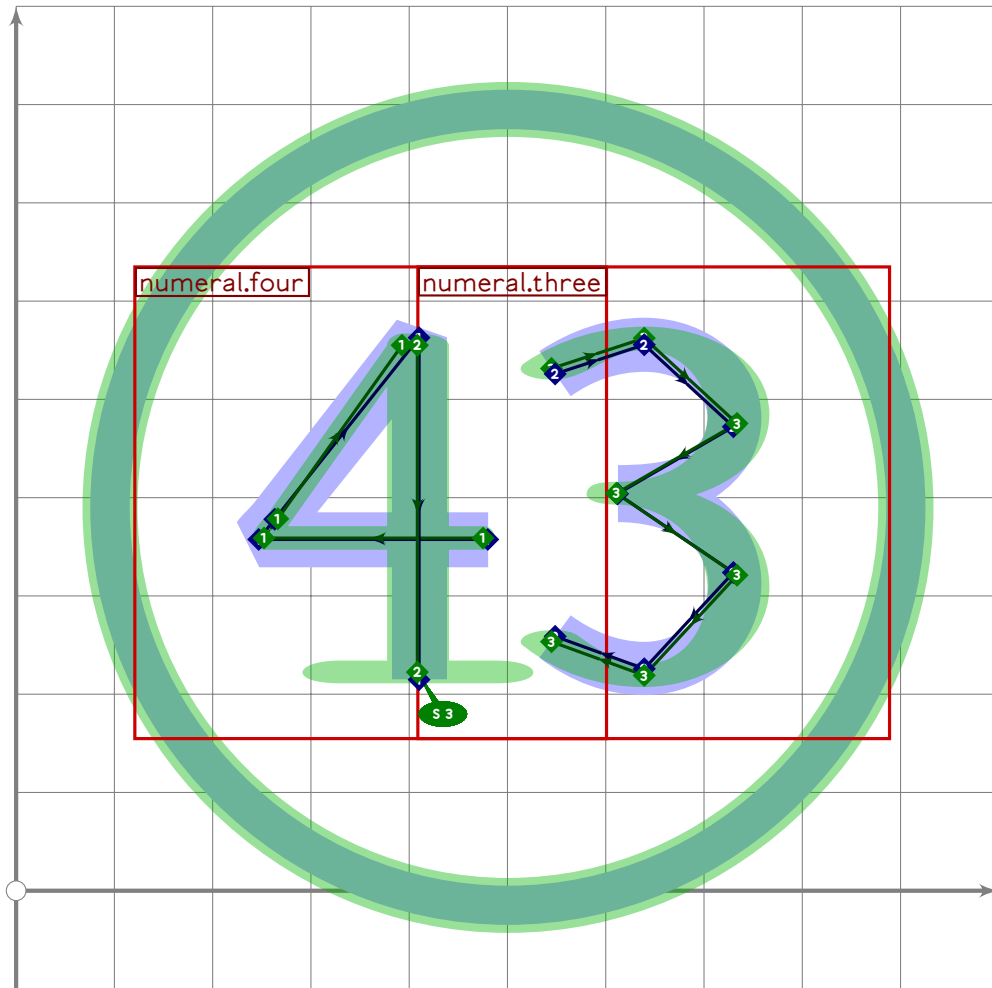
```



```

237 % 42
238 begint Suglyph("uni32B7",183);
239 tsu_curve.circle.single;
240 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
241 numeric x[],y[];
242 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.two);
243 tsu_render;
244 endtsuglyph;
245

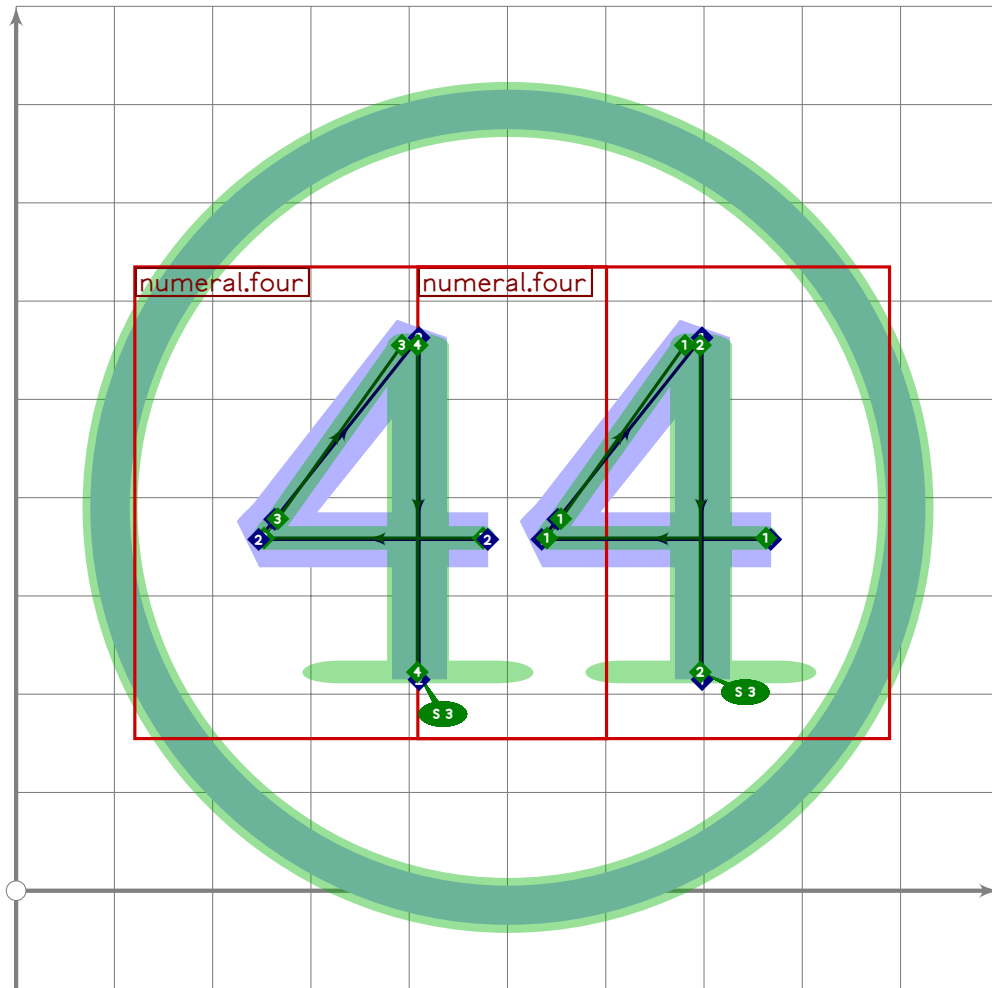
```



```

246 % 43
247 begint Suglyph("uni32B8",184);
248   tsu_curve.circle.single;
249   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
250   numeric x[],y[];
251   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.three);
252   tsu_render;
253   endtsuglyph;
254

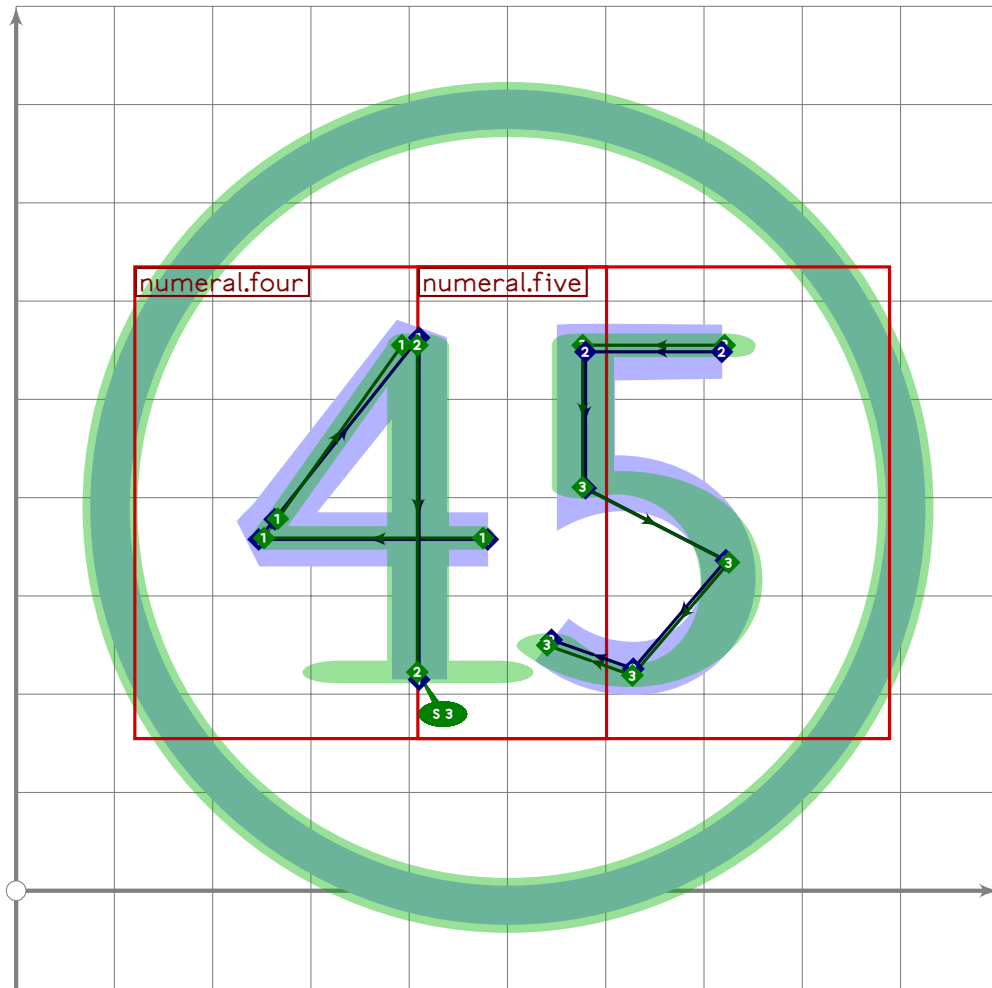
```



```

255 % 44
256 begint Suglyph("uni32B9",185);
257   tsu_curve.circle.single;
258   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.four);
259   numeric x[],y[];
260   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
261   tsu_render;
262 endtsuglyph;
263

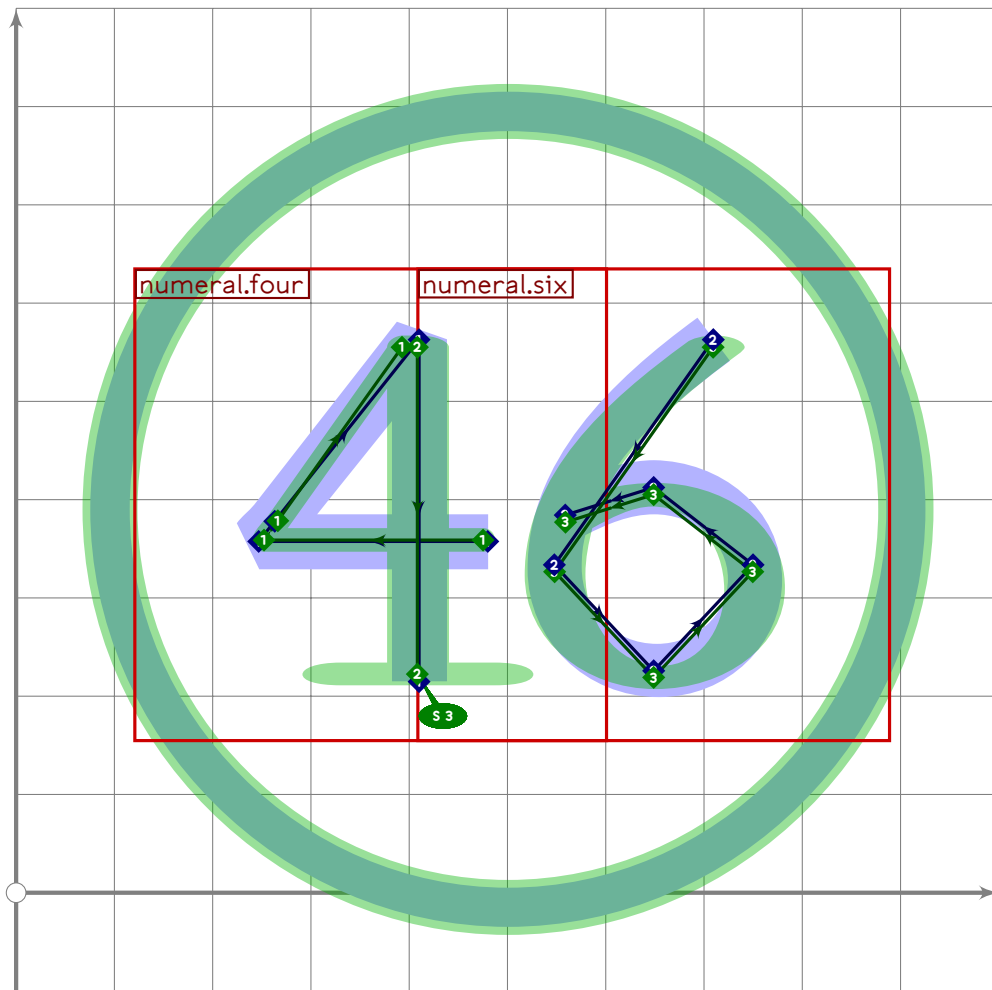
```



```

264 % 45
265 begint Suglyph("uni32BA",186);
266   tsu_curve.circle.single;
267   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
268   numeric x[],y[];
269   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.five);
270   tsu_render;
271 endtsuglyph;
272

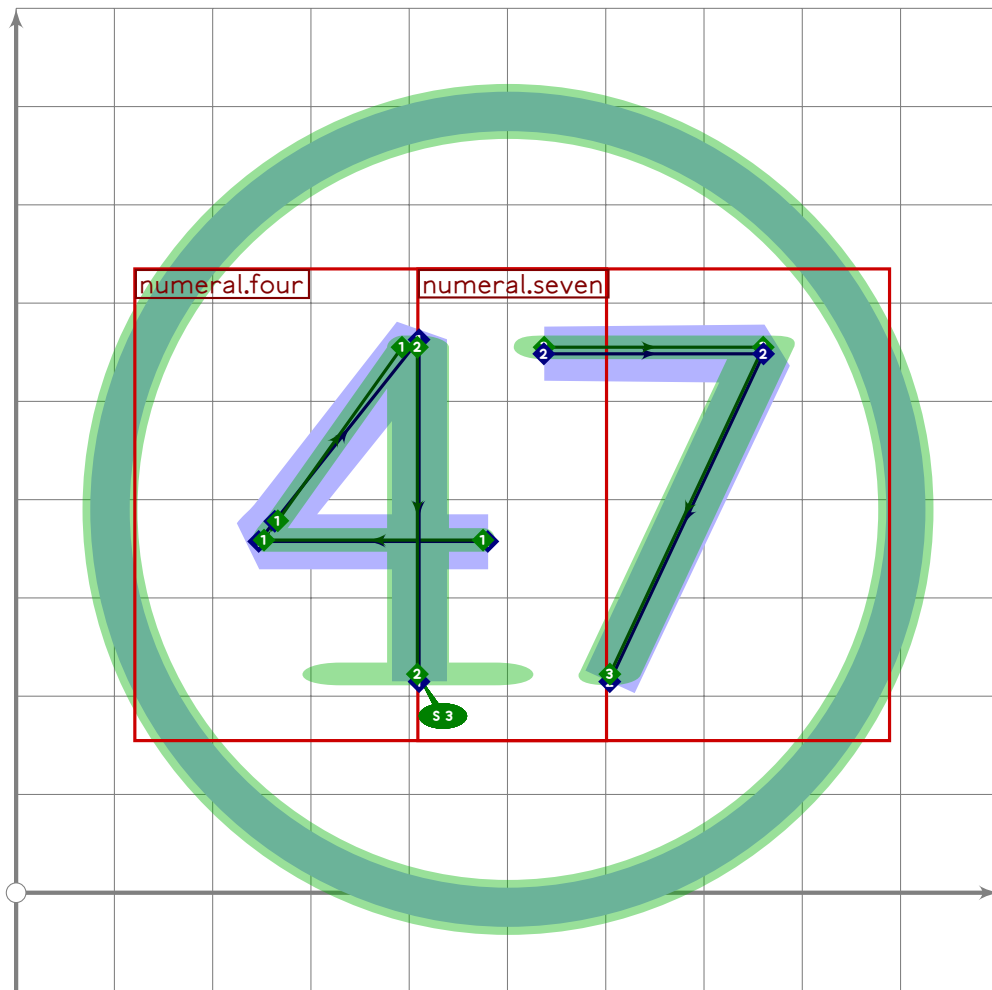
```



```

273 % 46
274 begint Suglyph("uni32BB",187);
275   tsu_curve.circle.single;
276   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
277   numeric x[],y[];
278   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.six);
279   tsu_render;
280 endtsuglyph;
281

```

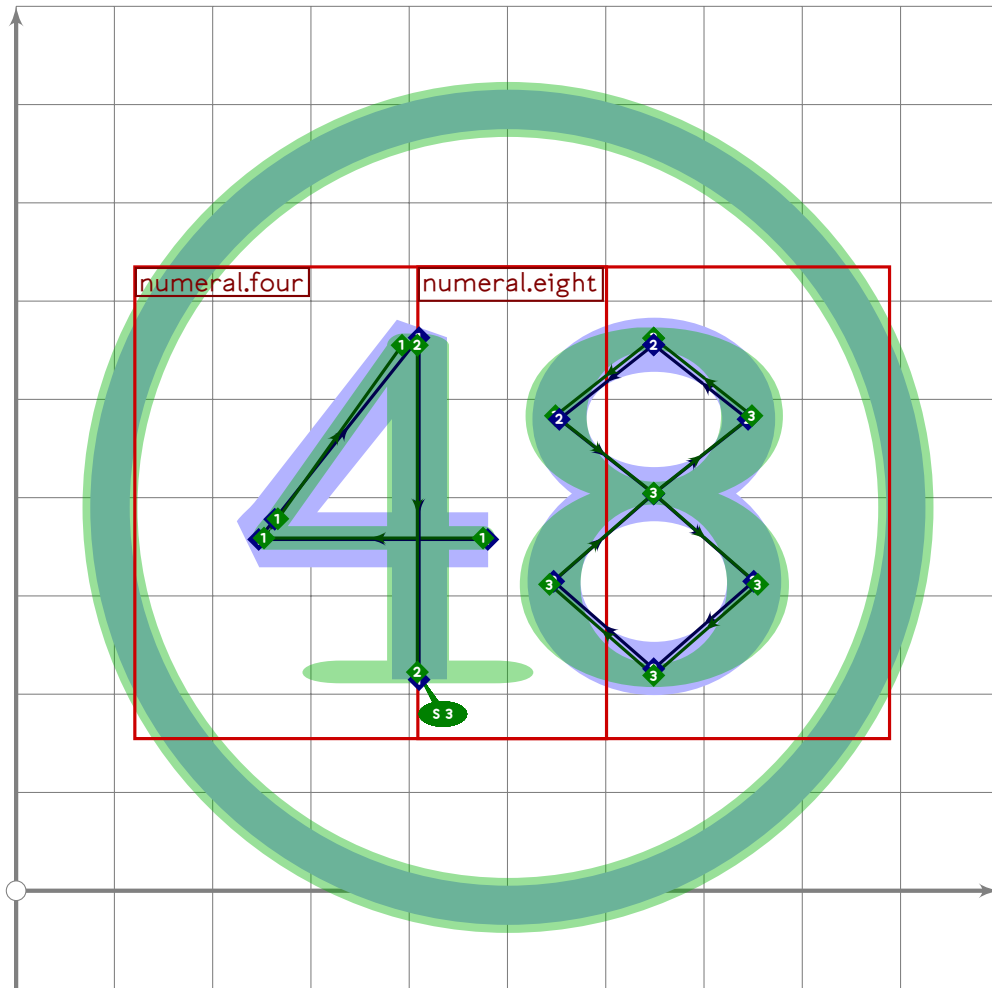


```

282 % 47
283 begint Suglyph("uni32BC",188);
284 tsu_curve.circle.single;
285 tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
286 numeric x[],y[];
287 tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.seven);
288 tsu_render;
289 endtsuglyph;
290

```

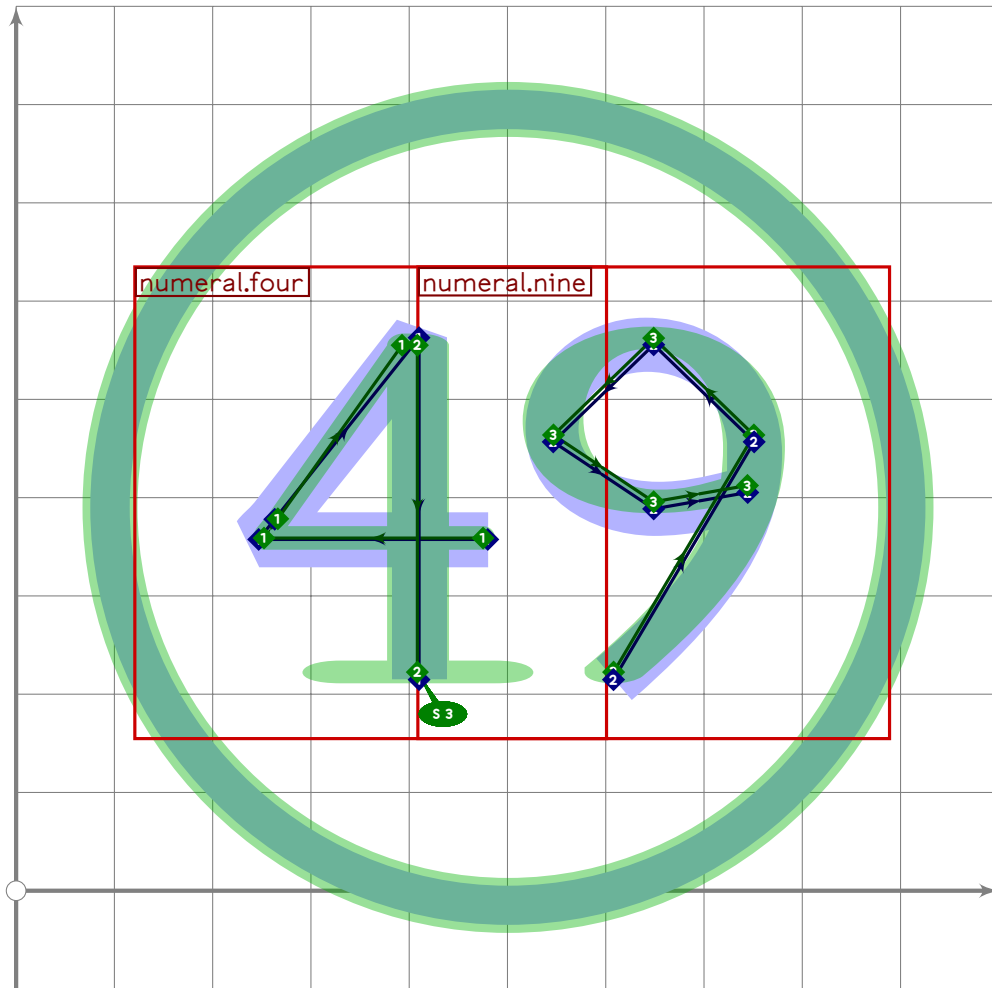




```

291 % 48
292 begint Suglyph("uni32BD",189);
293   tsu_curve.circle.single;
294   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
295   numeric x[],y[];
296   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.eight);
297   tsu_render;
298 endtsuglyph;
299

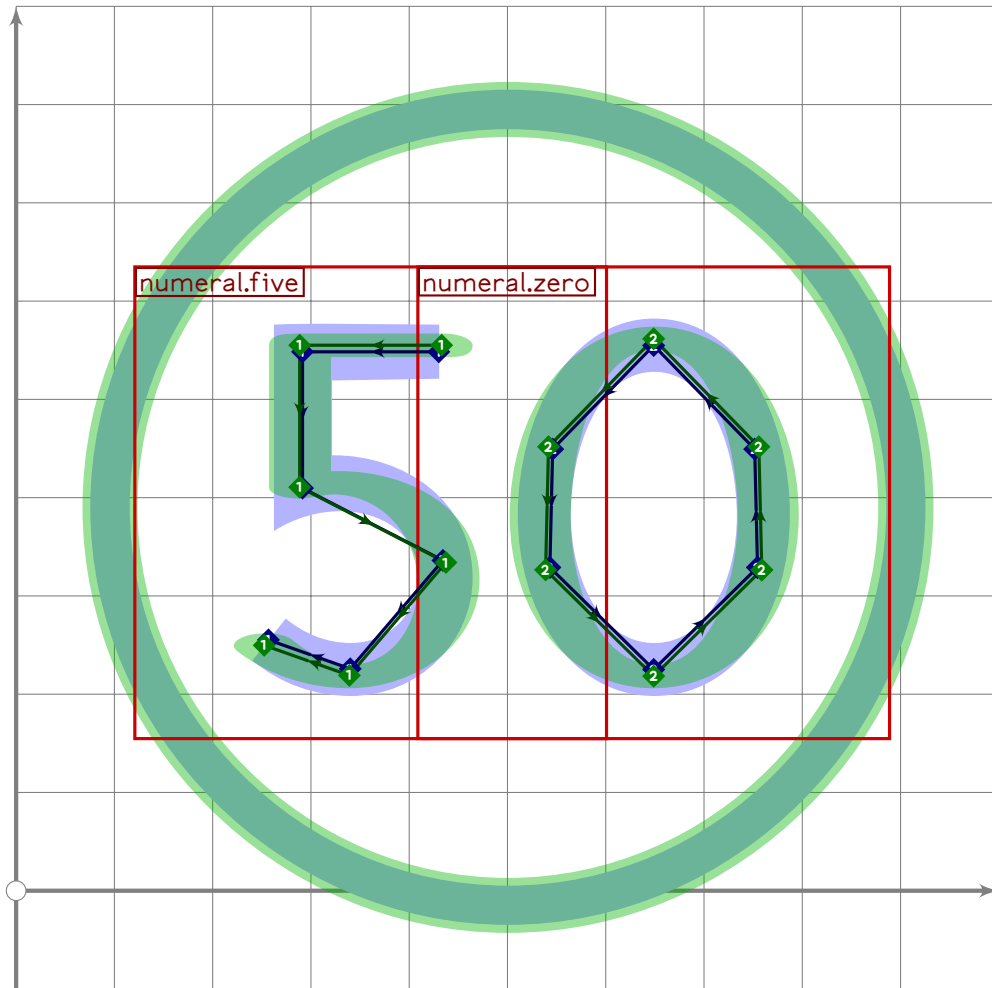
```



```

300 % 49
301 begint Suglyph("uni32BE",190);
302   tsu_curve.circle.single;
303   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.four);
304   numeric x[],y[];
305   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.nine);
306   tsu_render;
307 endtsuglyph;
308

```



```

309 % 50
310 begint Suglyph("uni32BF",191);
311   tsu_curve.circle.single;
312   tsu_xform(tsu_xf.ctwo.left)(tsu_curve.numeral.five);
313   numeric x[],y[];
314   tsu_xform(tsu_xf.ctwo.right)(tsu_curve.numeral.zero);
315   tsu_render;
316 endtsuglyph;
317
318
319

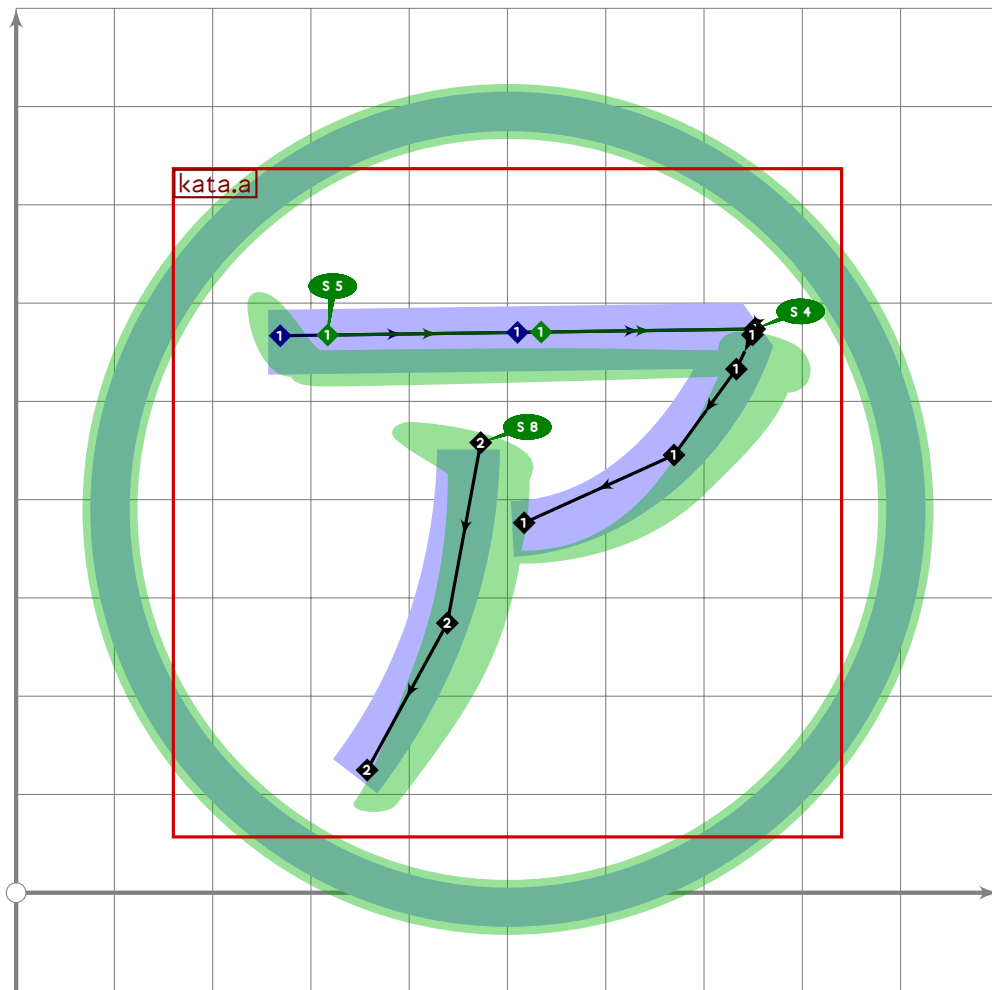
```

## Circled Katakana

```

320 % CIRCLED KATAKANA
321

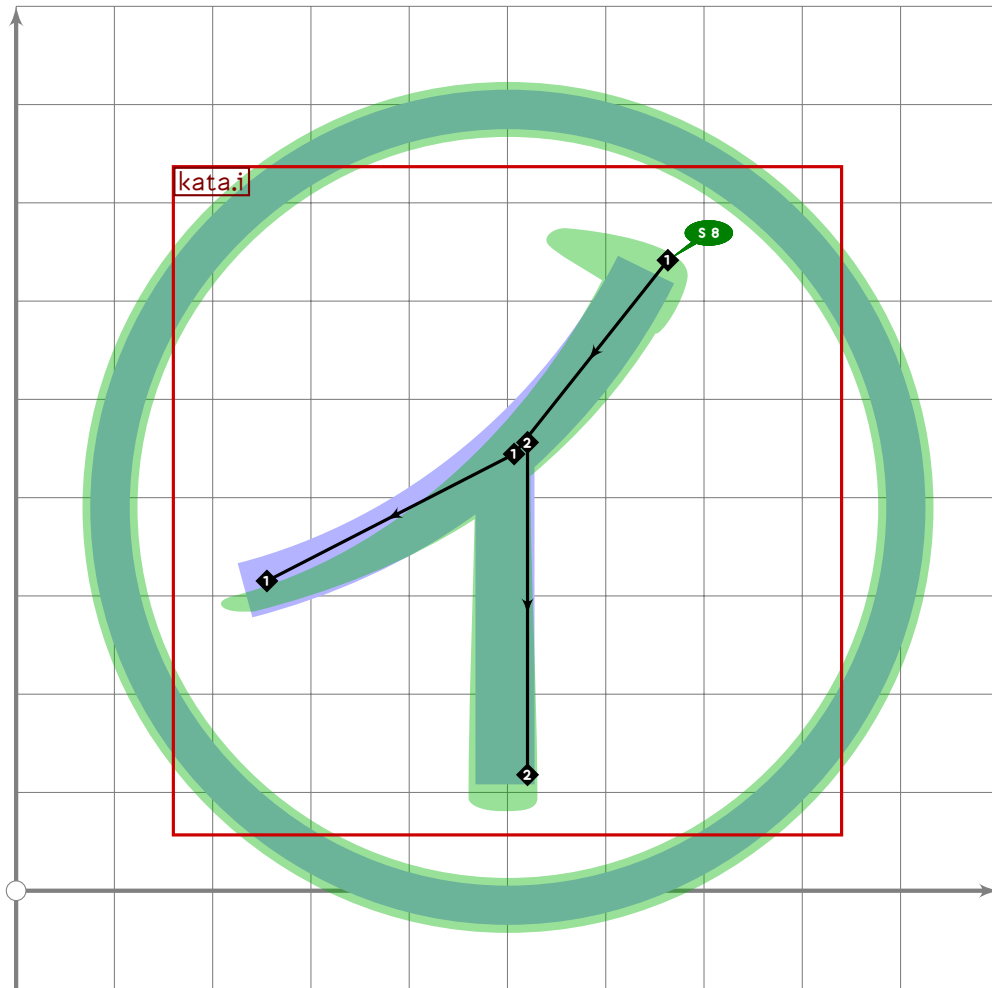
```



```

322 % circled "a"
323 begint Suglyph("uni32D0";208);
324 tsu_curve.circle.single;
325 tsu_xform(tsu_xf.circled)(tsu_curve.kata.a);
326 tsu_render_in_circle(tsu_xf.cbound);
327 endsuglyph;
328

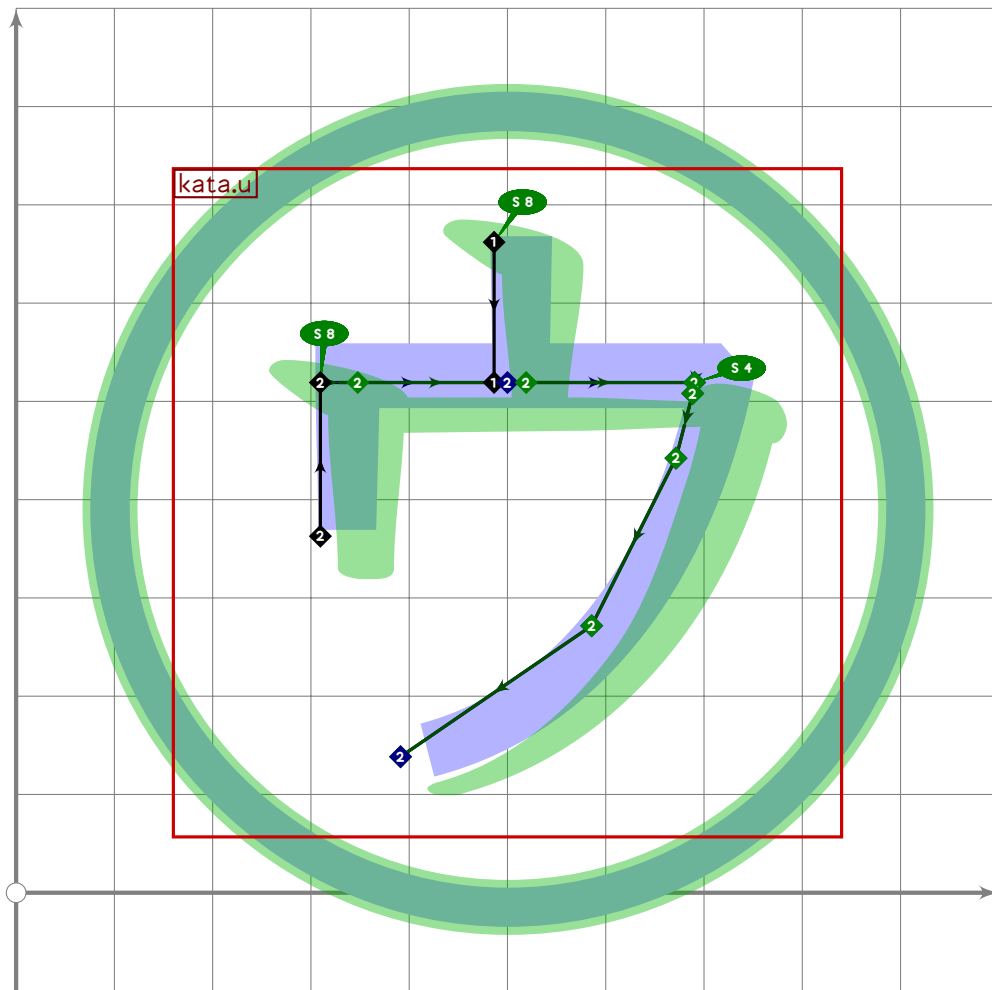
```



```

329 % circled "i"
330 begint Suglyph("uni32D1";209);
331 tsu_curve.circle.single;
332 tsu_xform(tsu_xf.circled)(tsu_curve.kata.i);
333 tsu_render_in_circle(tsu_xf.cbound);
334 endsuglyph;
335

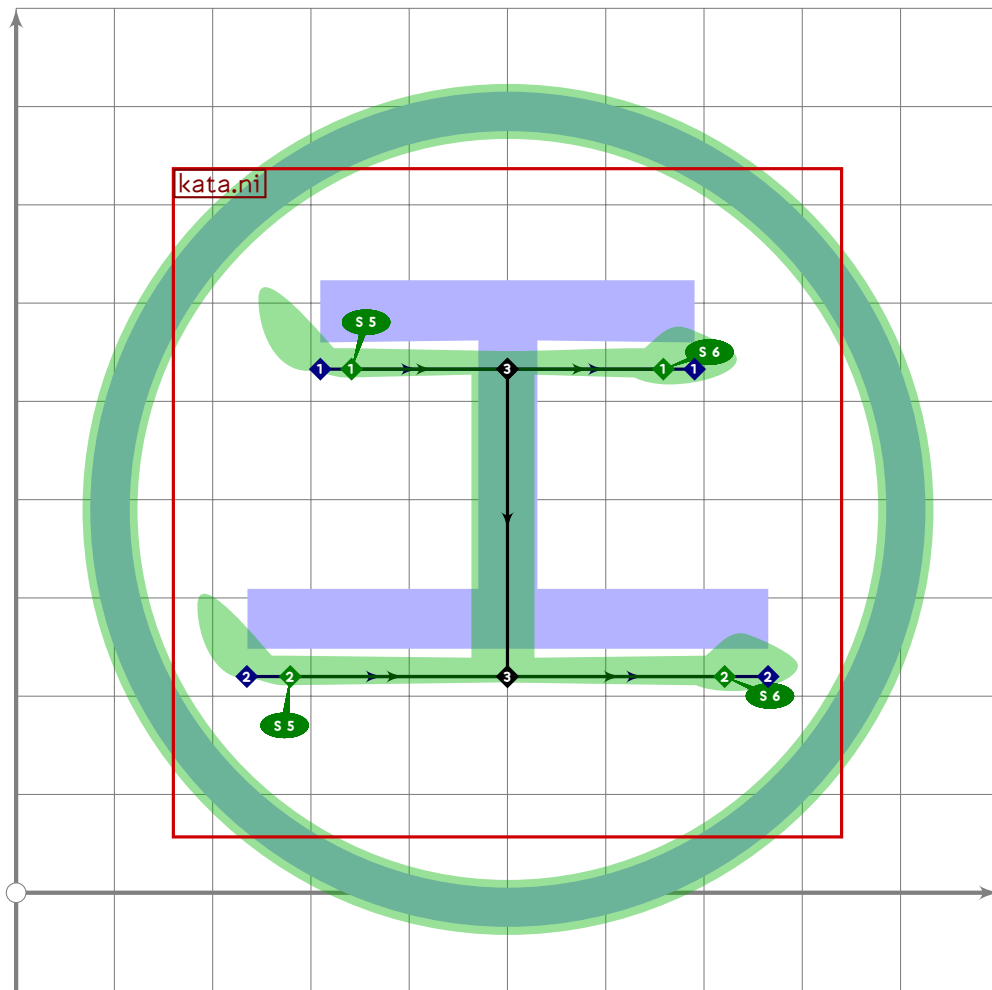
```



```

336 % circled "u"
337 begint Suglyph("uni32D2",210);
338 tsu_curve.circle.single;
339 tsu_xform(tsu_xf.circled)(tsu_curve.kata.u);
340 tsu_render_in_circle(tsu_xf.cbound);
341 endsuglyph;
342

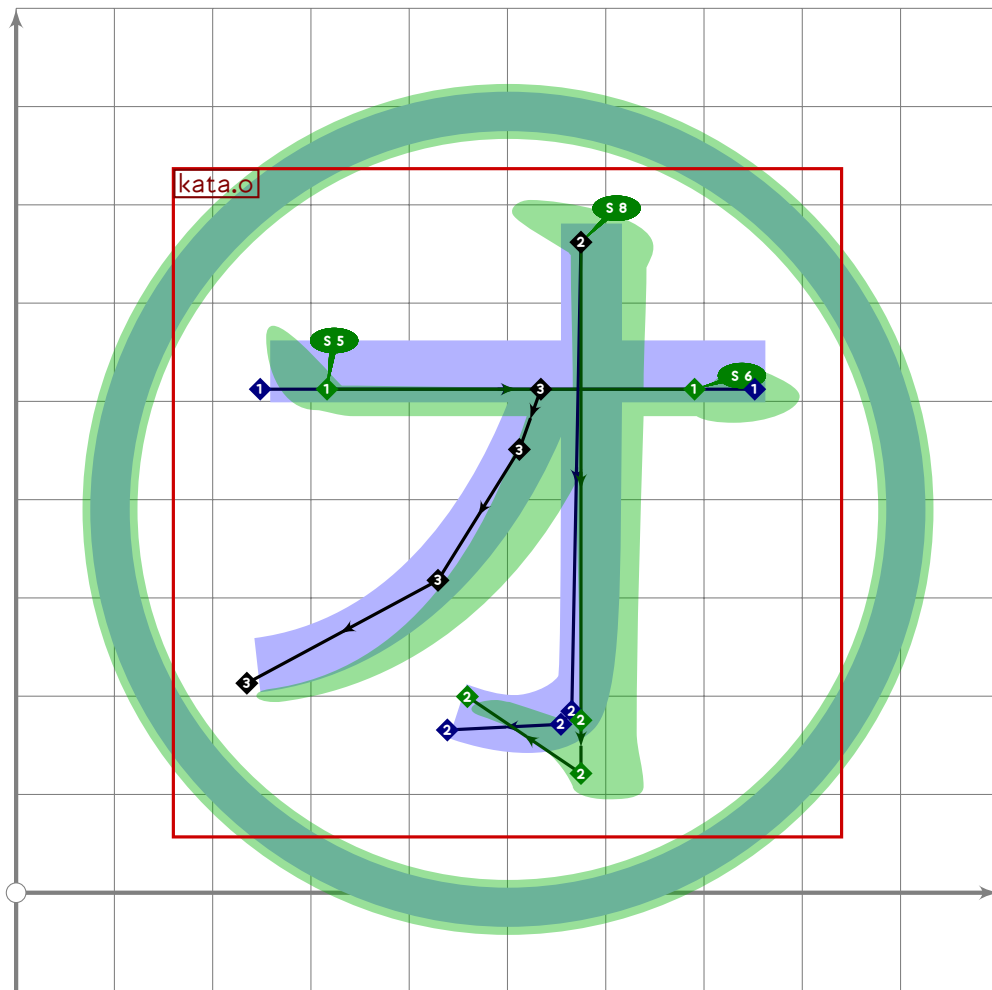
```



```

343 % circled "e"
344 begint Suglyph("uni32D3";211);
345 tsu_curve.circle.single;
346 tsu_xform(tsu_xf.circled)(tsu_curve.kata.e);
347 tsu_render_in_circle(tsu_xf.cbound);
348 endsuglyph;
349

```

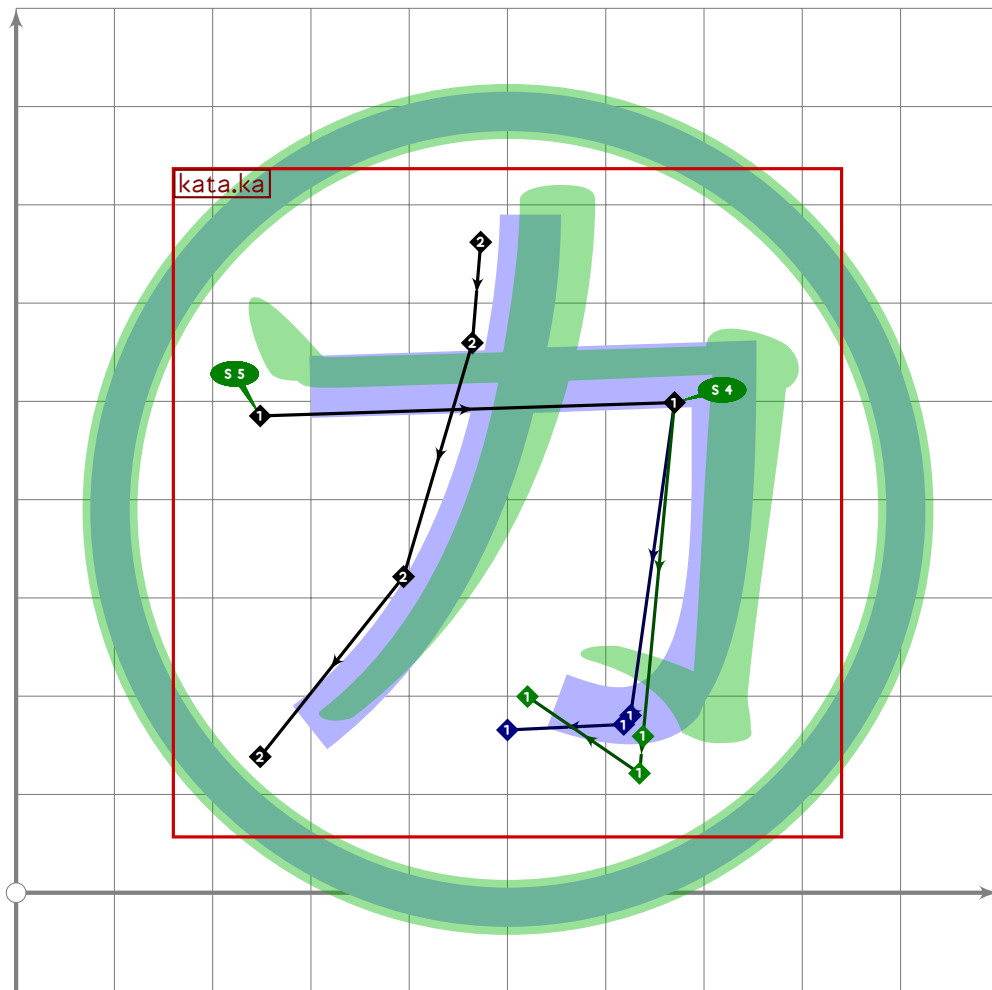


```

350 % circled "o"
351 begint Suglyph("uni32D4";212);
352 tsu_curve.circle.single;
353 tsu_xform(tsu_xf.circled)(tsu_curve.kata.o);
354 tsu_render_in_circle(tsu_xf.cbound);
355 endsuglyph;
356

```

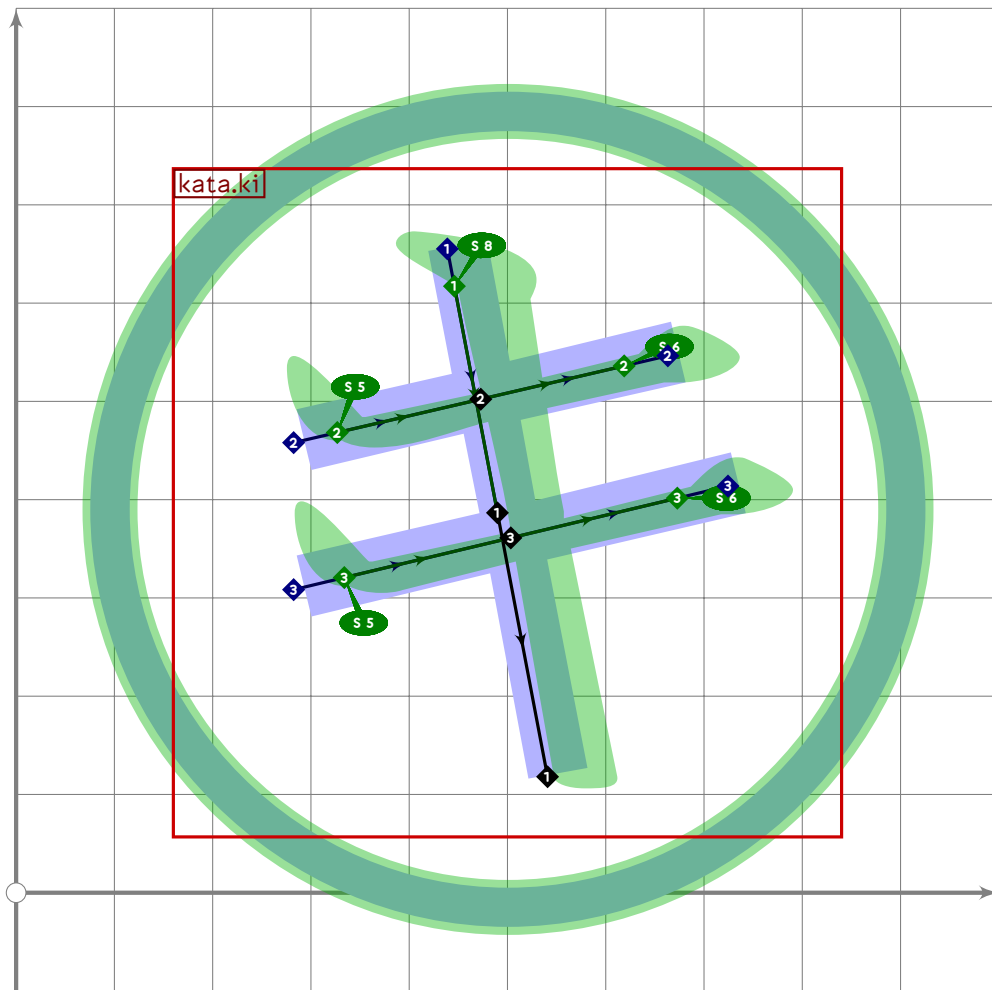




```

357 % circled "ka"
358 begint Suglyph("uni32D5";213);
359 tsu_curve.circle.single;
360 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ka);
361 tsu_render_in_circle(tsu_xf.cbound);
362 endsuglyph;
363

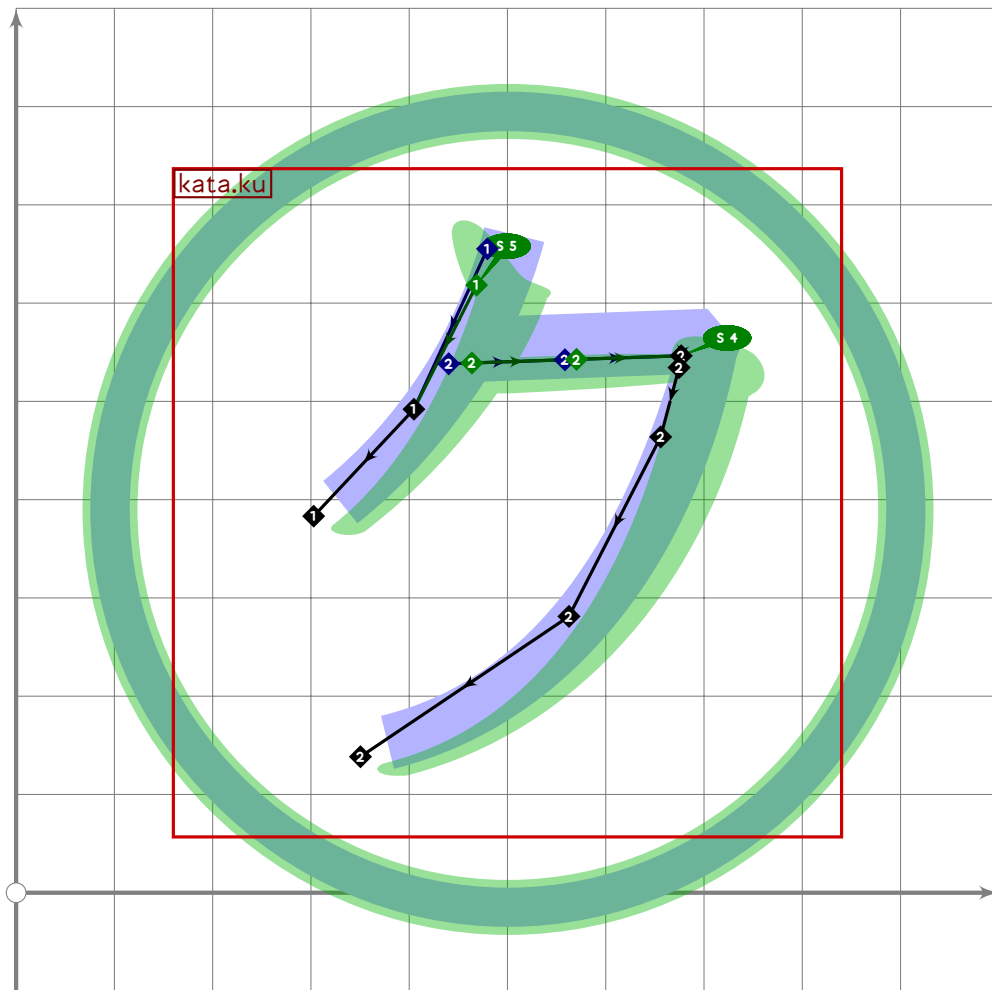
```



```

364 % circled "ki"
365 begint Suglyph("uni32D6",214);
366   tsu_curve.circle.single;
367   tsu_xform(tsu_xf.circled)(tsu_curve.kata.ki);
368   tsu_render_in_circle(tsu_xf.cbound);
369 endsuglyph;
370

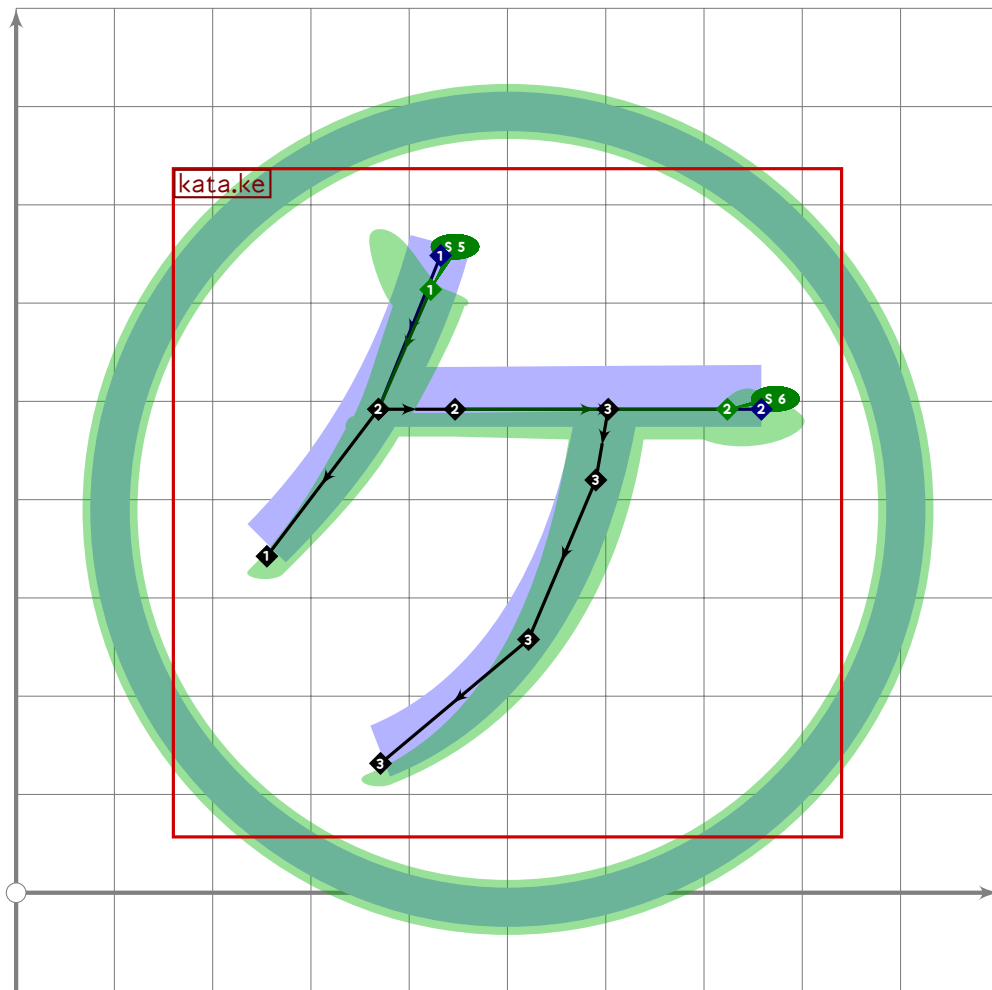
```



```

371 % circled "ku"
372 begint Suglyph("uni32D7",215);
373   tsu_curve.circle.single;
374   tsu_xform(tsu_xf.circled)(tsu_curve.kata.ku);
375   tsu_render_in_circle(tsu_xf.cbound);
376 endsuglyph;
377

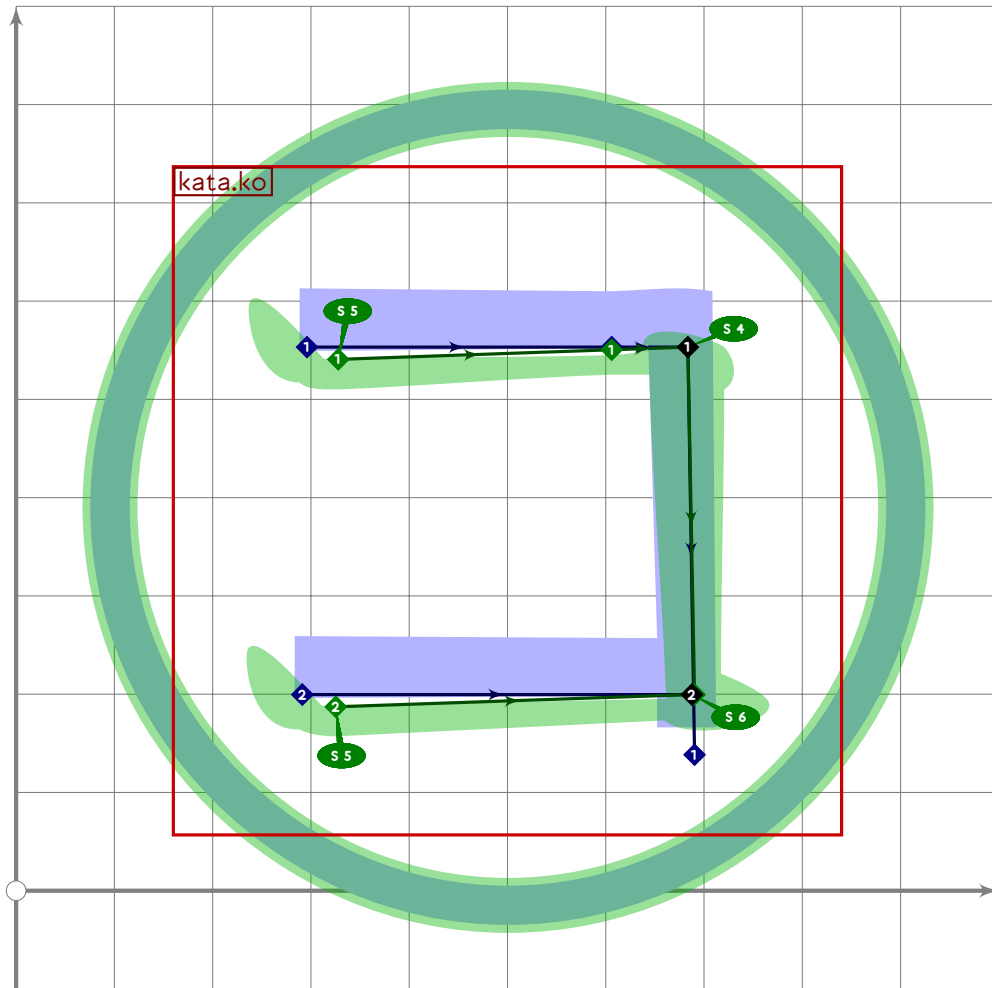
```



```

378 % circled "ke"
379 begint Suglyph("uni32D8",216);
380 tsu_curve.circle.single;
381 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ke);
382 tsu_render_in_circle(tsu_xf.cbound);
383 endsuglyph;
384

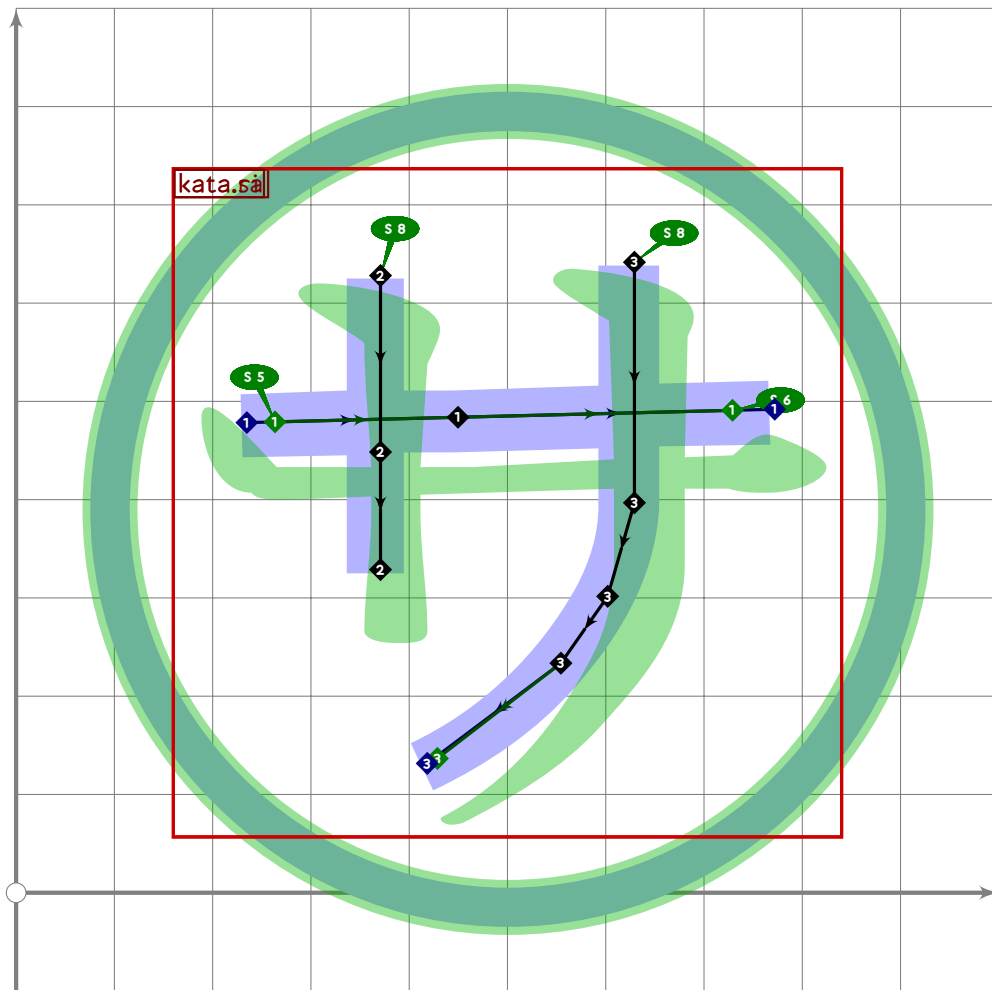
```



```

385 % circled "ko"
386 begint Suglyph("uni32D9",217);
387 tsu_curve.circle.single;
388 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ko);
389 tsu_render_in_circle(tsu_xf.cbound);
390 endsuglyph;
391

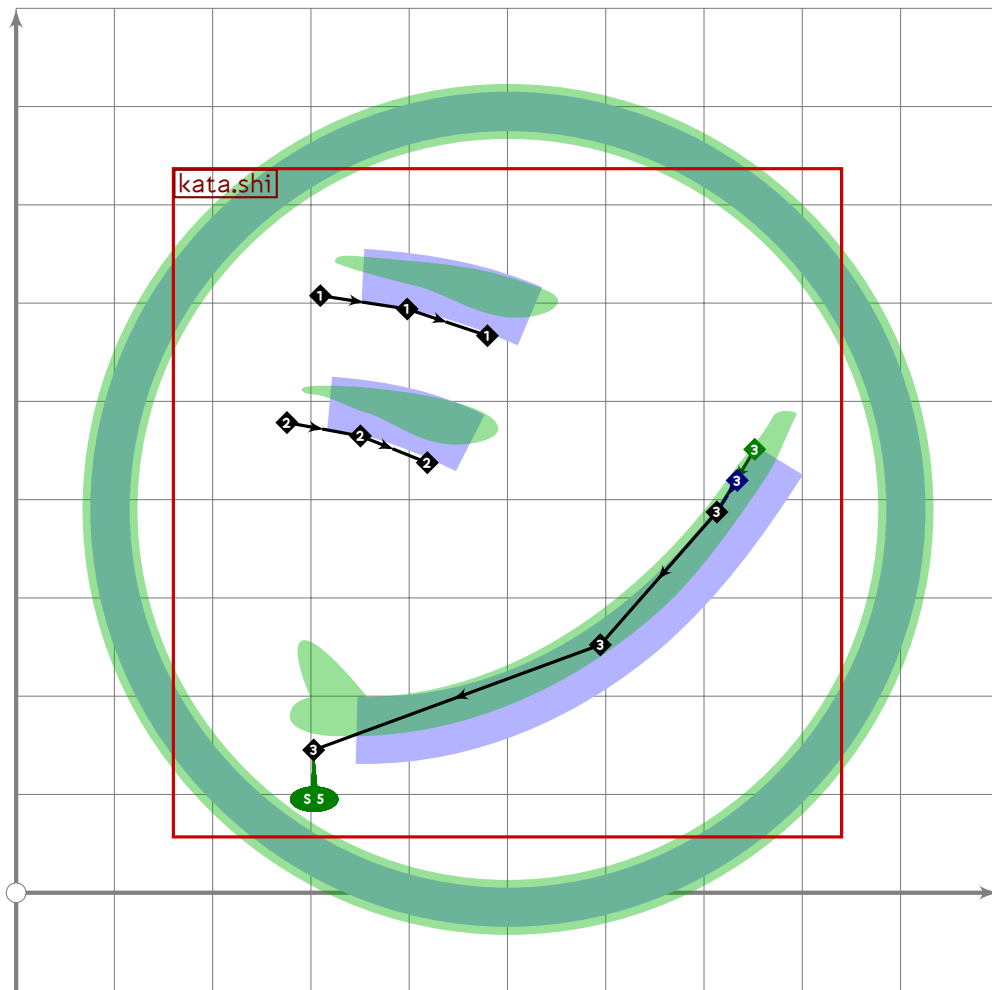
```



```

392 % circled "sa"
393 begint Suglyph("uni32DA",218);
394 tsu_curve.circle.single;
395 tsu_xform(tsu_xf.circled)(tsu_curve.kata.sa);
396 tsu_render_in_circle(tsu_xf.cbound);
397 endsuglyph;
398

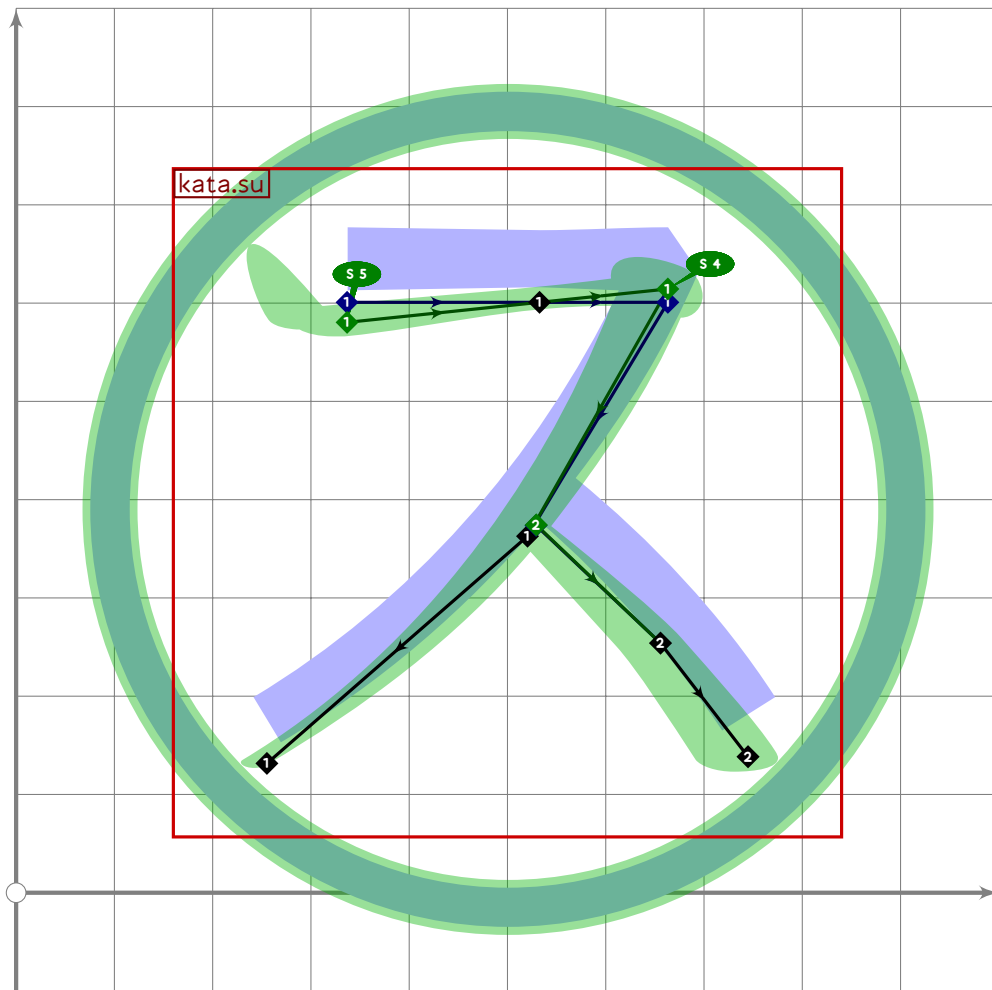
```



```

399 % circled "shi"
400 begint Suglyph("uni32DB";219);
401   tsu_curve.circle.single;
402   tsu_xform(tsu_xf.circled)(tsu_curve.kata.shi);
403   tsu_render_in_circle(tsu_xf.cbound);
404 endsuglyph;
405

```

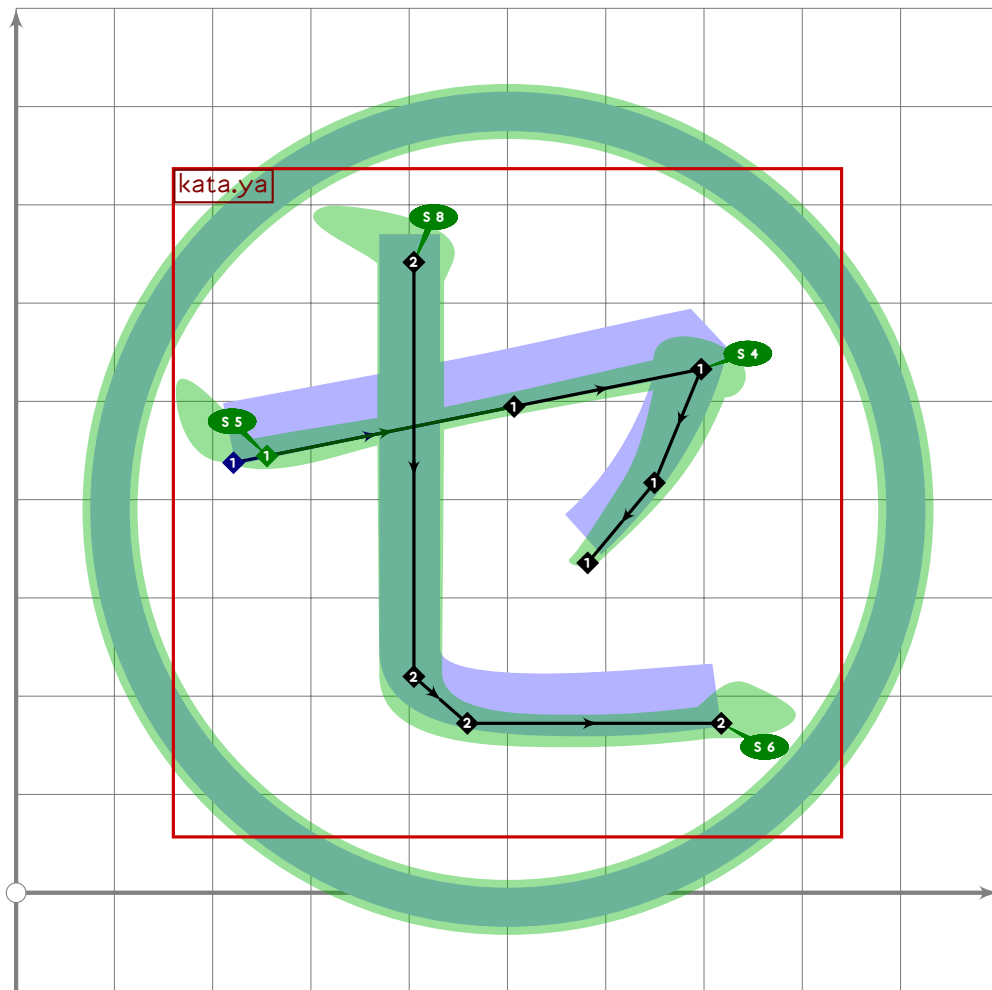


```

406 % circled "su"
407 begint Suglyph("uni32DC";220);
408   tsu_curve.circle.single;
409   tsu_xform(tsu_xf.circled)(tsu_curve.kata.su);
410   tsu_render_in_circle(tsu_xf.cbound);
411 endsuglyph;
412

```

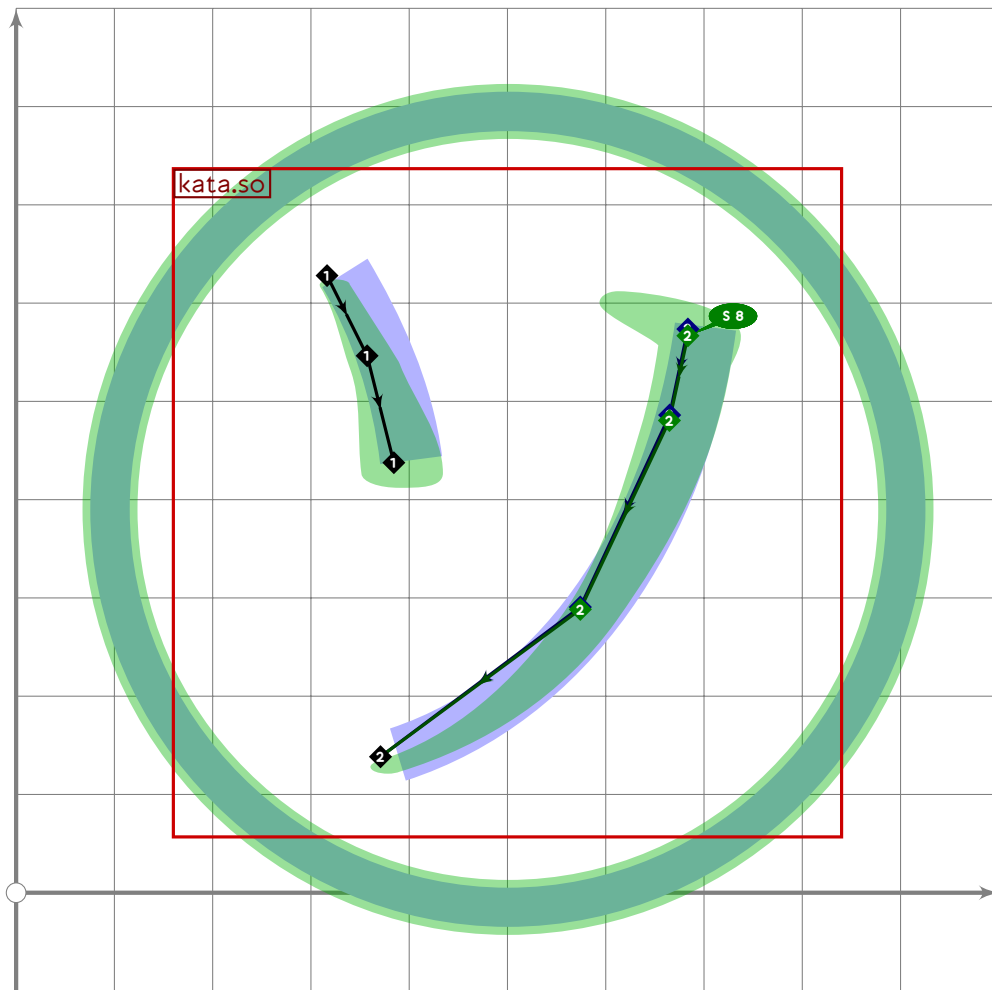




```

413 % circled "se"
414 begint Suglyph("uni32DD";221);
415 tsu_curve.circle.single;
416 tsu_xform(tsu_xf.circled)(tsu_curve.kata.se);
417 tsu_render_in_circle(tsu_xf.cbound);
418 endsuglyph;
419

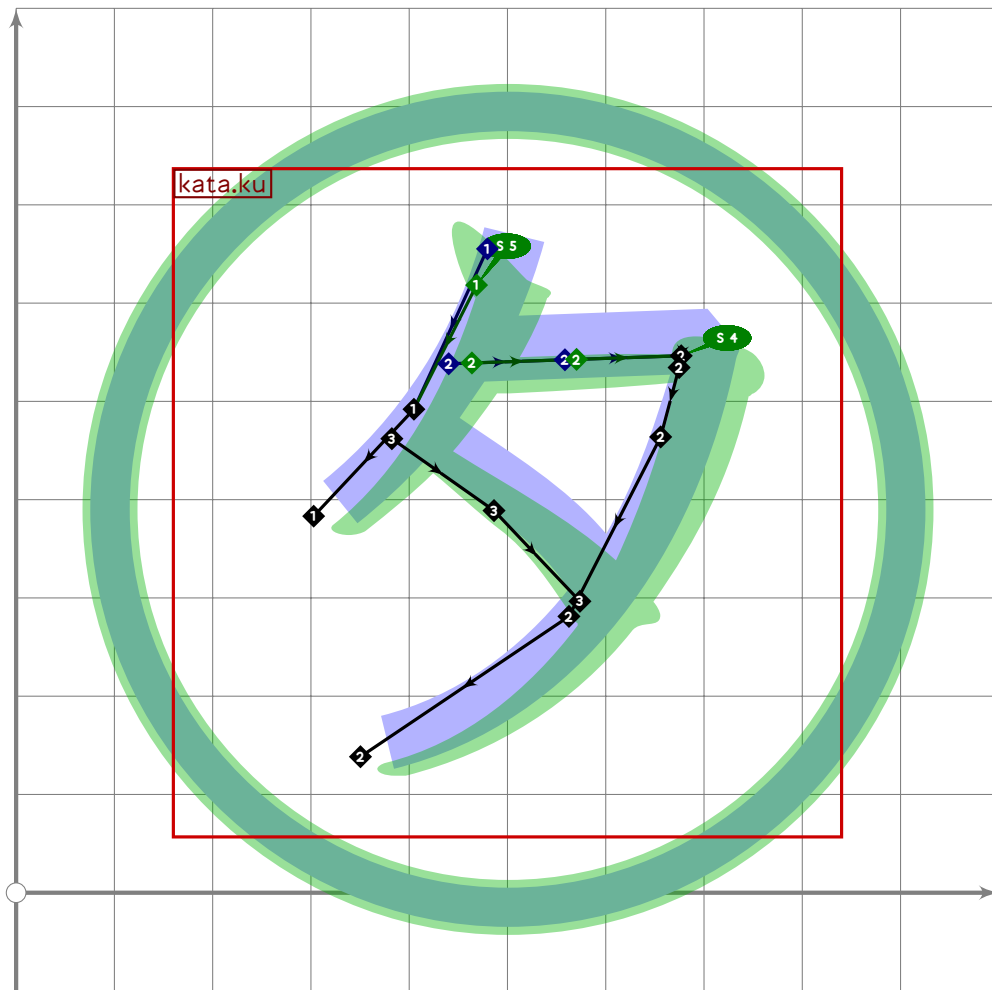
```



```

420 % circled "so"
421 begint Suglyph("uni32DE",222);
422 tsu_curve.circle.single;
423 tsu_xform(tsu_xf.circled)(tsu_curve.kata.so);
424 tsu_render_in_circle(tsu_xf.cbound);
425 endsuglyph;
426

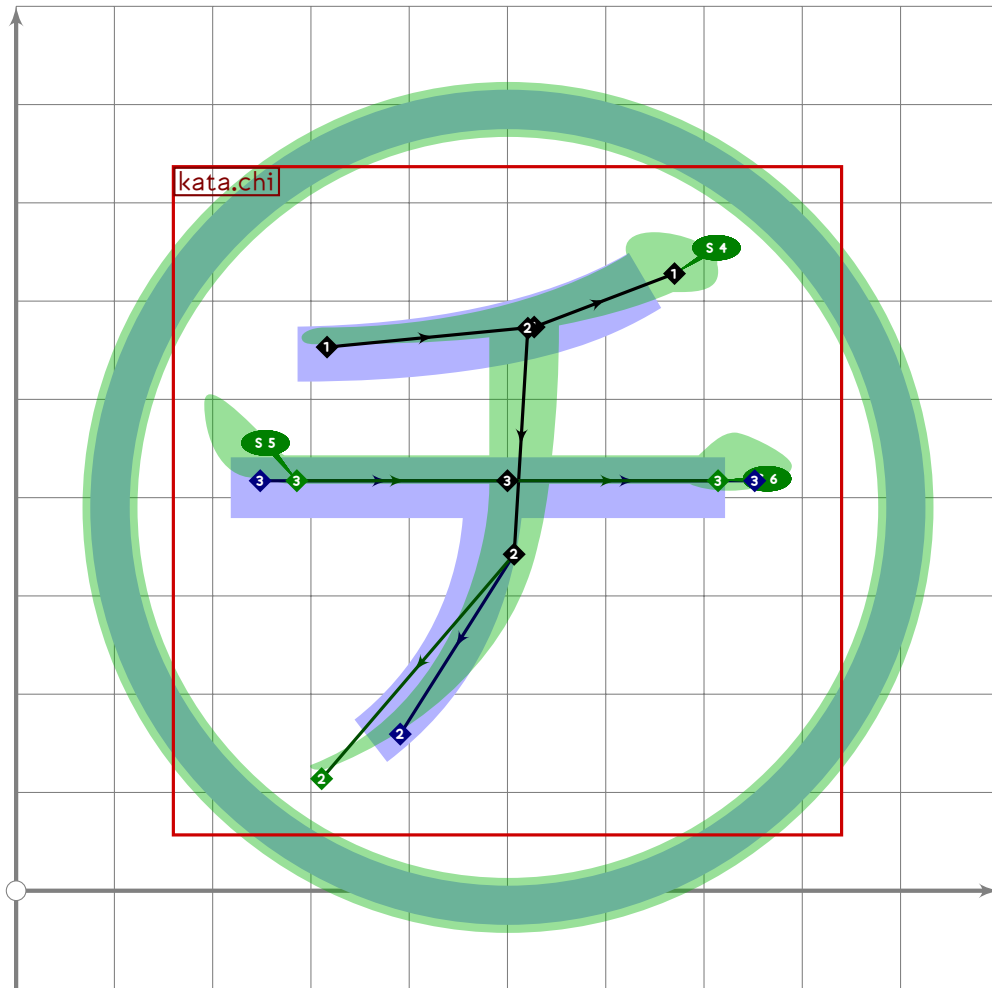
```



```

427 % circled "ta"
428 begint Suglyph("uni32DF",223);
429 tsu_curve.circle.single;
430 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ta);
431 tsu_render_in_circle(tsu_xf.cbound);
432 endsuglyph;
433

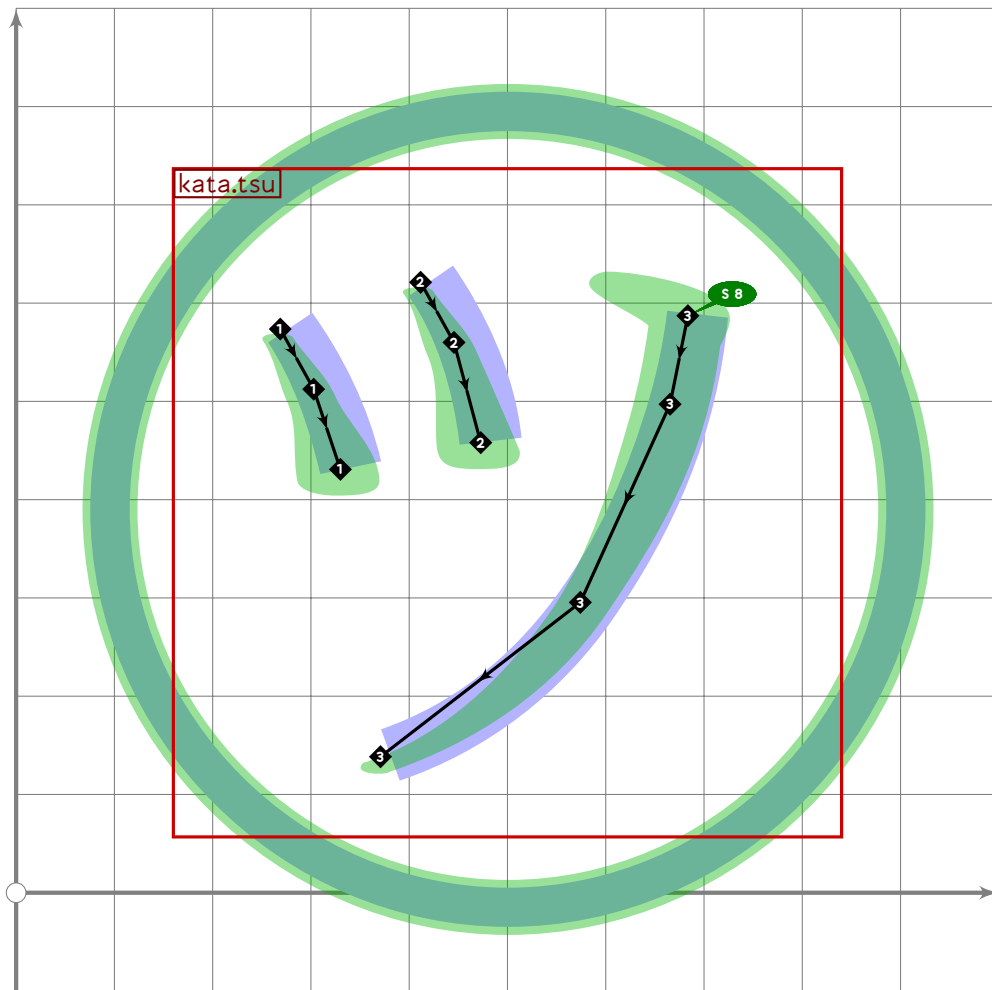
```



```

434 % circled "chi"
435 begint Suglyph("uni32E0",224);
436 tsu_curve.circle.single;
437 tsu_xform(tsu_xf.circled)(tsu_curve.kata.chi);
438 tsu_render_in_circle(tsu_xf.cbound);
439 endsuglyph;
440

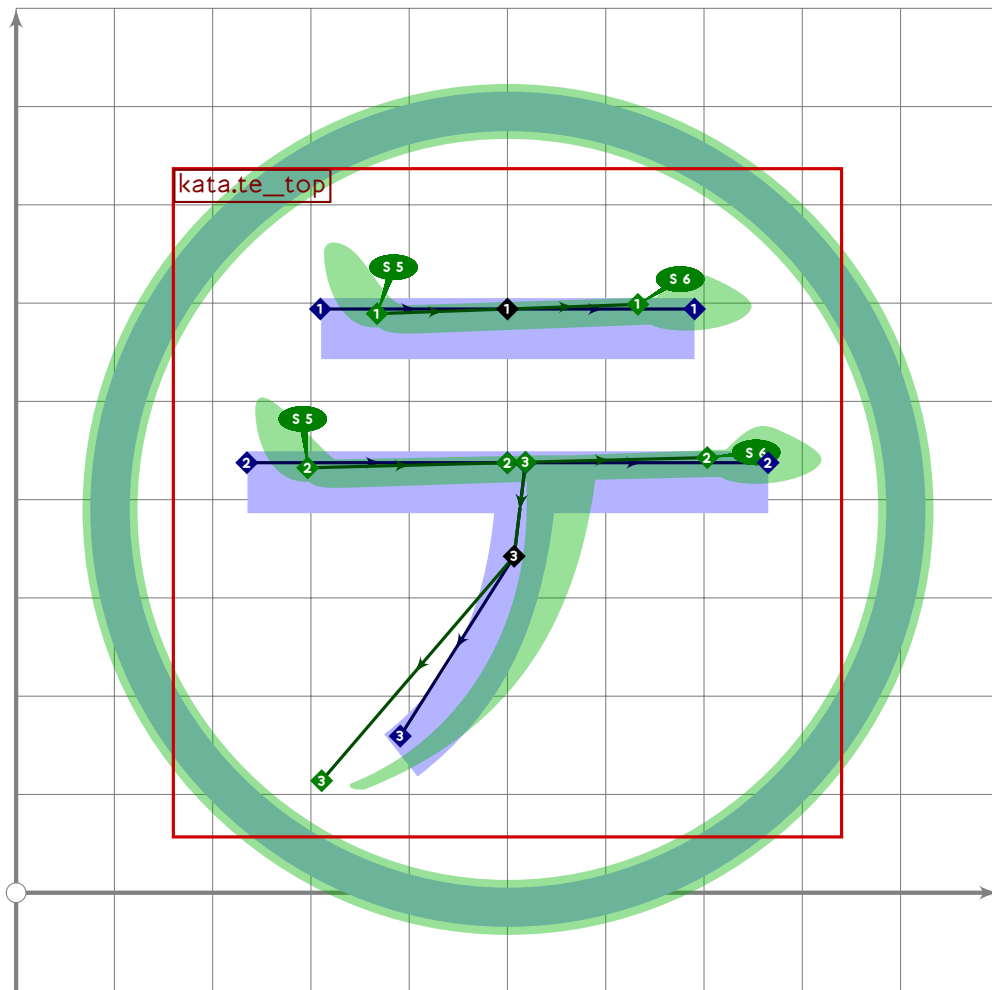
```



```

441 % circled "tsu"
442 begint Suglyph("uni32E1";225);
443   tsu_curve.circle.single;
444   tsu_xform(tsu_xf.circled)(tsu_curve.kata.tsu);
445   tsu_render_in_circle(tsu_xf.cbound);
446 endsuglyph;
447

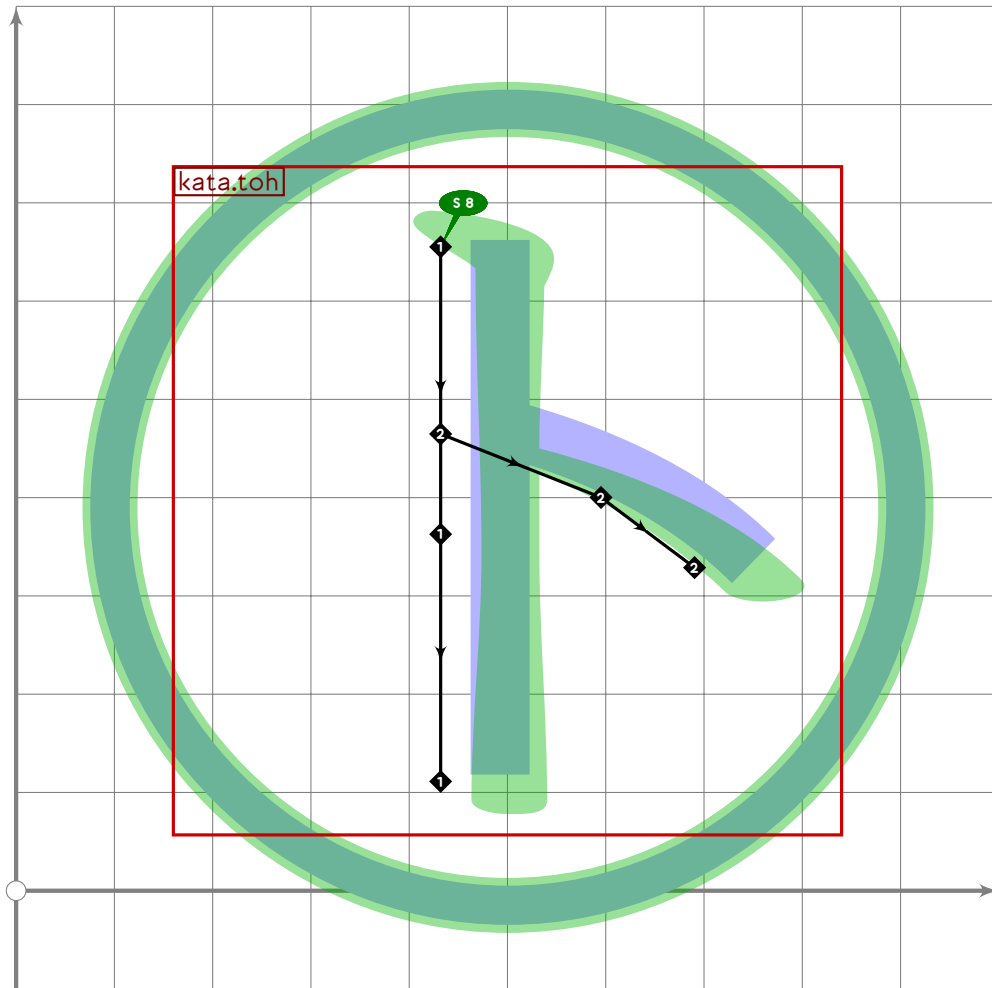
```



```

448 % circled "te"
449 begint Suglyph("uni32E2",226);
450 tsu_curve.circle.single;
451 tsu_xform(tsu_xf.circled)(tsu_curve.kata.te);
452 tsu_render_in_circle(tsu_xf.cbound);
453 endsuglyph;
454

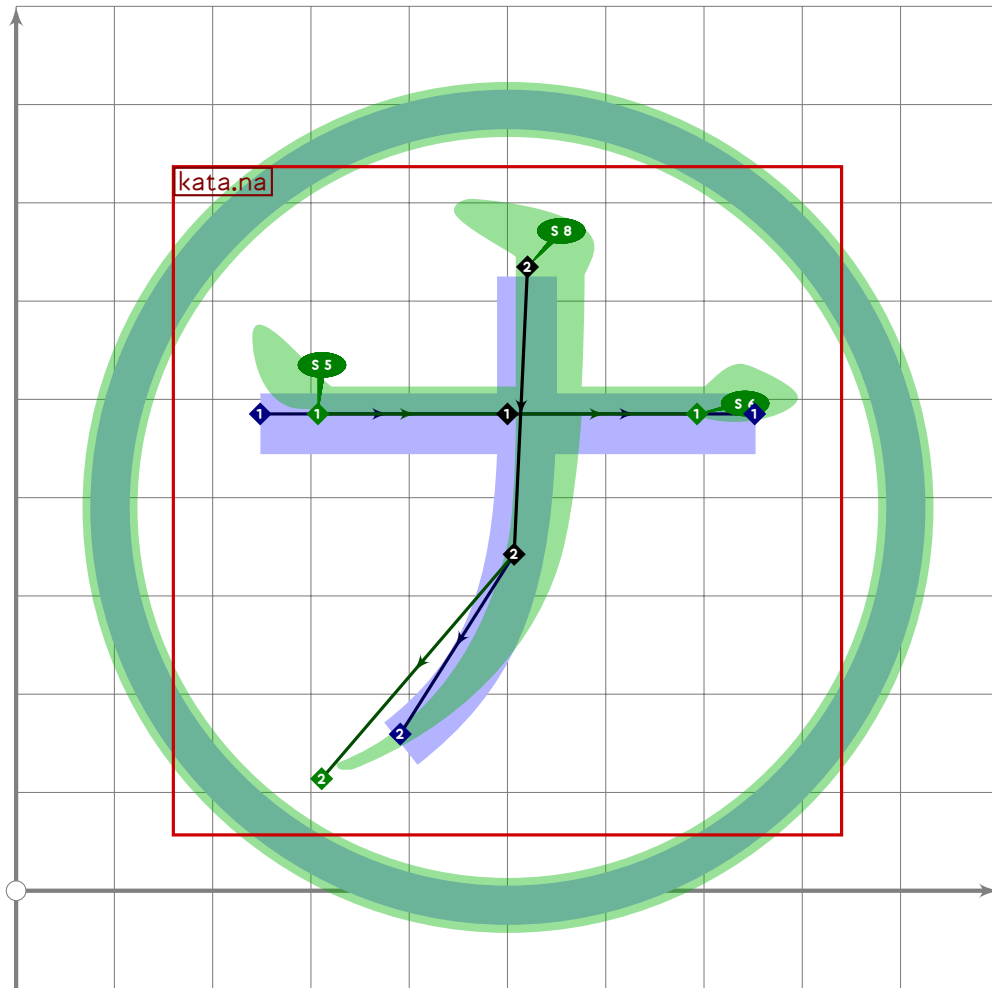
```



```

455 % circled "to"
456 begint Suglyph("uni32E3";227);
457 tsu_curve.circle.single;
458 tsu_xform(tsu_xf.circled)(tsu_curve.kata.toh);
459 tsu_render_in_circle(tsu_xf.cbound);
460 endsuglyph;
461

```

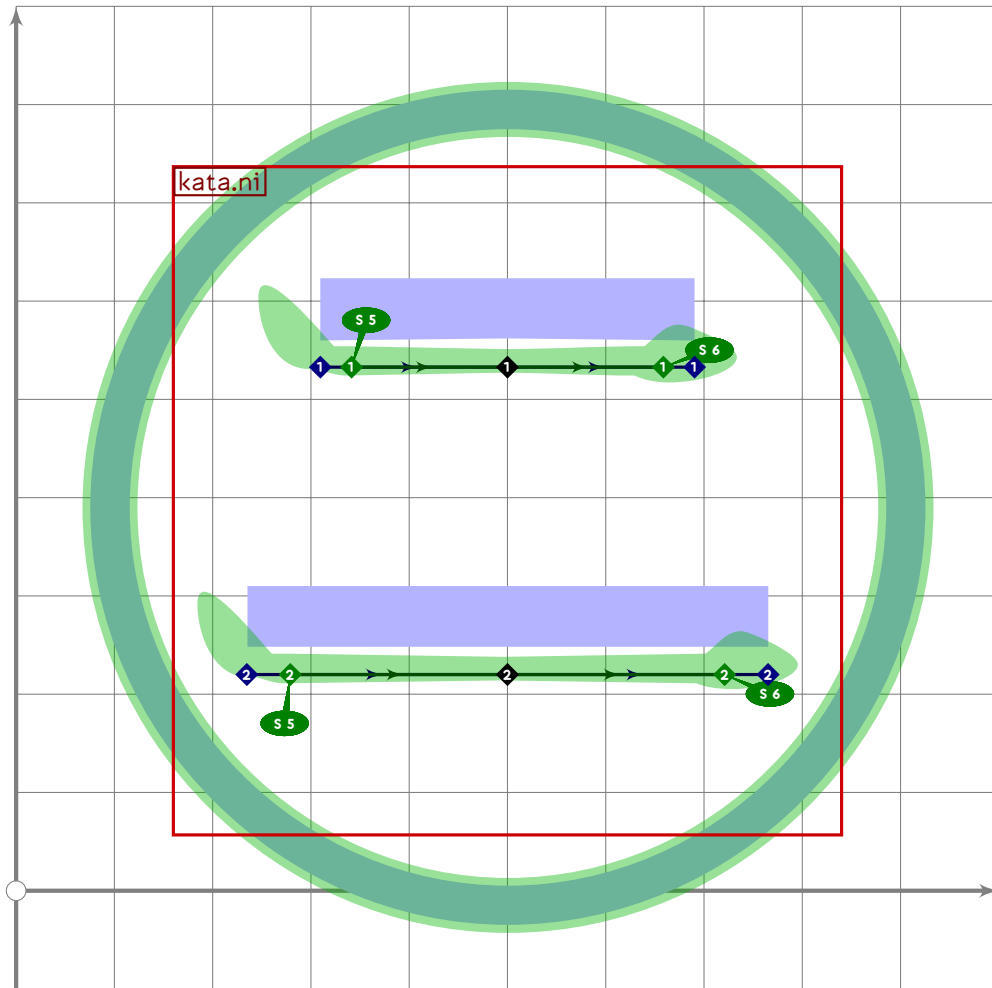


```

462 % circled "na"
463 begint Suglyph("uni32E4",228);
464 tsu_curve.circle.single;
465 tsu_xform(tsu_xf.circled)(tsu_curve.kata.na);
466 tsu_render_in_circle(tsu_xf.cbound);
467 endsuglyph;
468

```

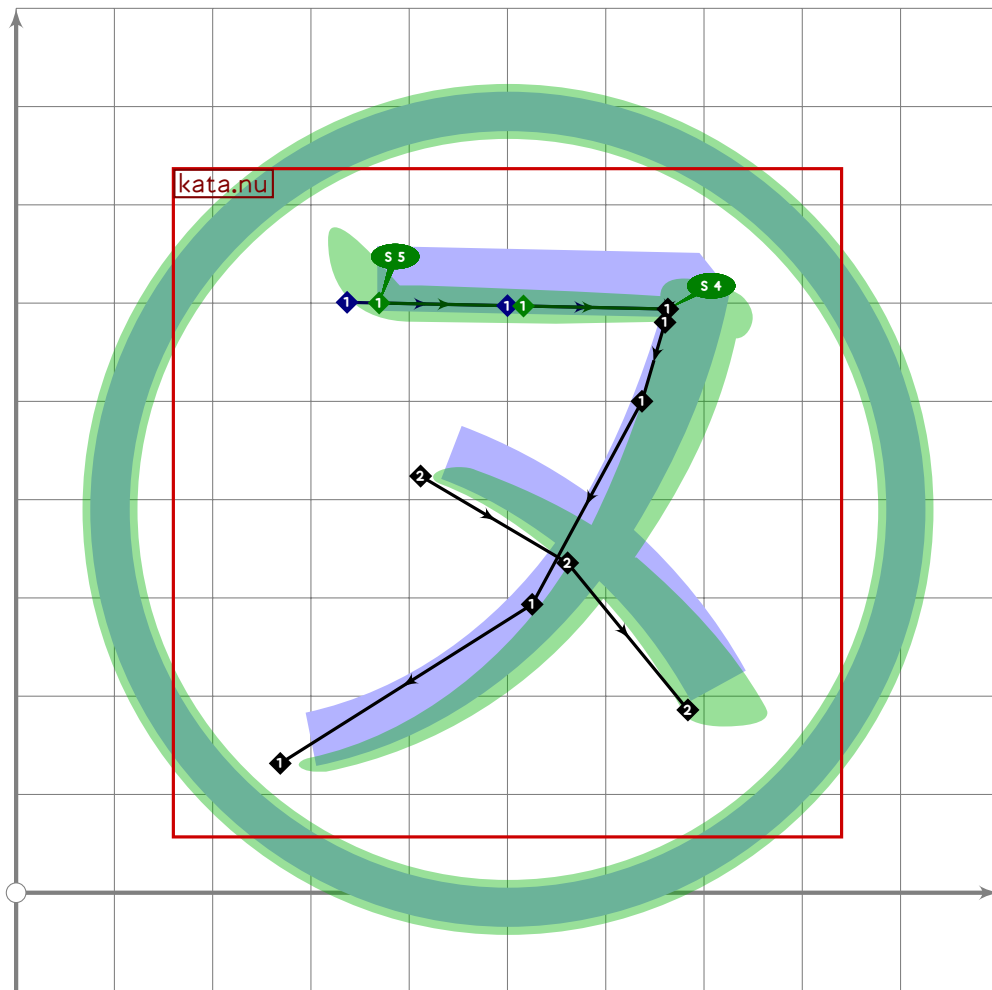




```

469 % circled "ni"
470 begint Suglyph("uni32E5";229);
471 tsu_curve.circle.single;
472 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ni);
473 tsu_render_in_circle(tsu_xf.cbound);
474 endsuglyph;
475

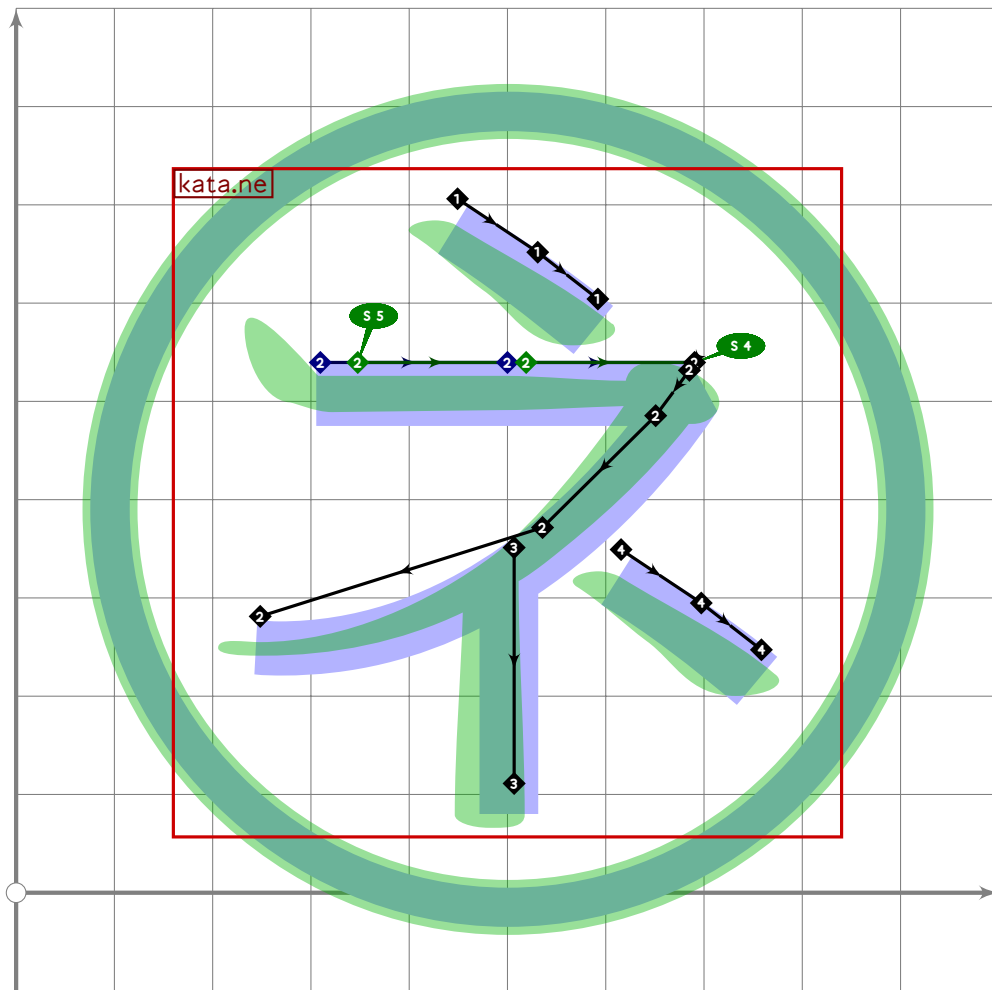
```



```

476 % circled "nu"
477 begint Suglyph("uni32E6";230);
478   tsu_curve.circle.single;
479   tsu_xform(tsu_xf.circled)(tsu_curve.kata.nu);
480   tsu_render_in_circle(tsu_xf.cbound);
481 endsuglyph;
482

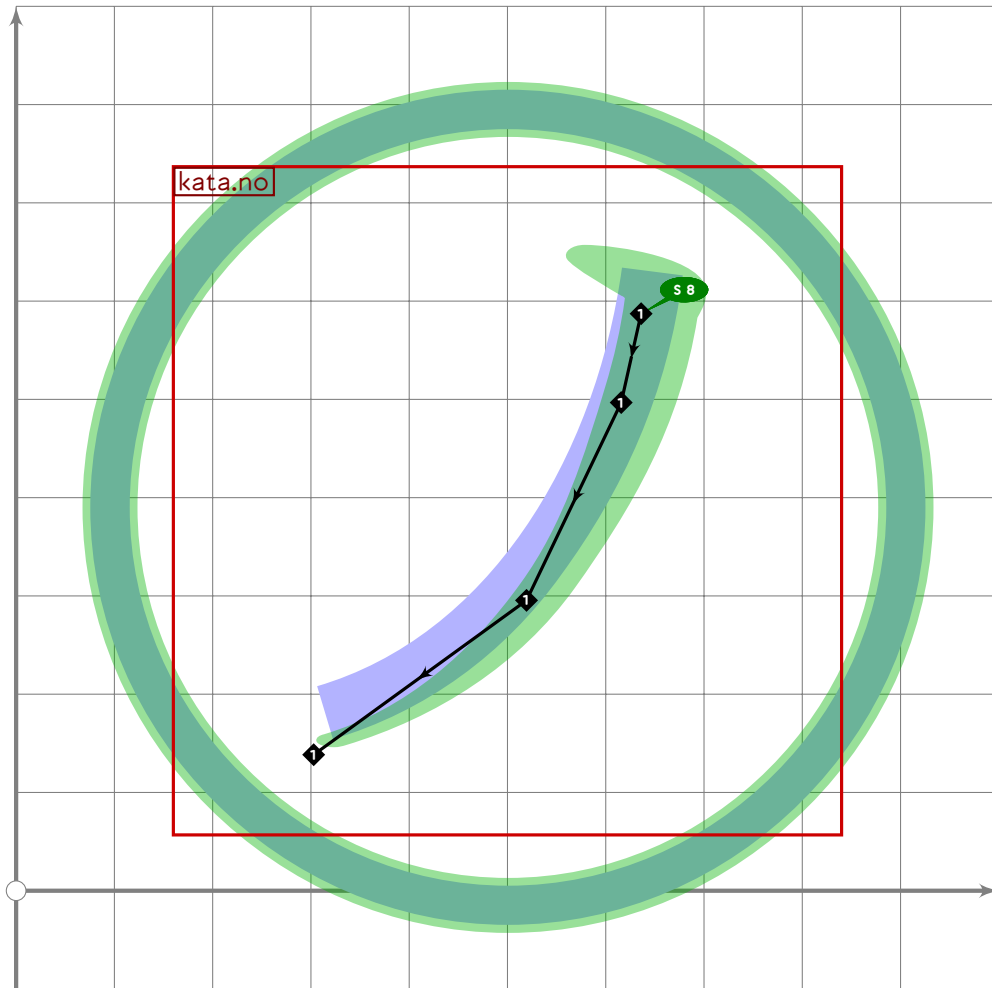
```



```

483 % circled "ne"
484 begint Suglyph("uni32E7",231);
485 tsu_curve.circle.single;
486 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ne);
487 tsu_render_in_circle(tsu_xf.cbound);
488 endsuglyph;
489

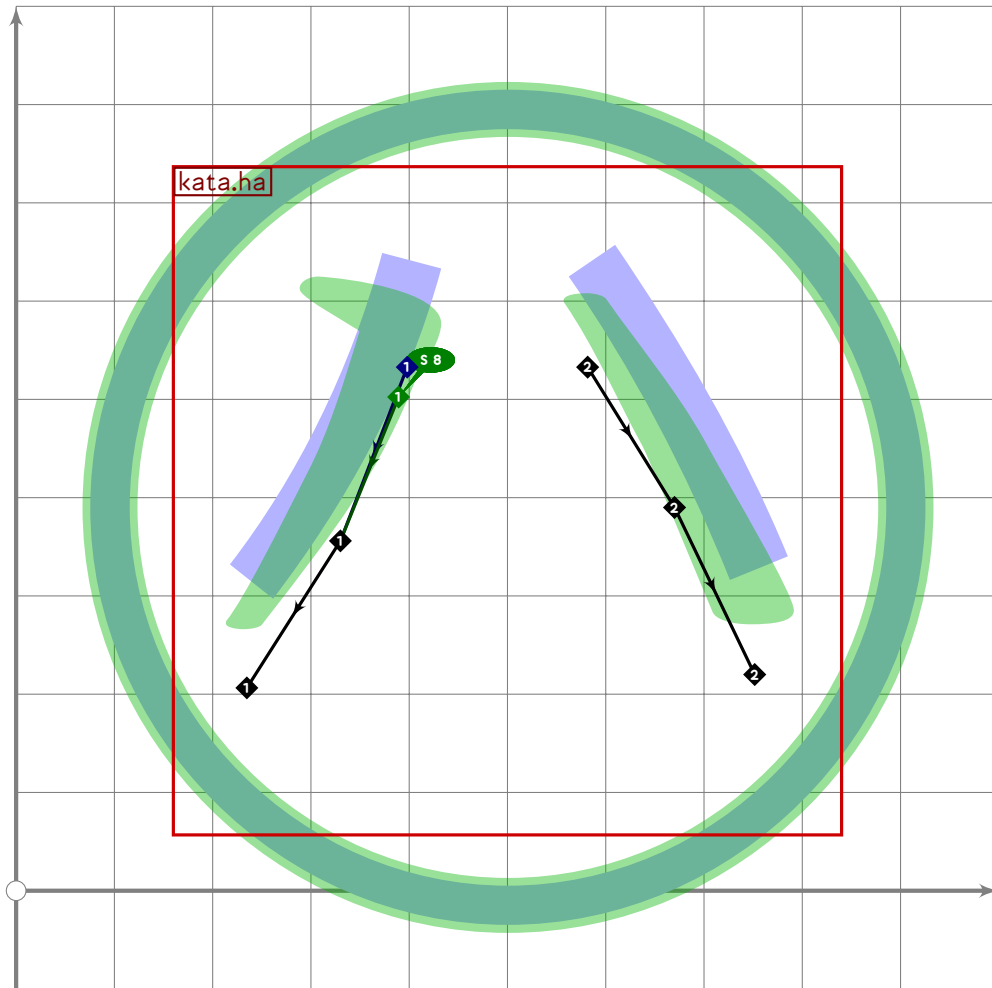
```



```

490 % circled "no"
491 begint Suglyph("uni32E8",232);
492 tsu_curve.circle.single;
493 tsu_xform(tsu_xf.circled)(tsu_curve.kata.no);
494 tsu_render_in_circle(tsu_xf.cbound);
495 endsuglyph;
496

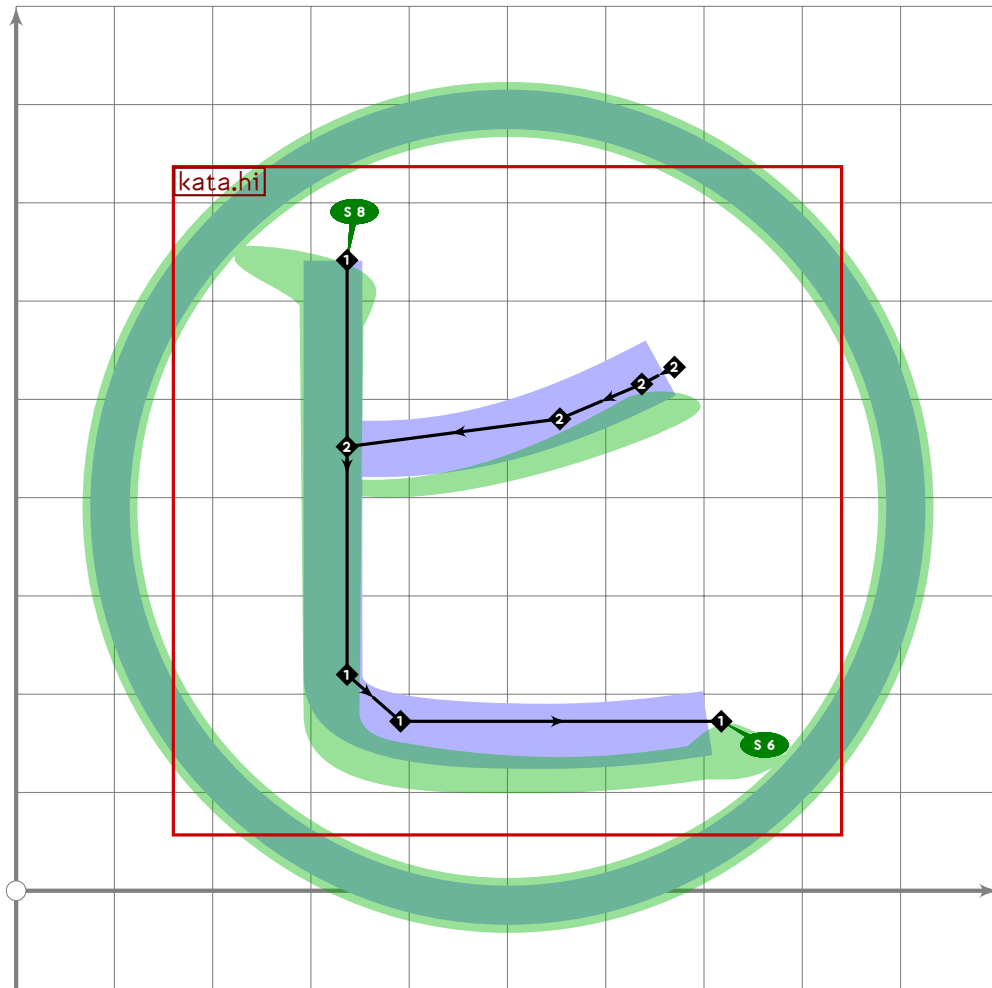
```



```

497 % circled "ha"
498 begint Suglyph("uni32E9",233);
499 tsu_curve.circle.single;
500 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ha);
501 tsu_render_in_circle(tsu_xf.cbound);
502 endsuglyph;
503

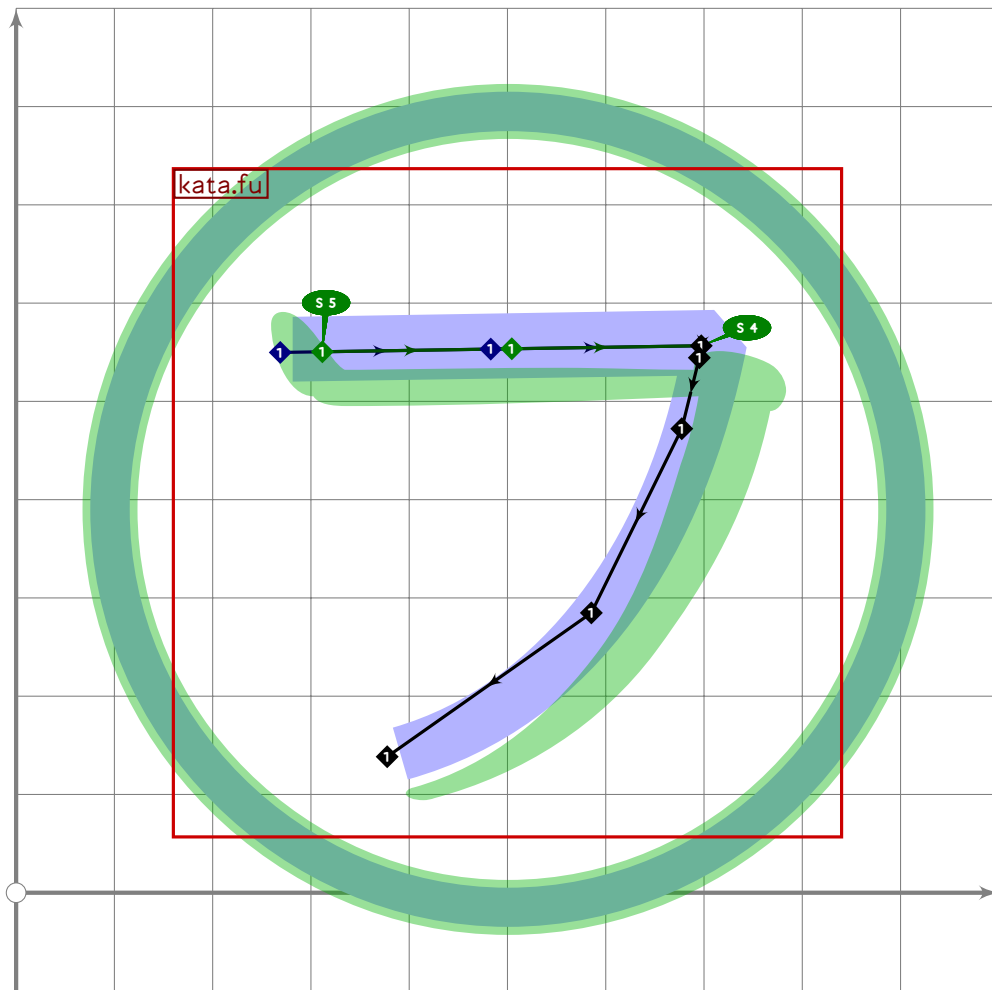
```



```

504 % circled "hi"
505 begint Suglyph("uni32EA",234);
506 tsu_curve.circle.single;
507 tsu_xform(tsu_xf.circled)(tsu_curve.kata.hi);
508 tsu_render_in_circle(tsu_xf.cbound);
509 endsuglyph;
510

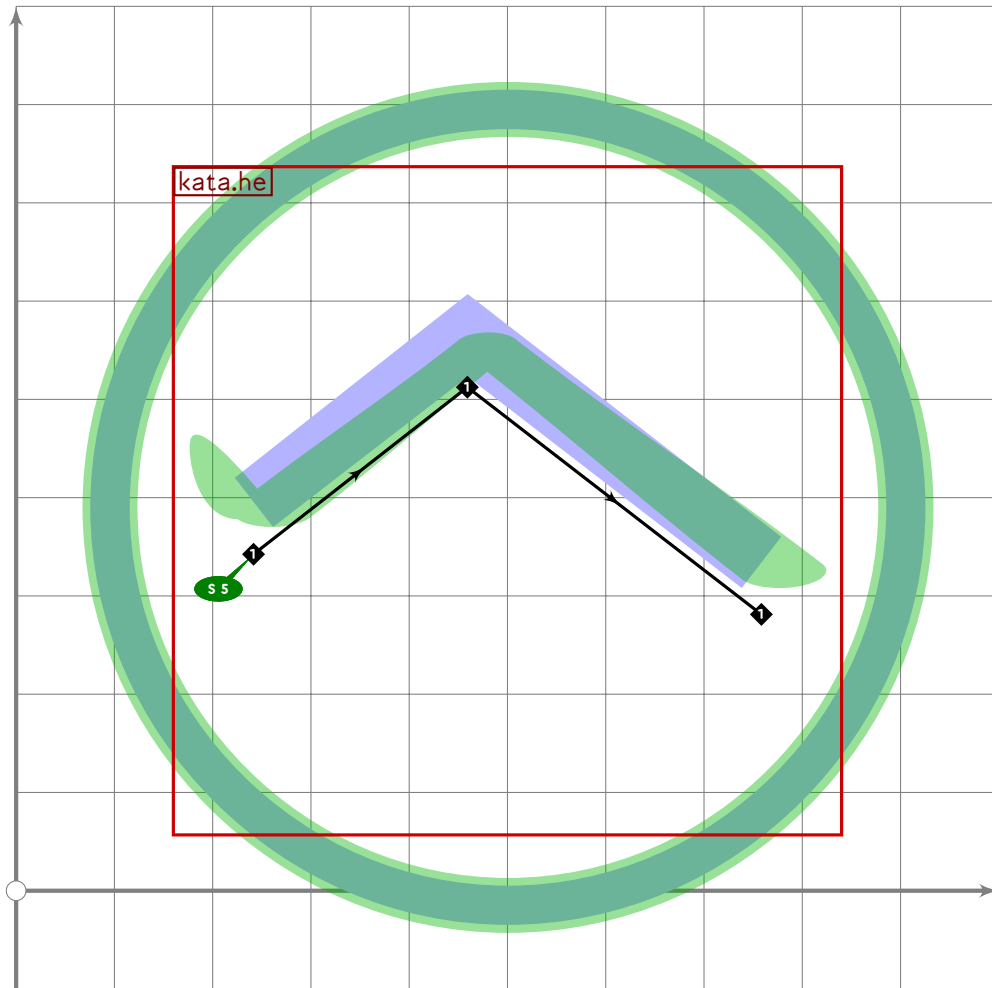
```



```

511 % circled "fu"
512 begint Suglyph("uni32EB",235);
513   tsu_curve.circle.single;
514   tsu_xform(tsu_xf.circled)(tsu_curve.kata.fu);
515   tsu_render_in_circle(tsu_xf.cbound);
516 endsuglyph;
517

```

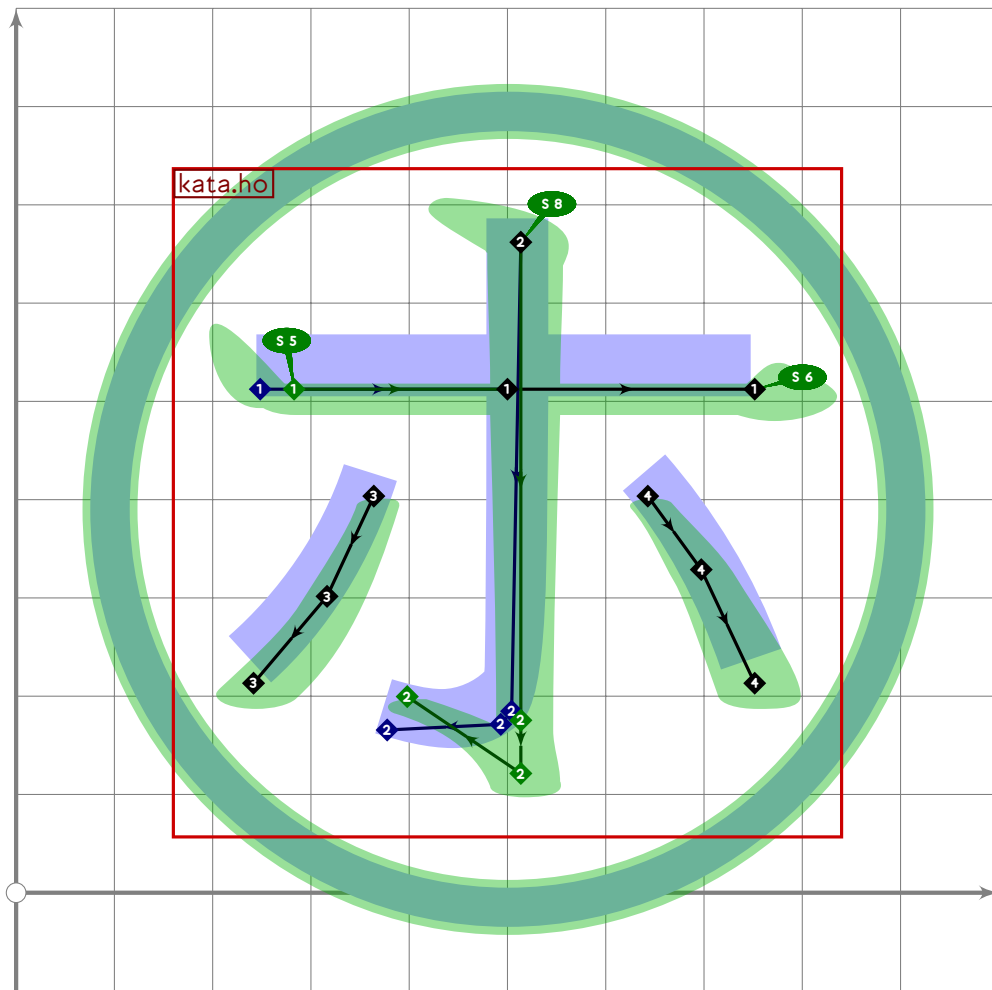


```

518 % circled "he"
519 begint Suglyph("uni32EC",236);
520 tsu_curve.circle.single;
521 tsu_xform(tsu_xf.circled)(tsu_curve.kata.he);
522 tsu_render_in_circle(tsu_xf.cbound);
523 endsuglyph;
524

```

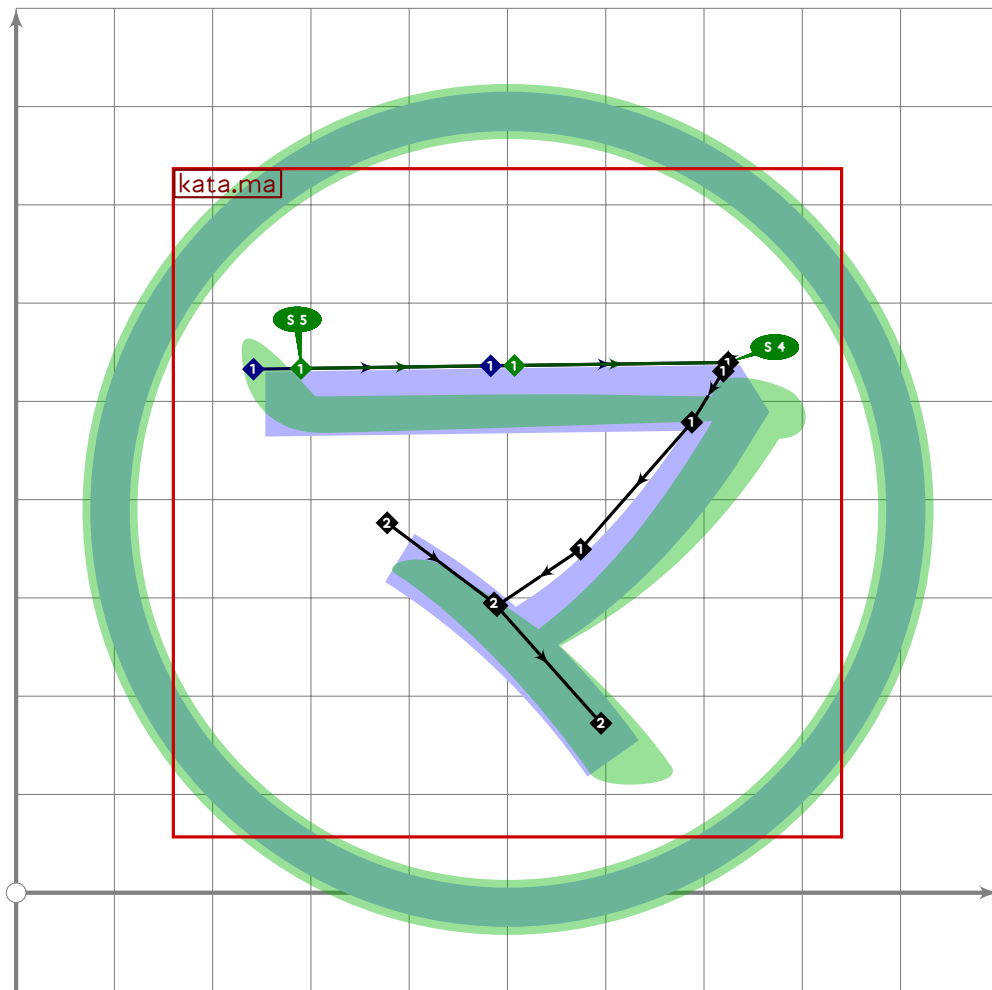




```

525 % circled "ho"
526 begint Suglyph("uni32ED",237);
527 tsu_curve.circle.single;
528 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ho);
529 tsu_render_in_circle(tsu_xf.cbound);
530 endsuglyph;
531

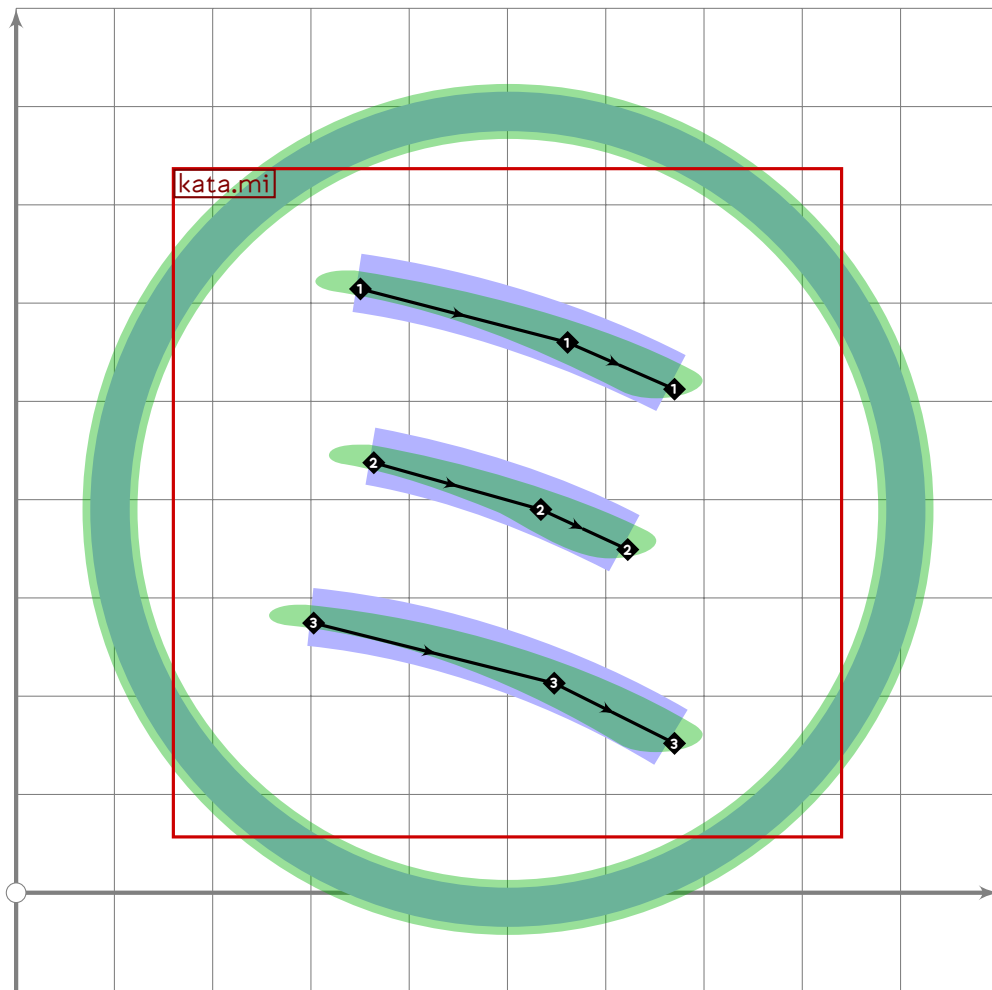
```



```

532 % circled "ma"
533 begint Suglyph("uni32EE",238);
534 tsu_curve.circle.single;
535 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ma);
536 tsu_render_in_circle(tsu_xf.cbound);
537 endtsuglyph;
538

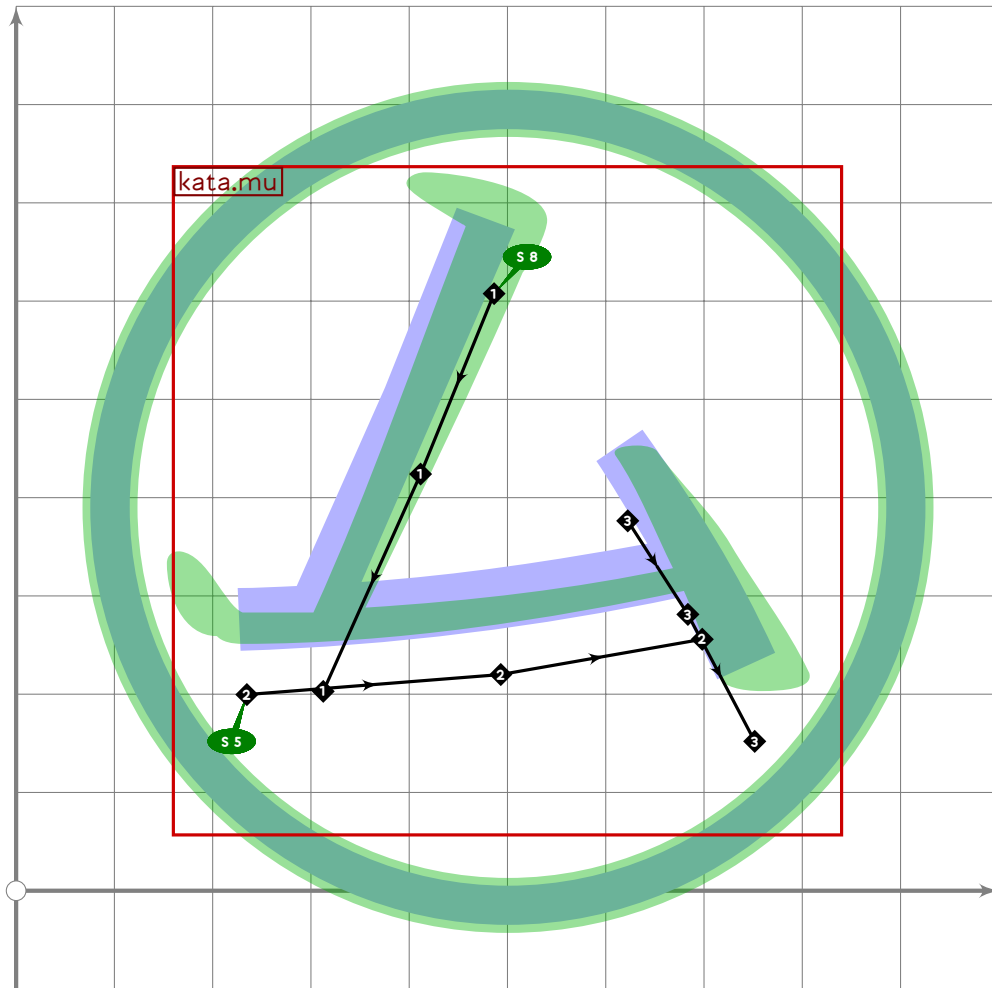
```



```

539 % circled "mi"
540 begint Suglyph("uni32EF",239);
541   tsu_curve.circle.single;
542   tsu_xform(tsu_xf.circled)(tsu_curve.kata.mi);
543   tsu_render_in_circle(tsu_xf.cbound);
544 endsuglyph;
545

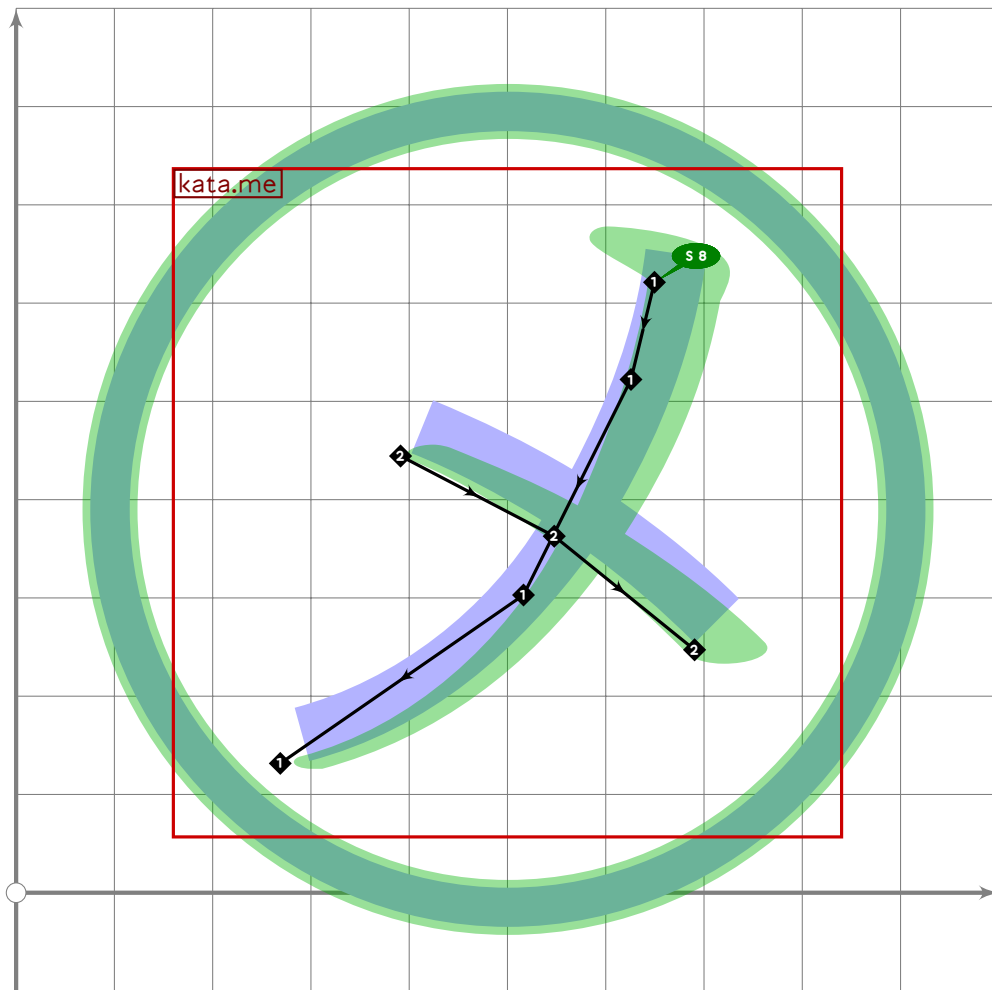
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```

546 % circled "mu"
547 begint Suglyph("uni32F0";240);
548 tsu_curve.circle.single;
549 tsu_xform(tsu_xf.circled)(tsu_curve.kata.mu);
550 tsu_render_in_circle(tsu_xf.cbound);
551 endsuglyph;
552

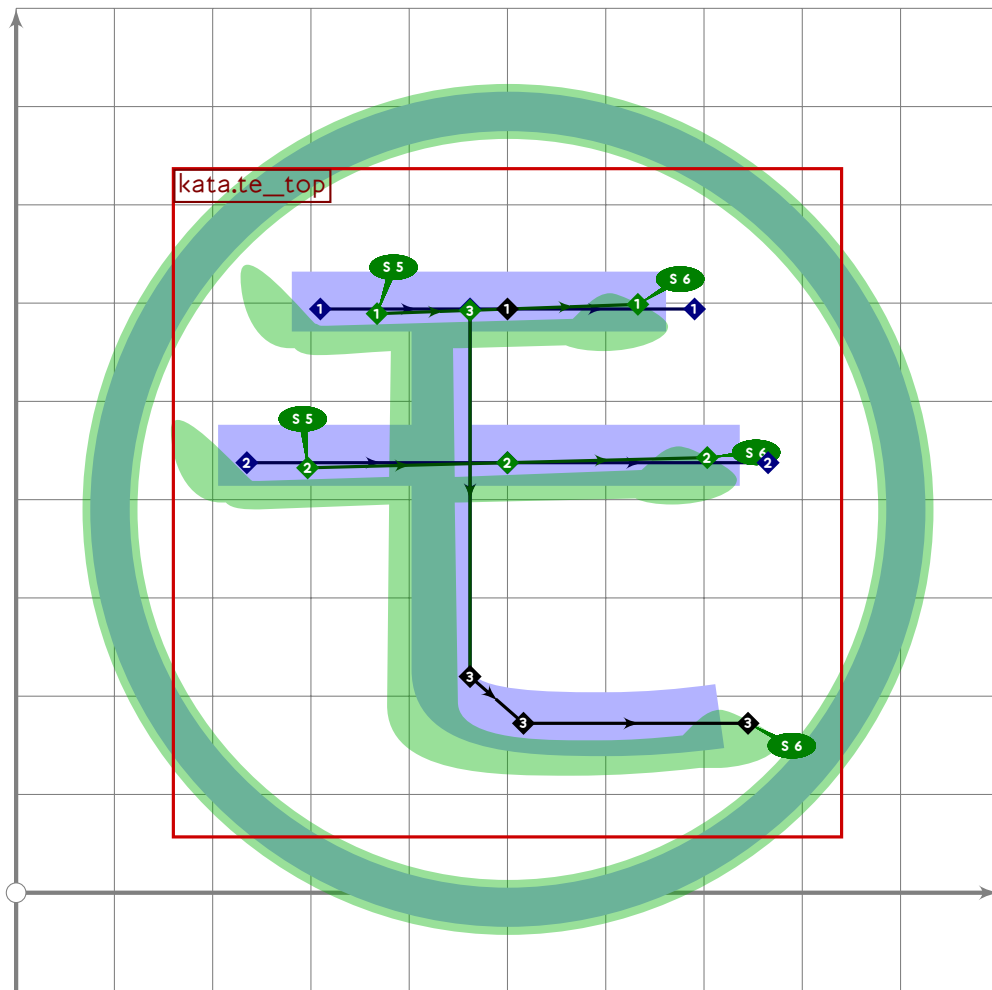
```



```

553 % circled "me"
554 begint Suglyph("uni32F1";241);
555 tsu_curve.circle.single;
556 tsu_xform(tsu_xf.circled)(tsu_curve.kata.me);
557 tsu_render_in_circle(tsu_xf.cbound);
558 endsuglyph;
559

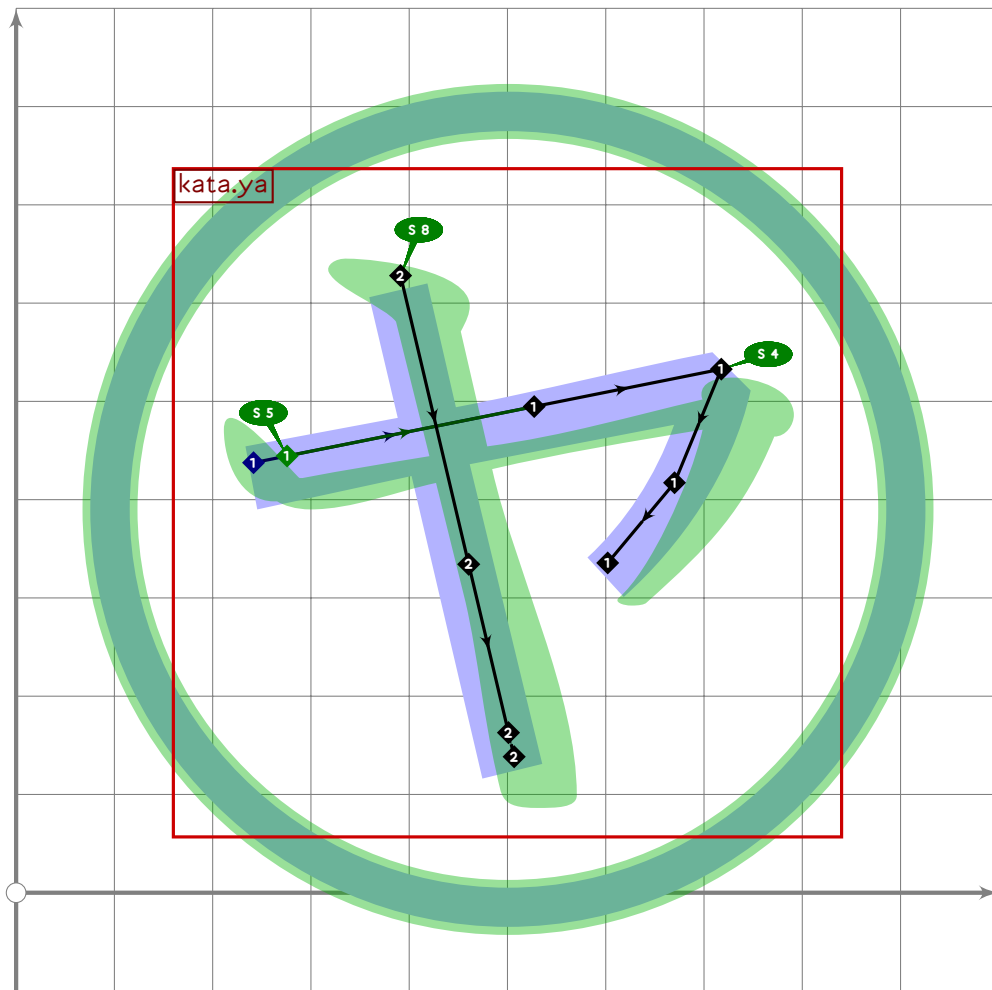
```



```

560 % circled "mo"
561 begint Suglyph("uni32F2";242);
562 tsu_curve.circle.single;
563 tsu_xform(tsu_xf.circled)(tsu_curve.kata.mo);
564 tsu_render_in_circle(tsu_xf.cbound);
565 endsuglyph;
566

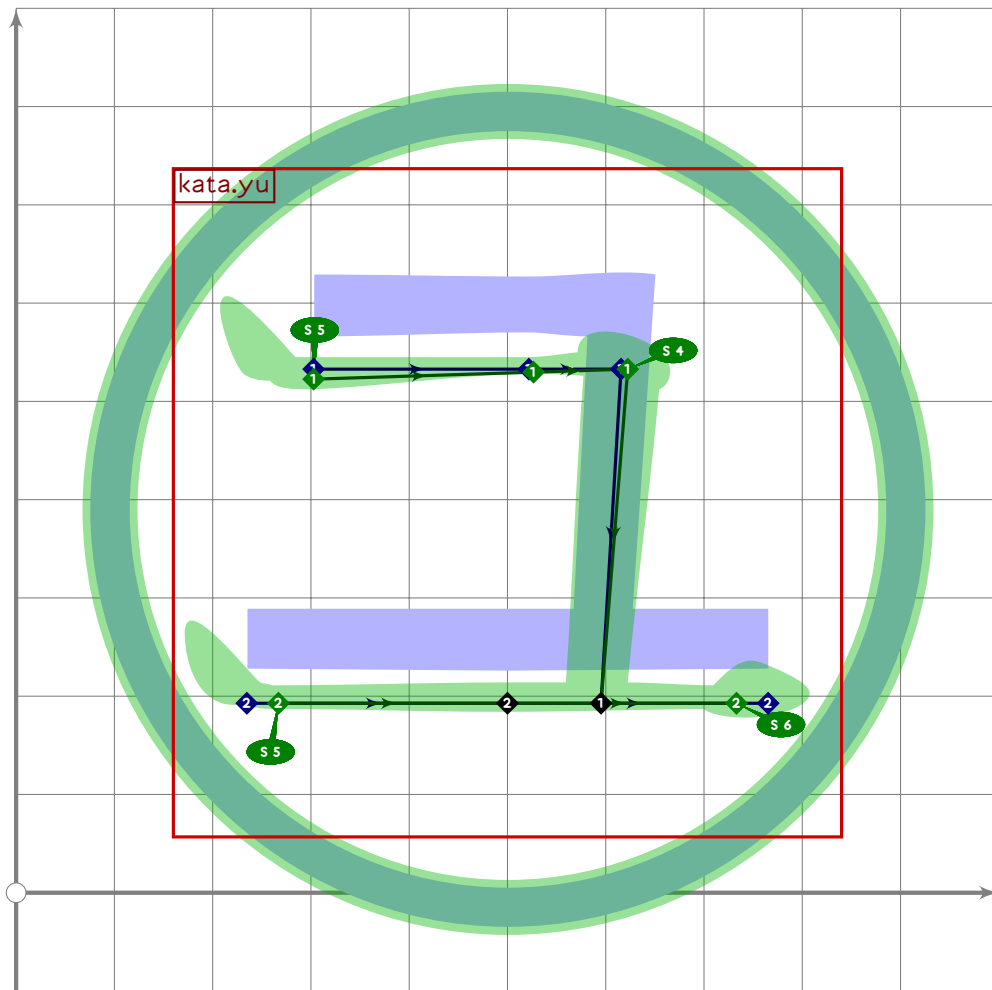
```



```

567 % circled "ya"
568 begint Suglyph("uni32F3";243);
569 tsu_curve.circle.single;
570 tsu_xform(tsu_xf.circled)(tsu_curve.kata,ya);
571 tsu_render_in_circle(tsu_xf.cbound);
572 endsuglyph;
573

```

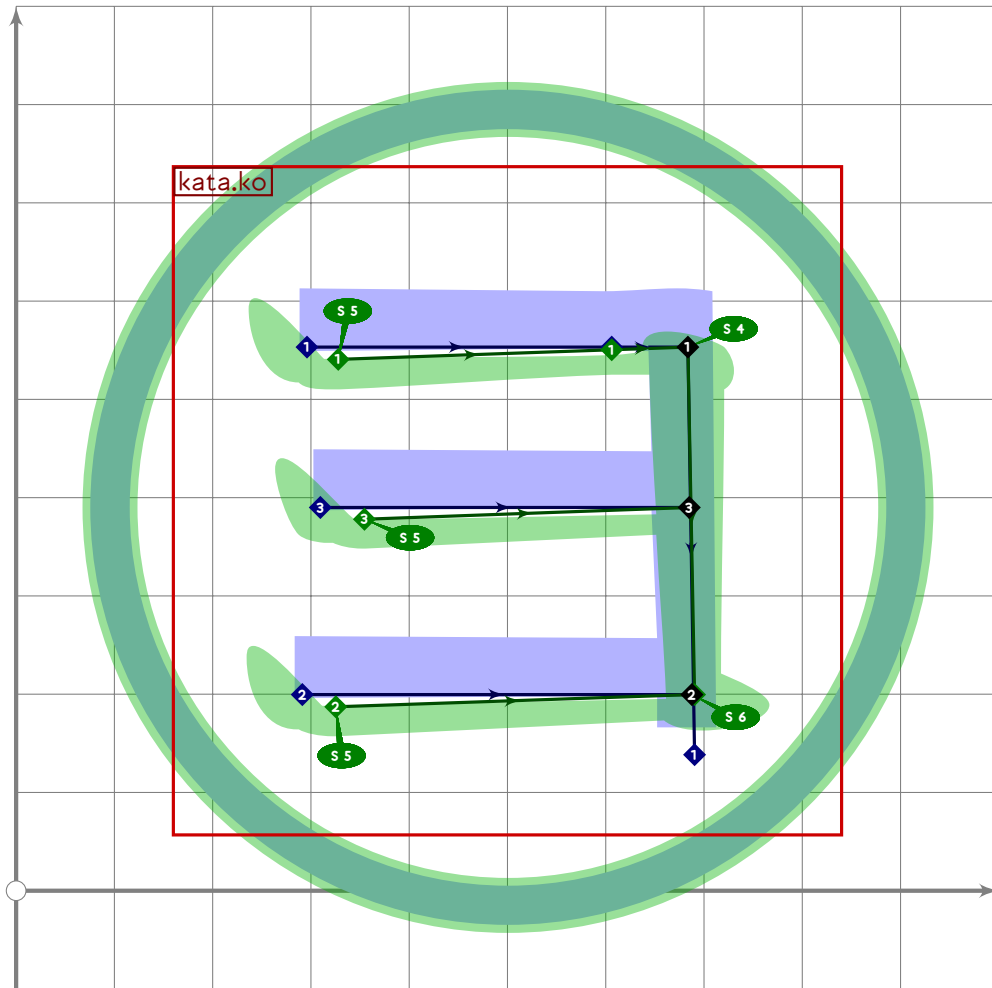


```

574 % circled "yu"
575 begint Suglyph("uni32F4";244);
576 tsu_curve.circle.single;
577 tsu_xform(tsu_xf.circled)(tsu_curve.kata.yu);
578 tsu_render_in_circle(tsu_xf.cbound);
579 endsuglyph;
580

```

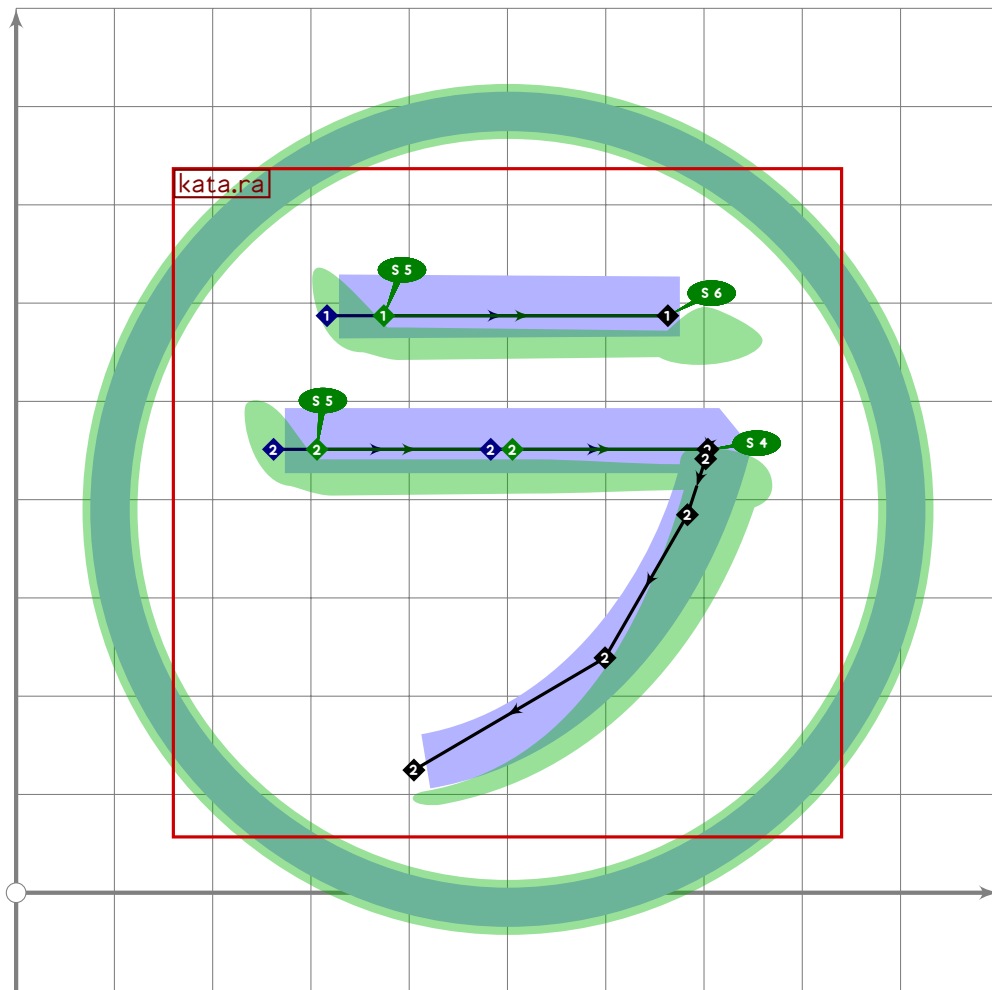




```

581 % circled "yo"
582 begint Suglyph("uni32F5";245);
583   tsu_curve.circle.single;
584   tsu_xform(tsu_xf.circled)(tsu_curve.kata.yo);
585   tsu_render_in_circle(tsu_xf.cbound);
586 endsuglyph;
587

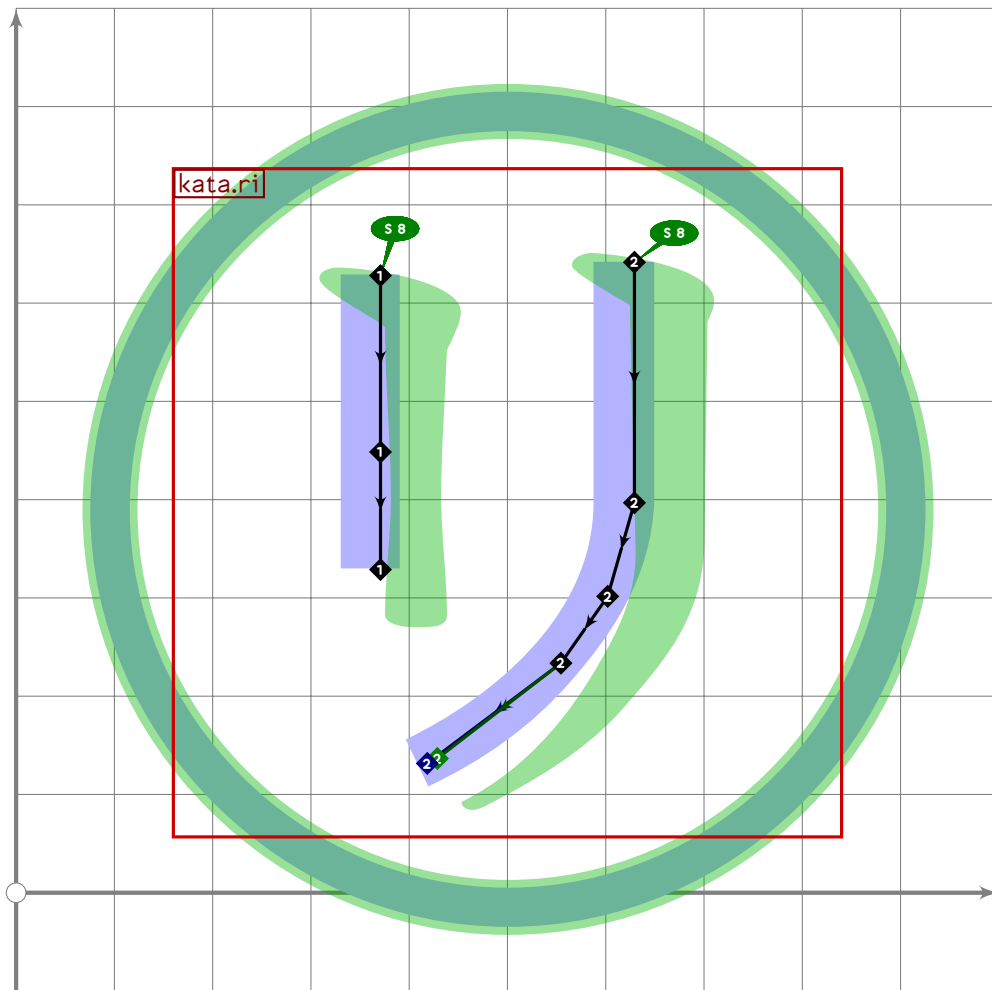
```



```

588 % circled "ra"
589 begint Suglyph("uni32F6";246);
590 tsu_curve.circle.single;
591 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ra);
592 tsu_render_in_circle(tsu_xf.cbound);
593 endsuglyph;
594

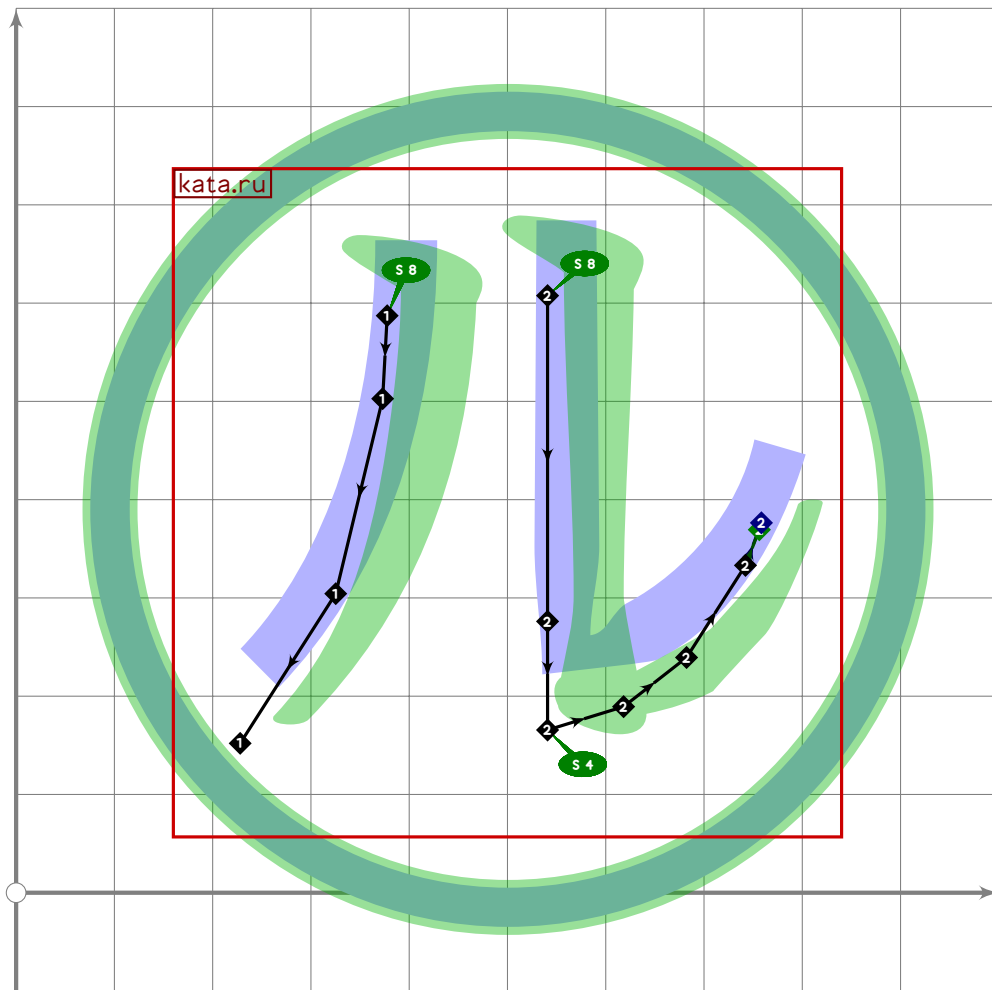
```



```

595 % circled "ri"
596 begint Suglyph("uni32F7",247);
597   tsu_curve.circle.single;
598   tsu_xform(tsu_xf.circled)(tsu_curve.kata.ri);
599   tsu_render_in_circle(tsu_xf.cbound);
600 endsuglyph;
601

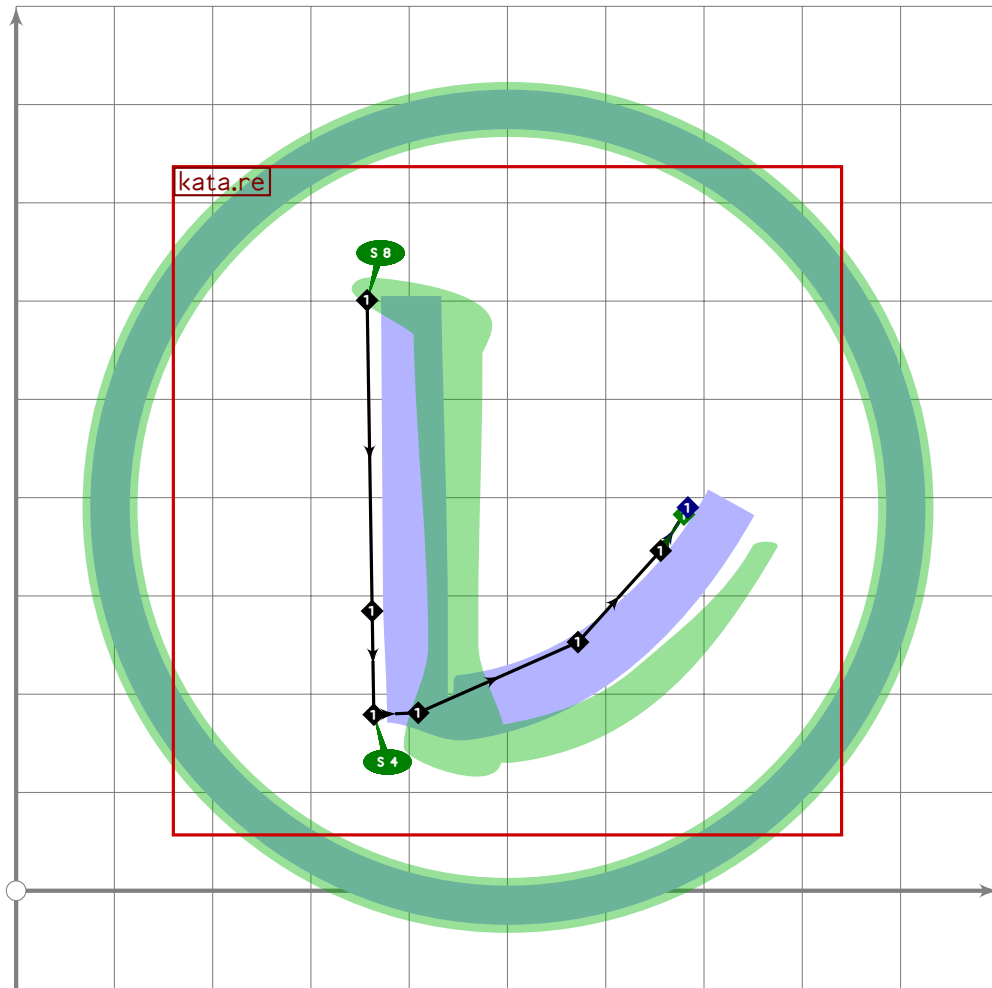
```



```

602 % circled "ru"
603 begint Suglyph("uni32F8",248);
604 tsu_curve.circle.single;
605 tsu_xform(tsu_xf.circled)(tsu_curve.kata.ru);
606 tsu_render_in_circle(tsu_xf.cbound);
607 endsuglyph;
608

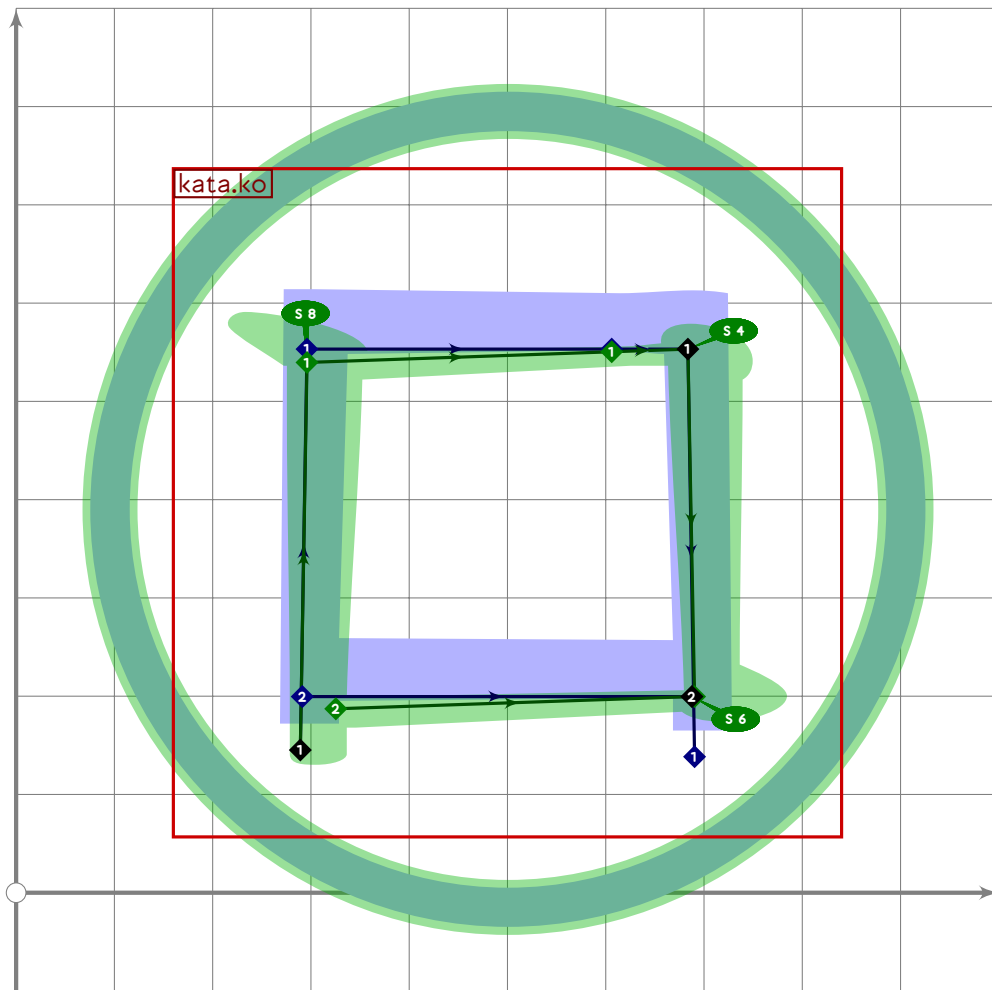
```



```

609 % circled "re"
610 begint Suglyph("uni32F9";249);
611   tsu_curve.circle.single;
612   tsu_xform(tsu_xf.circled)(tsu_curve.kata.re);
613   tsu_render_in_circle(tsu_xf.cbound);
614 endsuglyph;
615

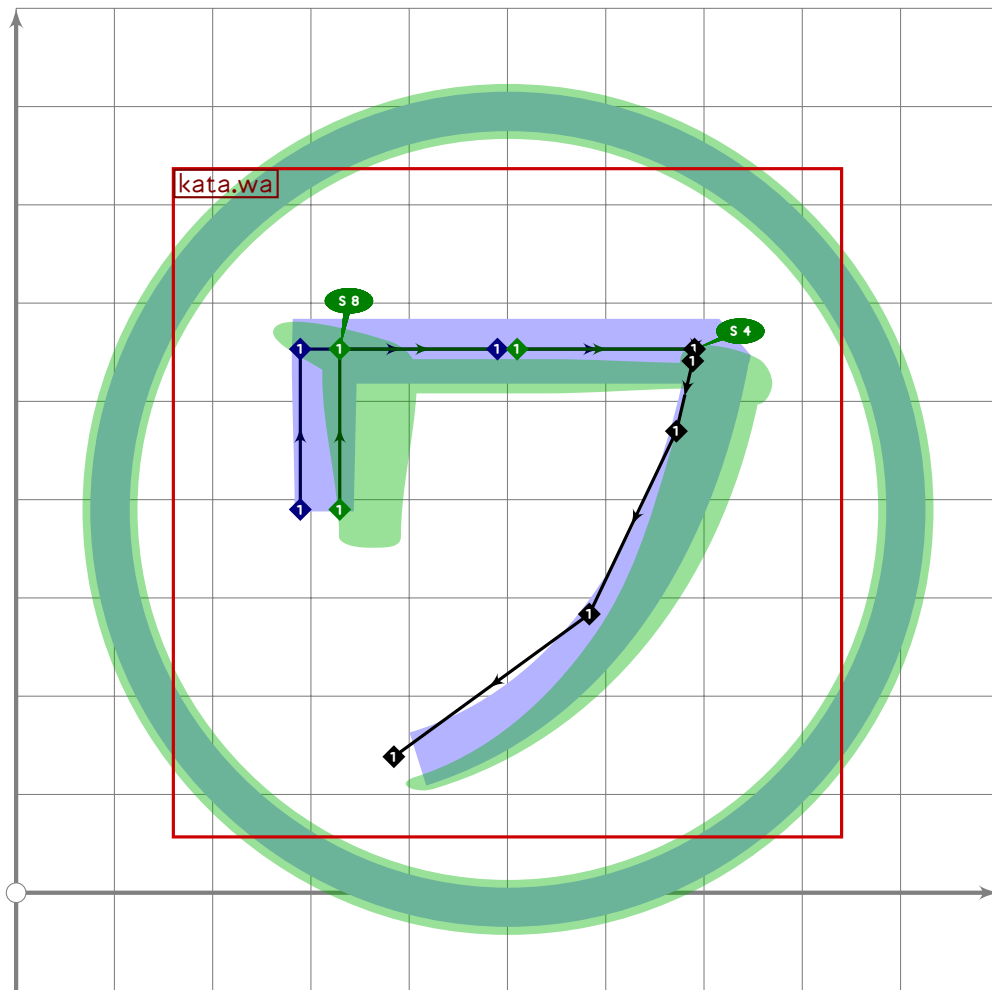
```



```

616 % circled "ro"
617 begint Suglyph("uni32FA";250);
618   tsu_curve.circle.single;
619   tsu_xform(tsu_xf.circled)(tsu_curve.kata.ro);
620   tsu_render_in_circle(tsu_xf.cbound);
621 endsuglyph;
622

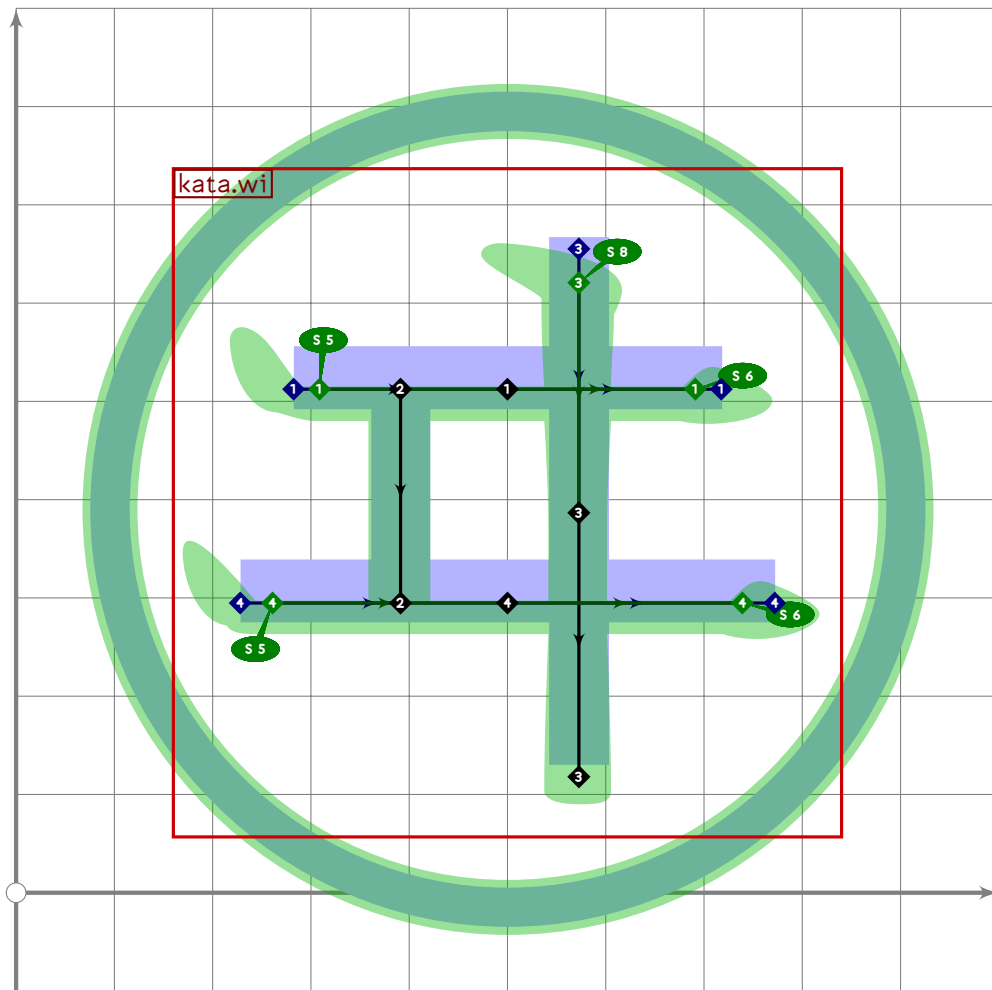
```



```

623 % circled "wa"
624 begint Suglyph("uni32FB",251);
625 tsu_curve.circle.single;
626 tsu_xform(tsu_xf.circled)(tsu_curve.kata.wa);
627 tsu_render_in_circle(tsu_xf.cbound);
628 endsuglyph;
629

```

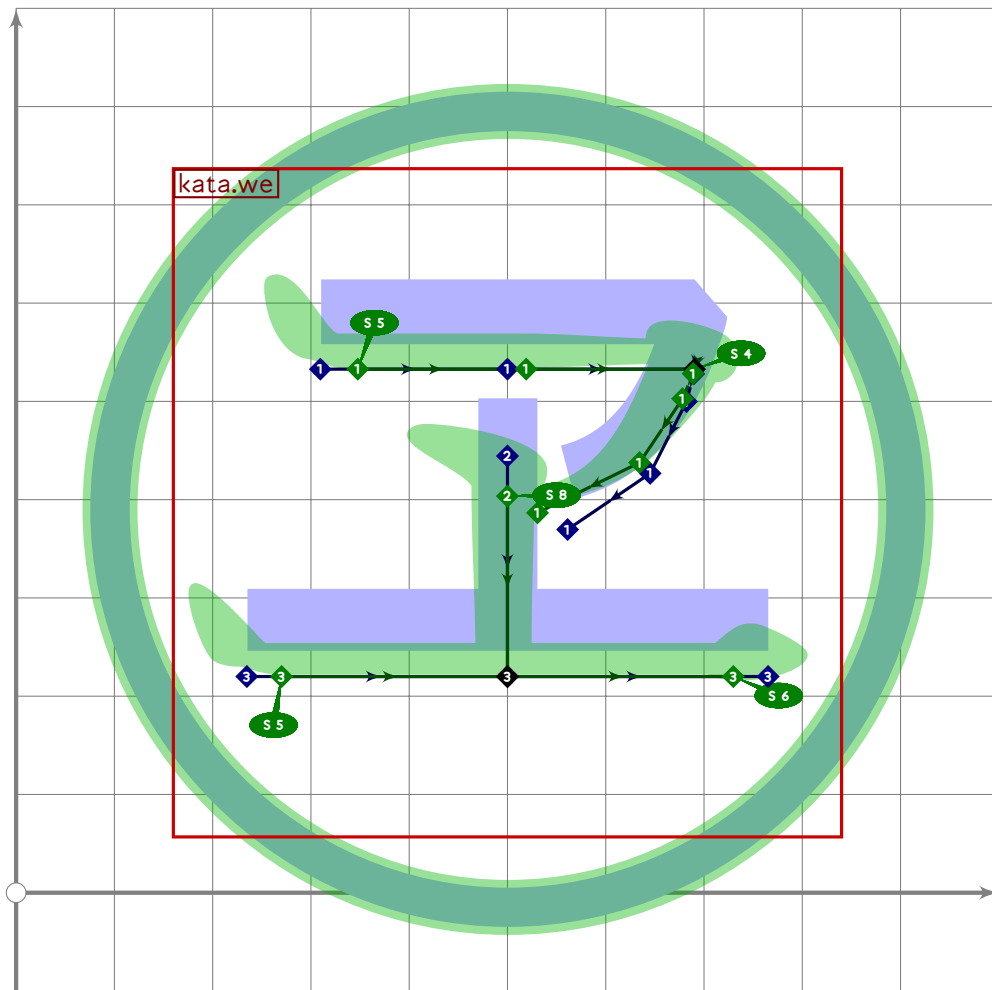


```

630 % circled "wi"
631 begint Suglyph("uni32FC";252);
632 tsu_curve.circle.single;
633 tsu_xform(tsu_xf.circled)(tsu_curve.kata.wi);
634 tsu_render_in_circle(tsu_xf.cbound);
635 endsuglyph;
636

```

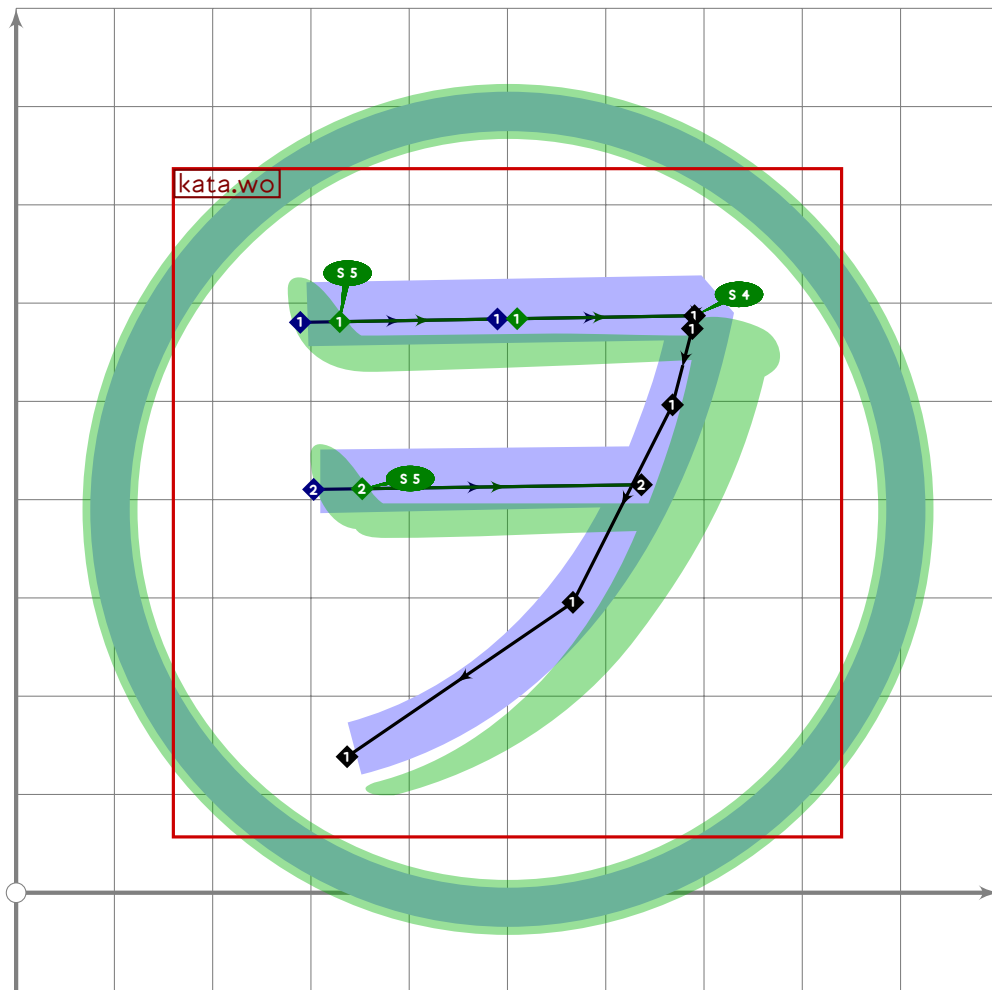




```

637 % circled "we"
638 begint Suglyph("uni32FD",253);
639 tsu_curve.circle.single;
640 tsu_xform(tsu_xf.circled)(tsu_curve.kata.we);
641 tsu_render_in_circle(tsu_xf.cbound);
642 endsuglyph;
643

```



```

644 % circled "wo"
645 begint Suglyph("uni32FE",254);
646   tsu_curve.circle.single;
647   tsu_xform(tsu_xf.circled)(tsu_curve.kata.wo);
648   tsu_render_in_circle(tsu_xf.cbound);
649 endsuglyph;
650
651 _____
652
653 endfont;
654
655 _____

```

# tsuku-4d.mp

```
1 %
2 % Unicode page 4D (I Ching/Yijing) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

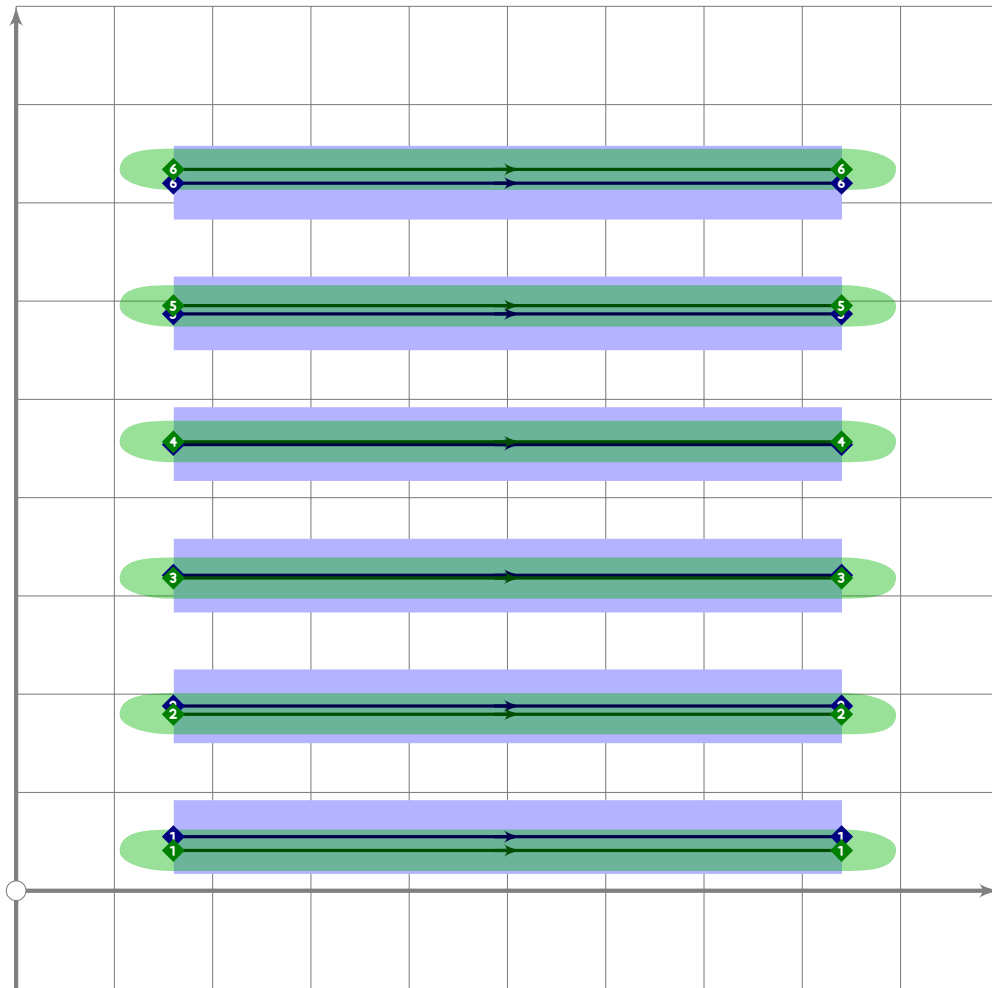

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input iching.mp;
39
40 

---


41
```

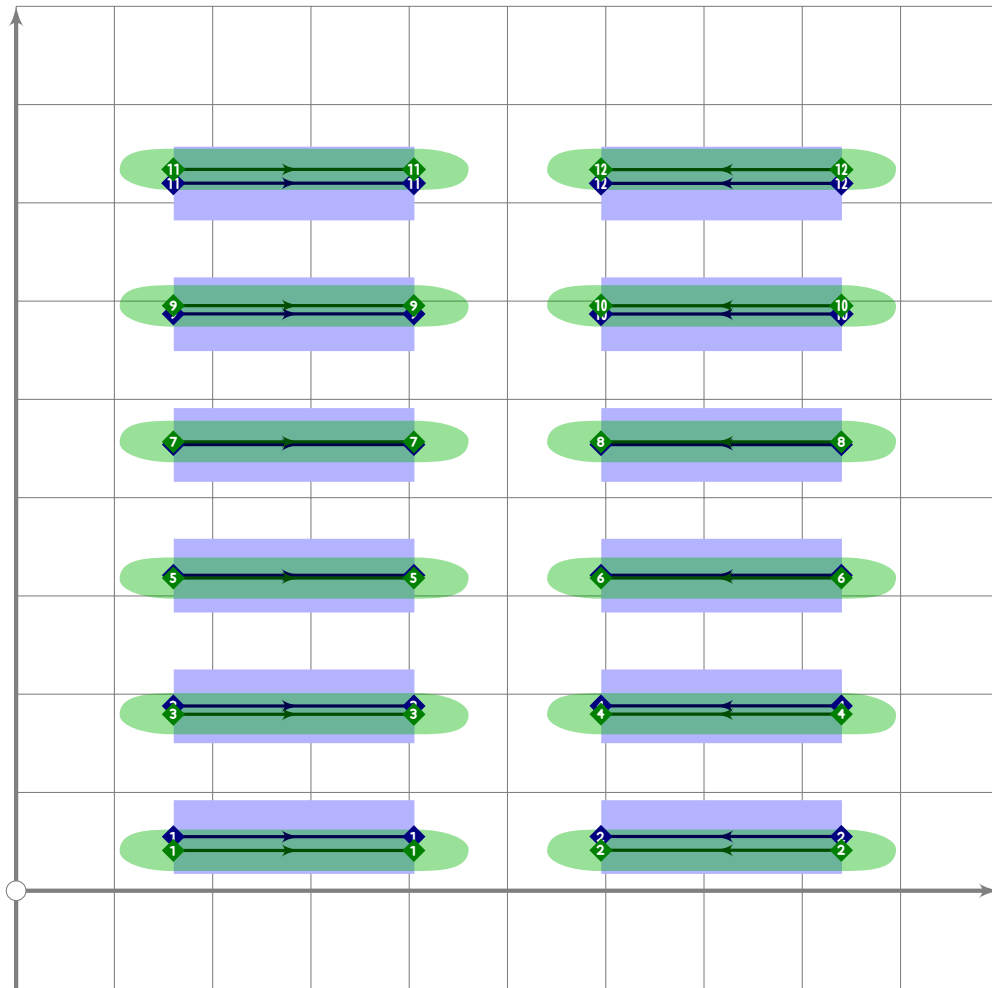
## I Ching

```
42 % I CHING
43
44 vardef make_hexagram(expr i,la,lb,lc,ld,le,lf) =
45   string hexname;
46   hexname:=if i<10: "iching0" else: "iching" fi & decimal i;
47   begintsuglyph(hexname,i*191);
48   tsu_curve.iching.line(1,6,la);
49   tsu_curve.iching.line(2,6,lb);
50   tsu_curve.iching.line(3,6,lc);
51   tsu_curve.iching.line(4,6,ld);
52   tsu_curve.iching.line(5,6,le);
53   tsu_curve.iching.line(6,6,lf);
54   tsu_render;
55   endtsuglyph;
56 enddef;
```

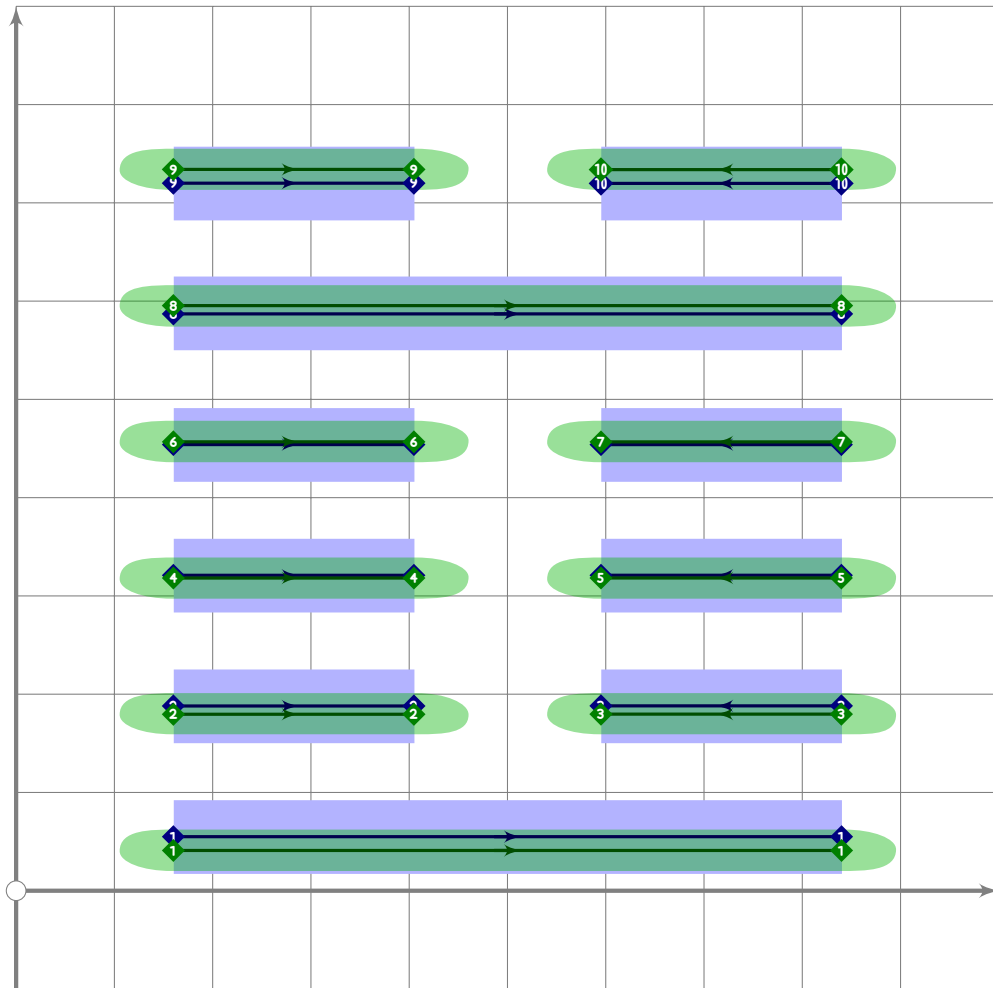


57

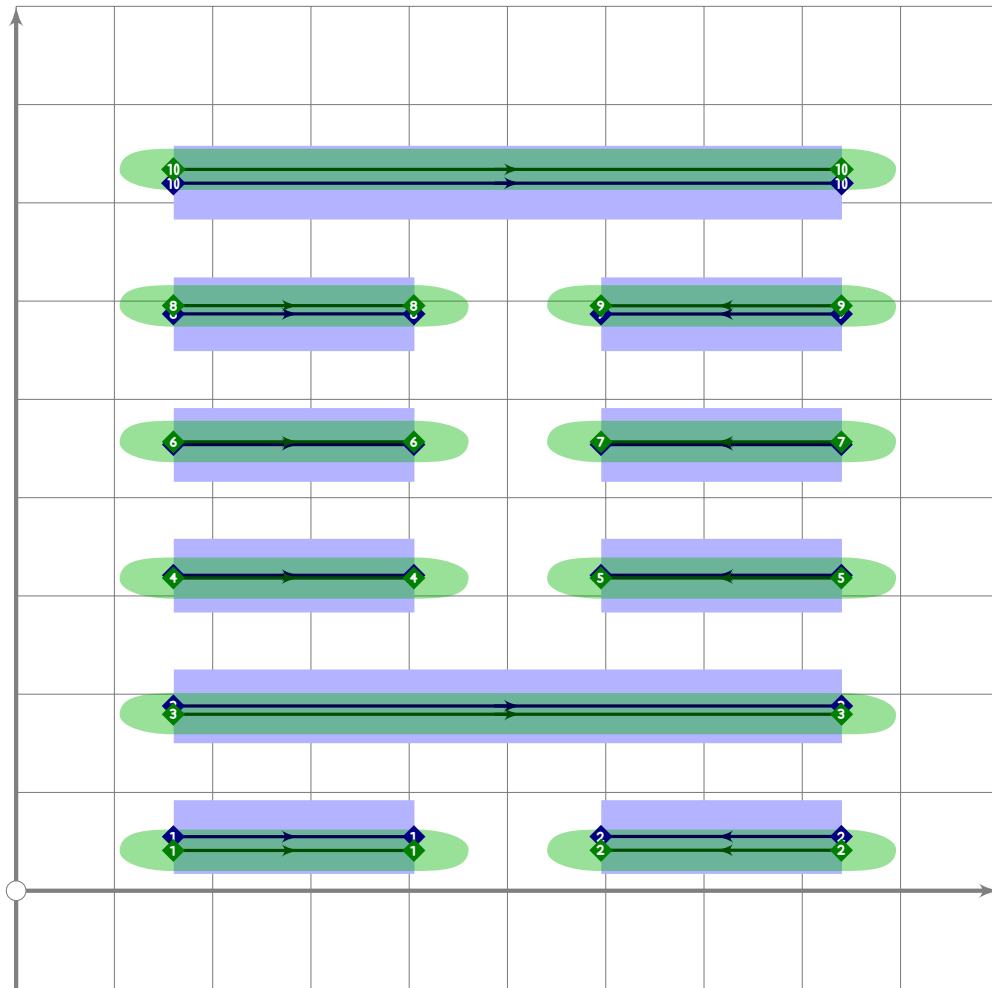
58 `make_hexagram(1, 1,1,1,1,1);`



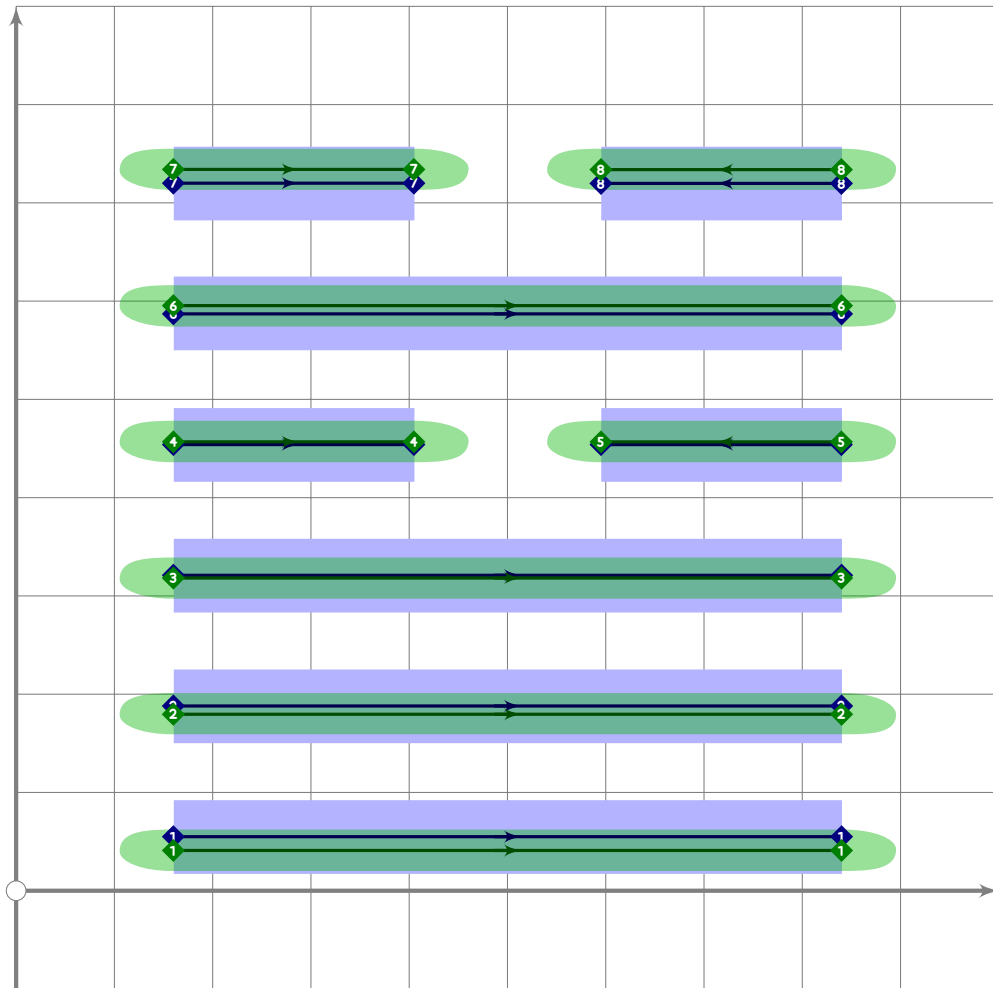
59 `make_hexagram(2, 0,0,0,0,0,0);`



60 `make_hexagram(3, 1,0,0,0,1,0);`

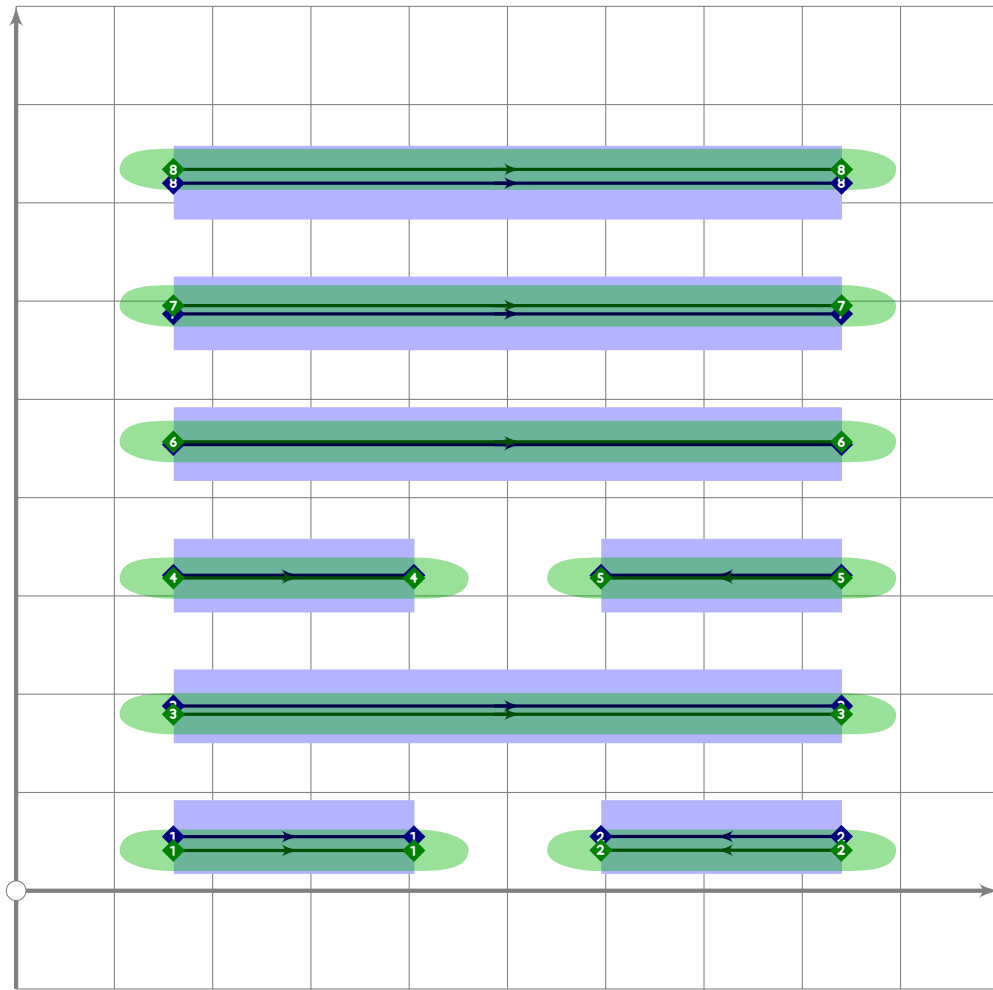


61 `make_hexagram(4, 0,1,0,0,0,1);`

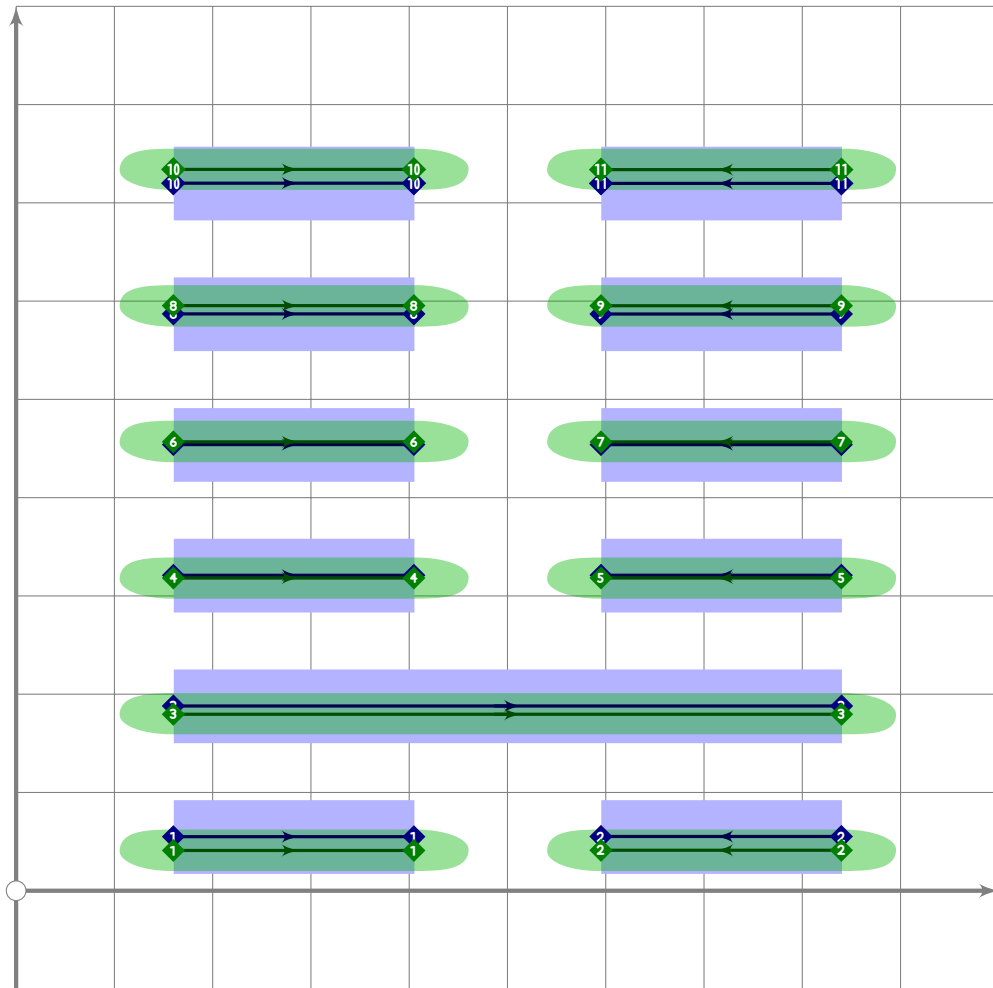


62 `make_hexagram(5, 1,1,0,1,0);`

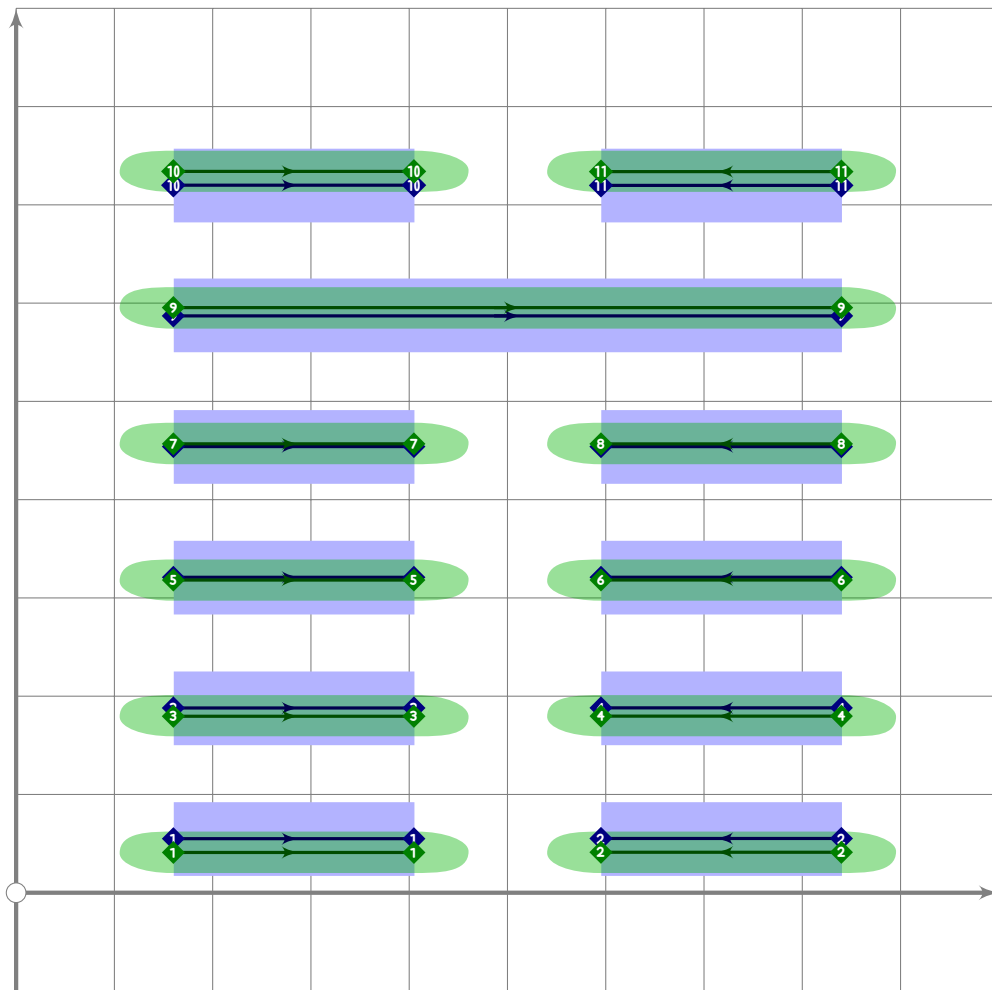




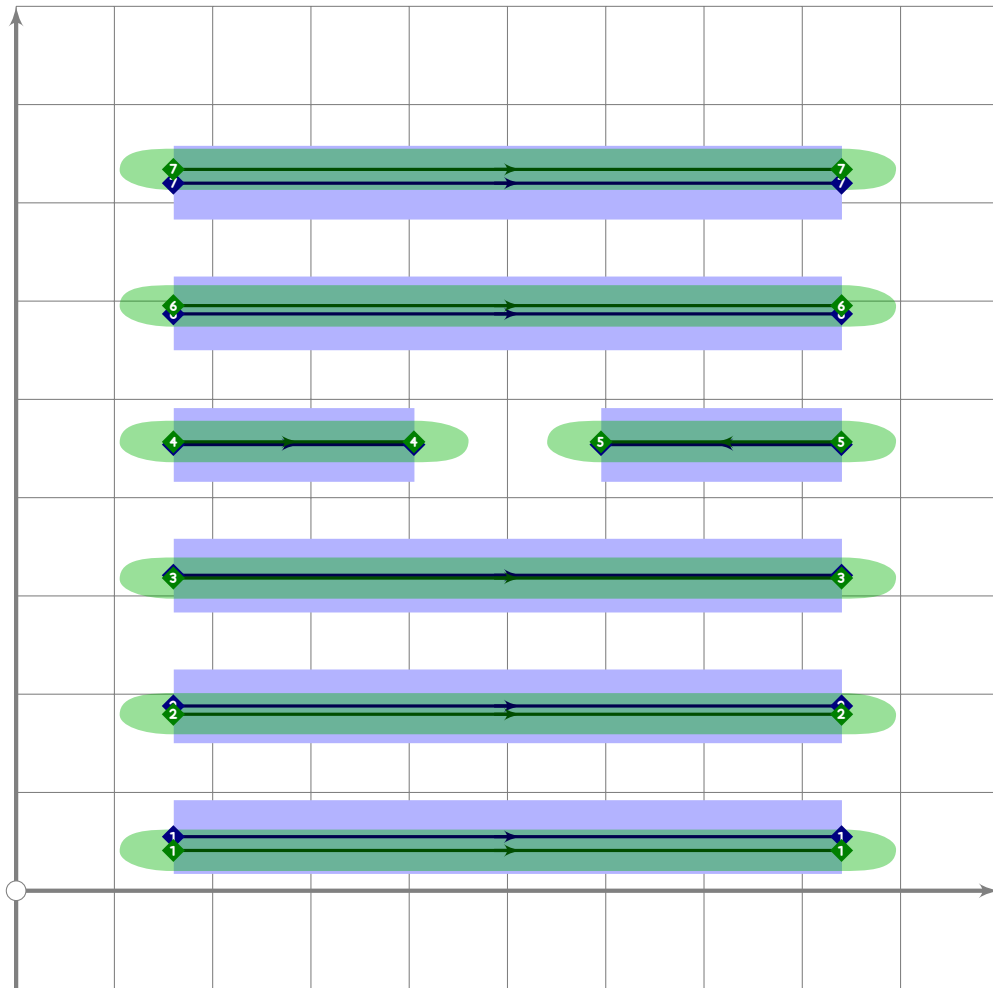
63 `make_hexagram(6, 0,1,0,1,1,1);`



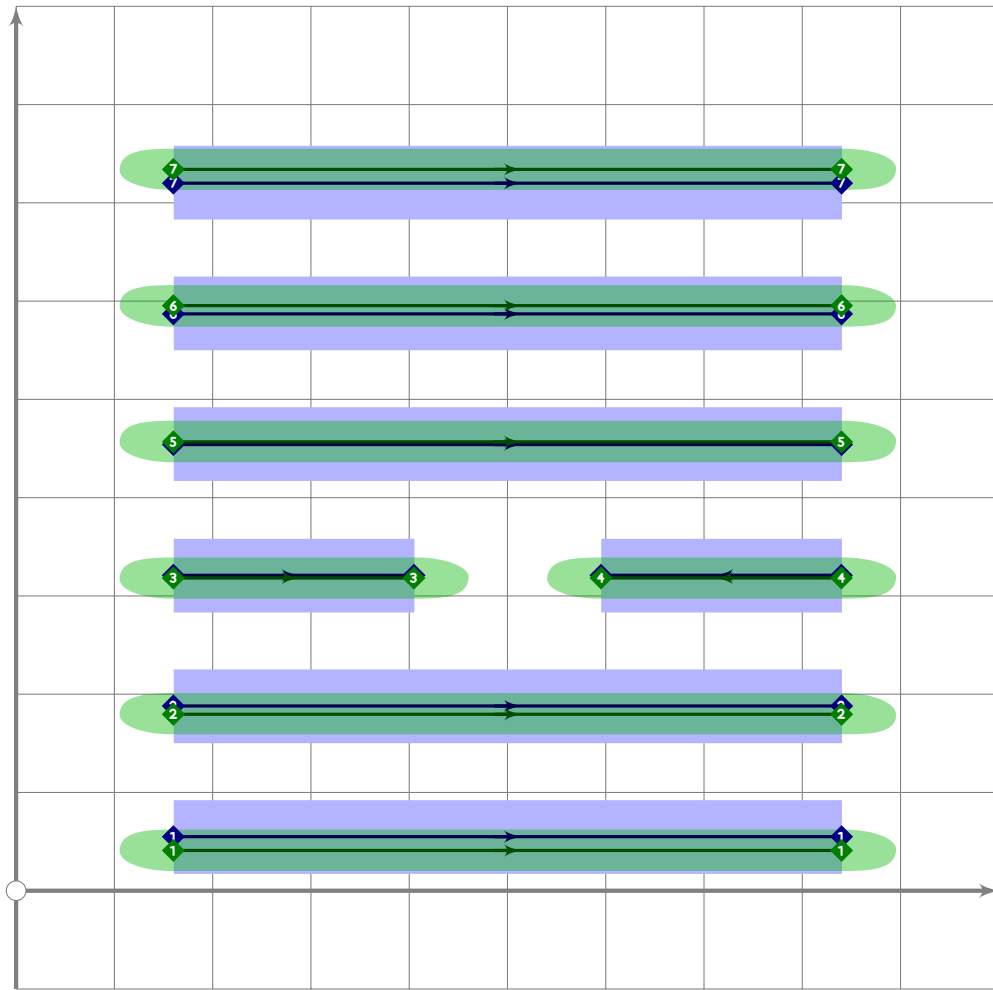
64 `make_hexagram(7, 0,1,0,0,0,0);`



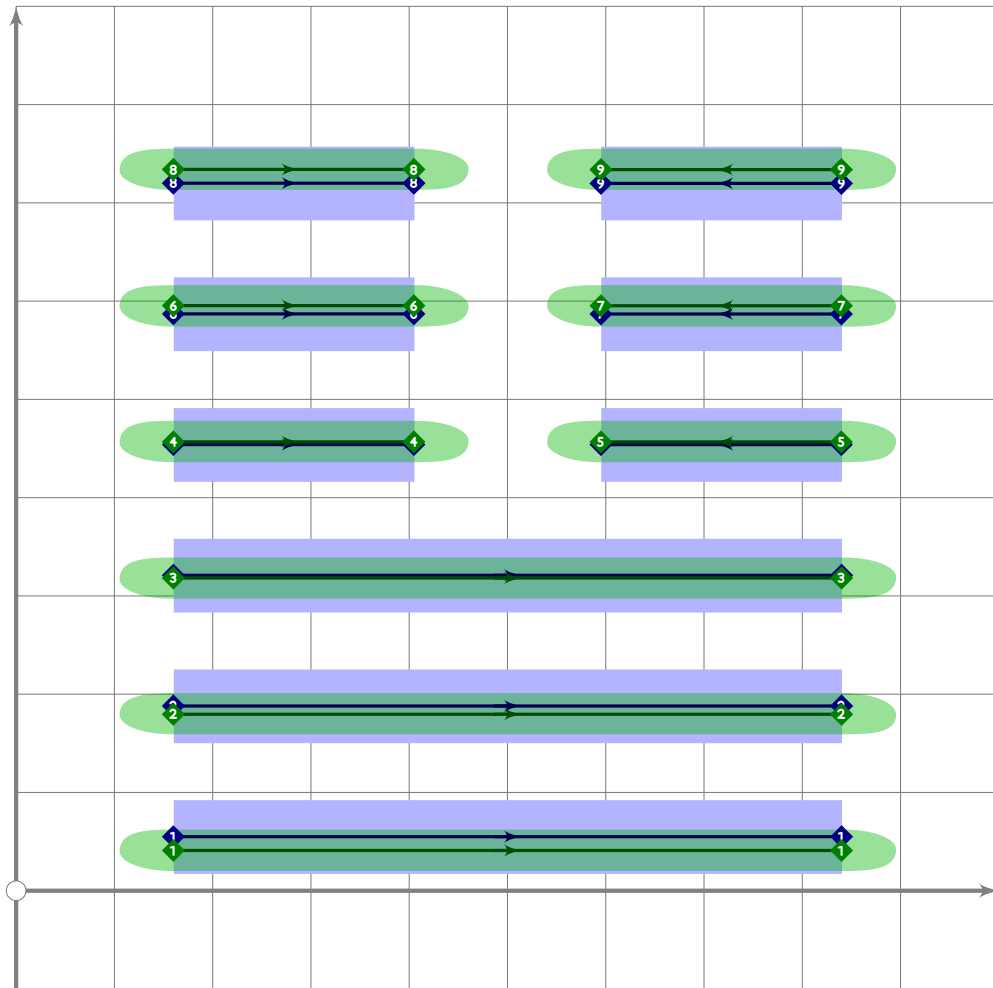
65 `make_hexagram(8, 0,0,0,0,1,0);`



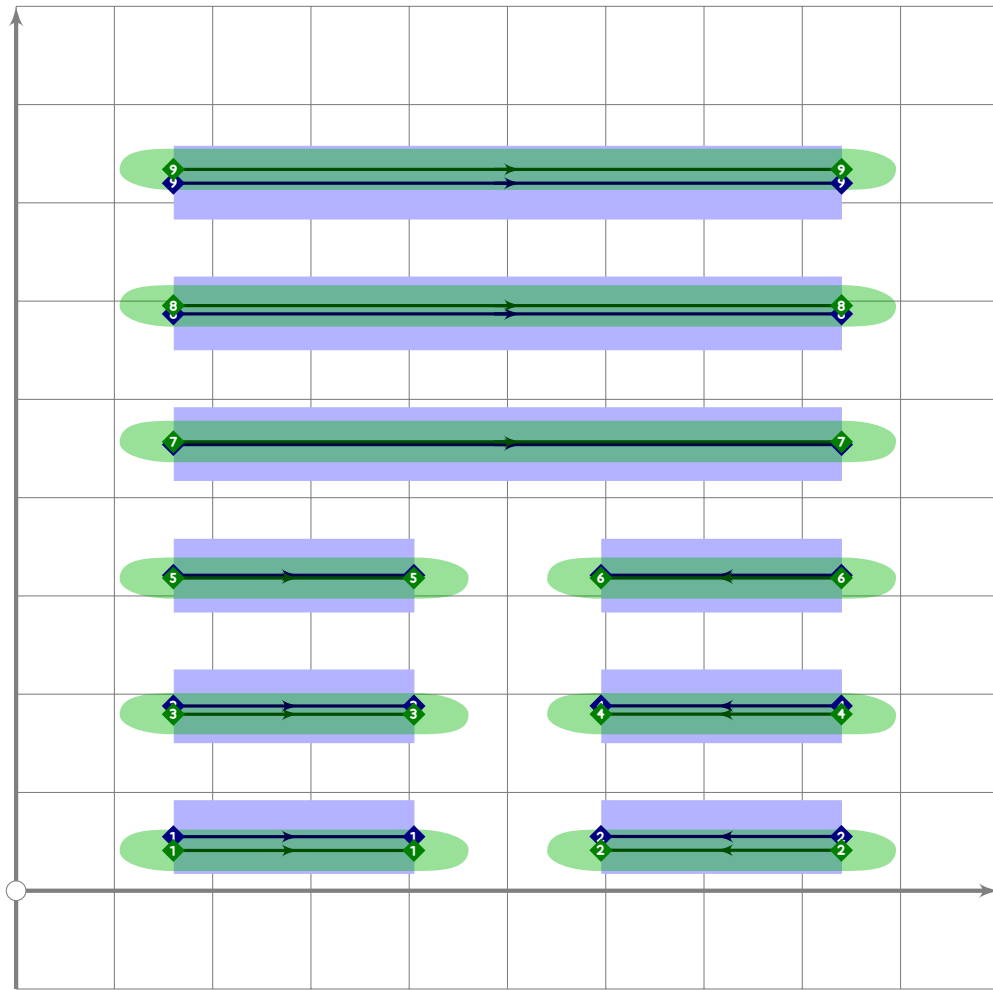
66 `make_hexagram(9, 1,1,0,1,1);`



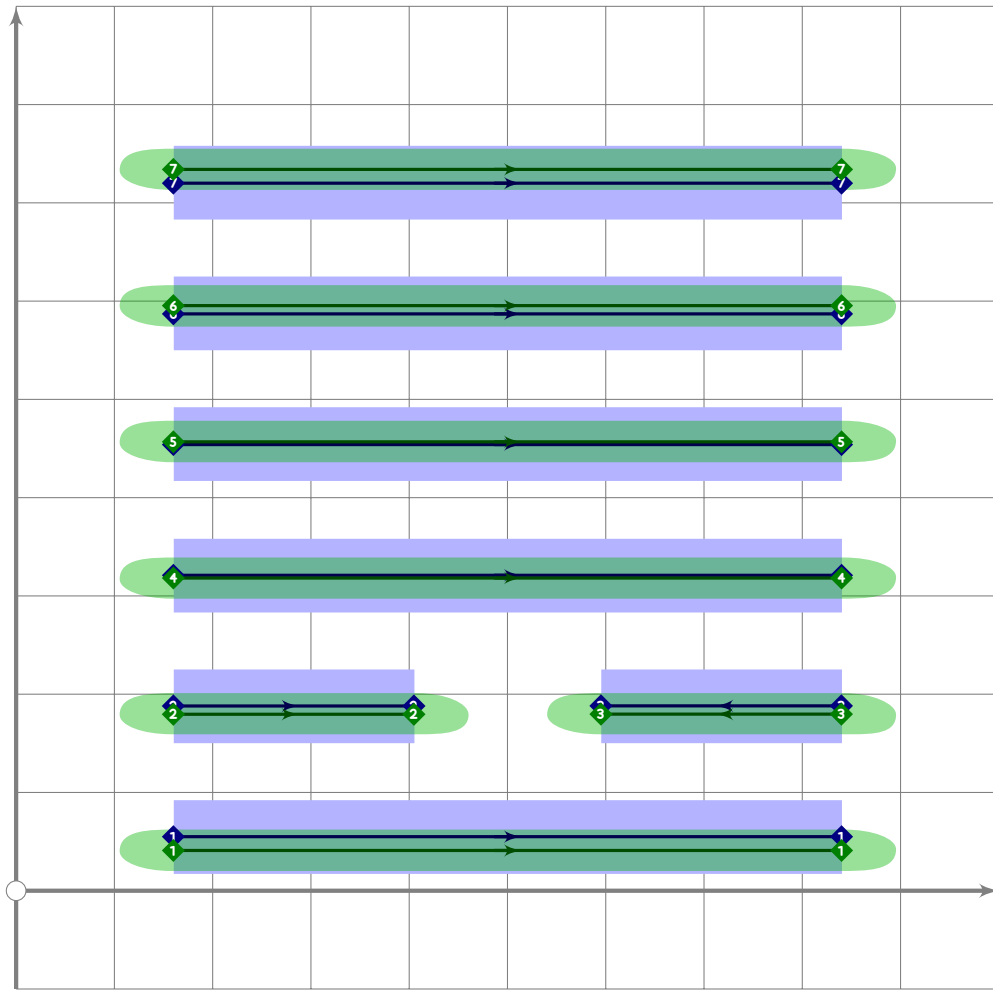
67 `make_hexagram(10,1,1,0,1,1,1);`



68 `make_hexagram(11,1,1,1,0,0,0);`

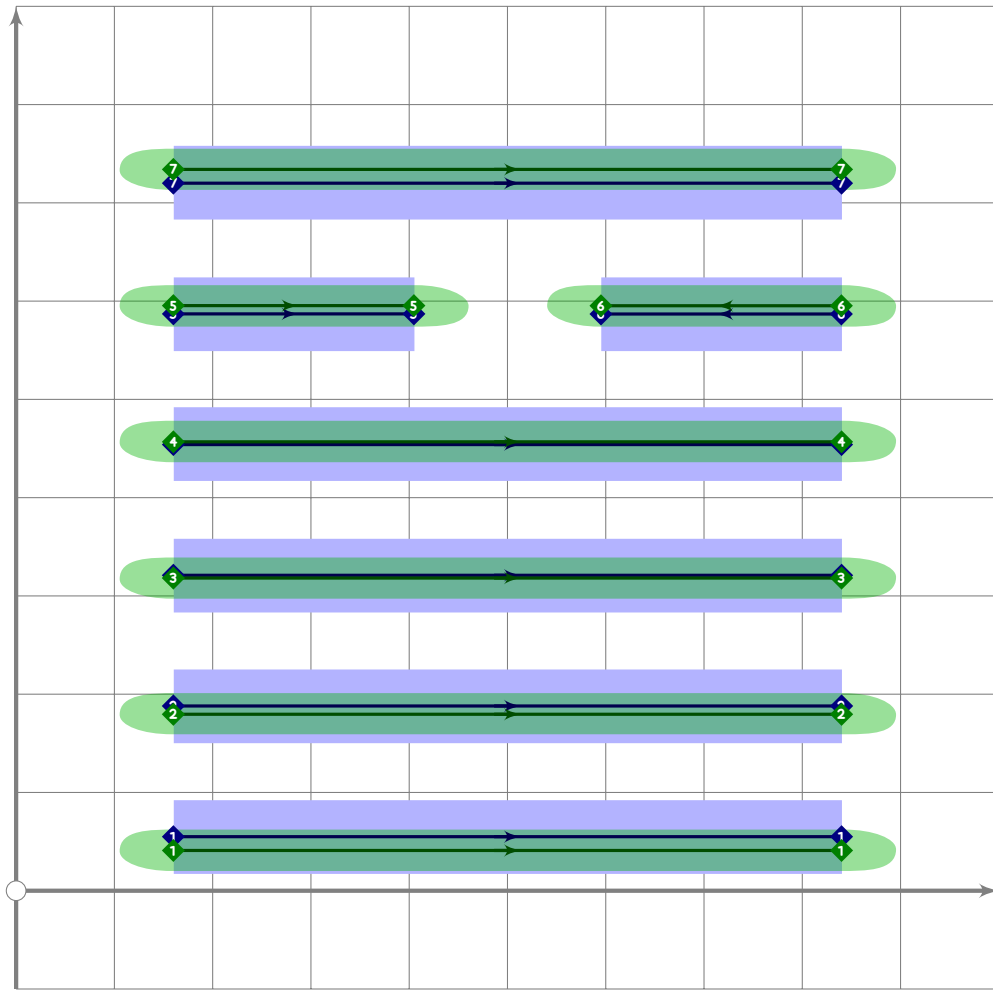


69 `make_hexagram(12,0,0,0,1,1,1);`

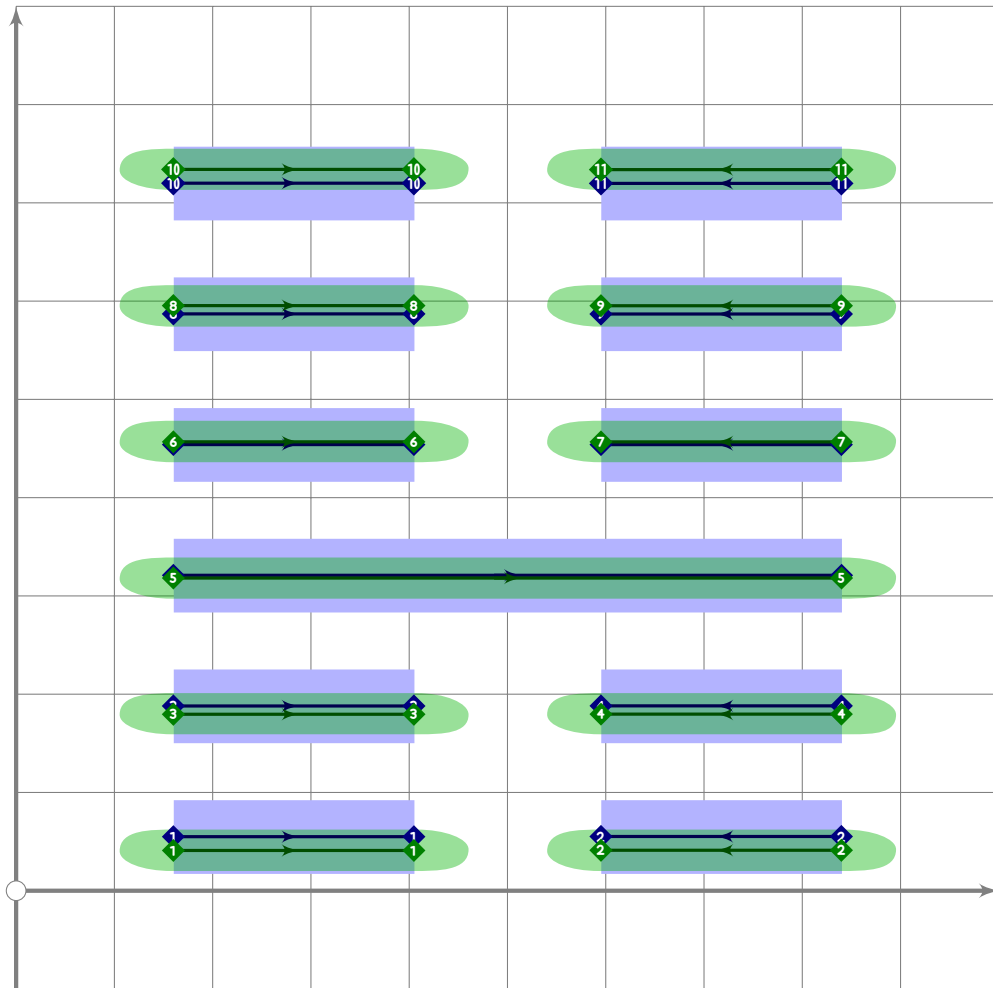


70 `make_hexagram(13,1,0,1,1,1);`

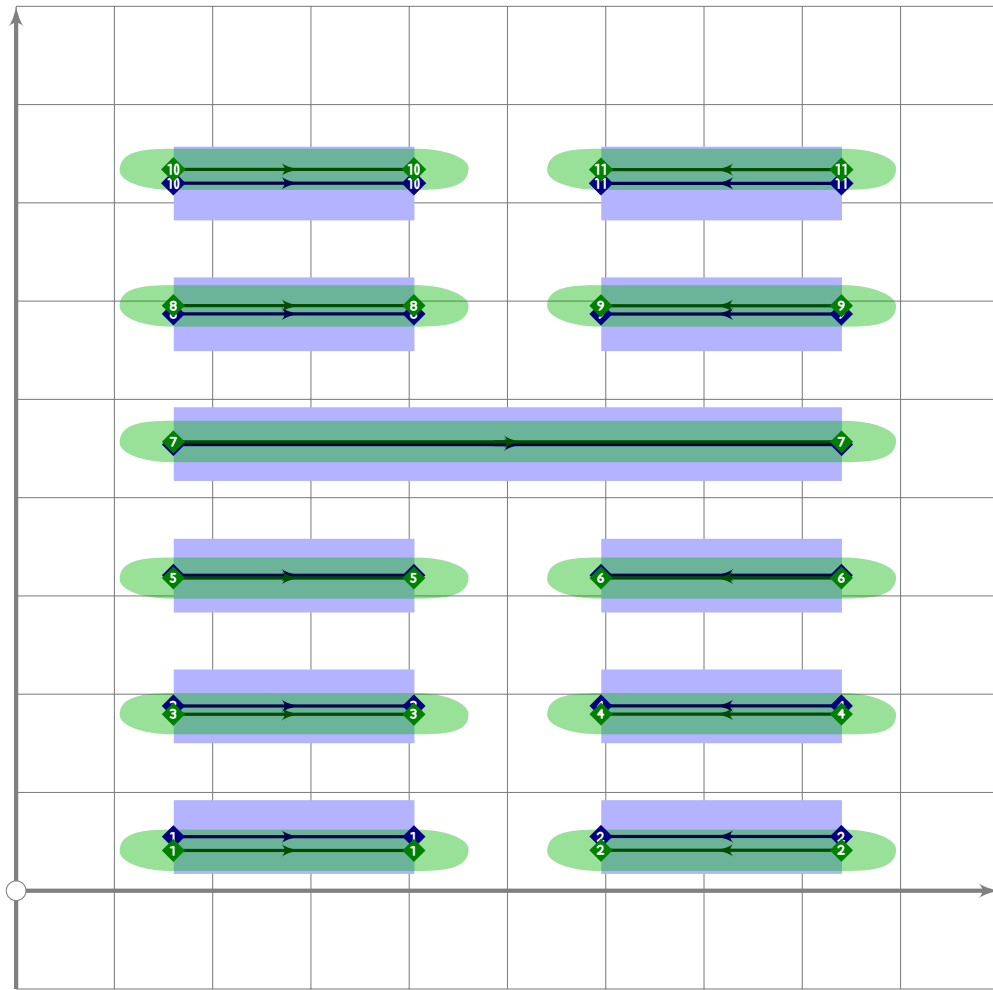




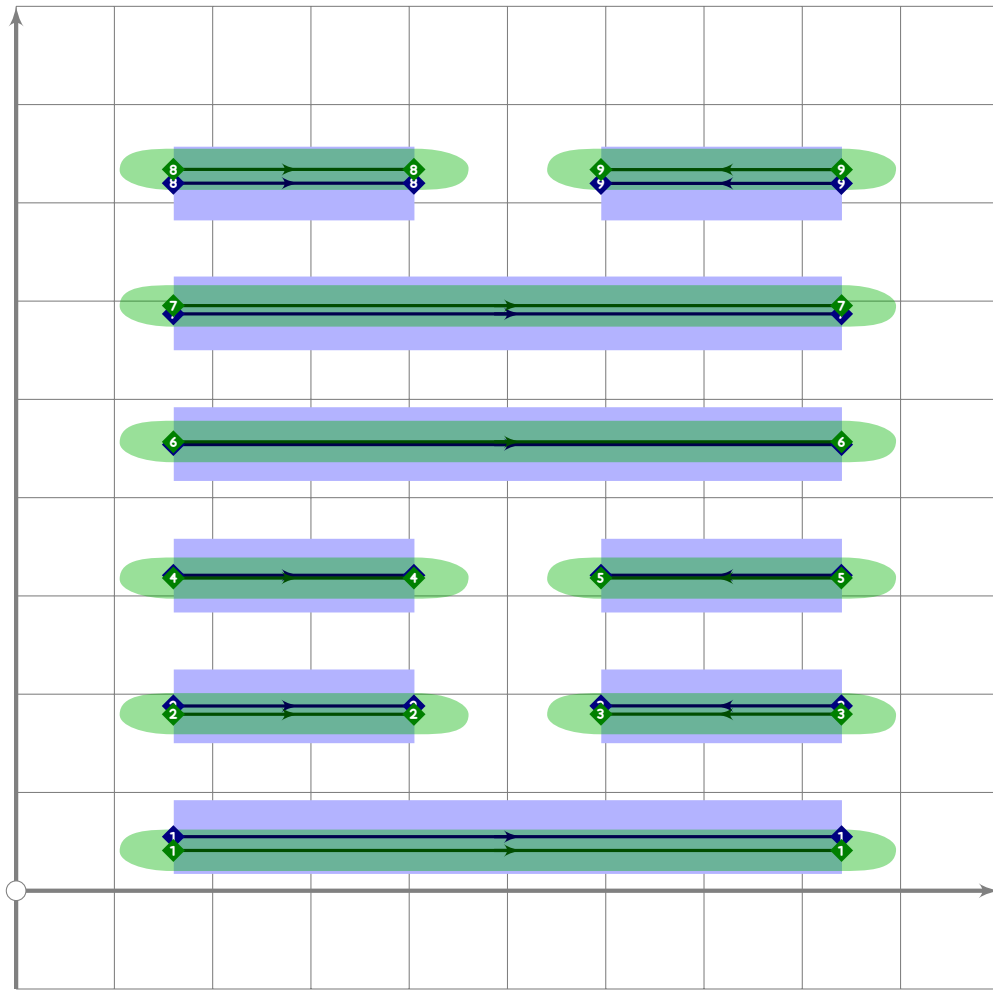
71 `make_hexagram(14,1,1,1,1,0,1);`



72 `make_hexagram(15,0,0,1,0,0,0);`

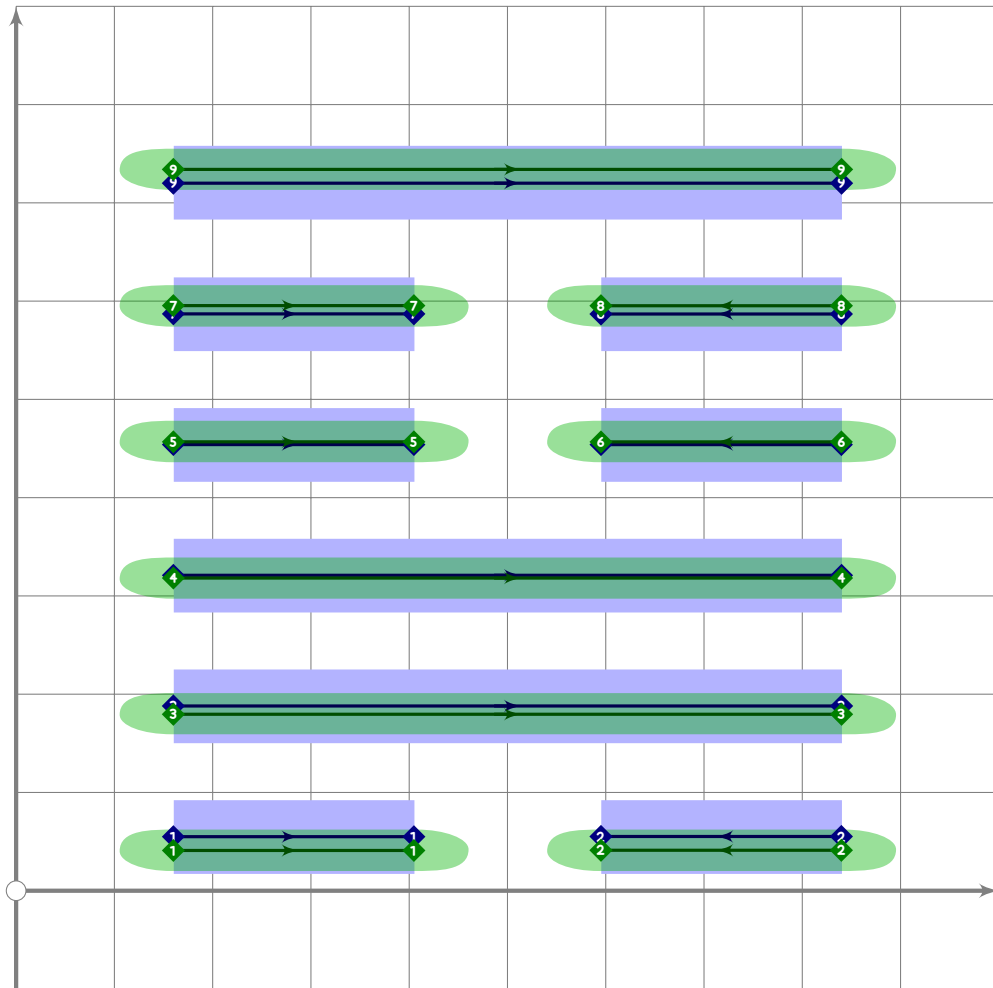


73 `make_hexagram(16,0,0,0,1,0,0);`

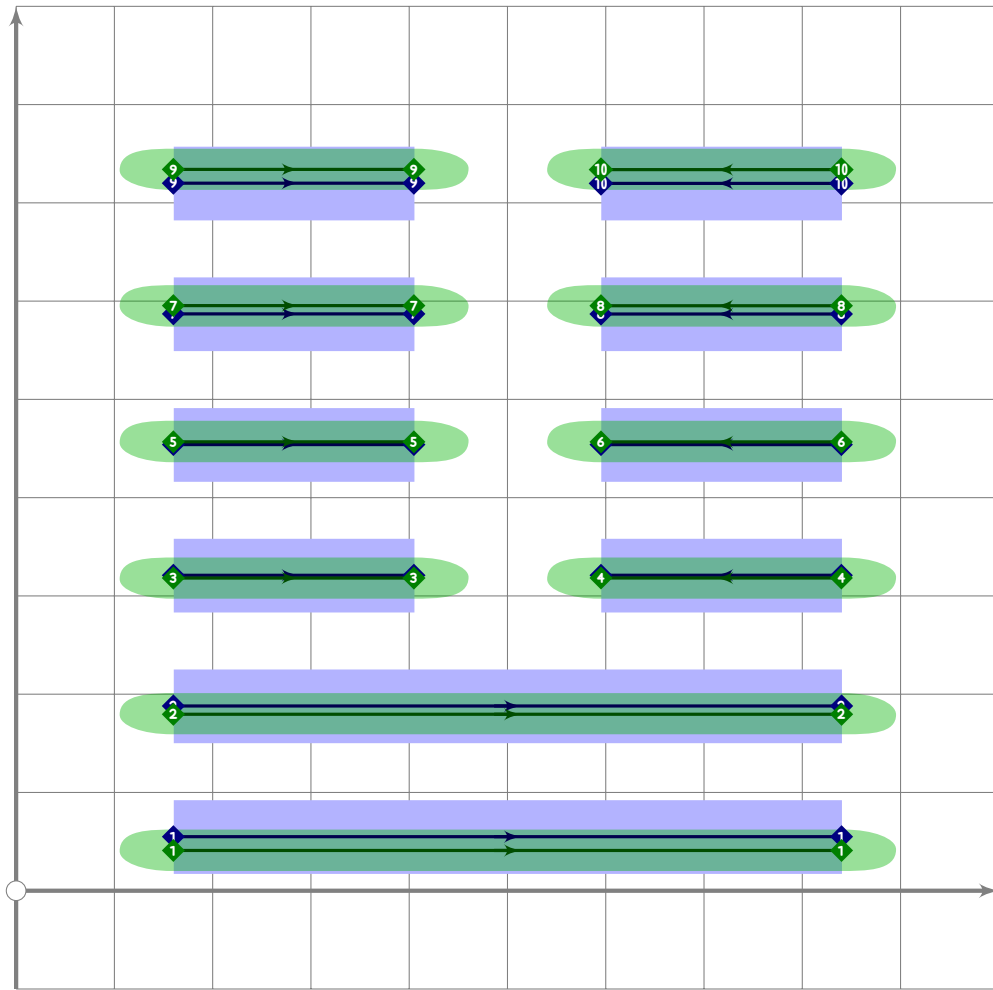


74

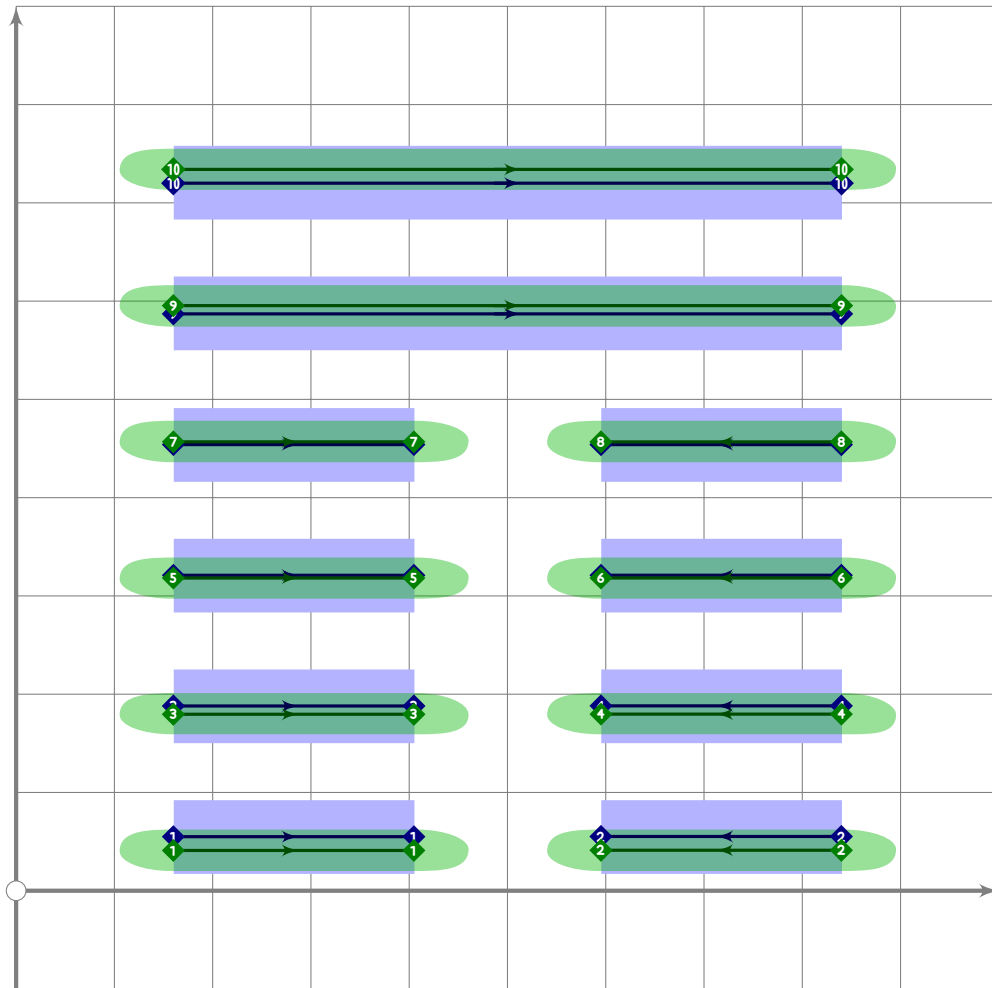
75 `make_hexagram(17,1,0,0,1,1,0);`



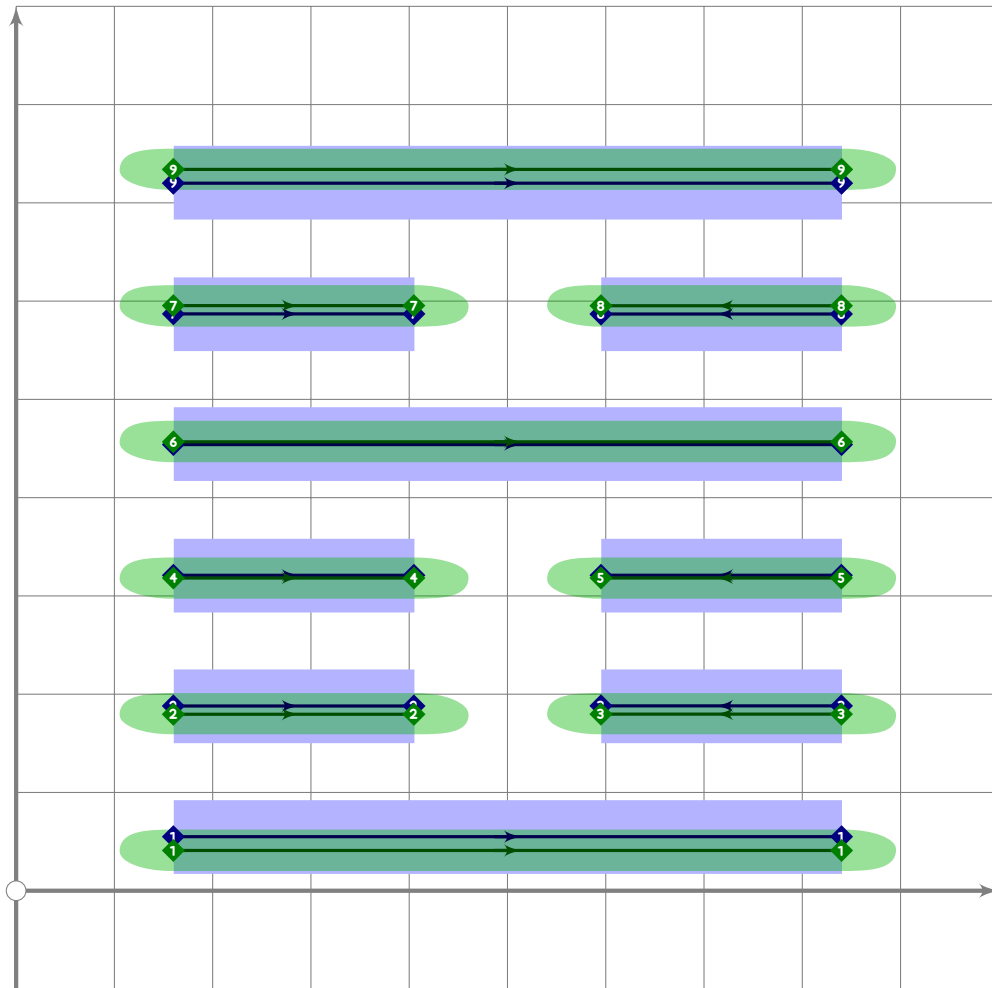
76 `make_hexagram(18,0,1,1,0,0,1);`



77 `make_hexagram(19,1,1,0,0,0,0);`

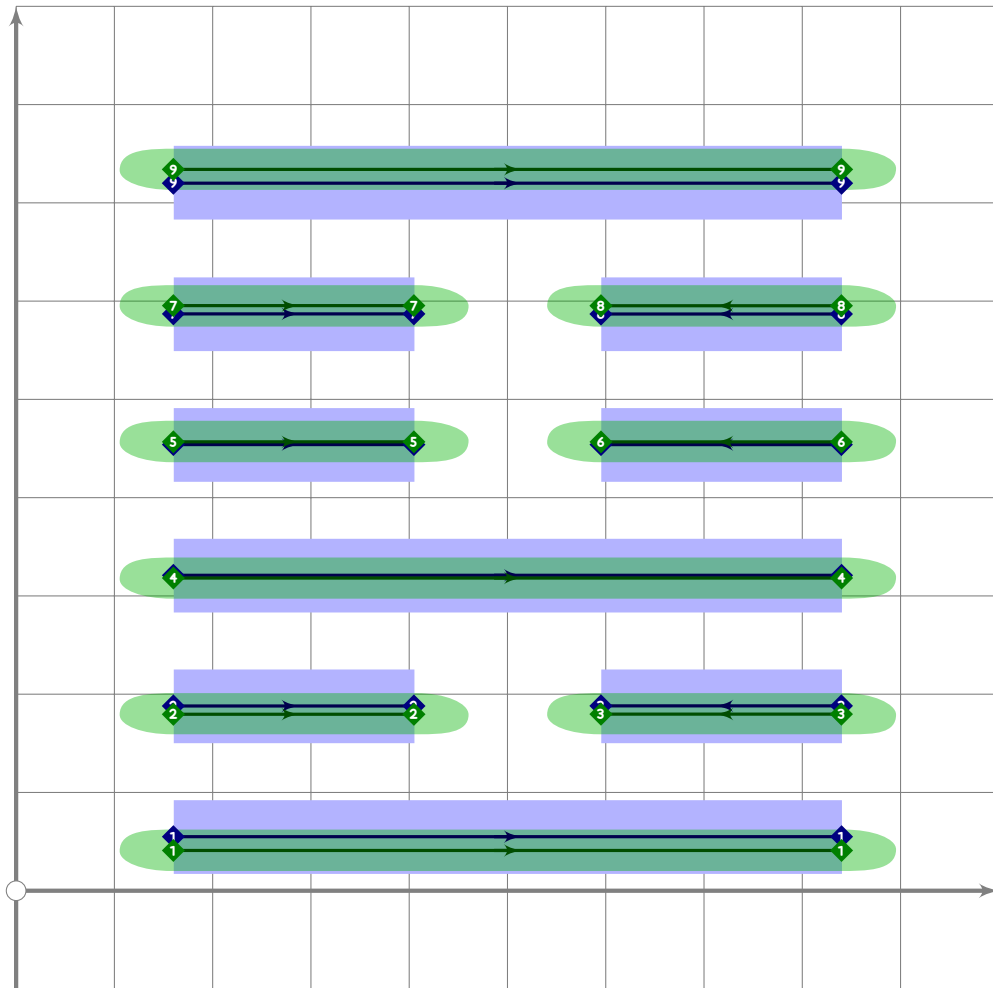


78 `make_hexagram(20,0,0,0,0,1,1);`

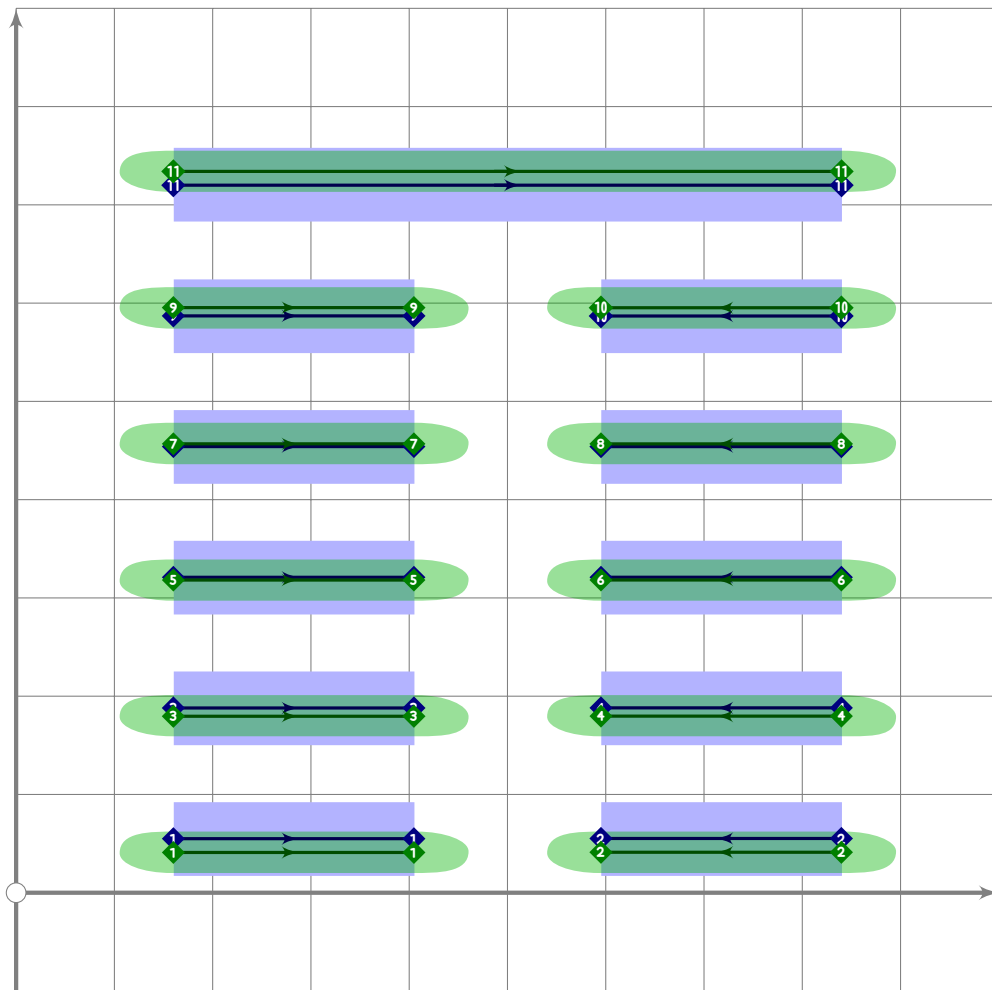


79 `make_hexagram(2,1,1,0,0,1,0,1);`

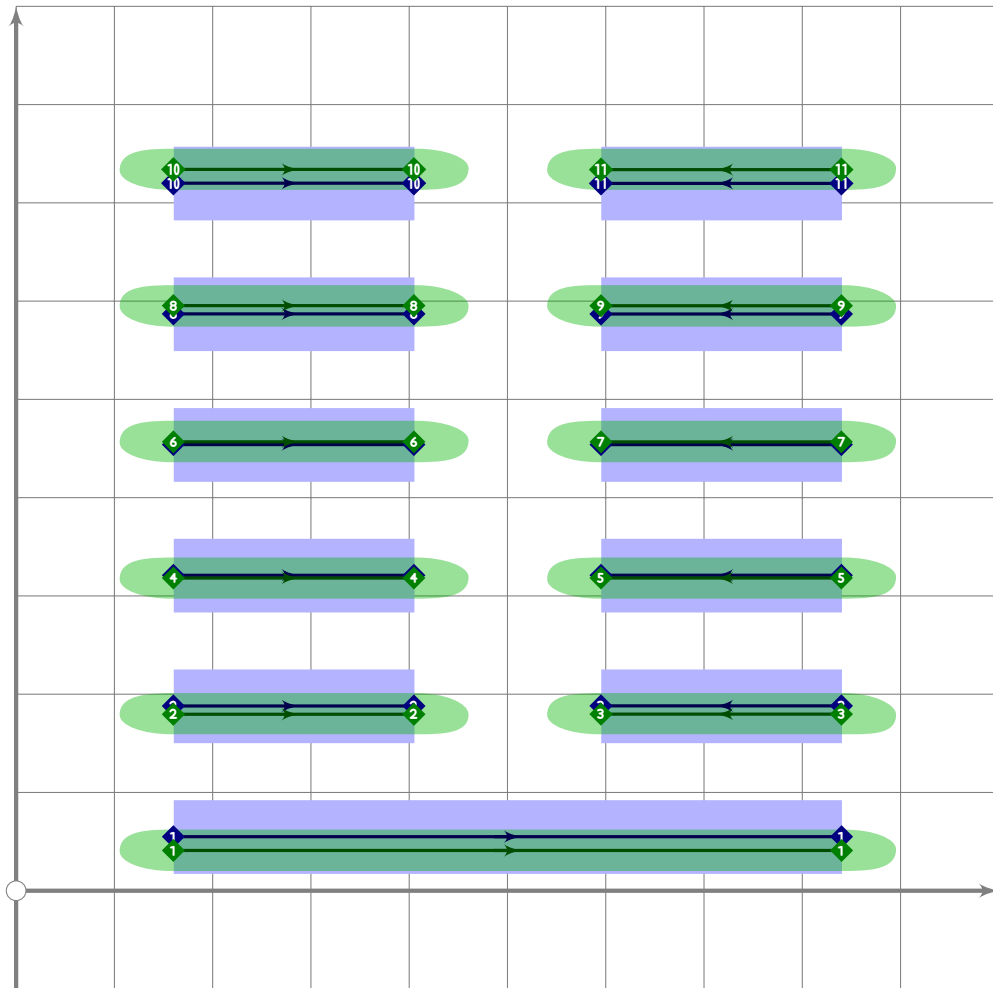




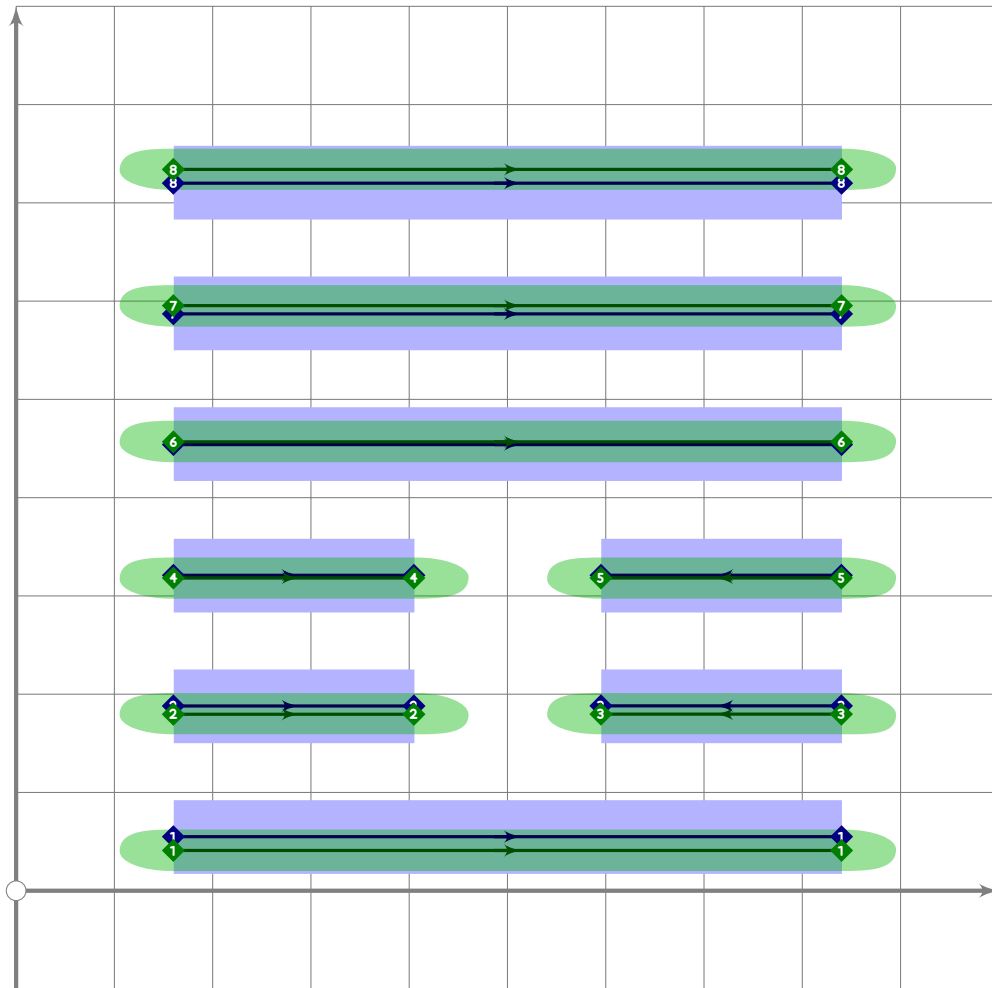
80 `make_hexagram(22,1,0,1,0,0,1);`



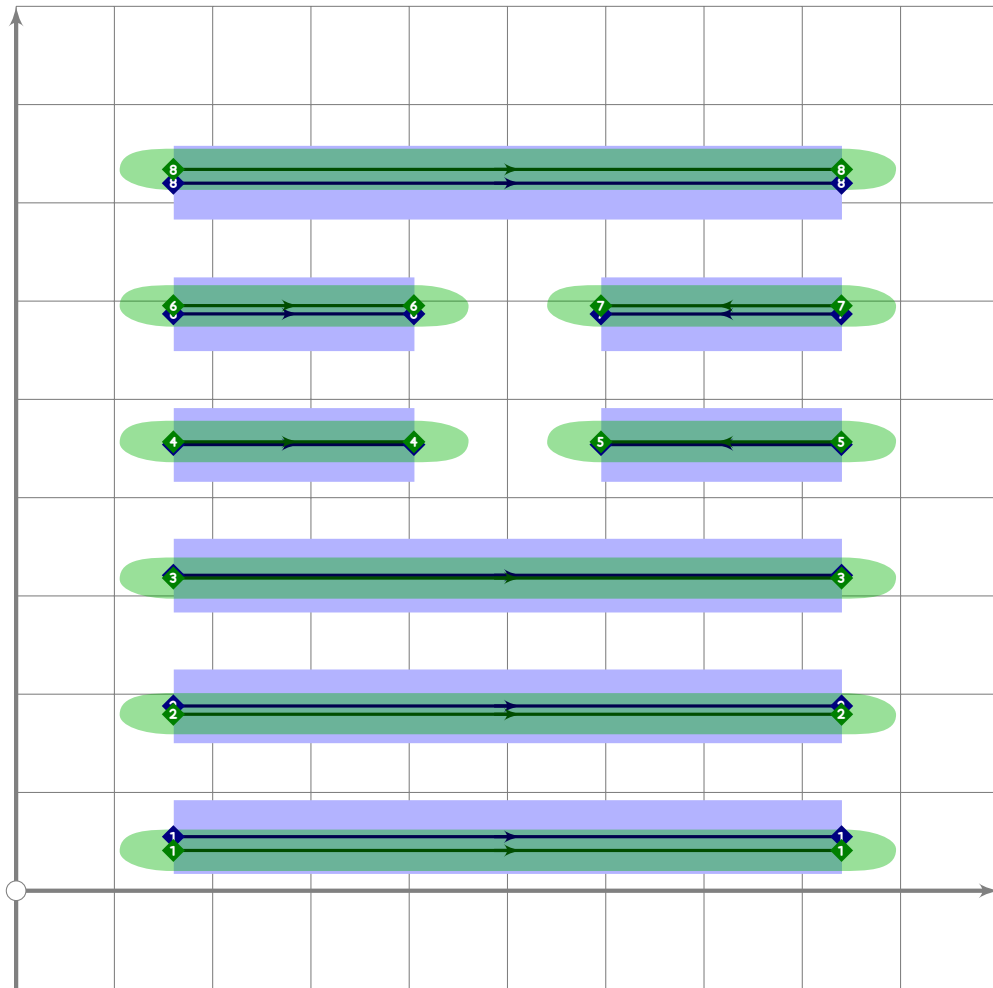
81 `make_hexagram(23,0,0,0,0,0,1);`



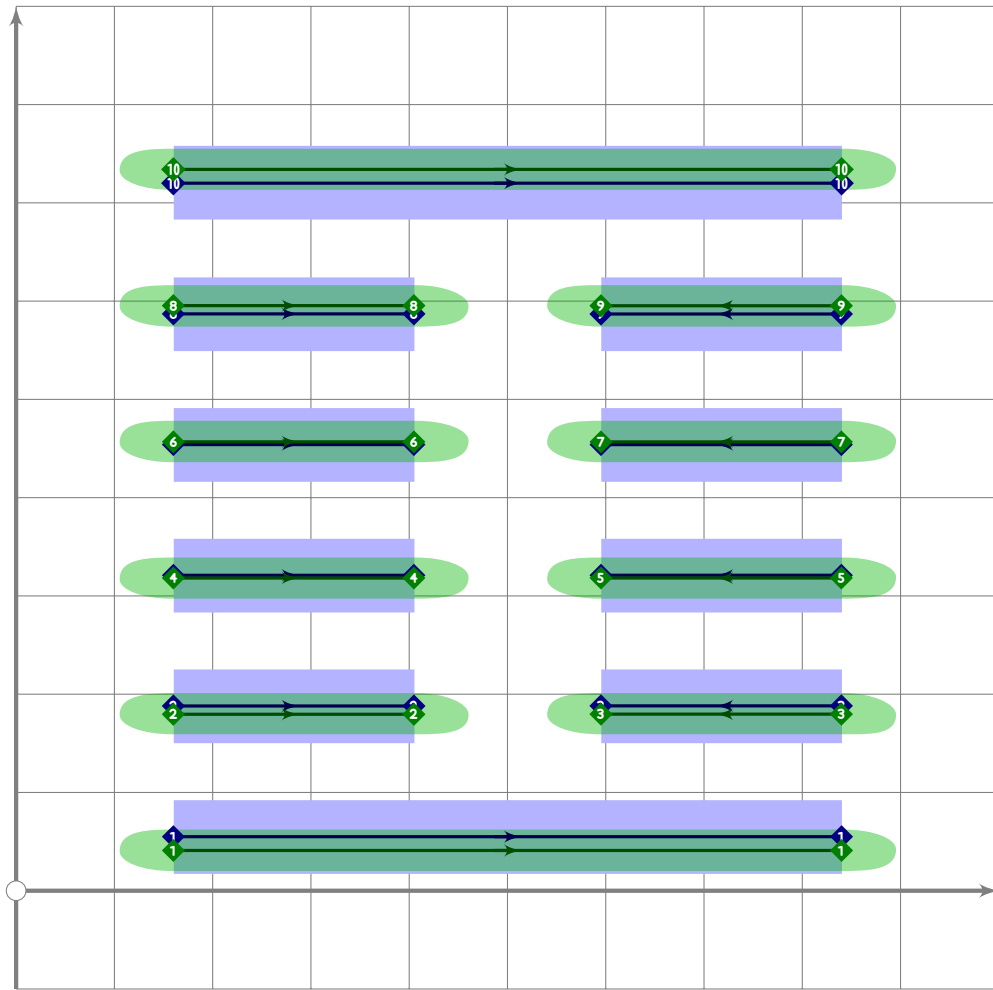
82 `make_hexagram(24,1,0,0,0,0,0);`



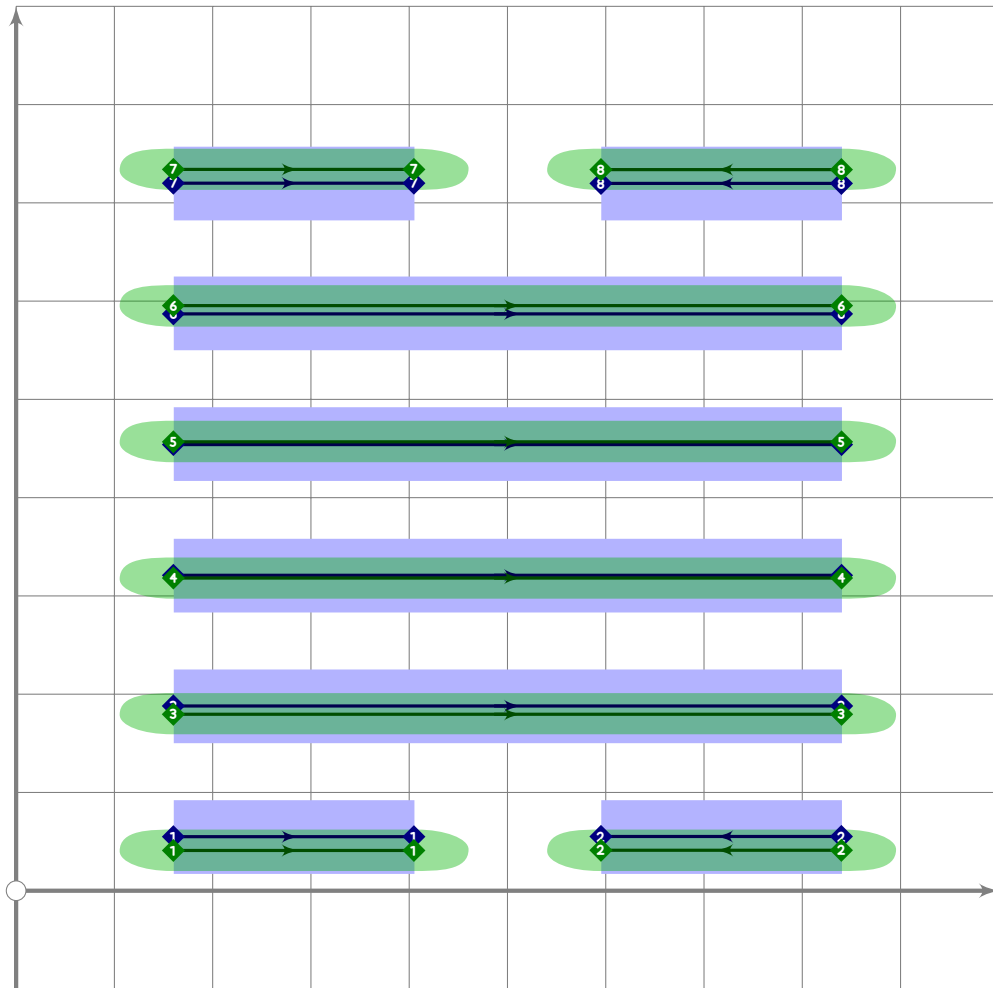
83 `make_hexagram(25,1,0,0,1,1,1);`



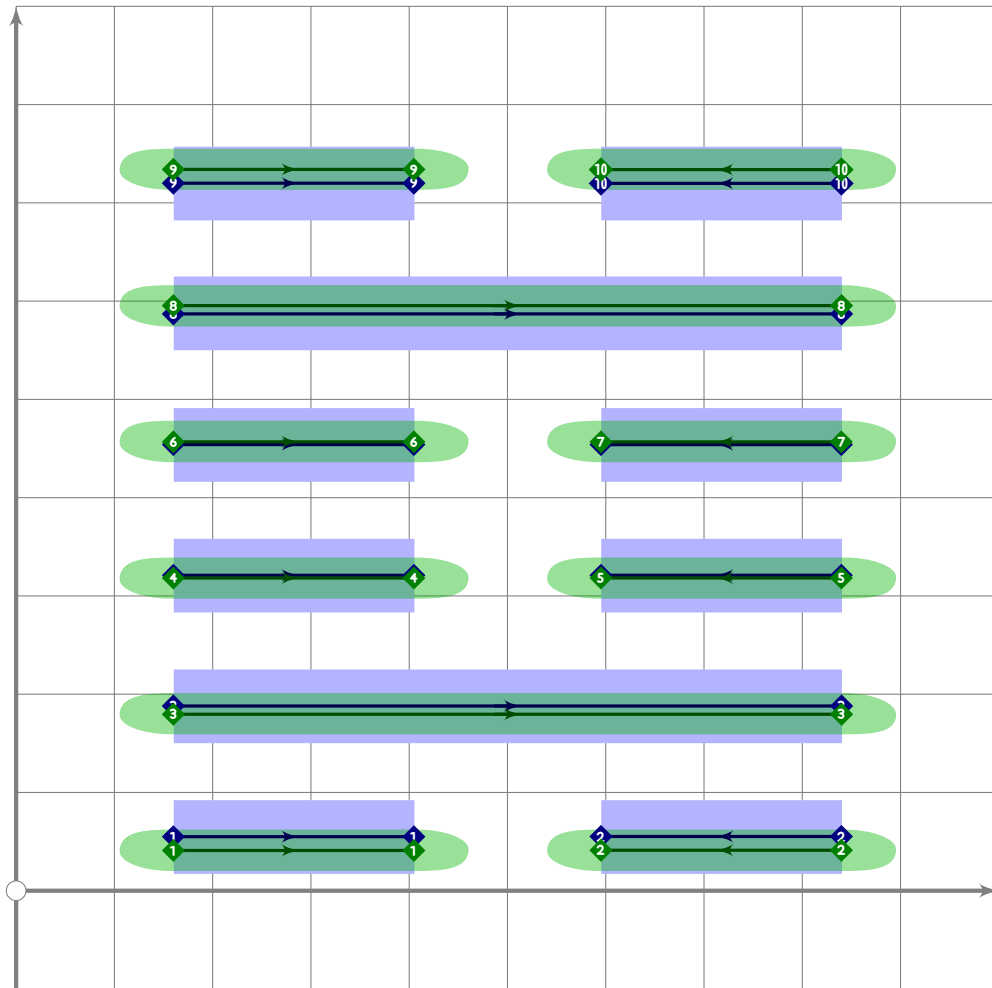
84 `make_hexagram(26,1,1,1,0,0,1);`



85 `make_hexagram(27,1,0,0,0,0,1);`

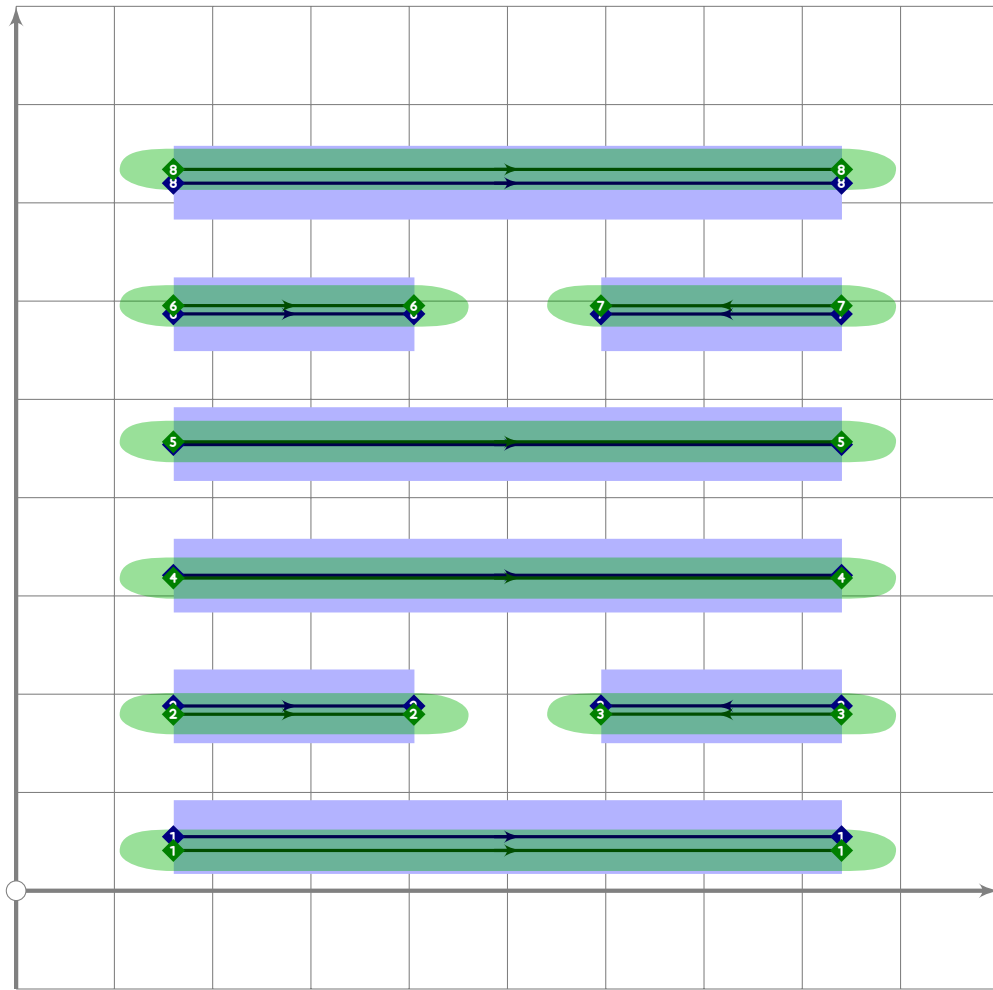


86 `make_hexagram(28,0,1,1,1,0);`

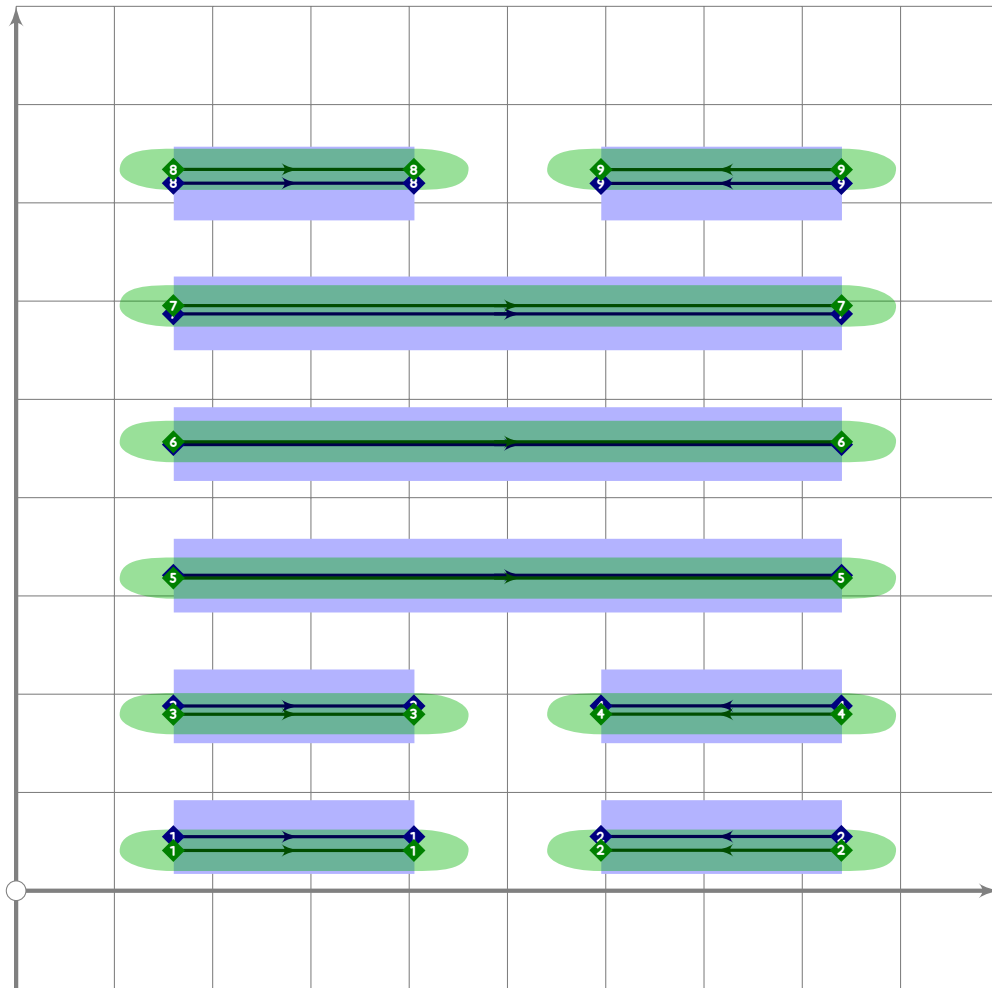


87 `make_hexagram(29,0,1,0,0,1,0);`

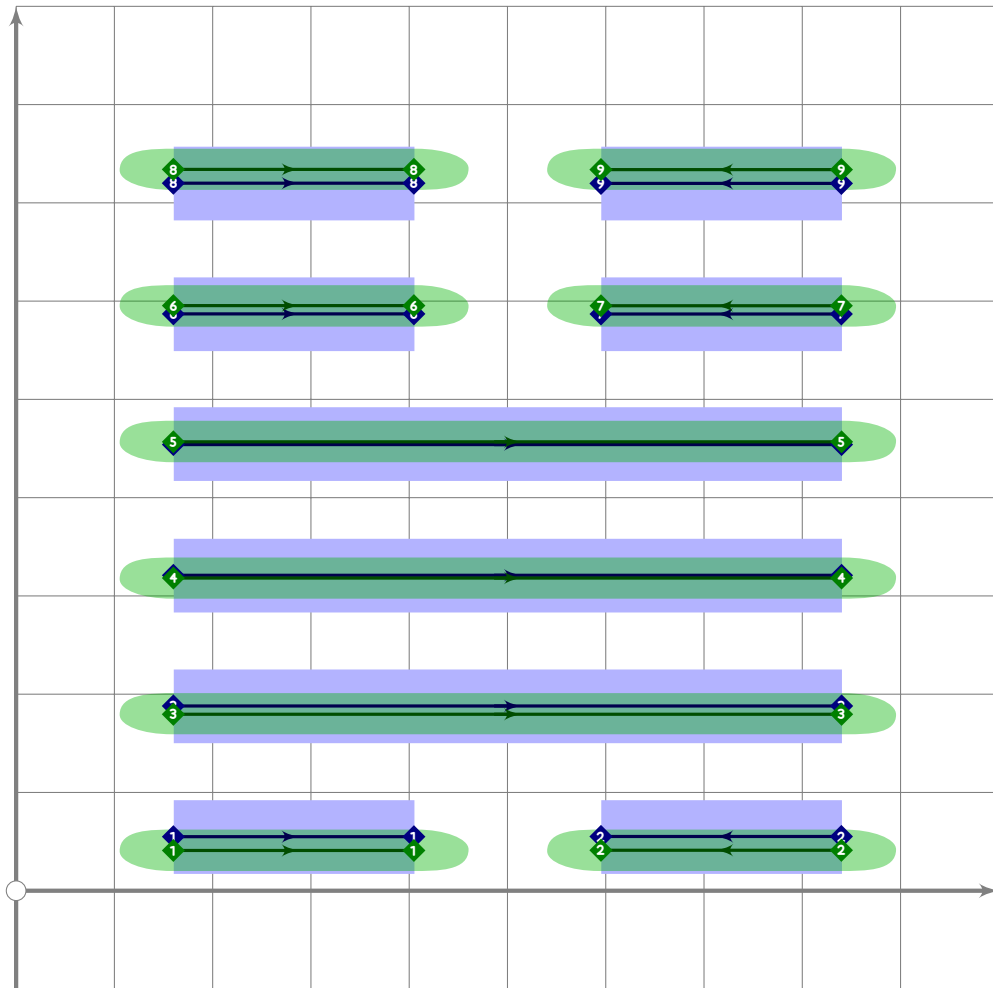




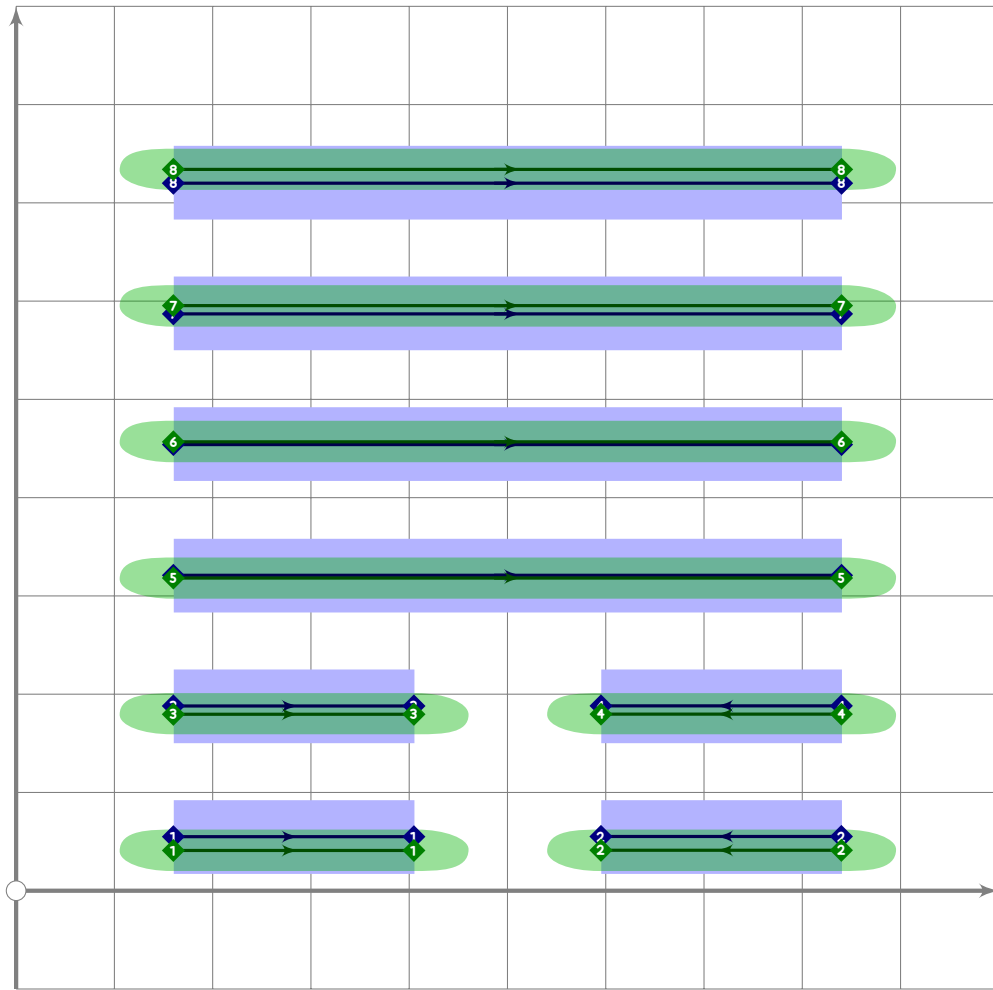
88 `make_hexagram(30,1,0,1,1,0,1);`



89 `make_hexagram(31,0,0,1,1,0);`

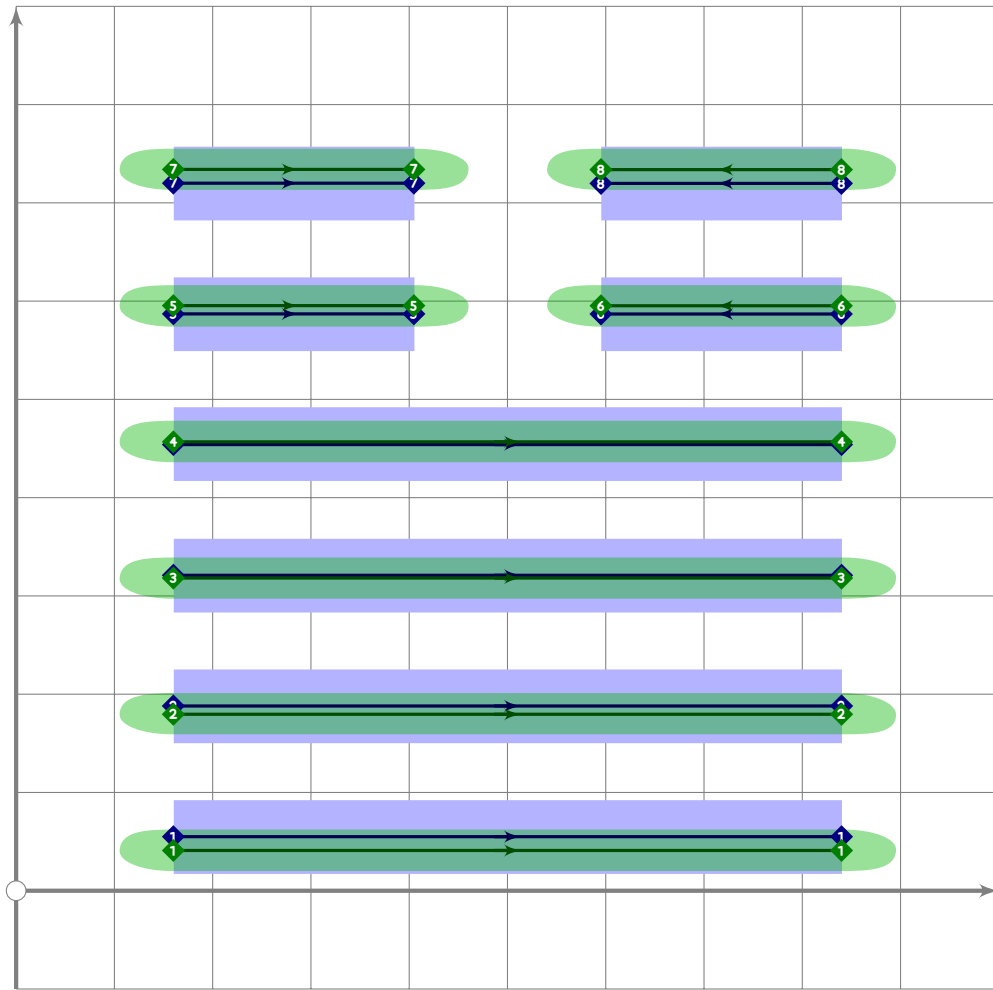


90 `make_hexagram(32,0,1,1,0,0);`

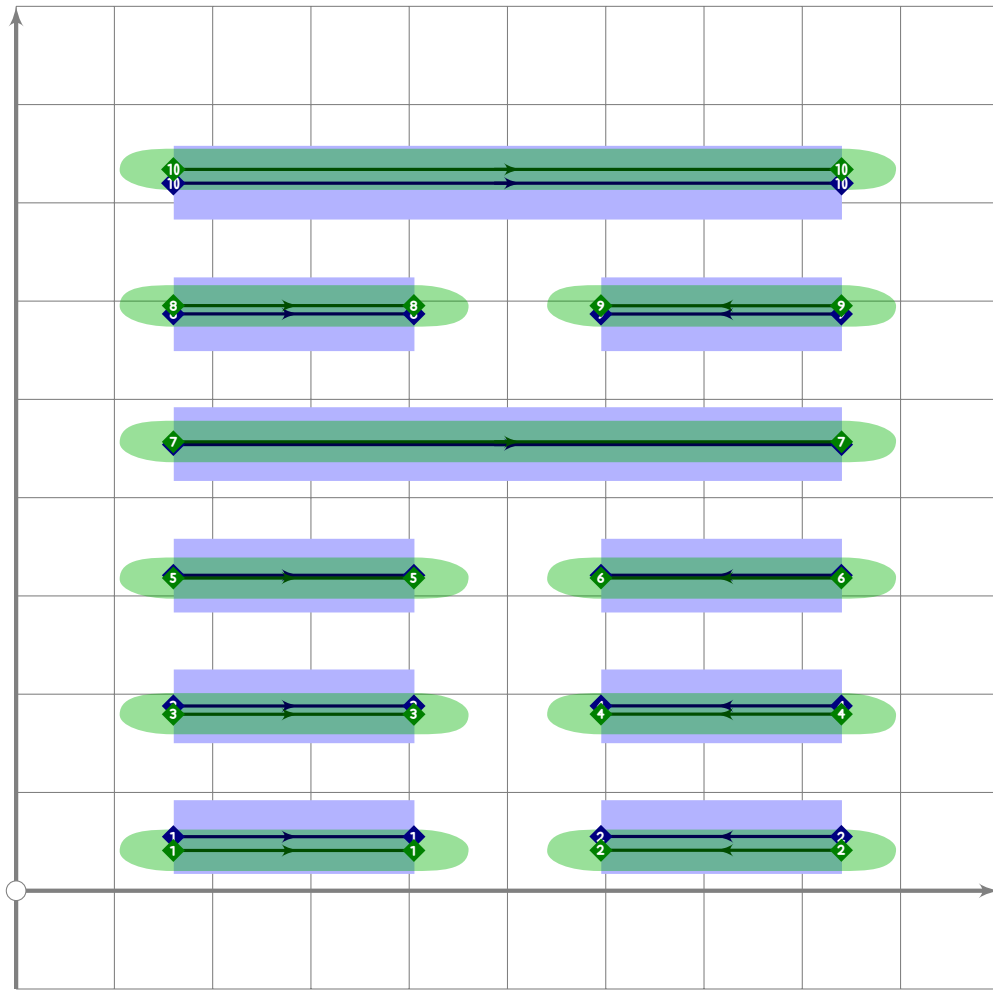


91

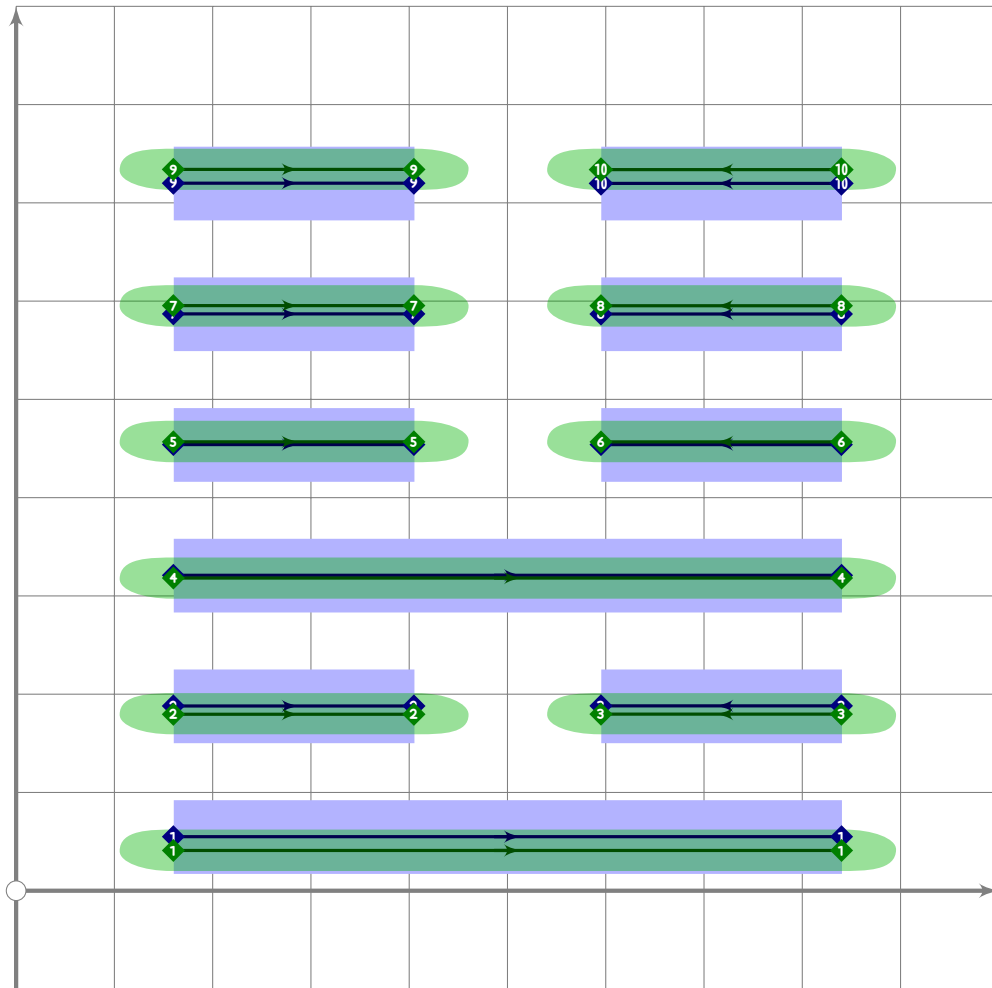
92 `make_hexagram(33,0,0,1,1,1);`



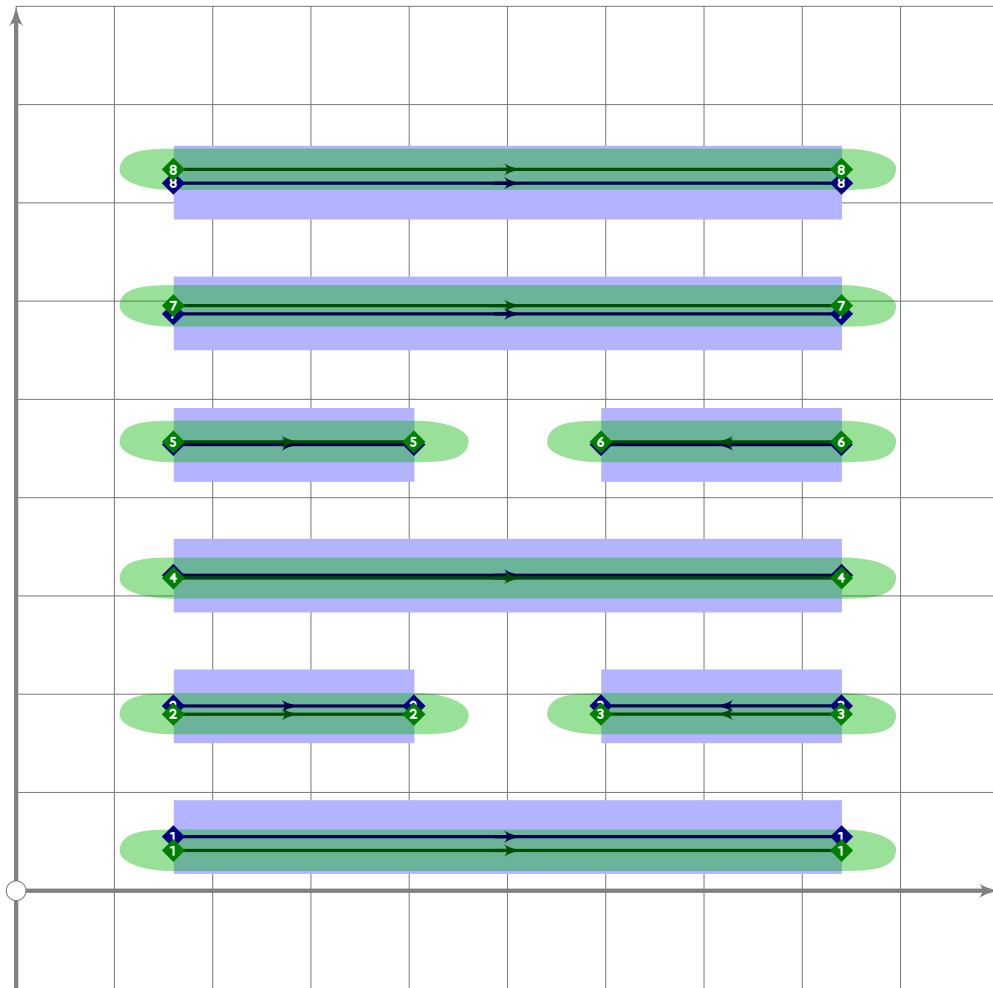
93 `make_hexagram(34,1,1,1,0,0);`



94 `make_hexagram(35,0,0,0,1,0,1);`

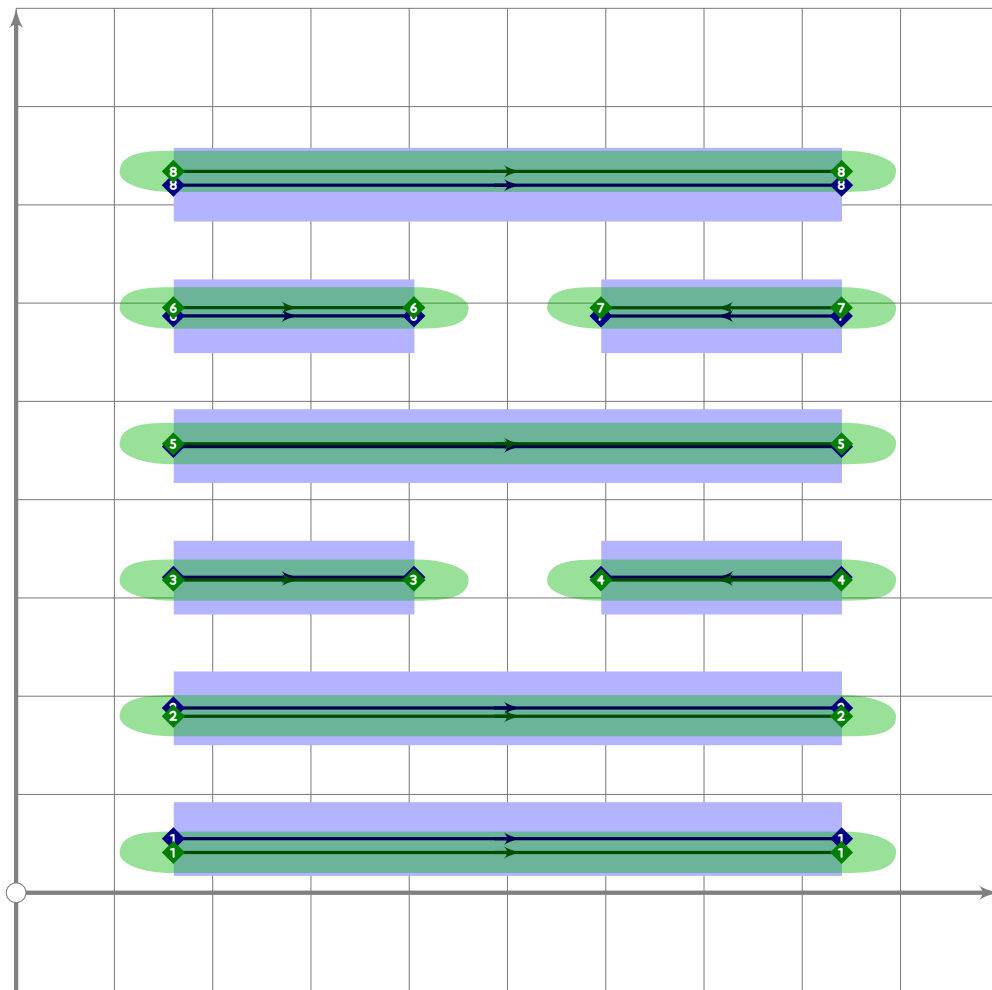


95 `make_hexagram(36,1,0,1,0,0,0);`

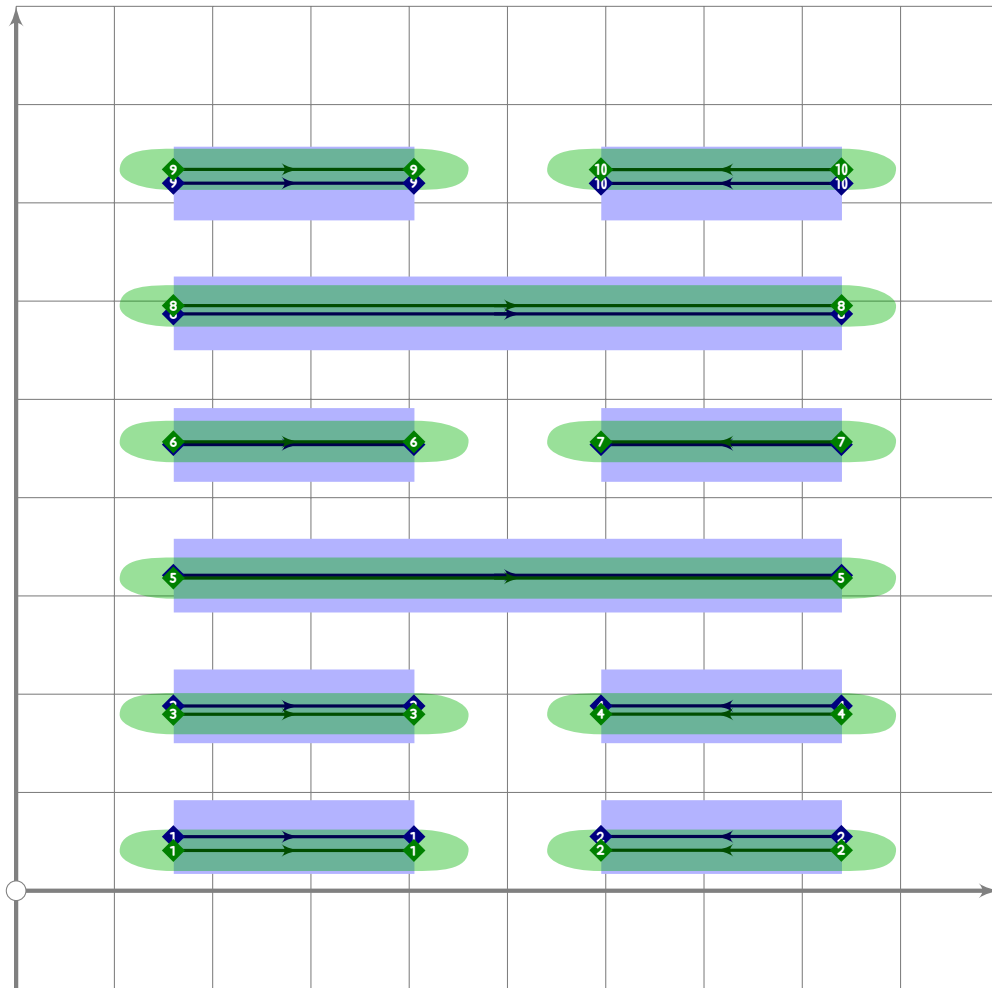


96 `make_hexagram(37,1,0,1,0,1,1);`

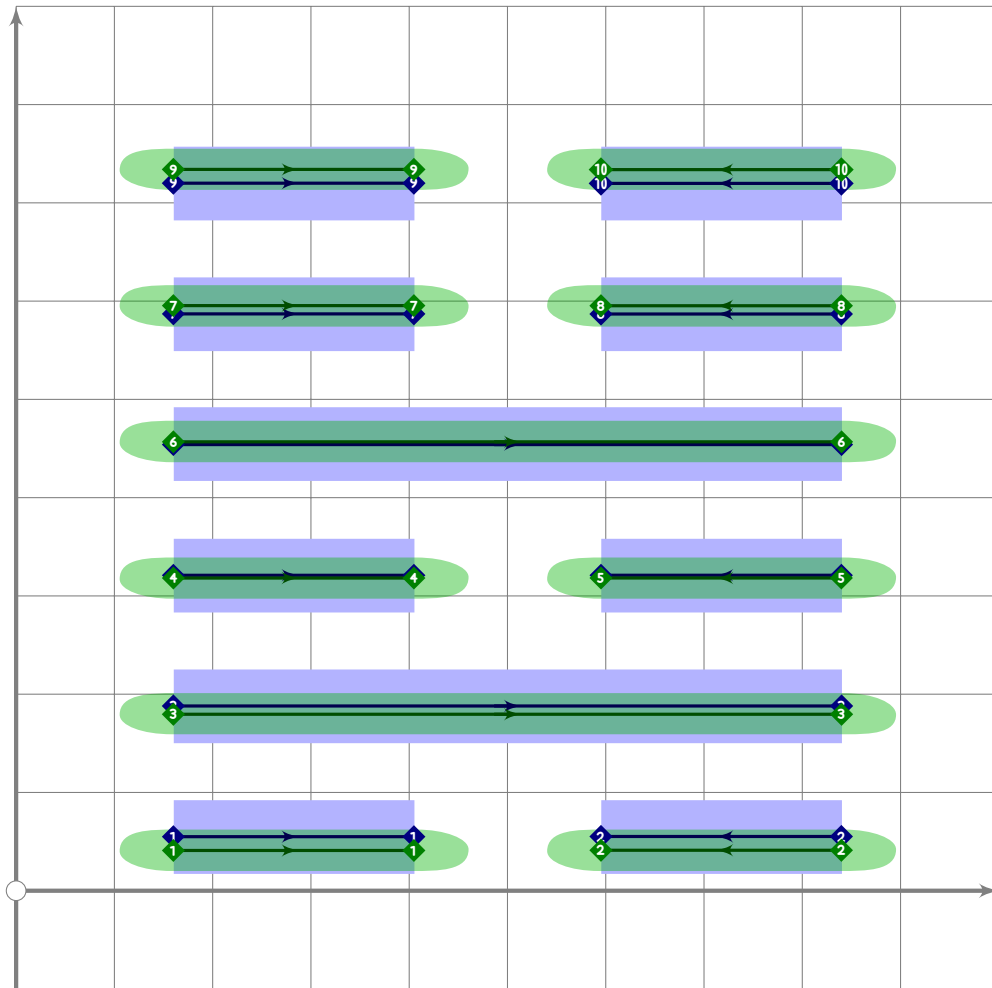




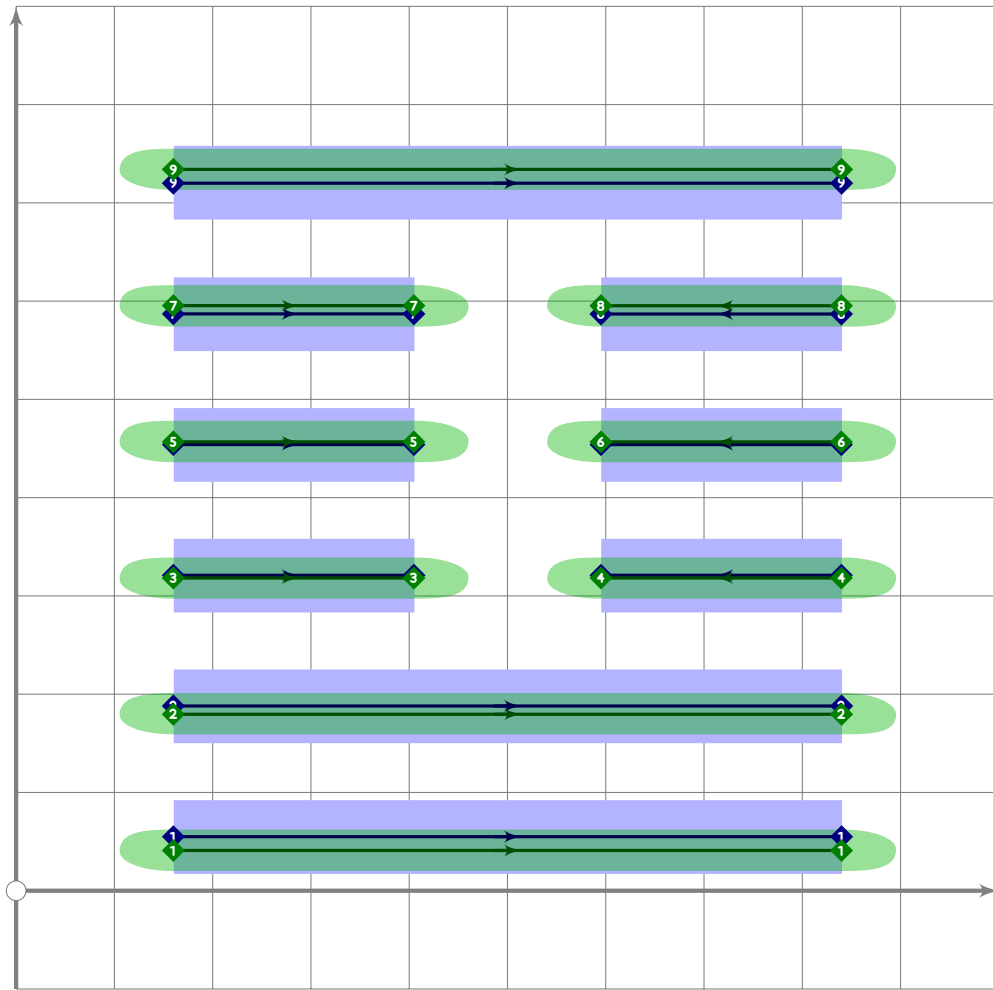
97 `make_hexagram(38,1,1,0,1,0,1);`



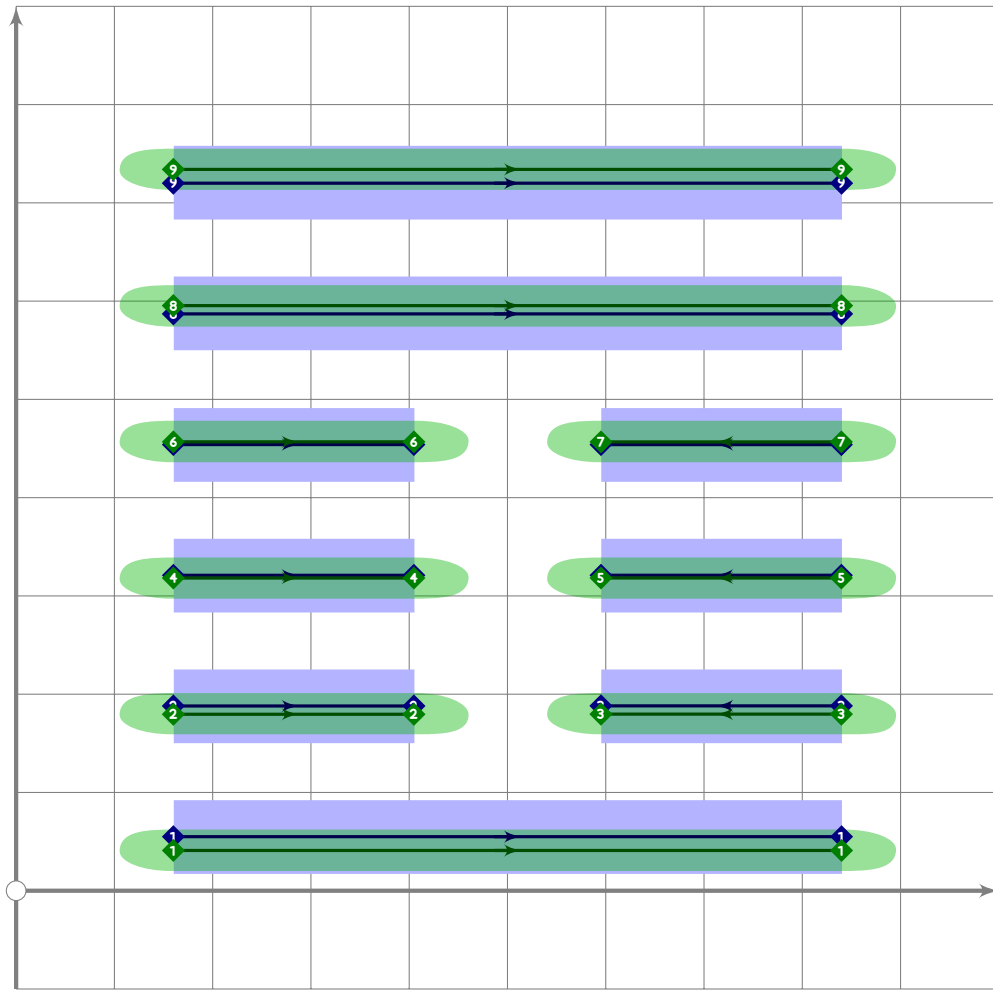
98 `make_hexagram(39,0,0,1,0,1,0);`



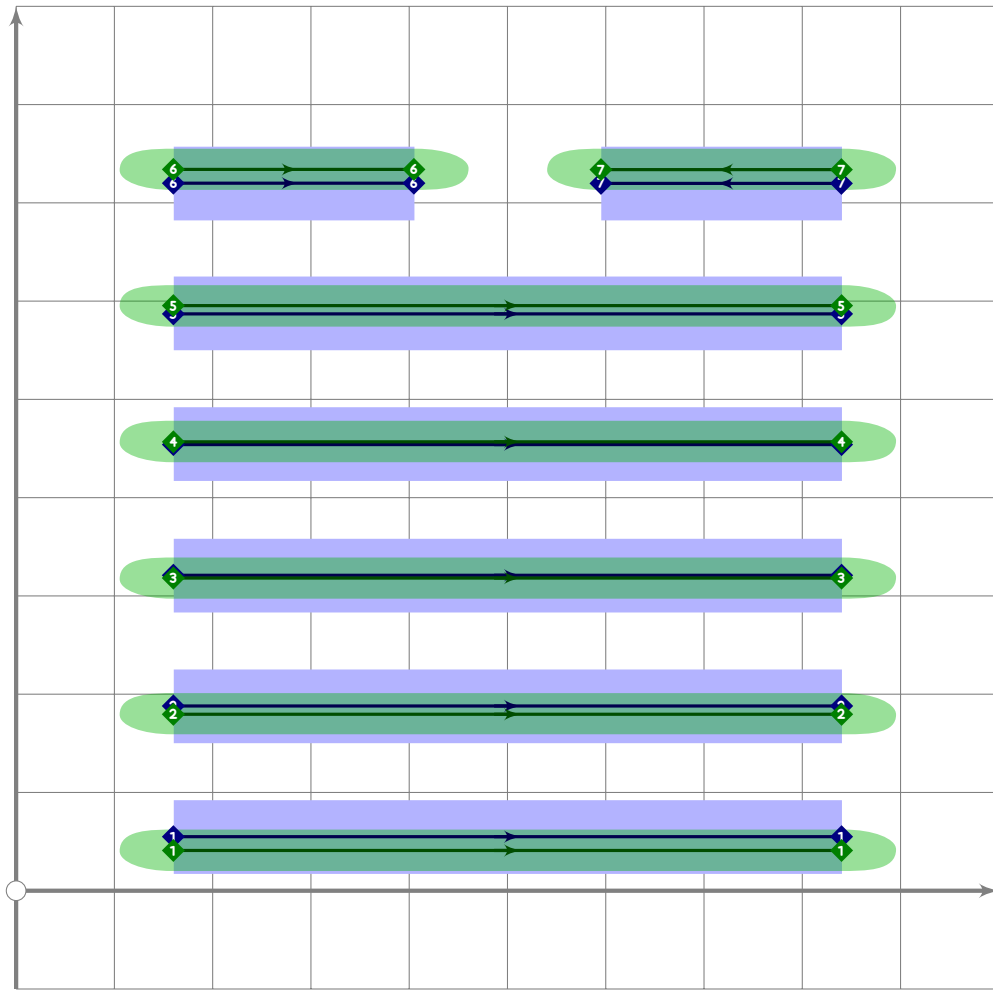
99 `make_hexagram(40,0,1,0,1,0,0);`



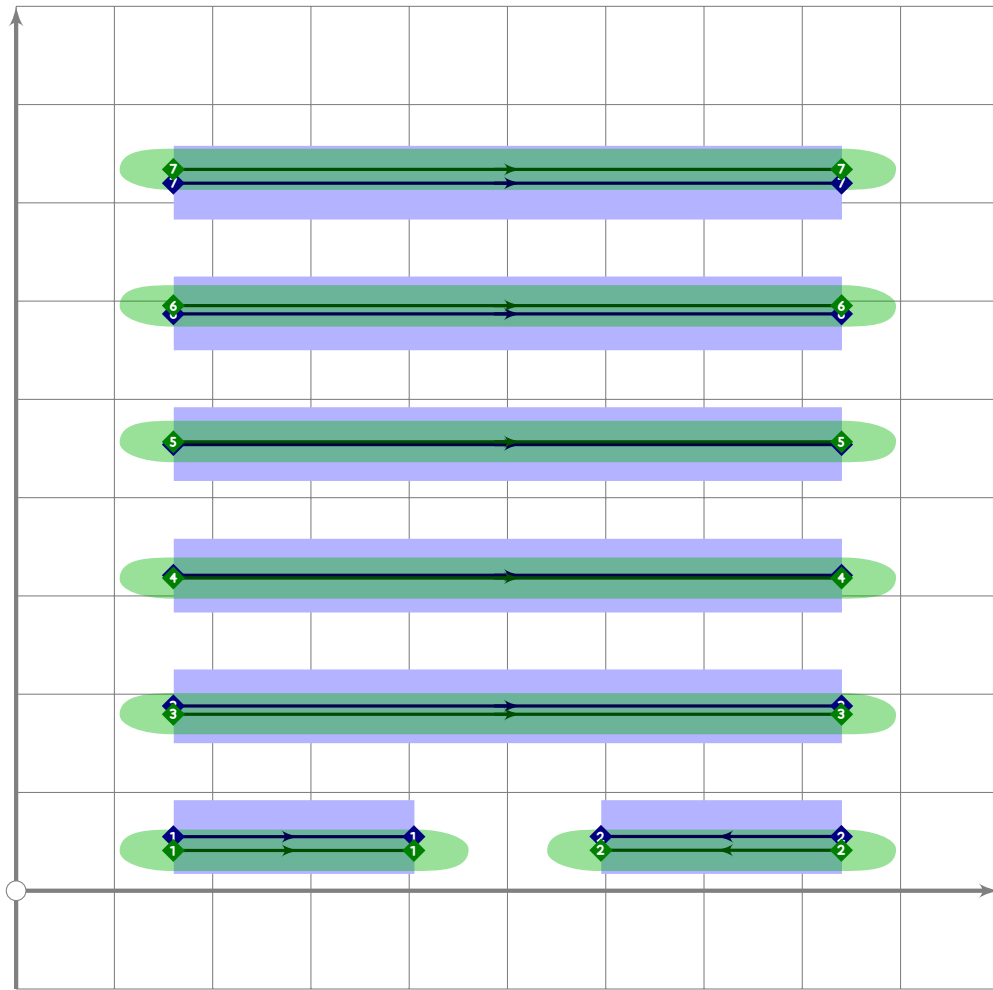
100 `make_hexagram(4,1,1,0,0,0,1);`



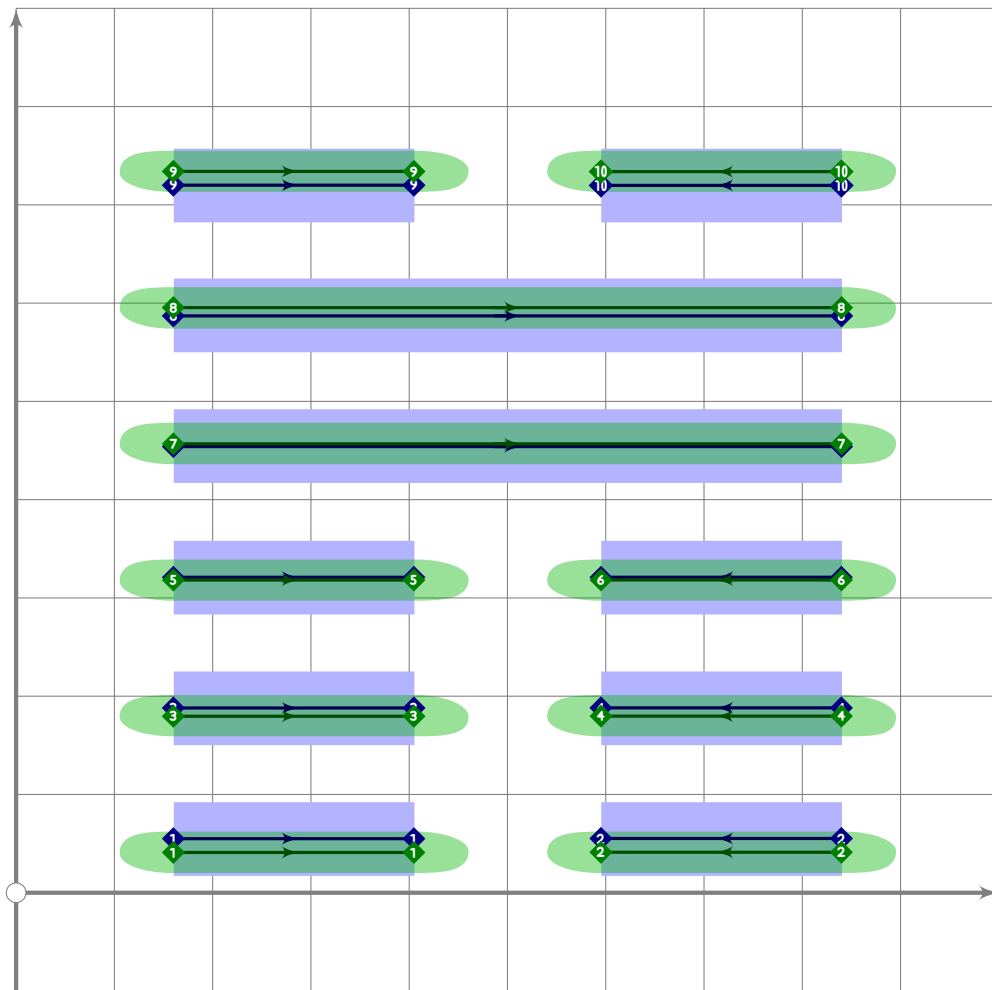
101 `make_hexagram(4,2,1,0,0,0,1,1);`



102 `make_hexagram(43,1,1,1,1,0);`

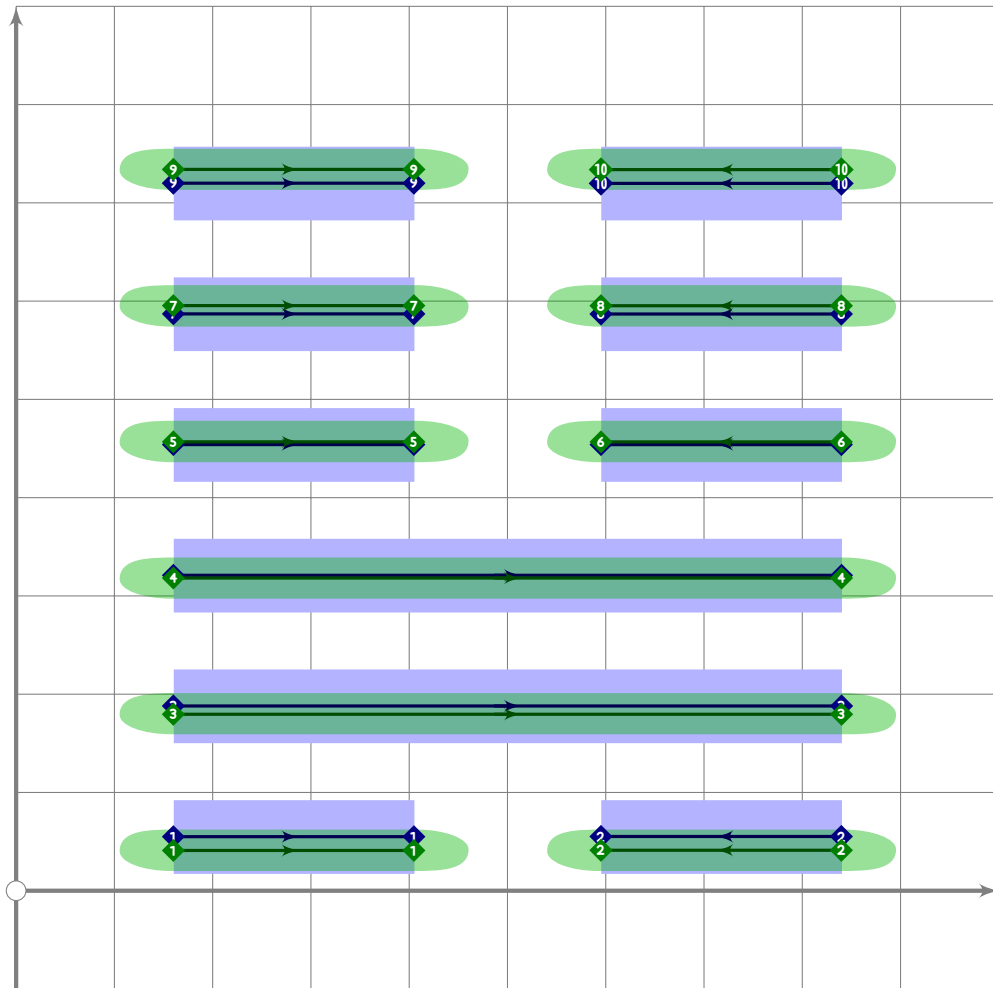


103 `make_hexagram(44,0,1,1,1,1);`

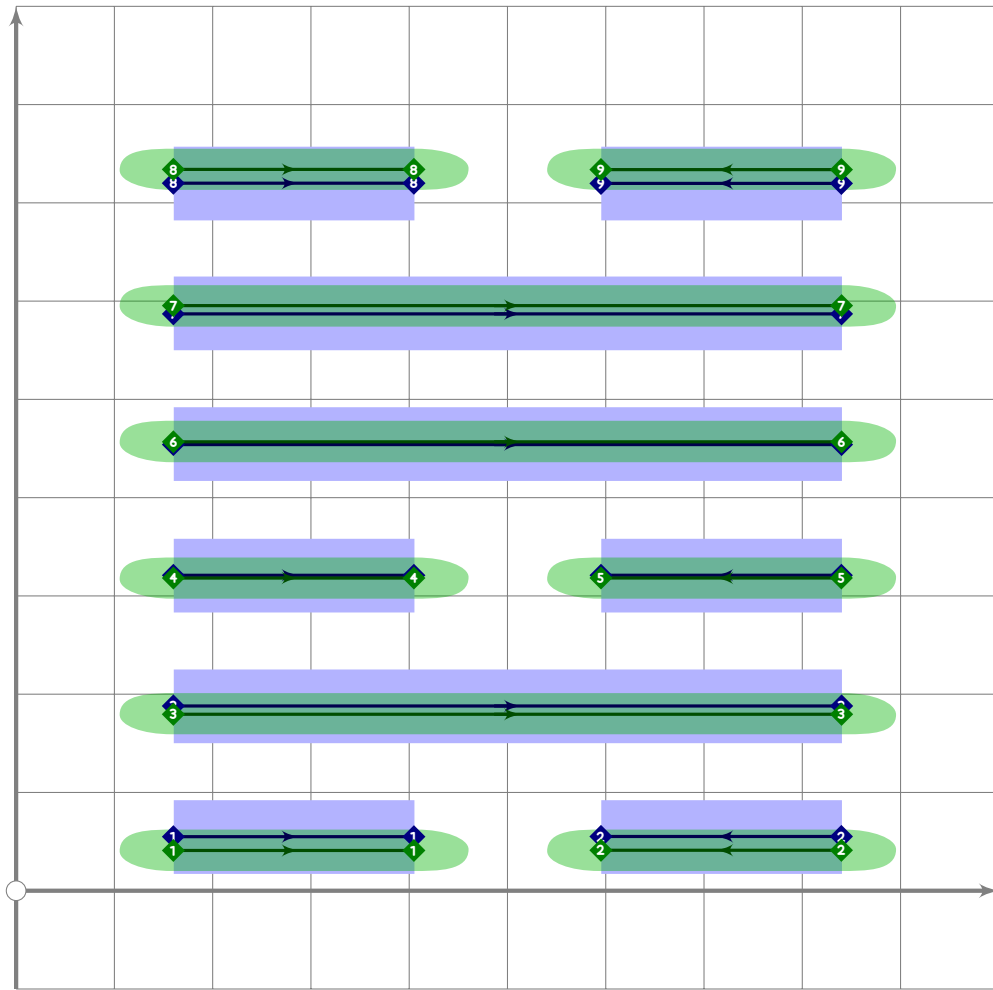


104 `make_hexagram(45,0,0,0,1,1,0);`

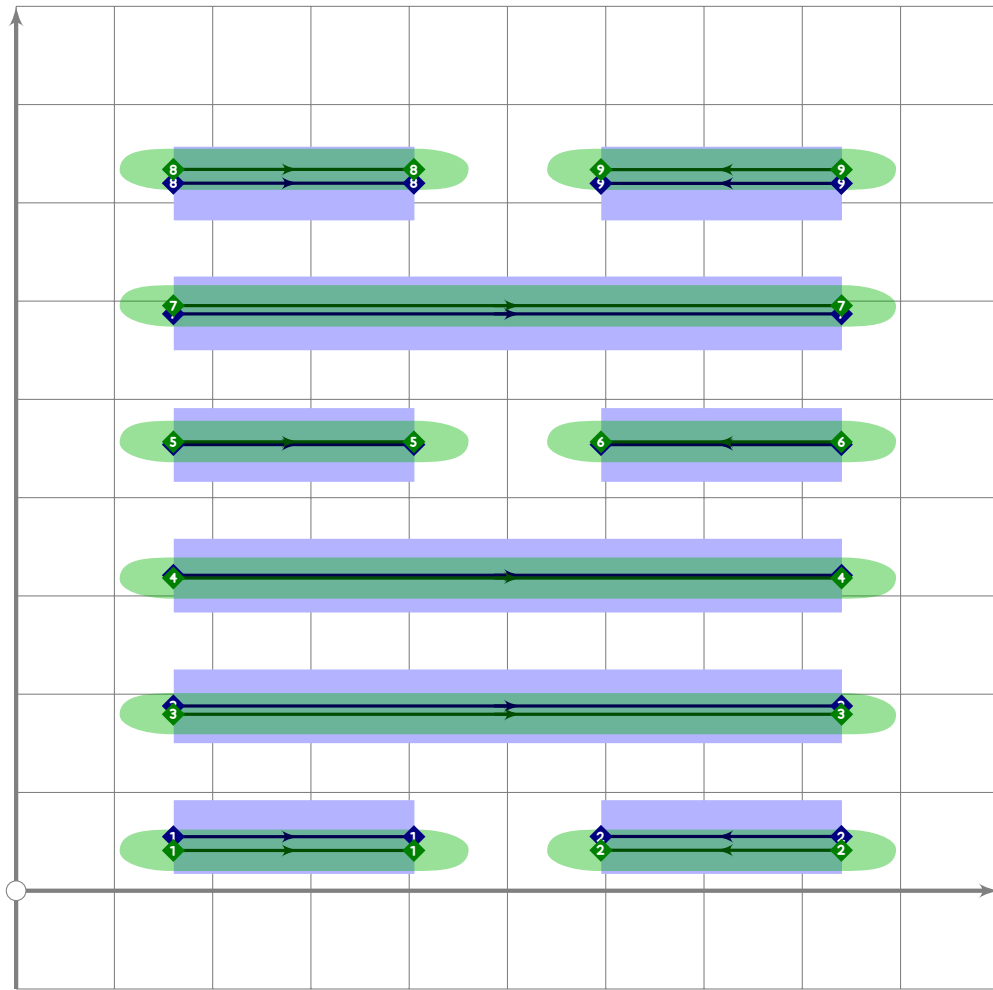




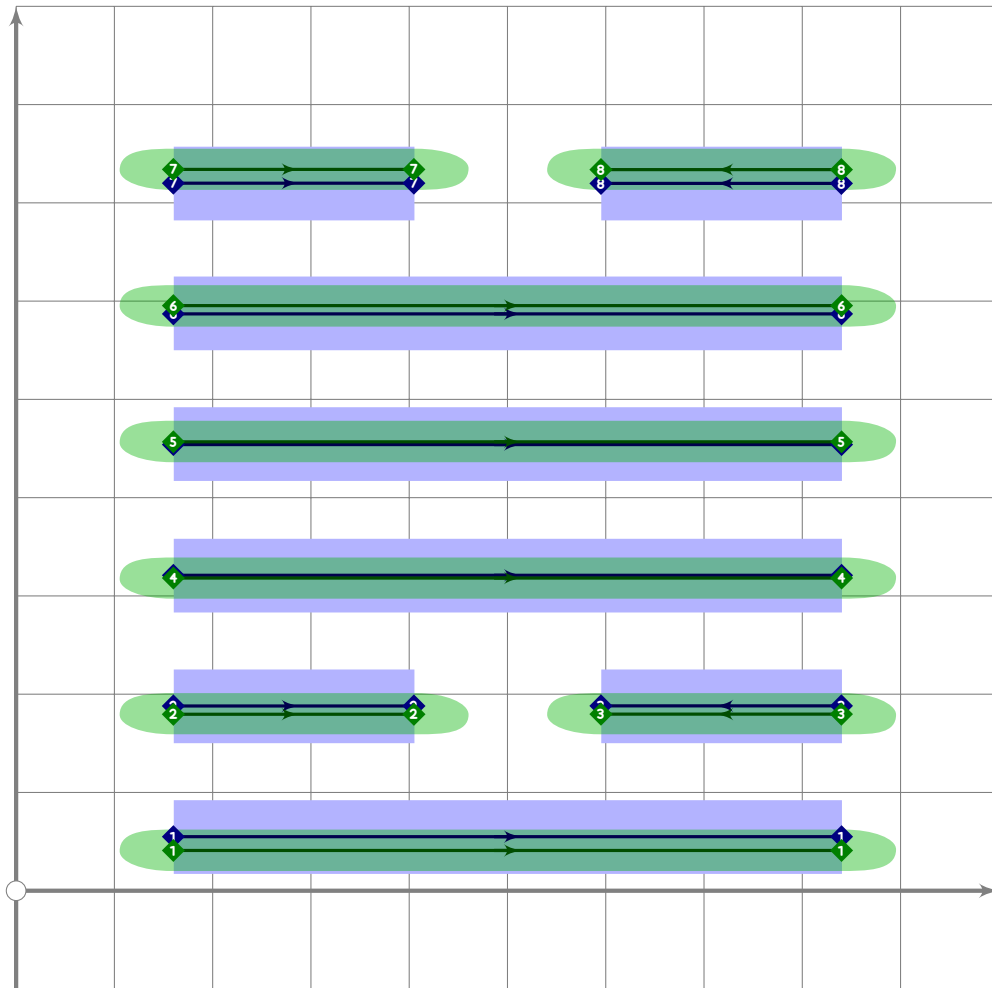
105 `make_hexagram(46,0,1,1,0,0,0);`



106 `make_hexagram(47,0,1,0,1,1,0);`

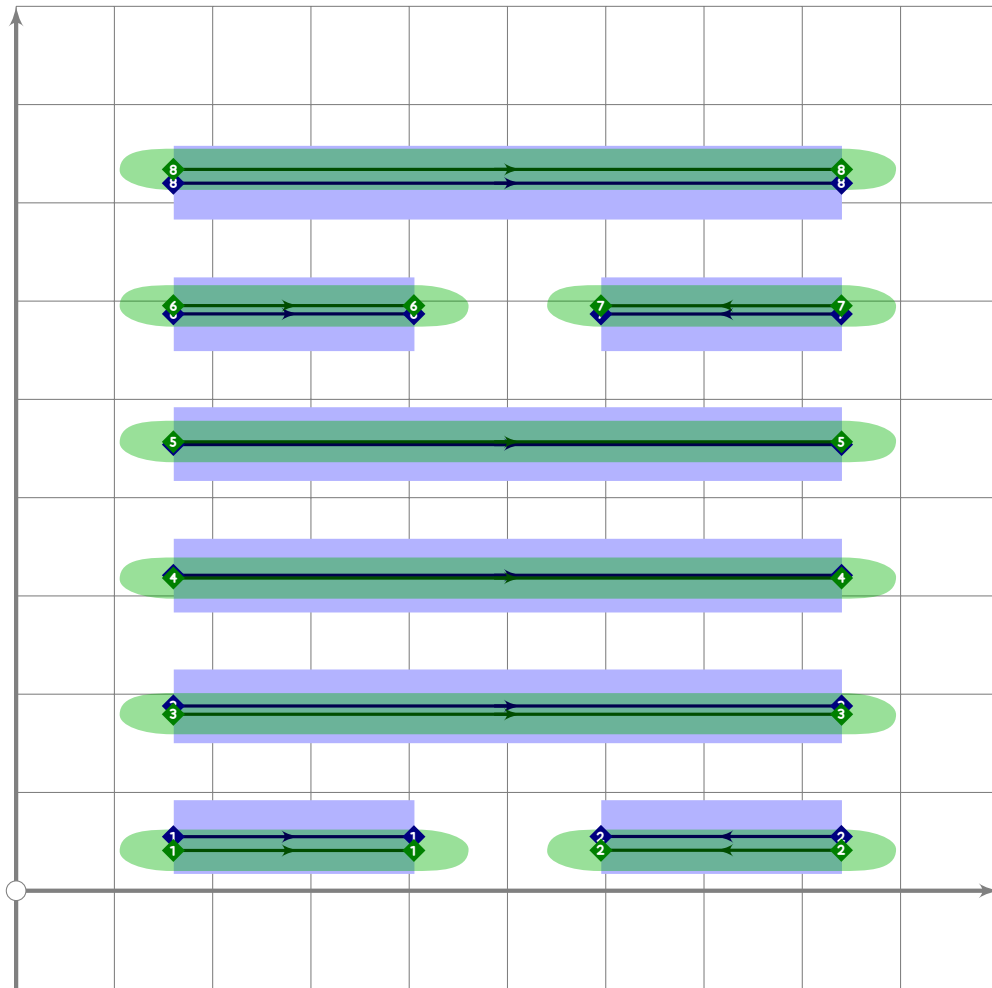


107 `make_hexagram(48,0,1,1,0,1,0);`

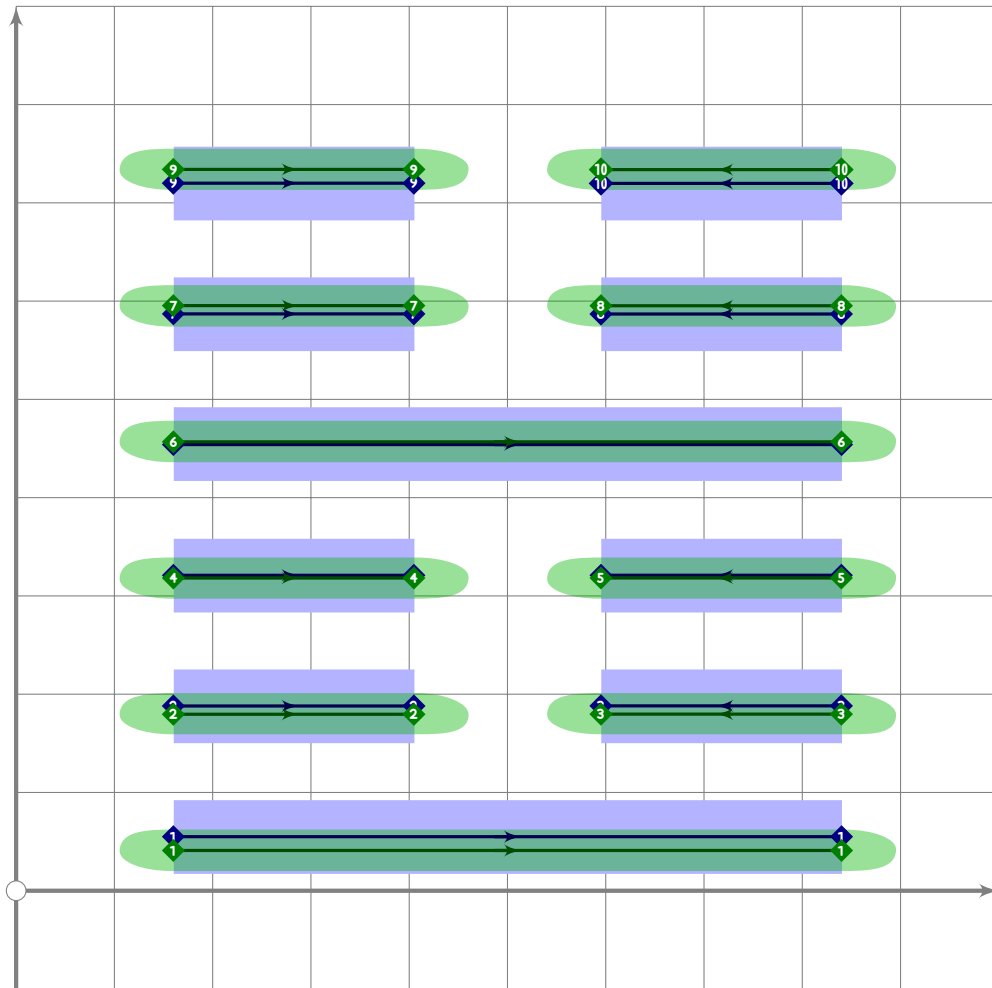


108

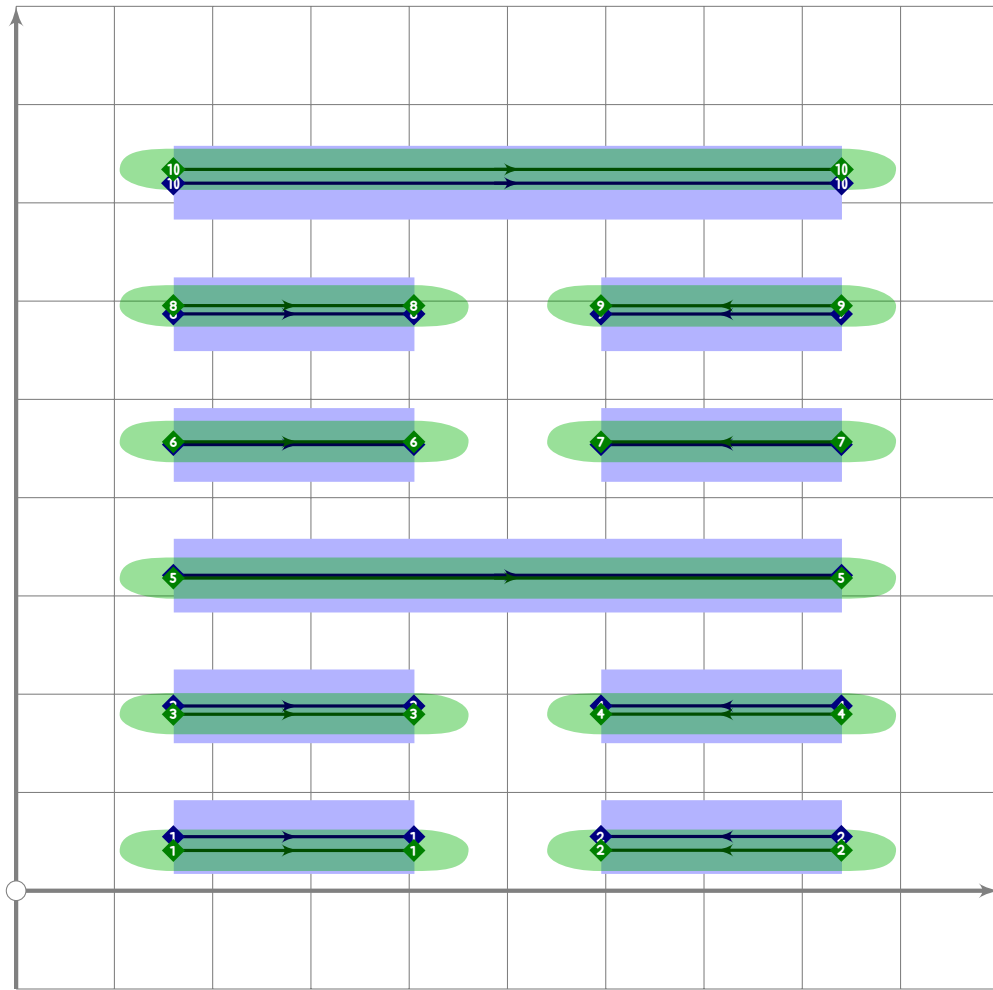
109 `make_hexagram(49,1,0,1,1,0);`



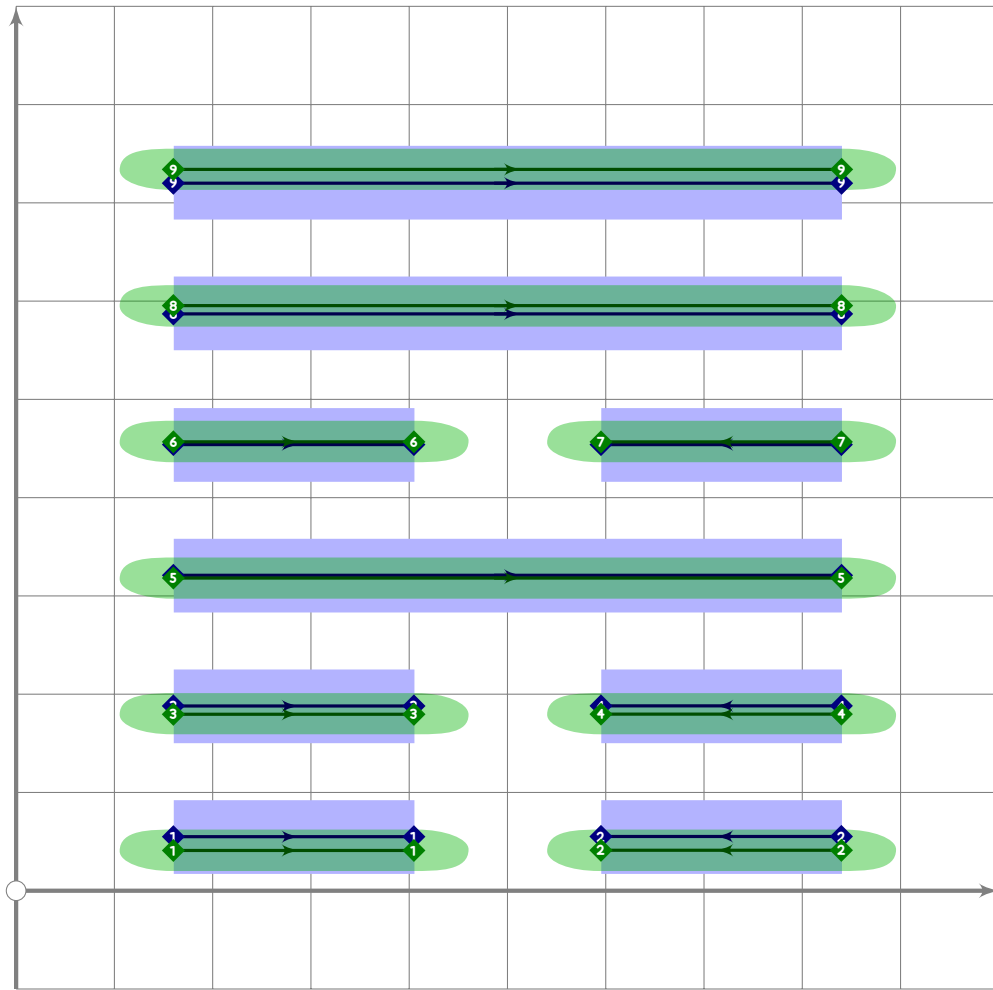
110 `make_hexagram(50,0,1,1,1,0,1);`



111 `make_hexagram(5,1,0,0,1,0,0);`

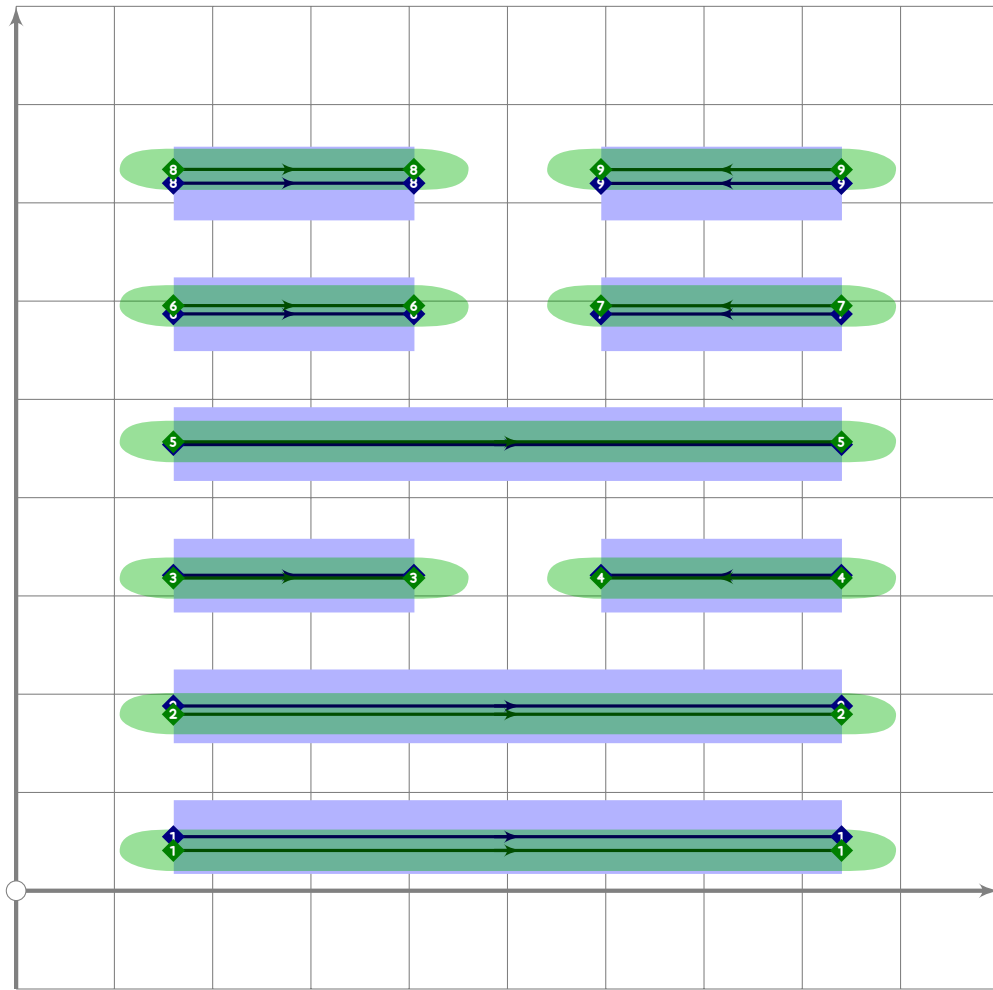


112 `make_hexagram(52,0,0,1,0,0,1);`

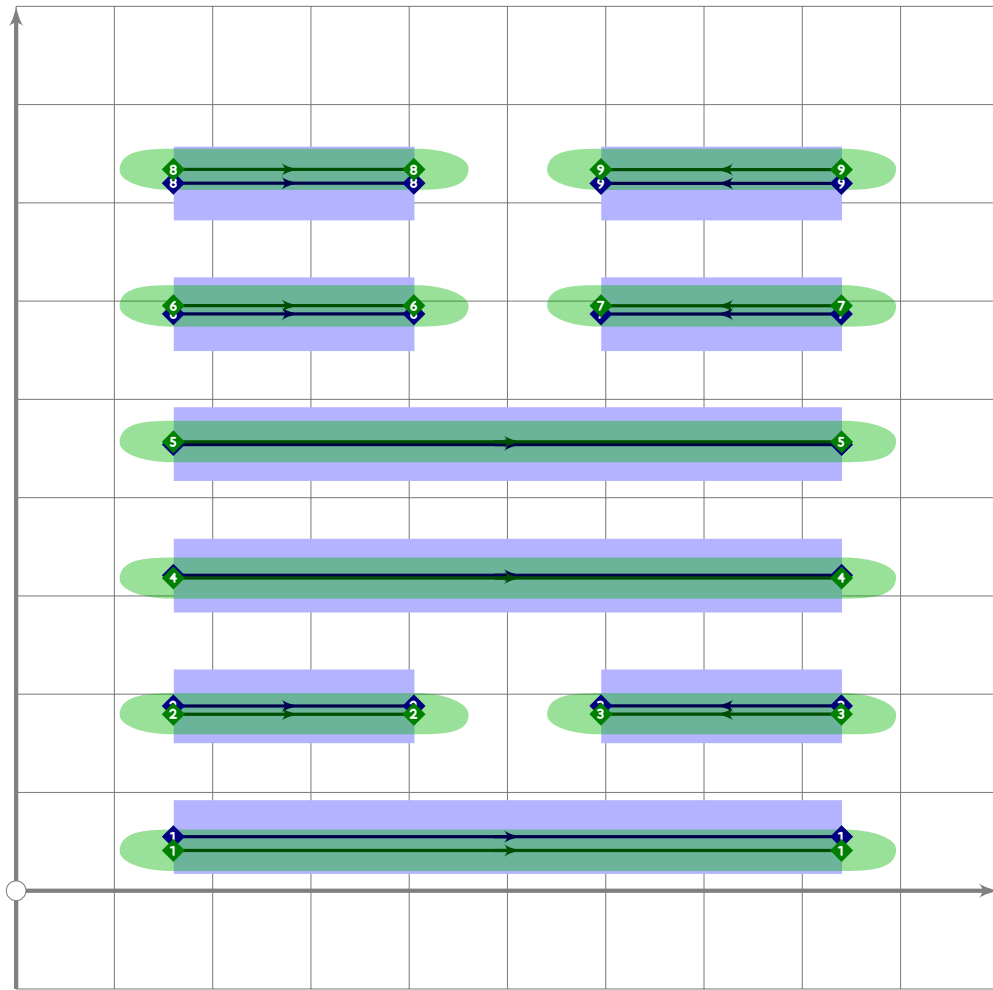


113 `make_hexagram(53,0,0,1,0,1,1);`

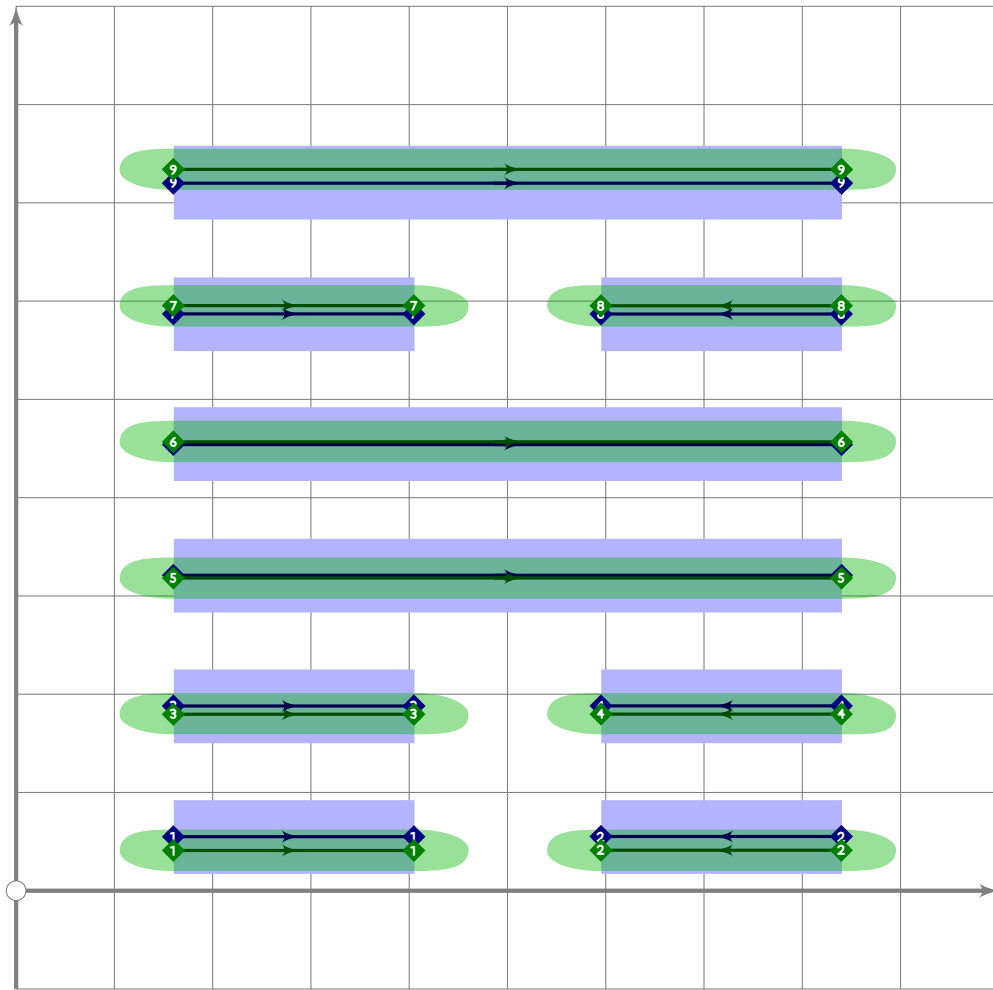




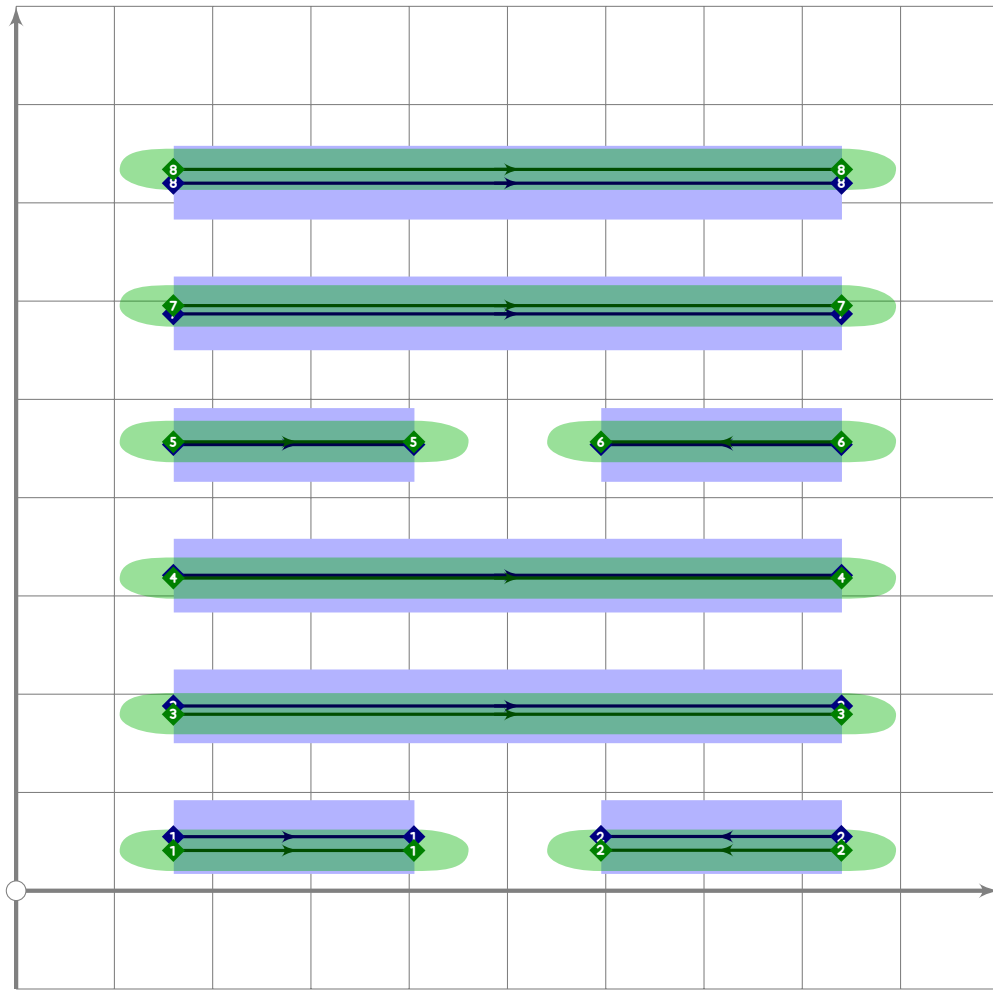
114 `make_hexagram(54,1,1,0,1,0,0);`



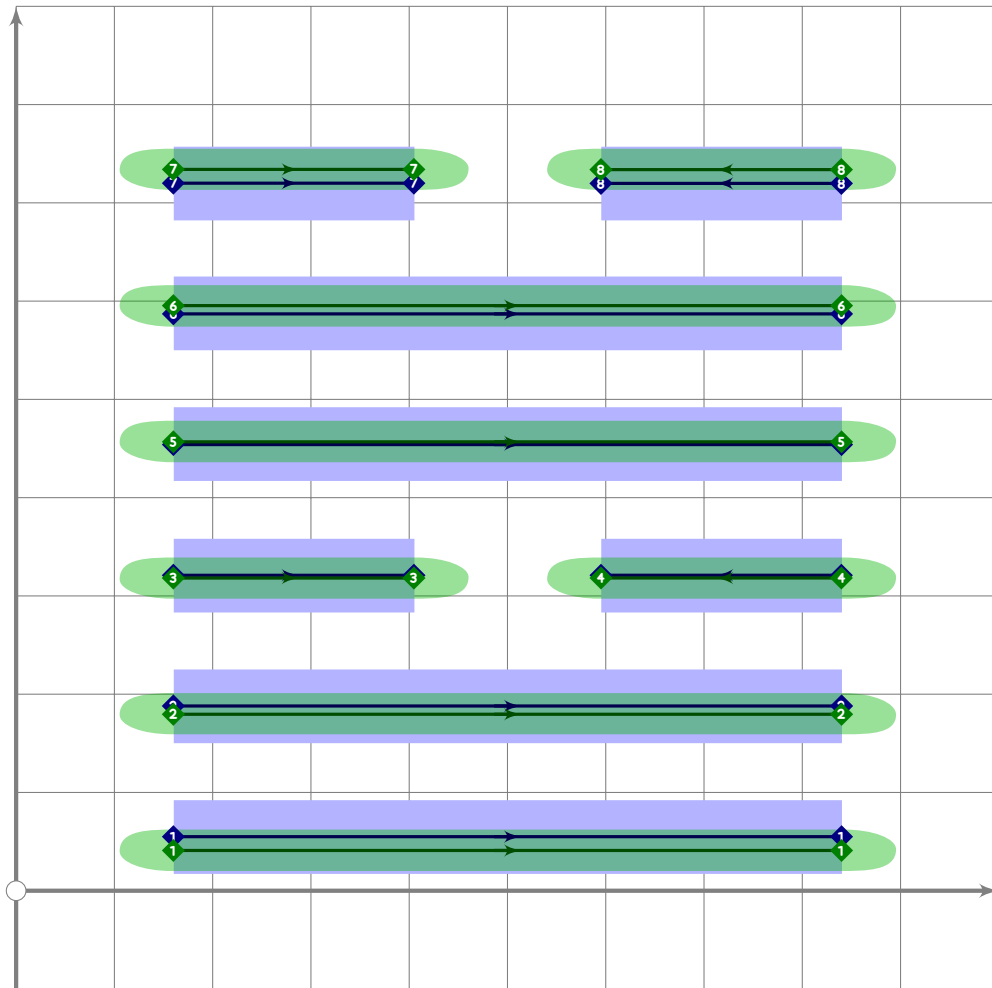
115 `make_hexagram(55,1,0,1,1,0,0);`



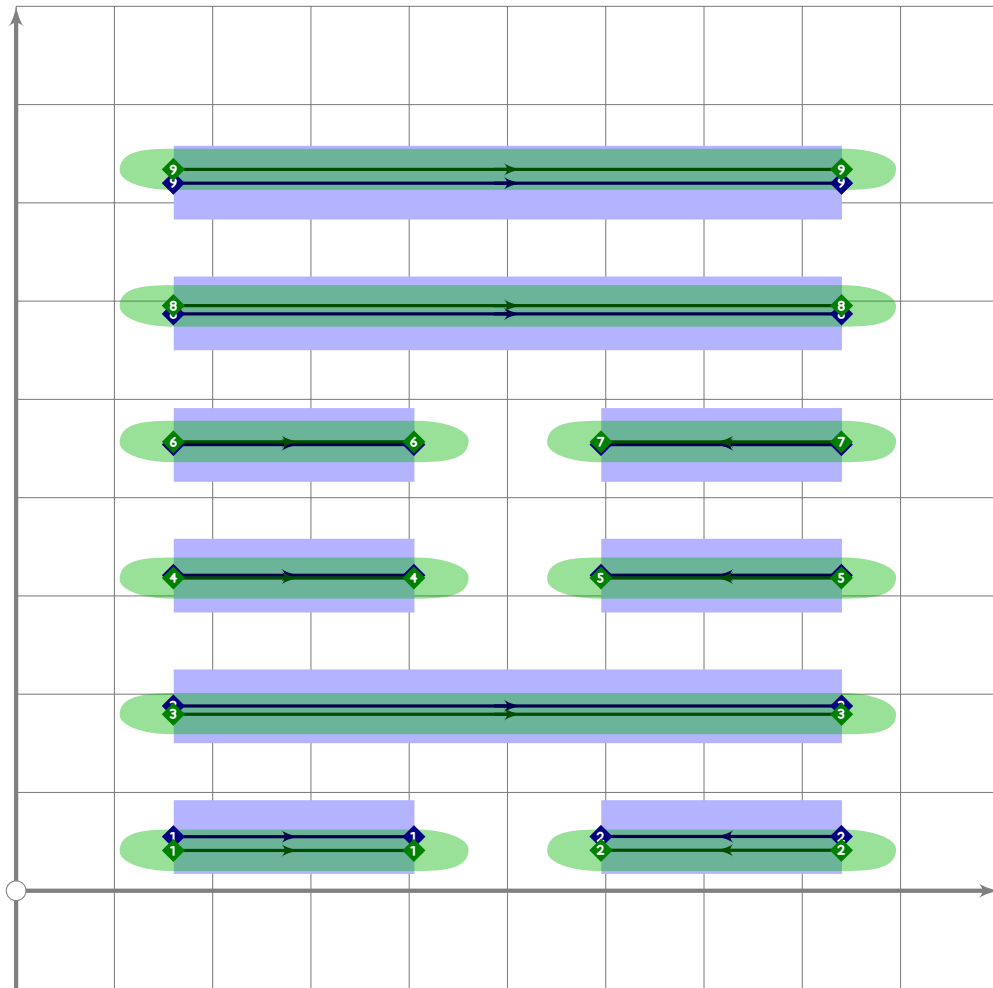
116 `make_hexagram(56,0,0,1,1,0,1);`



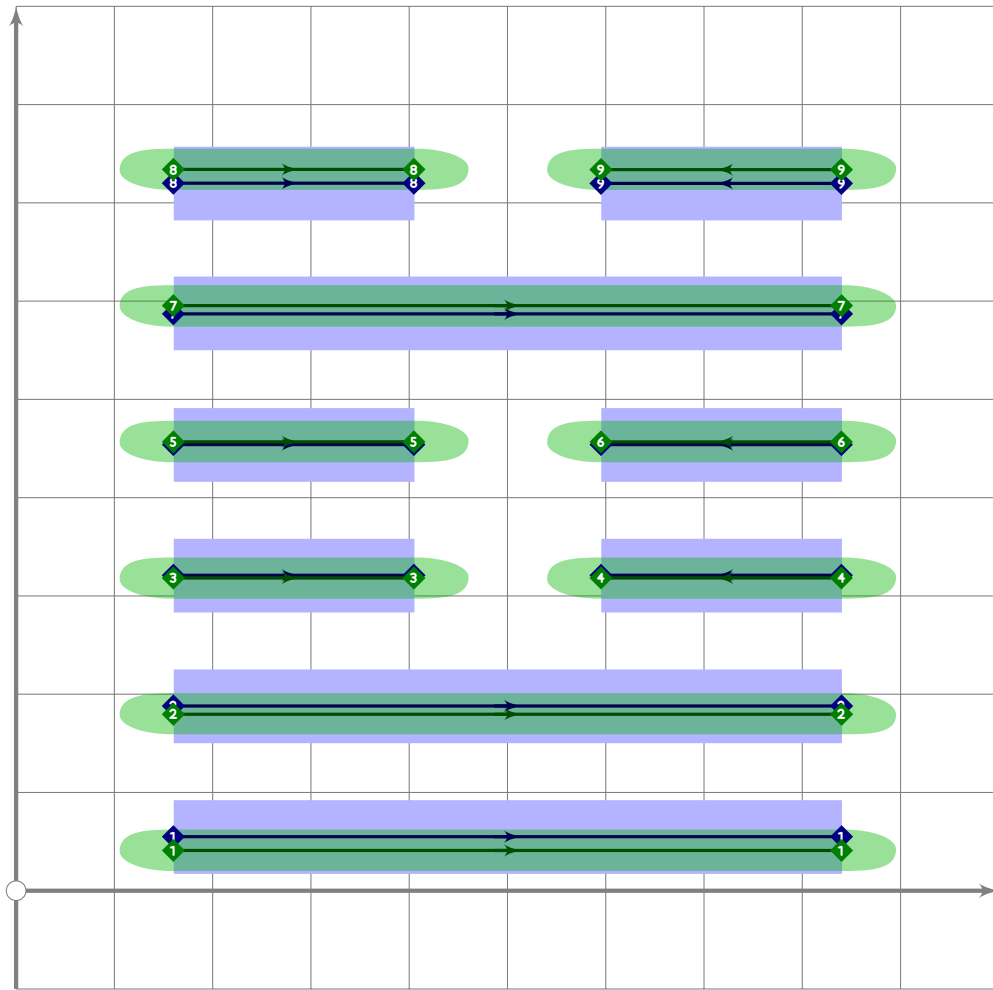
117 `make_hexagram(57,0,1,1,0,1,1);`



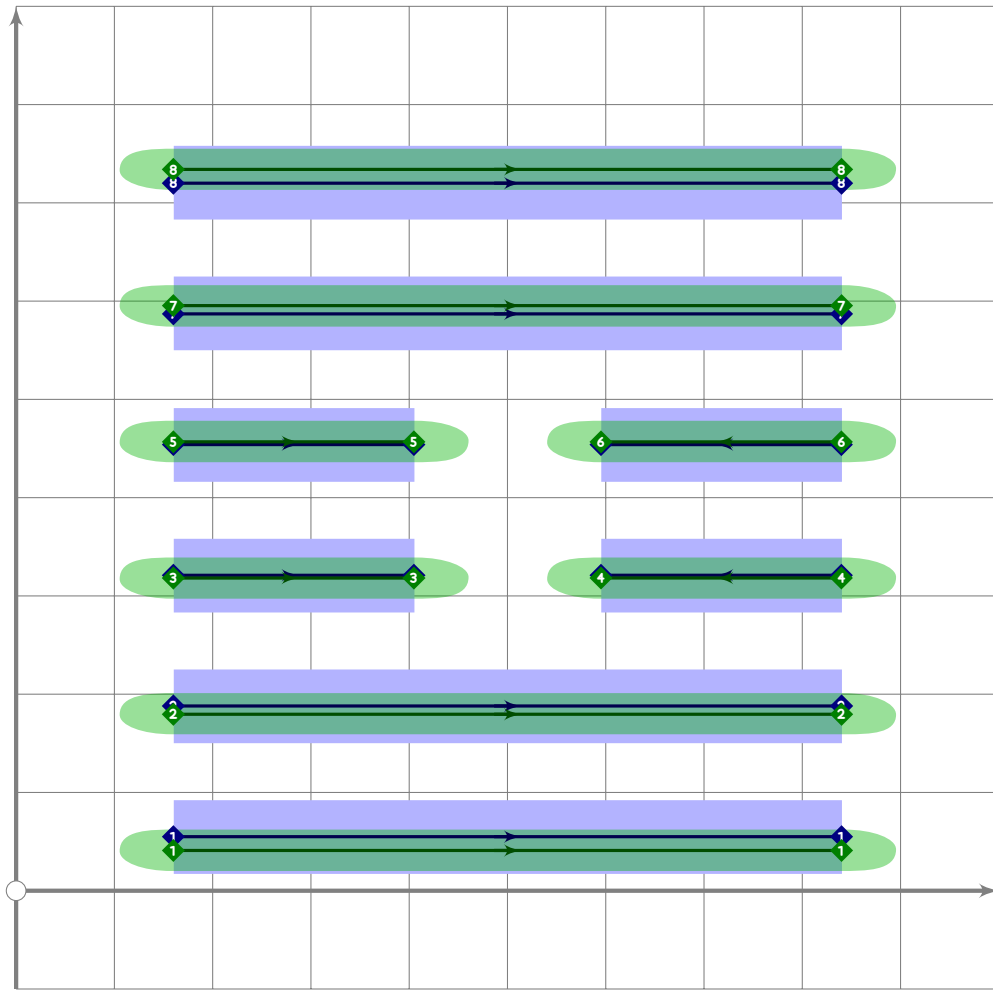
118 `make_hexagram(58,1,1,0,1,1,0);`



119 `make_hexagram(59,0,1,0,0,1,1);`

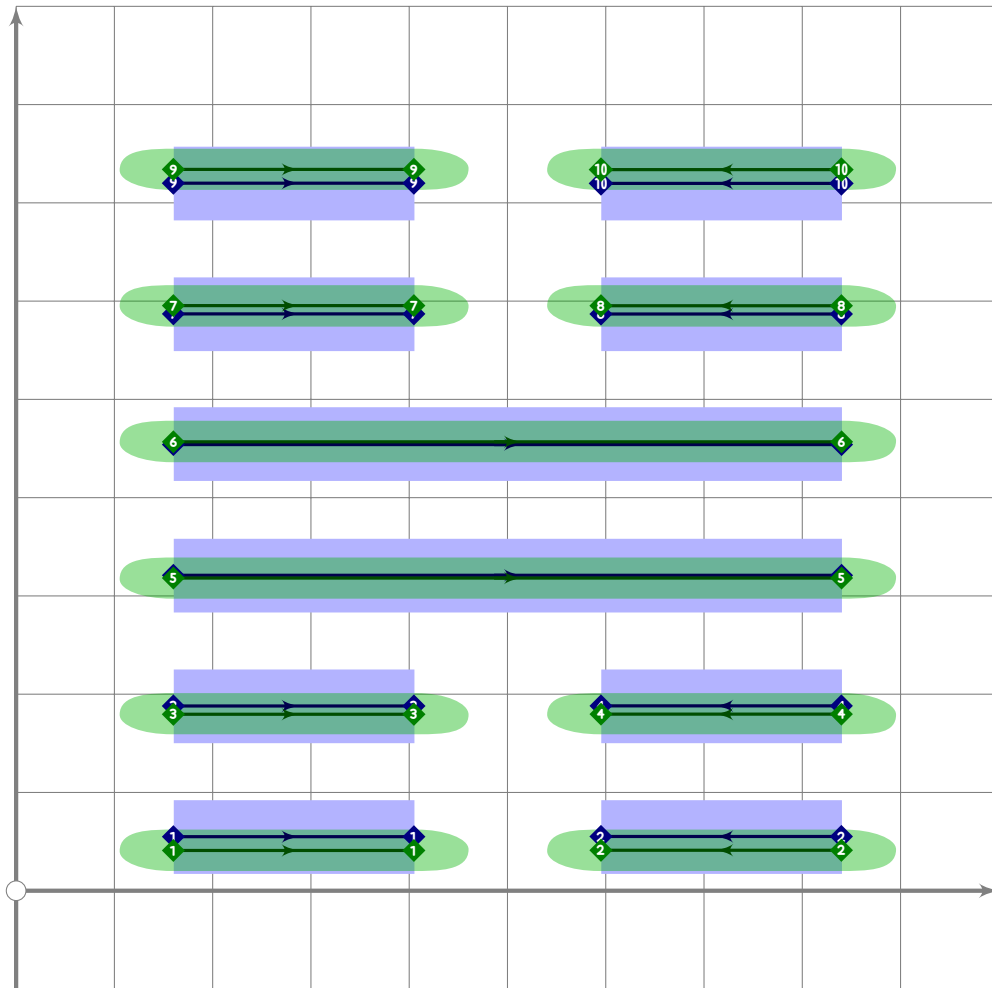


120 `make_hexagram(60,1,1,0,0,1,0);`

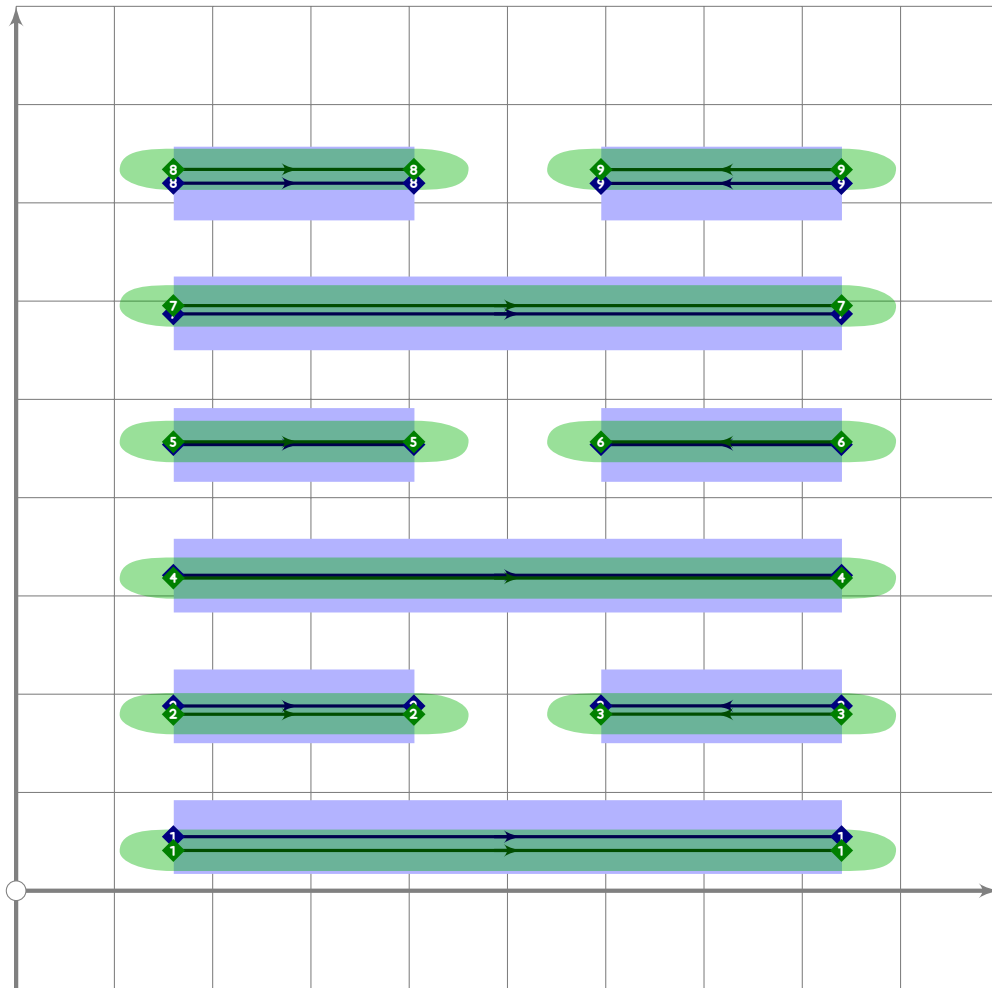


121 `make_hexagram(61,1,1,0,0,1,1);`

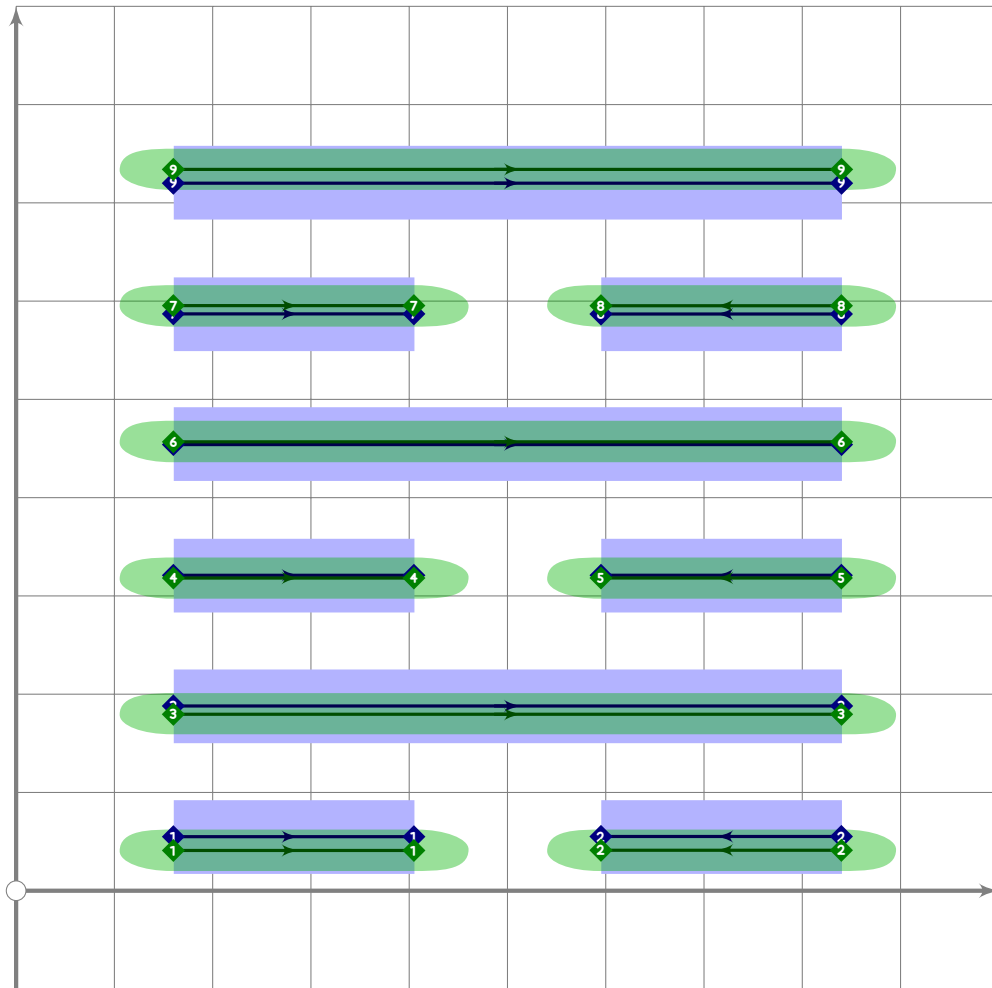




122 `make_hexagram(62,0,0,1,1,0,0);`



123 `make_hexagram(63,1,0,1,0,1,0);`



```
124 make_hexagram(64,0,1,0,1,0,1);
```

```
125
```

```
126
```

```
127
```

```
128 endfont;
```

```
129
```

```
130
```

Part IV

U+4E00 to U+9FFF

# tsuku-4e.mp

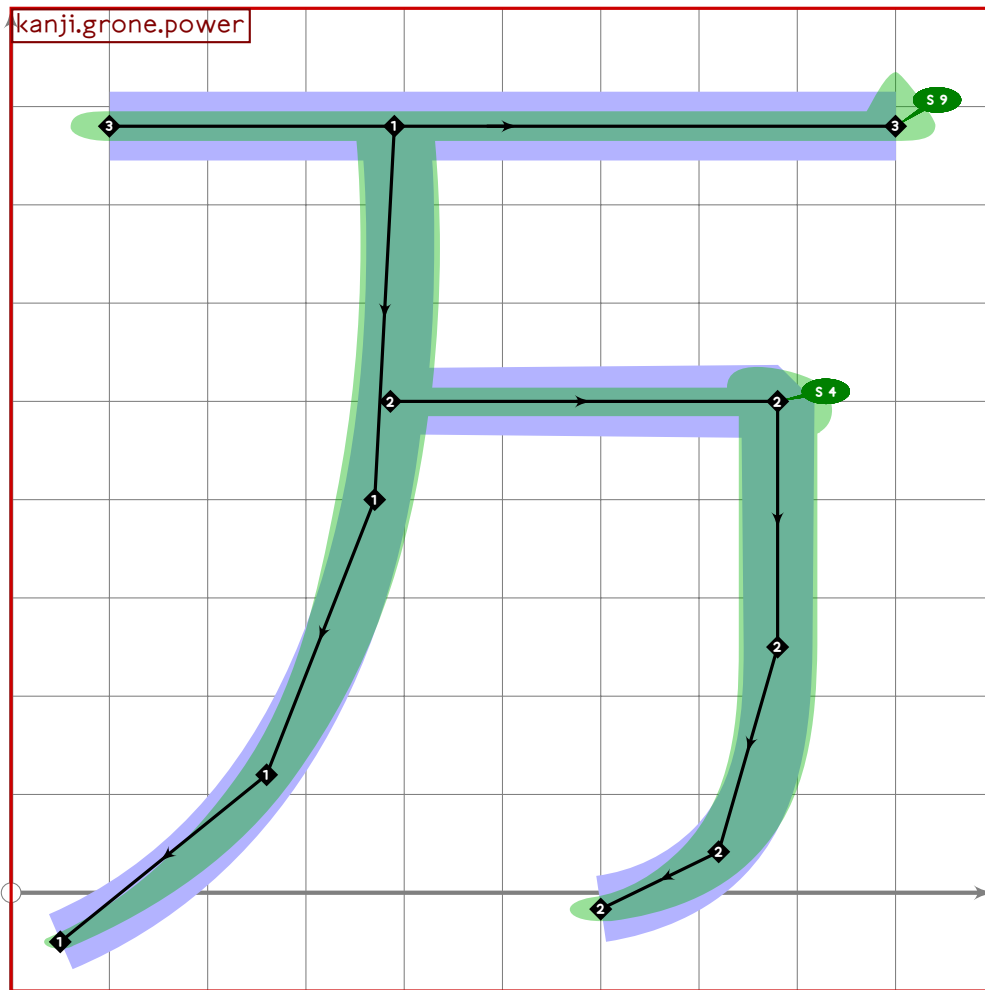
```
1 %
2 % Unicode page 4e (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeeight.mp;
38 input gradefour.mp;
39 input gradenine.mp;
40 input gradeone.mp;
41 input gradesix.mp;
42 input gradethree.mp;
43 input gradetwo.mp;
44 input leftrad.mp;
45 input radical.mp;
46 input rare.mp;
47
48 

---

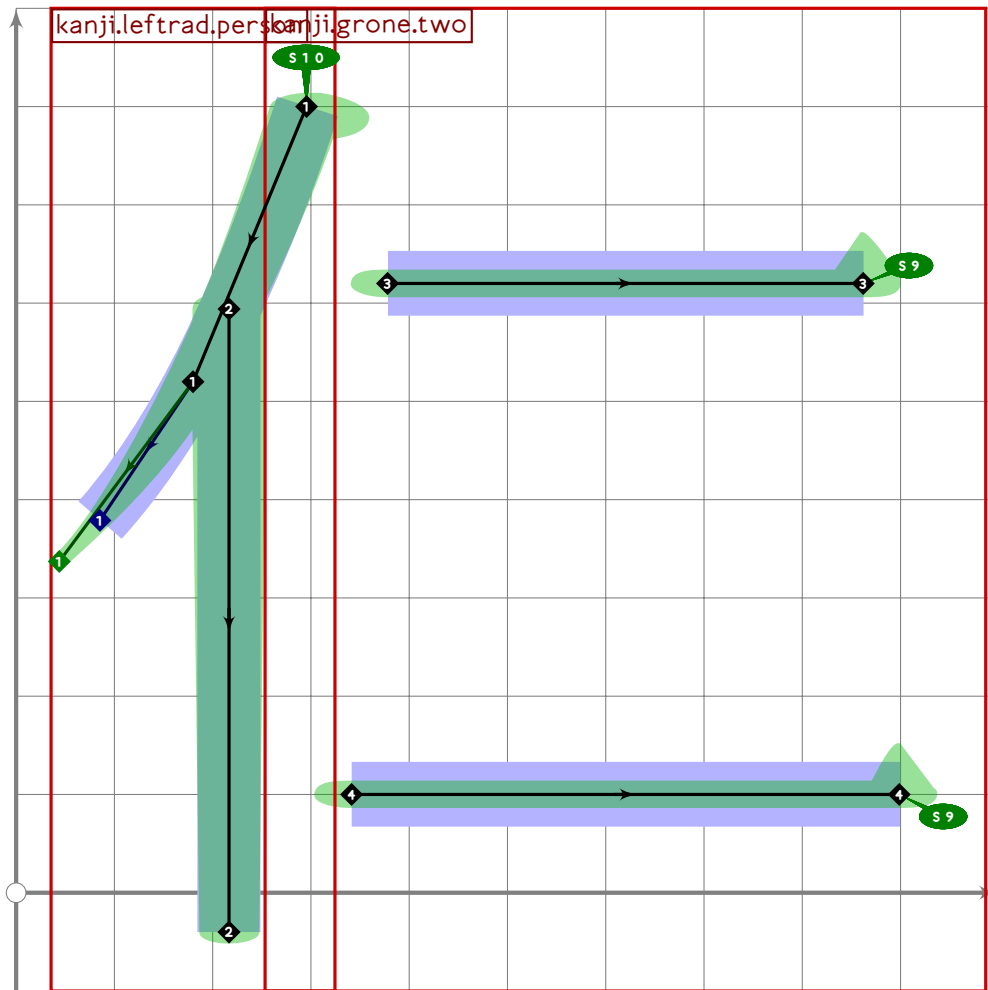

```



```

49
50 vardef tsu_curve.kanji.grtwo.myriad =
51   add_proof_box("kanji.grtwo.myriad");
52   tsu_curve.kanji.grone.power;
53   bo_serif[sp-2][0]:=whatever;
54   bp[sp-1]:=bp[sp-1] yscaled (500/600) shifted (-50,0);
55   bp[sp-1]:=subpath (xpart (bp[sp-1] intersectiontimes bp[sp-2]),infinity)
56     of bp[sp-1];
57   bp[sp]:=(100,780)-(900,780);
58   bq[sp]:=(1.6,1.6)-(1.6,1.6);
59   bo_serif[sp][1]:=9;
60   sp:=sp+1;
61 enddef;
62
63

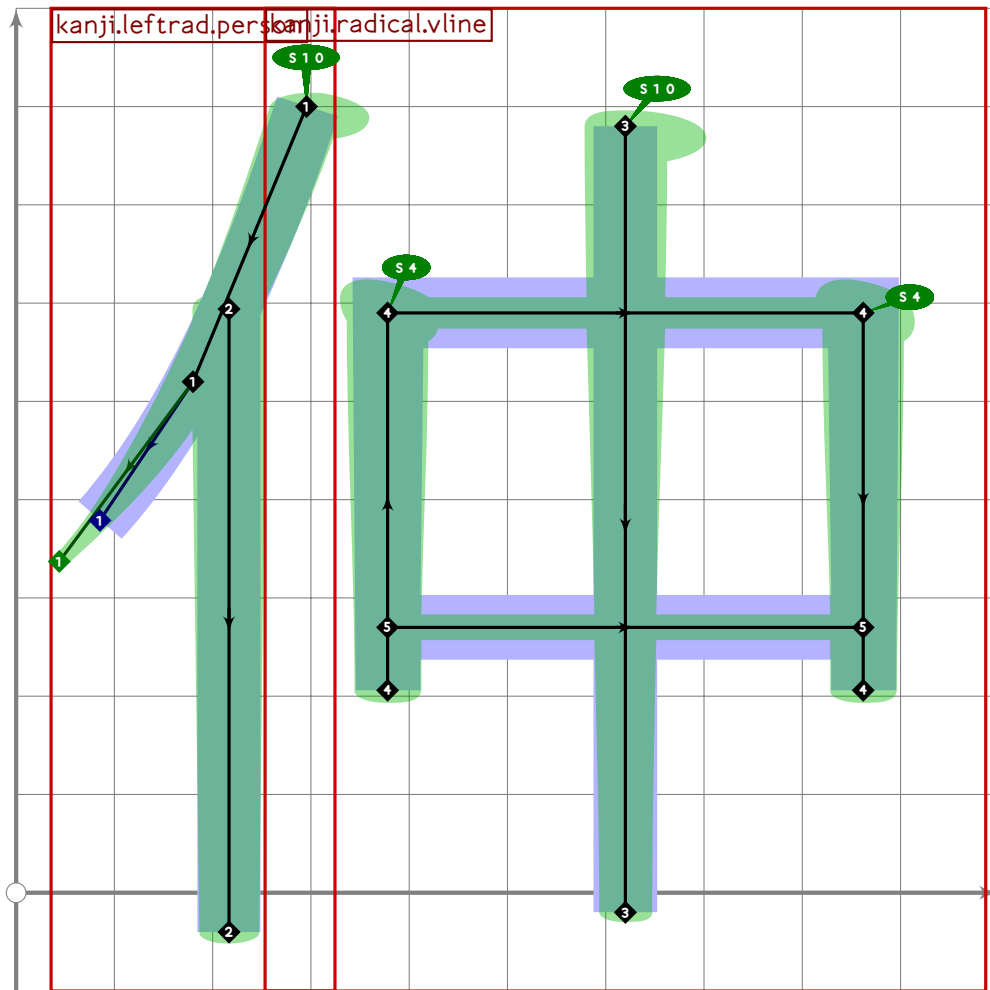
```



```

64
65 vardef tsu_curve.kanji.grsix.benevolence =
66   add_proof_box("kanji.grsix.benevolence");
67   build_kanji.lr(300,20)
68     (tsu_curve.kanji.leftrad.person)
69     (tsu_curve.kanji.grone.two);
70 enddef;
71
72

```

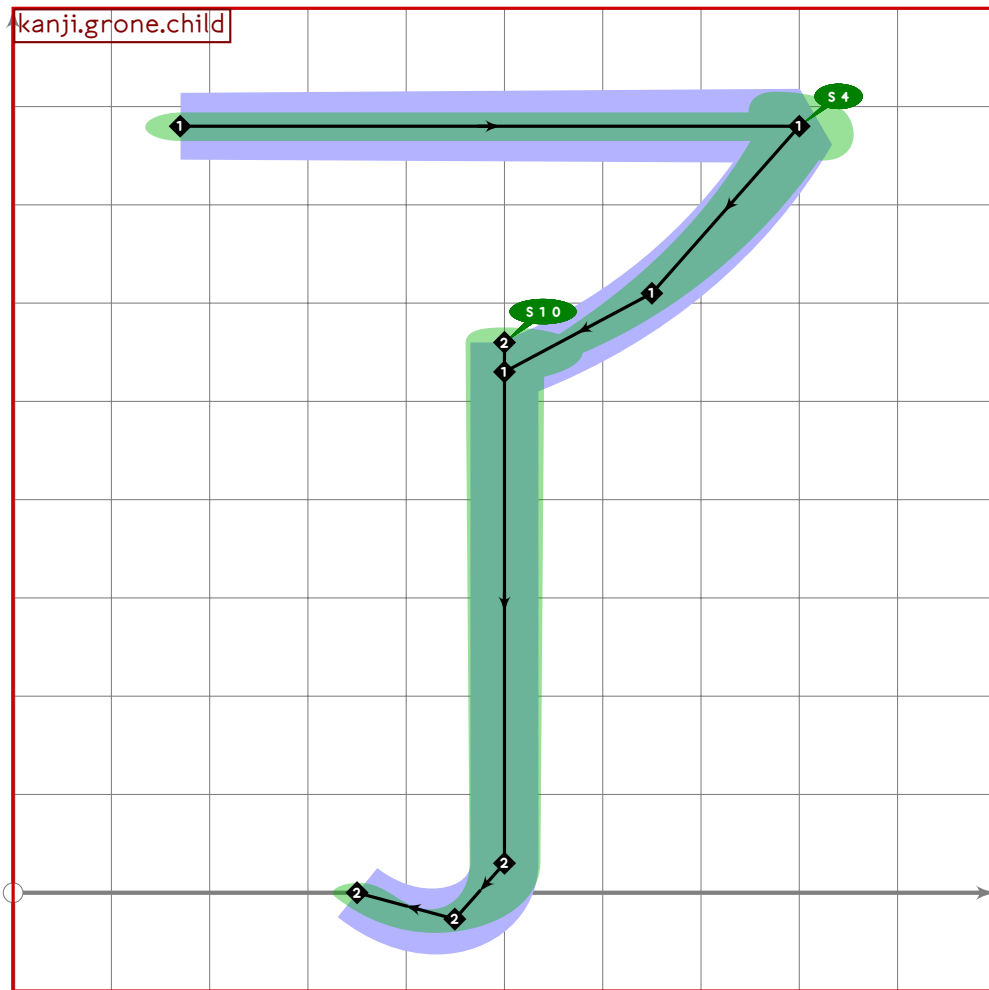


```

73
74 vardef tsu_curve.kanji.grfour.go_between =
75   add_proof_box("kanji.grfour.go_between");
76   build_kanji.lr(300,20)
77     (tsu_curve.kanji.leftrad.person)
78     (tsu_curve.kanji.grone.middle);
79 enddef;
80
81

```

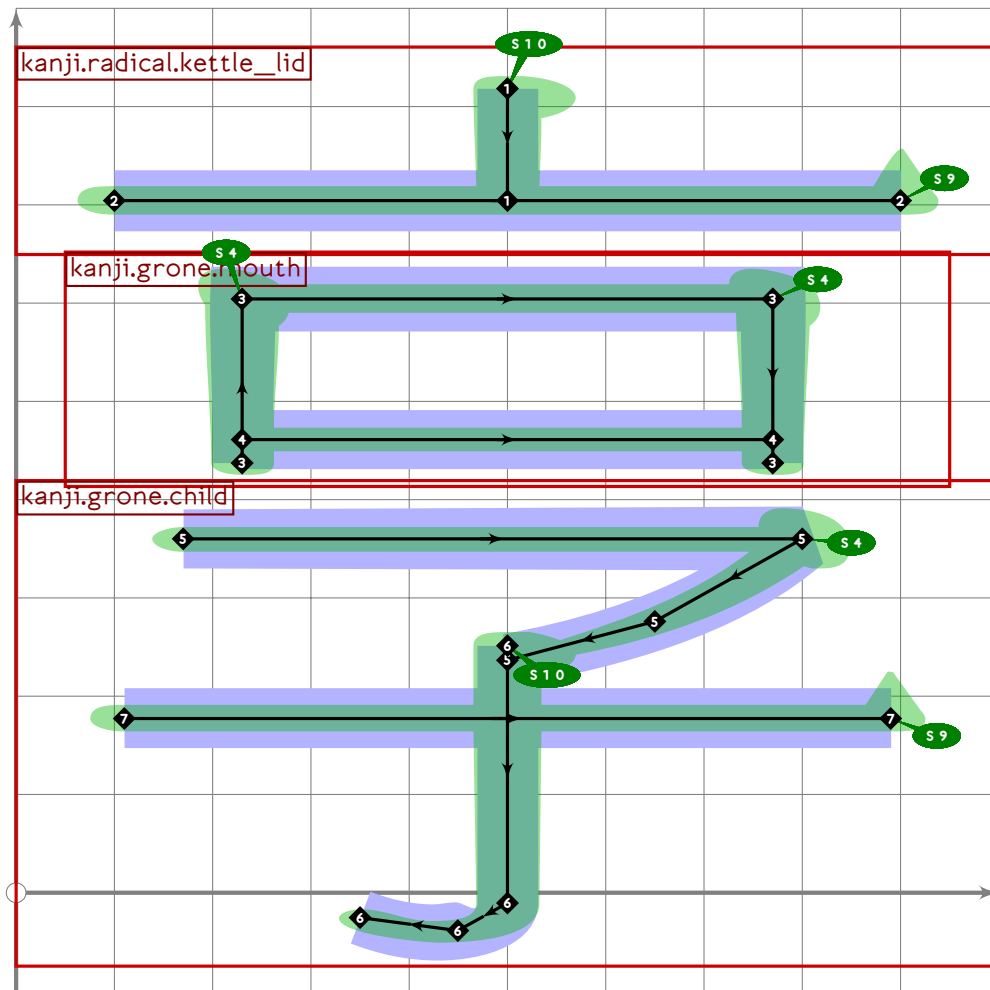




```

82
83 vardef tsu_curve.kanji.greight.completion =
84   add_proof_box("kanji.greight.completion");
85   tsu_curve.kanji.grone.child;
86   sp:=sp-1;
87   bo_serif[sp][1]:=whatever;
88 enddef;

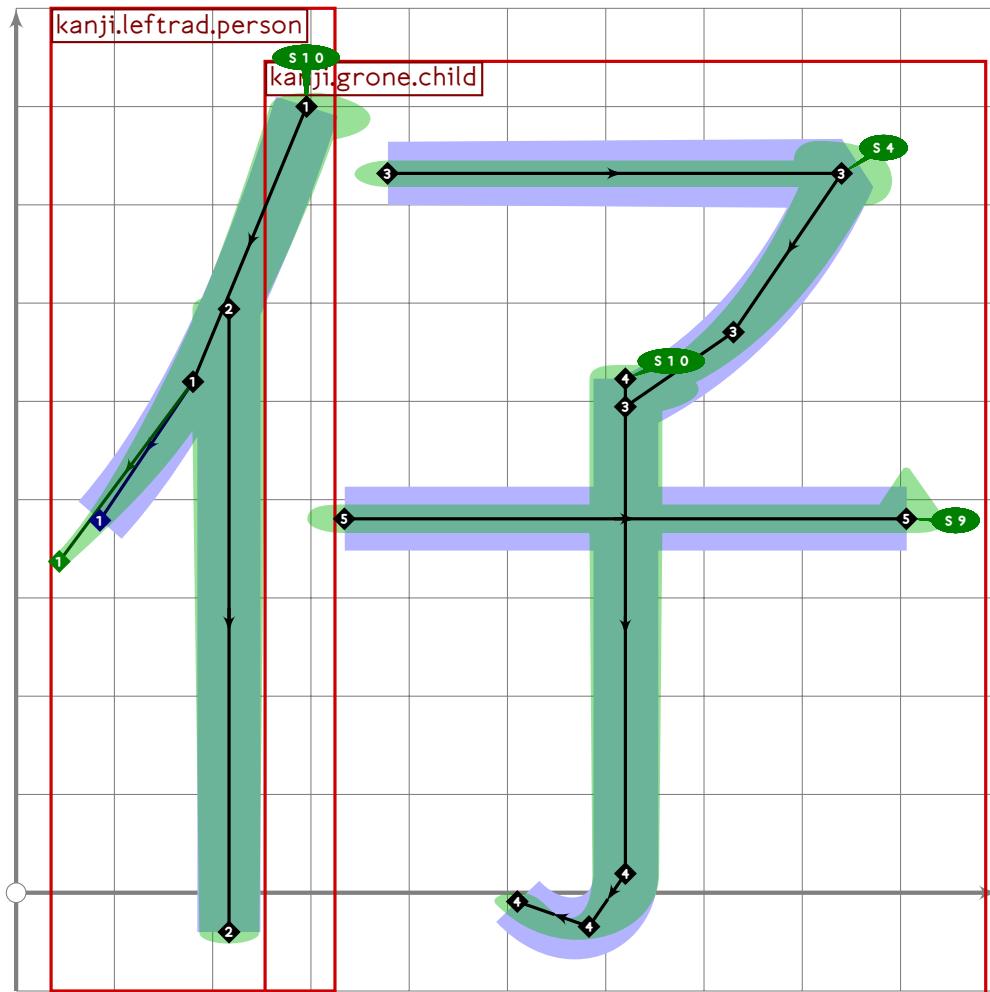
```



```

89
90 vardef tsu_curve.kanji.greight.undergo =
91   add_proof_box("kanji.greight.undergo");
92   build_kanji.level(build_kanji.tb(650,-20)
93     (tsu_curve.kanji.radical.kettle_lid)
94     (build_kanji.tb(550,-40)
95       (build_kanji.sscale(xscaled 0.9)(tsu_curve.kanji.grone.mouth))
96       (tsu_curve.kanji.grone.child)));
97 enddef;
98
99

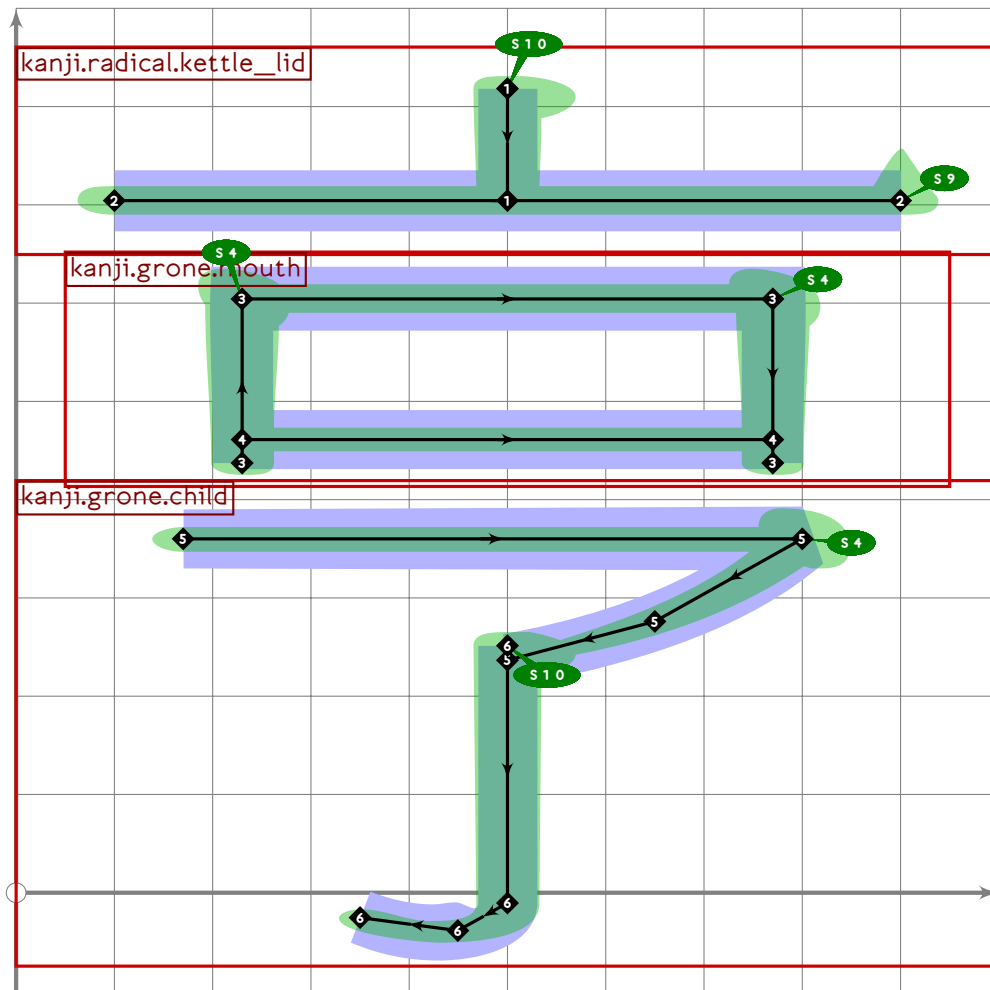
```



```

100
101 vardef tsu_curve.kanji.grnine.offspring =
102   add_proof_box("kanji.grnine.offspring");
103   build_kanji.level(build_kanji.lr(300,20)
104     (tsu_curve.kanji.leftrad.person)
105     (build_kanji.sscale(shifted (0,-30) yscaled 0.95)
106       (tsu_curve.kanji.grone.child)));
107 enddef;

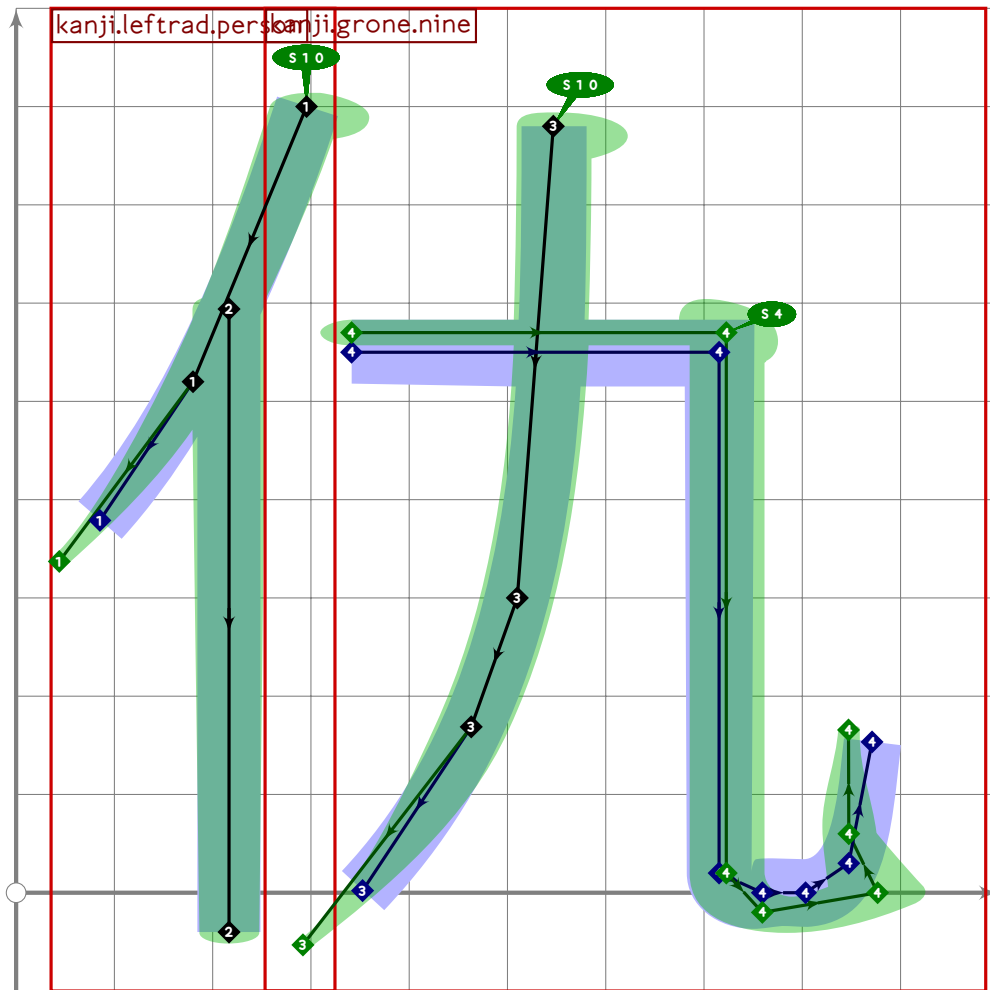
```



```

108
109 vardef tsu_curve.kanji.gnone.undergo =
110   add_proof_box("kanji.gnone.undergo");
111   build_kanji.level(build_kanji.tb(650,-20)
112     (tsu_curve.kanji.radical.kettle_lid)
113     (build_kanji.tb(550,-40)
114       (build_kanji.sscale(xscaled 0.9)(tsu_curve.kanji.gnone.mouth))
115       (tsu_curve.kanji.greight.completion)));
116 enddef;
117
118

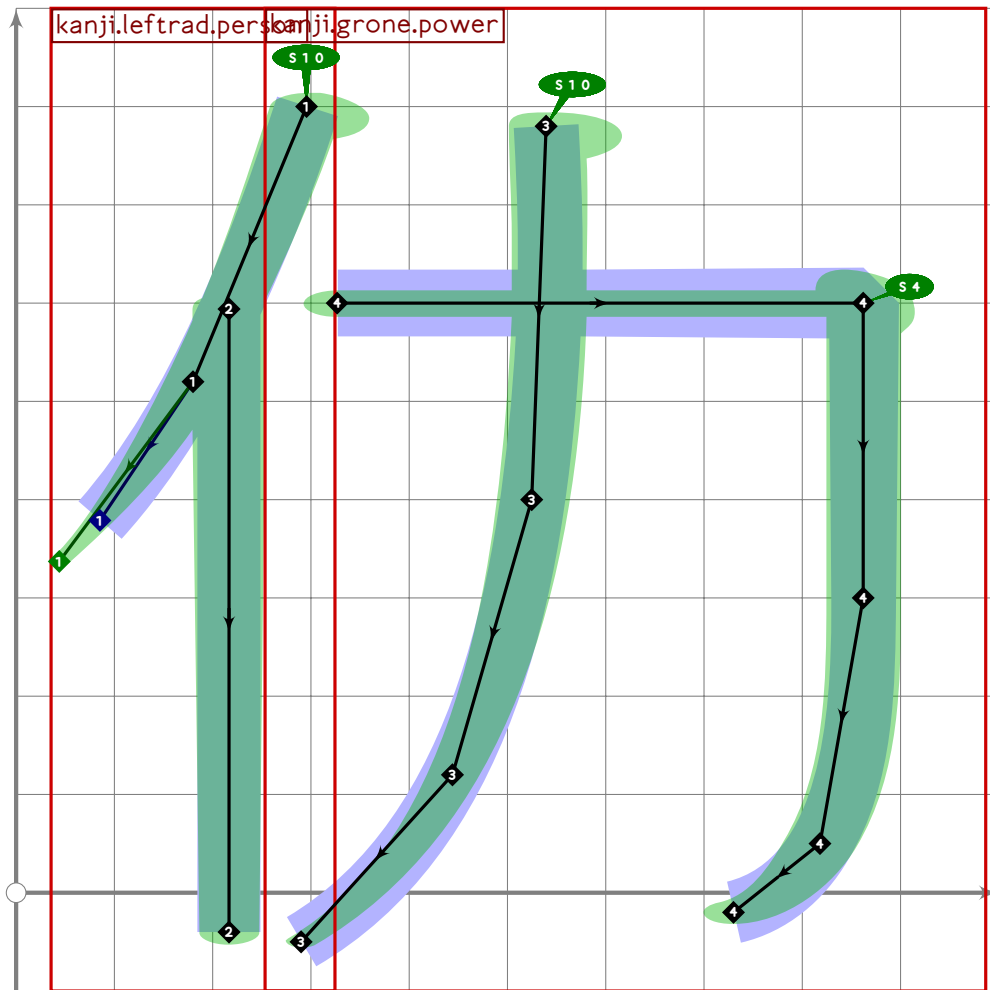
```



```

119
120 vardef tsu_curve.kanji.reference.enemy =
121   add_proof_box("kanji.reference.enemy");
122   build_kanji.lr(300,20)
123     (tsu_curve.kanji.leftrad.person)
124     (tsu_curve.kanji.grone.nine);
125 enddef;
126
127

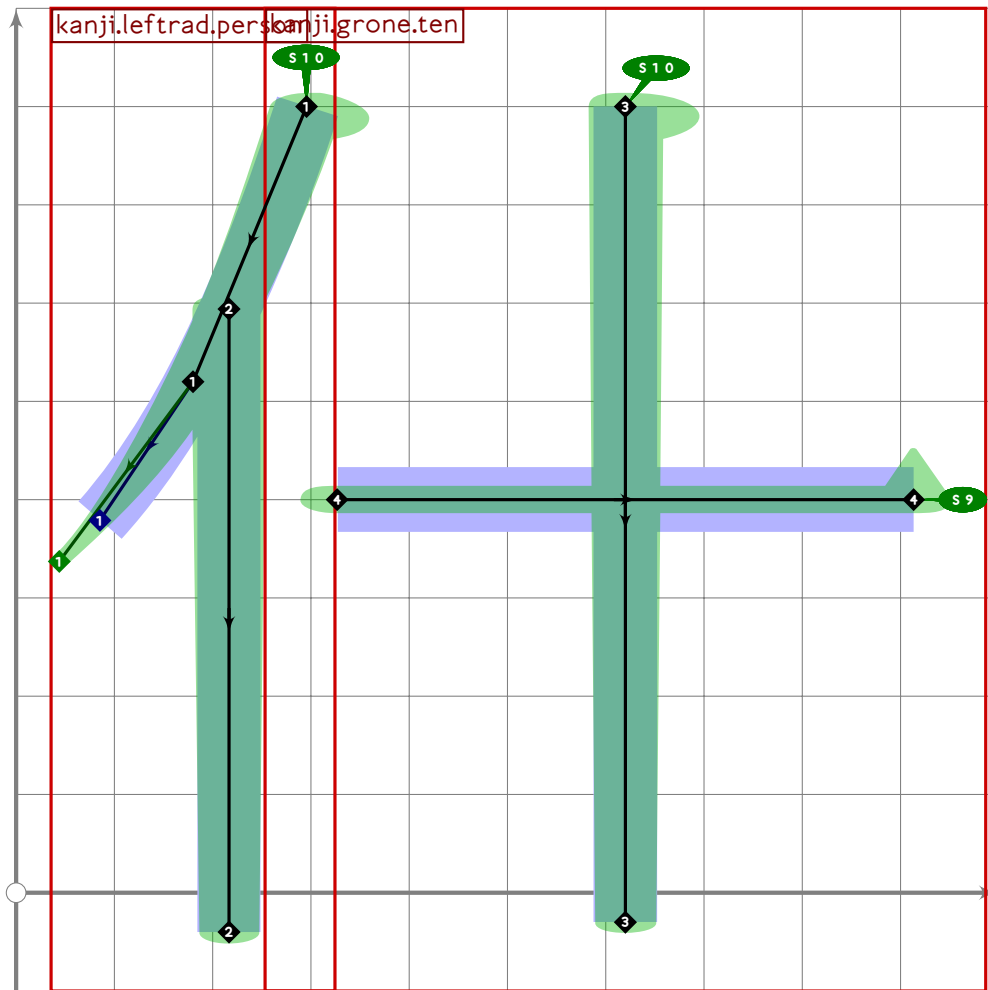
```



```

128
129 vardef tsu_curve.kanji.rare.surplus =
130   add_proof_box("kanji.rare.surplus");
131   build_kanji.lr(300,20)
132     (tsu_curve.kanji.leftrad.person)
133     (tsu_curve.kanji.grone.power);
134 enddef;

```



```

135
136 vardef tsu_curve.kanji.rare.utensil =
137   add_proof_box("kanji.rare.utensil");
138   build_kanji.lr(300,20)
139     (tsu_curve.kanji.leftrad.person)
140     (tsu_curve.kanji.grone.ten);
141 enddef;

```

```

142
143
144

```

```

145 % ichi/hito "one"
146 begintsuglyph("uni4E00",0); [see page 351]
147   tsu_curve.kanji.grone.one;
148   tsu_render;
149 endsuglyph;

```

```

150
151 % chuu/hinoto: "street"; "counter for leaves or guns"; "fourth zodiac sign"
152 % Uwaa ! Skala-sensei, I don't *want* to stick a thumbtack in my wrist!
153 begintsuglyph("uni4E01",1); [see page 405]
154   tsu_curve.kanji.grthree.thumbtack;
155   tsu_render;

```

```

156 endtsuglyph;
157
158 % nana/shichi "seven"
159 begintsuglyph("uni4E03",3); [see page 358]
160 tsu_curve.kanji.grone.seven;
161 tsu_render;
162 endtsuglyph;
163
164 % man/yorozu "myriad"
165 begintsuglyph("uni4E07",7); [see page 1142]
166 tsu_curve.kanji.grtwo.myriad;
167 tsu_render;
168 endtsuglyph;
169
170 % san/mi "three"
171 begintsuglyph("uni4E09",9); [see page 365]
172 tsu_curve.kanji.grone.three;
173 tsu_render;
174 endtsuglyph;
175
176 % ue/jyou "up"
177 begintsuglyph("uni4E0A",10); [see page 367]
178 tsu_curve.kanji.grone.up;
179 tsu_render;
180 endtsuglyph;
181
182 % shita/ka "down"
183 begintsuglyph("uni4E0B",11); [see page 329]
184 tsu_curve.kanji.grone.down;
185 tsu_render;
186 endtsuglyph;
187
188 % naka/chuu "middle"
189 begintsuglyph("uni4E2D",45); [see page 345]
190 tsu_curve.kanji.grone.middle;
191 tsu_render;
192 endtsuglyph;
193
194 % maru "circle"
195 begintsuglyph("uni4E38",56); [see page 377]
196 tsu_curve.kanji.grtwo.circle;
197 tsu_render;
198 endtsuglyph;
199
200 % sa/naga "notwithstanding" (needed for tsuku "make")
201 begintsuglyph("uni4E4D",77); [see page 424]
202 tsu_curve.kanji.rare.notwithstanding;
203 tsu_render;

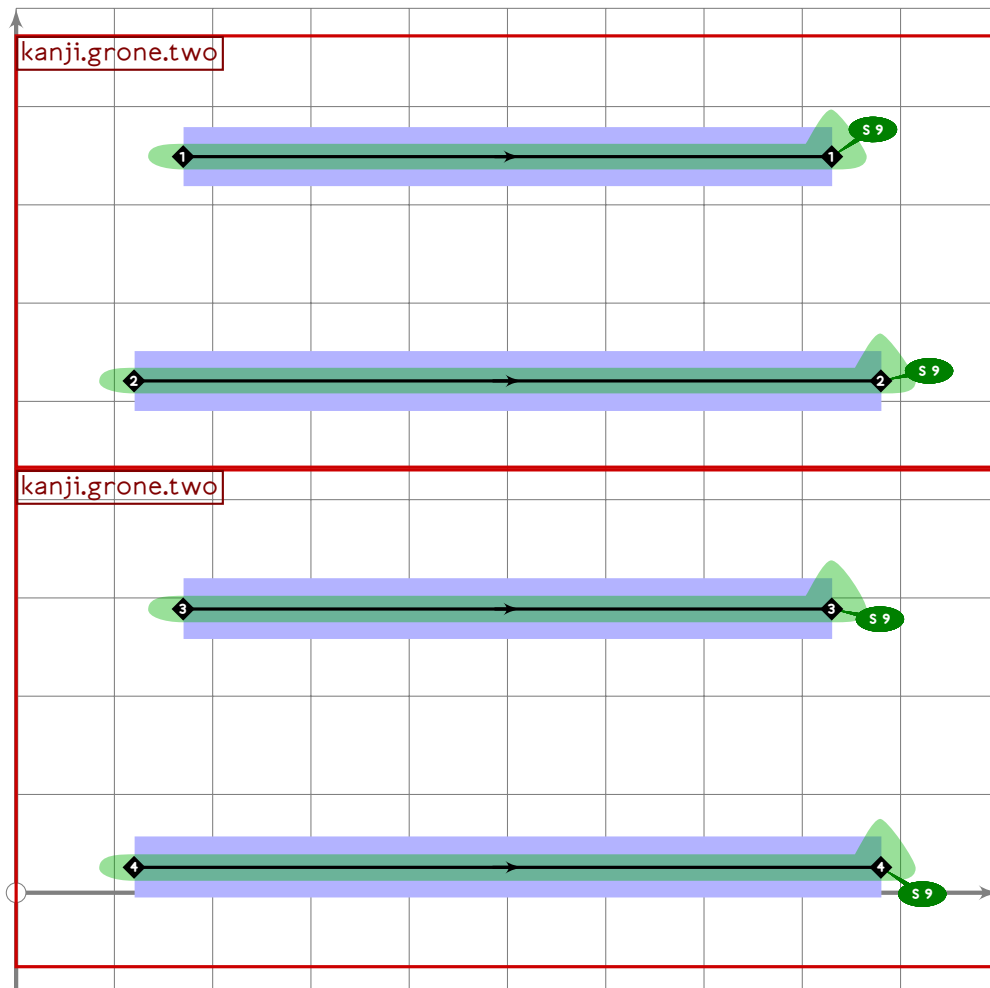
```



```

204 endtsuglyph;
205
206 % kyuu/kokono "nine"
207 begintsuglyph("uni4E5D";93); [see page 350]
208 tsu_curve.kanji.grone.nine;
209 tsu_render;
210 endtsuglyph;
211
212 % ryou "completion"
213 begintsuglyph("uni4E86";134); [see page 1145]
214 tsu_curve.kanji.greight.completion;
215 tsu_render;
216 endtsuglyph;
217
218 % ji/koto "thing"
219 begintsuglyph("uni4E8B";139); [see page 404]
220 tsu_curve.kanji.grthree.thing;
221 tsu_render;
222 endtsuglyph;
223
224 % ni/futa "two"
225 begintsuglyph("uni4E8C";140); [see page 366]
226 tsu_curve.kanji.grone.two;
227 tsu_render;
228 endtsuglyph;
229
230 % un/i "say"
231 begintsuglyph("uni4E91";145); [see page 419]
232 tsu_curve.kanji.grnine.declaim;
233 tsu_render;
234 endtsuglyph;
235
236 % go/itsu "five"
237 begintsuglyph("uni4E94";148); [see page 337]
238 tsu_curve.kanji.grone.five;
239 tsu_render;
240 endtsuglyph;
241

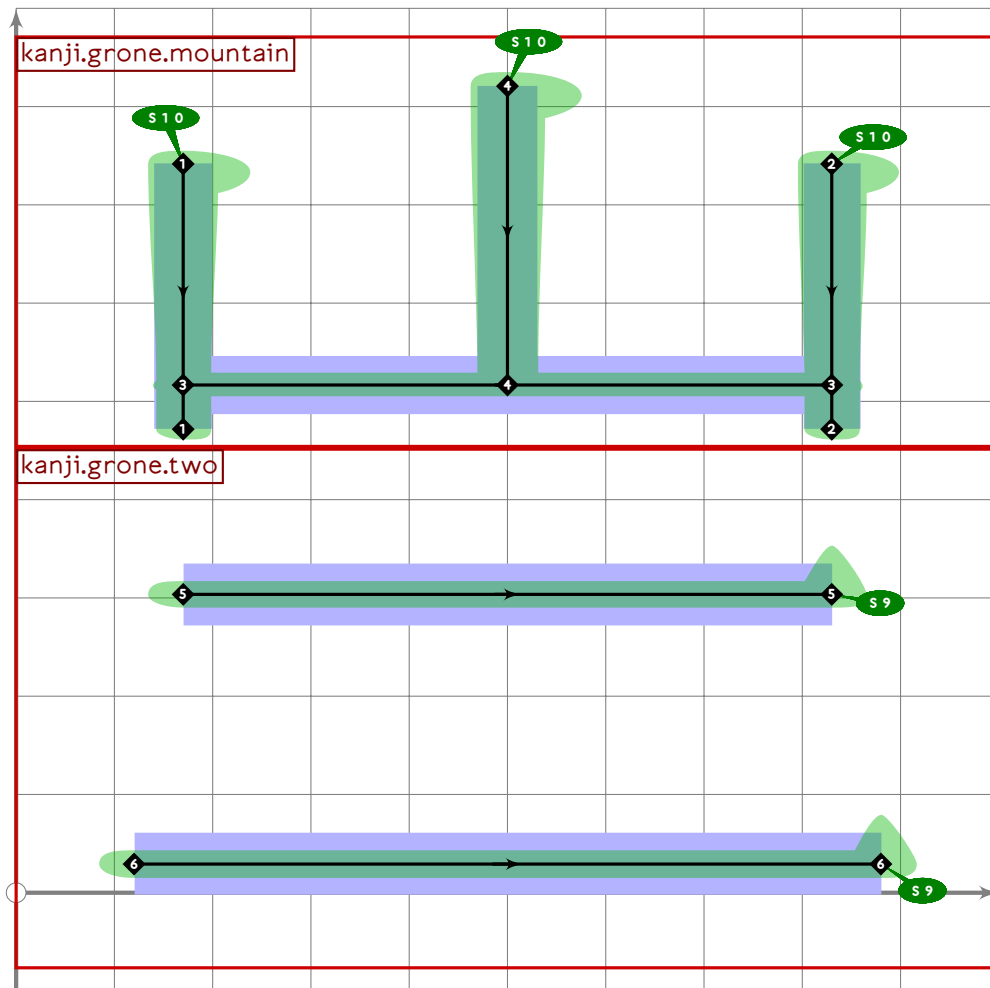
```



```

242 % extra
243 begint Suglyph("uni4E96",150);
244 build_kanji.tb(430,-50)
245   (tsu_curve.kanji.grone.two)
246   (tsu_curve.kanji.grone.two);
247   tsu_render;
248   endtsuglyph;
249

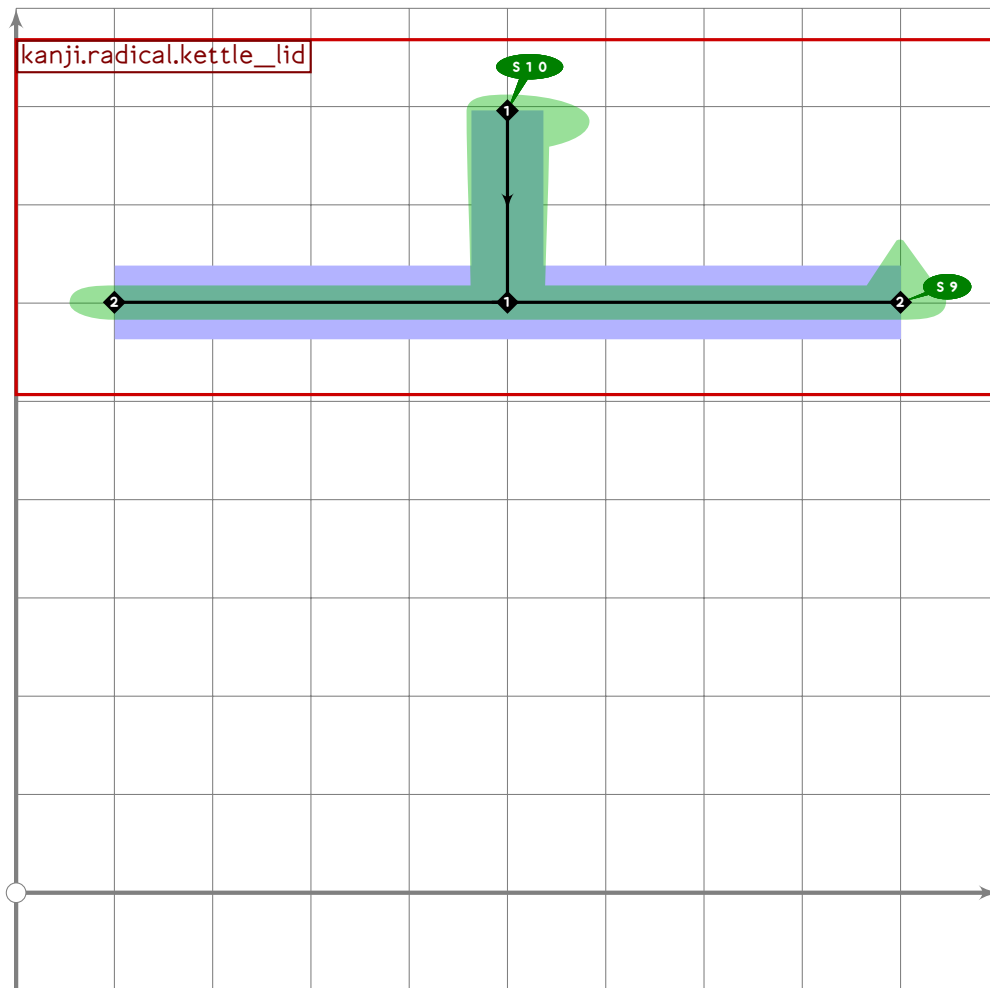
```



```

250 % extra
251 begint Suglyph("uni4E97";151);
252 build_kanji.tb(450,-50)
253 (tsu_curve.kanji.grone.mountain)
254 (tsu_curve.kanji.grone.two);
255 tsu_render;
256 endtsuglyph;
257

```



```

258 % "kettle lid radical"
259 begintsuglyph("uni4EA0",160);
260 build_kanji.tb(500,-50)
261   (tsu_curve.kanji.radical.kettle_lid)
262   ();
263   tsu_render;
264 endtsuglyph;
265
266 % kou/maji "mix"
267 begintsuglyph("uni4EA4",164);
268   tsu_curve.kanji.grtwo.mix;
269   tsu_render;
270 endtsuglyph;
271
272 % kou "undergo" (rarer form)
273 begintsuglyph("uni4EA8",168);
274   tsu_curve.kanji.grnine.undergo;
275   tsu_render;
276 endtsuglyph;
277
278 % kyou "undergo" (more common form)

```

[see page 388]

[see page 1148]

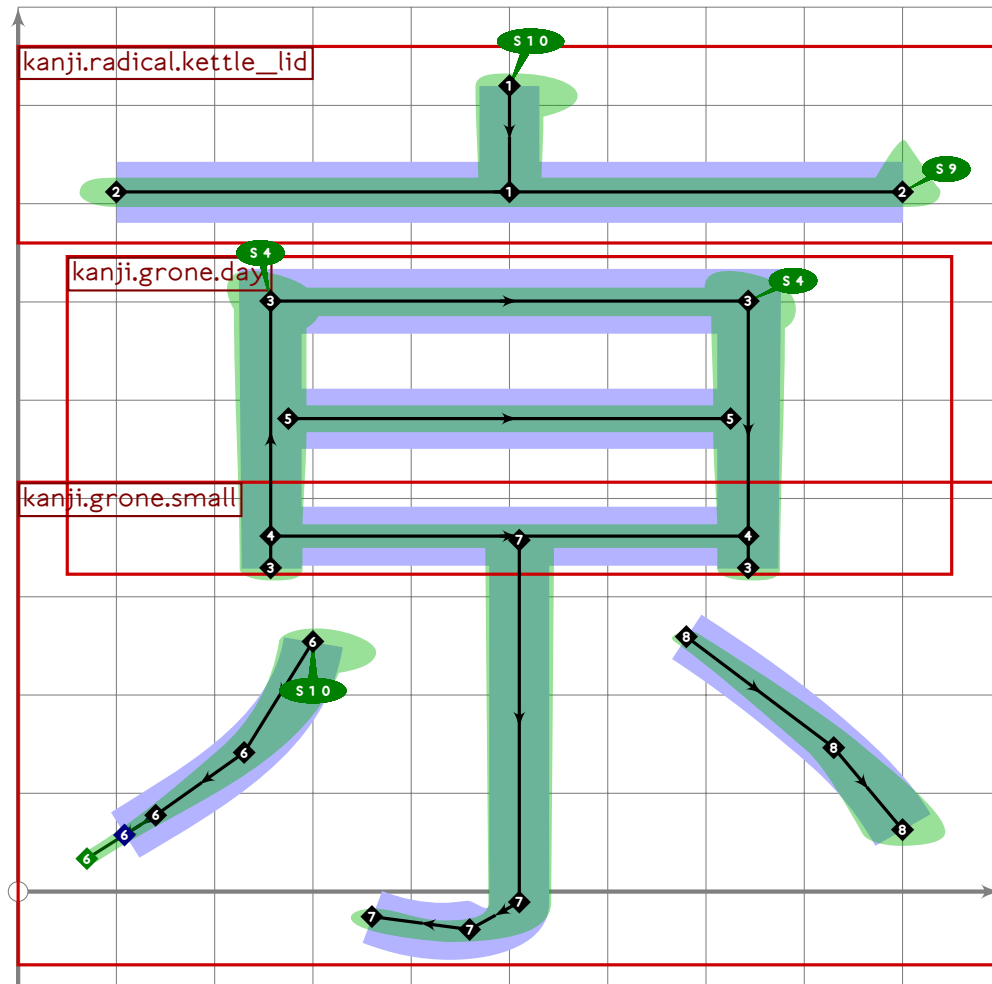
```

279 begint Suglyph("uni4EAB";171);
280 tsu_curve.kanji.greight.undergo;
281 tsu_render;
282 endtsuglyph;
283
284 % kyou "capital"
285 begint Suglyph("uni4EAC";172);
286 tsu_curve.kanji.grtwo.capital;
287 tsu_render;
288 endtsuglyph;
289

```

[see page 1146]

[see page 375]



```

290 % extra "capital"
291 begint Suglyph("uni4EB0";176);
292 build_kanji.level(build_kanji.tb(650,-40)
293   (tsu_curve.kanji.radical.kettle_lid)
294   (build_kanji.tb(500,70)
295     (build_kanji.sscale(xscaled 0.9)(tsu_curve.kanji.grone.day))
296     (tsu_curve.kanji.grone.small)));
297 bo_serif[sp-2][0]:=whatever;
298 tsu_render;
299 endtsuglyph;

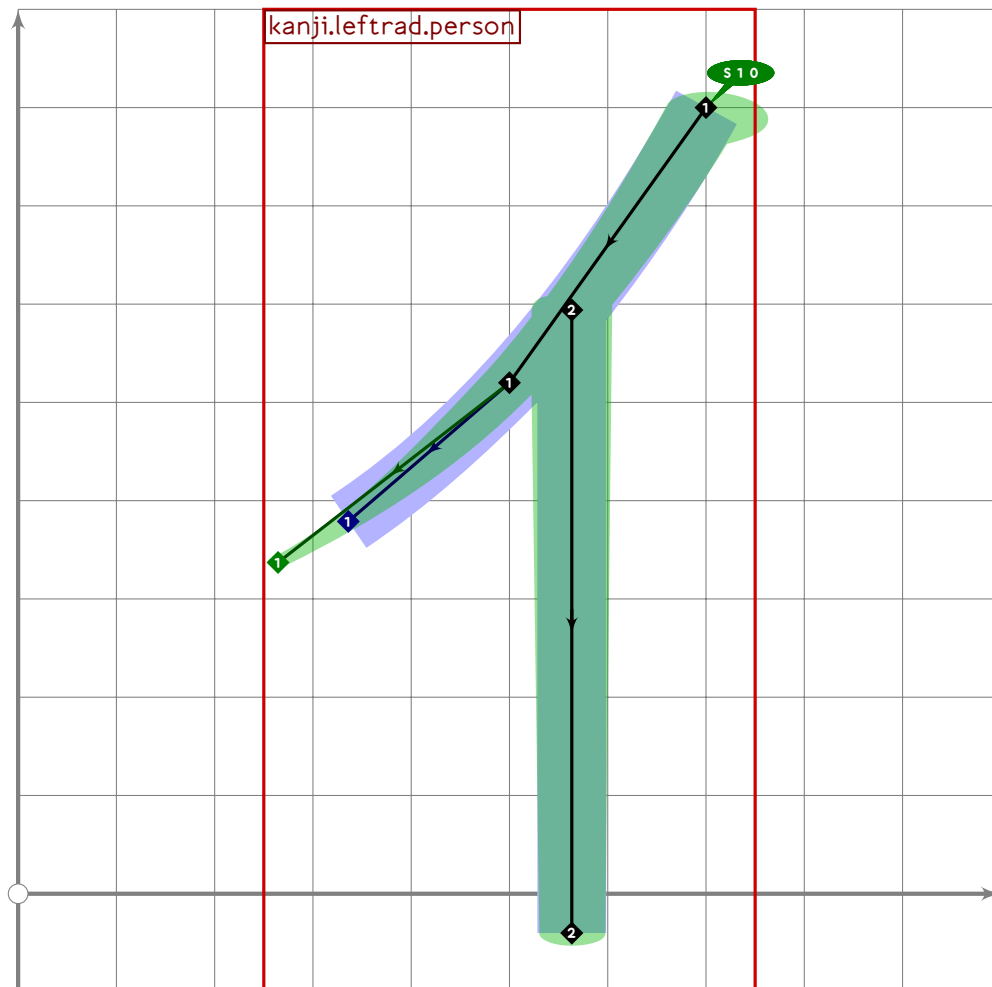
```

```

300
301 % hito/jin "person"
302 begintsuglyph("uni4EBA";186);
303   tsu_curve.kanji.grone.person;
304   tsu_render;
305 endsuglyph;
306

```

[see page 354]



```

307 % hito/jin "person" as radical
308 begintsuglyph("uni4EBB";187);
309   build_kanji.sscale(xscaled 0.5)(tsu_curve.kanji.leftrad.person);
310   tsu_render;
311 endsuglyph;
312

```

```

313 % juu "utensil"
314 begintsuglyph("uni4EC0";192);
315   tsu_curve.kanji.rare.utensil;
316   tsu_render;
317 endsuglyph;
318

```

[see page 1151]

```

319 % jin "benevolence"
320 begintsuglyph("uni4EC1";193);

```

[see page 1143]

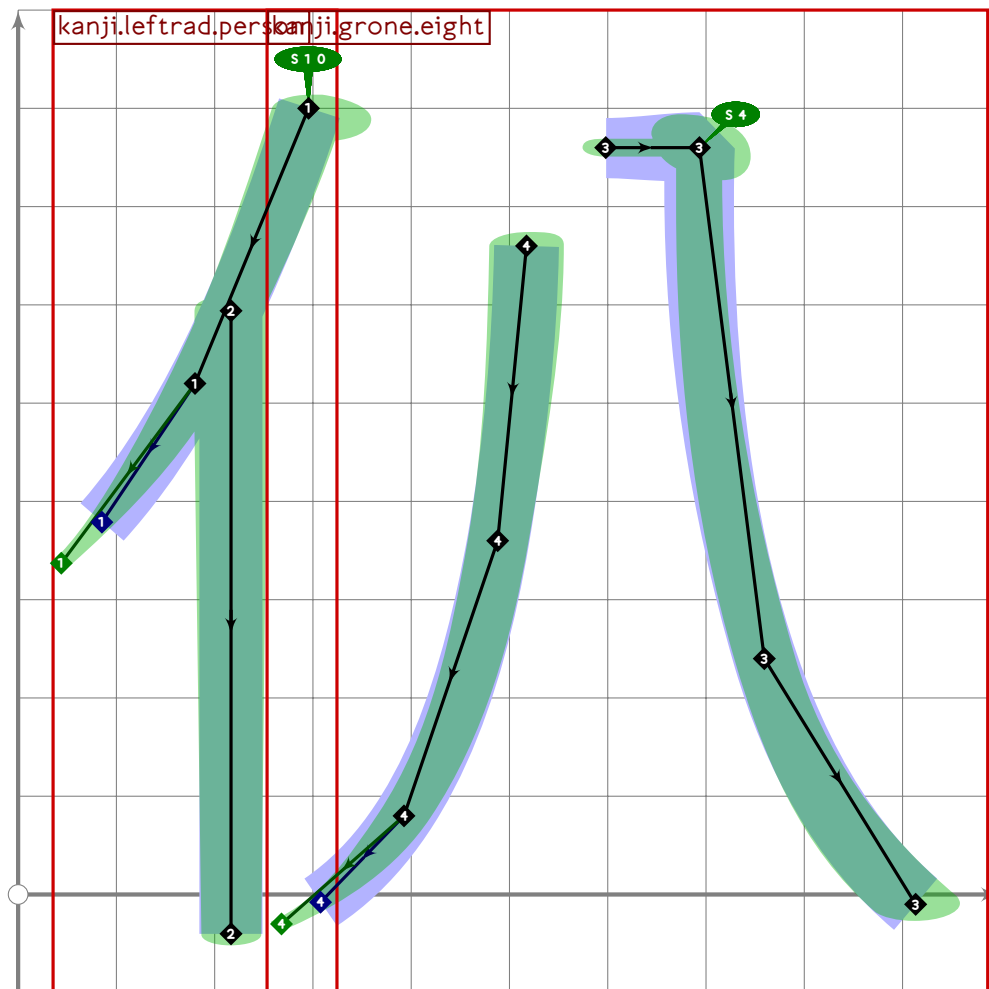
```

321 tsu_curve.kanji.grsix.benevolence;
322 tsu_render;
323 endsuglyph;
324
325 % "surplus or excess"
326 begintsuglyph("uni4EC2";194);
327 tsu_curve.kanji.rare.surplus;
328 tsu_render;
329 endsuglyph;
330
331 % ada "enemy"
332 begintsuglyph("uni4EC7";199);
333 tsu_curve.kanji.reference.enemy;
334 tsu_render;
335 endsuglyph;
336

```

[see page 1150]

[see page 1149]



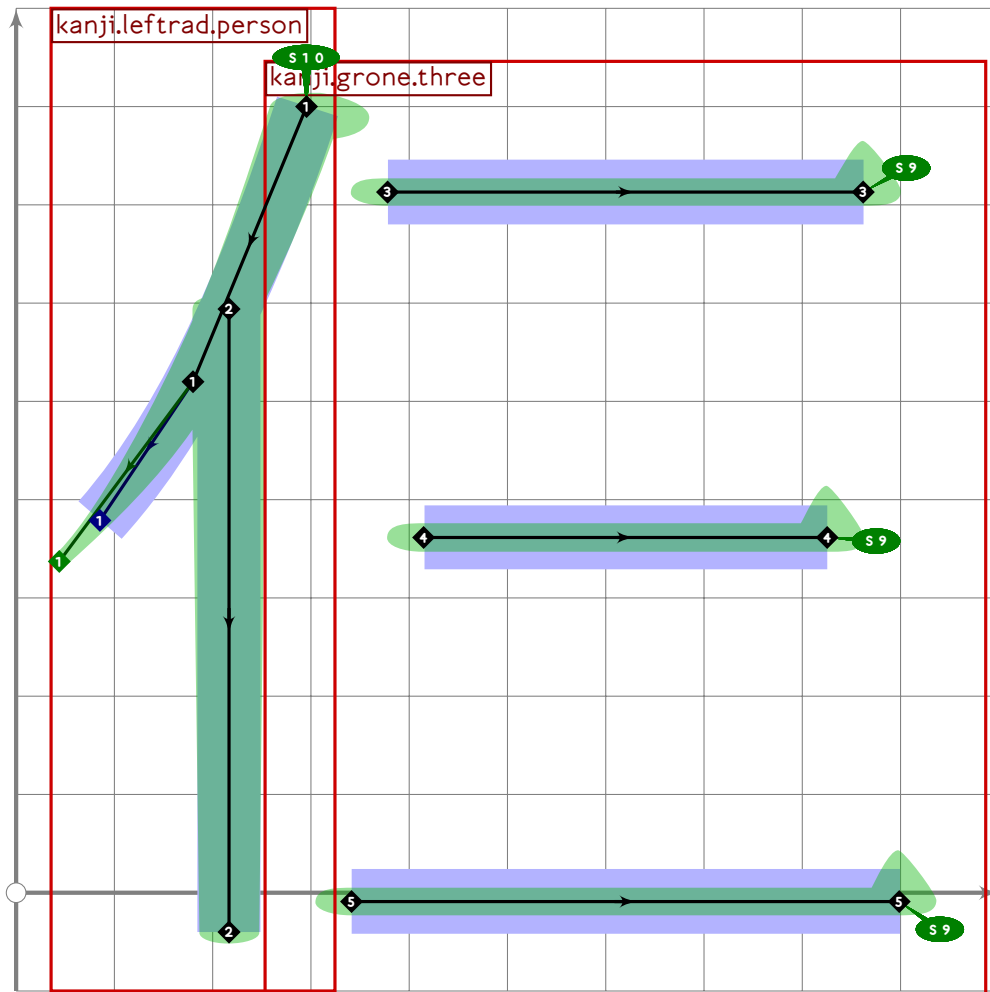
```

337 % extra
338 begintsuglyph("uni4EC8";200);
339 build_kanji.lr(300,20)
340 (tsu_curve.kanji.leftrad.person)
341 (tsu_curve.kanji.grone.eight);

```

```
342 tsu_render;
343 endtsuglyph;
344
345 % kon/ima "now"
346 begintsuglyph("uni4ECA";202); [see page 391]
347 tsu_curve.kanji.grtwo.now;
348 tsu_render;
349 endtsuglyph;
350
351 % ko "offspring"
352 begintsuglyph("uni4ED4";212); [see page 1147]
353 tsu_curve.kanji.grnine.offspring;
354 tsu_render;
355 endtsuglyph;
356
357 % fu/tsu "attach"
358 begintsuglyph("uni4ED8";216); [see page 406]
359 tsu_curve.kanji.grfour.attach;
360 tsu_render;
361 endtsuglyph;
362
363 % sen "wizard"
364 begintsuglyph("uni4ED9";217); [see page 418]
365 tsu_curve.kanji.greight.wizard;
366 tsu_render;
367 endtsuglyph;
368
```

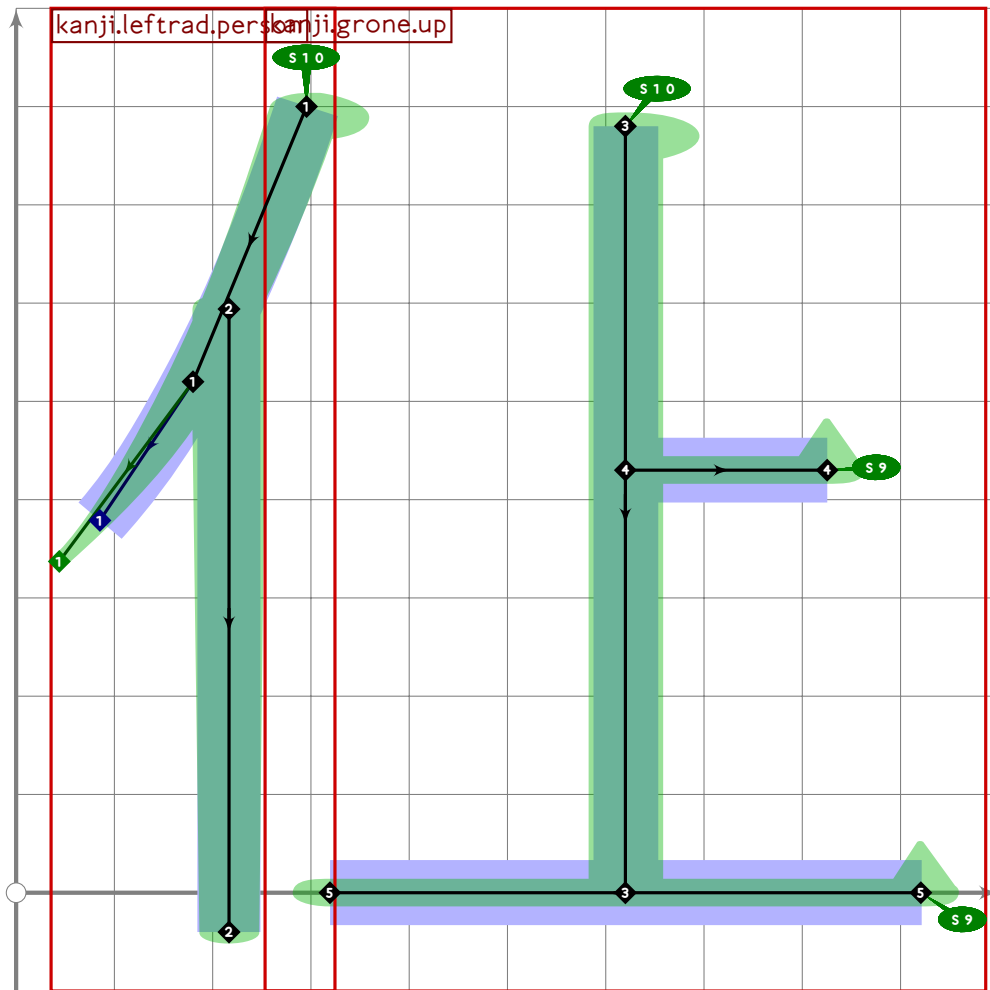




```

369 % extra
370 begint Suglyph("uni4EE8";232);
371 build_kanji.lr(300,20)
372   (tsu_curve.kanji.leftrad.person)
373   (build_kanji.sscale(shifted (0,30) yscaled 0.95)
374     (tsu_curve.kanji.grone.three));
375   tsu_render;
376 endtsuglyph;
377

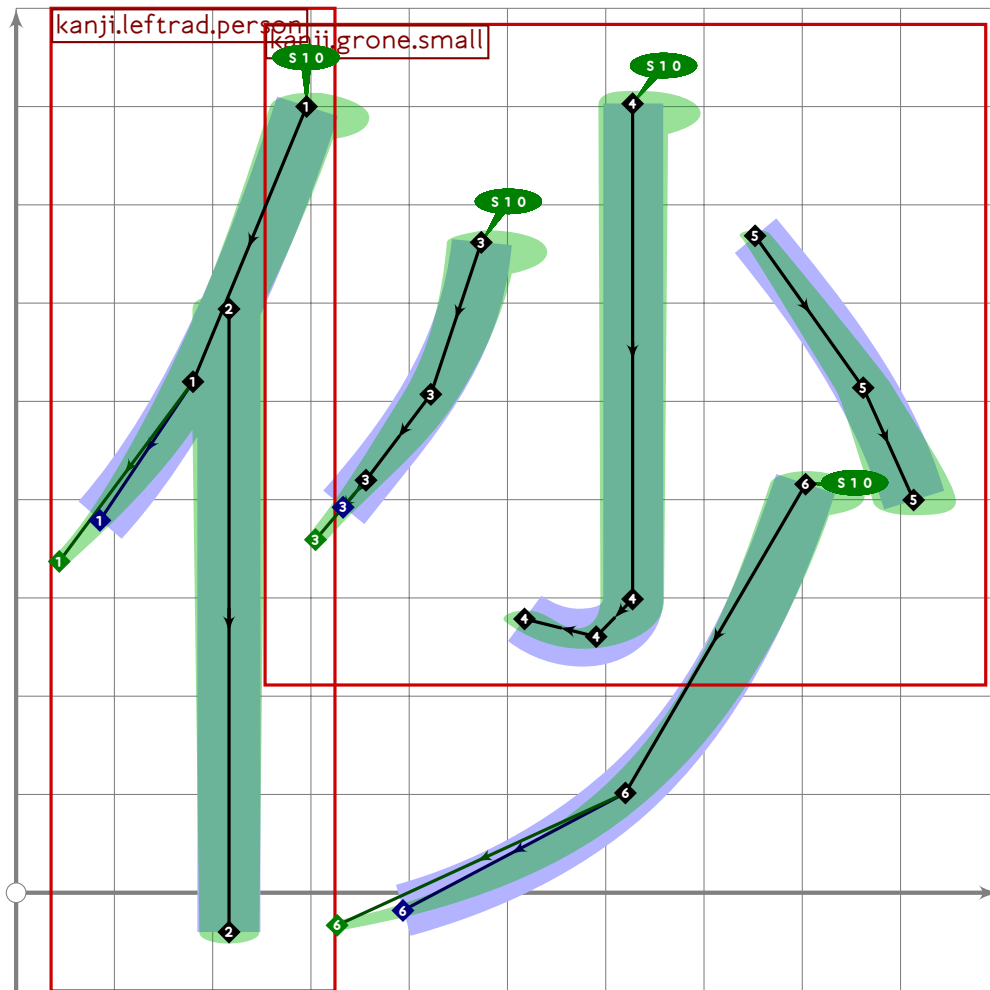
```



```

378 % extra
379 begint Suglyph("uni4EE9",233);
380 build_kanji.lr(300,20)
381   (tsu_curve.kanji.leftrad.person)
382   (tsu_curve.kanji.grone.up);
383   tsu_render;
384   endtsuglyph;
385

```

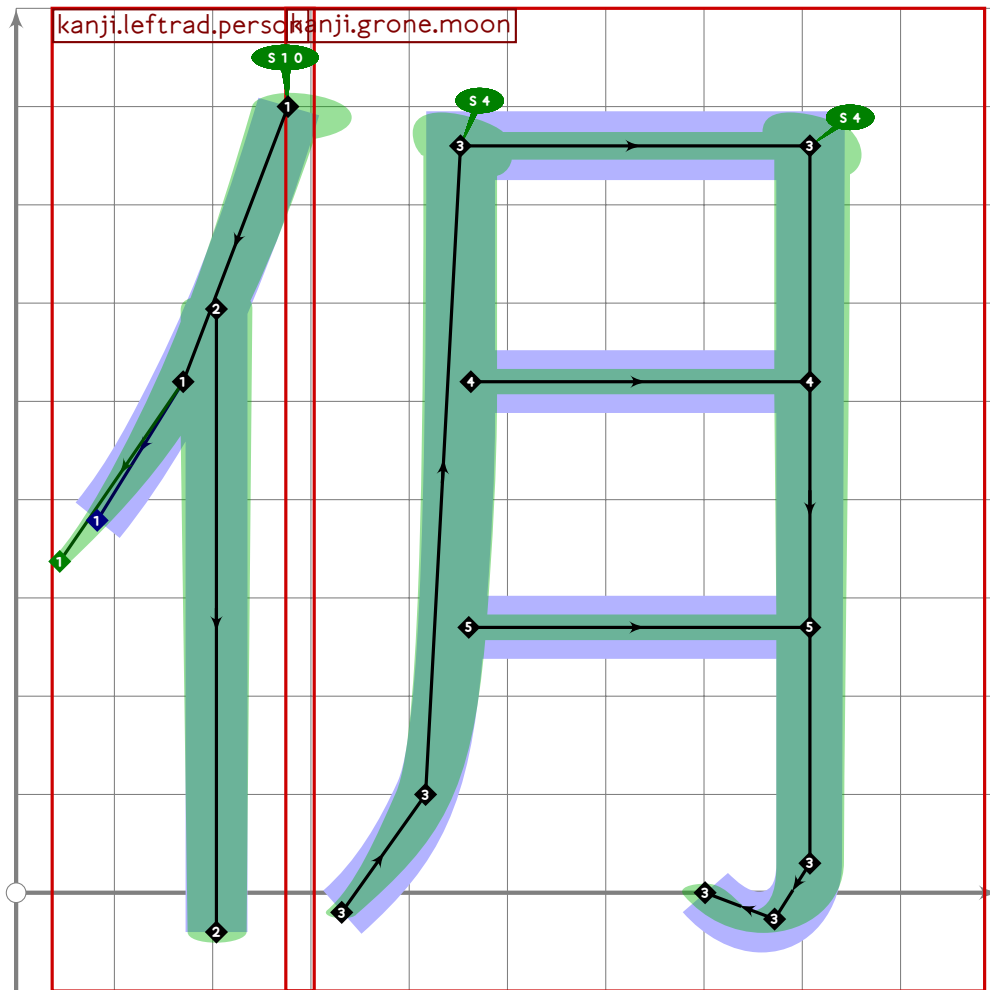


```

386 % extra
387 begintsuglyph("uni4EEF",239);
388 build_kanji.lr(300,20)
389   (tsu_curve.kanji.leftrad.person)
390   (tsu_curve.kanji.grtwo.little);
391   tsu_render;
392 endsuglyph;
393
394 % naka/chuu "go-between"
395 begintsuglyph("uni4EF2",242);
396   tsu_curve.kanji.grfour.go_between;
397   tsu_render;
398 endsuglyph;
399

```

[see page 1144]



```

400 % extra
401 begint Suglyph("uni4EF4",244);
402 build_kanji.lr(300,-20)
403   (tsu_curve.kanji.leftrad,person)
404   (tsu_curve.kanji.grone.moon);
405   tsu_render;
406 endsuglyph;
407
408 _____
409
410 endfont;
411
412 _____

```

# tsuku-4f.mp

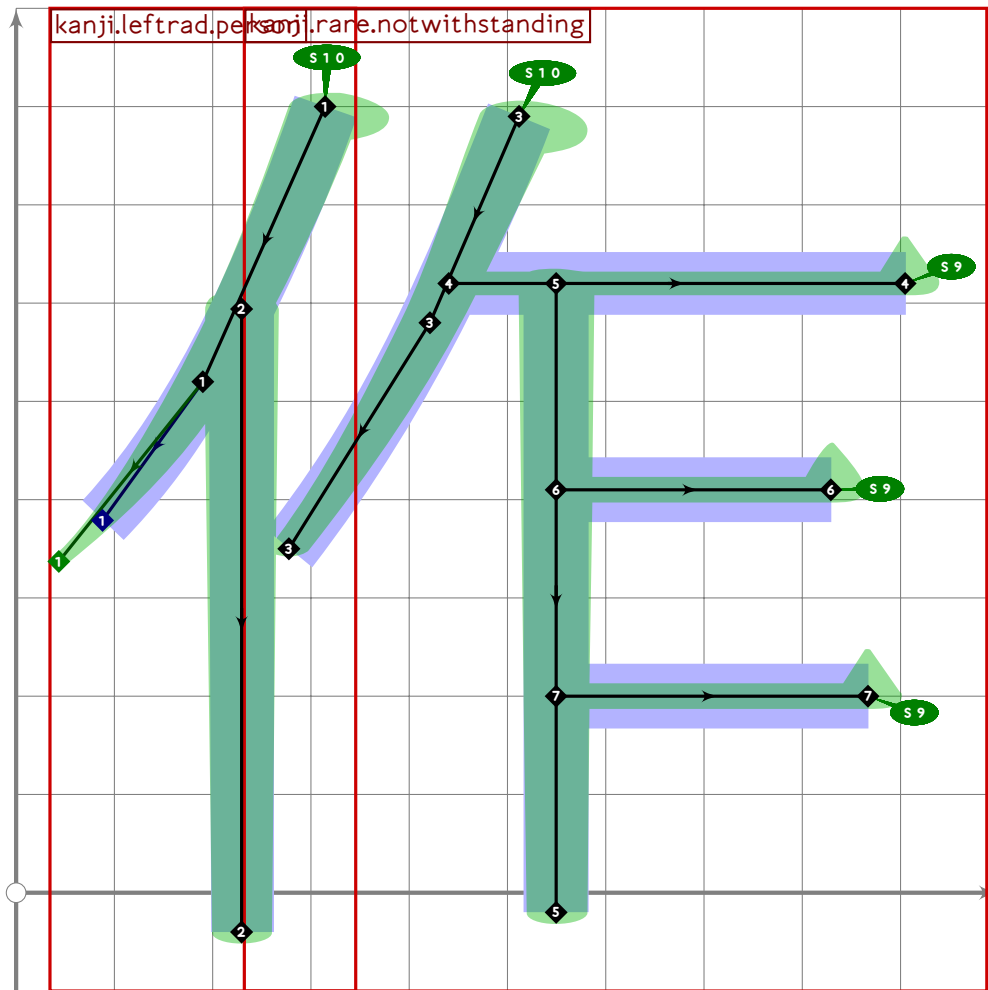
```
1 %
2 % Unicode page 4f (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradefive.mp;
38 input gradefour.mp;
39 input gradenine.mp;
40 input gradeone.mp;
41 input gradethree.mp;
42 input gradetwo.mp;
43 input leftrad.mp;
44 input radical.mp;
45 input rare.mp;
46
47 

---

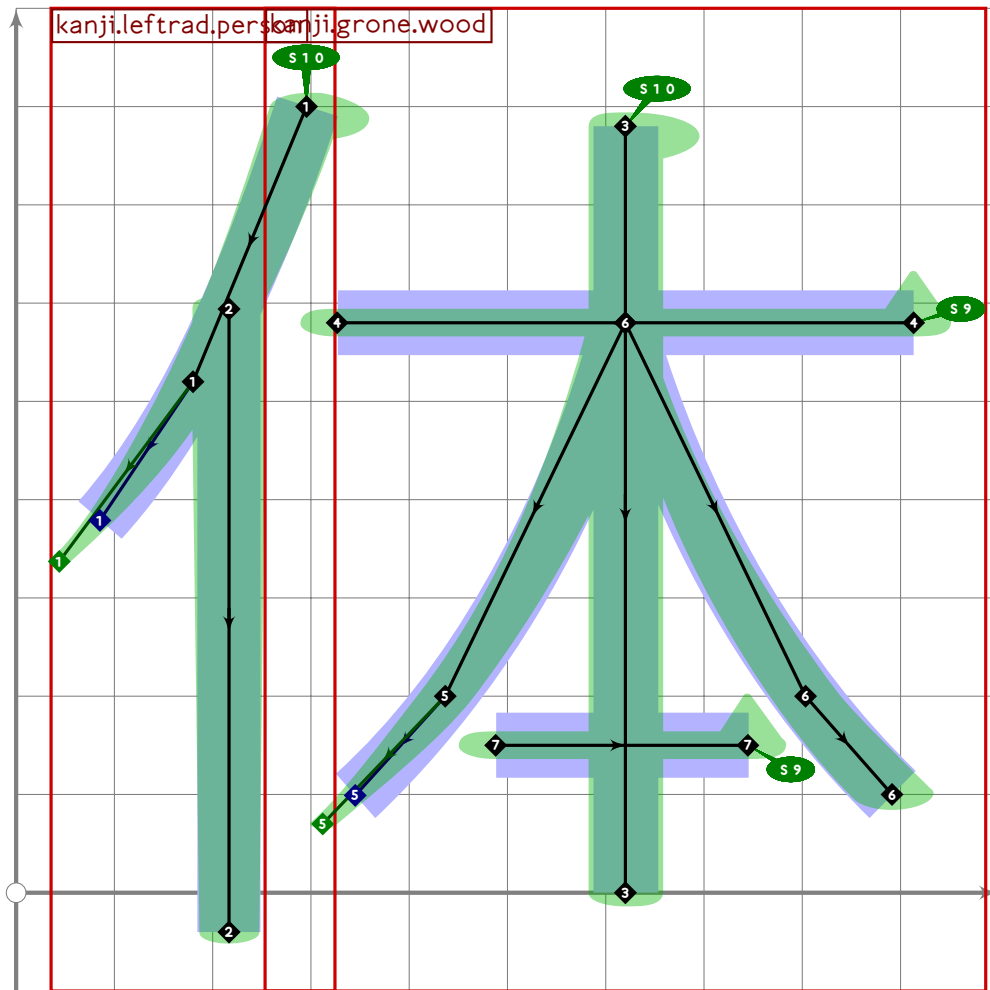

```



```

48
49 vardef tsu_curve.kanji.grtwo.make =
50   add_proof_box("kanji.grtwo.make");
51   build_kanji.lr(300,60)
52     (tsu_curve.kanji.lefrad.person)
53     (tsu_curve.kanji.rare.notwithstanding);
54 enddef;

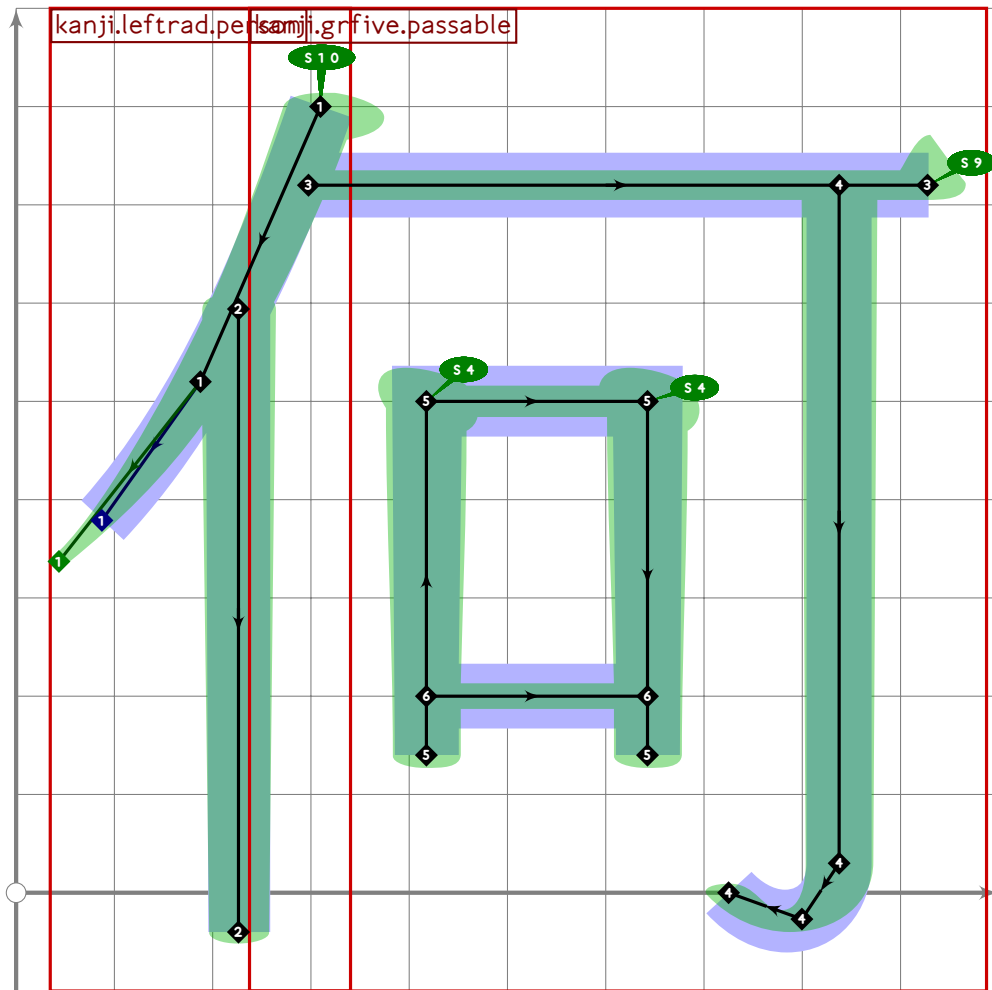
```



```

55
56 vardef tsu_curve.kanji.grtwo.substance =
57   add_proof_box("kanji.grtwo.substance");
58   build_kanji.lr(300,20)
59     (tsu_curve.kanji.leftrad.person)
60     (tsu_curve.kanji.grone.book);
61 enddef;

```

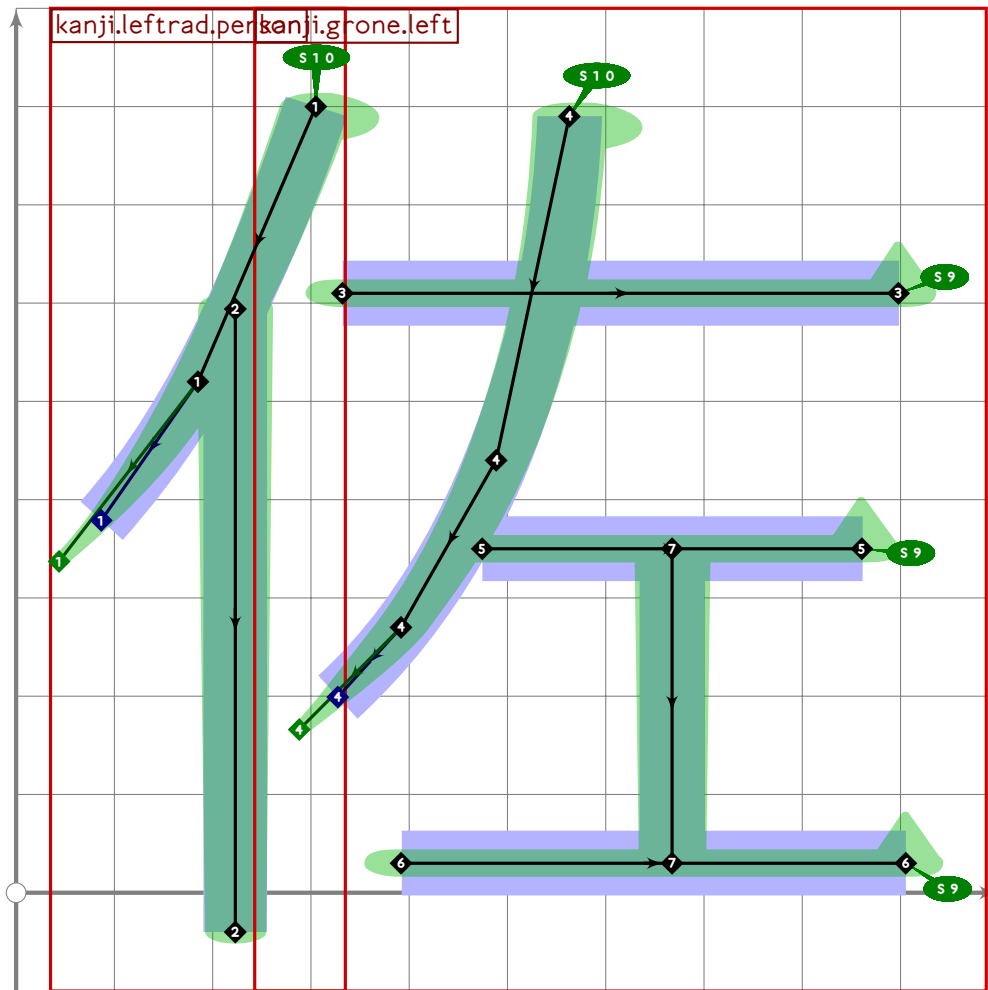


```

62
63 vardef tsu_curve.kanji.grtwo.what =
64   add_proof_box("kanji.grtwo.what");
65   build_kanji.lr(300,50)
66     (tsu_curve.kanji.leftrad.person)
67     (tsu_curve.kanji.grfive.passable);
68 enddef;
69
70

```

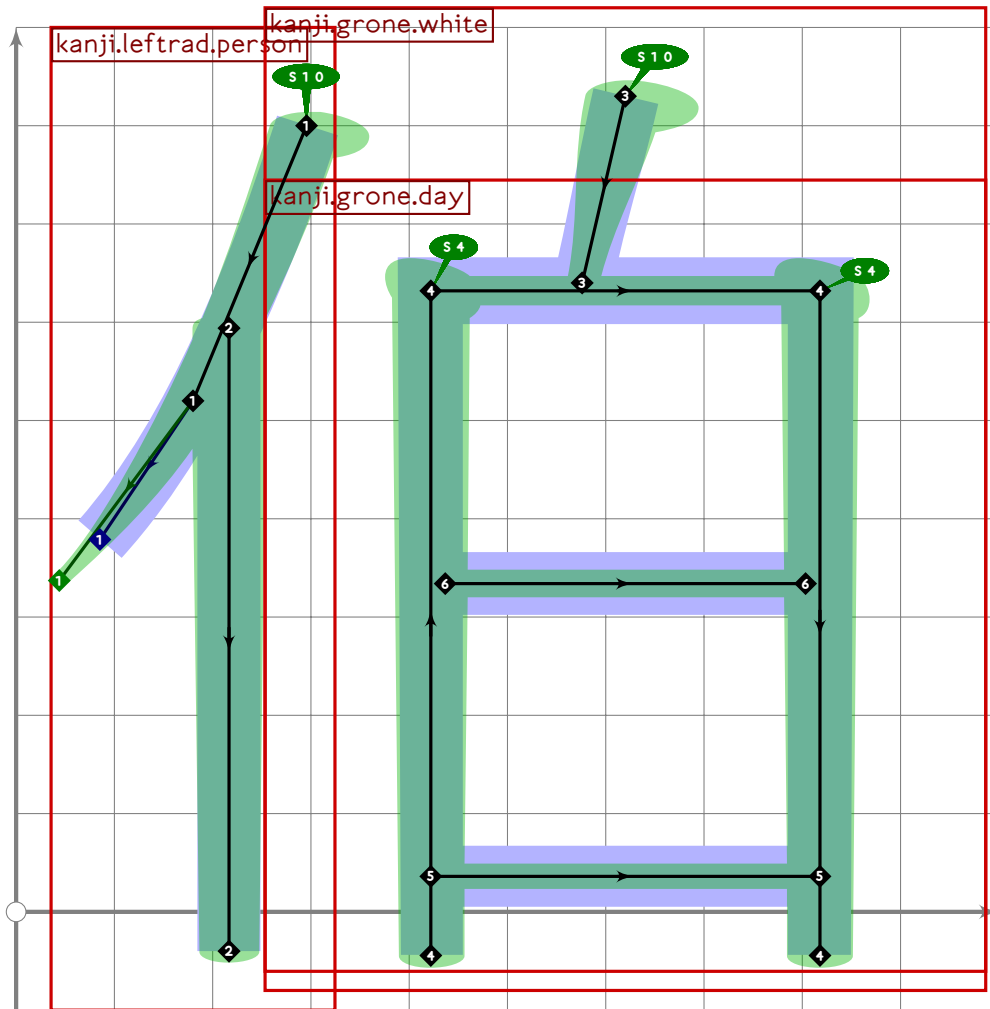




```

71
72 vardef tsu_curve.kanji.greight.assistant =
73   add_proof_box("kanji.greight.assistant");
74   build_kanji.lr(300,40)
75     (tsu_curve.kanji.leftrad.person)
76     (tsu_curve.kanji.grone.left);
77 enddef;

```

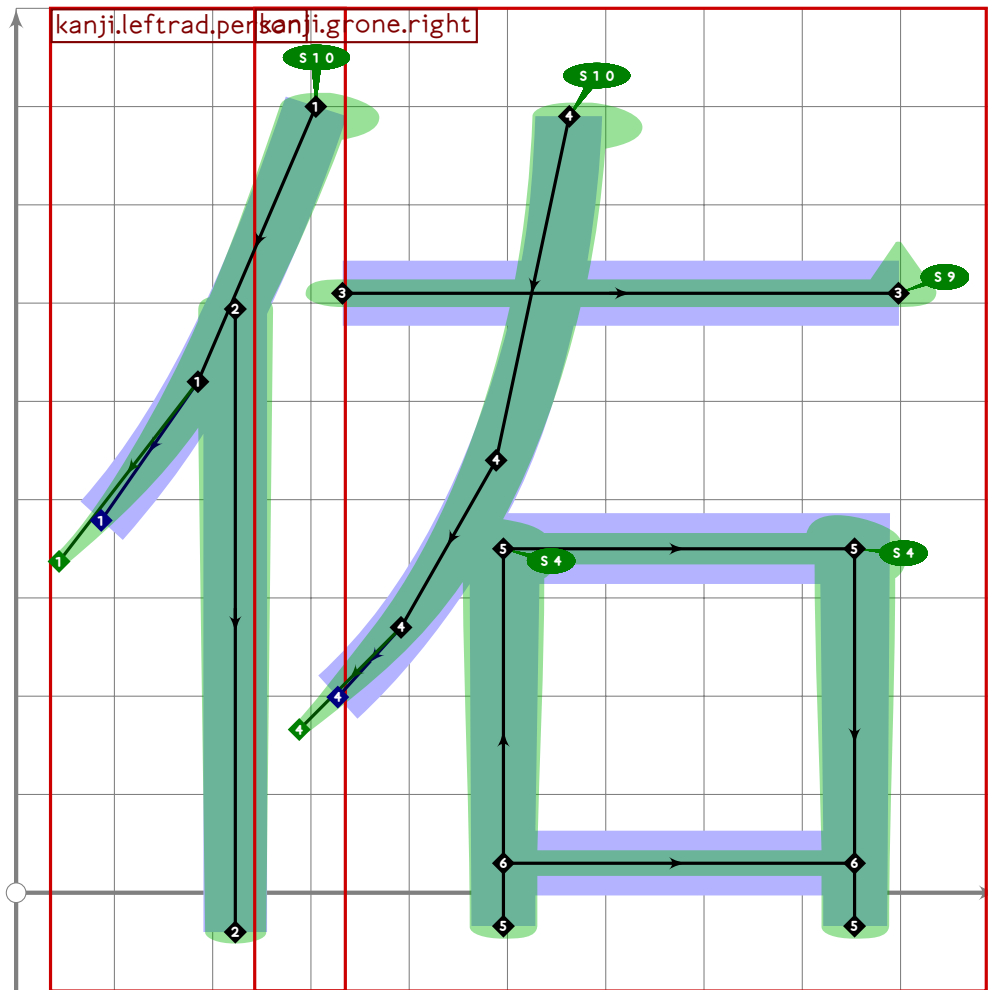


```

78
79 vardef tsu_curve.kanji.greight.earl =
80   add_proof_box("kanji.greight.earl");
81   build_kanji.lr(300,20)
82     (tsu_curve.kanji.leftrad.person)
83     (build_kanji.sscale(shifted (0,20))(tsu_curve.kanji.grone.white));
84 enddef;
85
86

```

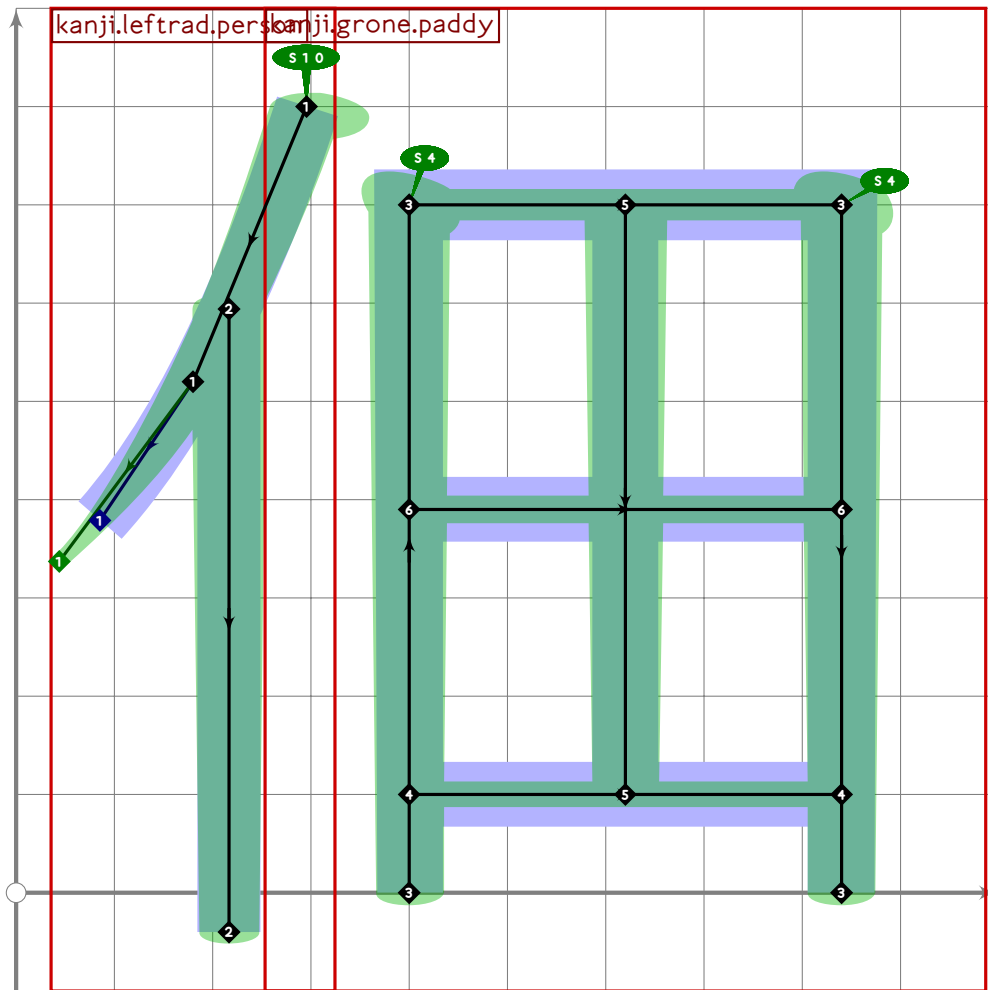
---



```

87
88 vardef tsu_curve.kanji.grnine.assistant =
89   add_proof_box("kanji.grnine.assistant");
90   build_kanji.lr(300,40)
91     (tsu_curve.kanji.leftrad.person)
92     (tsu_curve.kanji.grone.right);
93 enddef;

```



```

94
95 vardef tsu_curve.kanji.grnine.paddy =
96   add_proof_box("kanji.grnine.paddy");
97   build_kanji.lr(300,20)
98     (tsu_curve.kanji.leftrad.person)
99     (tsu_curve.kanji.grone.paddy);
100 enddef;

```

```
101
```

```
102
```

```
103
```

```
104 % yasu "vacation"
```

```
105 begintsuglyph("uni4F11";17);
```

[see page 368]

```
106   tsu_curve.kanji.grone.vacation;
```

```
107   tsu_render;
```

```
108 endtsuglyph;
```

```
109
```

```
110 % kai/a "meet"
```

```
111 begintsuglyph("uni4F1A";26);
```

[see page 386]

```
112   tsu_curve.kanji.grtwo.meet;
```

```
113   tsu_render;
```

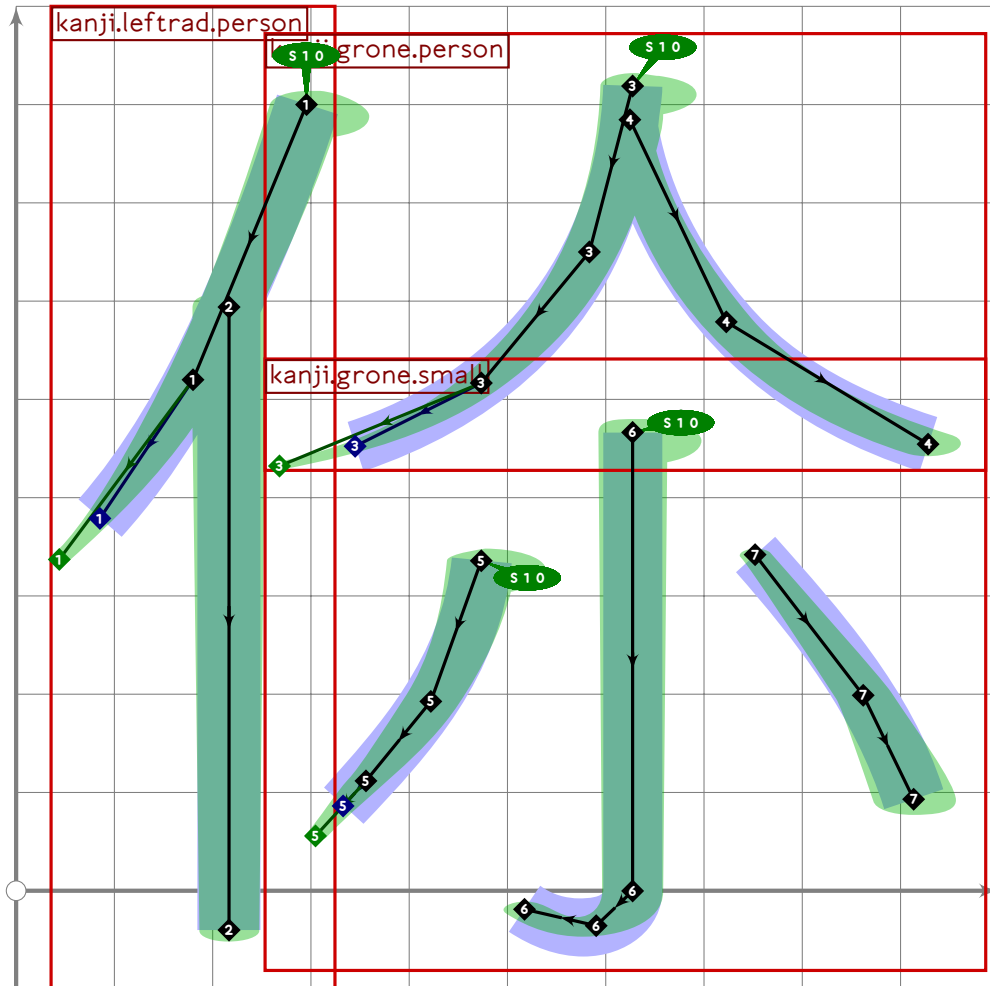
```
114 endtsuglyph;
```

```

115
116 % haku "earl"
117 begintsuglyph("uni4F2F",47);
118 tsu_curve.kanji.greight.earl;
119 tsu_render;
120 endtsuglyph;
121

```

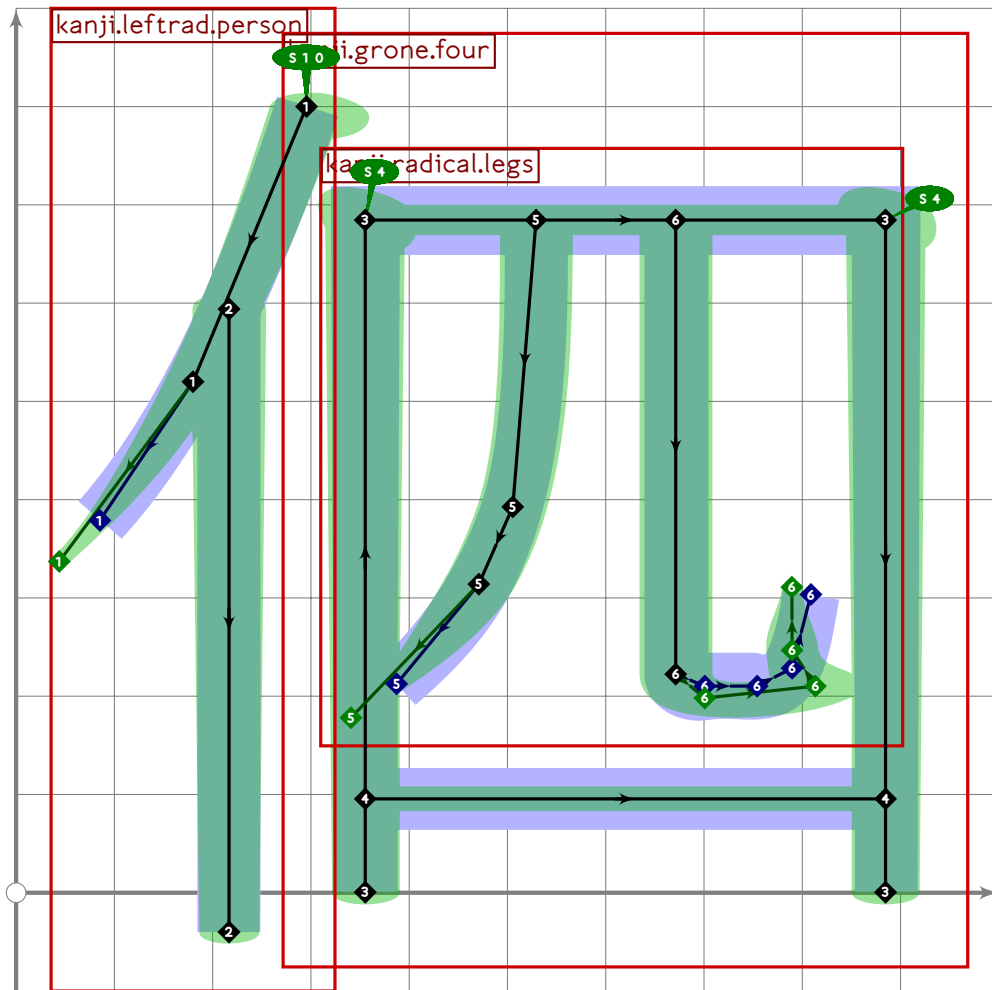
[see page 1170]



```

122 % extra
123 begintsuglyph("uni4F31",49);
124 build_kanji.lr(300,20)
125   (tsu_curve.kanji.leftrad.person)
126   (build_kanji.tb(480,60)
127     (tsu_curve.kanji.greight.person)
128     (tsu_curve.kanji.greight.small));
129 tsu_render;
130 endtsuglyph;
131

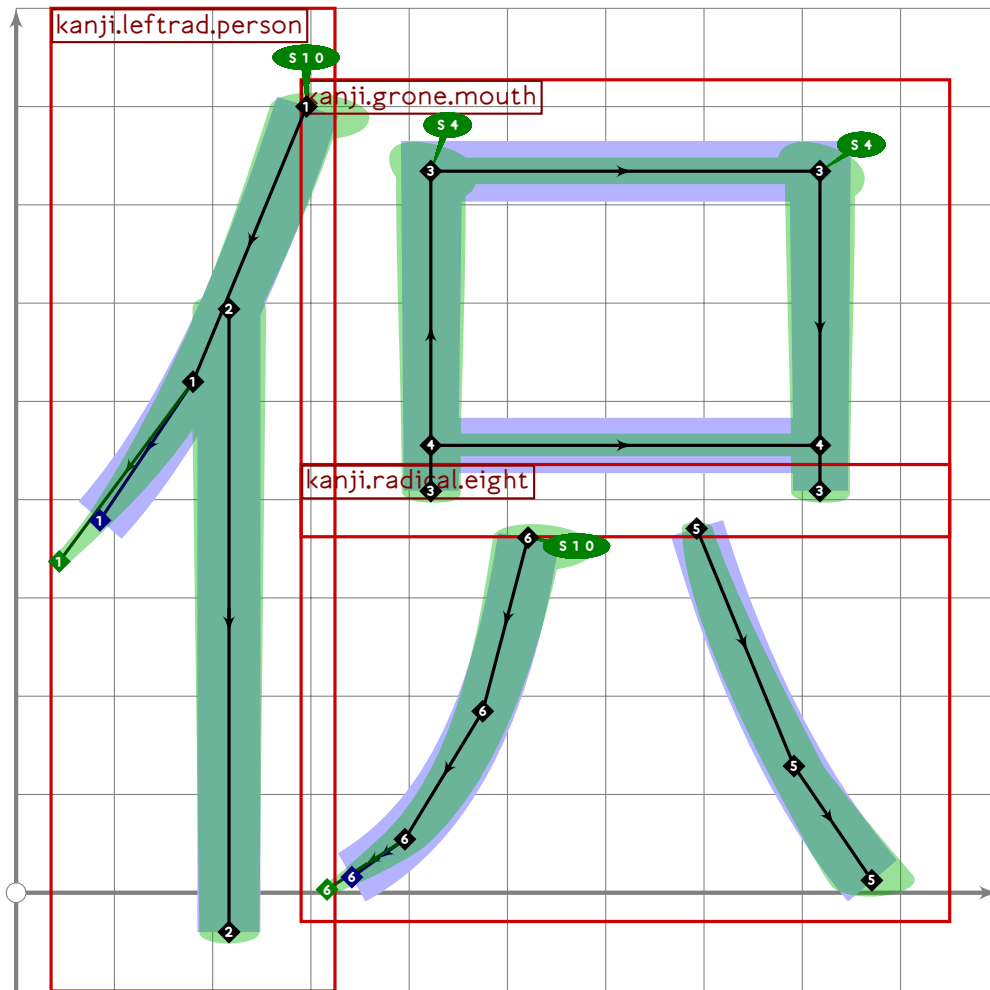
```



```

132 % extra
133 begint Suglyph("uni4F35",53);
134 build_kanji.lr(300,20)
135   (tsu_curve.kanji.leftrad.person)
136   (build_kanji.sscale(scaled 0.95)(tsu_curve.kanji.grone.four));
137 tsu_render;
138 endtsuglyph;
139

```



```

140 % extra
141 begintsuglyph("uni4F3F",63);
142 build_kanji.lr(300,20)
143   (tsu_curve.kanji.leftrad.person)
144   (build_kanji.sscale(scaled 0.9)(tsu_curve.kanji.grnine.only));
145 tsu_render;
146 endsuglyph;
147
148 % ten/tsukuda "cultivated paddy"
149 begintsuglyph("uni4F43",67);
150 tsu_curve.kanji.grnine.paddy;
151 tsu_render;
152 endsuglyph;
153
154 % suke "assistant"
155 begintsuglyph("uni4F50",80);
156 tsu_curve.kanji.greight.assistant;
157 tsu_render;
158 endsuglyph;
159
160 % suke "assistant"

```

[see page 1172]

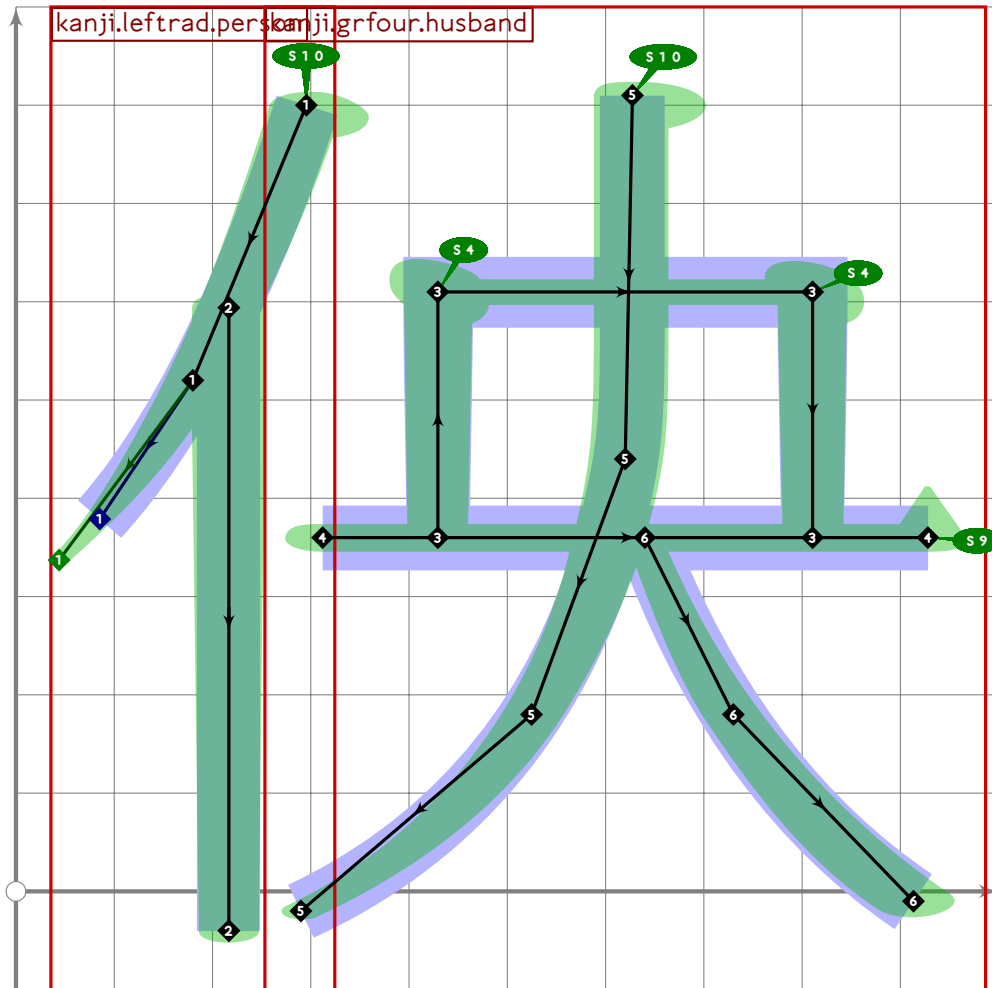
[see page 1169]

```

161 begintsuglyph("uni4F51",81);
162 tsu_curve.kanji.grnine.assistant;
163 tsu_render;
164 endsuglyph;
165

```

[see page 1171]



```

166 % extra
167 begintsuglyph("uni4F52",82);
168 build_kanji.lr(300,20)
169 (tsu_curve.kanji.leftrad.person)
170 (tsu_curve.kanji.grthree centre);
171 tsu_render;
172 endsuglyph;
173
174 % tai/karada "substance"
175 begintsuglyph("uni4F53",83);
176 tsu_curve.kanji.grtwo.substance;
177 tsu_render;
178 endsuglyph;
179
180 % ka/nani "what"
181 begintsuglyph("uni4F55",85);

```

[see page 1167]

[see page 1168]

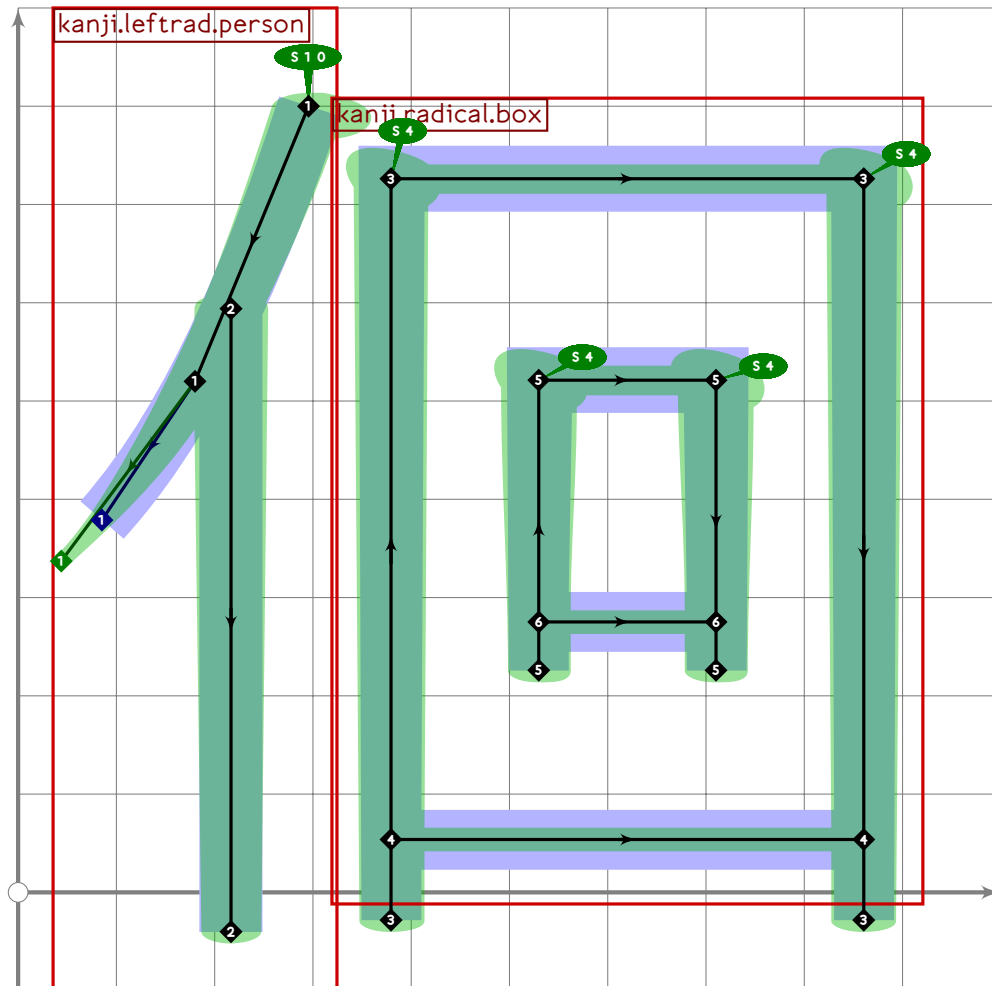


```

182 tsu_curve.kanji.grtwo.what;
183 tsu_render;
184 endtsuglyph;
185
186 % tsuku "make"
187 begintsuglyph("uni4F5C";92);
188 tsu_curve.kanji.grtwo.make;
189 tsu_render;
190 endtsuglyph;
191

```

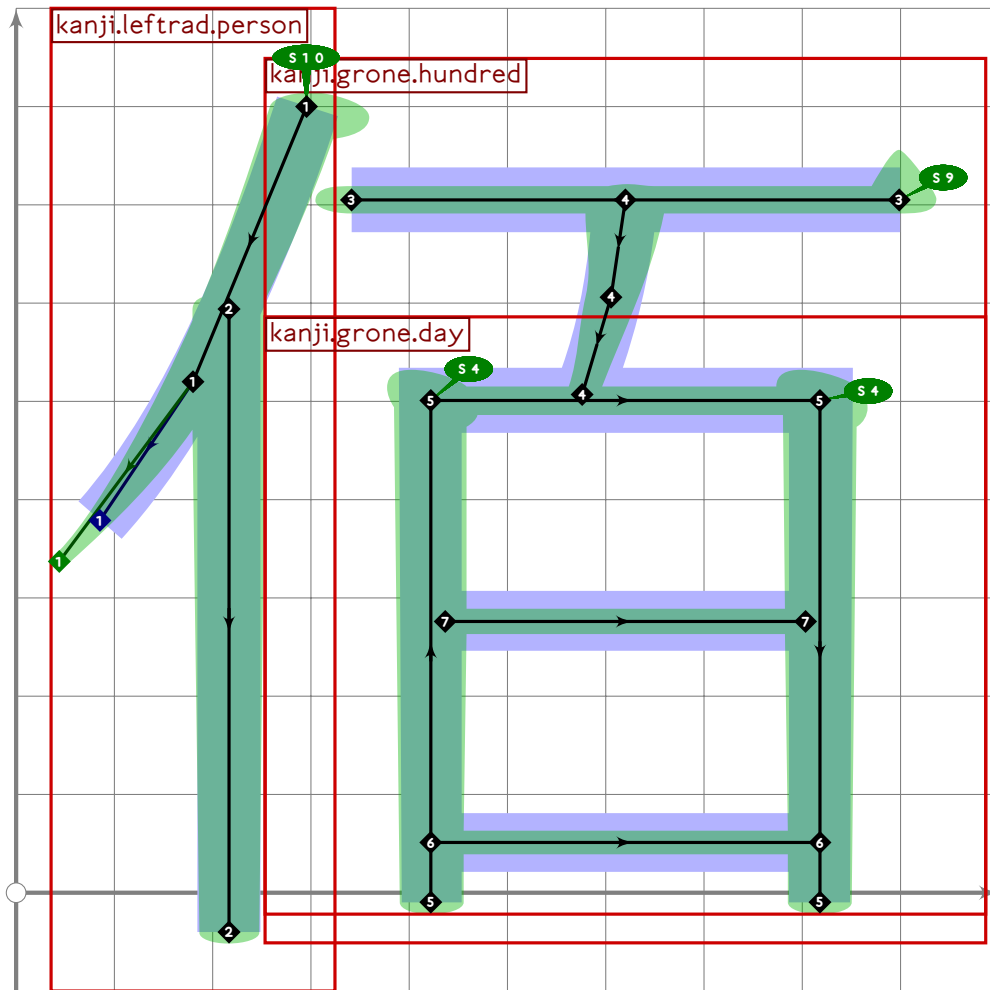
[see page 1166]



```

192 % extra "hesitate"
193 begintsuglyph("uni4F6A";106);
194 build_kanji.lr(300,20)
195   (tsu_curve.kanji.leftrad.person)
196   (build_kanji.sscale(scaled 0.82)(tsu_curve.kanji.grtwo.occurrences));
197 tsu_render;
198 endtsuglyph;
199

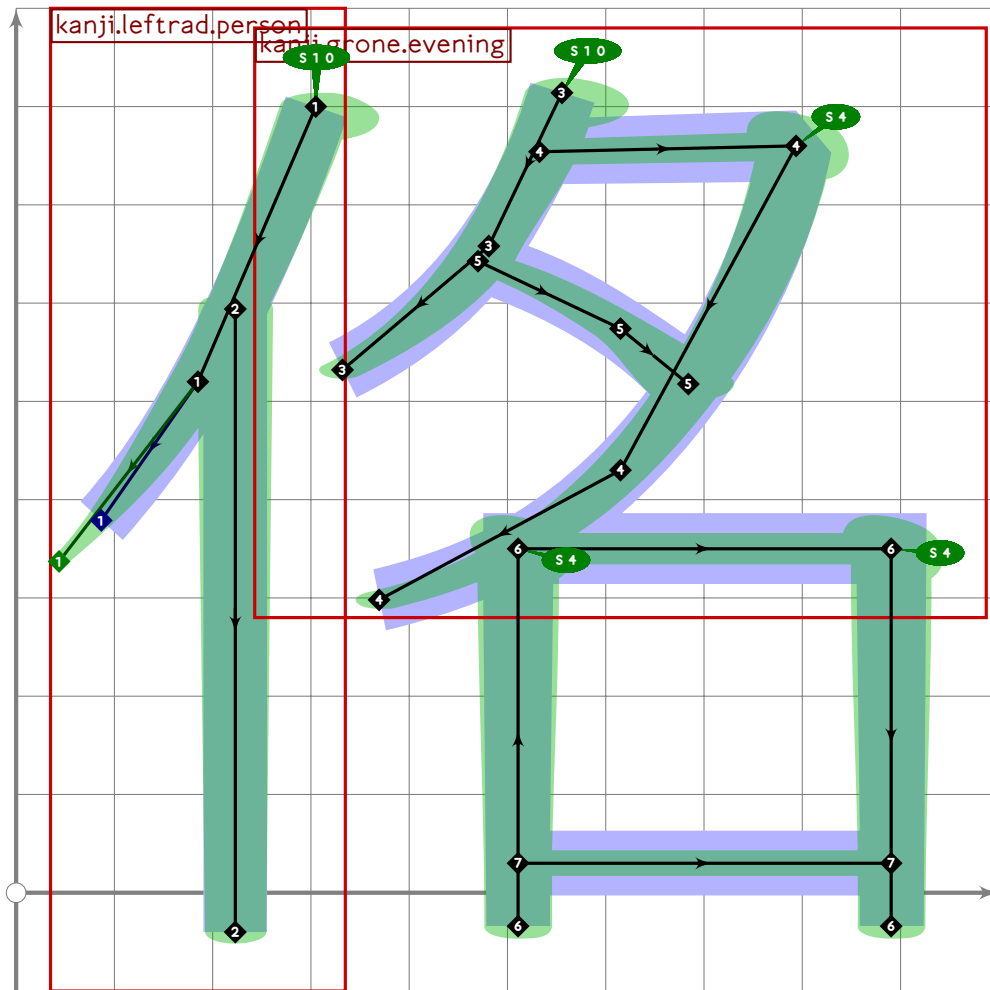
```



```

200 % extra "centurion"
201 begint Suglyph("uni4F70";112);
202 build_kanji.lr(300,20)
203   (tsu_curve.kanji.leftrad.person)
204   (build_kanji.sscale(yscaled 0.9)(tsu_curve.kanji.grone.hundred));
205 tsu_render;
206 endtsuglyph;
207

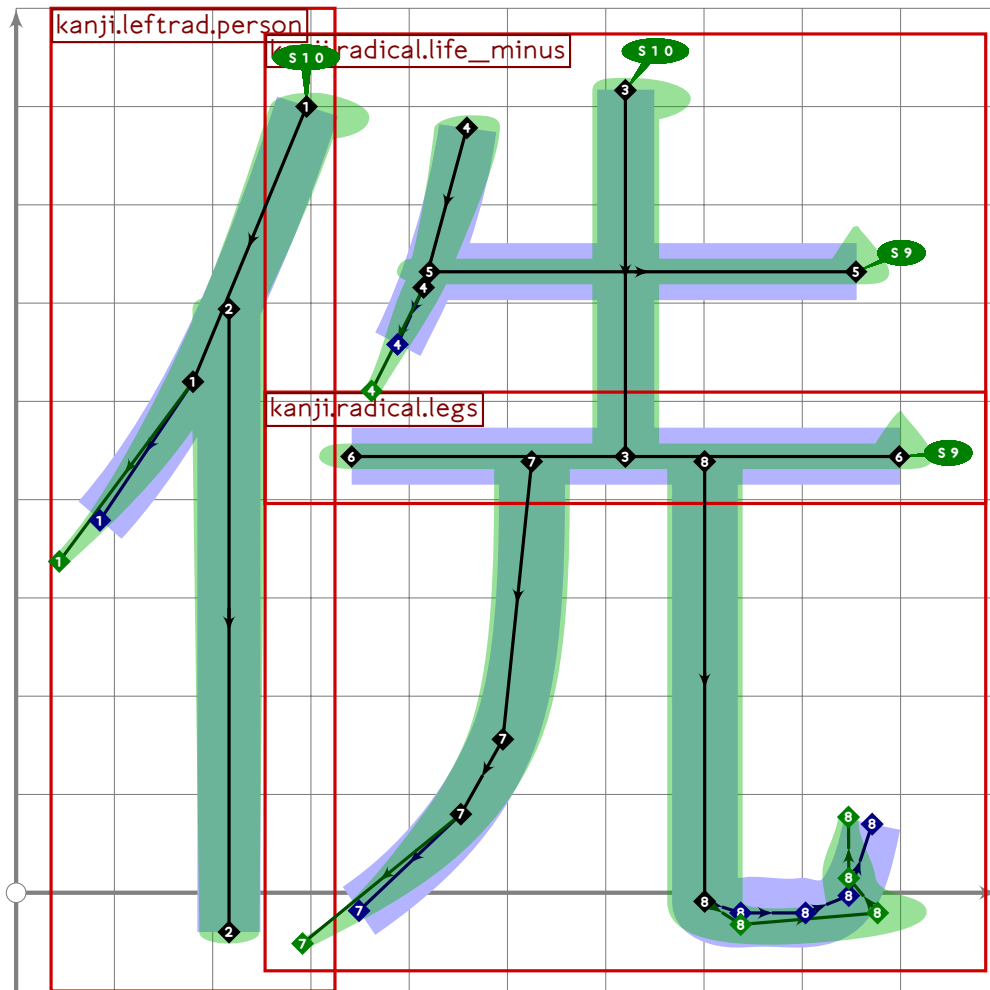
```



```

208 % extra
209 begint Suglyph("uni4F72";114);
210 build_kanji.lr(300,40)
211   (tsu_curve.kanji.leftrad.person)
212   (tsu_curve.kanji.grone.name);
213   tsu_render;
214 endtsuglyph;
215

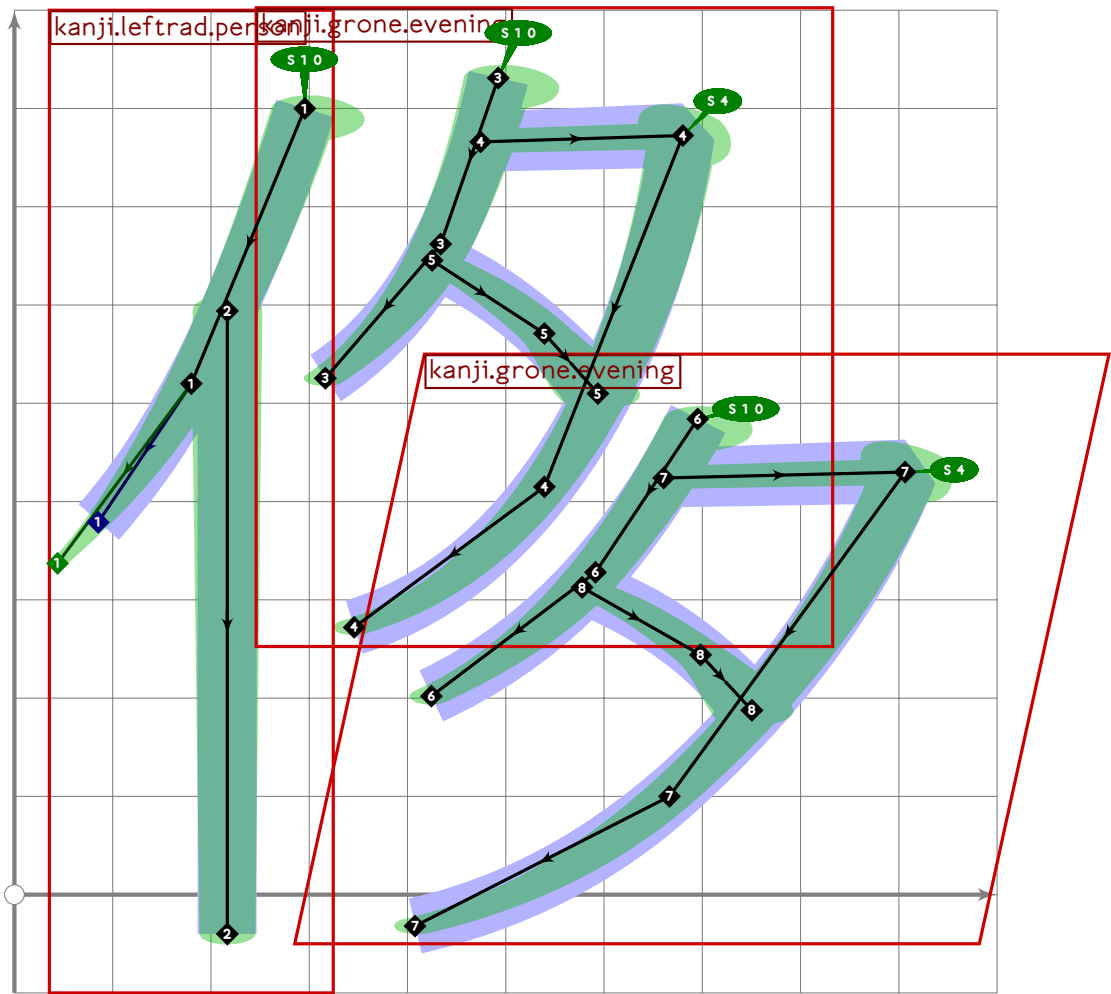
```



```

216 % extra
217 begint Suglyph("uni4F81";129);
218 build_kanji.lr(300,20)
219   (tsu_curve.kanji.leftrad.person)
220   (tsu_curve.kanji.grone.ahead);
221   tsu_render;
222 endsuglyph;
223

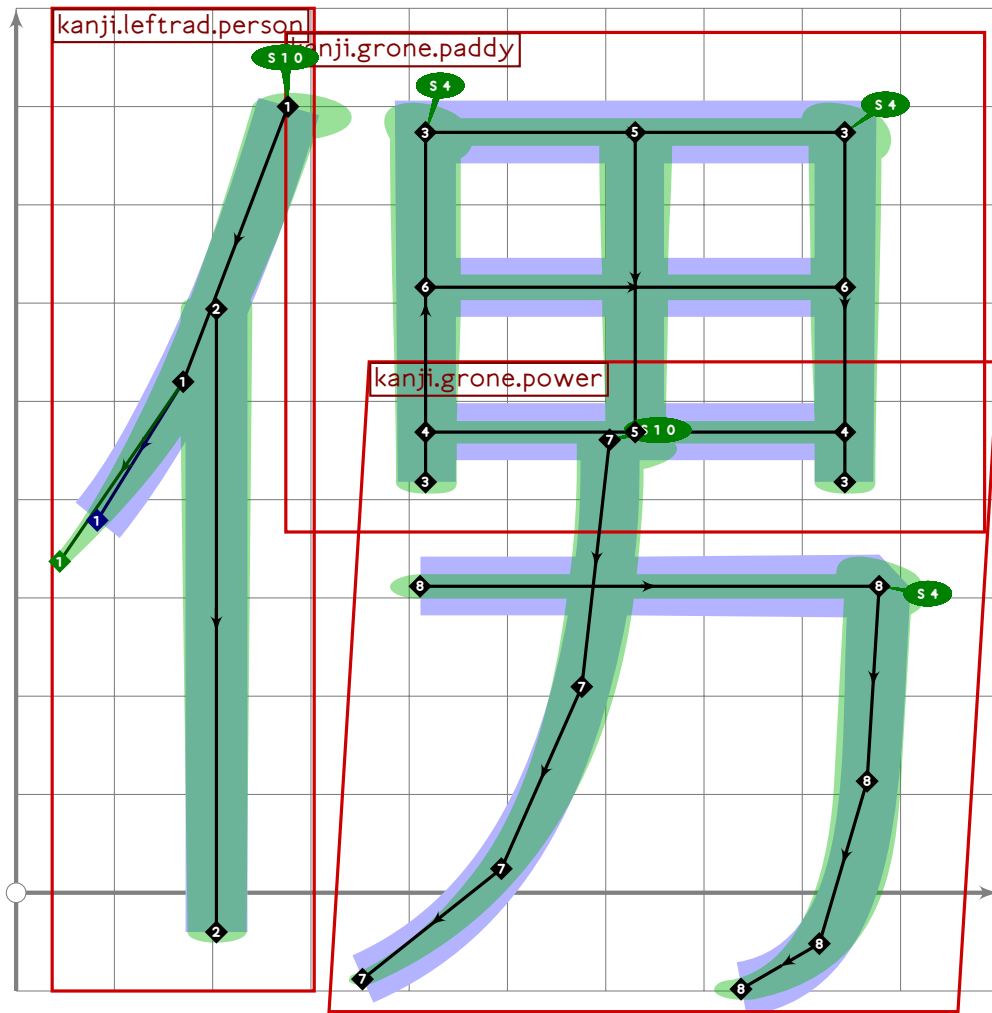
```



```

224 % extra "luxury"
225 begint Suglyph("uni4F88",136);
226 build_kanji.level(build_kanji.lr(300,20)
227   (tsu_curve.kanji.leftrad.person)
228   (tsu_curve.kanji.grtwo.many));
229 tsu_render;
230 endtsuglyph;
231

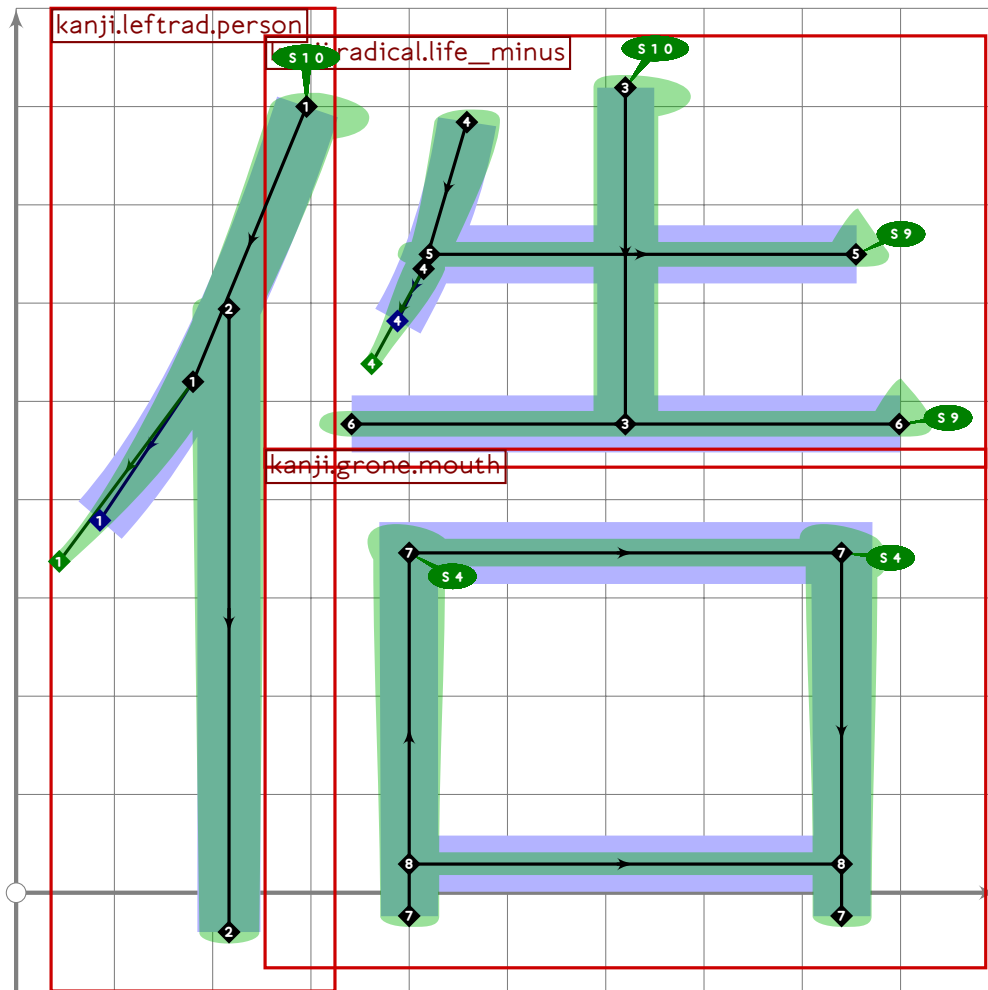
```



```

232 % extra
233 begintsuglyph("uni4FBD";189);
234 build_kanji.lr(300;20)
235   (tsu_curve.kanji.leftrad.person)
236   (tsu_curve.kanji.grone.man);
237   tsu_render;
238 endsuglyph;
239

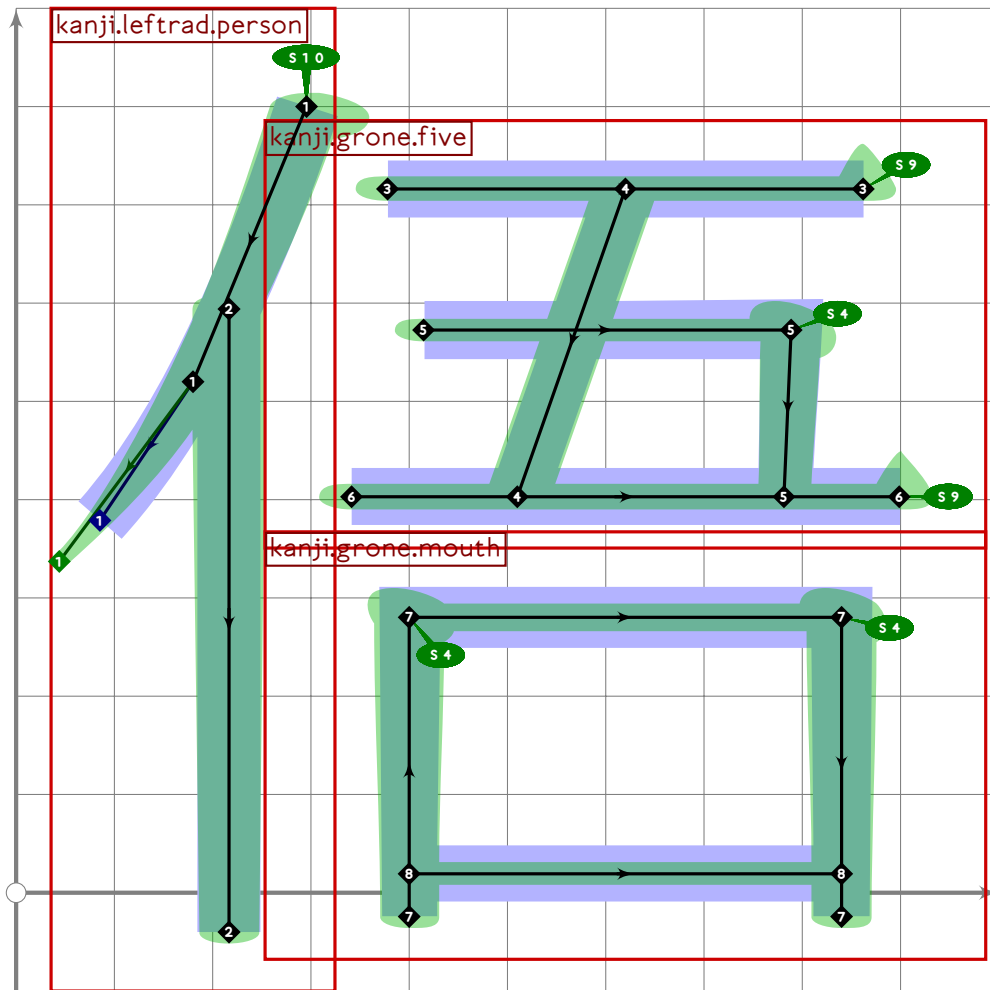
```



```

240 % extra
241 begint Suglyph("uni4FC8";200);
242 build_kanji.lr(300,20)
243   (tsu_curve.kanji.leftrad.person)
244   (tsu_curve.kanji.grfour.revelation);
245   tsu_render;
246 endsuglyph;
247

```



```

248 % extra
249 begintsuglyph("uni4FC9";201);
250 build_kanji.lr(300,20)
251   (tsu_curve.kanji.leftrad.person)
252   (build_kanji.sscale(yscaled 0.9 shifted (0,-40))
253     (tsu_curve.kanji.grnine.my));
254 tsu_render;
255 endsuglyph;
256
257 _____
258
259 endfont;
260
261 _____

```



# tsuku-50.mp

```
1 %  
2 % Unicode page 50 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

```
37 input gradeone.mp;
```

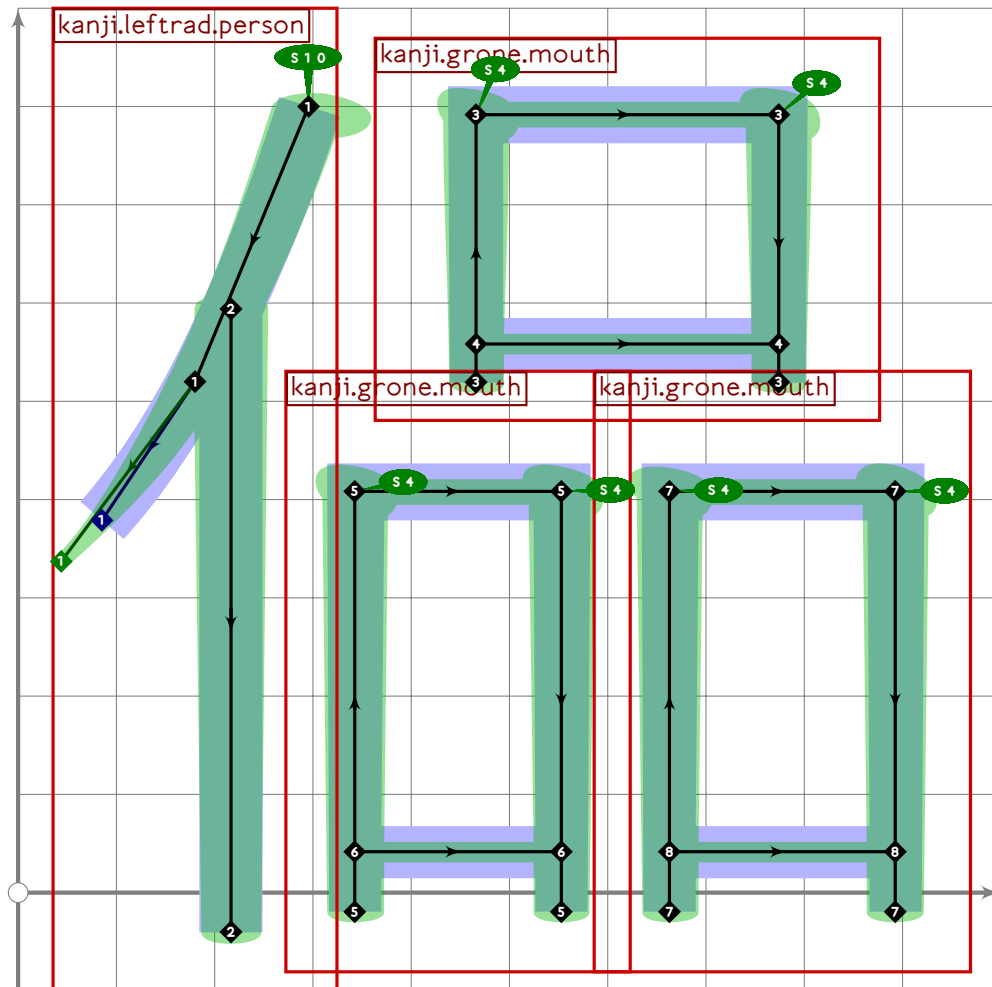
```
38 input gradethree.mp;
```

```
39 input leftrad.mp;
```

```
40
```

```
41
```

```
42
```



```
43 % extra
```

```
44 begintsuglyph("uni5058",88);
45   build_kanji.lr(300,20)
46     (tsu_curve.kanji.leftrad.person)
47     (tsu_curve.kanji.grthree.goods);
48   tsu_render;
49 endsuglyph;
50
51 

---

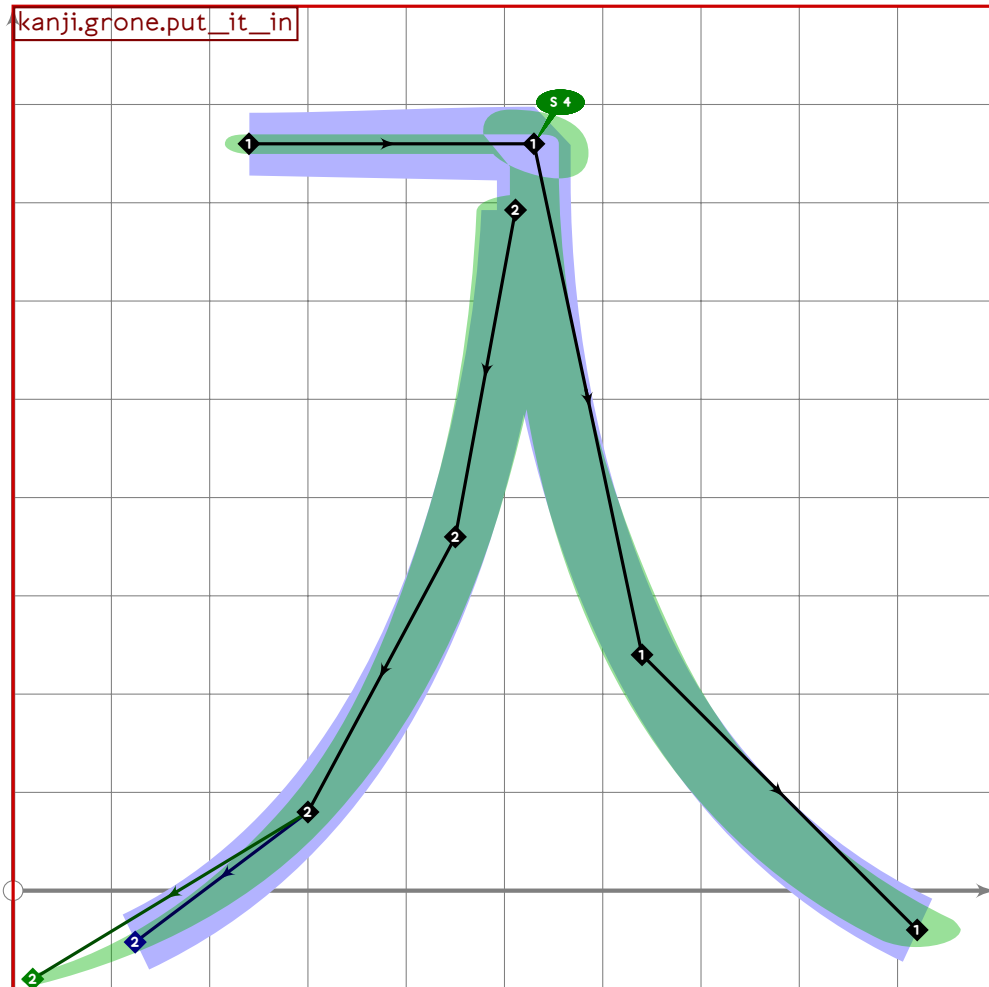

52
53 endfont;
54
55 

---


```

# tsuku-51.mp

```
1 %  
2 % Unicode page 51 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input radical.mp;  
40 input toprad.mp;  
41  
42 _____
```

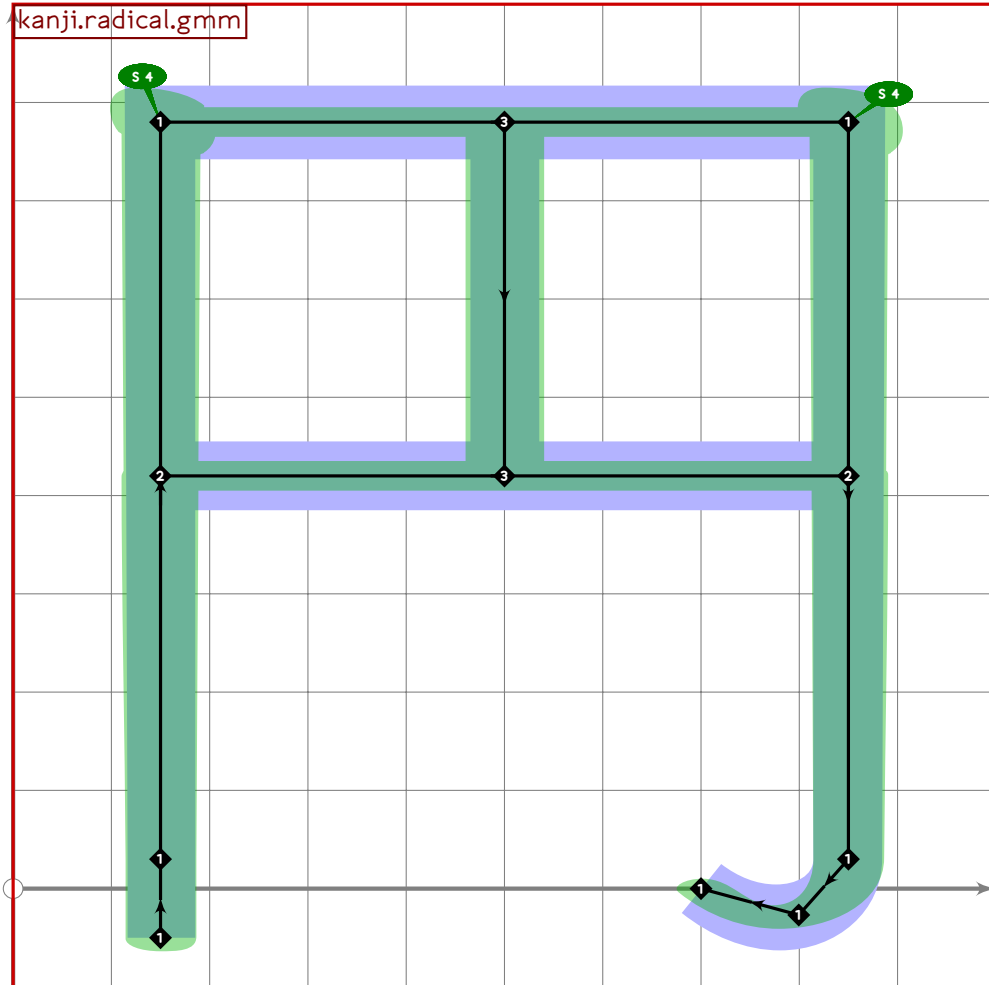


43

```

44 vardef tsu_curve.kanji.grone.put_it_in =
45   add_proof_box("kanji.grone.put_it_in");
46   bp[sp]:=(240,760)-(530,760)..tension 1.2..(640,240)..(920,-40);
47   bq[sp]:=(1.2,1.2)-(1.2,1.2)-(1.6,1.6)-(1.7,1.7);
48   bo_tip[sp][1]:=0;
49   bo_serif[sp][1]:=4;
50   bp[sp*1]:=(-20,0)*point 1.14 of bp[sp]..(450,360)..(300,80)..(20,-90);
51   bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.85,0.85);
52   sp:=sp*2;
53 enddef;

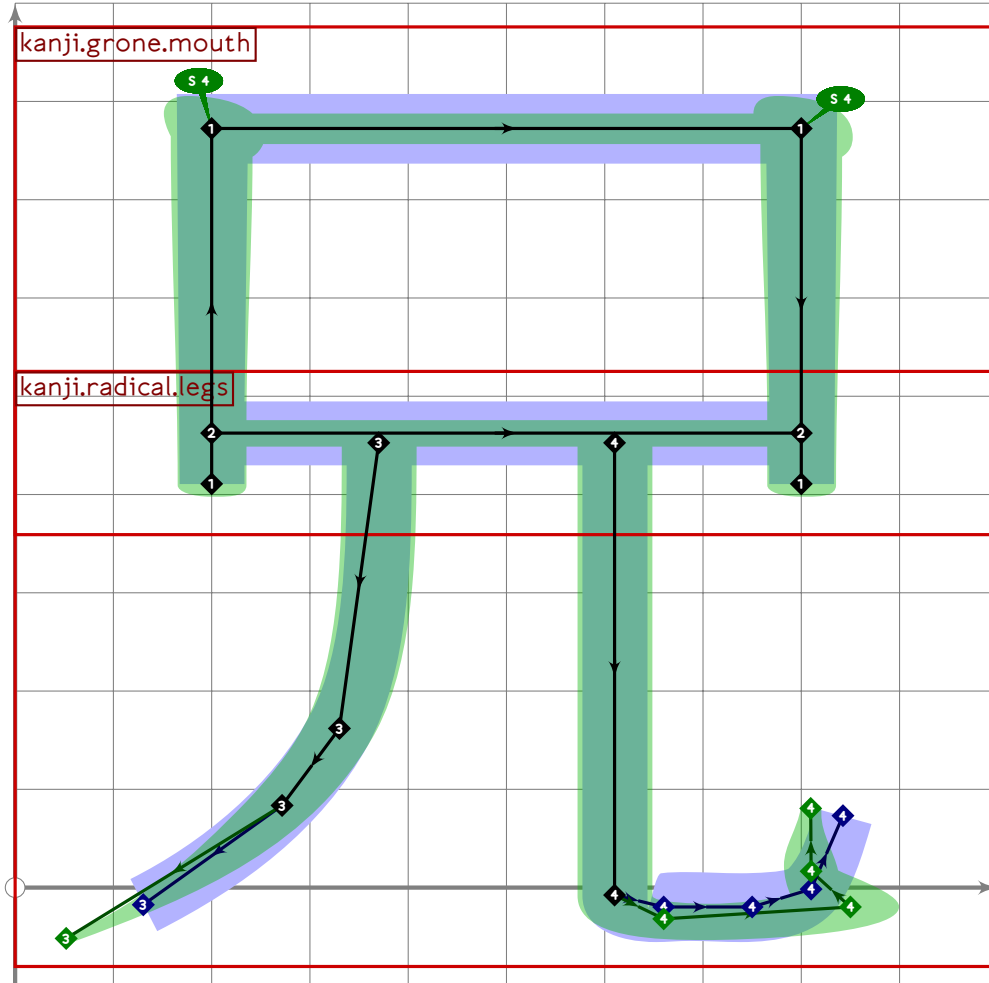
```



```

54
55 vardef tsu_curve.kanji.grone.yen =
56   add_proof_box("kanji.grone.yen");
57   tsu_curve.kanji.radical.gmm;
58   bp[sp]:=(point 1.52 of bp[sp*1])-(point 3.48 of bp[sp*1]);
59   bq[sp]:=(1.6,1.6)-(1.6,1.6);
60   bp[sp*1]:=(point 2.5 of bp[sp])-(point 0.5 of bp[sp]);
61   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
62   sp:=sp*2;
63 enddef;
64

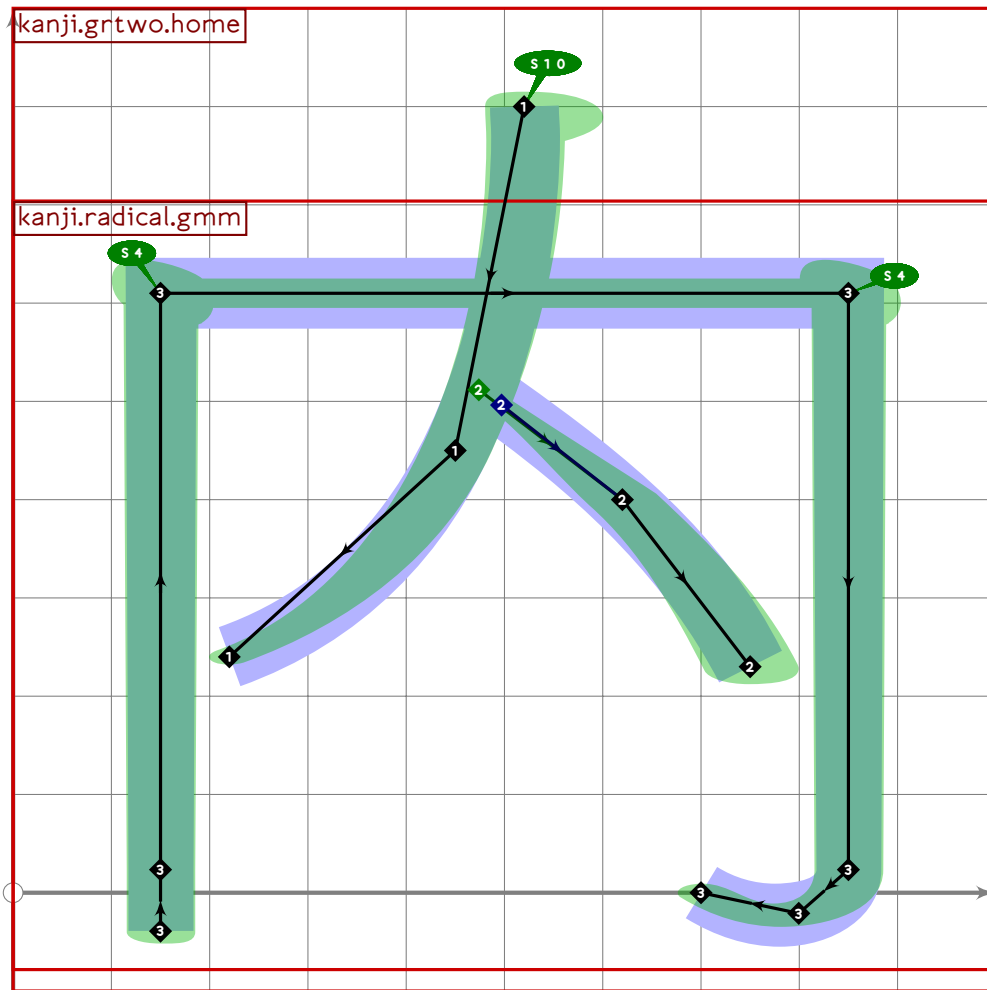
```



```

66
67 vardef tsu_curve.kanji.grtwo.big_brother =
68   add_proof_box("kanji.grtwo.big_brother");
69   build_kanji.level(build_kanji.tb(440,110)
70     (tsu_curve.kanji.grone.mouth)
71     (tsu_curve.kanji.radical.legs));
72 enddef;

```

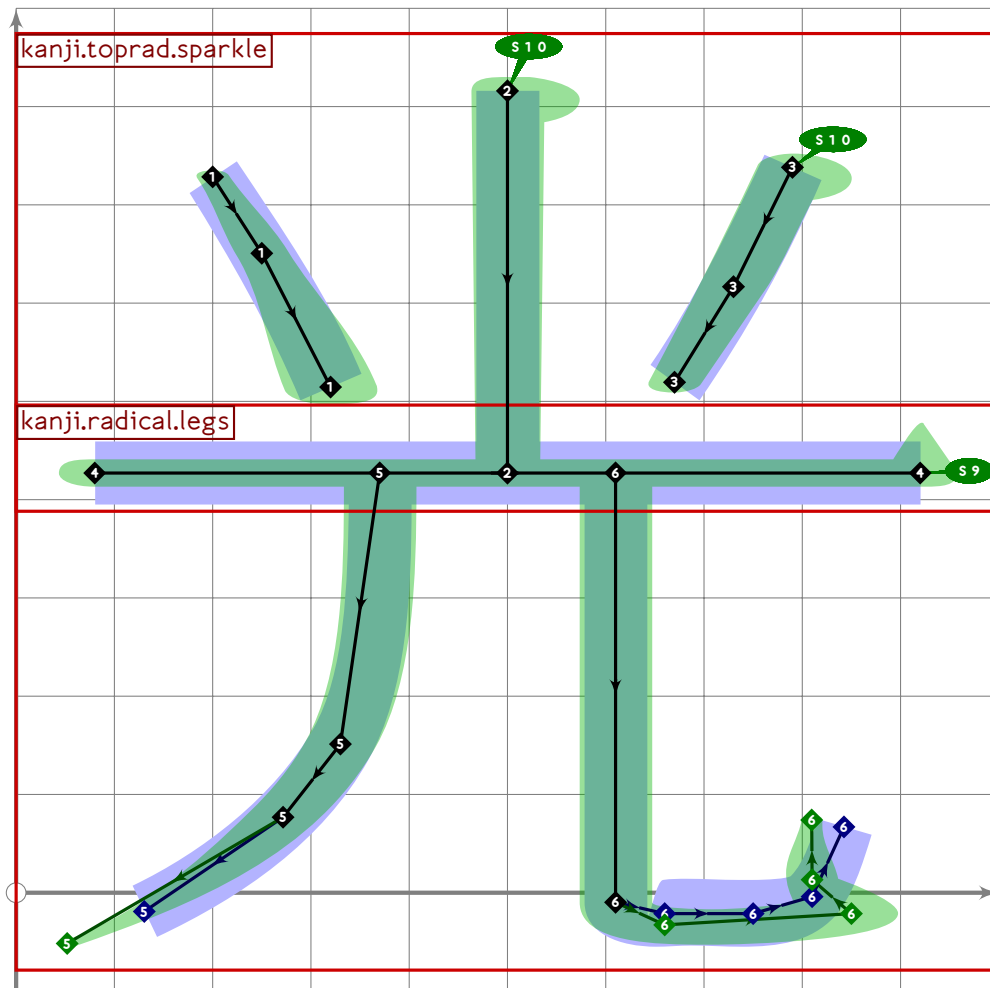


73

```

74 vardef tsu_curve.kanji.grtwo.home =
75   add_proof_box("kanji.grtwo.home");
76   bp[sp]:=(520,800)..tension 1.2..(450,450)..(220,240);
77   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.1,1.1);
78   bo_serif[sp][0]:=10;
79   bp[sp*1]:=(point 0.8 of bp[sp])..tension 1.2..(620,400)..(750,230);
80   bq[sp*1]:=(0.9,0.9)-(1.5,1.5)-(1.8,1.8);
81   sp:=sp*2;
82   tsu_xform(identity yscaled (610/780))(tsu_curve.kanji.radical.gmm);
83 enddef;

```



```

84
85 vardef tsu_curve.kanji.grtwo.shine =
86   add_proof_box("kanji.grtwo.shine");
87   build_kanji.level(build_kanji.tb(440,55)
88     (tsu_curve.kanji.toprad.sparkle;
89     bp[sp]:=(80,-20)-(920,-20);
90     bq[sp]:=(1.6,1.6)-(1.6,1.6);
91     bo_serif[sp][1]:=9;
92     sp:=sp+1;
93   )
94   (tsu_curve.kanji.radical.legs));
95 enddef;
96
97
98
99 % legs radical
100 begint Suglyph("uni513F",63);
101   tsu_curve.kanji.radical.legs;
102   tsu_render;
103 endtsuglyph;
104

```

[see page 311]

105 % moto/gen "origin" [see page 394]  
106 `begintsuglyph("uni5143";67);`  
107 `tsu_curve.kanji.grtwo.origin;`  
108 `tsu_render;`  
109 `endsuglyph;`  
110  
111 % nii (as in oniisan) "big brother" [see page 1189]  
112 `begintsuglyph("uni5144";68);`  
113 `tsu_curve.kanji.grtwo.big_brother;`  
114 `tsu_render;`  
115 `endsuglyph;`  
116  
117 % sen "ahead" [see page 319]  
118 `begintsuglyph("uni5148";72);`  
119 `tsu_curve.kanji.grone.ahead;`  
120 `tsu_render;`  
121 `endsuglyph;`  
122  
123 % kou/hikari "shine" [see page 1191]  
124 `begintsuglyph("uni5149";73);`  
125 `tsu_curve.kanji.grtwo.shine;`  
126 `tsu_render;`  
127 `endsuglyph;`  
128  
129 % hai/i "put it in" [see page 1188]  
130 `begintsuglyph("uni5165";101);`  
131 `tsu_curve.kanji.grone.put_it_in;`  
132 `tsu_render;`  
133 `endsuglyph;`  
134  
135 % hachi/ya "eight" [see page 333]  
136 `begintsuglyph("uni516B";107);`  
137 `tsu_curve.kanji.grone.eight;`  
138 `tsu_render;`  
139 `endsuglyph;`  
140  
141 % kou/kimi "public" but also the pronoun kimi [see page 395]  
142 `begintsuglyph("uni516C";108);`  
143 `tsu_curve.kanji.grtwo.public;`  
144 `tsu_render;`  
145 `endsuglyph;`  
146  
147 % roku/mui "six" [see page 360]  
148 `begintsuglyph("uni516D";109);`  
149 `tsu_curve.kanji.grone.six;`  
150 `tsu_render;`  
151 `endsuglyph;`  
152



```
153 % George Michael's Moustache
154 begintsuglyph\("uni5182";130\); [see page 310]
155 tsu\_curve.kanji.radical.gmm;
156 tsu\_render;
157 endtsuglyph;
158
159 % nai/uchi "home, me"
160 begintsuglyph\("uni5185";133\); [see page 1190]
161 tsu\_curve.kanji.grtwo.home;
162 tsu\_render;
163 endtsuglyph;
164
165 % en "yen" (currency unit)
166 begintsuglyph\("uni5186";134\); [see page 1188]
167 tsu\_curve.kanji.grone.yen;
168 tsu\_render;
169 endtsuglyph;
170
171 % de "go away"
172 begintsuglyph\("uni51FA";250\); [see page 339]
173 tsu\_curve.kanji.grone.go\_away;
174 tsu\_render;
175 endtsuglyph;
176
177 

---


178
179 endfont;
180
181 

---


```

# tsuku-52.mp

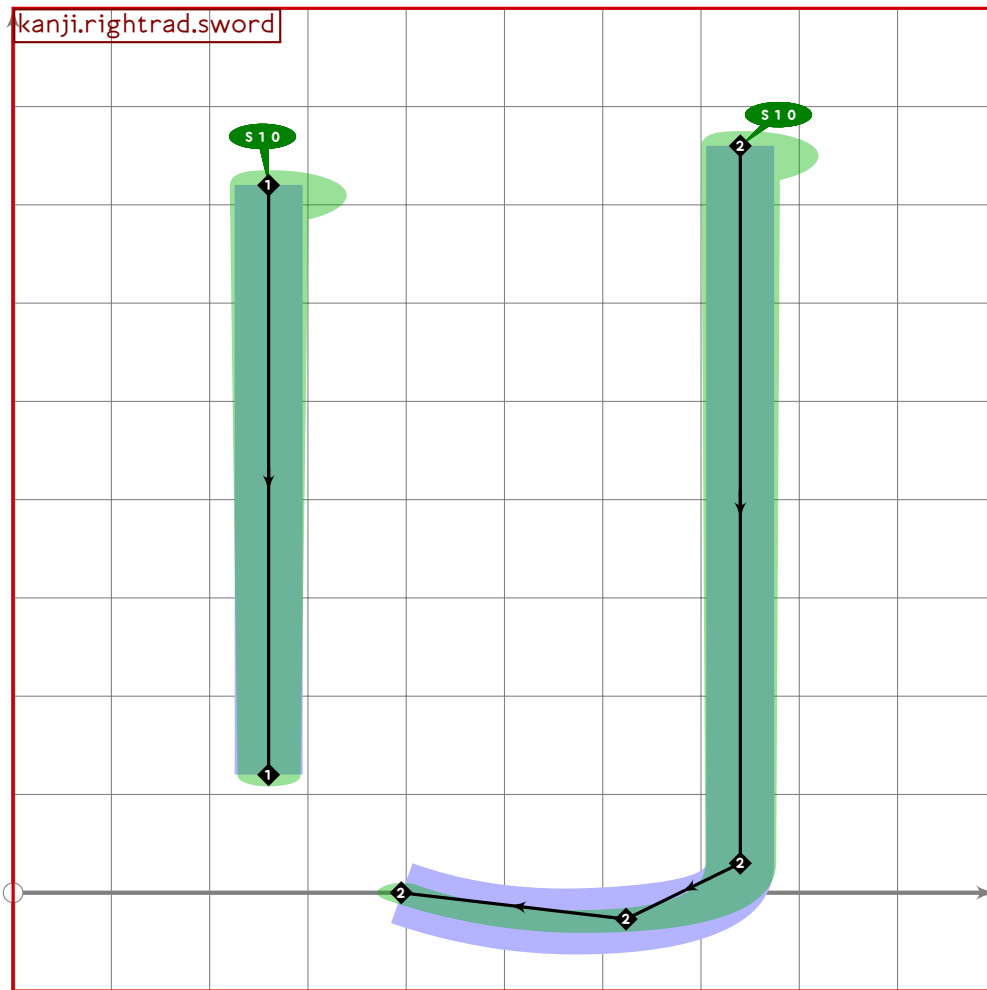
```
1 %
2 % Unicode page 52 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input bottomrad.mp;
37 input buildkanji.mp;
38 input gradeeight.mp;
39 input gradeone.mp;
40 input gradesix.mp;
41 input gradethree.mp;
42 input gradetwo.mp;
43 input leftrad.mp;
44 input radical.mp;
45 input toprad.mp;
46
47 

---

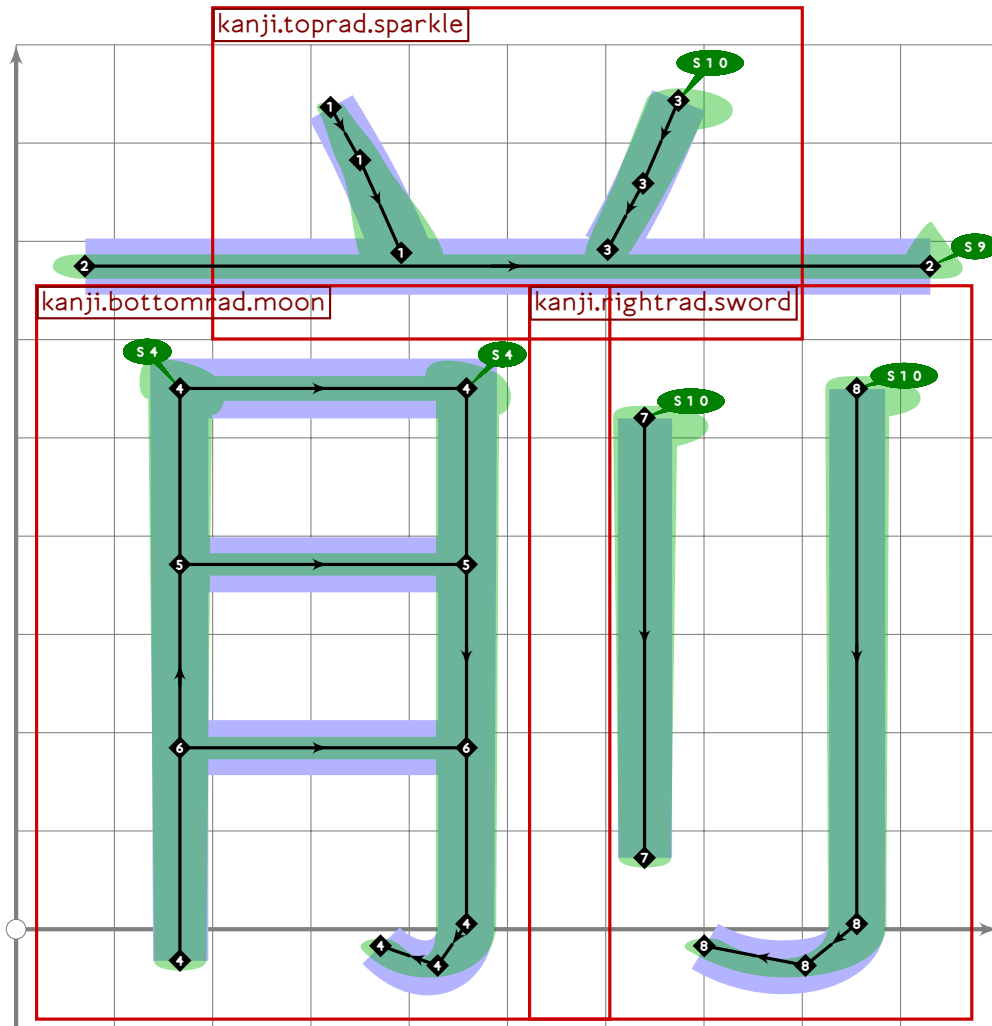

```



```

48
49 vardef tsu_curve.kanji.rightrad.sword =
50   add_proof_box("kanji.rightrad.sword");
51   bp[sp]:=(260,720)-(260,120);
52   bq[sp]:=(1.6,1.6)-(1.4,1.4);
53   bo_serif[sp][0]:=10;
54   bp[sp*1]:=(740,760);
55   bq[sp*1]:=(1.6,1.6);
56   bo_serif[sp*1][0]:=10;
57   build_kanji.add_jtail(sp*1);
58   bp[sp*1]:=bp[sp*1] shifted (-740,0) xscaled 2.3 shifted (740,0);
59   sp:=sp*2;
60 enddef;
61
62

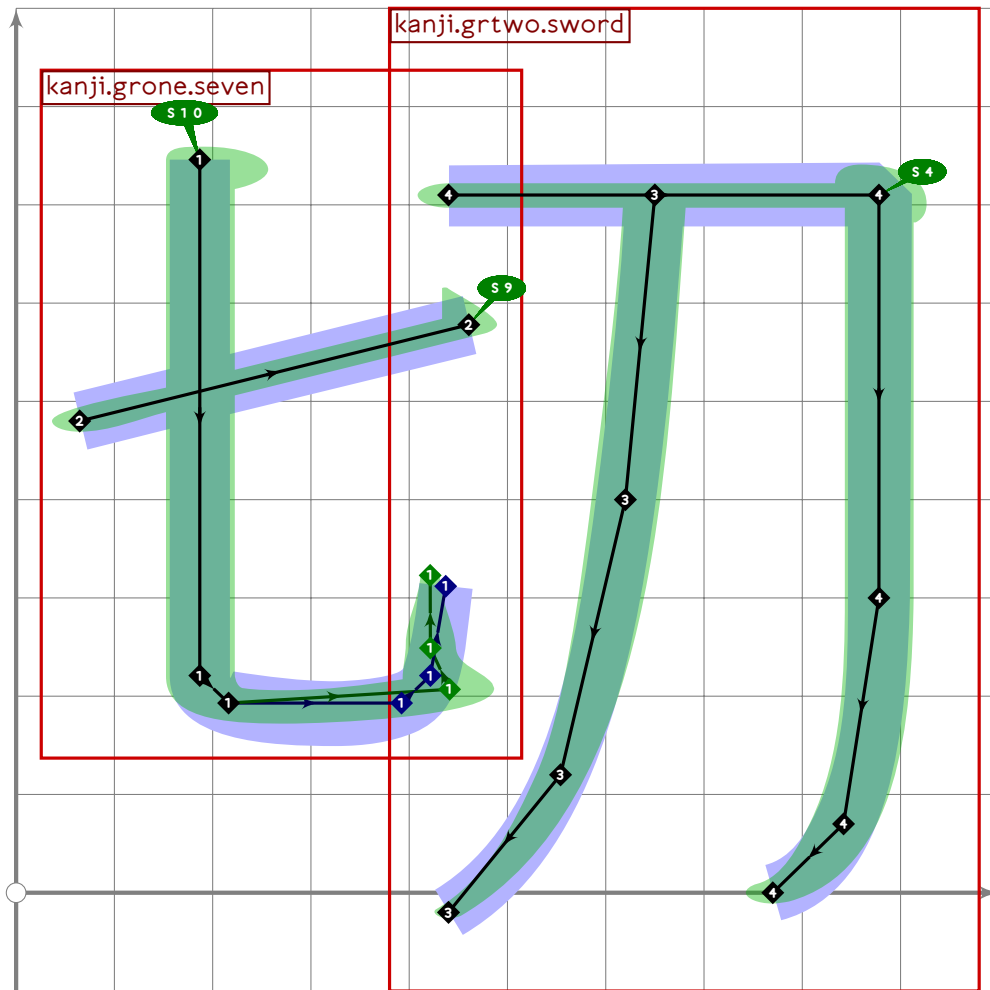
```



```

63
64 vardef tsu_curve.kanji.grtwo.before =
65   tsu_xform(identity yscaled (780/720))
66   (build_kanji.level(build_kanji.tb(570,0)
67     (build_kanji.sscale(xscaled 0.6)(tsu_curve.kanji.toprad.sparkle);
68     bp[sp-2]:=(70,120)-(930,120);
69     bq[sp-2]:=(1.6,1.6)-(1.6,1.6);
70     bo_serif[sp-2][0]:=whatever;
71     bo_serif[sp-2][1]:=9;
72     )
73     (build_kanji.lr(560,30)
74       (tsu_curve.kanji.bottomrad.moon)
75       (tsu_curve.kanji.rightrad.sword)))));
76 enddef;

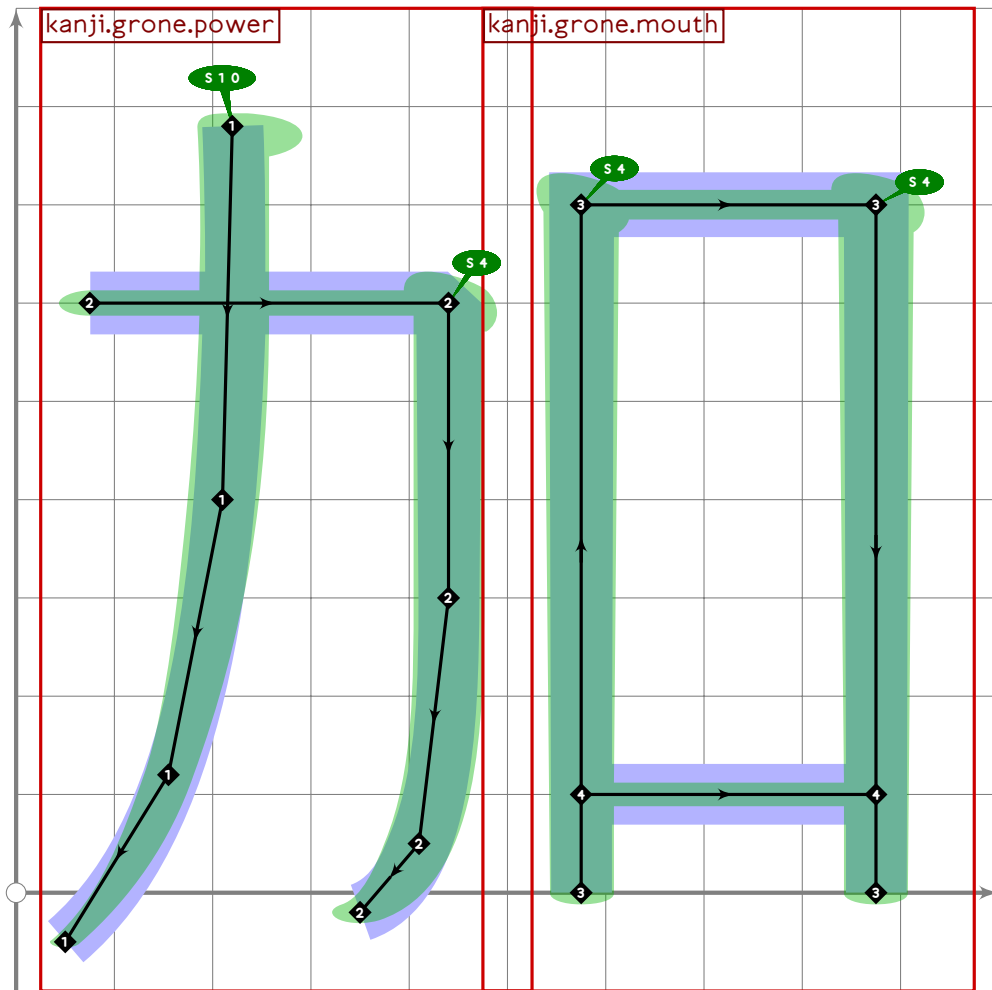
```



```

77
78 vardef tsu_curve.kanji.grtwo.cut =
79   build_kanji.level(build_kanji.lr(450,80)
80     (tsu_curve.kanji.leftrad.seven)
81     (tsu_curve.kanji.grtwo.sword));
82 enddef;
83
84

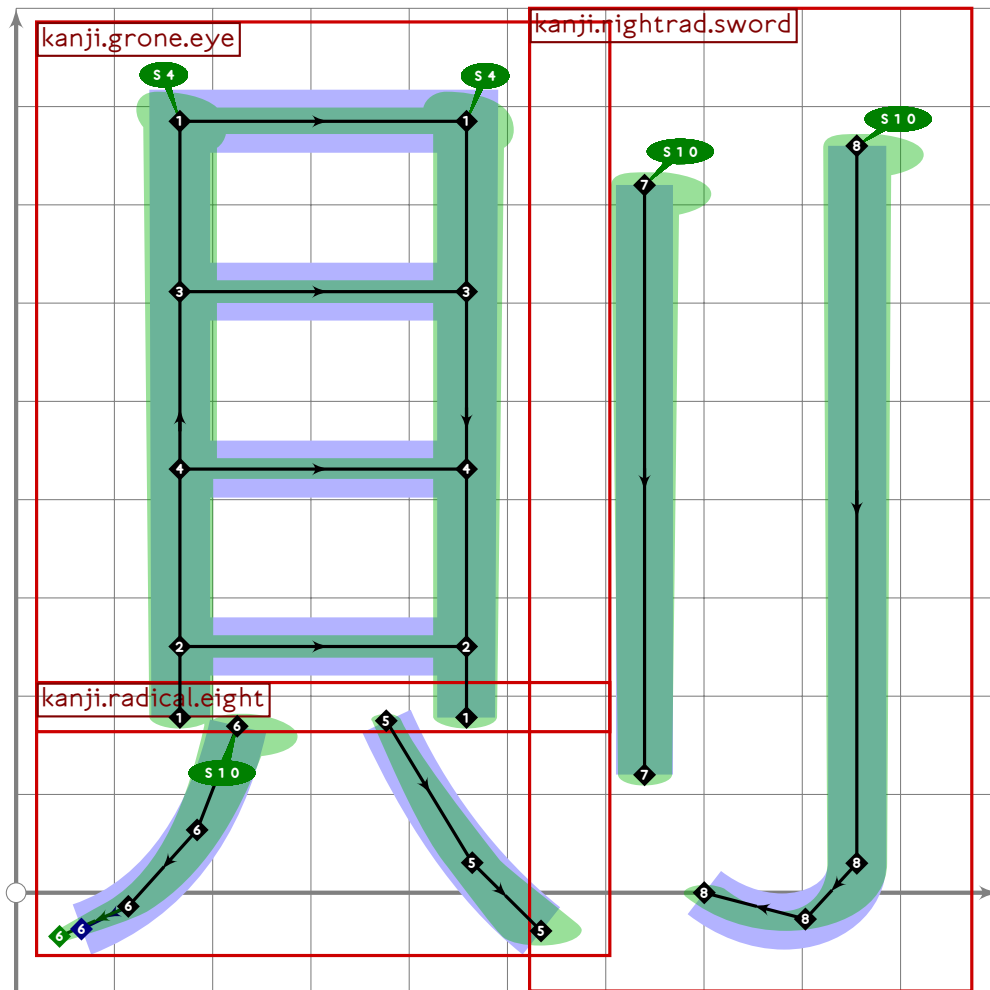
```



```

85
86 vardef tsu_curve.kanji.grfour.addition =
87   add_proof_box("kanji.grfour.addition");
88   build_kanji.level(build_kanji.lr(500,0)
89     (tsu_curve.kanji.grone.power)
90     (tsu_curve.kanji.grone.mouth));
91 enddef;
92
93

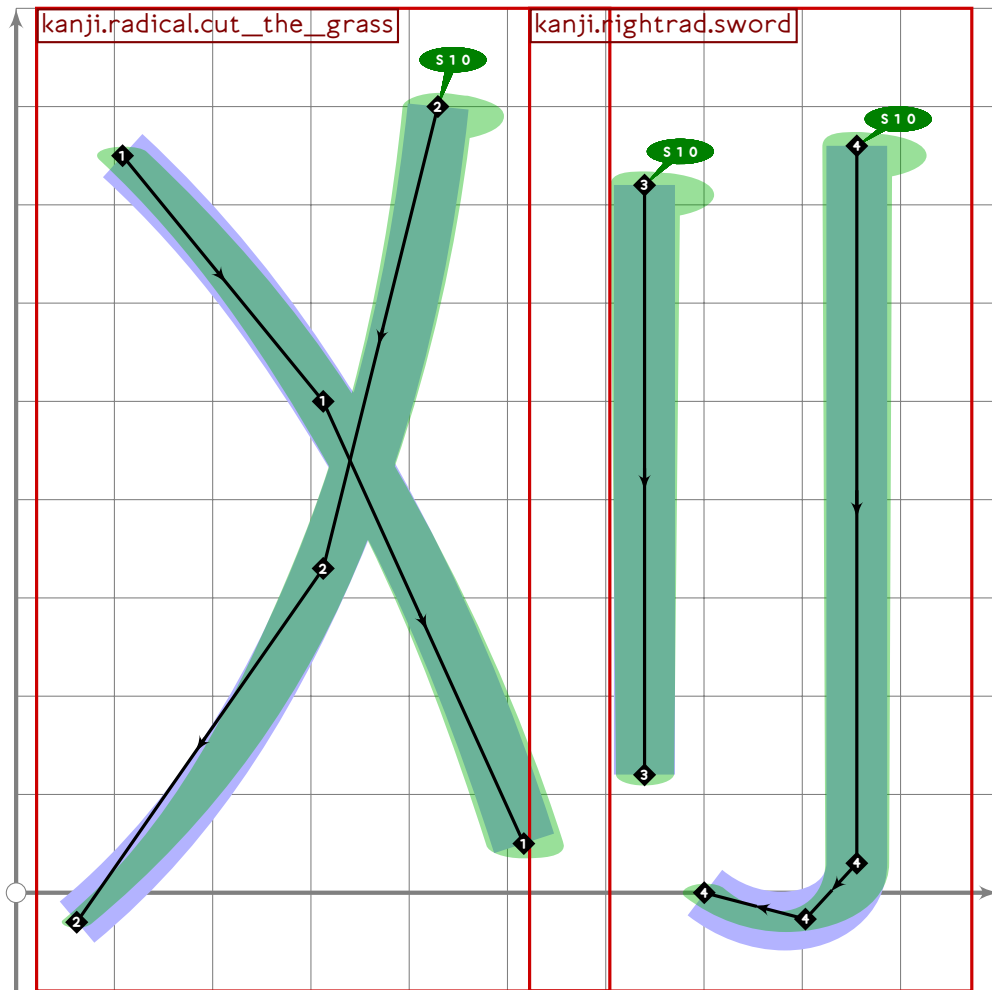
```



```

94
95 vardef tsu_curve.kanji.grfive.conform =
96   add_proof_box("kanji.grfive.conform");
97   build_kanji.level(build_kanji.lr(560,30)
98     (tsu_curve.kanji.grone.shell)
99     (tsu_curve.kanji.righthtrad.sword));
100 enddef;
101
102

```

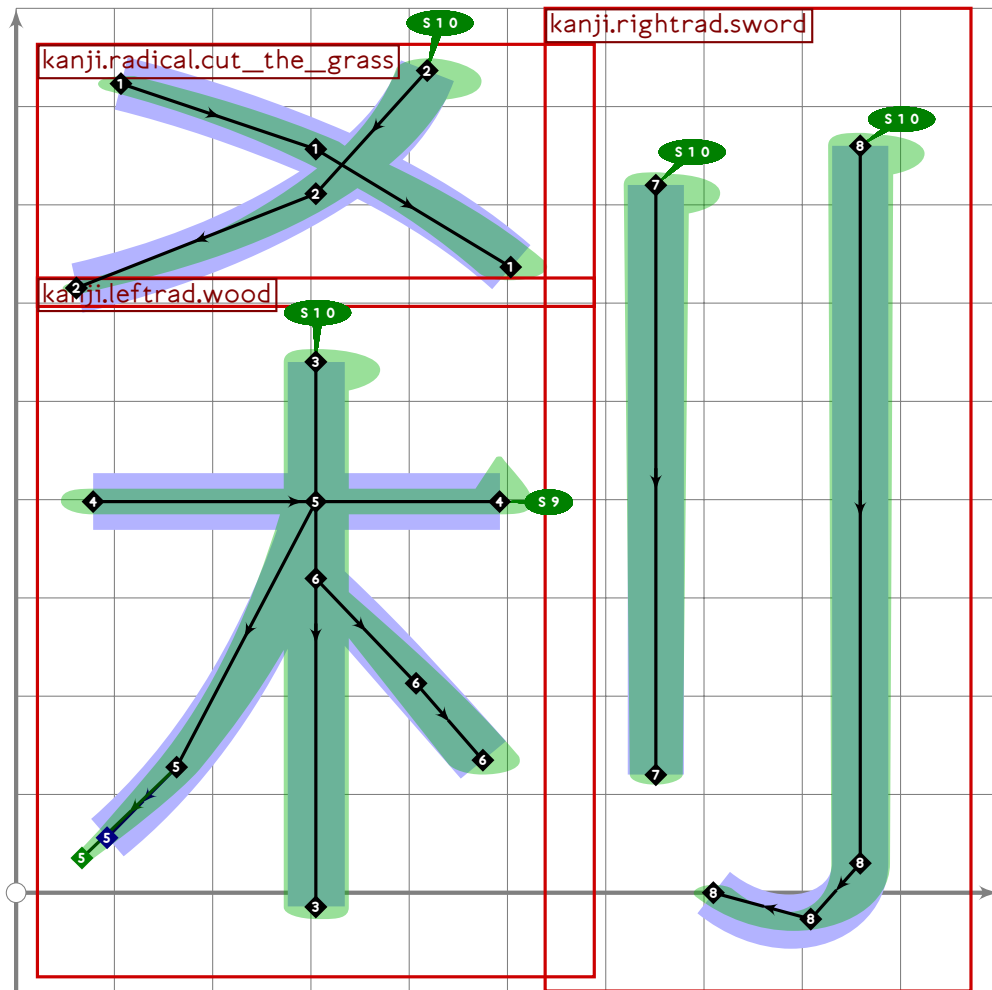


```

103
104 vardef tsu_curve.kanji.greight.cut_the_grass =
105   add_proof_box("kanji.greight.cut_the_grass");
106   build_kanji.level(build_kanji.lr(560,30)
107     (tsu_curve.kanji.radical.cut_the_grass)
108     (tsu_curve.kanji.rightrad.sword));
109 enddef;

```

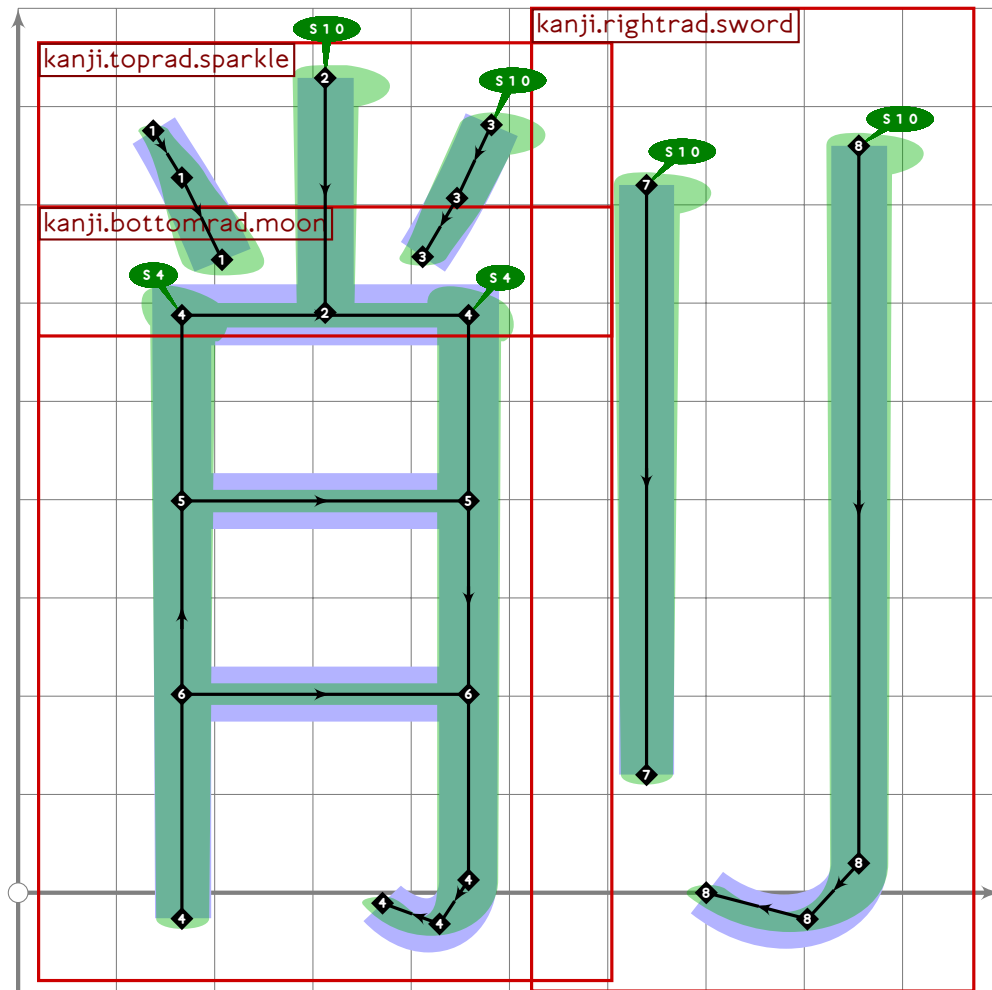




```

110
111 vardef tsu_curve.kanji.greight.temple =
112   add_proof_box("kanji.greight.temple");
113   build_kanji.level(build_kanji.lr(560,0)
114     (build_kanji.tb(600,-20)
115       (tsu_curve.kanji.radical.cut_the_grass)
116       (tsu_curve.kanji.leftrad.wood))
117     (tsu_curve.kanji.rightrad.sword));
118 enddef;

```



```

119
120 vardef tsu_curve.kanji.greight.whittle =
121   add_proof_box("kanji.greight.whittle");
122   build_kanji.level(build_kanji.lr(560,30)
123     (tsu_curve.kanji.greight.resemblance)
124     (tsu_curve.kanji.righthrad.sword));
125 enddef;

```

126  
127

```

128
129 % tou/katana "sword"
130 begintsuglyph("uni5200";0);
131   tsu_curve.kanji.grtwo.sword;
132   tsu_render;
133 endsuglyph;

```

[see page 398]

```

134
135 % tou "sword radical"
136 begintsuglyph("uni5202";2);
137   tsu_curve.kanji.righthrad.sword;
138   tsu_render;
139 endsuglyph;

```

[see page 1195]

140  
141 % bun/wa "minute" or "understand" (wakarimasu ka?)

142 `begintsuglyph("uni5206";6);`

[see page 387]

143 `tsu_curve.kanji.grtwo.minute;`

144 `tsu_render;`

145 `endsuglyph;`

146

147 % setsu/ki "cut"

148 `begintsuglyph("uni5207";7);`

[see page 1197]

149 `tsu_curve.kanji.grtwo.cut;`

150 `tsu_render;`

151 `endsuglyph;`

152

153 % gai/ka "mow"

154 `begintsuglyph("uni5208";8);`

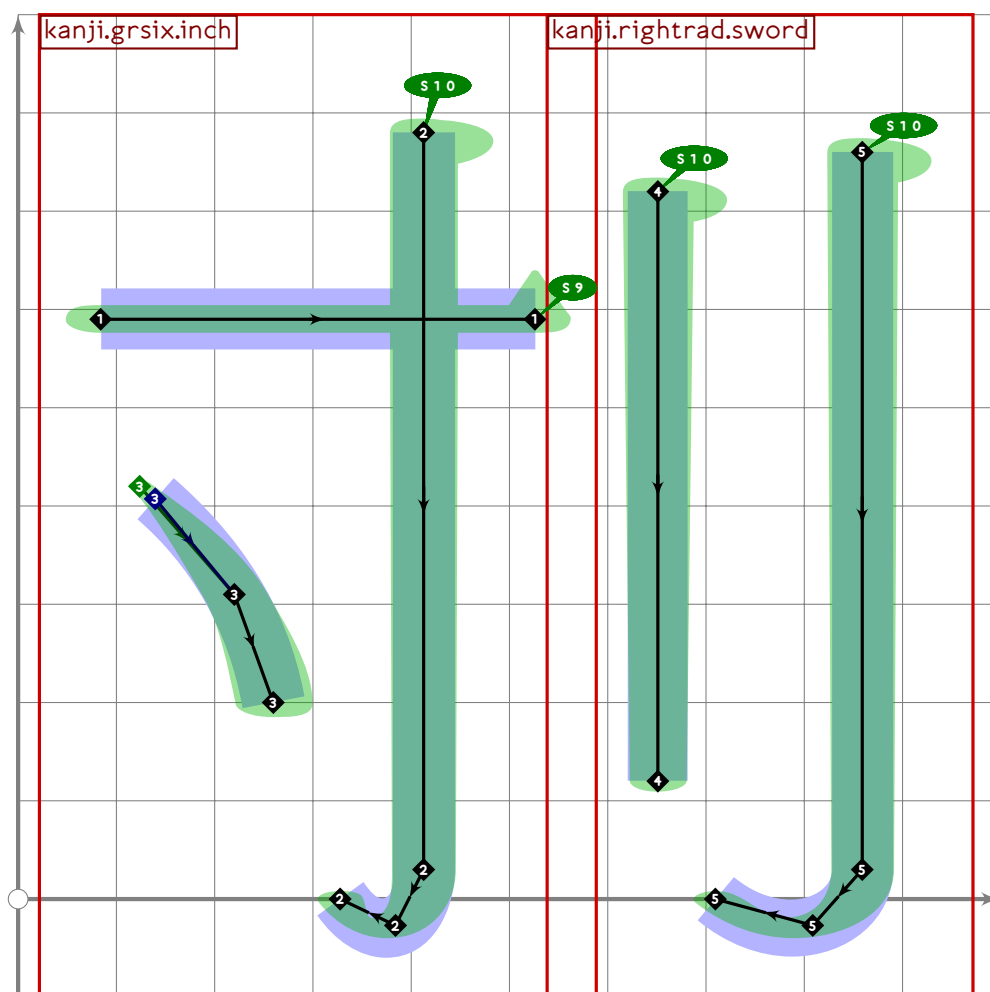
[see page 1200]

155 `tsu_curve.kanji.greight.cut_the_grass;`

156 `tsu_render;`

157 `endsuglyph;`

158



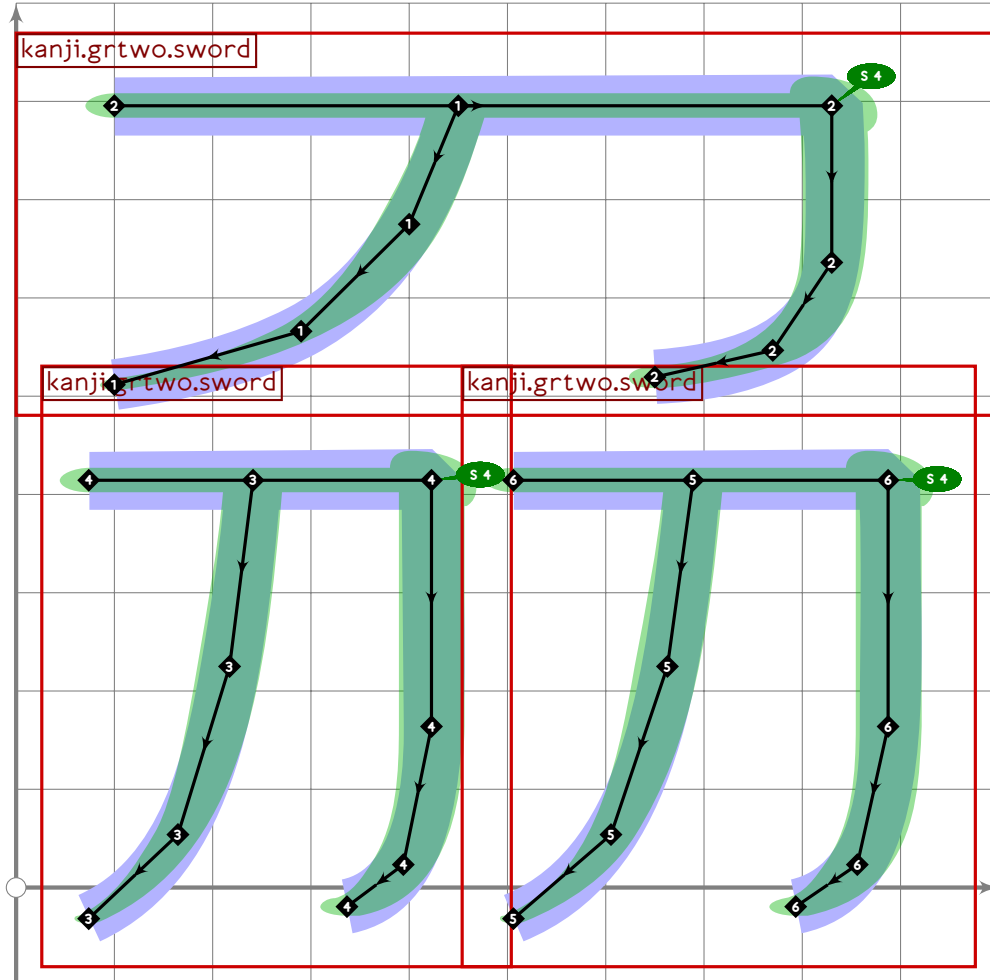
159 % extra

160 `begintsuglyph("uni520C";12);`

```

161 build_kanji.level(build_kanji.lr(560,0)
162   (tsu_curve.kanji.grsix.inch)
163   (tsu_curve.kanji.rightrad.sword));
164 tsu_render;
165 endtsuglyph;
166

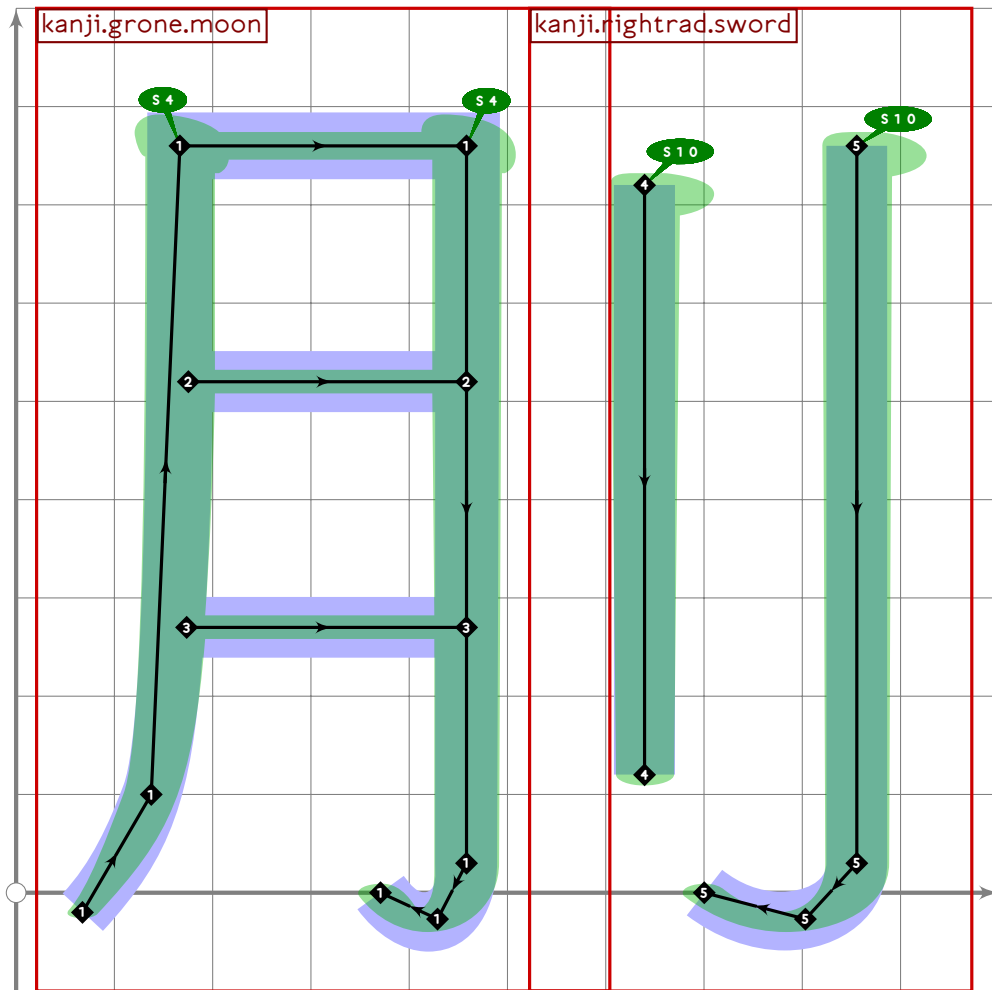
```



```

167 % extra
168 begint Suglyph("uni5215";21);
169 build_kanji.level(build_kanji.tricluster(1)
170   (tsu_curve.kanji.grtwo.sword)
171   (tsu_curve.kanji.grtwo.sword)
172   (tsu_curve.kanji.grtwo.sword));
173 tsu_render;
174 endtsuglyph;
175

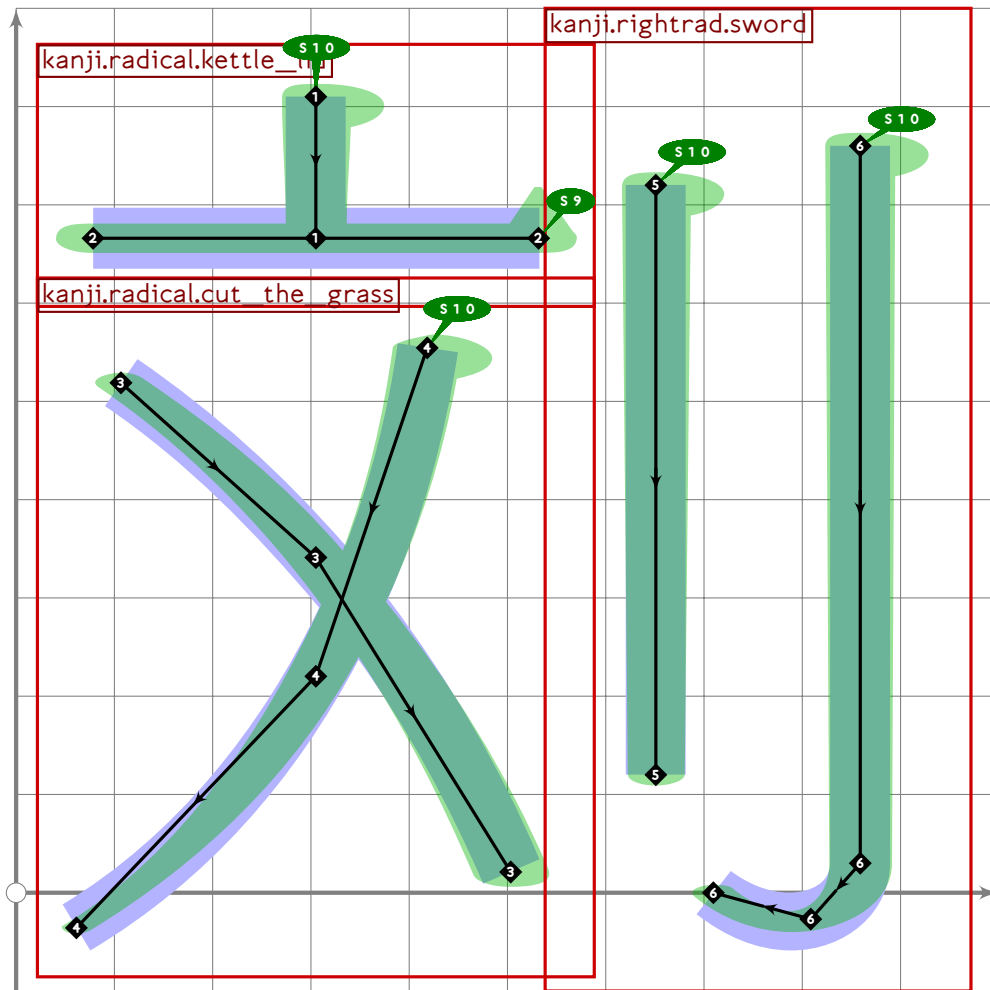
```



```

176 % extra: punishment by cutting off the feet (wtf?)
177 begint Suglyph("uni5216";22);
178 build_kanji.level(build_kanji.lr(560,30)
179     (tsu_curve.kanji.grone.moon)
180     (tsu_curve.kanji.rightrad.sword));
181 tsu_render;
182 endsuglyph;
183

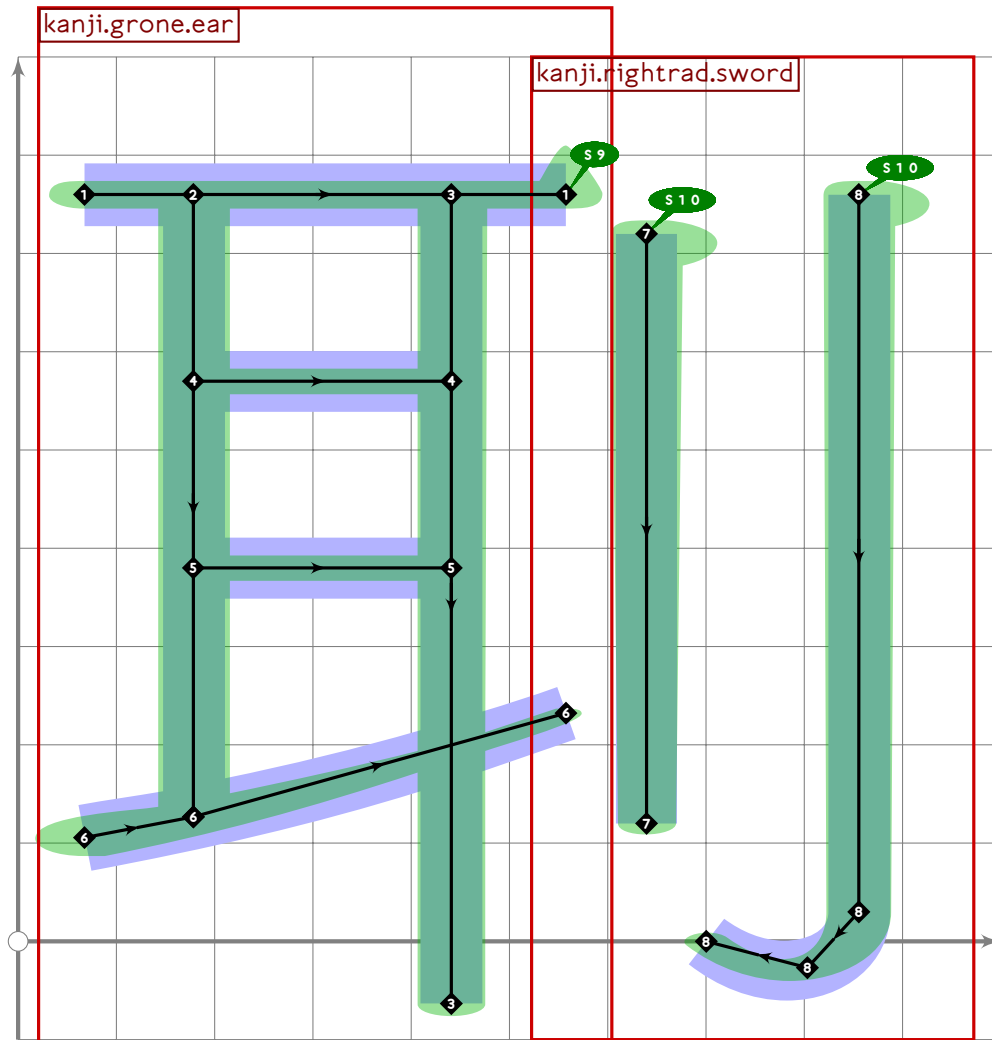
```



```

184 % extra: kill, destroy
185 begint Suglyph("uni5218";24);
186 build_kanji.level(build_kanji.lr(560,0)
187   (build_kanji.tb(600,-20)
188     (tsu_curve.kanji.radical.kettle_lid)
189     (tsu_curve.kanji.radical.cut_the_grass))
190   (tsu_curve.kanji.rightrad.sword));
191 tsu_render;
192 endtsuglyph;
193

```



```

194 % extra: punishment by cutting off the ears
195 begintsuglyph("uni5235";53);
196 build_kanji.level(build_kanji.lr(560,30)
197   (tsu_xform(identity yscaled (760/720))(tsu_curve.kanji.grone.ear))
198   (tsu_curve.kanji.rightrad.sword));
199 tsu_render;
200 endtsuglyph;

```

```

201
202 % satsu "temple/central pillar of pagoda"
203 begintsuglyph("uni5239";57);
204 tsu_curve.kanji.greight.temple;
205 tsu_render;
206 endtsuglyph;

```

[see page 1201]

```

207
208 % soku/notto "conform"
209 begintsuglyph("uni5247";71);
210 tsu_curve.kanji.grfive.conform;
211 tsu_render;
212 endtsuglyph;

```

[see page 1199]

213

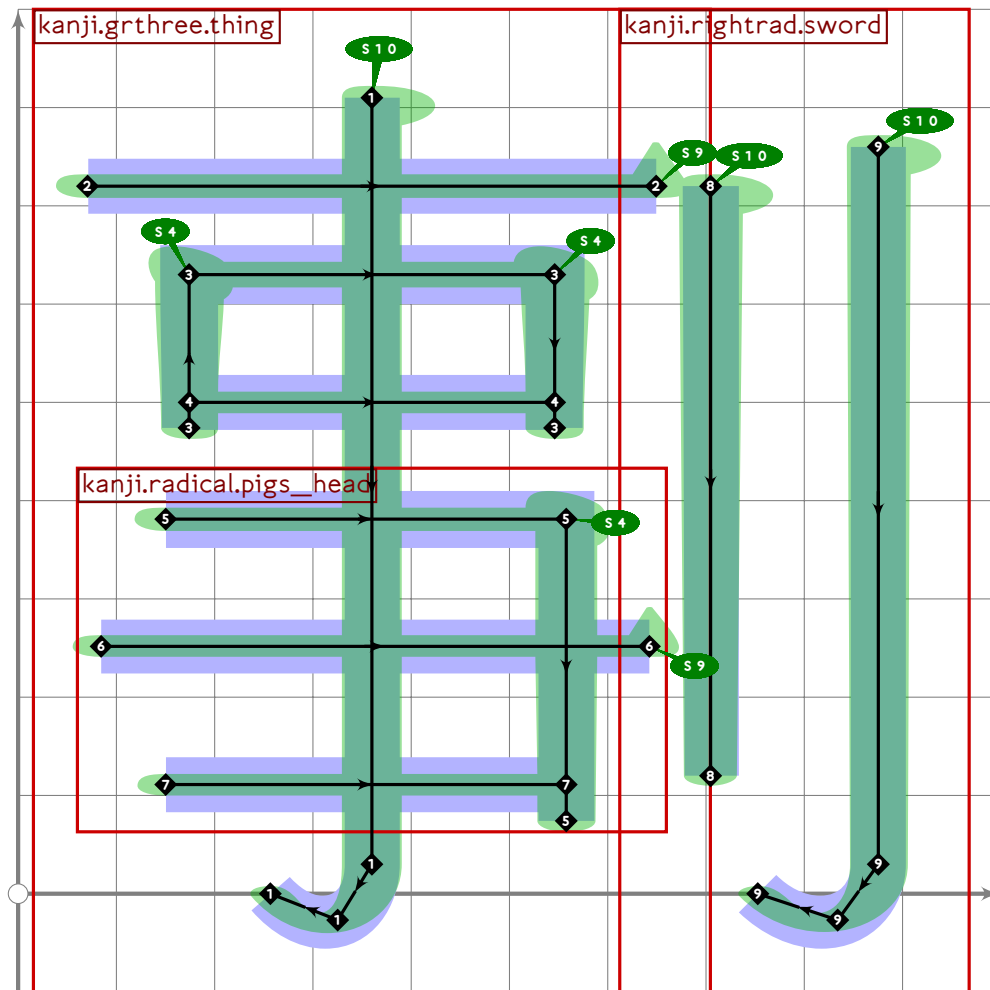
```

214 % saku/kezu "whittle, sharpen, plane"
215 begintsuglyph("uni524A";74);
216 tsu_curve.kanji.greight.whittle;
217 tsu_render;
218 endtsuglyph;
219
220 % zen/mae "before"
221 begintsuglyph("uni524D";77);
222 tsu_curve.kanji.grtwo.before;
223 tsu_render;
224 endtsuglyph;
225

```

[see page 1202]

[see page 1196]

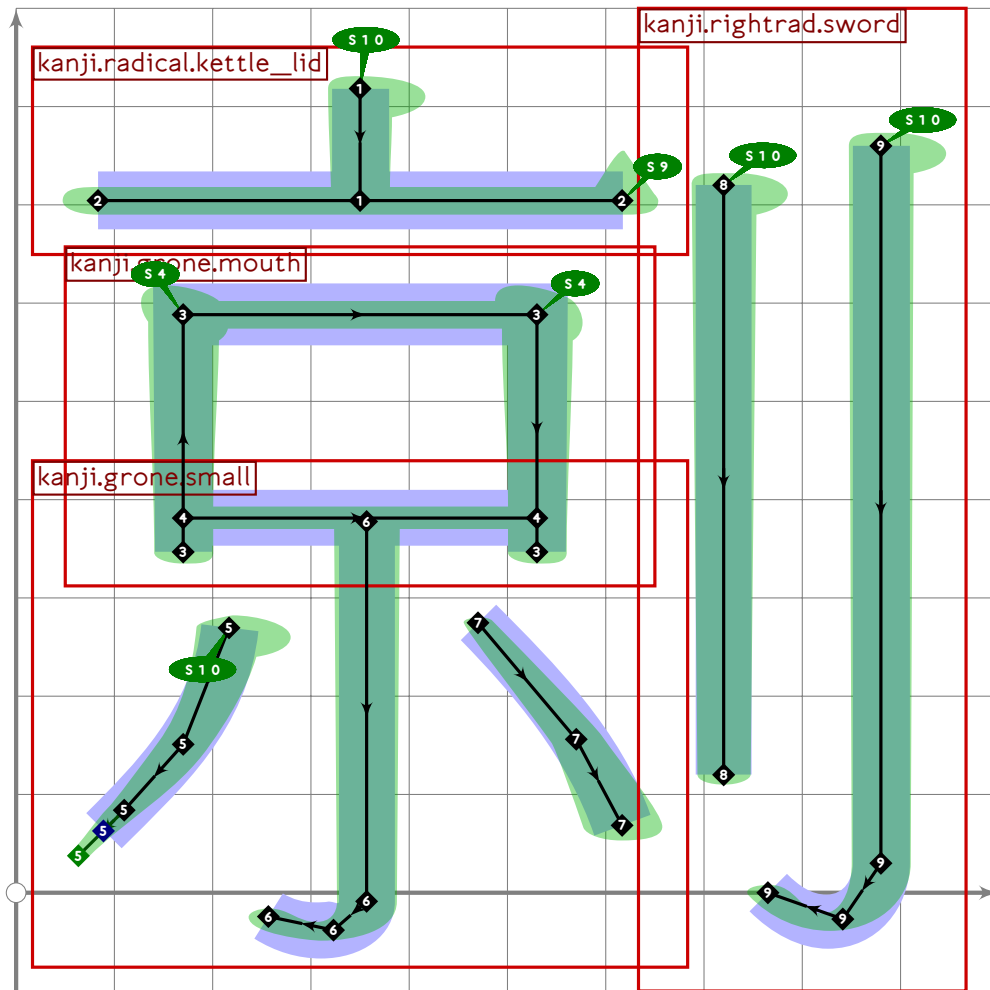


```

226 % extra: "stab"
227 begintsuglyph("uni525A";90);
228 build_kanji.level(build_kanji.lr(650,40)
229   (tsu_curve.kanji.grthree.thing)
230   (tsu_curve.kanji.rightrad.sword));
231 tsu_render;
232 endtsuglyph;
233

```

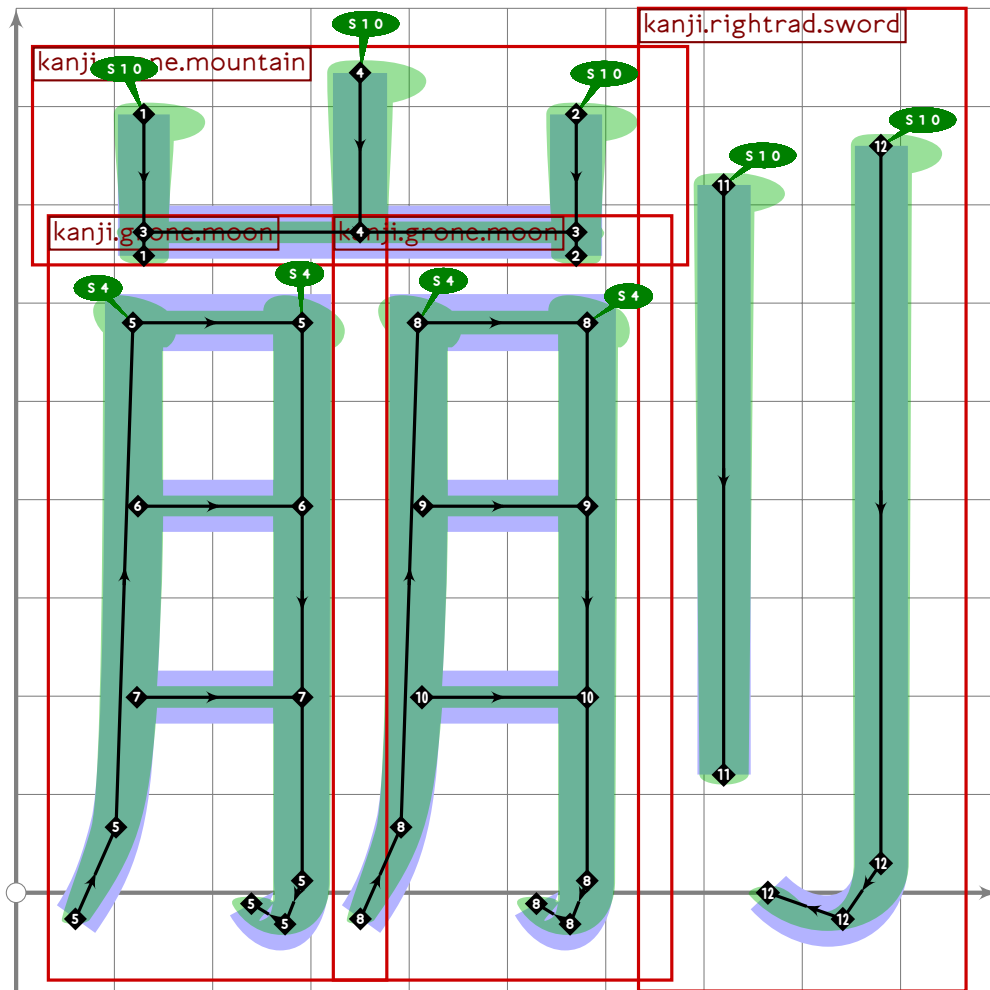




```

234 % extra: "brand" (probably yet another criminal punishment)
235 begint Suglyph("uni5260";96);
236 build_kanji.level(build_kanji.lr(650,0)
237   (tsu_curve.kanji.grtwo.capital)
238   (tsu_curve.kanji.rightrad.sword));
239 tsu_render;
240 endsuglyph;
241

```



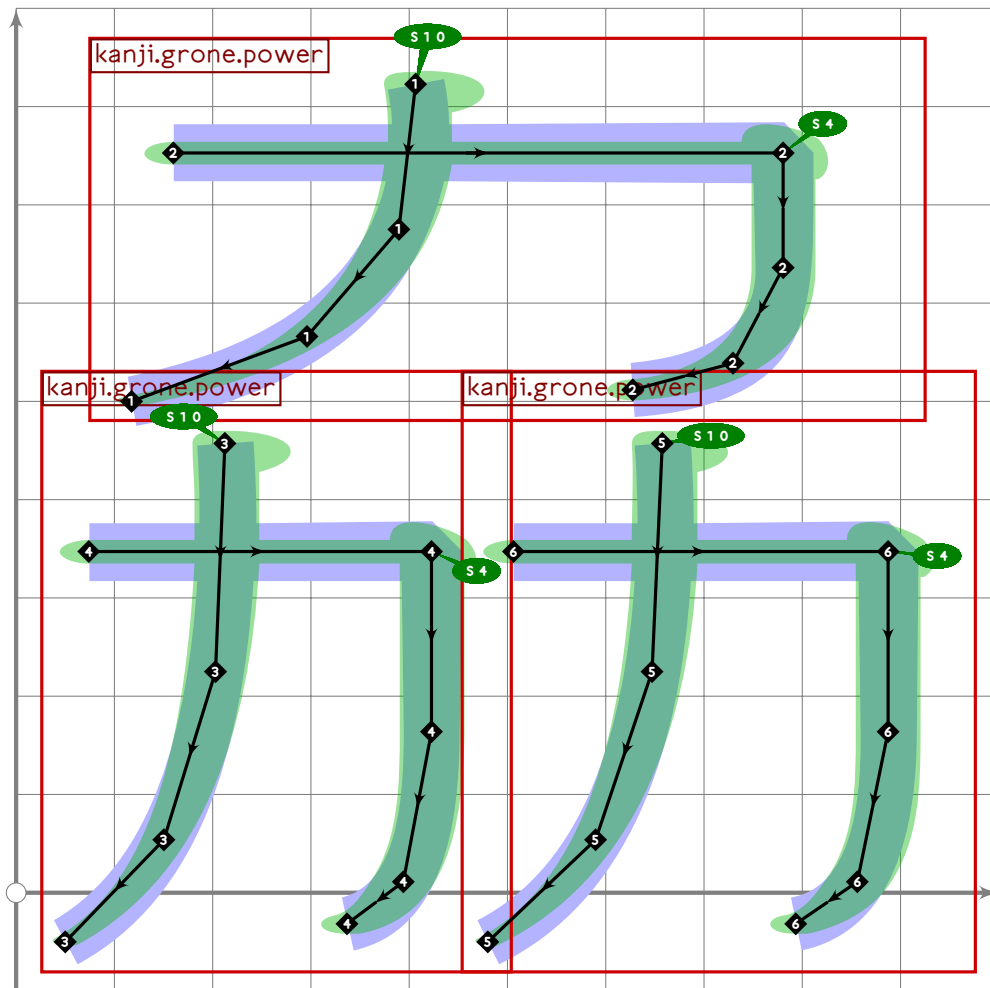
```

242 % extra
243 begintsuglyph("uni527B";123);
244 build_kanji.level(build_kanji.lr(650,0)
245   (tsu_curve.kanji.greight.demolish)
246   (tsu_curve.kanji.rightrad.sword));
247 tsu_render;
248 endtsuglyph;
249
250 % ryoku "power"; as in Koizumi Itsuki has teh "chounouryoku"
251 begintsuglyph("uni529B";155);
252 tsu_curve.kanji.grone.power;
253 tsu_render;
254 endtsuglyph;
255
256 % kuwa "addition"; also "Canada"
257 begintsuglyph("uni52A0";160);
258 tsu_curve.kanji.grfour.addition;
259 tsu_render;
260 endtsuglyph;
261

```

[see page 355]

[see page 1198]



```

262 % extra
263 begint Suglyph("uni52A6",166);
264 build_kanji.level(build_kanji.tricluster(0.85)
265   (tsu_curve.kanji.grone.power)
266   (tsu_curve.kanji.grone.power)
267   (tsu_curve.kanji.grone.power));
268 tsu_render;
269 endtsuglyph;
270
271 _____
272
273 endfont;
274
275 _____

```

# tsuku-53.mp

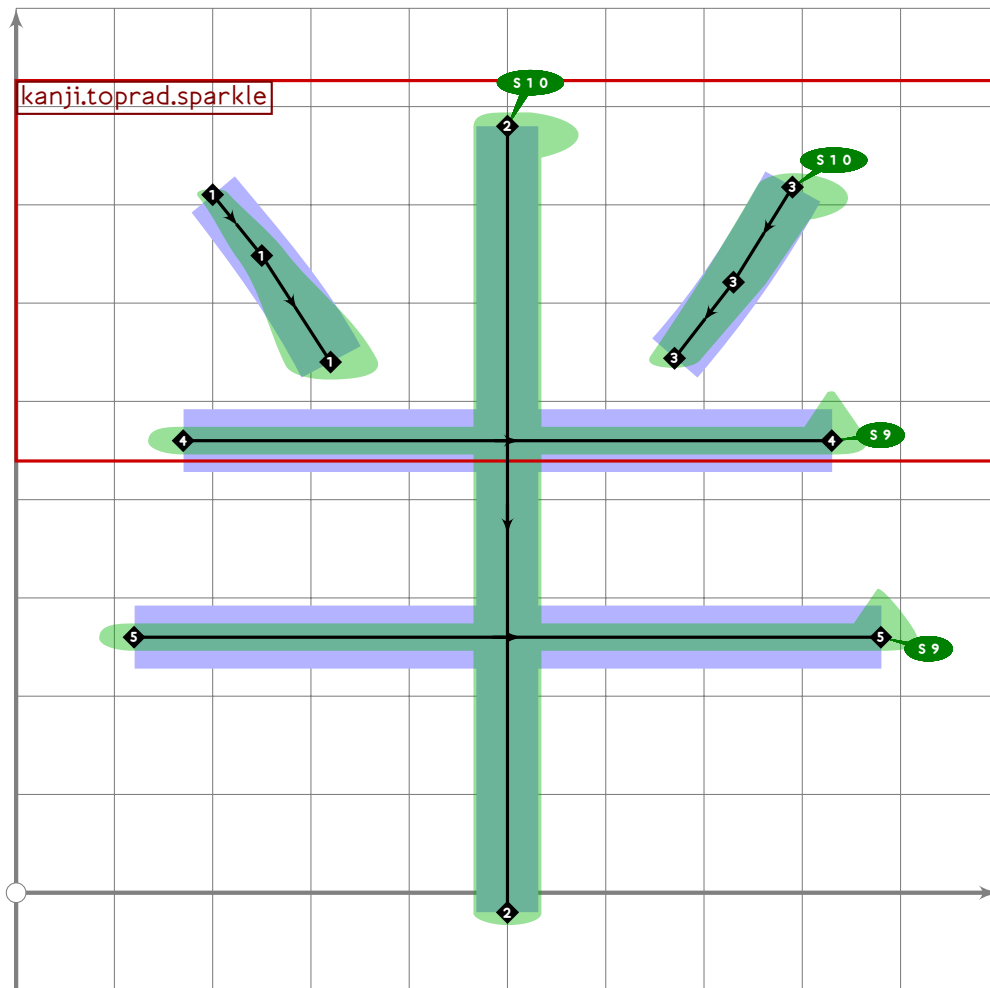
```
1 %
2 % Unicode page 53 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeeight.mp;
38 input gradefive.mp;
39 input gradenine.mp;
40 input gradeone.mp;
41 input gradethree.mp;
42 input gradetwo.mp;
43 input leftrad.mp;
44 input radical.mp;
45 input toprad.mp;
46
47 

---


```

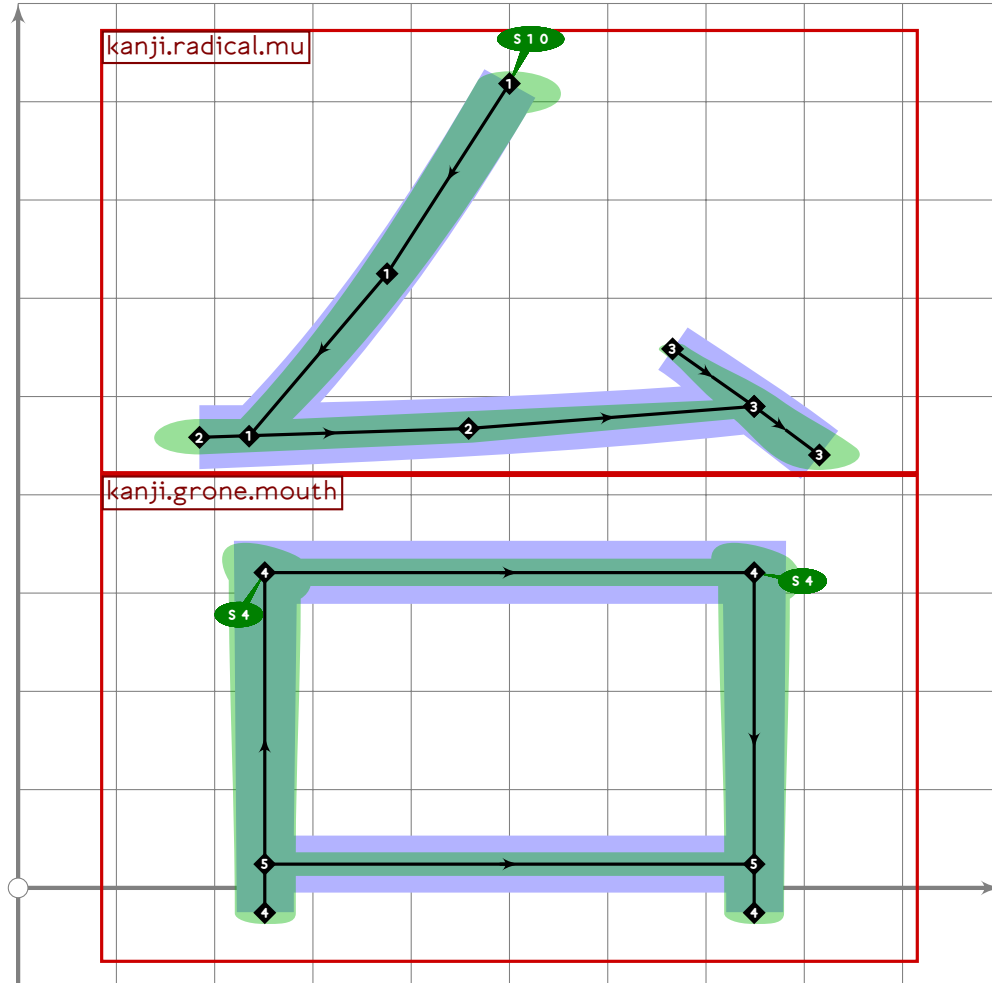


```

48
49 vardef tsu_curve.kanji.grtwo.half =
50   add_proof_box("kanji.grtwo.half");
51   build_kanji.level(begingroup
52     save saved_path,mytr;
53     path saved_path;
54     transform mytr;
55     xpart mytr=xypart mytr=yxpart mytr=0;
56     xxpart mytr=1;
57     (500,160) transformed mytr=(500,540);
58     (500,780) transformed mytr=(500,780);
59     tsu_xform(mytr)(tsu_curve.kanji.toprad.sparkle;saved_path=bp[sp-2]);
60     bp[sp-2]:=saved_path;
61     bp[sp]:=(170,460)-(830,460);
62     bq[sp]:=(1.6,1.6)-(1.6,1.6);
63     bo_serif[sp][1]:=9;
64     bp[sp+1]:=(120,260)-(880,260);
65     bq[sp+1]:=(1.6,1.6)-(1.6,1.6);
66     bo_serif[sp+1][1]:=9;
67     sp:=sp+2;
68   endgroup);

```

69 enddef;



70

```
71 vardef tsu_curve.kanji.grtwo.pedastal =  
72   add_proof_box("kanji.grtwo.pedastal");  
73   build_kanji.sscale(xscaled 0.83)(  
74     build_kanji.level(build_kanji.tb(420,-50)  
75       (tsu_curve.kanji.radical.mu)  
76       (tsu_curve.kanji.grone.mouth)));  
77 enddef;
```

78

79

80

```
81 % hi/saji "spoon"  
82 begintsuglyph("uni5315";21);  
83   tsu_curve.kanji.radical.spoon;  
84   tsu_render;  
85 endsuglyph;
```

[see page 315]

86

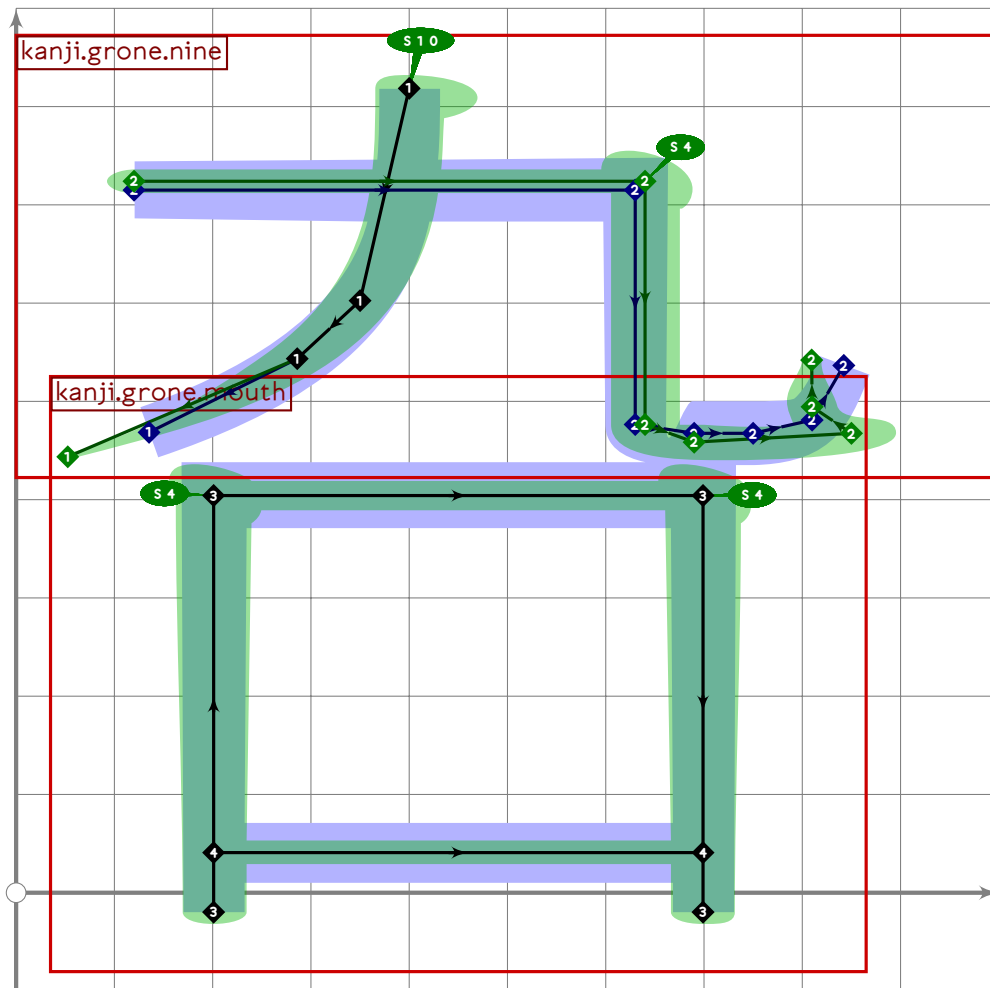
```
87 % ka/ba "change"  
88 begintsuglyph("uni5316";22);  
89   tsu_curve.kanji.grthree.change;
```

[see page 401]

90 `tsu_render;`  
 91 `endtsuglyph;`  
 92  
 93 `% juu/too "ten"`  
 94 `begintsuglyph("uni5341",65);` [see page 363]  
 95 `tsu_curve.kanji.grone.ten;`  
 96 `tsu_render;`  
 97 `endtsuglyph;`  
 98  
 99 `% sen "one thousand"`  
 100 `begintsuglyph("uni5343",67);` [see page 352]  
 101 `tsu_curve.kanji.grone.one_thousand;`  
 102 `tsu_render;`  
 103 `endtsuglyph;`  
 104  
 105 `% han/naka "half"`  
 106 `begintsuglyph("uni534A",74);` [see page 1213]  
 107 `tsu_curve.kanji.grtwo.half;`  
 108 `tsu_render;`  
 109 `endtsuglyph;`  
 110  
 111 `% go/uma "noon"`  
 112 `begintsuglyph("uni5348",72);` [see page 390]  
 113 `tsu_curve.kanji.grtwo.noon;`  
 114 `tsu_render;`  
 115 `endtsuglyph;`  
 116  
 117 `% sen/urana "divination"`  
 118 `begintsuglyph("uni5360",96);` [see page 414]  
 119 `tsu_curve.kanji.greight.divination;`  
 120 `tsu_render;`  
 121 `endtsuglyph;`  
 122  
 123 `% "mu radical"`  
 124 `begintsuglyph("uni53B6",182);` [see page 312]  
 125 `tsu_curve.kanji.radical.mu;`  
 126 `tsu_render;`  
 127 `endtsuglyph;`  
 128  
 129 `% kou/kuchi "mouth"`  
 130 `begintsuglyph("uni53E3",227);` [see page 348]  
 131 `tsu_curve.kanji.grone.mouth;`  
 132 `tsu_render;`  
 133 `endtsuglyph;`  
 134  
 135 `% ko/furo "old"`  
 136 `begintsuglyph("uni53E4",228);` [see page 393]  
 137 `tsu_curve.kanji.grtwo.old;`

```
138 tsu_render;
139 endtsuglyph;
140
141 % tada "only"
142 begintsuglyph("uni53EA",234); [see page 421]
143 tsu_curve.kanji.grnine.only;
144 tsu_render;
145 endtsuglyph;
146
147 % ka/be "passable"
148 begintsuglyph("uni53EF",239); [see page 409]
149 tsu_curve.kanji.grfive.passable;
150 tsu_render;
151 endtsuglyph;
152
153 % tai/utana "pedastal"
154 begintsuglyph("uni53F0",240); [see page 1214]
155 tsu_curve.kanji.grtwo.pedastal;
156 tsu_render;
157 endtsuglyph;
158
159 % migi "right"
160 begintsuglyph("uni53F3",243); [see page 356]
161 tsu_curve.kanji.grone.right;
162 tsu_render;
163 endtsuglyph;
164
```





```

165 % extra
166 begint Suglyph("uni53F4";244);
167 build_kanji.tb(470,50)
168   (tsu_curve.kanji.grone.nine)
169   (build_kanji.sscale(xscaled 0.83 shifted (-50,0))
170     (tsu_curve.kanji.grone.mouth));
171 tsu_render;
172 endtsuglyph;
173
174 _____
175
176 endfont;
177
178 _____

```

# tsuku-54.mp

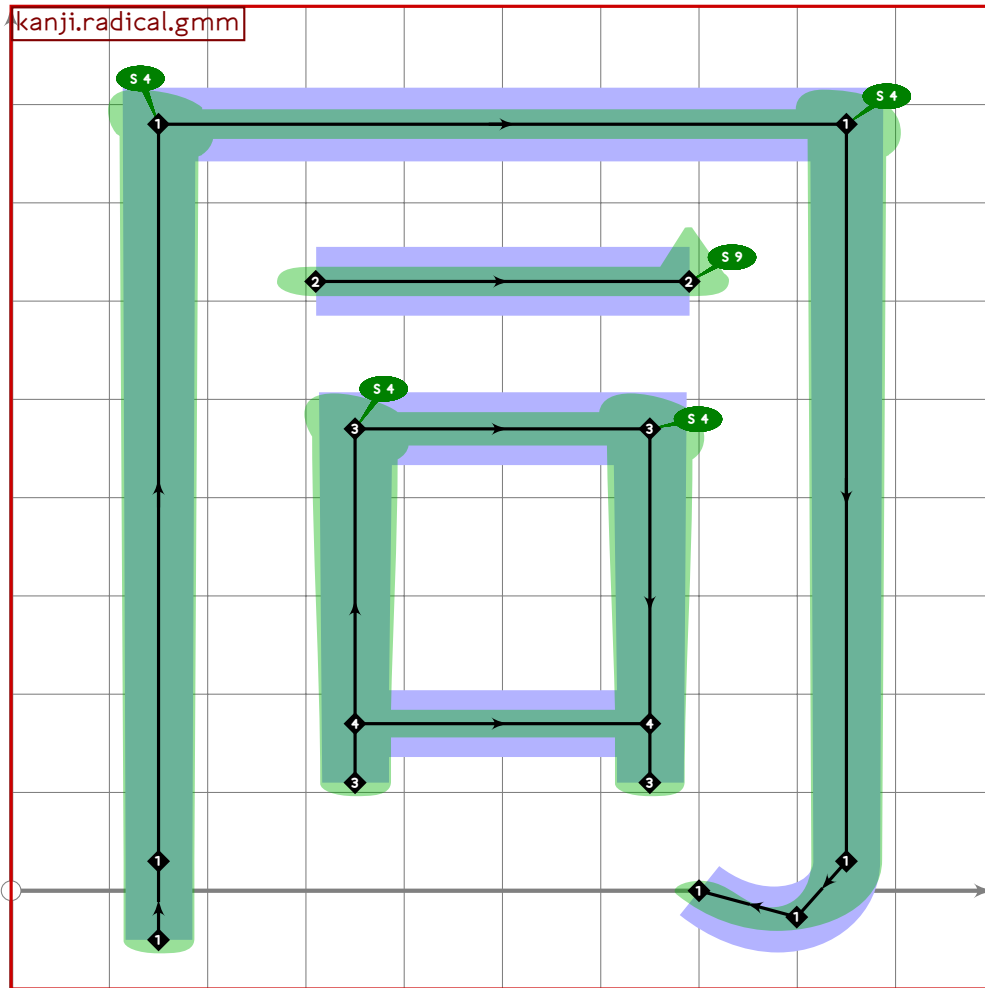
```
1 %
2 % Unicode page 54 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradefour.mp;
38 input gradenine.mp;
39 input gradeone.mp;
40 input gradethree.mp;
41 input gradetwo.mp;
42 input radical.mp;
43
44 

---


```



```

45
46 vardef tsu_curve.kanji.grtwo.same =
47   add_proof_box("kanji.grtwo.same");
48   tsu_curve.kanji.radical.gmm;
49   bp[sp]:=(310,620)-(690,620);
50   bq[sp]:=(1.6,1.6)-(1.6,1.6);
51   bo_serif[sp][1]:=9;
52   sp:=sp*1;
53   build_kanji.box((350,470),(650,170));
54 enddef;

```

```

57
58 % gou/a "meet"
59 begint Suglyph("uni5408",8);
60   tsu_curve.kanji.grtwo.join;
61   tsu_render;
62 endsuglyph;
63
64 % dou/onaji "the same"
65 begint Suglyph("uni540C",12);

```

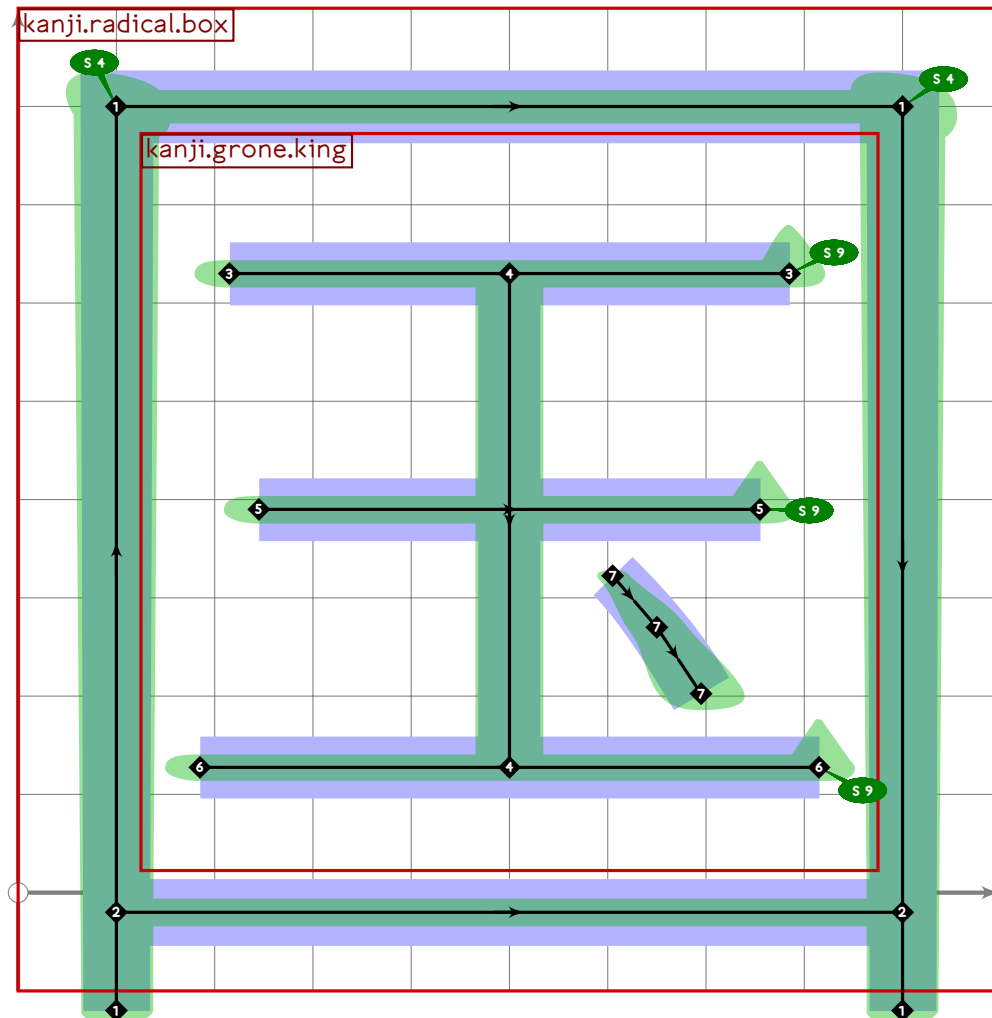
[see page 382]

[see page 1219]

```
66 tsu_curve.kanji.grtwo.same;
67 tsu_render;
68 endtsuglyph;
69
70 % na "name"
71 begintsuglyph("uni540D";13); [see page 349]
72 tsu_curve.kanji.grone.name;
73 tsu_render;
74 endtsuglyph;
75
76 % go/ware "my, mine"
77 begintsuglyph("uni543E";62); [see page 420]
78 tsu_curve.kanji.grnine.my;
79 tsu_render;
80 endtsuglyph;
81
82 % koku "revelation"
83 begintsuglyph("uni544A";74); [see page 408]
84 tsu_curve.kanji.grfour.revelation;
85 tsu_render;
86 endtsuglyph;
87
88 % hin.shina "goods"
89 begintsuglyph("uni54C1";193); [see page 403]
90 tsu_curve.kanji.grthree.goods;
91 tsu_render;
92 endtsuglyph;
93
94 _____
95
96 endfont;
97
98 _____
```

# tsuku-56.mp

```
1 %  
2 % Unicode page 56 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradesix.mp;  
39 input gradetwo.mp;  
40 input radical.mp;  
41  
42 _____
```



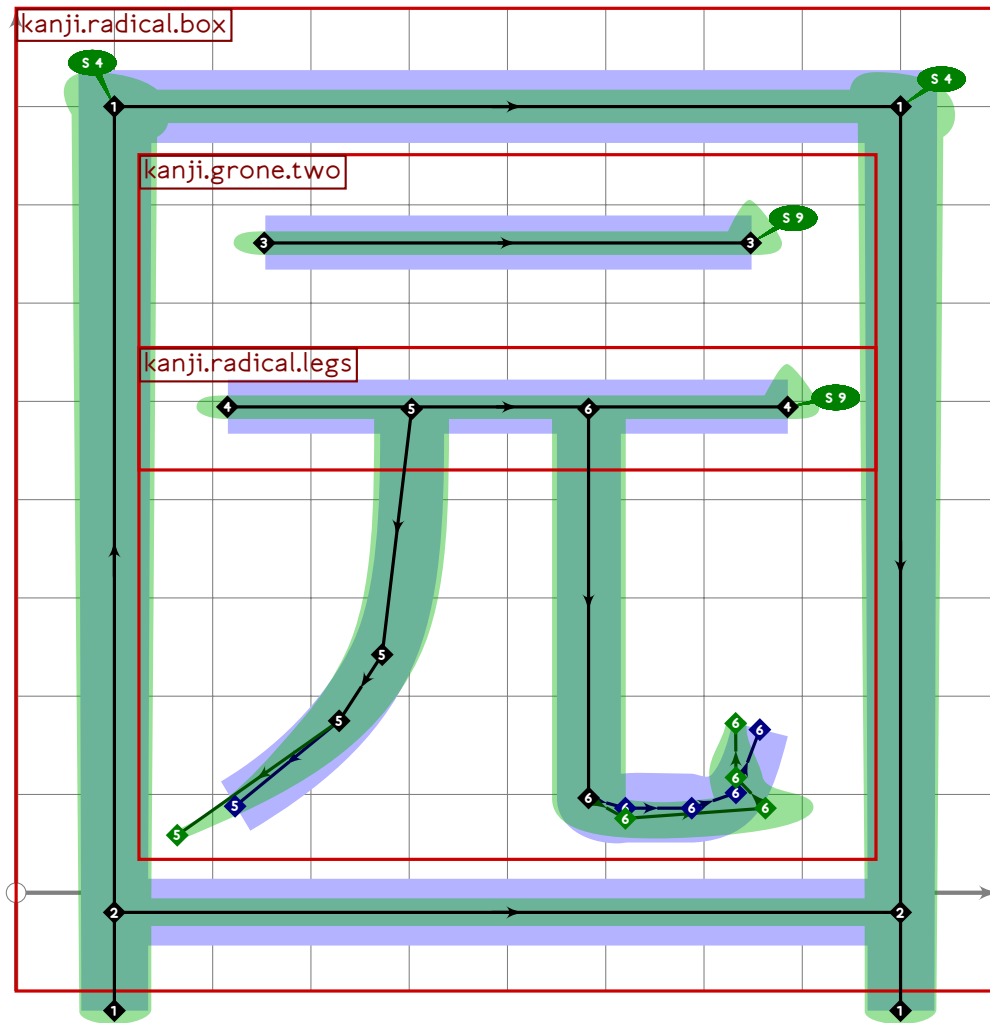
```

43
44 vardef tsu_curve.kanji.grtwo.country =
45   add_proof_box("kanji.grtwo.country");
46   tsu_curve.kanji.radical.box;
47   build_kanji.sscale(scaled 0.75)(tsu_curve.kanji.grone.ball);
48 enddef;
49
50 

---


51
52 % box radical
53 begintsuglyph("uni56D7",215); [see page 307]
54   tsu_curve.kanji.radical.box;
55   tsu_render;
56 endtsuglyph;
57
58 % shi/yon "four"
59 begintsuglyph("uni54DB",219); [see page 338]
60   tsu_curve.kanji.grone.four;
61   tsu_render;
62 endtsuglyph;
63
64 % kai "counter for occurrences"
65 begintsuglyph("uni54DE",222); [see page 392]
66   tsu_curve.kanji.grtwo.occurrences;
67   tsu_render;
68 endtsuglyph;
69

```



```

70 % extra
71 begintsuglyph("uni56ED";237);
72 tsu_curve.kanji.radical.box;
73 build_kanji.sscale(scaled 0.75)(tsu_curve.kanji.grtwo.origin);
74 tsu_render;
75 endsuglyph;
76
77 % koma "bothered"
78 begintsuglyph("uni56F0";240);
79 tsu_curve.kanji.grsix.bothered;
80 tsu_render;
81 endsuglyph;
82
83 % koku/kuni "country"
84 begintsuglyph("uni56FD";253);
85 tsu_curve.kanji.grtwo.country;
86 tsu_render;
87 endsuglyph;
88
89

```

[see page 411]

[see page 1222]

90

91 **endfont;**

92

93

---



# tsuku-57.mp

```
1 %
2 % Unicode page 57 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38 input radical.mp;
39
40 

---

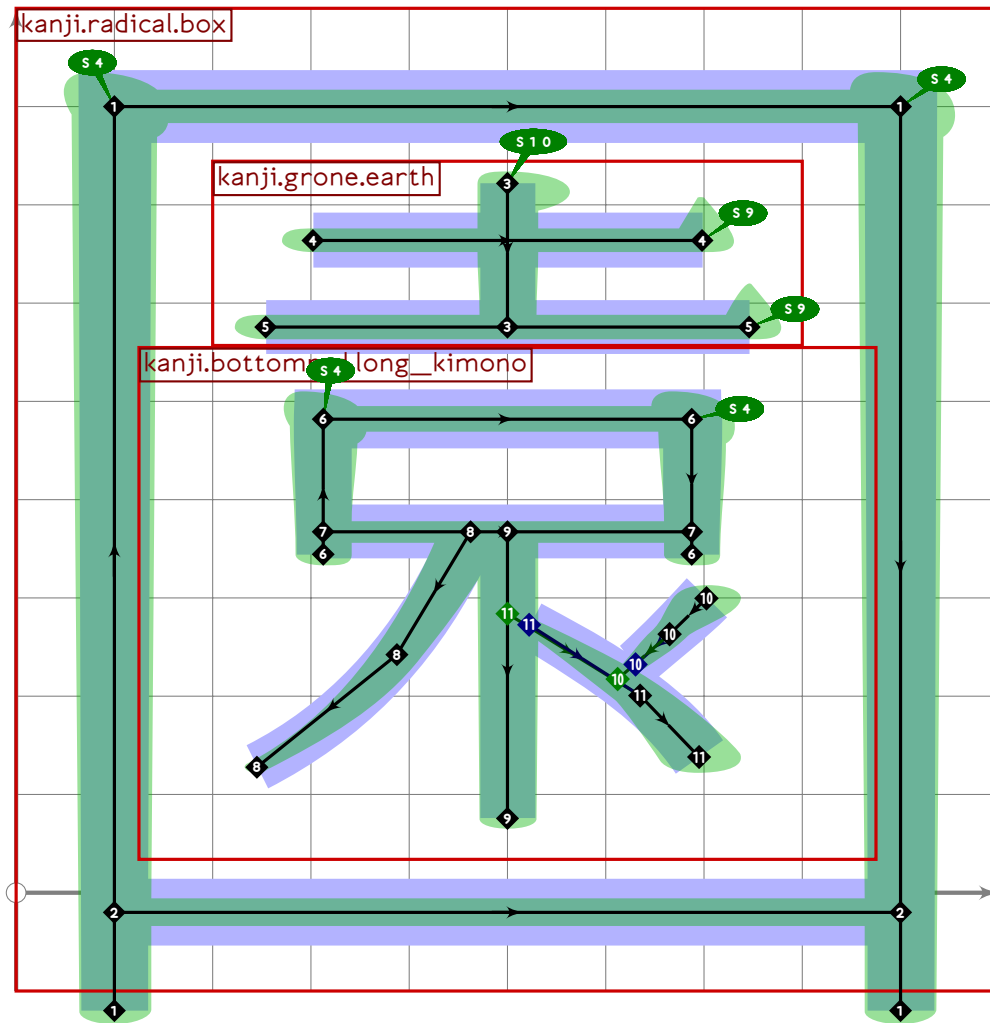

41
42 vardef tsu_curve.kanji.bottomrad.long_kimono =
43   add_proof_box("kanji.bottomrad.long_kimono");
44   build_kanji.box((250,760),(750,540));
45   bp[sp]:=(450,540)..tension 1.2..(350,300)..(160,80);
46   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(1,1);
47   bp[sp*1]:=(500,540)-(500,-20);
48   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
49   bp[sp*3]:=(500,380)..tension 1.2..(680,220)..(760,100);
50   bq[sp*3]:=(0.9,0.9)-(1.5,1.5)-(1.9,1.9);
51   bp[sp*2]:=(770,410)..tension 1.2..(720,340)..(point 0.8 of bp[sp*3]);
52   bq[sp*2]:=(1.7,1.7)-(1.2,1.2)-(0.9,0.9);
53   sp:=sp*4;
54 enddef;
55
56 

---


57
58 vardef tsu_curve.kanji.radical.long_kimono =
59   add_proof_box("kanji.radical.long_kimono");
60   build_kanji.level(build_kanji.tb(600,-50)
61     (build_kanji.sscale(xscaled 0.8)(tsu_curve.kanji.grone.earth))
62     (tsu_curve.kanji.bottomrad.long_kimono));
63 enddef;
64
65 

---


```



```

66
67 vardef tsu_curve.kanji.grtwo.garden =
68   add_proof_box("kanji.grtwo.garden");
69   tsu_curve.kanji.radical.box;
70   build_kanji.sscale(scaled 0.75)(tsu_curve.kanji.radical.long_kimono);
71 enddef;

```

72

73

74

75 % en/zono "garden"

76 `begintsuglyph("uni5712";18);`

[see page 1226]

77 `tsu_curve.kanji.grtwo.garden;`

78 `tsu_render;`

79 `endtsuglyph;`

80

81 % tsuchi/do "earth"

82 `begintsuglyph("uni571F";31);`

[see page 332]

83 `tsu_curve.kanji.grone.earth;`

84 `tsu_render;`

85 `endtsuglyph;`

86

87

---

88

89 **endfont;**

90

91

---

# tsuku-58.mp

```
1 %  
2 % Unicode page 58 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

5-29 [Standard copyright notice]

30

31

32

33 beginfont

34

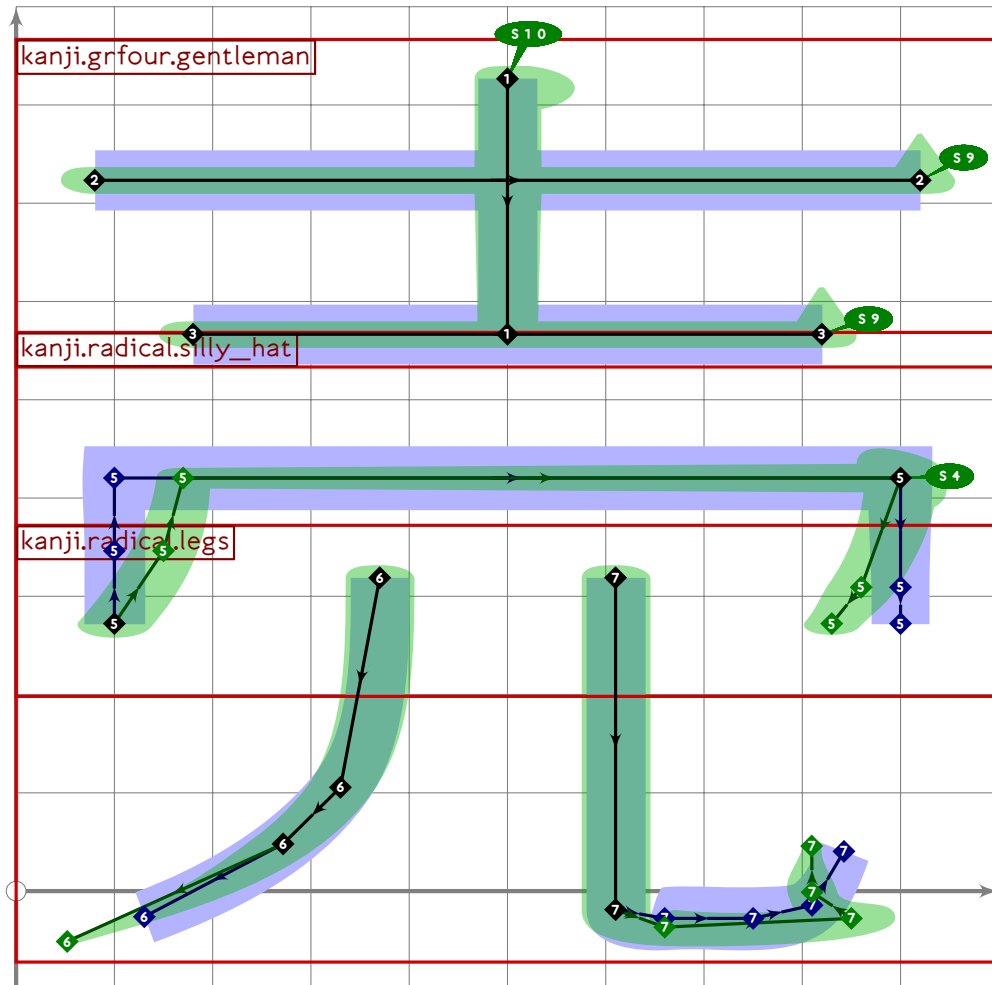
35 % AUTODEPS

36 input buildkanji.mp;

37 input radical.mp;

38

39



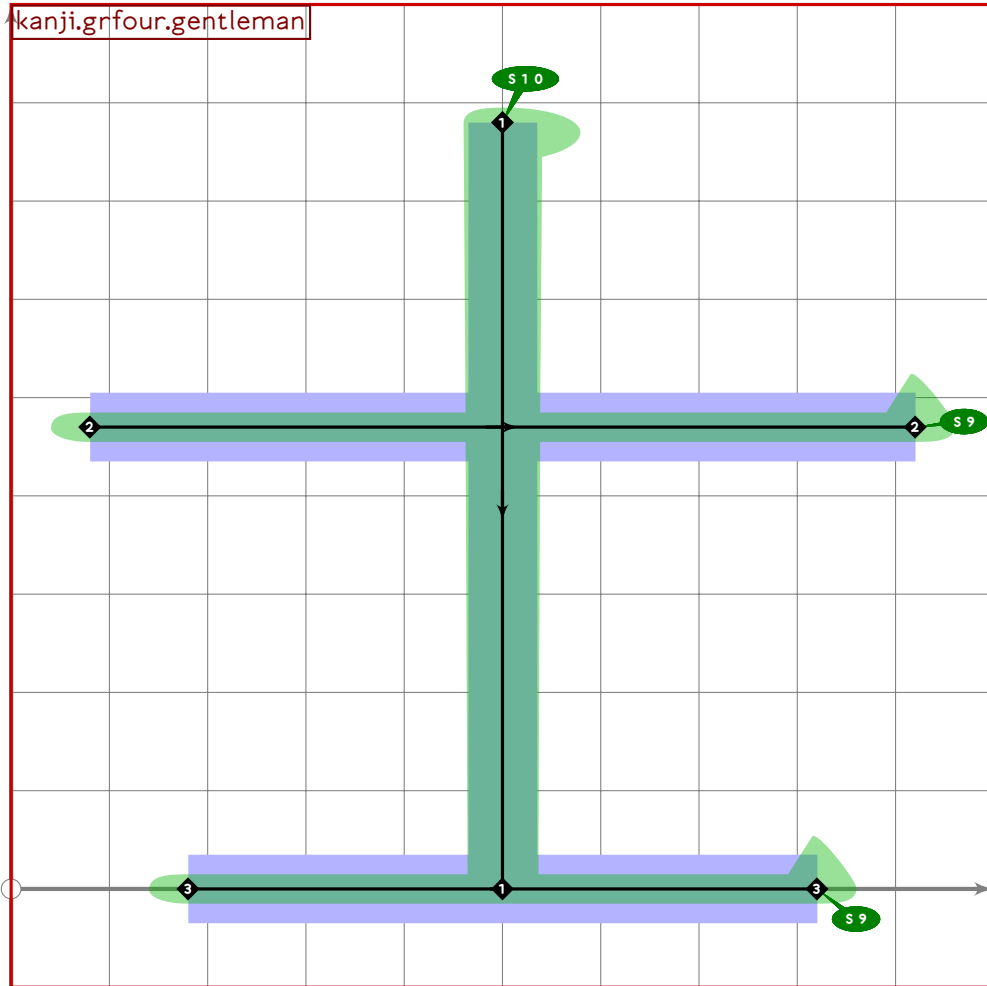
40

```
41 vardef tsu_curve.kanji.grtwo.sell =  
42   add_proof_box("kanji.grtwo.sell");  
43   build_kanji.level(build_kanji.tb(550,0))
```

```

44 (tsu_curve.kanji.grfour.gentleman)
45 (build_kanji.tb(450,200)
46 (tsu_curve.kanji.radical.silly_hat;
47 bo_size[sp-2]:=0)
48 (tsu_curve.kanji.radical.legs));
49 endif;
50
51

```



```

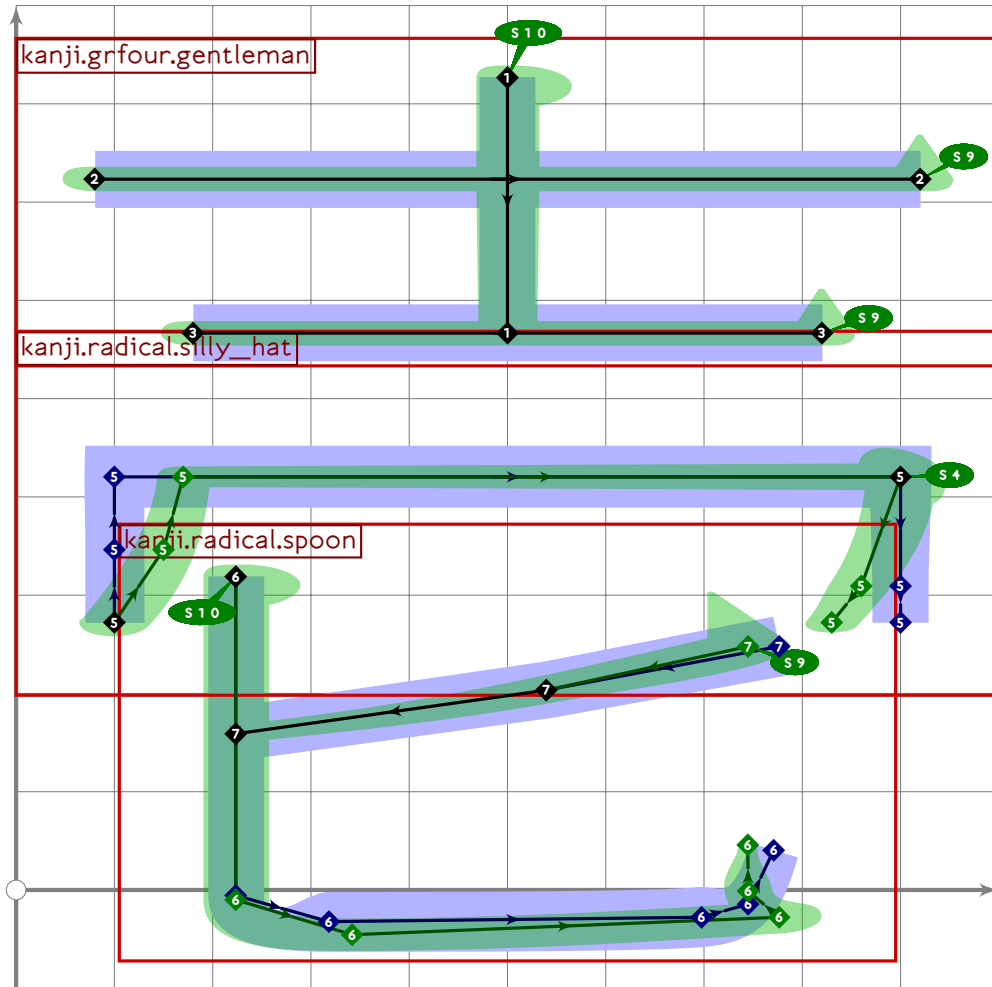
52
53 vardef tsu_curve.kanji.grfour.gentleman =
54 add_proof_box("kanji.grfour.gentleman");
55 bp[sp]:= (500,780)-(500,0);
56 bq[sp]:= (1.6,1.6)-(1.5,1.5);
57 bo_serif[sp][0]:=10;
58 bp[sp+1]:= (80,470)-(920,470);
59 bq[sp+1]:= (1.6,1.6)-(1.6,1.6);
60 bo_serif[sp+1][1]:=9;
61 bp[sp+2]:= (180,0)-(820,0);
62 bq[sp+2]:= (1.6,1.6)-(1.6,1.6);
63 bo_serif[sp+2][1]:=9;
64 sp:=sp+3;

```

```

65 endif;
66
67

```



```

68
69 vardef tsu_curve.kanji.greight.legal_one =
70   add_proof_box("kanji.greight.legal_one");
71   build_kanji.level(build_kanji.tb(550,0)
72     (tsu_curve.kanji.grfour.gentleman)
73     (build_kanji.tb(450,200)
74       (tsu_curve.kanji.radical.silly_hat;
75         bo_size[sp-2]:=0)
76       (build_kanji.sscale(xscaled 0.79)
77         (tsu_curve.kanji.radical.spoon)))));
78 endif;
79

```

```

80
81
82 % shi "gentleman" ("samurai" radical)
83 begint Suglyph("uni58EB",235);
84   tsu_curve.kanji.grfour.gentleman;
85   tsu_render;

```

[see page 1229]

```
86 endtsuglyph;
87
88 % ichi/hitotsu "one" (formal, also first musical scale degree)
89 begintsuglyph("uni58F1",241); [see page 1230]
90 tsu_curve.kanji.greight.legal_one;
91 tsu_render;
92 endtsuglyph;
93
94 % bai/u "sell"
95 begintsuglyph("uni58F2",242); [see page 1228]
96 tsu_curve.kanji.grtwo.sell;
97 tsu_render;
98 endtsuglyph;
99
100 

---


101
102 endfont;
103
104 

---


```

# tsuku-59.mp

1 %  
2 % Unicode page 59 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %

5-29 [Standard copyright notice]

30

31

32

33 beginfont

34

35 % AUTODEPS

36 input buildkanji.mp;

37 input gradefour.mp;

38 input gradeone.mp;

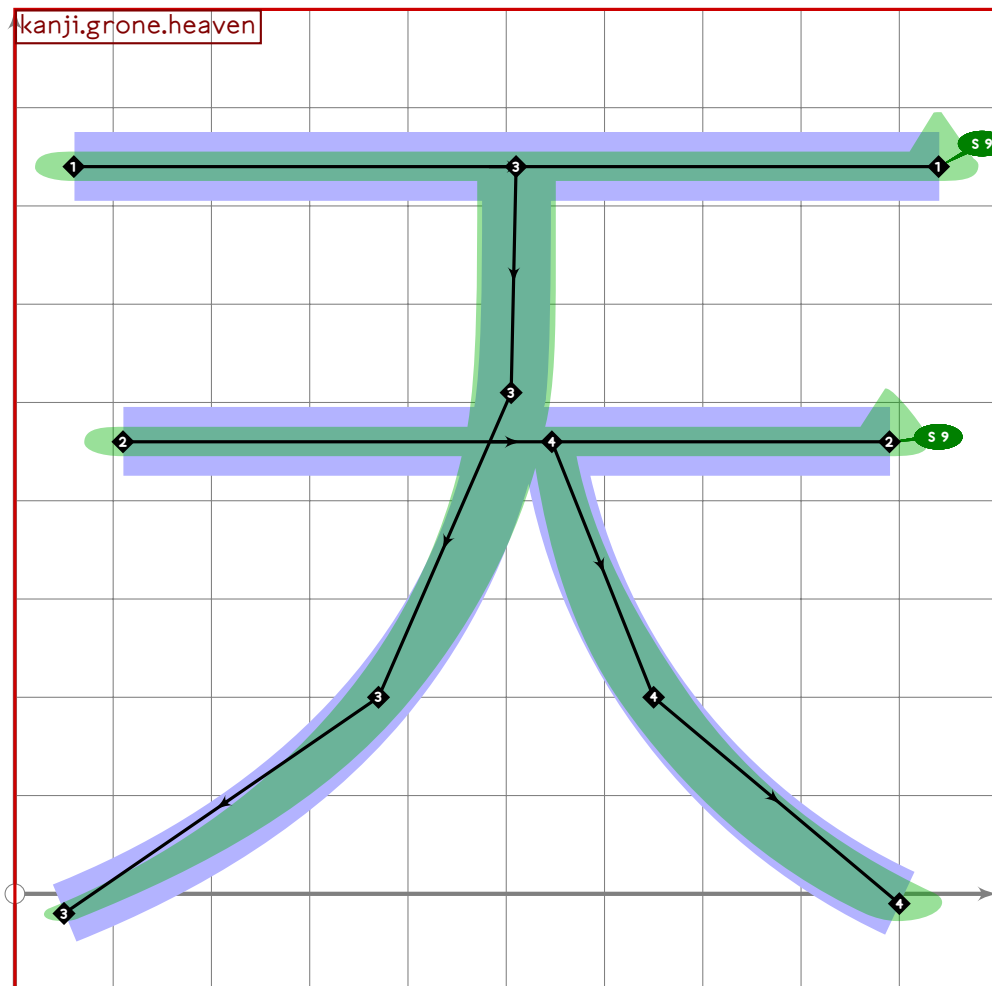
39 input gradethree.mp;

40 input gradetwo.mp;

41 input rare.mp;

42

43

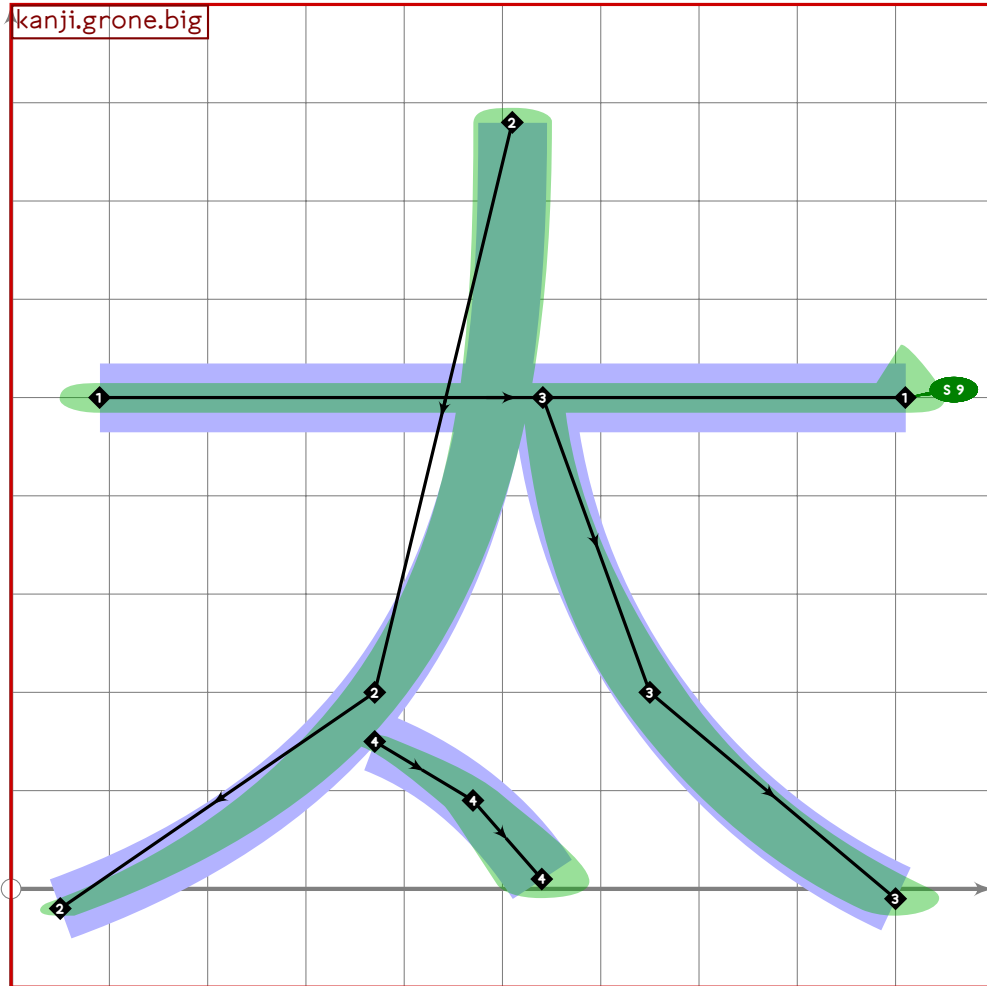




```

44
45 vardef tsu_curve.kanji.grone.heaven =
46   add_proof_box("kanji.grone.heaven");
47   bp[sp]:=(60,740)-(940,740);
48   bq[sp]:=(1.6,1.6)-(1.6,1.6);
49   bo_serif[sp][1]=9;
50   bp[sp*1]:=(110,460)-(890,460);
51   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
52   bo_serif[sp*1][1]=9;
53   bp[sp*2]:=(510,740){down}..(505,510)..(370,200)..{curl 0.5}(50,-20);
54   bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-(1.1,1.1);
55   bp[sp*3]:=((bp[sp*1] intersectionpoint bp[sp*2])*(50,0))..
56     (650,200)..(900,-10);
57   bq[sp*3]:=(1.1,1.1)-(1.5,1.5)-(1.7,1.7);
58   sp:=sp*4;
59 enddef;
60
61

```



```

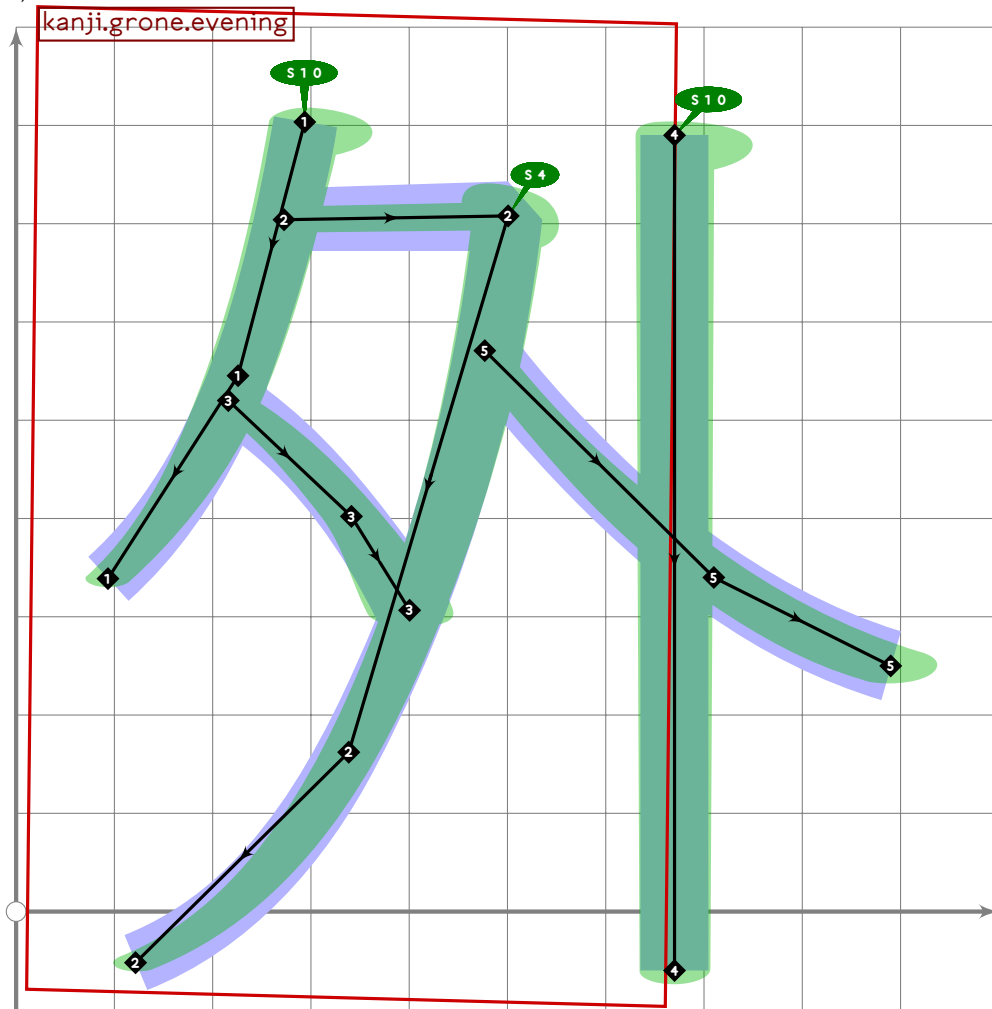
62
63 vardef tsu_curve.kanji.grtwo.thick =
64   add_proof_box("kanji.grtwo.thick");

```

```

65 tsu_curve.kanji.grone.big;
66 bp[sp]:=(370,150)..(470,90)..(540,10);
67 bq[sp]:=(1,1)-(1.4,1.4)-(1.8,1.8);
68 sp:=sp*1;
69 enddef;

```



```

70
71 vardef tsu_curve.kanji.grtwo.other =
72   add_proof_box("kanji.grtwo.other");
73   tsu_xform(identity shifted (-50,-500) rotated -1 xscaled 0.65
74     shifted (50,520))
75     (tsu_curve.kanji.grone.evening);
76   bp[sp]:=(670,790)..(670,-60);
77   bq[sp]:=(1.6,1.6)-(1.5,1.5);
78   bo_serif[sp][0]:=10;
79   bp[sp*1]:=(point 1.25 of bp[sp-2])..tension 1.2..(710,340)..(890,250);
80   bq[sp*1]:=(1.1,1.1)-(1.5,1.5)-(1.8,1.8);
81   sp:=sp*2;
82 enddef;
83
84

```

85

86 % yuu/seki "evening" [see page 334]

87 `begintsuglyph("uni5915",21);`

88 `tsu_curve.kanji.grone.evening;`

89 `tsu_render;`

90 `endtsuglyph;`

91

92 % gai/hoka "except" [see page 1234]

93 `begintsuglyph("uni5916",22);`

94 `tsu_curve.kanji.grtwo.other;`

95 `tsu_render;`

96 `endtsuglyph;`

97

98 % ta/oo "many" [see page 385]

99 `begintsuglyph("uni591A",26);`

100 `tsu_curve.kanji.grtwo.many;`

101 `tsu_render;`

102 `endtsuglyph;`

103

104 % dai/oo "big" [see page 321]

105 `begintsuglyph("uni5927",39);`

106 `tsu_curve.kanji.grone.big;`

107 `tsu_render;`

108 `endtsuglyph;`

109

110 % ten "heaven" [see page 1233]

111 `begintsuglyph("uni5929",41);`

112 `tsu_curve.kanji.grone.heaven;`

113 `tsu_render;`

114 `endtsuglyph;`

115

116 % tai/futo "thick" [see page 1233]

117 `begintsuglyph("uni592A",42);`

118 `tsu_curve.kanji.grtwo.thick;`

119 `tsu_render;`

120 `endtsuglyph;`

121

122 % fu/otto "husband" [see page 407]

123 `begintsuglyph("uni592B",43);`

124 `tsu_curve.kanji.grfour.husband;`

125 `tsu_render;`

126 `endtsuglyph;`

127

128 % rare, but needed to build more common glyphs [see page 422]

129 `begintsuglyph("uni592C",44);`

130 `tsu_curve.kanji.rare.decide;`

131 `tsu_render;`

132 `endtsuglyph;`

133  
134 % rare, but needed to build more common glyphs

```
135 begintsuglyph("uni592D";45);
```

[see page 423]

```
136 tsu_curve.kanji.rare.early_death;
```

```
137 tsu_render;
```

```
138 endsuglyph;
```

139

140 % ou "centre"

```
141 begintsuglyph("uni592E";46);
```

[see page 400]

```
142 tsu_curve.kanji.grthree centre;
```

```
143 tsu_render;
```

```
144 endsuglyph;
```

145

146 % jo/onna "woman"

```
147 begintsuglyph("uni5973";115);
```

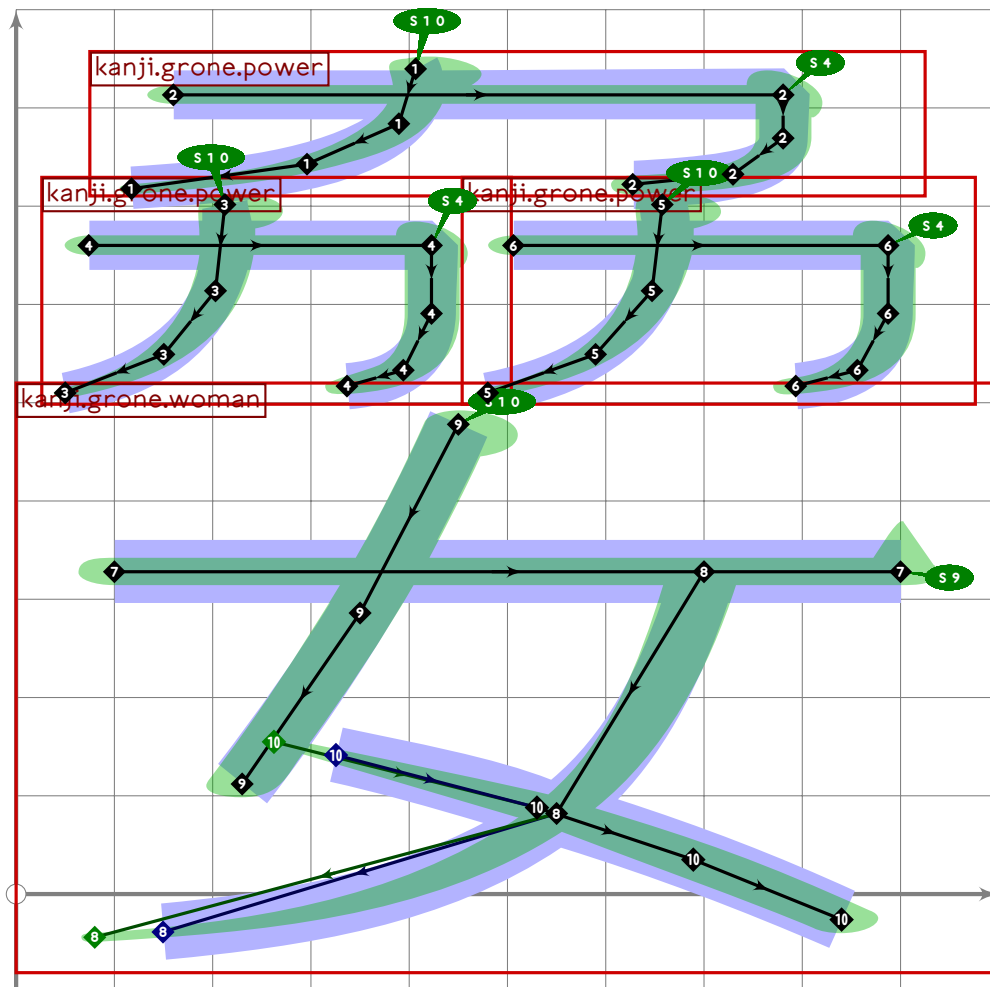
[see page 372]

```
148 tsu_curve.kanji.grone.woman;
```

```
149 tsu_render;
```

```
150 endsuglyph;
```

151



152 % extra

```
153 begintsuglyph("uni59ED";237);
```

```
154 build_kanji.tb(500,-20)
155     (build_kanji.tricluster(0.85)
156       (tsu_curve.kanji.grone.power)
157       (tsu_curve.kanji.grone.power)
158       (tsu_curve.kanji.grone.power))
159     (tsu_curve.kanji.grone.woman);
160 tsu_render;
161 endtsuglyph;
162
163 

---

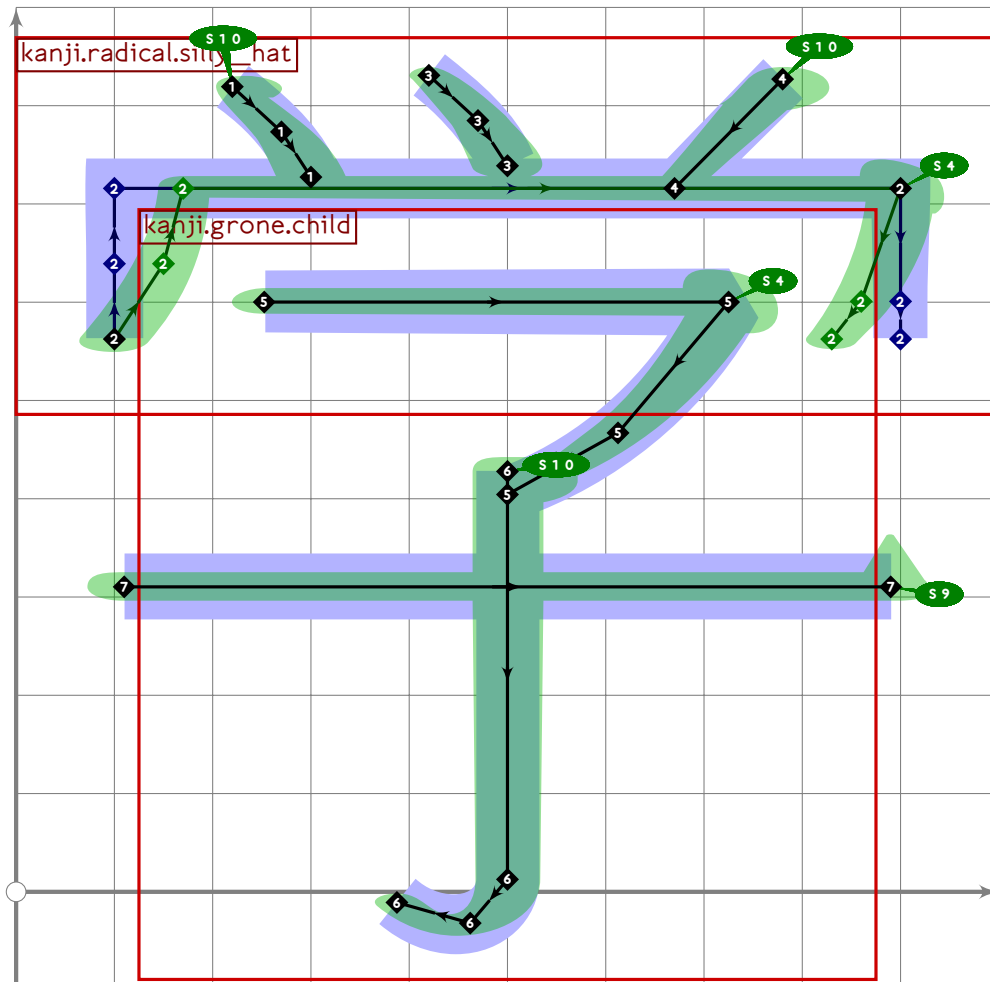

164
165 endfont;
166
167 

---


```

# tsuku-5b.mp

```
1 %  
2 % Unicode page 5b (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradesix.mp;  
39 input gradethree.mp;  
40 input gradetwo.mp;  
41 input radical.mp;  
42  
43 _____
```

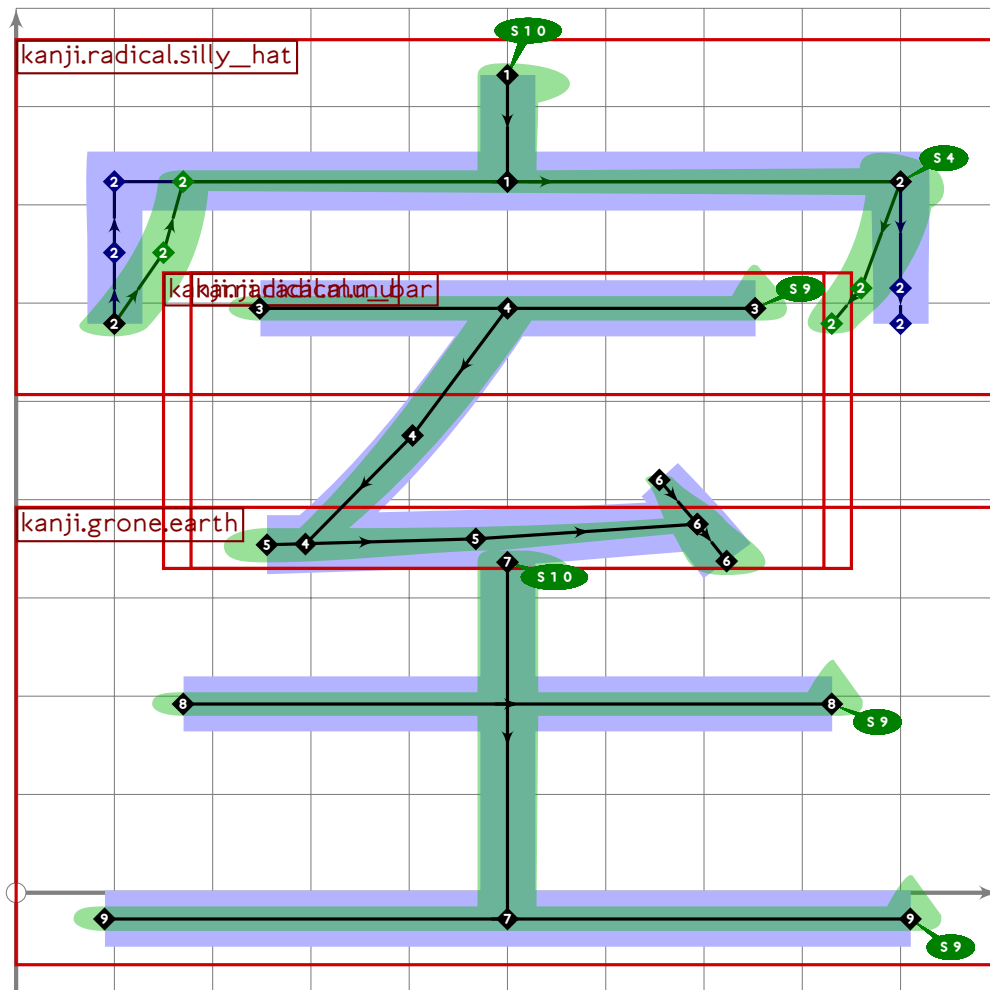


```

44
45 vardef tsu_curve.kanji.grone.study =
46   add_proof_box("kanji.grone.study");
47   build_kanji.tb(580,150)
48     (tsu_curve.kanji.radical.silly_hat;
49     bp[sp-2]:=(220,770)..(270,650)..(300,530);
50     bq[sp-2]:=(1.2,1.2)-(1.5,1.5)-(1.7,1.7);
51     bo_size[sp-2]:=95;
52     bp[sp]:=(420,800)..(470,680)..(500,560);
53     bq[sp]:=(1.2,1.2)-(1.5,1.5)-(1.7,1.7);
54     bo_size[sp]:=95;
55     bp[sp+1]:=(780,790)-(670,500);
56     bq[sp+1]:=(1.7,1.7)-(1.3,1.3);
57     bo_size[sp+1]:=95;
58     bo_serif[sp+1][0]:=10;
59     sp:=sp+2;
60   )
61   (build_kanji.sscale(xscaled 0.75)
62     (tsu_curve.kanji.grone.child;sp:=sp-1);
63     sp:=sp+1);
64 enddef;
65
66

```

---

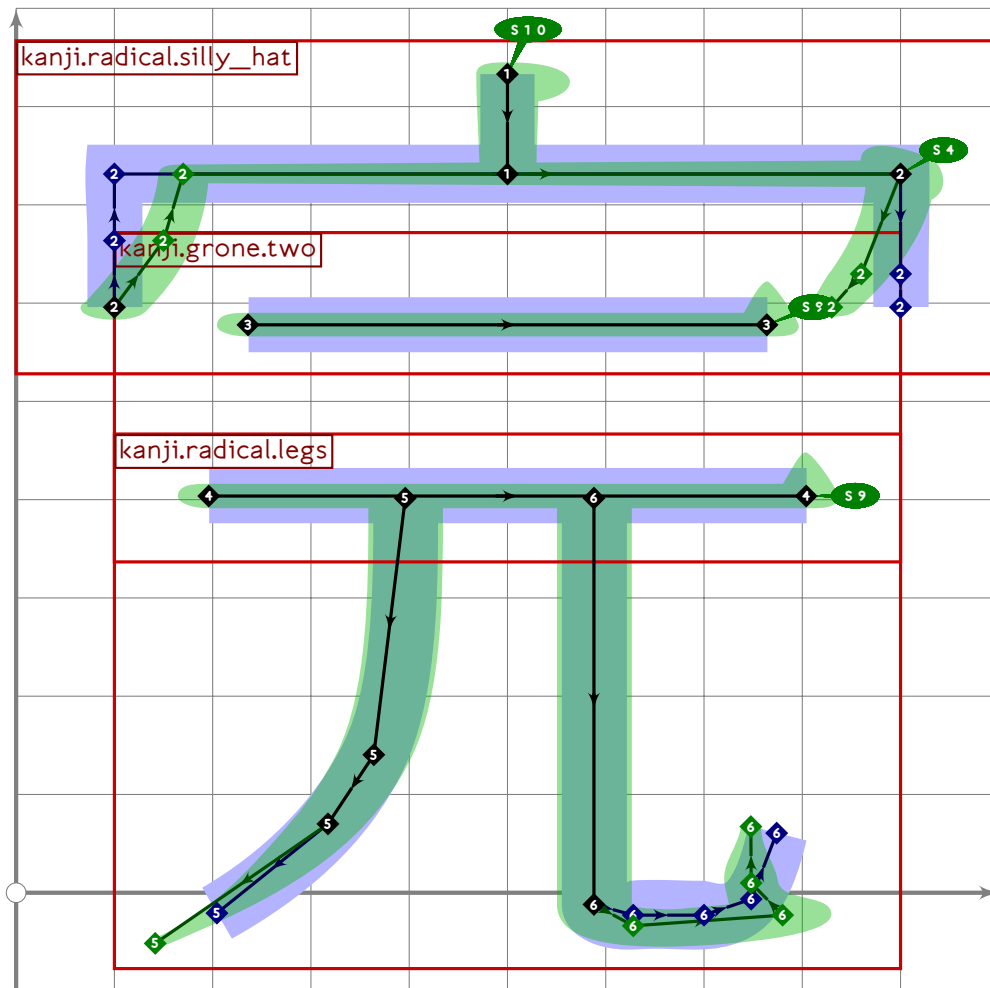


```

67
68 vardef tsu_curve.kanji.grtwo.chamber =
69   add_proof_box("kanji.grtwo.chamber");
70   build_kanji.tb(600,150)
71     (tsu_curve.kanji.radical.silly_hat)
72     (build_kanji.level(build_kanji.tb(420,100)
73       (build_kanji.sscale(scaled 0.7)(tsu_curve.kanji.radical.mu_bar))
74       (tsu_curve.kanji.grone.earth)));
75   enddef;
76
77

```

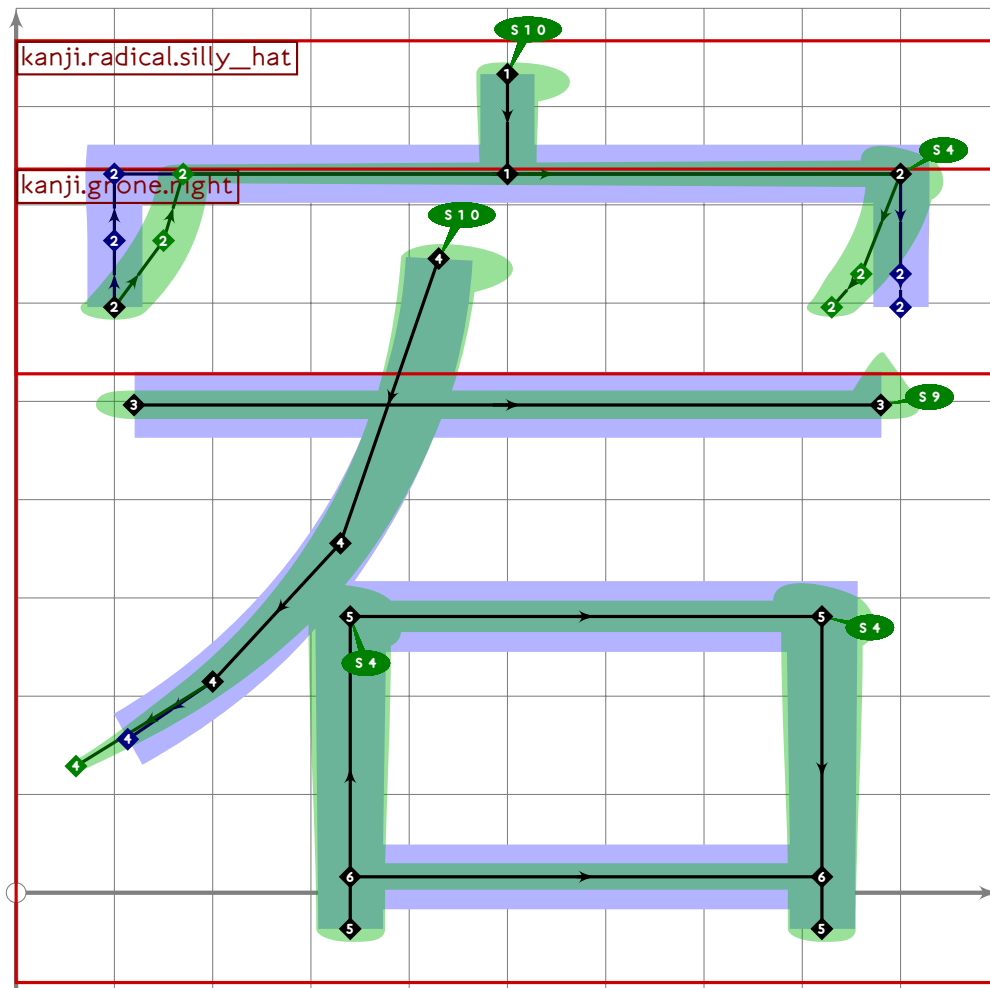




```

78
79 vardef tsu_curve.kanji.grfour.perfect =
80   add_proof_box("kanji.grfour.perfect");
81   build_kanji.tb(600,110)
82     (tsu_curve.kanji.radical.silly_hat)
83     (build_kanji.sscale(xscaled 0.8)(tsu_curve.kanji.grtwo.origin));
84   enddef;
85
86

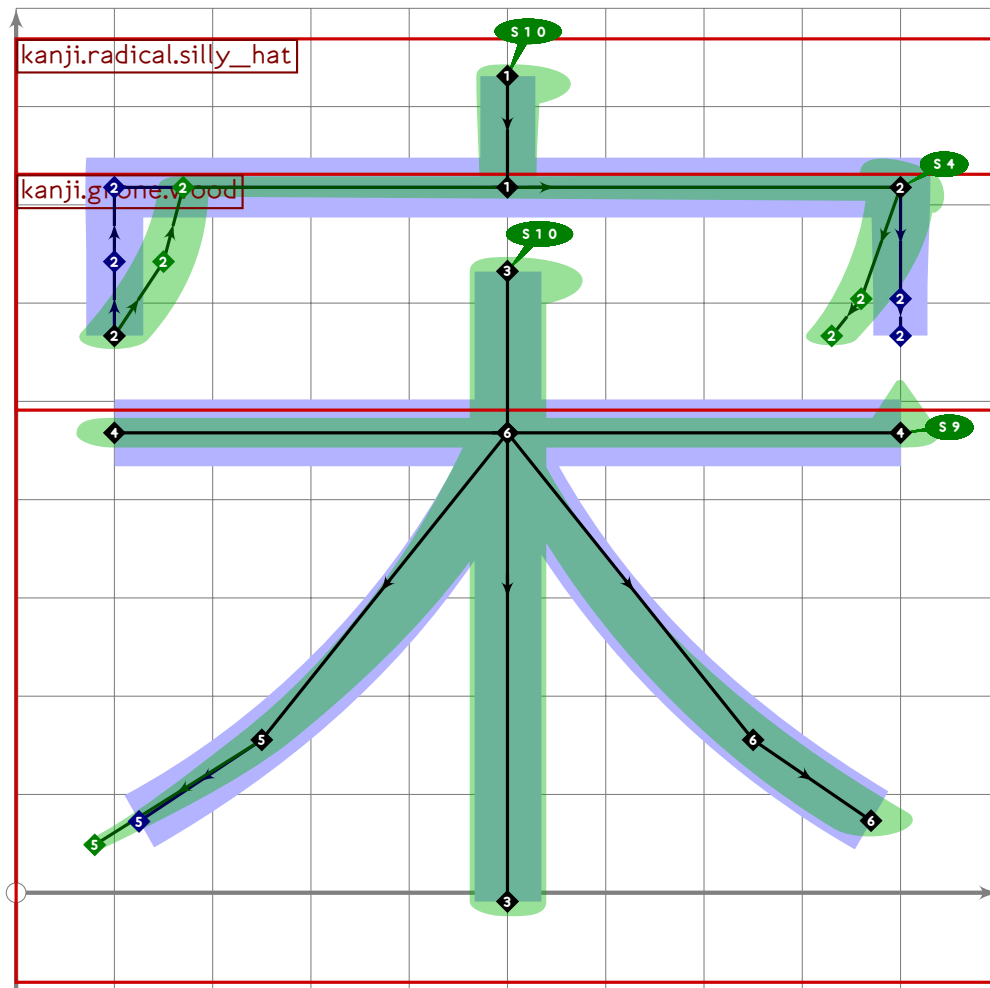
```



```

87
88 vardef tsu_curve.kanji.grnine.cave =
89   add_proof_box("kanji.grnine.cave");
90   build_kanji.tb(620,150)
91     (tsu_curve.kanji.radical.silly_hat)
92     (tsu_curve.kanji.grnone.right);
93 enddef;

```



```

94
95 vardef tsu_curve.kanji.grnine.song_dynasty =
96   add_proof_box("kanji.grnine.song_dynasty");
97   build_kanji.tb(600,180)
98     (tsu_curve.kanji.radical.silly_hat)
99     (tsu_curve.kanji.grone.wood);
100 enddef;

```

```

101
102

```

```

103
104 % ko "child"
105 begintsuglyph("uni5B50",80);
106   tsu_curve.kanji.grone.child;
107   tsu_render;
108 endtsuglyph;

```

[see page 326]

```

109
110 % ji "character"
111 begintsuglyph("uni5B57",87);
112   tsu_curve.kanji.grone.character;
113   tsu_render;
114 endtsuglyph;

```

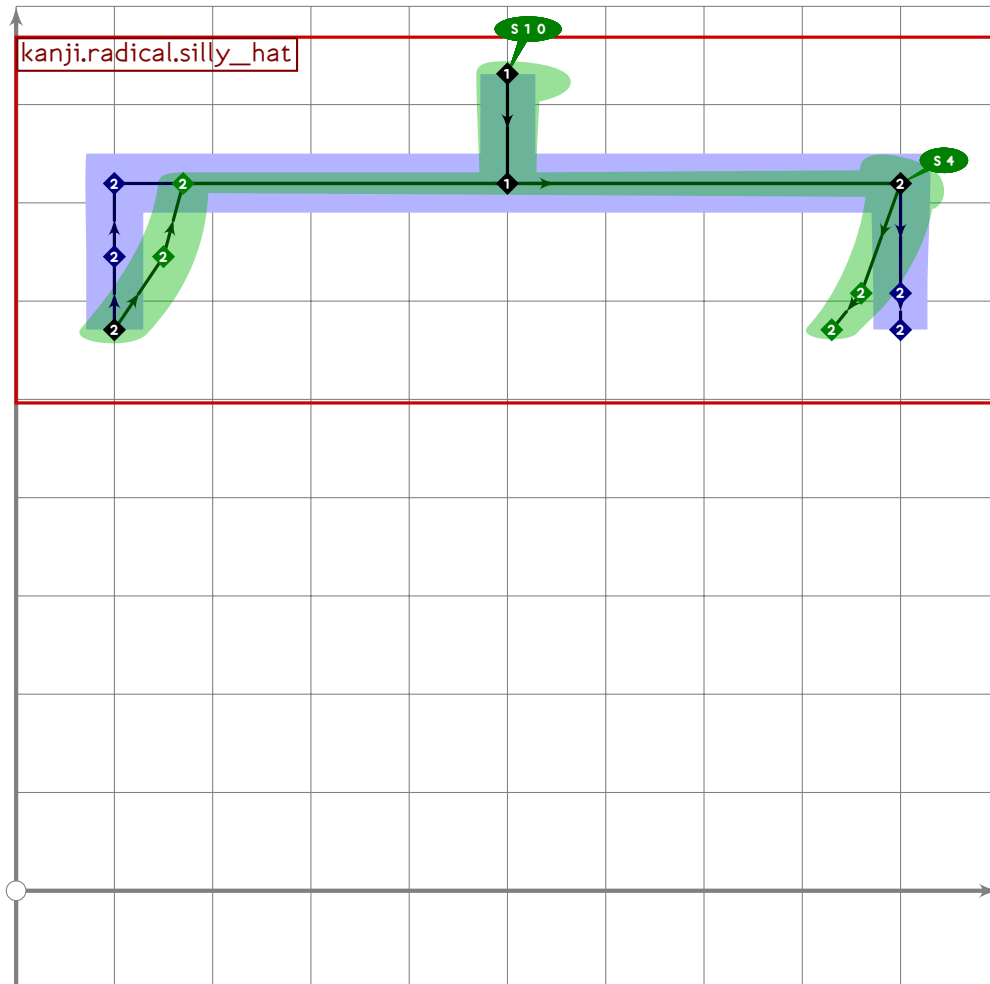
[see page 325]

```

115
116 % gaku "school"
117 begintsuglyph("uni5B66",102);
118 tsu_curve.kanji.grone.study;
119 tsu_render;
120 endsuglyph;
121

```

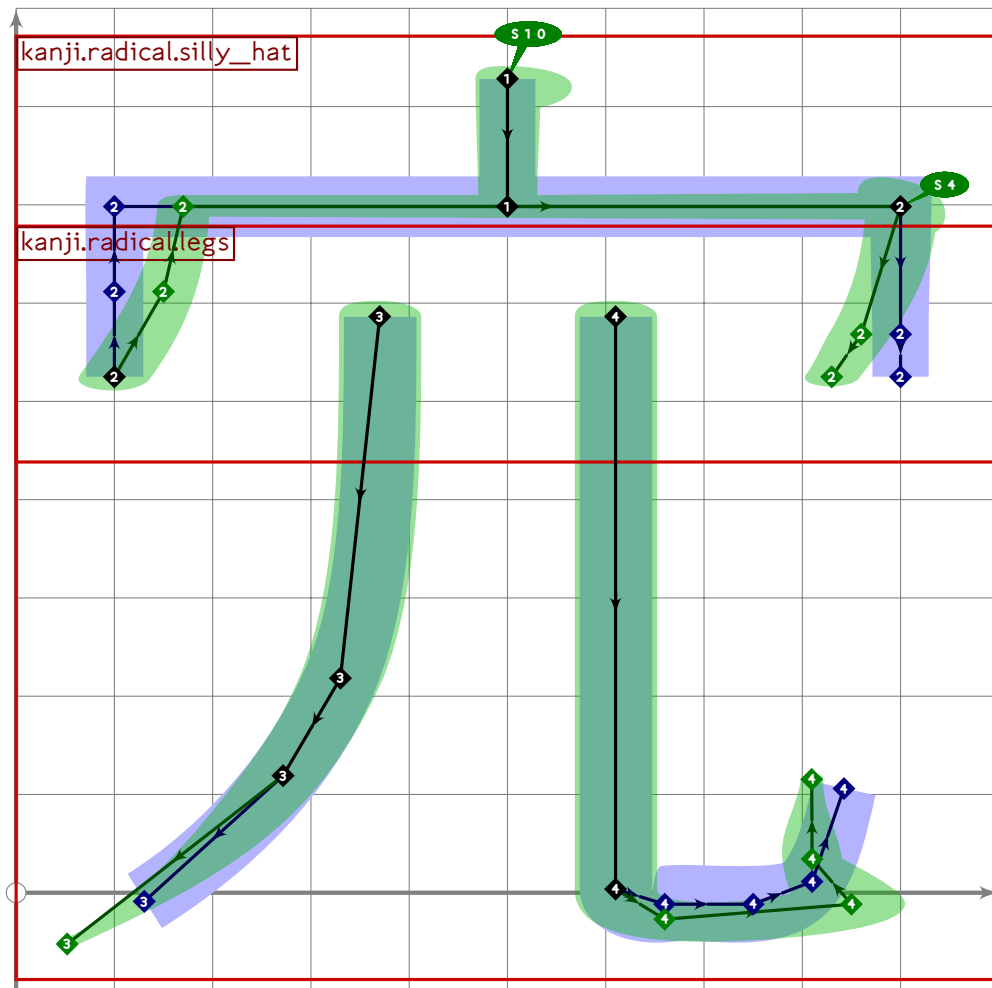
[see page 1239]



```

122 % silly hat radical
123 begintsuglyph("uni5B80",128);
124 build_kanji.tb(500,-30)
125 (tsu_curve.kanji.radical.silly_hat)
126 ();
127 tsu_render;
128 endsuglyph;
129

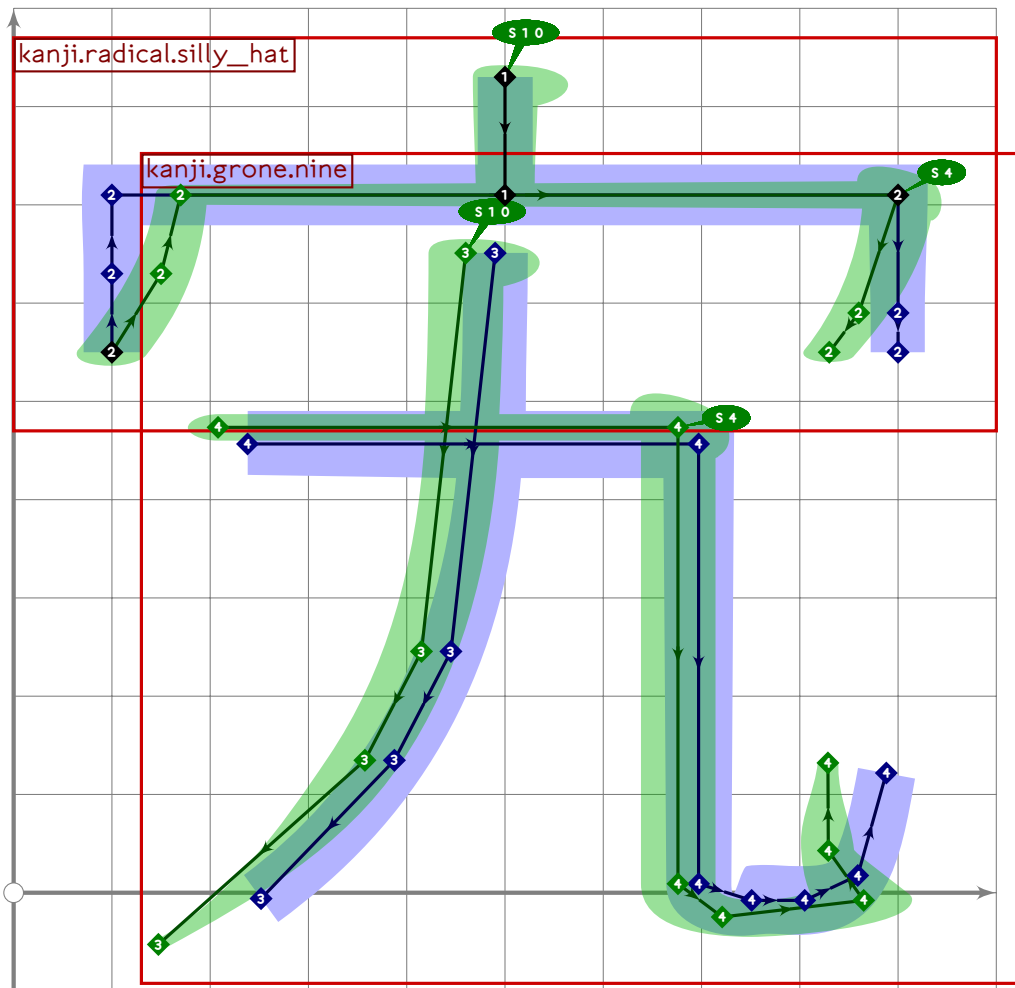
```



```

130 % extra
131 begint Suglyph("uni5B82",130);
132 build_kanji.tb(550,180)
133   (tsu_curve.kanji.radical.silly_hat)
134   (tsu_curve.kanji.radical.legs);
135   tsu_render;
136 endtsuglyph;
137

```



```

138 % extra
139 begint Suglyph("uni5B84",132);
140 build_kanji.tb(600,220)
141   (tsu_curve.kanji.radical.silly_hat)
142   (build_kanji.sscale(xscaled 0.9 shifted (80-30*mincho,0))
143     (tsu_curve.kanji.grone.nine));
144 tsu_render;
145 endtsuglyph;
146
147 % an/yasu "easy/cheap"
148 begint Suglyph("uni5B89",137);
149   tsu_curve.kanji.grthree.easy;
150   tsu_render;
151 endtsuglyph;
152
153 % "song dynasty"
154 begint Suglyph("uni5B8B",139);
155   tsu_curve.kanji.grnine.song_dynasty;
156   tsu_render;
157 endtsuglyph;
158

```

[see page 402]

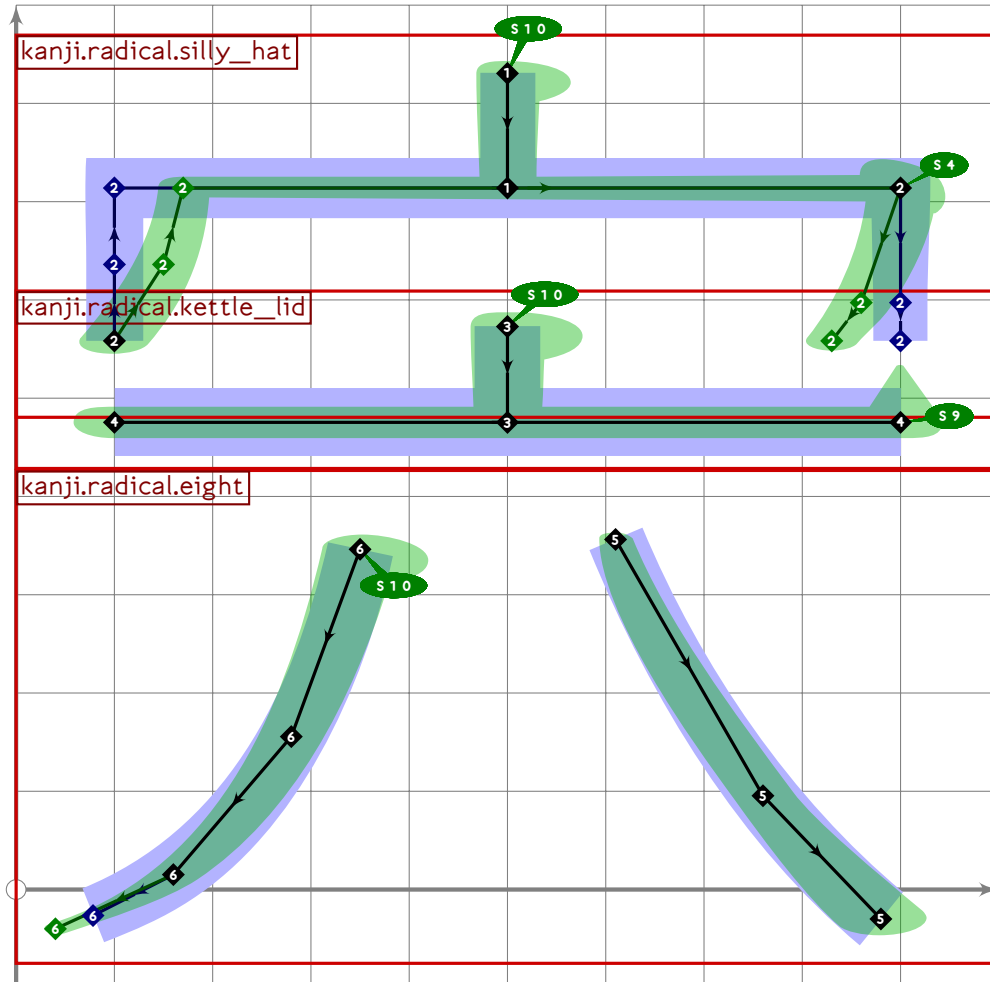
[see page 1243]

```

159 % kan "perfect"
160 begintsuglyph("uni5B8C";140);
161 tsu_curve.kanji.grfour.perfect;
162 tsu_render;
163 endtsuglyph;
164

```

[see page 1241]



```

165 % extra "meat"
166 begintsuglyph("uni5B8D";141);
167 build_kanji.tb(550,100)
168   (tsu_curve.kanji.radical.silly_hat)
169   (tsu_curve.kanji.grone.six);
170 tsu_render;
171 endtsuglyph;
172
173 % "cave"
174 begintsuglyph("uni5B95";149);
175 tsu_curve.kanji.grnine.cave;
176 tsu_render;
177 endtsuglyph;
178
179 % shitsu/muro "chamber"

```

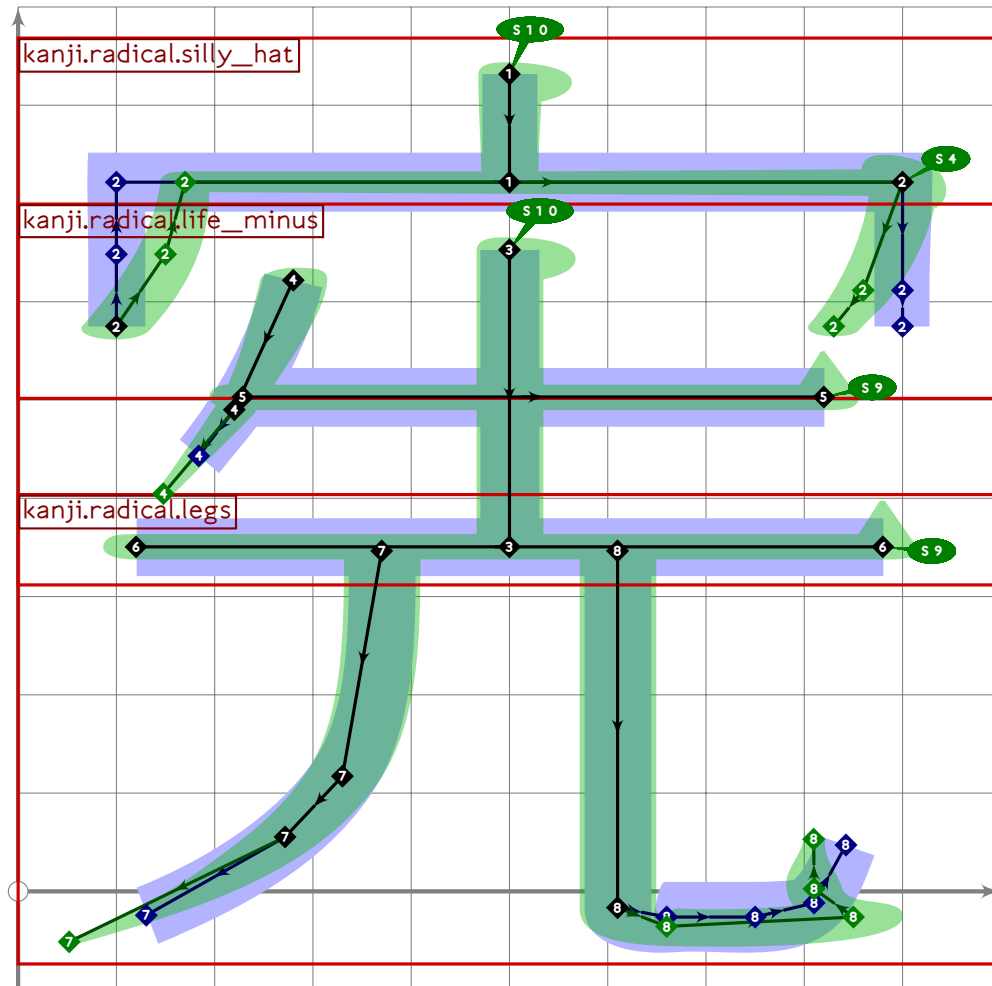
[see page 1242]

```

180 begintsuglyph("uni5BA4",164);
181   tsu_curve.kanji.grtwo.chamber;
182   tsu_render;
183 endtsuglyph;
184

```

[see page 1240]



```

185 % extra
186 begintsuglyph("uni5BAA",170);
187   build_kanji.tb(600,160)
188     (tsu_curve.kanji.radical.silly_hat)
189     (tsu_curve.kanji.grone.ahead);
190   tsu_render;
191 endtsuglyph;
192

```

```

193 % su/miki "inch", also often a radical
194 begintsuglyph("uni5BF8",248);
195   tsu_curve.kanji.grsix.inch;
196   tsu_render;
197 endtsuglyph;
198

```

[see page 412]

```

199 % tera/ji "temple"
200 begintsuglyph("uni5BFA",250);

```

[see page 399]



```
201 tsu_curve.kanji.grtwo.temple;  
202 tsu_render;  
203 endtsuglyph;  
204  
205 

---

  
206  
207 endfont;  
208  
209 

---


```

# tsuku-5c.mp

```
1 %  
2 % Unicode page 5c (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

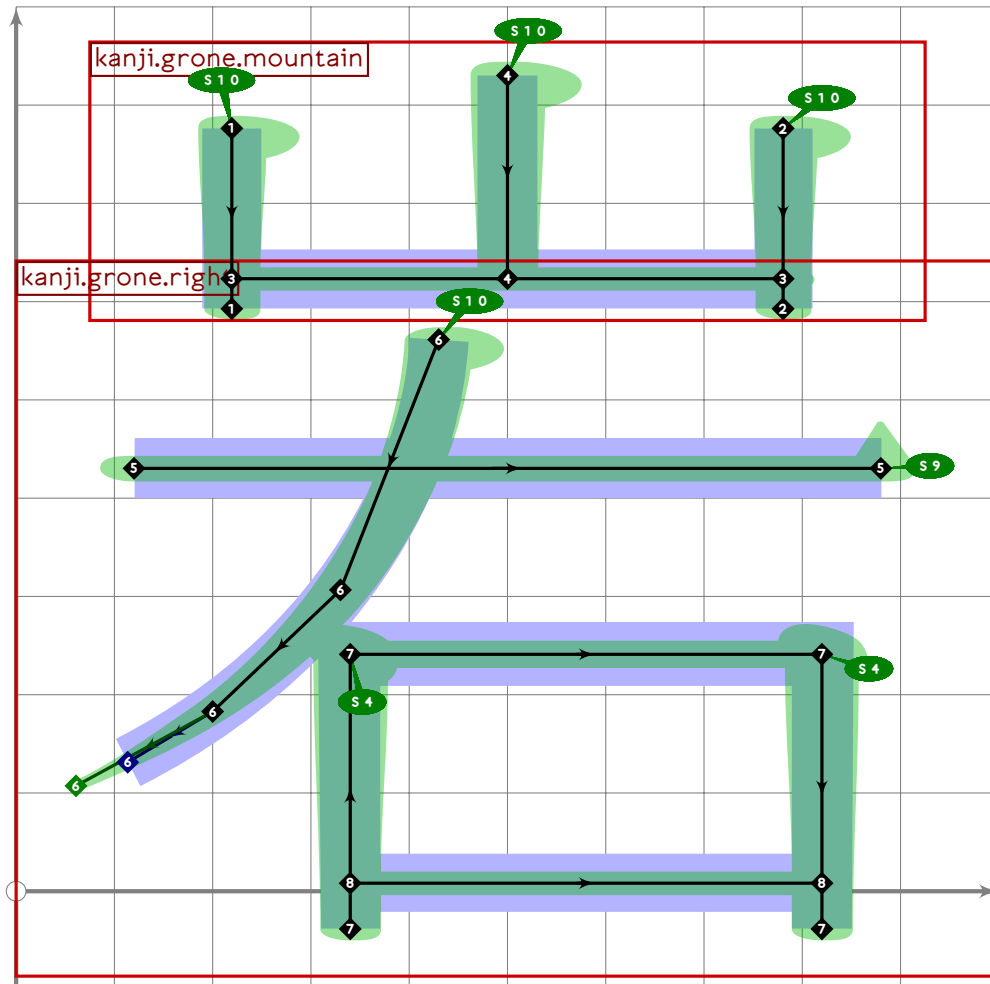
```
36 input buildkanji.mp;
```

```
37 input gradeone.mp;
```

```
38 input gradetwo.mp;
```

```
39
```

```
40
```



```
41
```

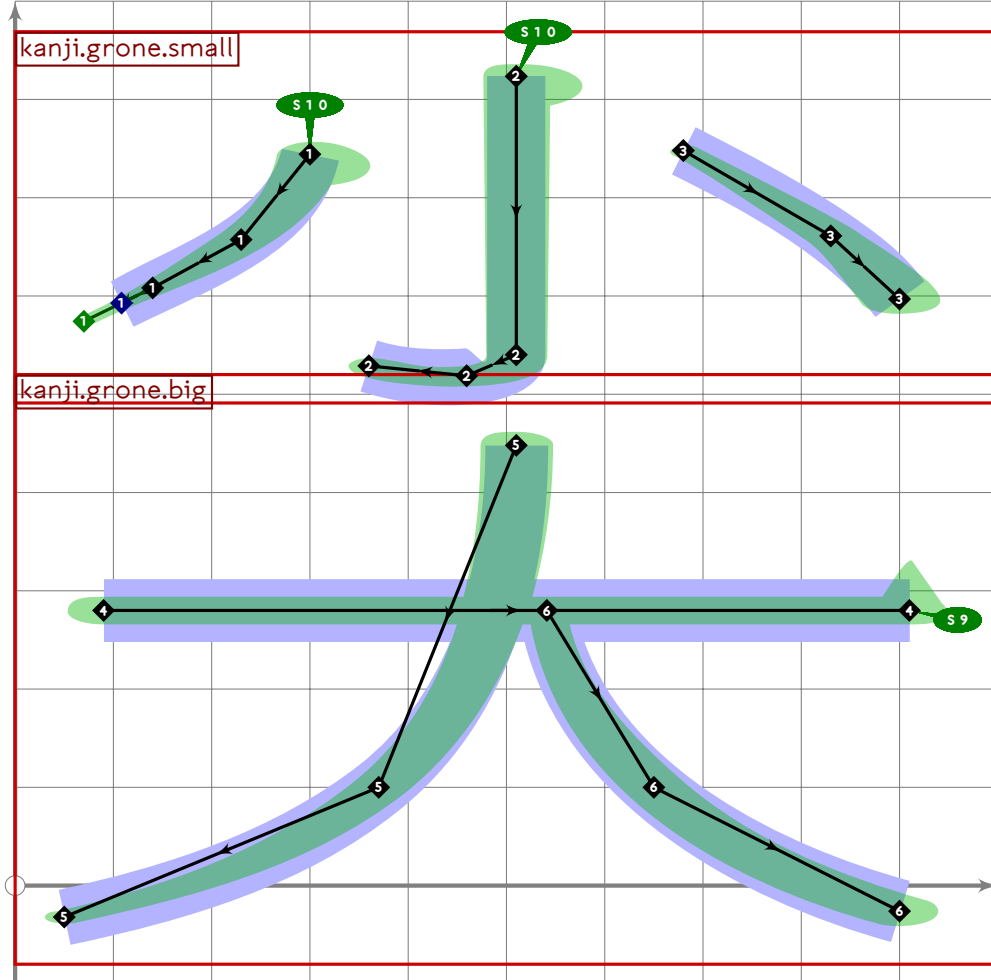
```
42 vardef tsu_curve.kanji.grtwo.rock =
```

```
43   add_proof_box("kanji.grtwo.rock");
```

```

44 build_kanji.level(build_kanji.tb(600,10)
45   (build_kanji.sscale(xscaled 0.85)(tsu_curve.kanji.grone.mountain))
46   (tsu_curve.kanji.grone.right));
47 enddef;
48
49

```



```

50
51 vardef tsu_curve.kanji.grnine.pointed =
52   add_proof_box("kanji.grnine.pointed");
53   build_kanji.tb(500,-20)
54     (tsu_curve.kanji.grone.small)
55     (tsu_curve.kanji.grone.big);
56 enddef;
57
58
59
60 % shuu/chii "small"
61 begint Suglyph("uni5C0F";15);
62   tsu_curve.kanji.grone.small;
63   tsu_render;
64 endtsuglyph;

```

[see page 361]

65

66 % sho/suko "little"

67 `begintsuglyph("uni5C11";17);`

[see page 384]

68 `tsu_curve.kanji.grtwo.little;`

69 `tsu_render;`

70 `endtsuglyph;`

71

72 % pointed

73 `begintsuglyph("uni5C16";22);`

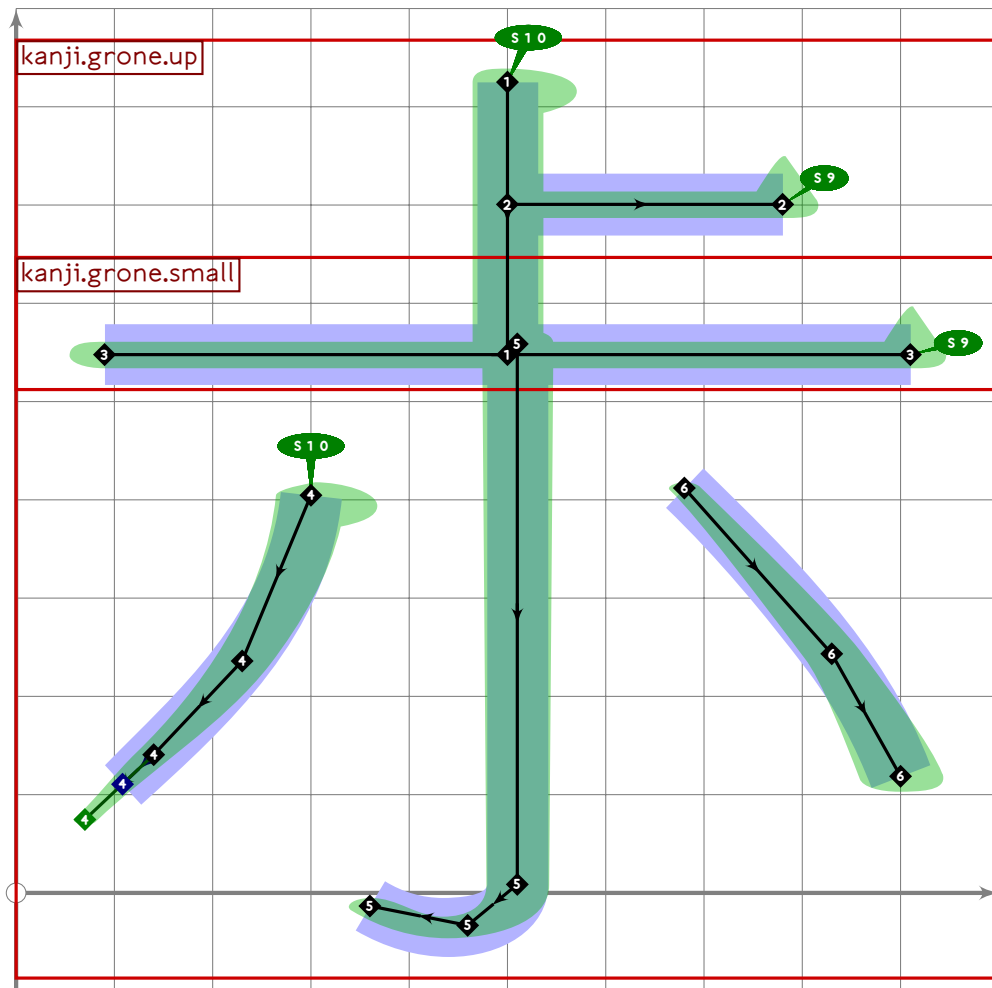
[see page 1251]

74 `tsu_curve.kanji.grnine.pointed;`

75 `tsu_render;`

76 `endtsuglyph;`

77



78 % extra "younger brother"

79 `begintsuglyph("uni5C17";23);`

80 `build_kanji.level(build_kanji.tb(570,80)`

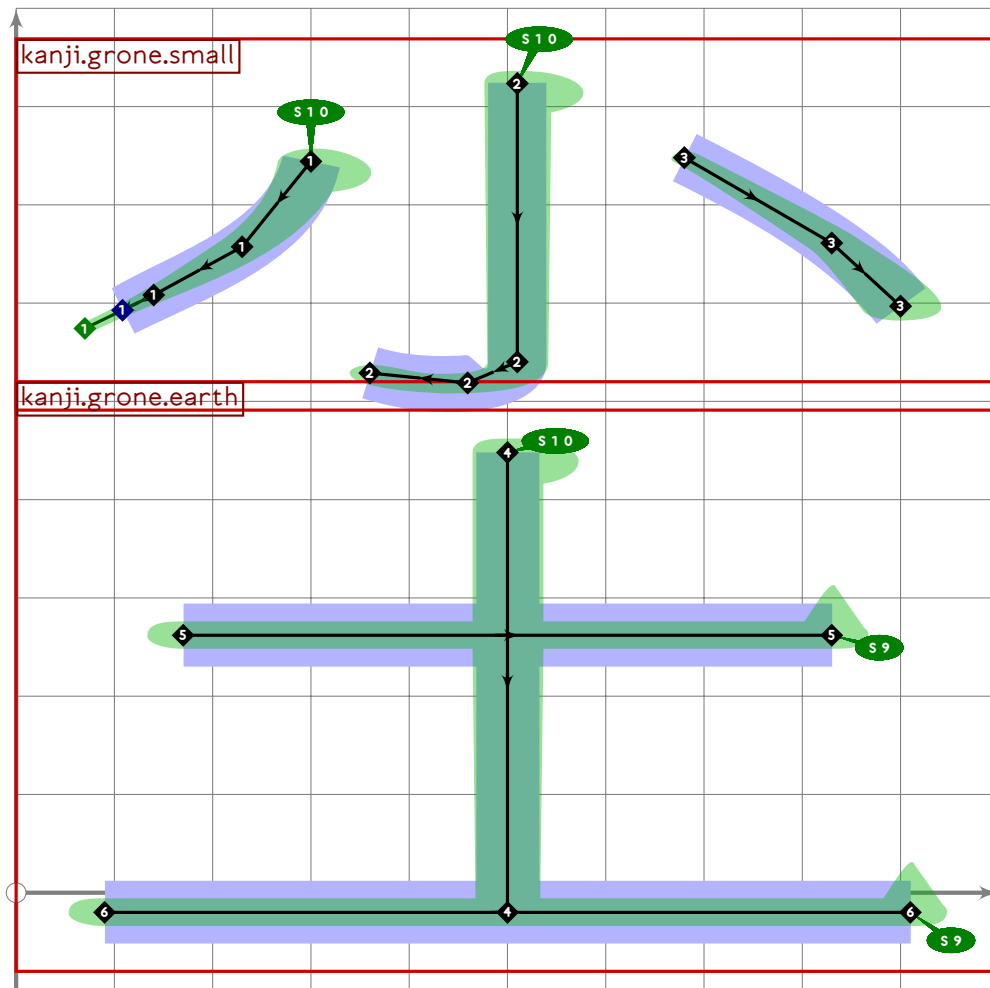
81 `(tsu_curve.kanji.grone.up)`

82 `(tsu_curve.kanji.grone.small;bo_serif[sp-2][0]:=whatever));`

83 `tsu_render;`

84 `endtsuglyph;`

85



```

86 % extra
87 begintsuglyph("uni5C18";24);
88 build_kanji.tb(500,-20)
89 (tsu_curve.kanji.grone.small)
90 (tsu_curve.kanji.grone.earth);
91 tsu_render;
92 endtsuglyph;
93
94 % yama/san "mountain"
95 begintsuglyph("uni5C71";113);
96 tsu_curve.kanji.grone.mountain;
97 tsu_render;
98 endtsuglyph;
99
100 % gan/iwa "rock"
101 begintsuglyph("uni5CA9";169);
102 tsu_curve.kanji.grtwo.rock;
103 tsu_render;
104 endtsuglyph;
105
106

```

[see page 347]

[see page 1250]

107

108 **endfont;**

109

110

---

# tsuku-5d.mp

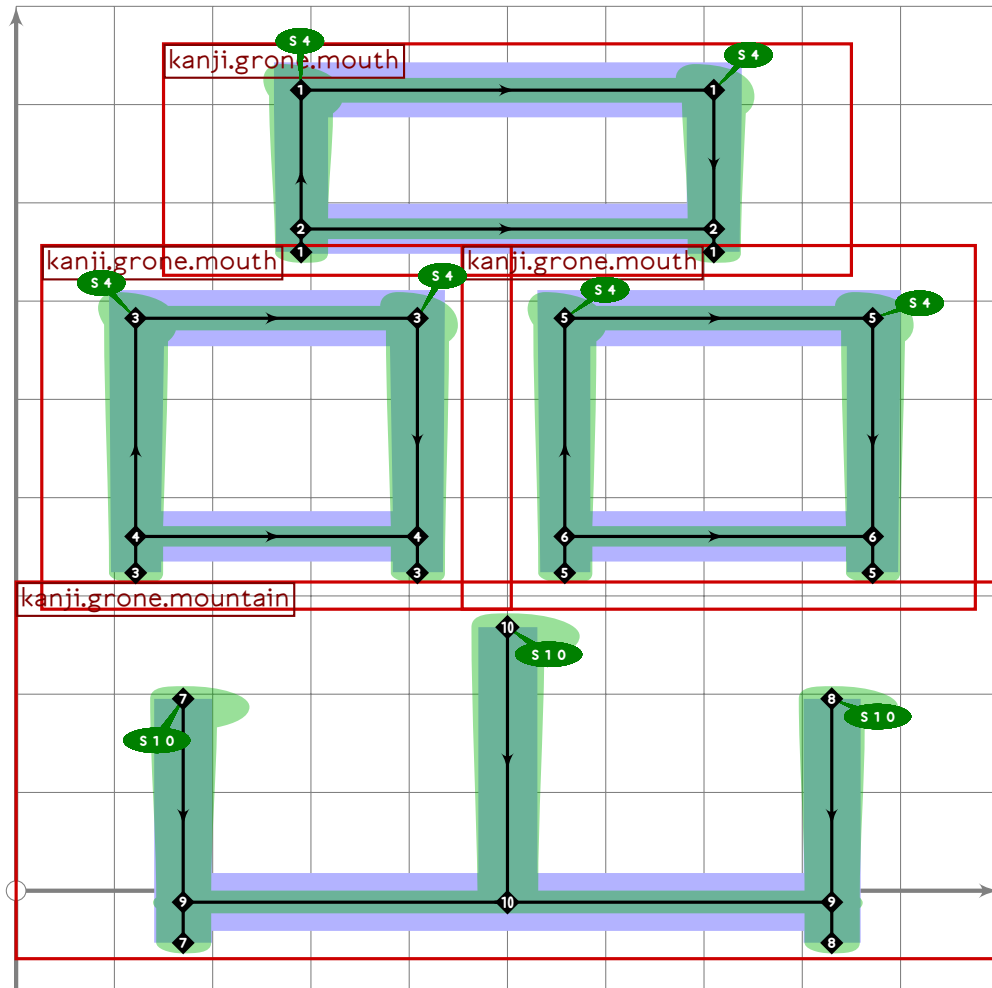
```
1 %
2 % Unicode page 5d (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeeight.mp;
38 input gradeone.mp;
39 input gradethree.mp;
40 input gradetwo.mp;
41 input radical.mp;
42
43 

---


44
45 % hou/kuzu "demolish"
46 begintsuglyph("uni5D29";41); [see page 413]
47 tsu_curve.kanji.greight.demolish;
48 tsu_render;
49 endtsuglyph;
50
```

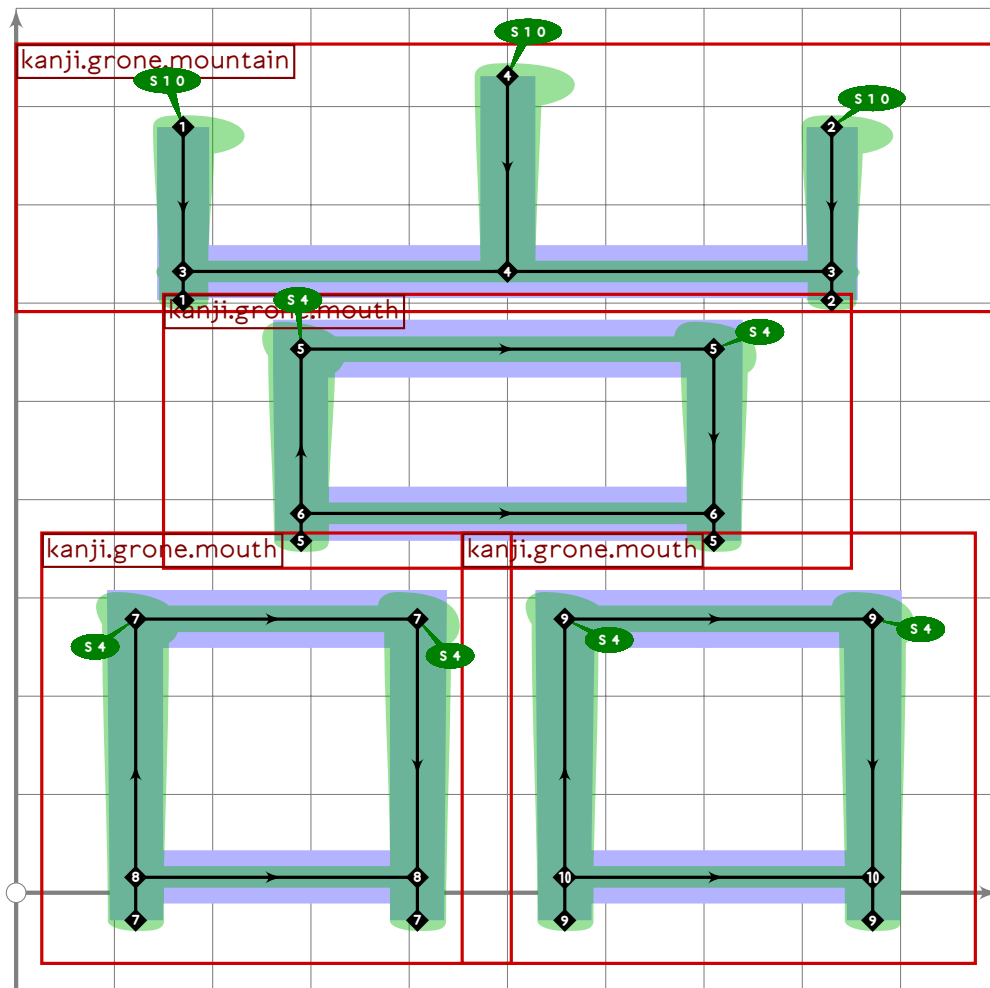


```

51 % extra
52 begint Suglyph("uni5D52",82);
53   build_kanji.tb(300,-10)
54   (tsu_curve.kanji.grthree.goods)
55   (tsu_curve.kanji.grone.mountain);
56   tsu_render;
57   endtsuglyph;
58

```





```

59 % extra
60 begintsuglyph("uni5D53",83);
61   build_kanji.level(build_kanji.tb(600,-10)
62     (tsu_curve.kanji.grone.mountain)
63     (tsu_curve.kanji.grthree.goods));
64   tsu_render;
65 endsuglyph;
66
67 % kawa "river"
68 begintsuglyph("uni5DDD";221);
69   tsu_curve.kanji.grone.river;
70   tsu_render;
71 endsuglyph;
72
73 % takumi "craft"
74 begintsuglyph("uni5DE5";229);
75   tsu_curve.kanji.grtwo.craft;
76   tsu_render;
77 endsuglyph;
78
79 % hidari "left"

```

[see page 357]

[see page 378]

```
80 begintsuglyph("uni5DE6",230); [see page 343]
81 tsu_curve.kanji.grone.left;
82 tsu_render;
83 endtsuglyph;
84
85 % kin/oo/haba "towel" or "hanging scroll"
86 begintsuglyph("uni5DFE",254); [see page 417]
87 tsu_curve.kanji.greight.towel;
88 tsu_render;
89 endtsuglyph;
90
91 

---


92
93 endfont;
94
95 

---


```

# tsuku-5e.mp

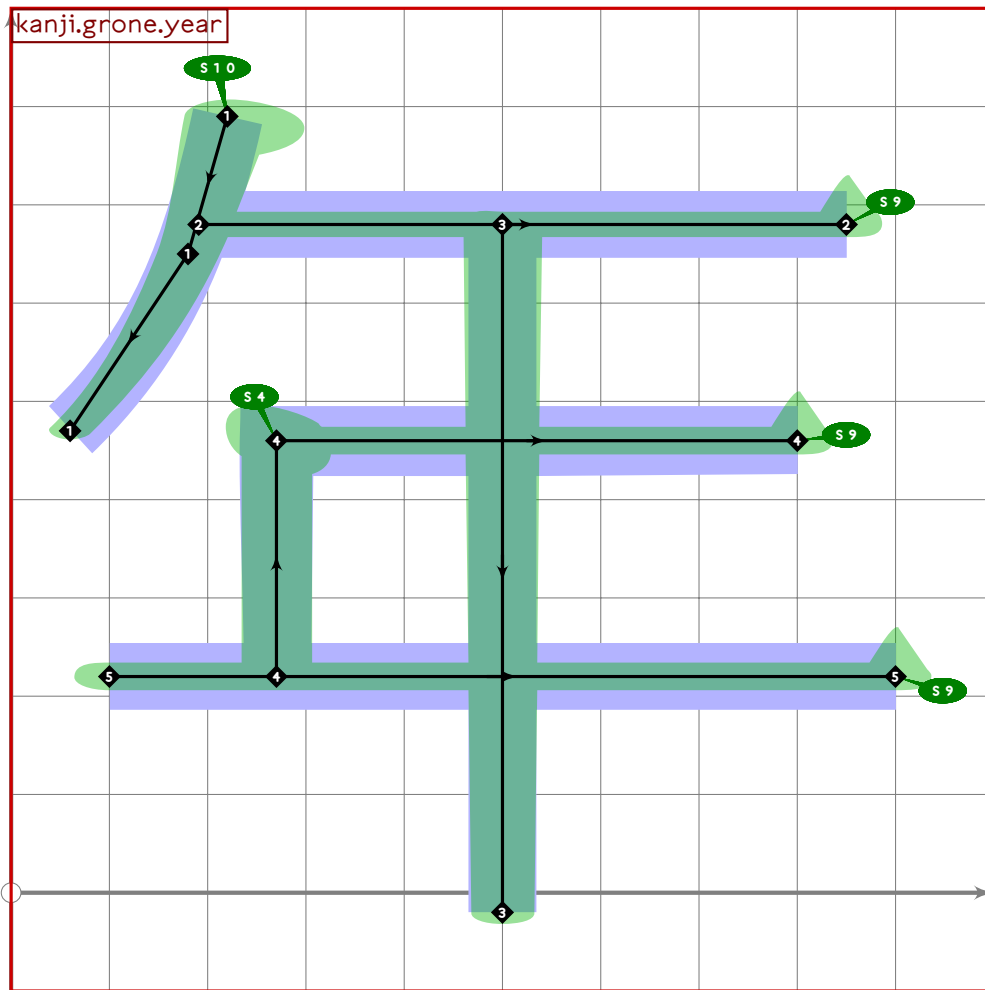
```
1 %
2 % Unicode page 5e (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeeight.mp;
38 input gradefour.mp;
39 input gradeone.mp;
40 input gradesix.mp;
41 input gradethree.mp;
42 input gradetwo.mp;
43 input leftrad.mp;
44 input radical.mp;
45 input toprad.mp;
46
47 

---


```



```

48
49 vardef tsu_curve.kanji.grone.year =
50   add_proof_box("kanji.grone.year");
51   bp[sp]:=(220,790){curl 0}{..(180,650)..(60,470)};
52   bq[sp]:=(1.7,1.7)-(1.4,1.4)-(1.1,1.1);
53   bo_serif[sp][0]:=10;
54   bp[sp*1]:=((0,680)-(1000,680)) intersectionpoint bp[sp]-(850,680);
55   bq[sp*1]:=(1.4,1.4)-(1.5,1.5);
56   bo_serif[sp*1][1]:=9;
57   bp[sp*2]:=(500,680)-(500,-20);
58   bq[sp*2]:=(1.6,1.6)-(1.4,1.4);
59   bp[sp*3]:=(270,220)-(270,460)-(800,460);
60   bq[sp*3]:=(1.5,1.5)-(1.5,1.5)-(1.5,1.5);
61   bo_tip[sp*3][1]:=1;
62   bo_serif[sp*3][1]:=4;
63   bo_serif[sp*3][2]:=9;
64   bp[sp*4]:=(100,220)-(900,220);
65   bq[sp*4]:=(1.5,1.5)-(1.5,1.5);
66   bo_serif[sp*4][1]:=9;
67   sp:=sp+5;
68 enddef;

```

69

70

---

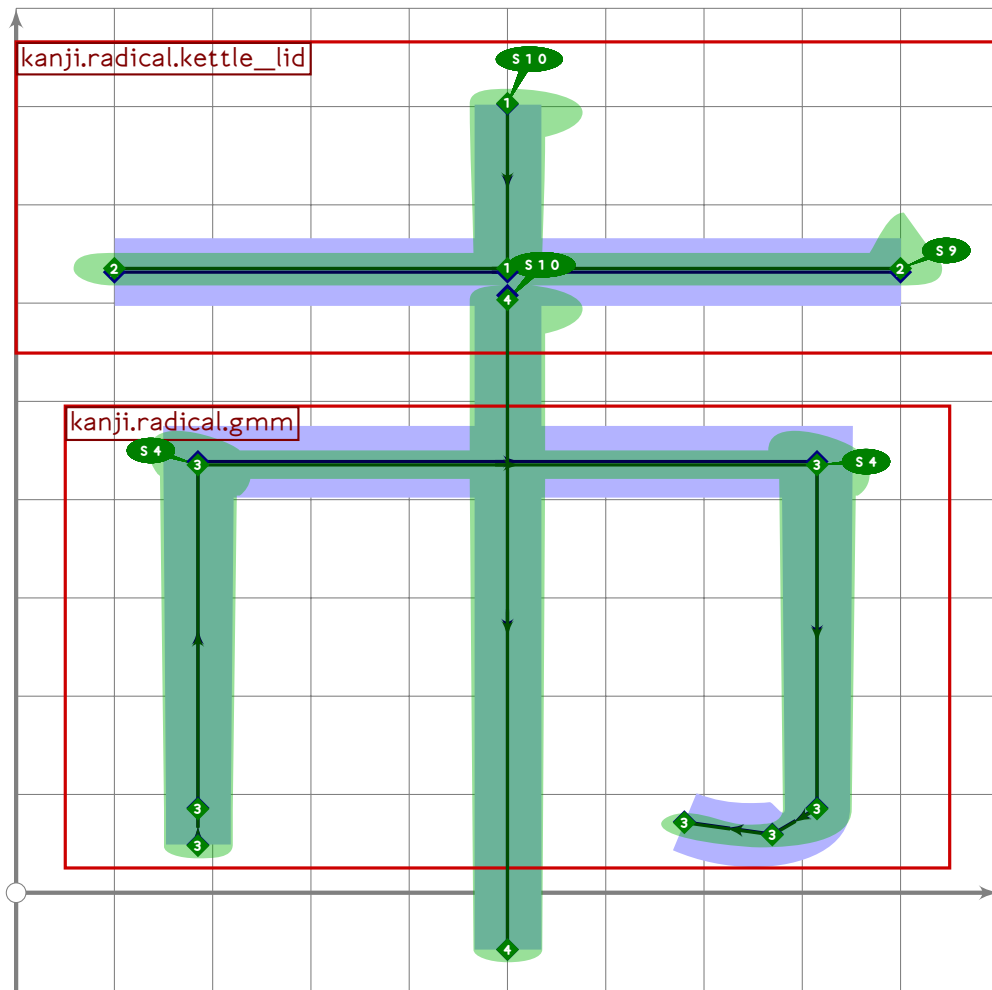
71

```
72 vardef build_kanji.dotcliff_enclose(text contents) =  
73   add_proof_box("build_kanji.dotcliff_enclose");  
74   bp[sp]:=(550,810)-(550,660);  
75   bq[sp]:=(1.6,1.6)-(1.5,1.5);  
76   bo_serif[sp][0]:=10;  
77   bp[sp*1]:=(50,-50)..(120,100)..(160,300)..tension 1.2..(180,660)  
78     -(850,660);  
79   bq[sp*1]:=(1,1)-(1.3,1.3)-(1.5,1.5)-(1.6,1.6)-(1.6,1.6);  
80   bo_tip[sp*1][3]:=1;  
81   sp:=sp*2;  
82   begingroup  
83     save t;  
84     transform t;  
85     (50,-50) transformed t=(230,-50);  
86     (500,-50) transformed t=(560,-50);  
87     (500,850) transformed t=(560,630);  
88     tsu_xform(t)(contents);  
89   endgroup;  
90 enddef;
```

91

92

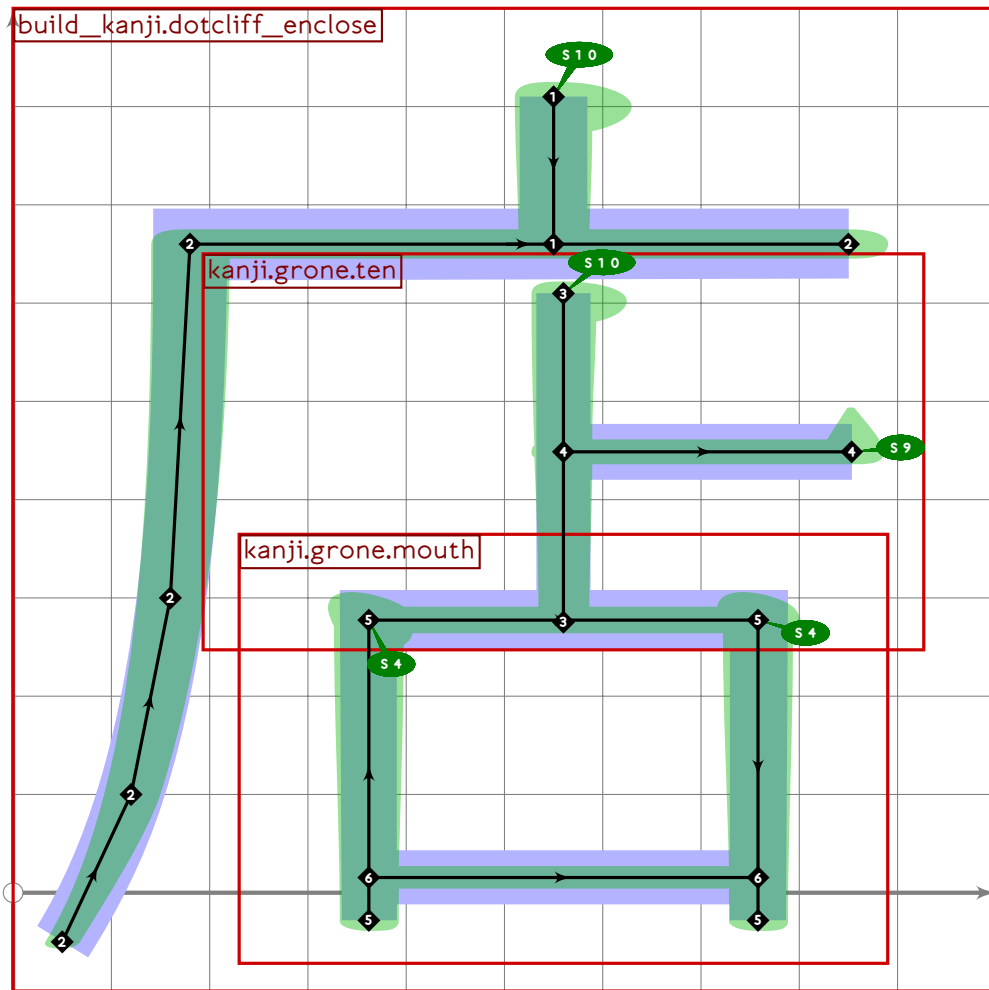
---



```

93
94 vardef tsu_curve.kanji.grtwo.market =
95   add_proof_box("kanji.grtwo.market");
96   build_kanji.level(build_kanji.tb(610,90-10*mincho)
97     (tsu_curve.kanji.radical.kettle_lid)
98     (tsu_curve.kanji.greight.towel));
99 enddef;

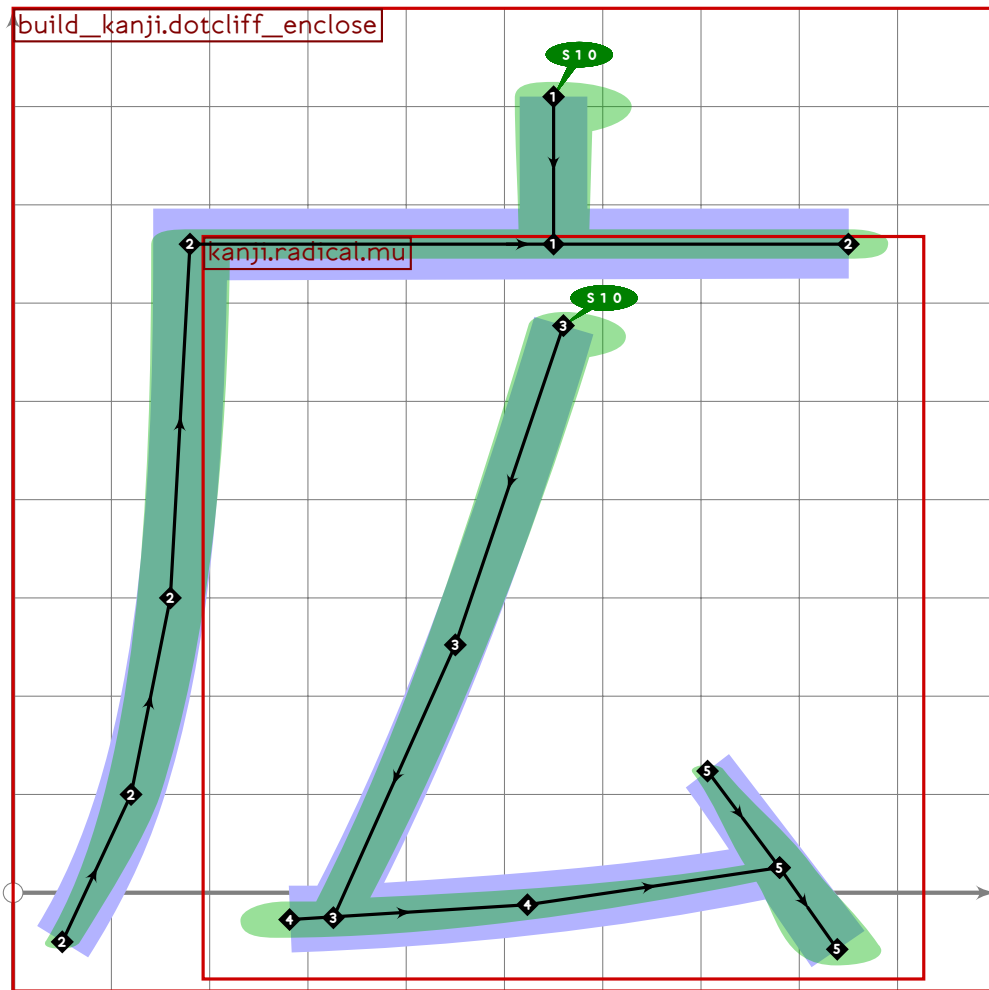
```



```

100
101 vardef tsu_curve.kanji.grtwo.shop =
102   add_proof_box("kanji.grtwo.shop");
103   build_kanji.dotcliff_enclose(tsu_curve.kanji.greight.divination);
104 enddef;

```

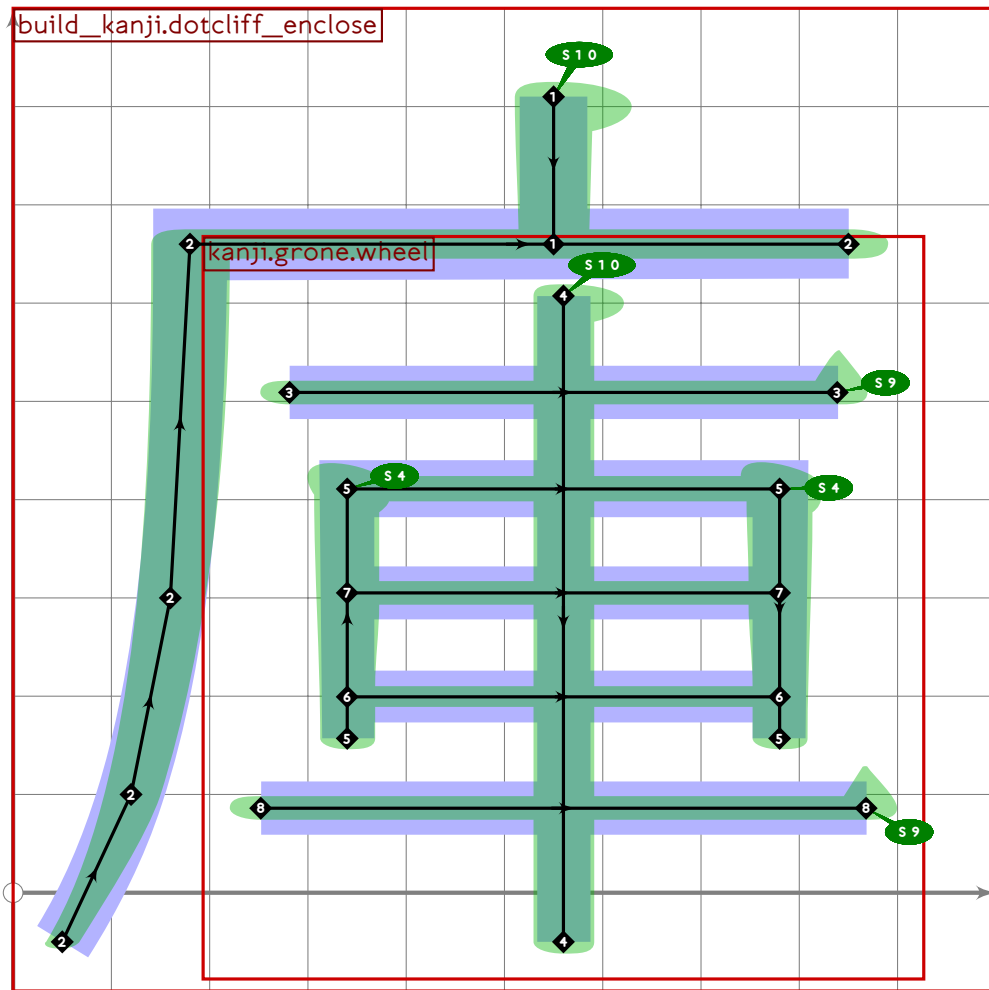


```

105
106 vardef tsu_curve.kanji.grtwo.wide =
107   add_proof_box("kanji.grtwo.wide");
108   build_kanji.dotcliff_enclose(tsu_curve.kanji.radical.mu);
109 enddef;
110
111

```

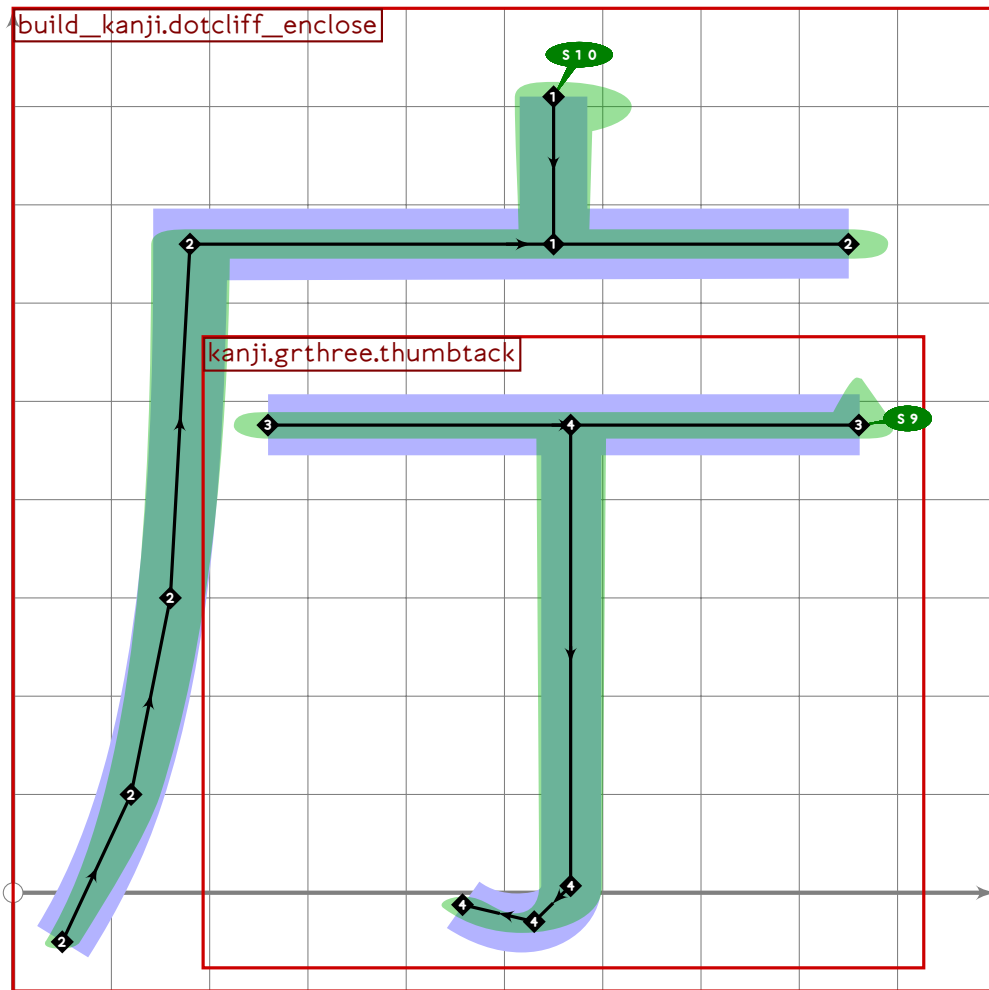




```

112
113 vardef tsu_curve.kanji.grthree.warehouse =
114   add_proof_box("kanji.grthree.warehouse");
115   build_kanji.dotcliff_enclose(tsu_curve.kanji.grone.wheel);
116 enddef;
117
118 _____

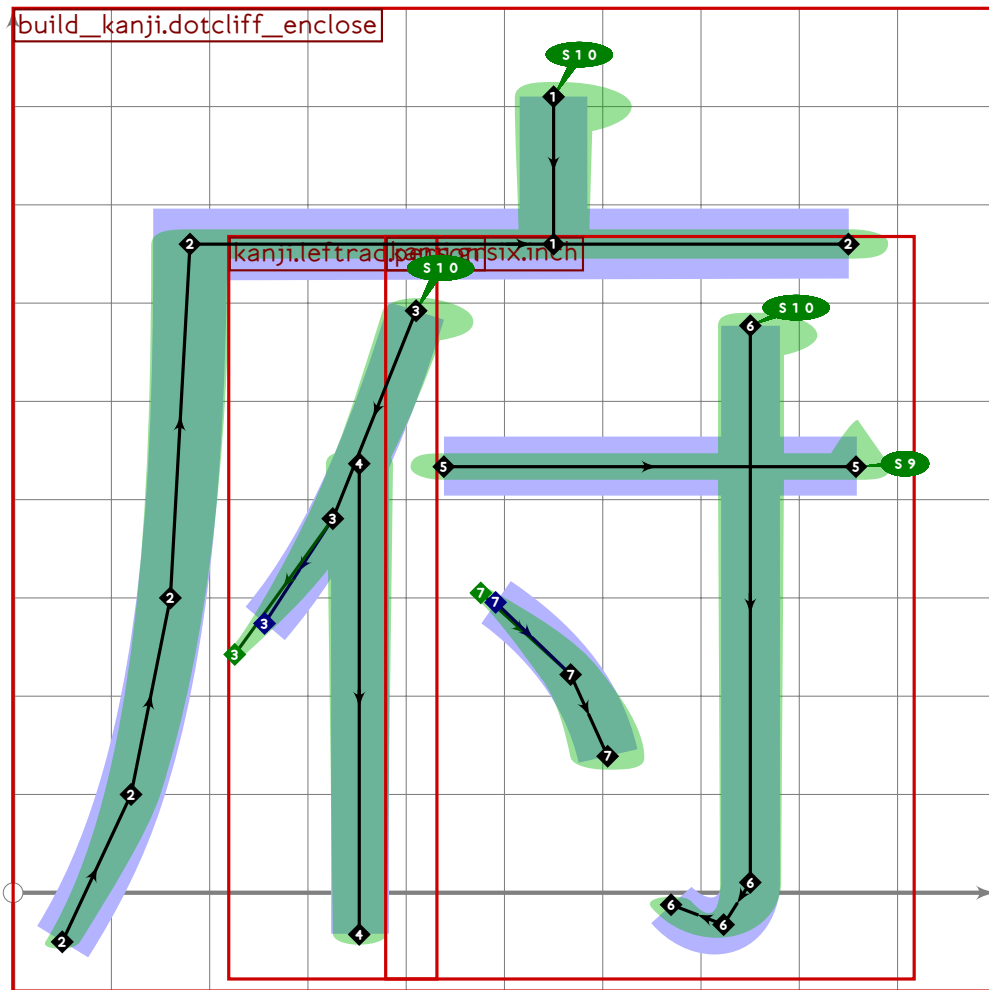
```



```

119
120 vardef tsu_curve.kanji.grsix.government_office =
121   add_proof_box("kanji.grsix.government_office");
122   build_kanji.dotcliff_enclose(tsu_xform(identity yscaled 0.85)
123     (tsu_curve.kanji.grthree.thumbtack));
124 enddef;
125
126

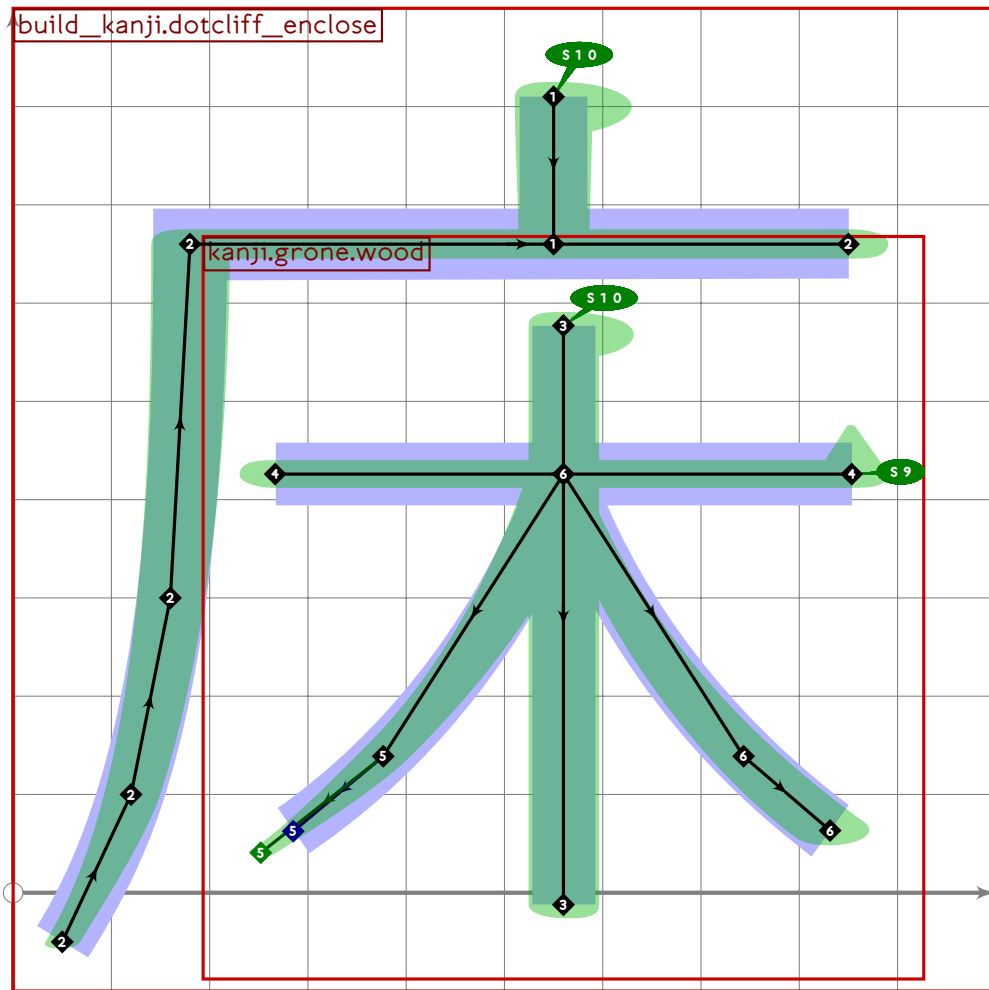
```



```

127
128 vardef tsu_curve.kanji.grfour.urban_prefecture =
129   add_proof_box("kanji.grfour.urban_prefecture");
130   build_kanji.dotcliff_enclose(tsu_curve.kanji.grfour.attach);
131 enddef;
132
133

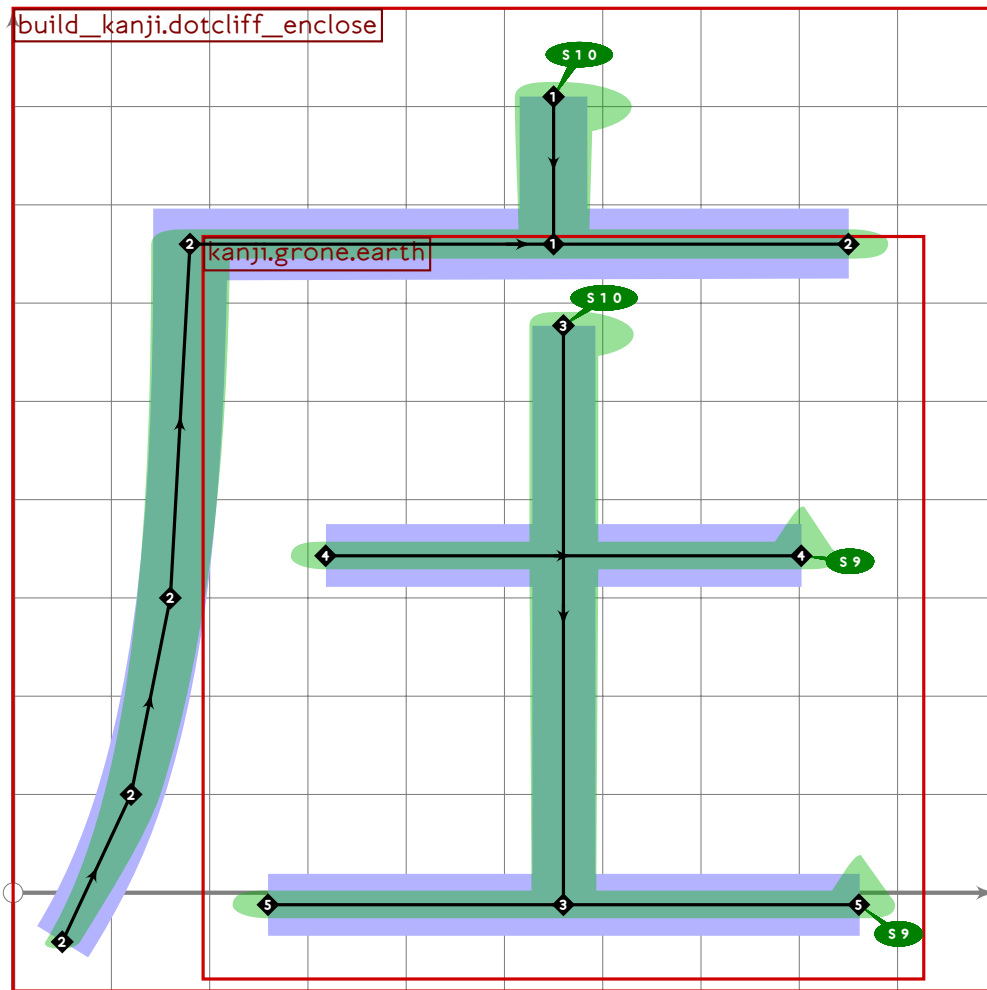
```



```

134
135 vardef tsu_curve.kanji.greight.bed =
136   add_proof_box("kanji.greight.bed");
137   build_kanji.dotcliff_enclose(tsu_curve.kanji.grone.wood);
138 enddef;
139
140

```



```

141
142 vardef tsu_curve.kanji.grnine.manor =
143   add_proof_box("kanji.grnine.manor");
144   build_kanji.dotcliff_enclose(tsu_curve.kanji.grnone.earth);
145 enddef;

```

146

147

148

149 % shi/ichi "market"

```
150 begintsuglyph("uni5E02";2);
```

[see page 1262]

```
151   tsu_curve.kanji.grtwo.market;
```

```
152   tsu_render;
```

```
153 endtsuglyph;
```

154

155 % nen/toshi "year"

```
156 begintsuglyph("uni5E74";116);
```

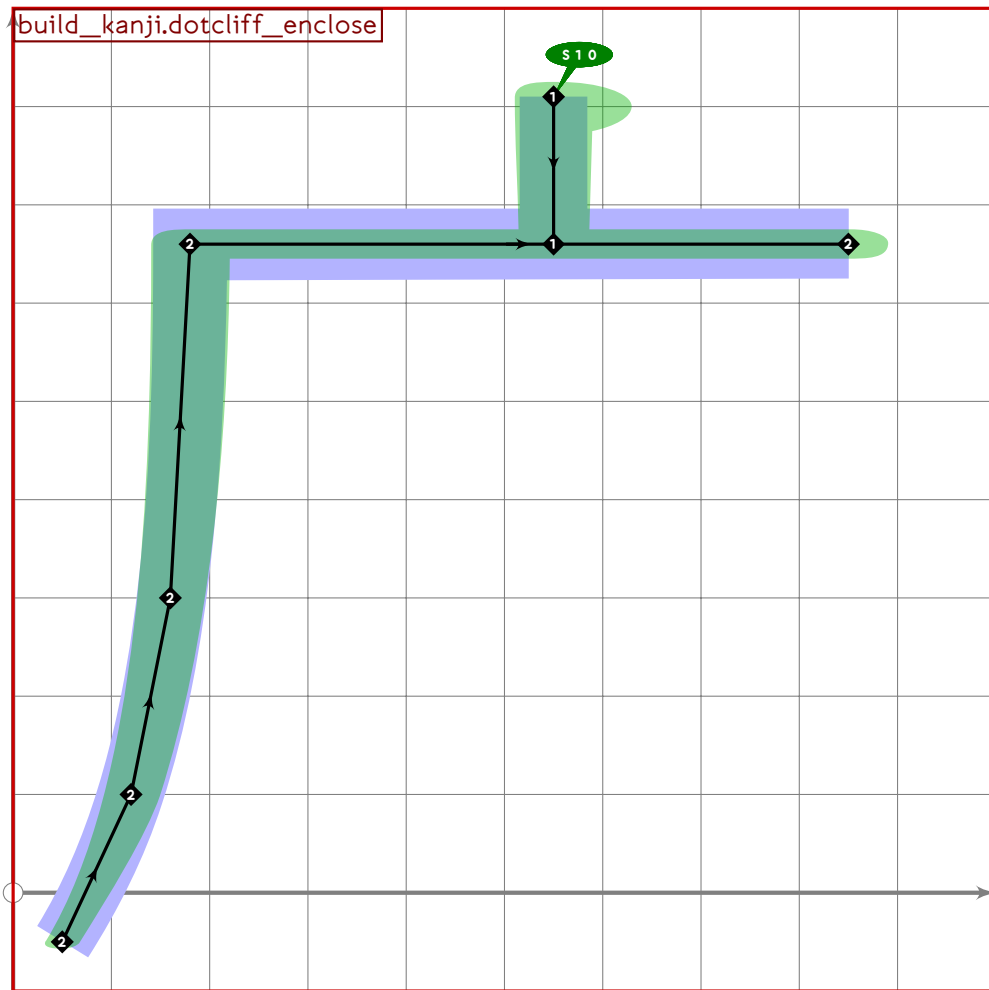
[see page 1260]

```
157   tsu_curve.kanji.grone.year;
```

```
158   tsu_render;
```

```
159 endtsuglyph;
```

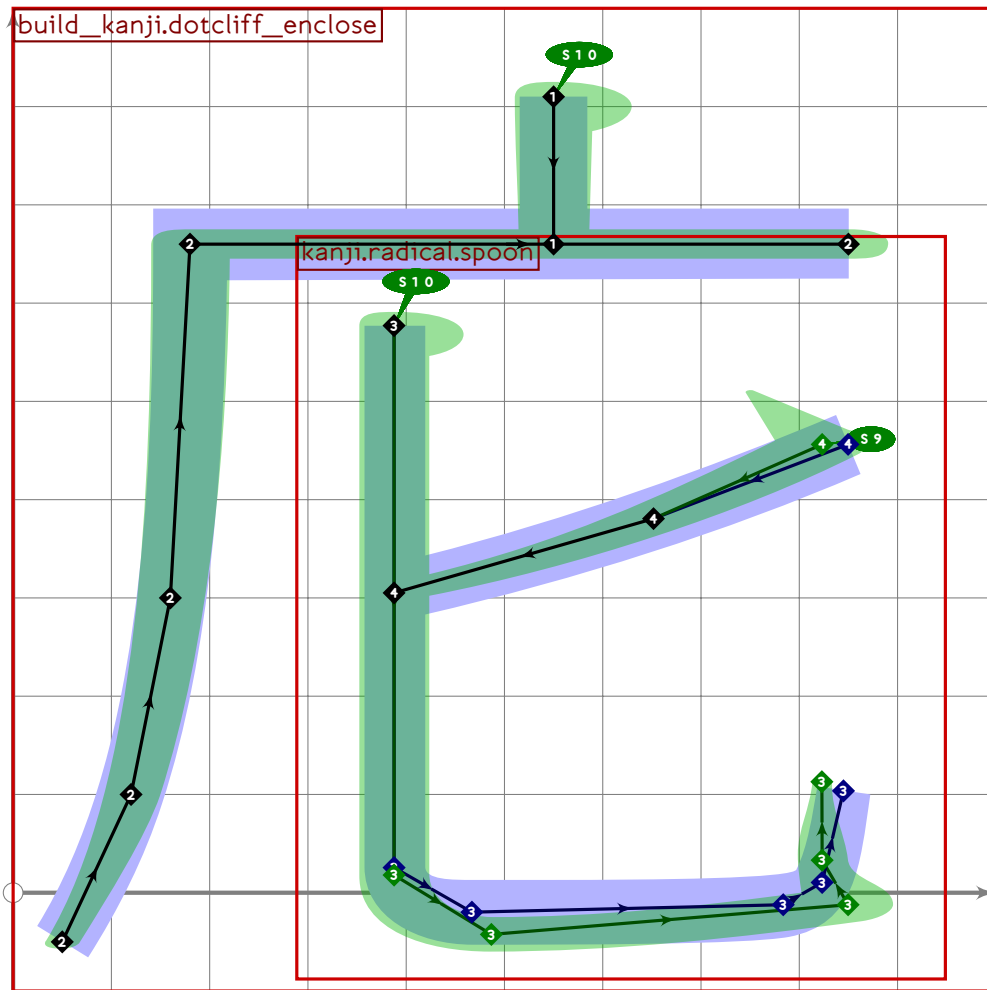
160



```

161 % madare "dotted cliff radical"
162 beginsuglyph("uni5E7F",127);
163   build_kanji.dotcliff_enclose();
164   tsu_render;
165 endsuglyph;
166

```

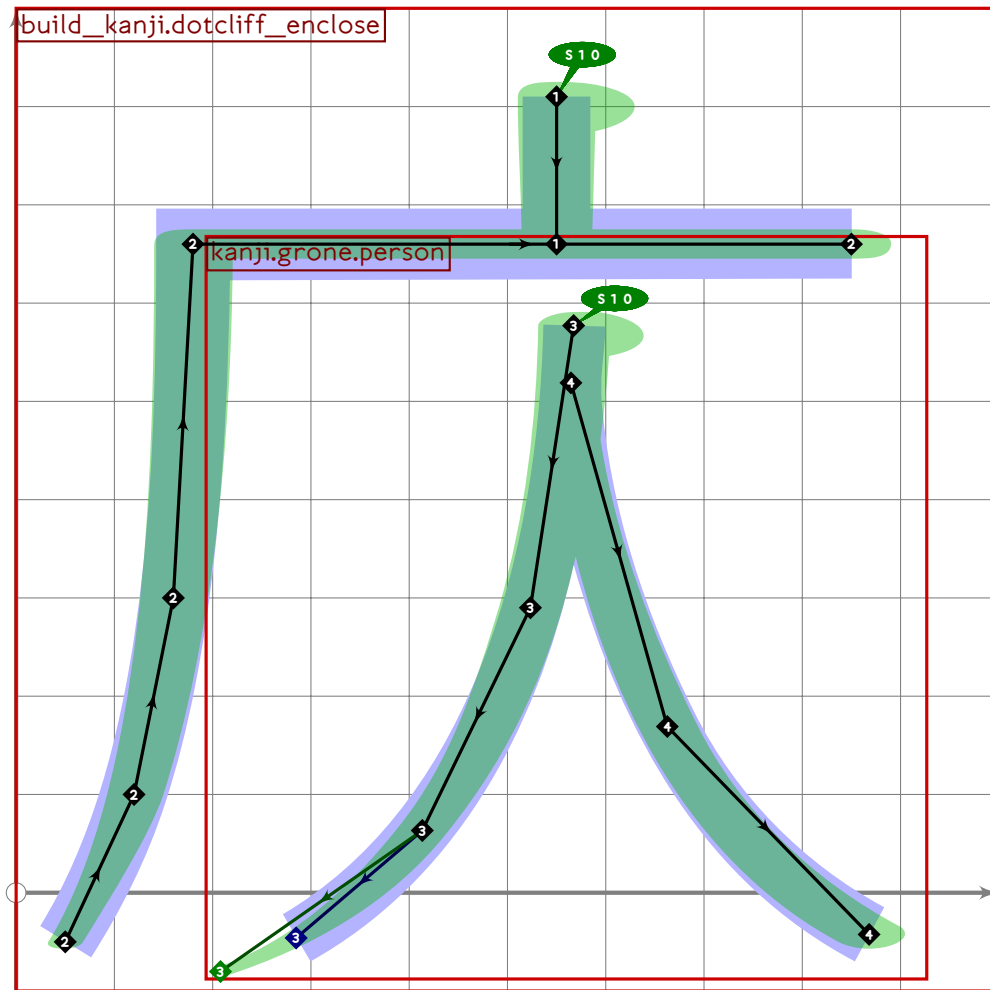


```

167 % extra
168 begintsuglyph("uni5E80",128);
169   build_kanji.dotcliff_enclose(
170     build_kanji.sscale(xscaled 0.9 shifted (80,0))
171     (tsu_curve.kanji.radical.spoon));
172   tsu_render;
173 endsuglyph;
174
175 % chou/yakushou "government office"
176 begintsuglyph("uni5E81",129);
177   tsu_curve.kanji.grsix.government_office;
178   tsu_render;
179 endsuglyph;
180

```

[see page 1266]



```

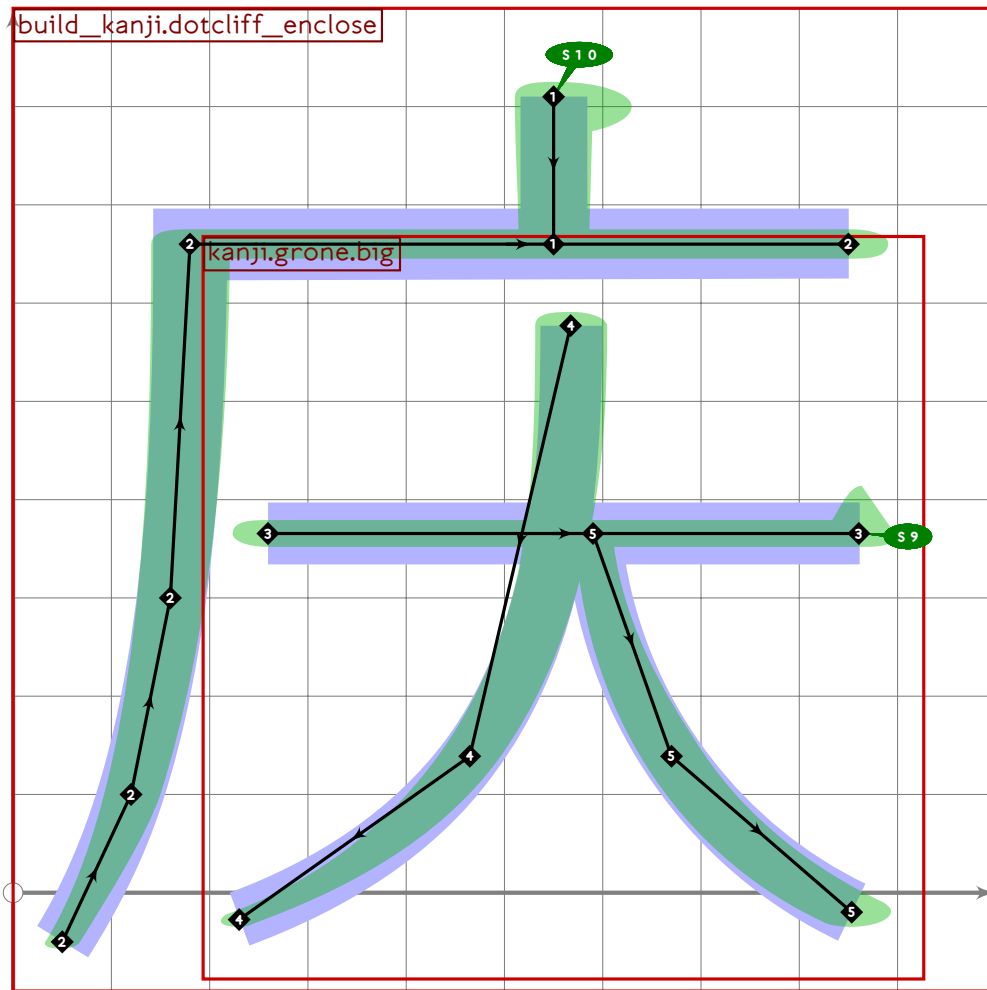
181 % extra
182 begintsuglyph("uni5E82",130);
183   build_kanji.dotcliff_enclose(tsu_curve.kanji.grone.person);
184   tsu_render;
185 endtsuglyph;
186
187 % kou/hiro "wide"
188 begintsuglyph("uni5E83",131);
189   tsu_curve.kanji.grtwo.wide;
190   tsu_render;
191 endtsuglyph;
192
193 % kou/hiro "wide"
194 begintsuglyph("uni5E84",132);
195   tsu_curve.kanji.grnine.manor;
196   tsu_render;
197 endtsuglyph;
198

```

[see page 1264]

[see page 1269]





```

199 % extra
200 begintsuglyph("uni5E86",134);
201 build_kanji.dotcliff_enclose(tsu_curve.kanji.grone.big);
202 tsu_render;
203 endtsuglyph;
204
205 % toko/yuka "bed"
206 begintsuglyph("uni5E8A",138);
207 tsu_curve.kanji.greight.bed;
208 tsu_render;
209 endtsuglyph;
210
211 % ten/mise "shop"
212 begintsuglyph("uni5E97",151);
213 tsu_curve.kanji.grtwo.shop;
214 tsu_render;
215 endtsuglyph;
216
217 % fu "urban prefecture"
218 begintsuglyph("uni5E9C",156);
219 tsu_curve.kanji.grfour.urban_prefecture;

```

[see page 1268]

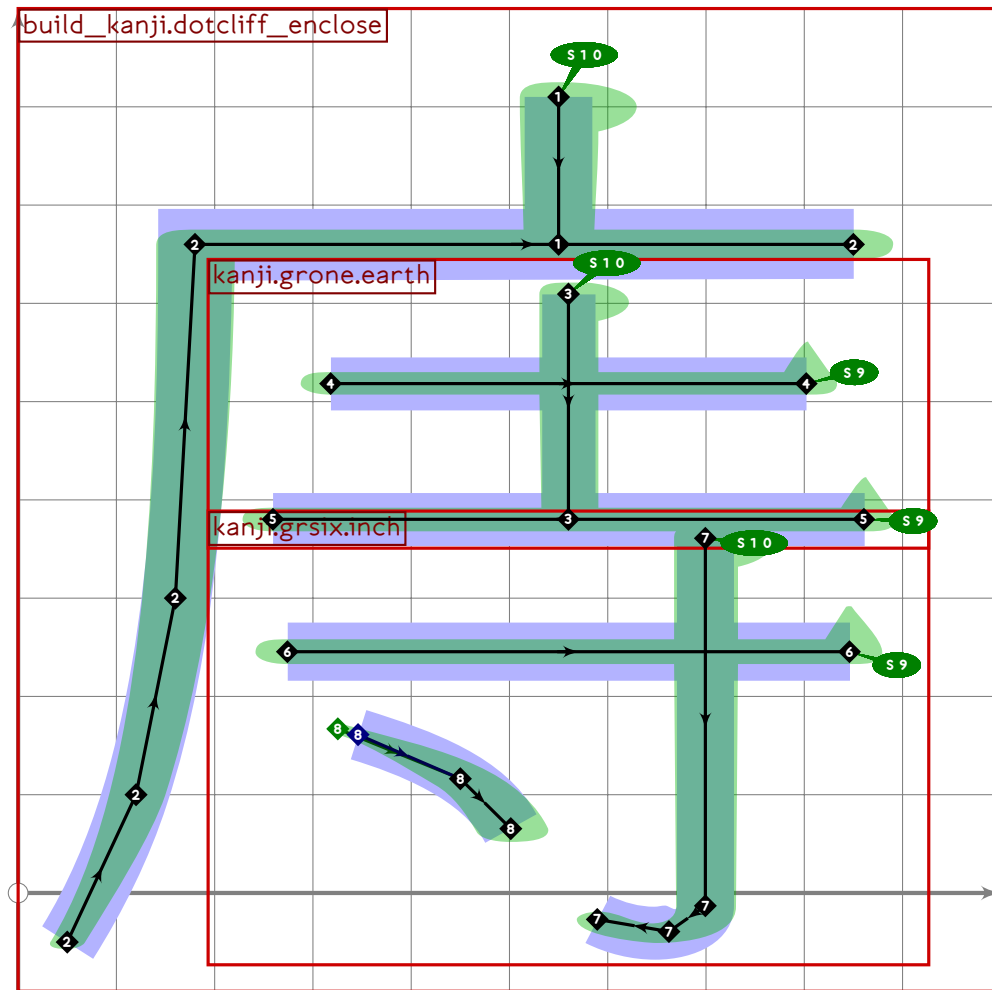
[see page 1263]

[see page 1267]

```

220 tsu_render;
221 endtsuglyph;
222

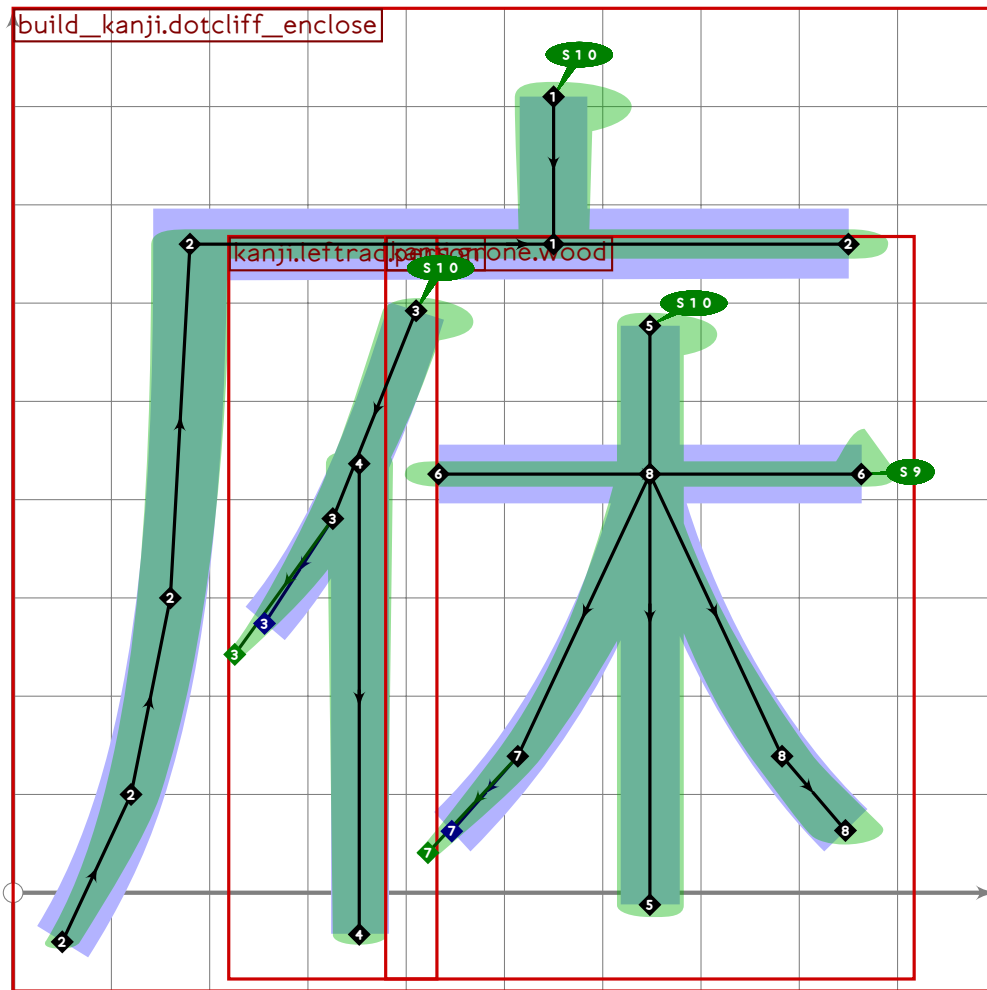
```



```

223 % extra
224 beginsuglyph("uni5EA4",164);
225 build_kanji.dotcliff_enclose(tsu_curve.kanji.grtwo.temple);
226 tsu_render;
227 endtsuglyph;
228

```

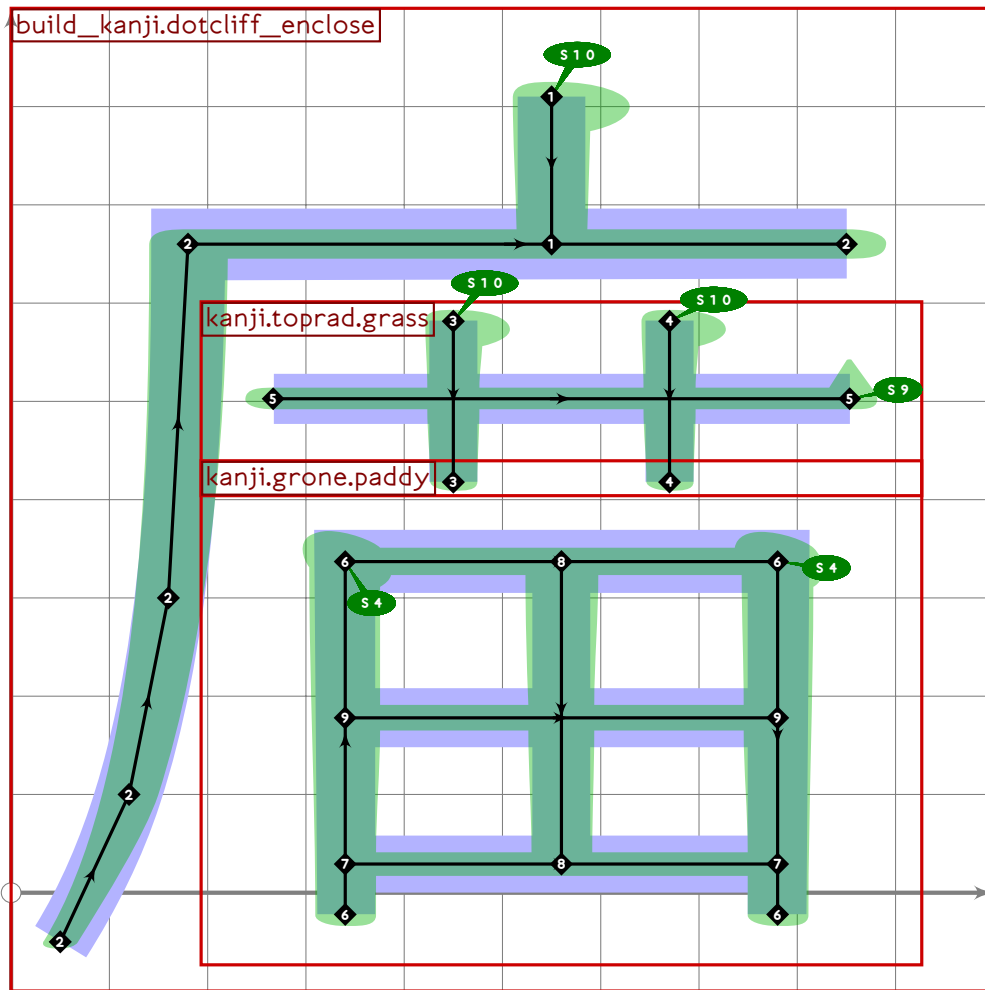


```

229 % extra
230 beginsuglyph("uni5EA5",165);
231 build_kanji.dotcliff_enclose(tsu_curve.kanji.grone.vacation);
232 tsu_render;
233 endsuglyph;
234
235 % ko/kura "warehouse"
236 beginsuglyph("uni5EAB",171);
237 tsu_curve.kanji.grthree.warehouse;
238 tsu_render;
239 endsuglyph;
240

```

[see page 1265]



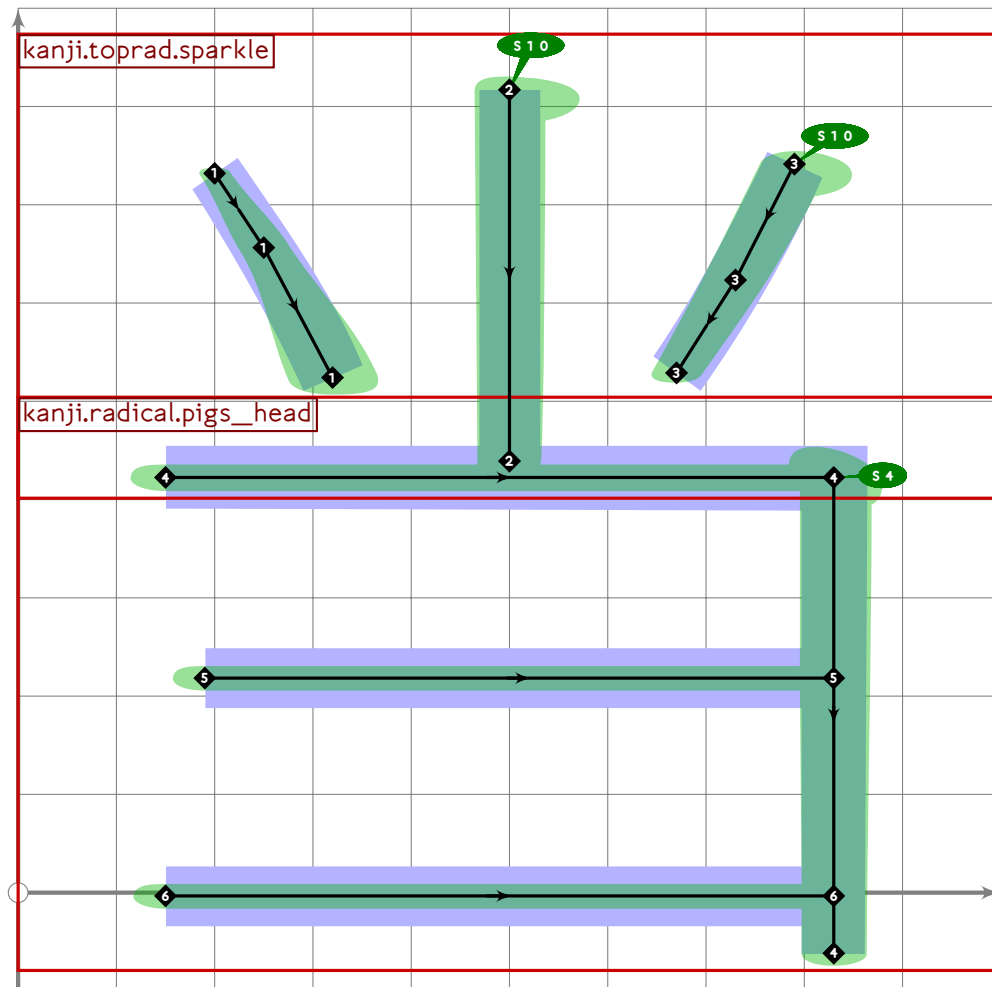
```

241 % extra
242 begint Suglyph("uni5EBF",191);
243 build_kanji.dotcliff_enclose(
244     tsu_xform(identity yscaled 0.94)(tsu_curve.kanji.greight.seedling));
245 tsu_render;
246 endsuglyph;
247
248 _____
249
250 endfont;
251
252 _____

```

# tsuku-5f.mp

```
1 %  
2 % Unicode page 5f (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input radical.mp;  
40 input toprad.mp;  
41  
42 _____
```

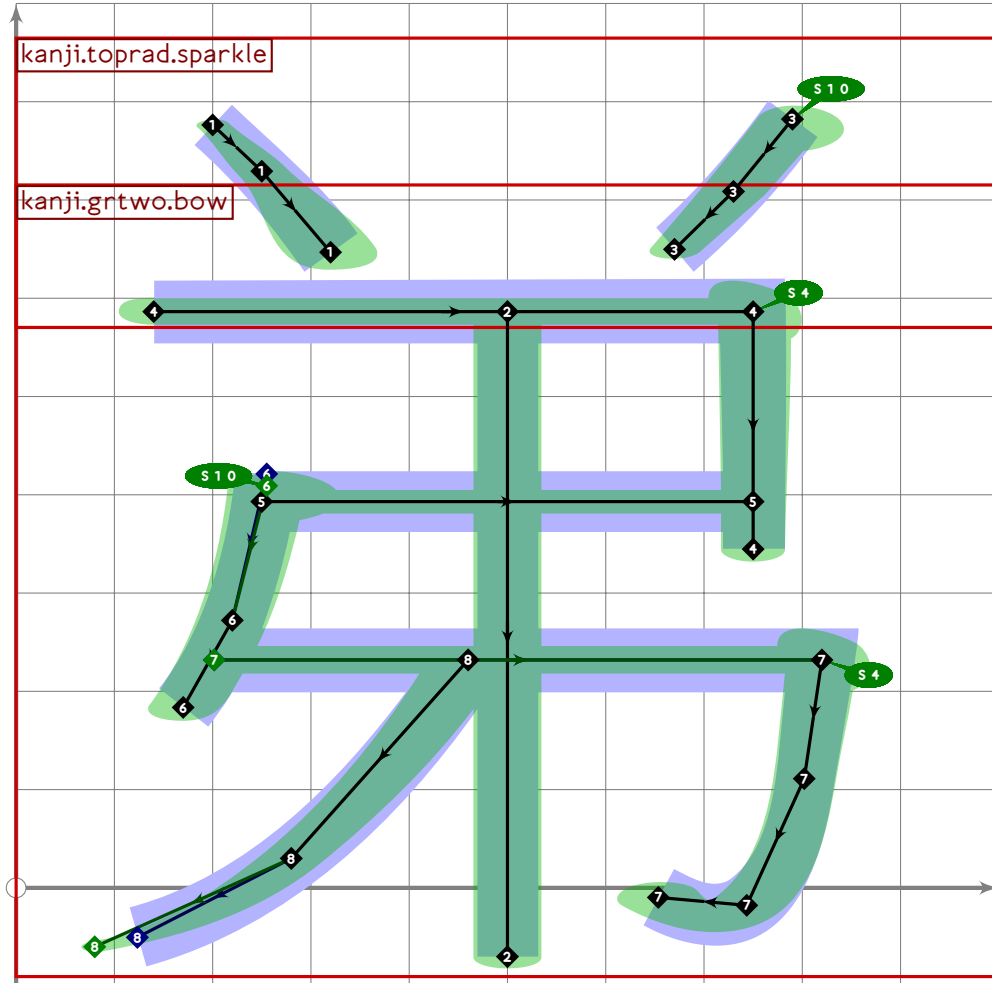


43

```

44 vardef tsu_curve.kanji.grtwo.hit =
45   add_proof_box("kanji.grtwo.hit");
46   build_kanji.level(build_kanji.tb(450,50)
47     (tsu_curve.kanji.toprad.sparkle)
48     (tsu_curve.kanji.radical.pigs_head));
49 enddef;

```

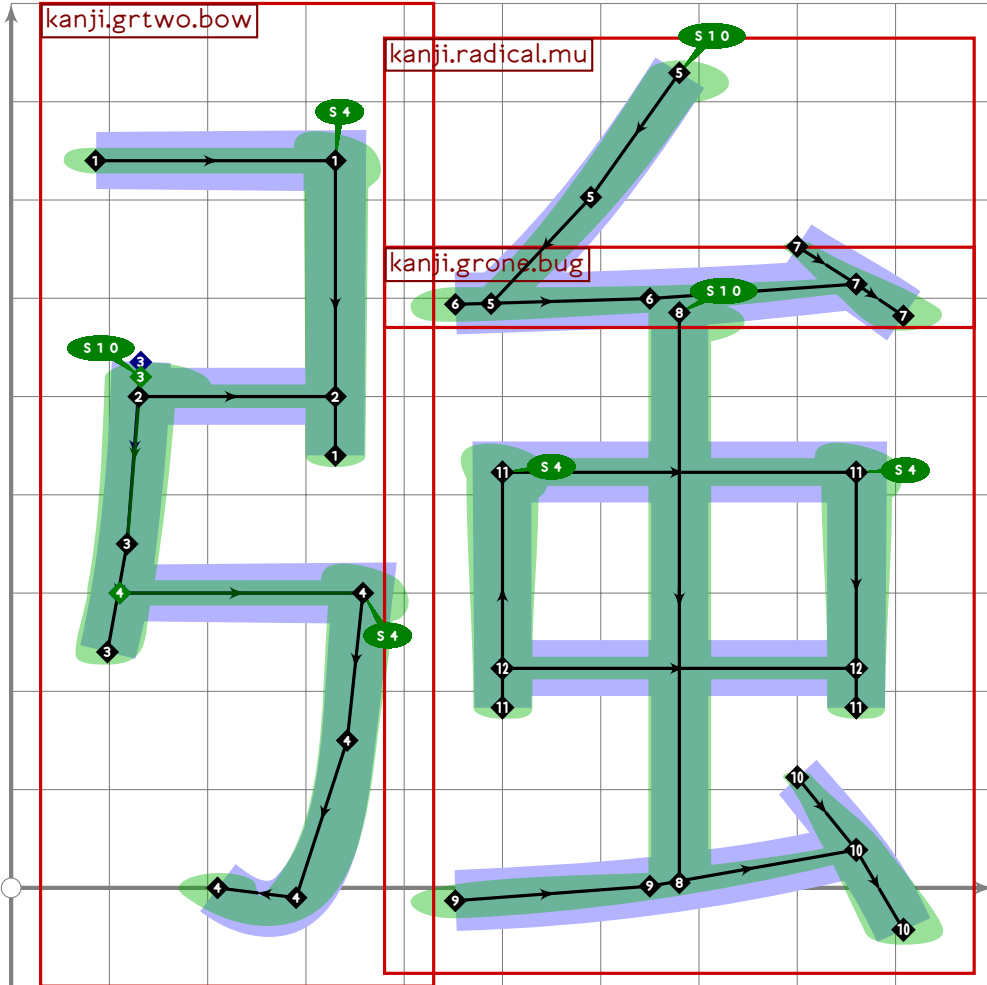


```

50
51 vardef tsu_curve.kanji.grtwo.little_brother =
52   add_proof_box("kanji.grtwo.little_brother");
53   build_kanji.level(build_kanji.tb(630,90)
54     (tsu_curve.kanji.toprad.sparkle)
55     (tsu_curve.kanji.grtwo.bow));
56   bp[sp-6]:=((500,y part point 0 of bp[sp-4])-(500,70);
57   bo_serif[sp-6][0]:=whatever;
58   bp[sp-1]:=((point 0 of bp[sp-1])-(
59     ((subpath (1,infinity) of bp[sp-1])
60       shifted (-820,0) xscaled 0.45 shifted (820,0));
61   bp[sp]:=((bp[sp-6] intersectionpoint bp[sp-1])*(-40,0))..tension 1.2..
62     (280,30)..(80,-60);
63   bq[sp]:=(1.6,1.6)-(1.4,1.4)-(0.9,0.9);
64   sp:=sp*1;

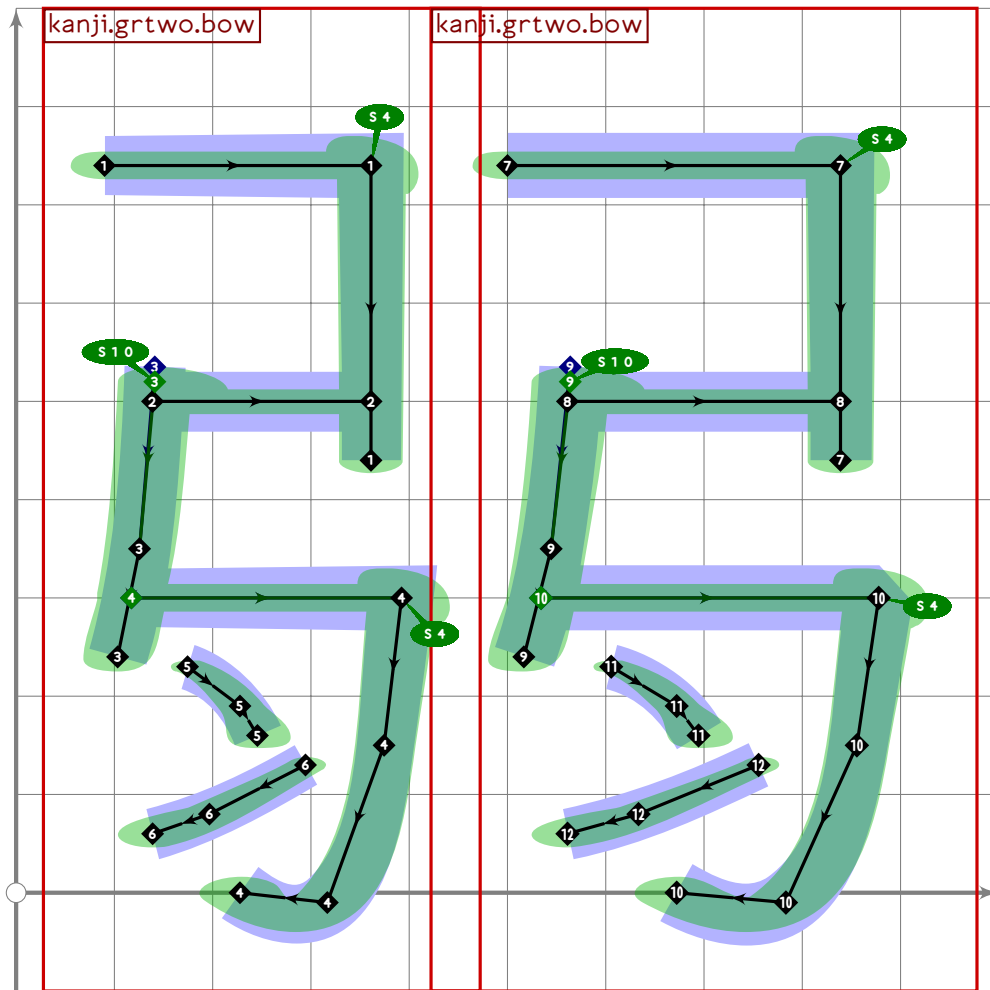
```

65 enddef;



66

```
67 vardef tsu_curve.kanji.grtwo.strong =  
68   add_proof_box("kanji.grtwo.strong");  
69   build_kanji.level(build_kanji.lr(410,0)  
70     (tsu_curve.kanji.grtwo.bow)  
71     (build_kanji.tb(600,30)  
72       (tsu_curve.kanji.radical.mu)  
73       (tsu_curve.kanji.grone.bug)));  
74 enddef;
```

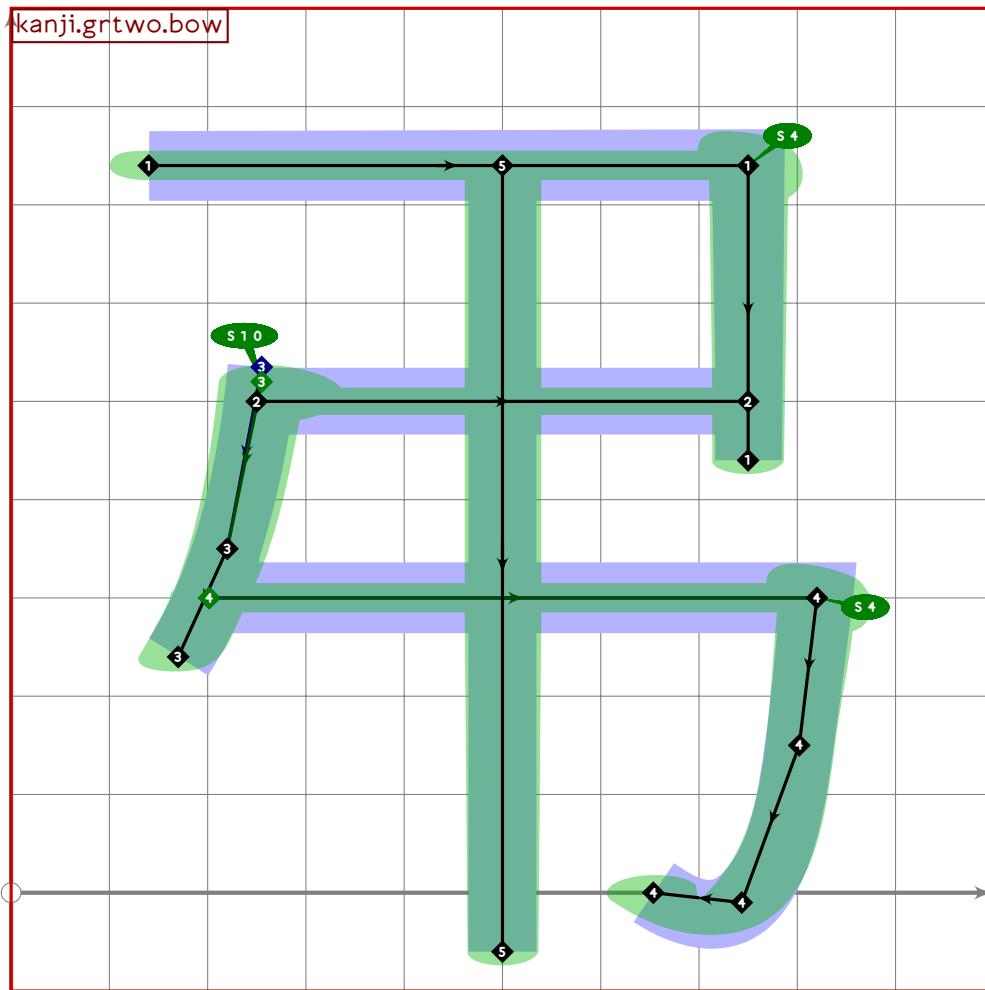


```

75
76 vardef tsu_curve.kanji.grtwo.weak =
77   add_proof_box("kanji.grtwo.weak");
78   build_kanji.lr(450,0)
79   (tsu_curve_kanji.grtwo_helper.weak)
80   (tsu_curve_kanji.grtwo_helper.weak);
81 enddef;
82 vardef tsu_curve_kanji.grtwo_helper.weak =
83   tsu_curve.kanji.grtwo.bow;
84   bp[sp]:=(330,230)..tension 1.2..(450,190)..(490,160);
85   bq[sp]:=(1.2,1.2)-(1.4,1.4)-(1.8,1.8);
86   bo_size[sp]:=80;
87   bp[sp*1]:=(600,130)..tension 1.2..(380,80)..(250,60);
88   bq[sp*1]:=(1.3,1.3)-(1.6,1.6)-(1.9,1.9);
89   bo_size[sp*1]:=80;
90   sp:=sp*2;
91 enddef;
92
93

```

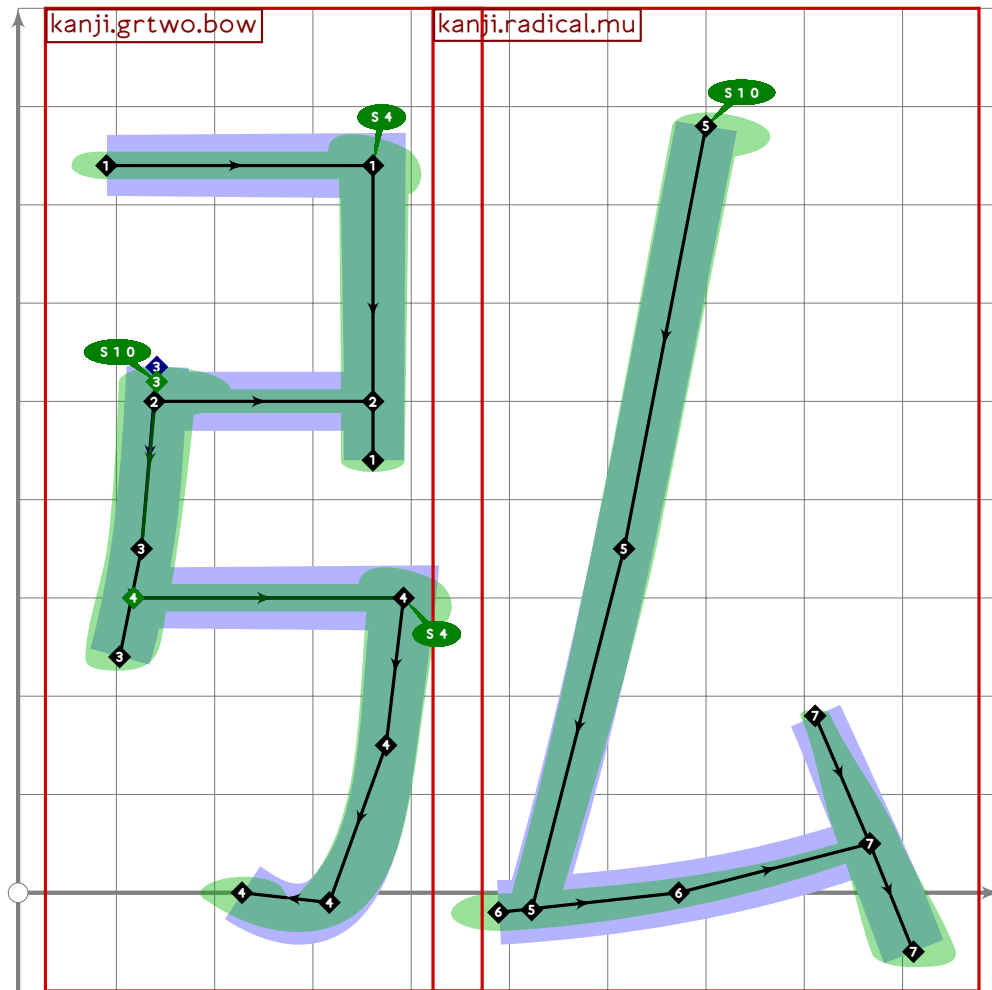




```

94
95 vardef tsu_curve.kanji.greight.funeral =
96   add_proof_box("kanji.greight.funeral");
97   tsu_curve.kanji.grtwo.bow;
98   bp[sp-1]:=(point 0 of bp[sp-1])–
99     ((subpath (1,infinity) of bp[sp-1])
100      shifted (-820,0) xscaled 0.45 shifted (820,0));
101   bp[sp]:=(500,740)–(500,60);
102   bq[sp]:=(1.6,1.6)–(1.5,1.5);
103   sp:=sp*1;
104 enddef;
105
106

```



```

107
108 vardef tsu_curve.kanji.grnine.wide =
109   add_proof_box("kanji.grnine.wide");
110   build_kanji.level(build_kanji.lr(450,0)
111     (tsu_curve.kanji.grtwo.bow)
112     (tsu_curve.kanji.radical.mu));
113 enddef;
114
115
116
117 % kyu/yumi "bow" (projectile weapon)
118 begintsuglyph("uni5F13";19);
119   tsu_curve.kanji.grtwo.bow;
120   tsu_render;
121 endtsuglyph;
122
123 % chou/tomura "funeral"
124 begintsuglyph("uni5F14";20);
125   tsu_curve.kanji.greight.funeral;
126   tsu_render;
127 endtsuglyph;

```

[see page 374]

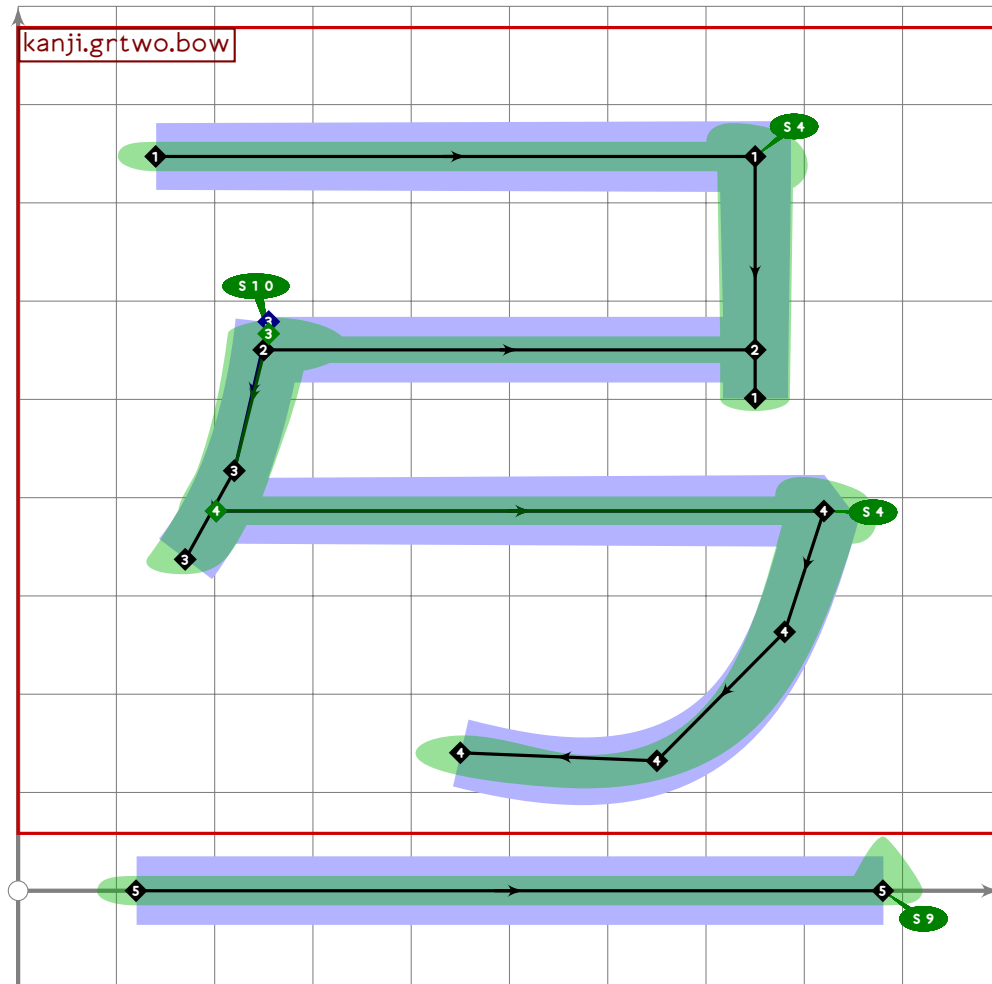
[see page 1281]

```

128
129 % in/hi "pull"
130 begintsuglyph("uni5F15",21);
131   tsu_curve.kanji.grtwo.pull;
132   tsu_render;
133 endsuglyph;
134

```

[see page 396]



```

135 % te "phoneme only"
136 begintsuglyph("uni5F16",22);
137   tsu_xform(identity shifted (0,780) yscaled 0.82 shifted (0,780))
138     (tsu_curve.kanji.grtwo.bow);
139   bp[sp]:=(120,0)-(880,0);
140   bq[sp]:=(1.6,1.6)-(1.6,1.6);
141   bo_serif[sp][1]:=9;
142   sp:=sp*1;
143   tsu_render;
144 endsuglyph;
145
146 % kou/hiro "wide" (used in names)
147 begintsuglyph("uni5F18",24);
148   tsu_curve.kanji.gnrnine.wide;

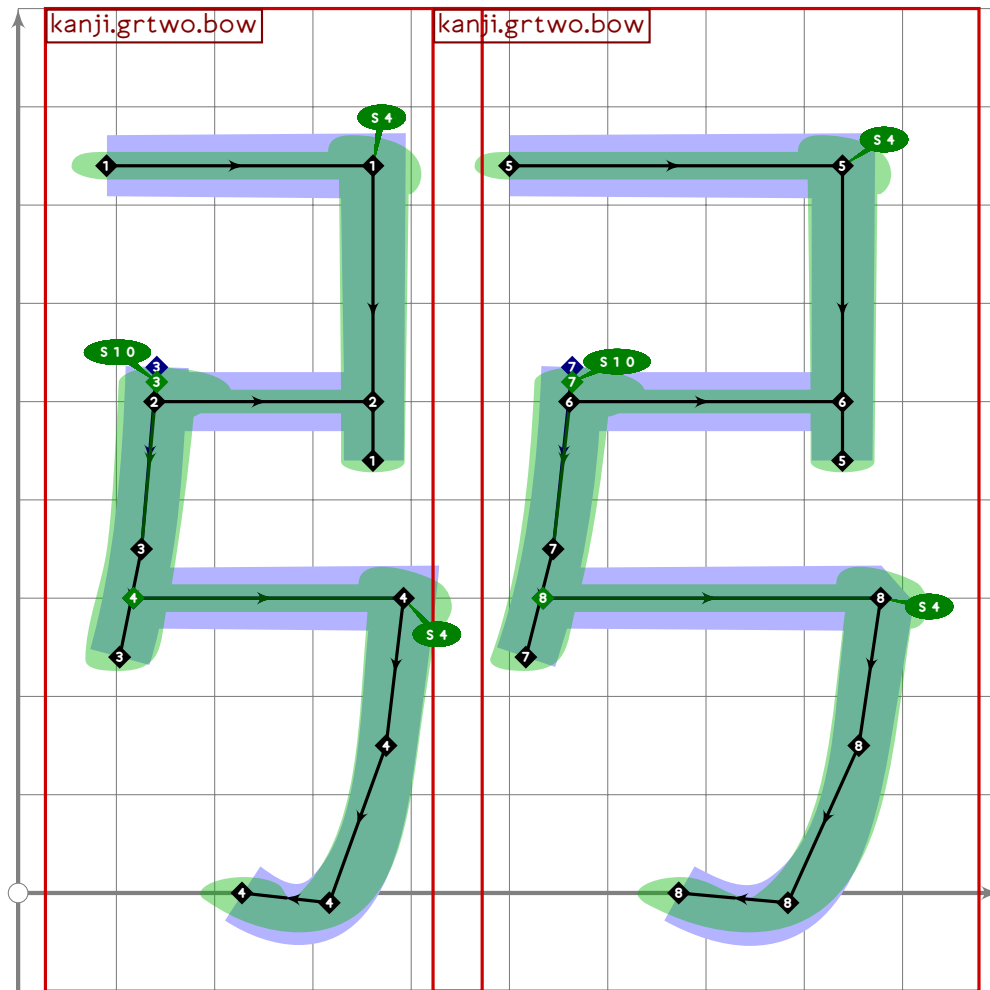
```

[see page 1282]

```

149 tsu_render;
150 endtsuglyph;
151

```



```

152 % extra
153 begintsuglyph("uni5F1C";28);
154 build_kanji.level(build_kanji.lr(450,0)
155   (tsu_curve.kanji.grtwo.bow)
156   (tsu_curve.kanji.grtwo.bow));
157 tsu_render;
158 endtsuglyph;
159
160 % twi/otouto "little brother"
161 begintsuglyph("uni5F1F";31);
162 tsu_curve.kanji.grtwo.little_brother;
163 tsu_render;
164 endtsuglyph;
165
166 % jyaku/yowa "weak"
167 begintsuglyph("uni5F31";49);
168 tsu_curve.kanji.grtwo.weak;
169 tsu_render;

```

[see page 1278]

[see page 1280]

```
170 endtsuglyph;
171
172 % kyou/tsuyo "strong"
173 begintsuglyph("uni5F37",55); [see page 1279]
174 tsu_curve.kanji.grtwo.strong;
175 tsu_render;
176 endtsuglyph;
177
178 % needed for lots of other things, rare by itself
179 begintsuglyph("uni5F50",80); [see page 314]
180 tsu_curve.kanji.radical.pigs_tail;
181 tsu_render;
182 endtsuglyph;
183
184 % tou/a(tari) "hit"
185 begintsuglyph("uni5F53",83); [see page 1278]
186 tsu_curve.kanji.grtwo.hit;
187 tsu_render;
188 endtsuglyph;
189
190 

---


191
192 endfont;
193
194 

---


```

# tsuku-62.mp

```
1 %  
2 % Unicode page 62 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

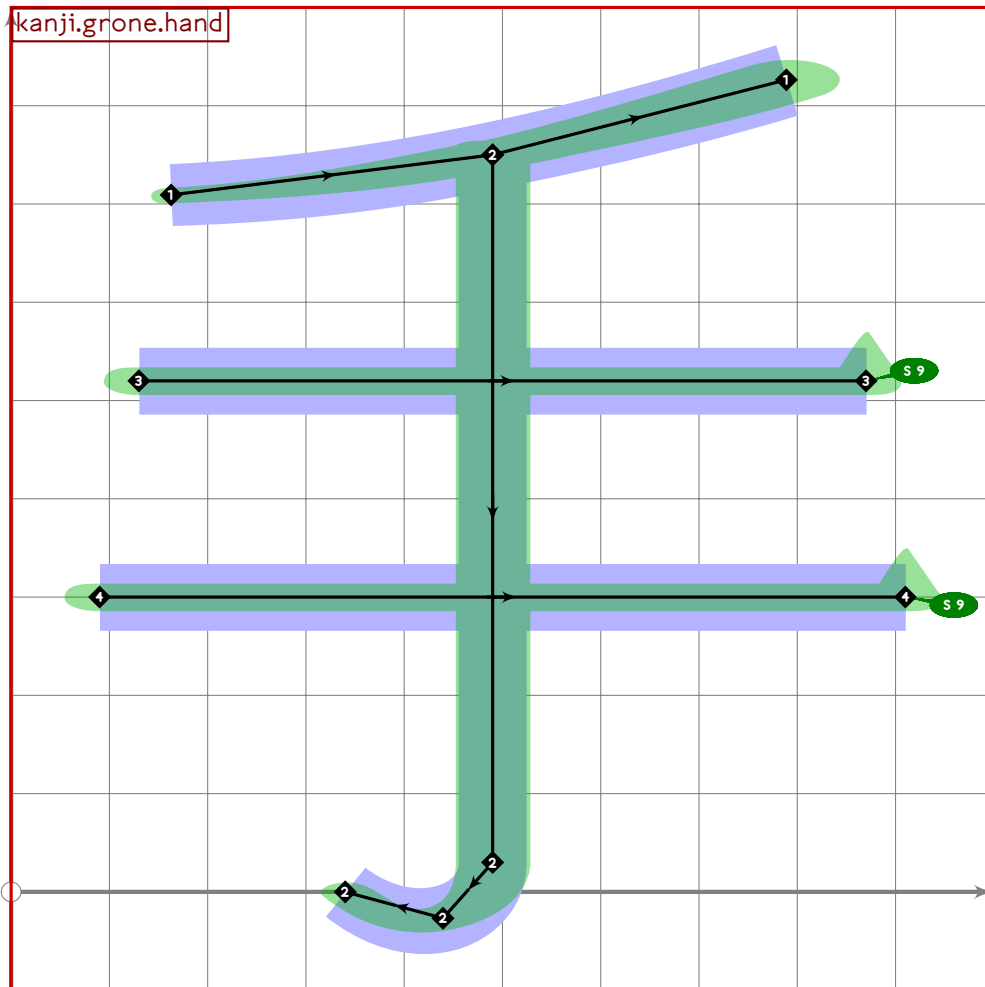
```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

```
37
```

```
38
```



```
39
```

```
40 vardef tsu_curve.kanji.grone.hand =  
41   add_proof_box("kanji.grone.hand");  
42   build_kanji.add_beret(  
43     bp[sp]:=(490,750);
```

```

44     bq[sp]:=(1.6,1.6);
45     build_kanji.add_jtail(sp);
46     bp[sp+1]:=(130,520)-(870,520);
47     bq[sp+1]:=(1.5,1.5)-(1.5,1.5);
48     bo_serif[sp+1][1]:=9;
49     bp[sp+2]:=(90,300)-(910,300);
50     bq[sp+2]:=(1.5,1.5)-(1.5,1.5);
51     bo_serif[sp+2][1]:=9;
52     sp:=sp+3;
53 );
54 enddef;
55
56 

---


57
58 % te "hand"
59 begintsuglyph("uni624B",75); [see page 1286]
60     tsu_curve.kanji.grone.hand;
61     tsu_render;
62 endtsuglyph;
63
64 

---


65
66 endfont;
67
68 

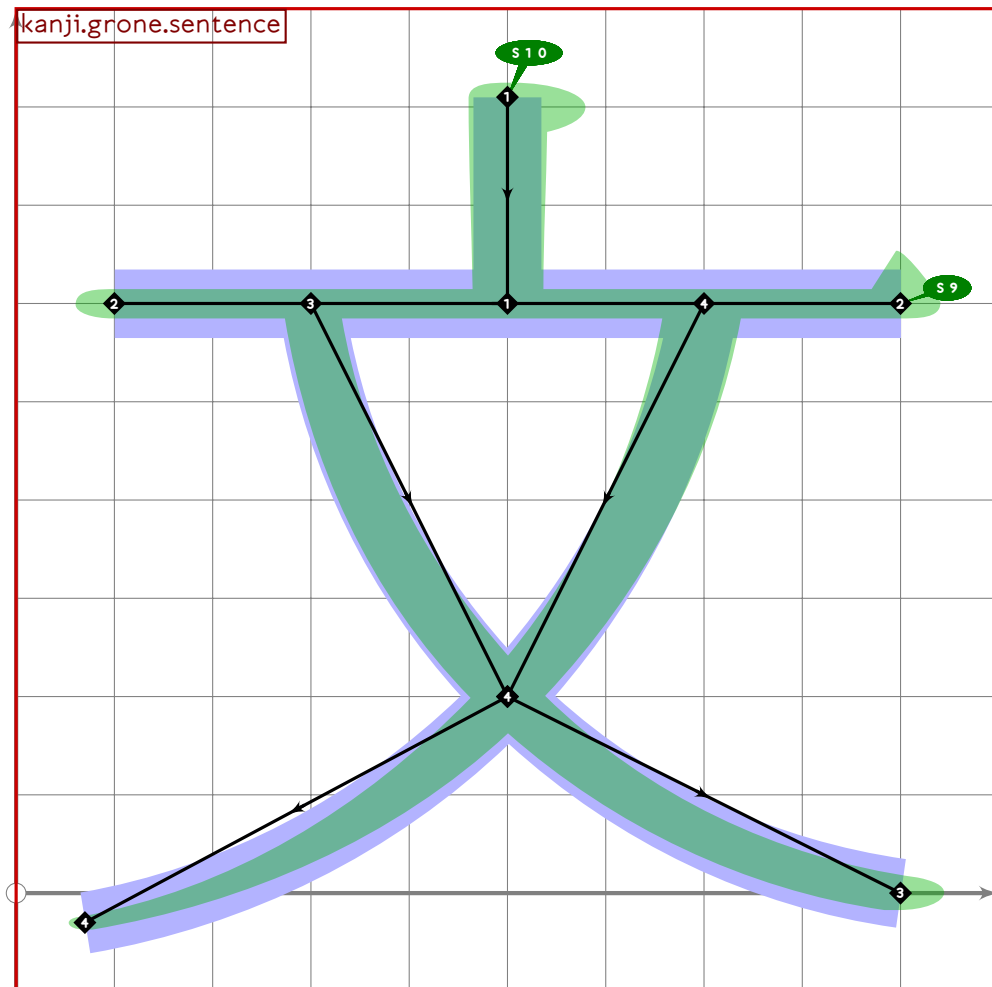
---



```

# tsuku-65.mp

```
1 %  
2 % Unicode page 65 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38  
39 _____
```



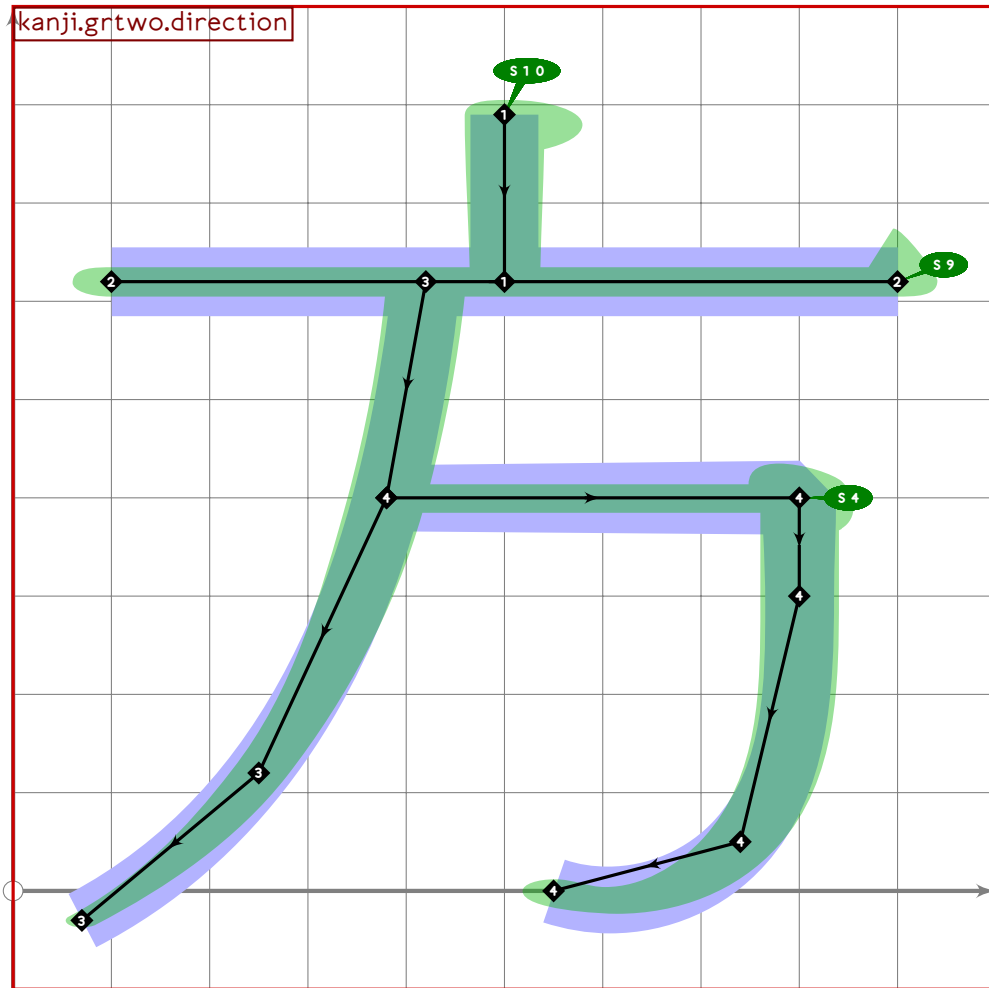
```
40  
41 vardef tsu_curve.kanji.grone.sentence =  
42   add_proof_box("kanji.grone.sentence");  
43   bp[sp]:=(500,810)-(500,600);
```



```

44 bq[sp]:=(1.6,1.6)-(1.5,1.5);
45 bo_serif[sp][0]:=10;
46 bp[sp*1]:=(100,600)-(900,600);
47 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
48 bo_serif[sp*1][1]:=9;
49 bp[sp*2]:=(300,600)..(500,200)..(900,0);
50 bq[sp*2]:=(1.3,1.3)-(1.5,1.5)-(1.7,1.7);
51 bp[sp*3]:=(700,600)..(500,200)..(70,-30);
52 bq[sp*3]:=(1.6,1.6)-(1.5,1.5)-(1,1);
53 sp:=sp*4;
54 enddef;
55
56

```



```

57
58 vardef tsu_curve.kanji.grtwo.direction =
59   add_proof_box("kanji.grtwo.direction");
60   bp[sp]:=(500,790)..(500,620);
61   bq[sp]:=(1.6,1.6)-(1.5,1.5);
62   bo_serif[sp][0]:=10;
63   bp[sp*1]:=(100,620)-(900,620);
64   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);

```

```

65 bo_serif[sp*1][1]:=9;
66 bp[sp*2]:=(420,620)..(380,400)..(250,120)..(70,-30);
67 bq[sp*2]:=(1.6,1.6)-(1.6,1.6)-(1.3,1.3)-(1,1);
68 bp[sp*3]:=(380,400)-(800,400)..tension 11..(800,300)..(740,50)..(550,0);
69 bq[sp*3]:=(1.5,1.5)-(1.6,1.6)-(1.6,1.6)-(1.6,1.6)-(1.4,1.4);
70 bo_tip[sp*3][1]:=0;
71 bo_serif[sp*3][1]:=4;
72 sp:=sp*4;
73 enddef;
74
75 

---


76
77 % bun/fumi "sentence"
78 begintsuglyph("uni6587",135); [see page 1288]
79 tsu_curve.kanji.grone.sentence;
80 tsu_render;
81 endtsuglyph;
82
83 % hi/nichi "day"
84 begintsuglyph("uni65E5",229); [see page 328]
85 tsu_curve.kanji.grone.day;
86 tsu_render;
87 endtsuglyph;
88
89 % hou/kata "direction" or "how to do it"
90 begintsuglyph("uni65B9",185); [see page 1289]
91 tsu_curve.kanji.grtwo.direction;
92 tsu_render;
93 endtsuglyph;
94
95 % hayaku "early"
96 begintsuglyph("uni65E9",233); [see page 331]
97 tsu_curve.kanji.grone.early;
98 tsu_render;
99 endtsuglyph;
100
101 

---


102
103 endfont;
104
105 

---



```

# tsuku-66.mp

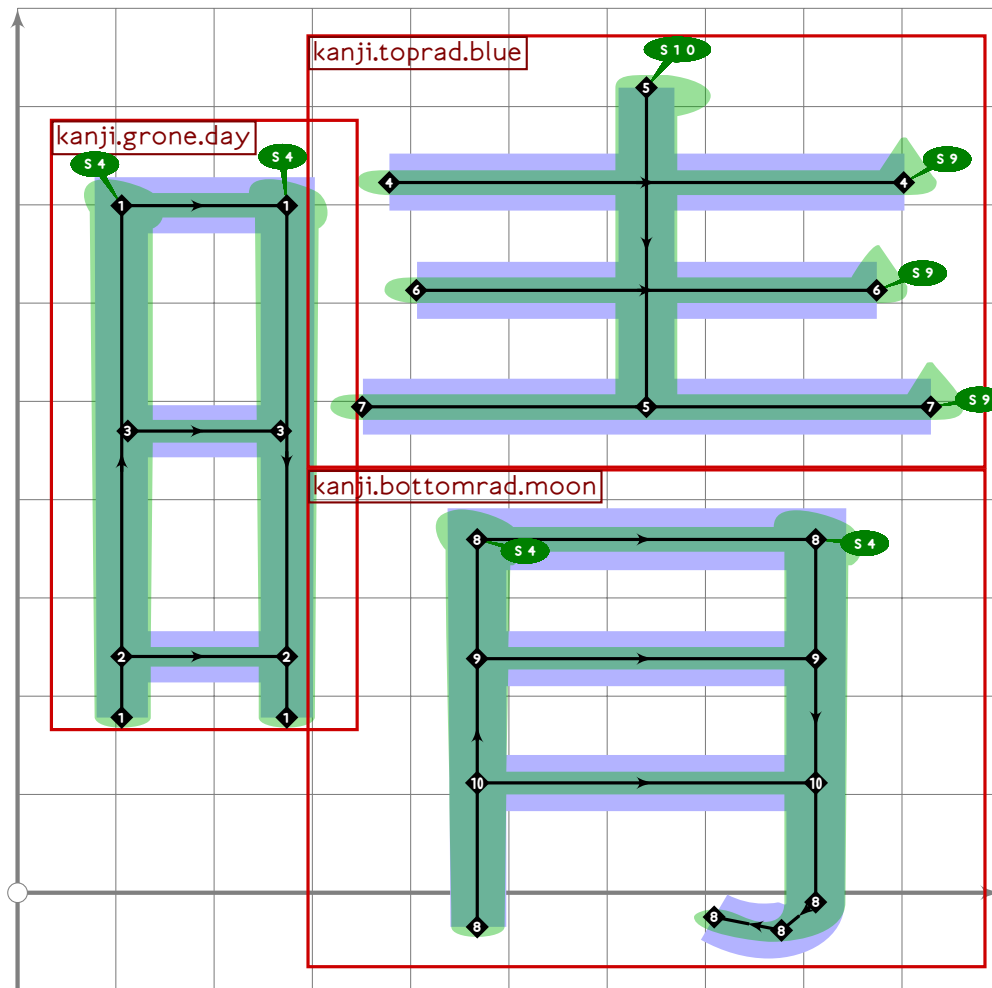
```
1 %
2 % Unicode page 66 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input bottomrad.mp;
37 input buildkanji.mp;
38 input gradeone.mp;
39 input gradesix.mp;
40 input gradetwo.mp;
41 input leftrad.mp;
42 input radical.mp;
43 input toprad.mp;
44
45 

---

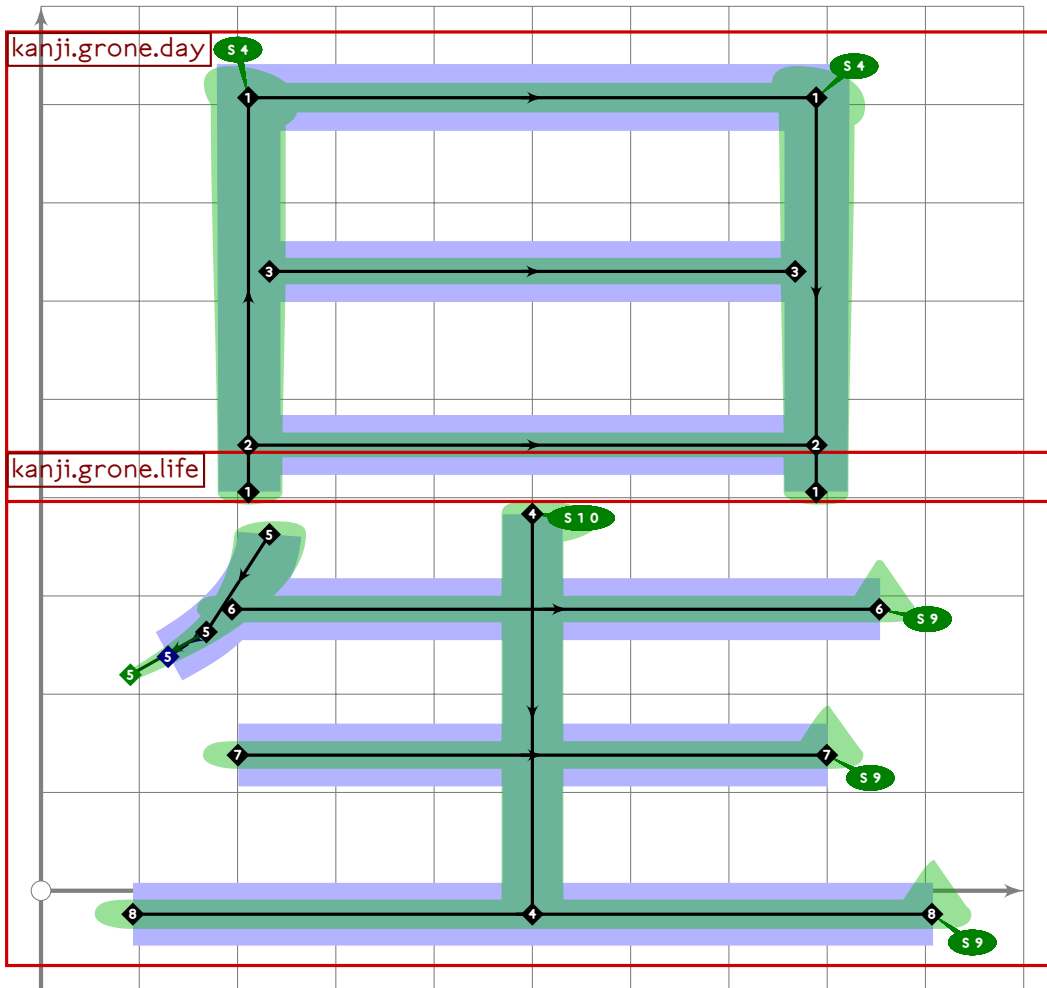

```



```

46
47 vardef tsu_curve.kanji.grtwo.fairweather =
48   add_proof_box("kanji.grtwo.fairweather");
49   build_kanji.lr(330,0)
50     (tsu_curve.kanji.leftrad.day)
51     (tsu_curve.kanji.grone.blue);
52 enddef;

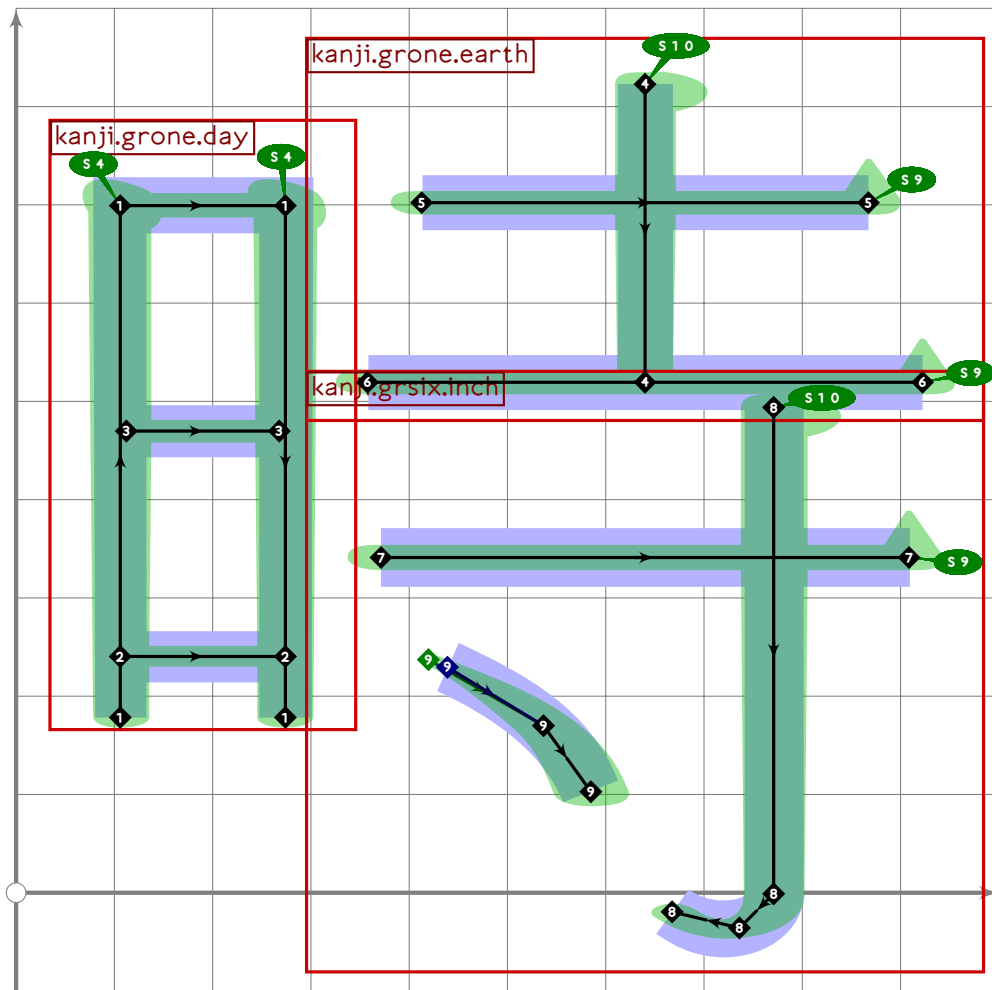
```



```

53
54 vardef tsu_curve.kanji.grtwo.star =
55   add_proof_box("kanji.grtwo.star");
56   build_kanji.sscale(xscaled 1.07)(build_kanji.tb(420,0)
57     (tsu_curve.kanji.grone.day)
58     (tsu_curve.kanji.grone.life));
59 enddef;

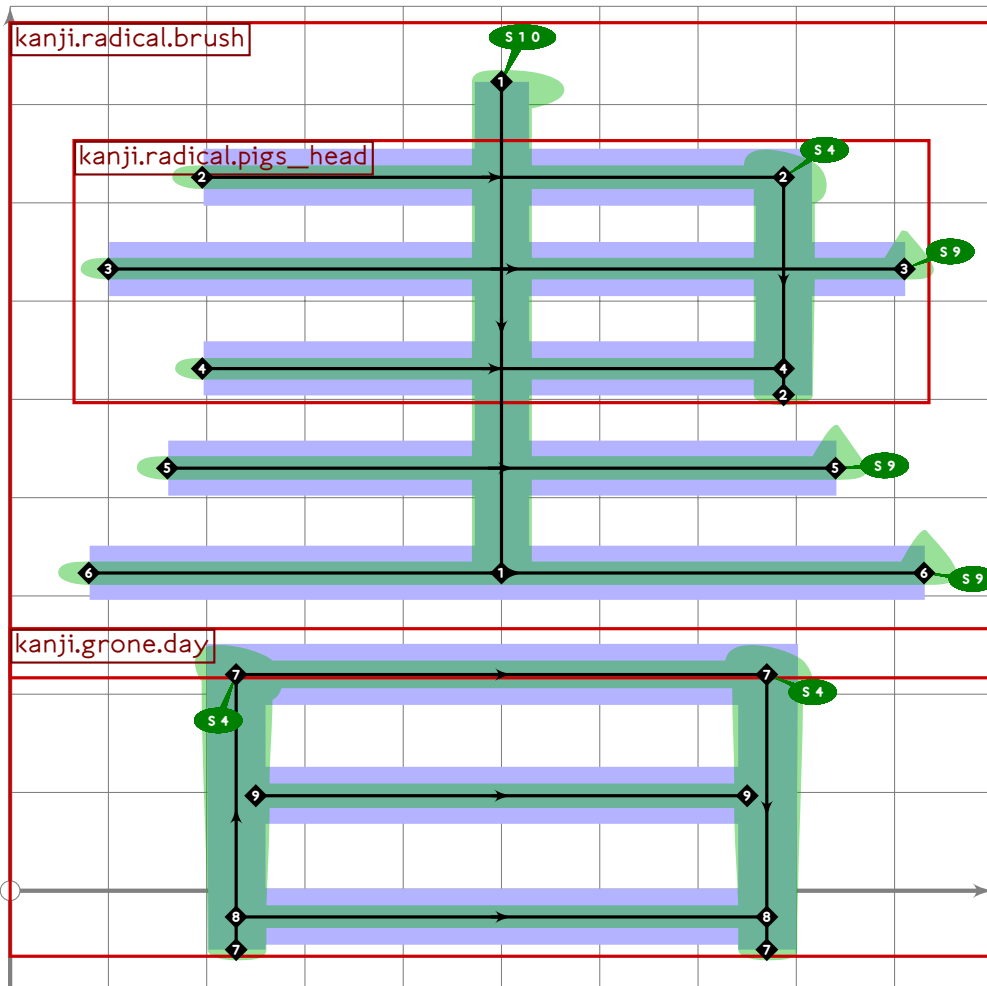
```



```

60
61 vardef tsu_curve.kanji.grtwo.time =
62   add_proof_box("kanji.grtwo.time");
63   build_kanji.lr(330,0)
64     (tsu_curve.kanji.leftrad.day)
65     (tsu_curve.kanji.grtwo.temple);
66 enddef;
67

```



```

68 % "write" is a reserved word
69 vardef tsu_curve.kanji.grtwo.writing =
70   add_proof_box("kanji.grtwo.writing");
71   build_kanji.tb(250,0)
72   (tsu_curve.kanji.radical.brush;
73    bp[sp-6]:=(point 0 of bp[sp-6])-(bp[sp-6] intersectionpoint bp[sp-1]))
74   (tsu_curve.kanji.grone.day);
75 enddef;

```

```

76
77
78
79 % mei/aka "light"
80 begint Suglyph("uni660E";14); [see page 383]
81   tsu_curve.kanji.grtwo.light;
82   tsu_render;
83 endtsuglyph;
84
85 % sei/hoshi "star"
86 begint Suglyph("uni661F";31); [see page 1293]
87   tsu_curve.kanji.grtwo.star;
88   tsu_render;

```

```
89 endtsuglyph;
90
91 % jo/toki "time"
92 begintsuglyph("uni6642",66); [see page 1294]
93 tsu_curve.kanji.grtwo.time;
94 tsu_render;
95 endtsuglyph;
96
97 % sei/ha "fair or clear weather"
98 begintsuglyph("uni6674",116); [see page 1292]
99 tsu_curve.kanji.grtwo.fairweather;
100 tsu_render;
101 endtsuglyph;
102
103 % sho/ka "writing"
104 begintsuglyph("uni66F8",248); [see page 1295]
105 tsu_curve.kanji.grtwo.writing;
106 tsu_render;
107 endtsuglyph;
108
109 

---


110
111 endfont;
112
113 

---


```



# tsuku-67.mp

```
1 %  
2 % Unicode page 67 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

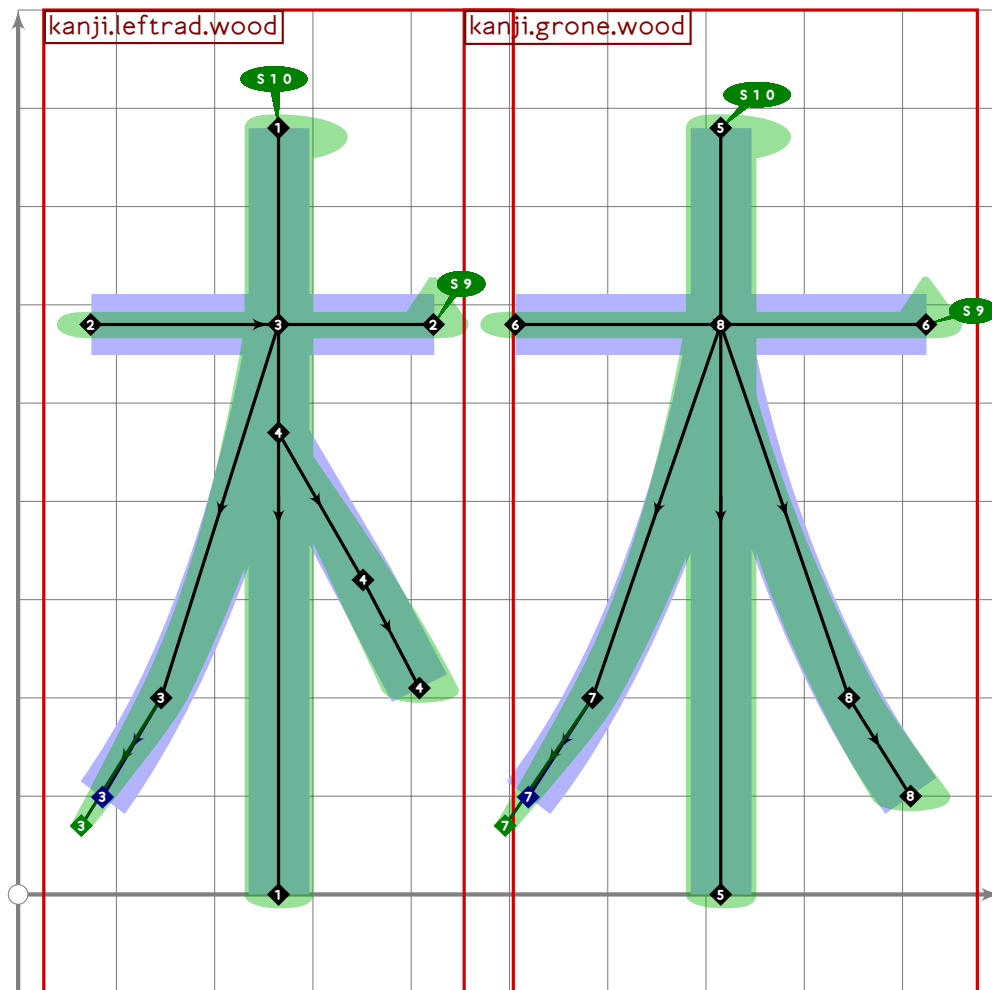
```
37 input gradeone.mp;
```

```
38 input gradesix.mp;
```

```
39 input leftrad.mp;
```

```
40
```

```
41
```



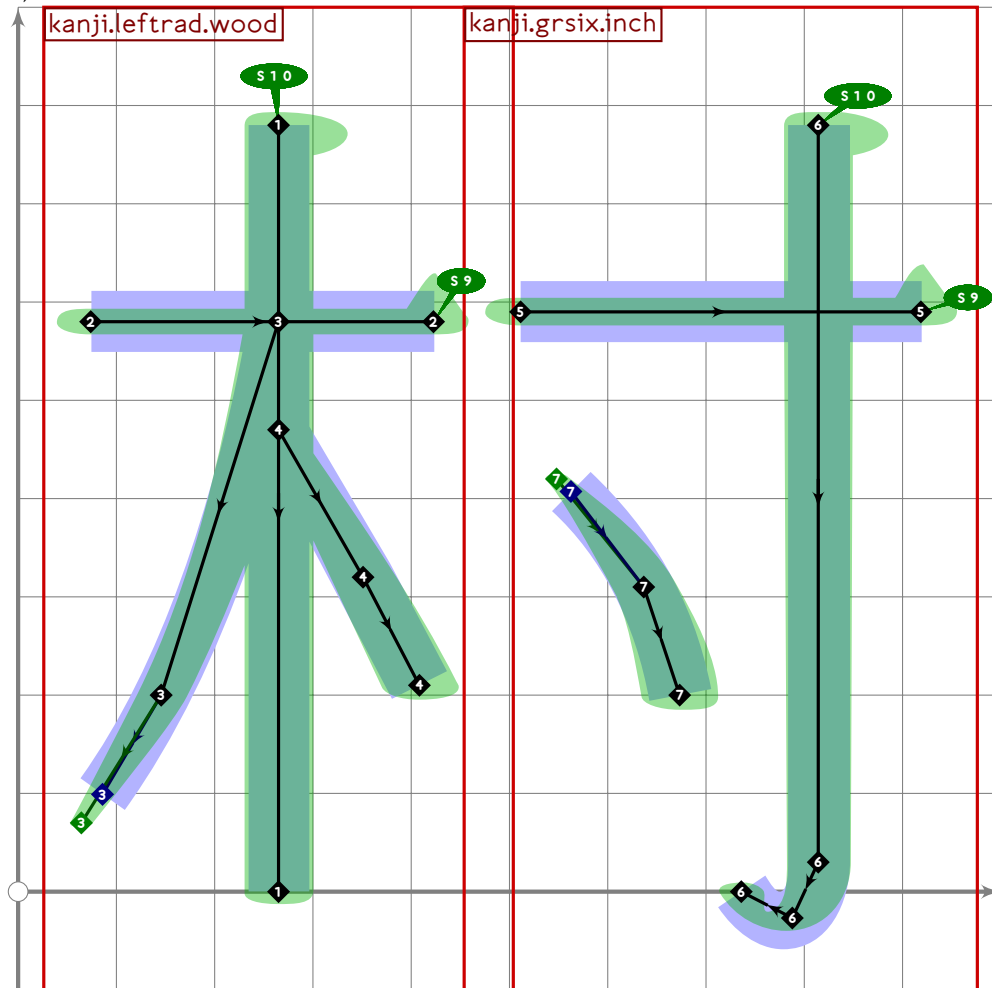
```
42
```

```
43 vardef tsu_curve.kanji.grone.grove =
```

```

44 add_proof_box("kanji.grone.grove");
45 build_kanji.lr(480,0)
46 (tsu_curve.kanji.leftrad.wood)
47 (tsu_curve.kanji.grone.wood);
48 enddef;

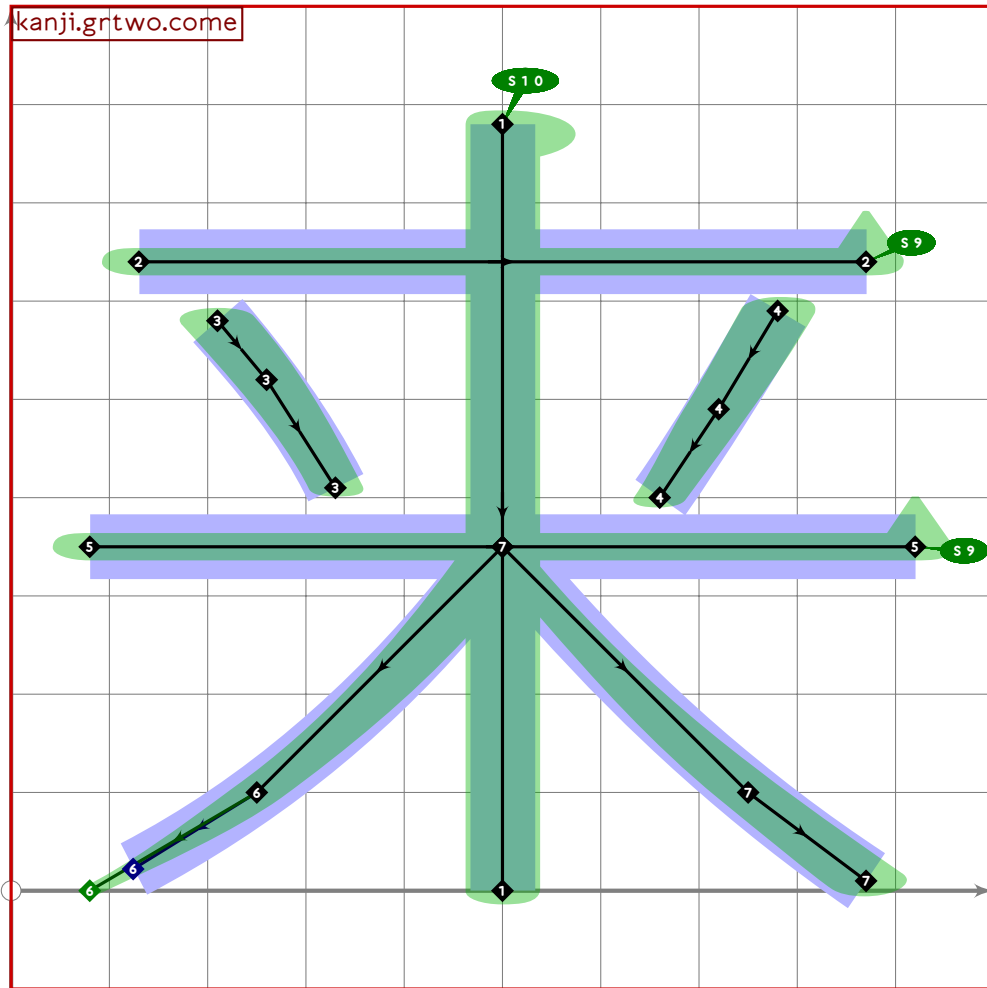
```



```

49
50 vardef tsu_curve.kanji.grone.village =
51   add_proof_box("kanji.grone.village");
52   build_kanji.lr(480,0)
53     (tsu_curve.kanji.leftrad.wood)
54     (tsu_curve.kanji.grsix.inch);
55 enddef;
56
57

```



```

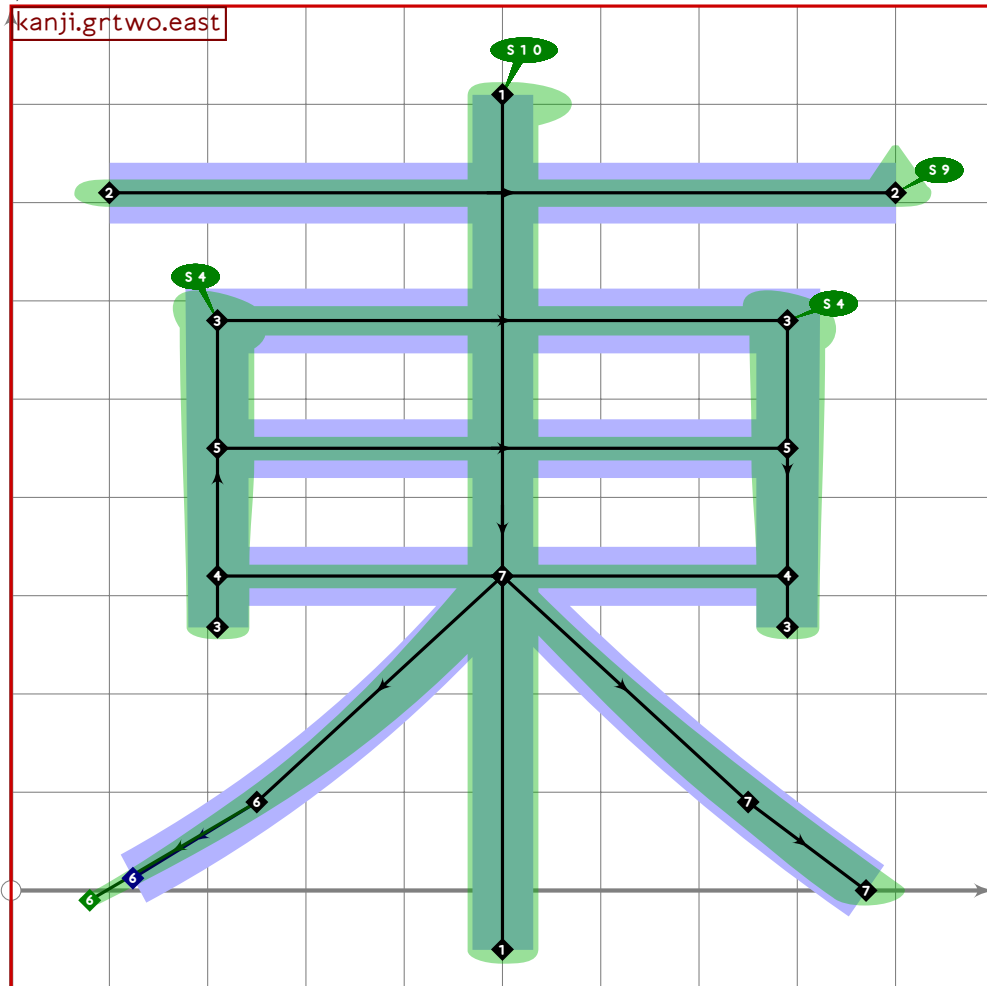
58
59 vardef tsu_curve.kanji.grtwo.come =
60   add_proof_box("kanji.grtwo.come");
61   bp[sp]:=(500,780)-(500,0);
62   bq[sp]:=(1.6,1.6)-(1.6,1.6);
63   bo_serif[sp][0]:=10;
64   bp[sp*1]:=(130,640)-(870,640);
65   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
66   bo_serif[sp*1][1]:=9;
67   bp[sp*2]:=(210,580)..tension 1.2..(260,520)..(330,410);
68   bq[sp*2]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3);
69   bo_serif[sp*2]:=10;
70   bp[sp*3]:=(780,590)..tension 1.2..(720,490)..(660,400);
71   bq[sp*3]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3);
72   bo_serif[sp*3]:=10;
73   bp[sp*4]:=(80,350)-(920,350);
74   bq[sp*4]:=(1.6,1.6)-(1.6,1.6);
75   bo_serif[sp*4][1]:=9;
76   bp[sp*5]:=(500,350)..(250,100)..(80,0);
77   bq[sp*5]:=(1.6,1.6)..(1.3,1.3)..(0.9,0.9);
78   bp[sp*6]:=(500,350)..(750,100)..(870,10);

```

```

79 bq[sp*6]:= (1,1,1)..(1.5,1.5)..(1.7,1.7);
80 for i:=sp upto sp*6: bo_size[i]:=94; endfor;
81 sp:=sp*7;
82 enddef;

```



```

83
84 vardef tsu_curve.kanji.grtwo.east =
85   add_proof_box("kanji.grtwo.east");
86   bp[sp]:= (500,810)-(500,-60);
87   bq[sp]:= (1.6,1.6)-(1.6,1.6);
88   bo_serif[sp][0]:=10;
89   bp[sp*1]:= (100,710)-(900,710);
90   bq[sp*1]:= (1.6,1.6)-(1.6,1.6);
91   bo_serif[sp*1][1]:=9;
92   sp:=sp*2;
93   build_kanji.box((210,580),(790,320));
94   bp[sp]:= (210,450)-(790,450);
95   bq[sp]:= (1.5,1.5)-(1.5,1.5);
96   bp[sp*1]:= (500,320)..(250,90)..(80,-10);
97   bq[sp*1]:= (1.6,1.6)..(1.3,1.3)..(0.9,0.9);
98   bp[sp*2]:= (500,320)..(750,90)..(870,0);
99   bq[sp*2]:= (1,1,1)..(1.5,1.5)..(1.7,1.7);

```

```

100 sp:=sp+3;
101 for i=sp-8 upto sp-1: bo_size[i]:=89; endfor;
102 enddef;
103
104 

---


105
106 % tsuki/getsu "moon"
107 begintsuglyph("uni6708",8); [see page 346]
108 tsu_curve.kanji.grone.moon;
109 tsu_render;
110 endtsuglyph;
111
112 % ki "wood"
113 begintsuglyph("uni6728",40); [see page 373]
114 tsu_curve.kanji.grone.wood;
115 tsu_render;
116 endtsuglyph;
117
118 % hon "book"
119 begintsuglyph("uni672C",44); [see page 323]
120 tsu_curve.kanji.grone.book;
121 tsu_render;
122 endtsuglyph;
123
124 % son/mura "village"
125 begintsuglyph("uni6751",81); [see page 1298]
126 tsu_curve.kanji.grone.village;
127 tsu_render;
128 endtsuglyph;
129
130 % ku/rai "come"
131 begintsuglyph("uni6765",101); [see page 1299]
132 tsu_curve.kanji.grtwo.come;
133 tsu_render;
134 endtsuglyph;
135
136 % tou/higashi "east"
137 begintsuglyph("uni6771",113); [see page 1300]
138 tsu_curve.kanji.grtwo.east;
139 tsu_render;
140 endtsuglyph;
141
142 % rin/hayashi "grove"
143 begintsuglyph("uni6797",151); [see page 1297]
144 tsu_curve.kanji.grone.grove;
145 tsu_render;
146 endtsuglyph;
147

```

148

---

149

150 **endfont;**

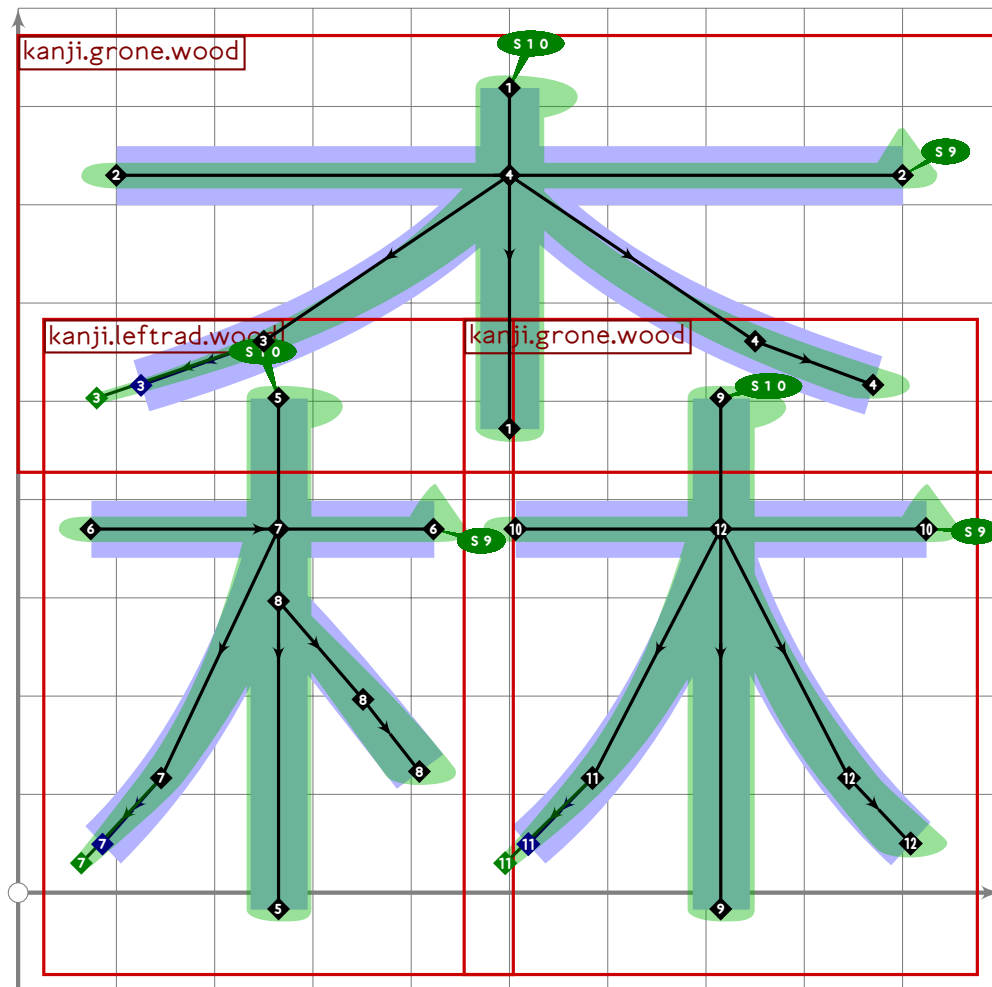
151

152

---

# tsuku-68.mp

```
1 %  
2 % Unicode page 68 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input leftrad.mp;  
40 input radical.mp;  
41  
42 _____
```

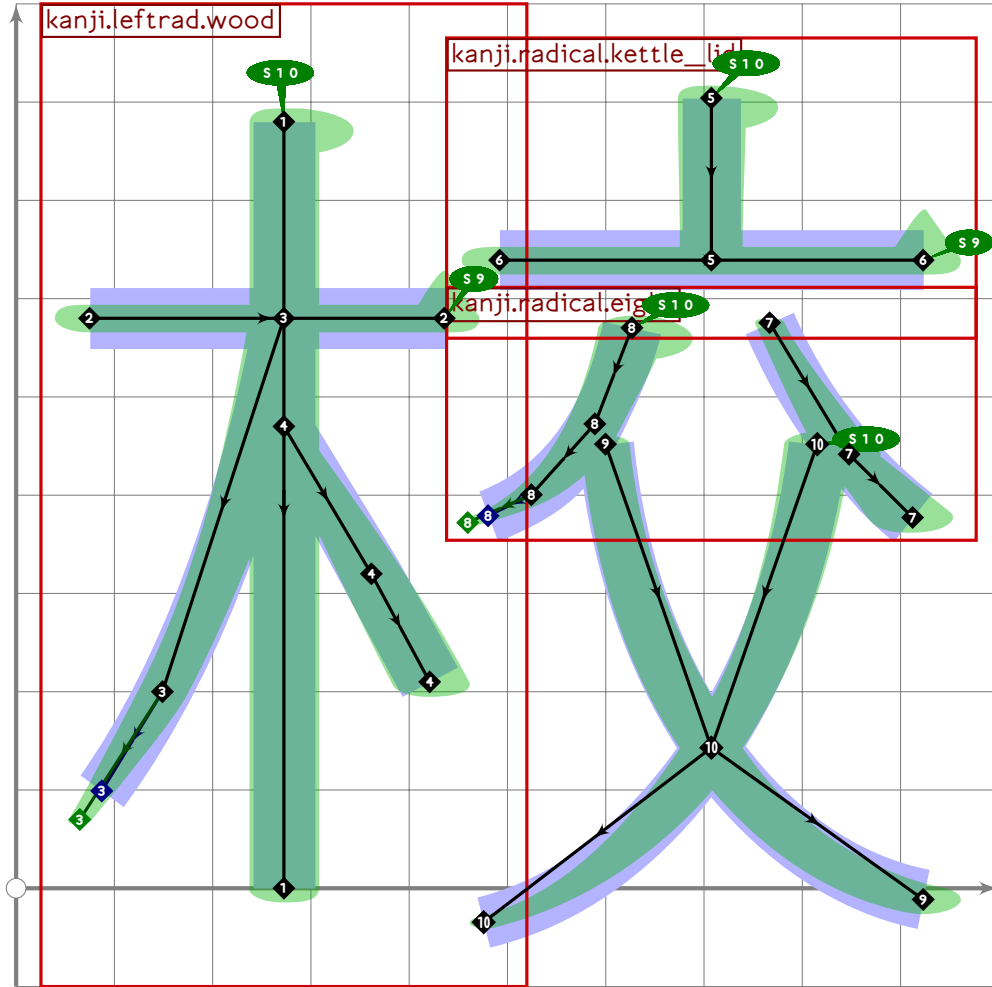


43

```

44 vardef tsu_curve.kanji.grone.forest =
45   add_proof_box("kanji.grone.forest");
46   build_kanji.tb(500,100)
47     (tsu_curve.kanji.grone.wood)
48     (build_kanji.lr(480,0)
49       (tsu_curve.kanji.leftrad.wood)
50       (tsu_curve.kanji.grone.wood));
51 enddef;

```



```

52
53 vardef tsu_curve.kanji.grone.school =
54   add_proof_box("kanji.grone.school");
55   build_kanji.lr(480,30)
56     (tsu_curve.kanji.leftrad.wood)
57     (tsu_curve.kanji.grtwo.mix);
58 enddef;

```

59

60

61

62 % kou "school"

63 `begintsuglyph("uni6821";33);`

64 `tsu_curve.kanji.grone.school;`

[see page 1304]



```
65 tsu_render;
66 endtsuglyph;
67
68 % shin/mori "forest"
69 begintsuglyph("uni68EE",238); [see page 1304]
70 tsu_curve.kanji.grone.forest;
71 tsu_render;
72 endtsuglyph;
73
74 

---


75
76 endfont;
77
78 

---


```

# tsuku-6b.mp

```
1 %  
2 % Unicode page 6b (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

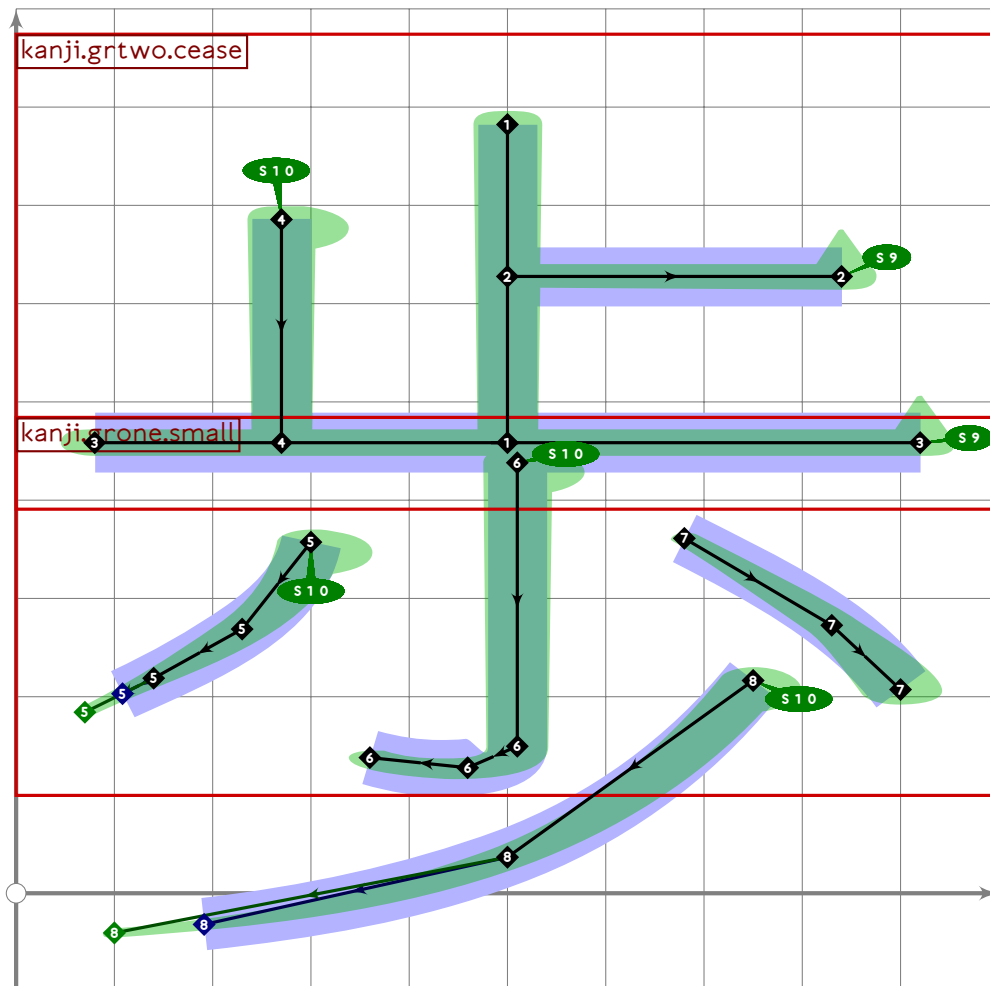
```
36 input buildkanji.mp;
```

```
37 input gradeone.mp;
```

```
38 input gradetwo.mp;
```

```
39
```

```
40
```



```
41
```

```
42 vardef tsu_curve.kanji.grtwo.walk =
```

```
43   add_proof_box("kanji.grtwo.walk");
```

```
44 build_kanji.level(build_kanji.tb(440,50)
45   (tsu_curve.kanji.grtwo.cease)
46   (tsu_curve.kanji.grtwo.little));
47 enddef;
48
49 

---


50
51 % shi/toma "stop"
52 begintsuglyph("uni6B62";98); [see page 376]
53   tsu_curve.kanji.grtwo.cease;
54   tsu_render;
55 endtsuglyph;
56
57 % sei/tada/machi "correct"
58 begintsuglyph("uni6B63";99); [see page 327]
59   tsu_curve.kanji.grone.correct;
60   tsu_render;
61 endtsuglyph;
62
63 % ho/aruku "walk"
64 begintsuglyph("uni6B69";105); [see page 1306]
65   tsu_curve.kanji.grtwo.walk;
66   tsu_render;
67 endtsuglyph;
68
69 

---


70
71 endfont;
72
73 

---


```

# tsuku-6c.mp

```
1 %
2 % Unicode page 6c (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input bottomrad.mp;
37 input buildkanji.mp;
38 input gradeone.mp;
39 input gradethree.mp;
40 input radical.mp;
41 input topgrad.mp;
42
43 

---

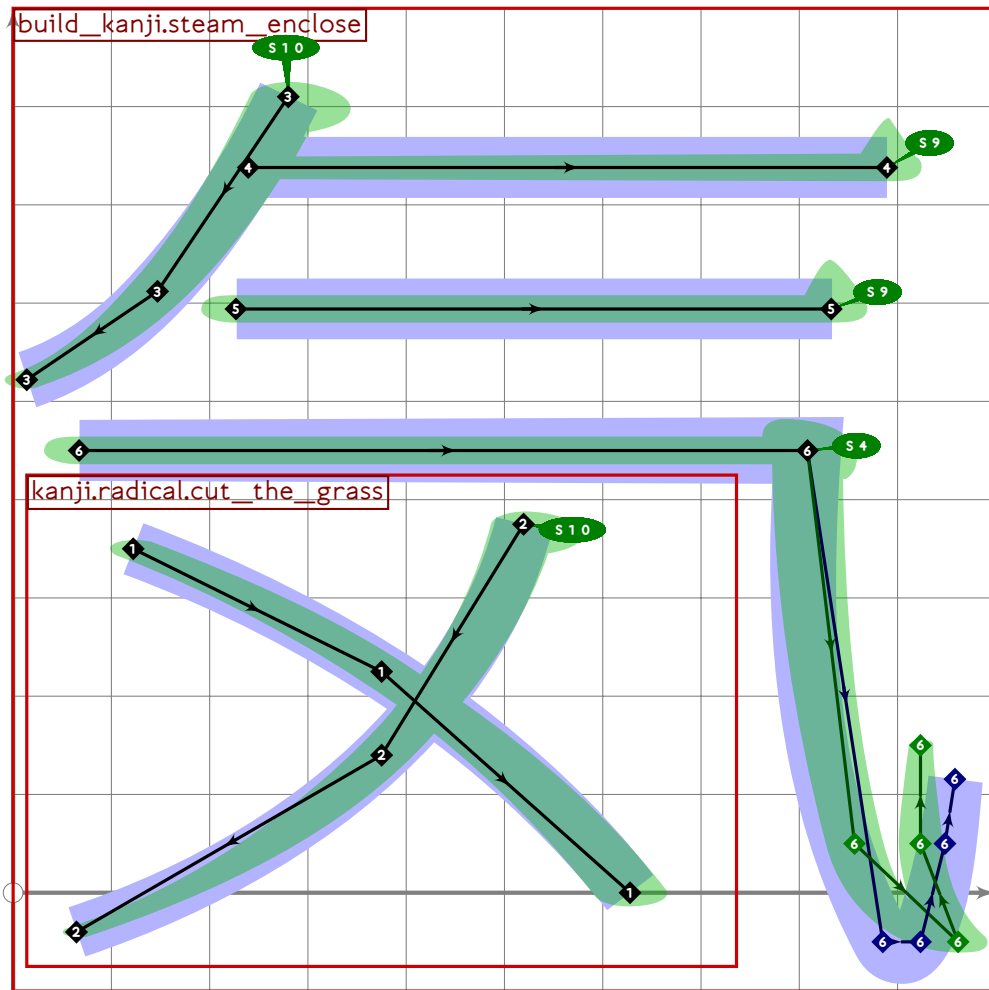

44
45 vardef build_kanji.steam_enclose(expr ur)(text contents) =
46   begingroup
47     save xfa,xfb,xfc,xfd;
48     transform xfa,xfb,xfc,xfd;
49     (50,-50) transformed xfc=(50,-50);
50     (950,850) transformed xfc=ur;
51     xypart xfc=yxpart xfc=0;
52     tsu_xform(xfc)(contents);
53     add_proof_box("build_kanji.steam_enclose");
54
55     (0,0) transformed xfa=(0,950) transformed xfc;
56     (1,1) transformed xfa=(280,810);
57     xypart xfa=yxpart xfa=0;
58     (0,0) transformed xfb=(1100,950) transformed xfc;
59     (1,1) transformed xfb=(970,810);
60     xypart xfb=yxpart xfb=0;
61     (0,1) transformed xfd=(1100,950) transformed xfc;
62     (1,0) transformed xfd=(1000,-50);
63     xypart xfd=yxpart xfd=0;
64
65     bp[sp]:=((1,1)..tension 1.2..(0.5,0.45)..(0,0.2)) transformed xfa;
66     bq[sp]:=(1.7,1.7)-(1.5,1.5)-(1.2,1.2);
67     bo_serif[sp][0]:=10;
68
69     bp[sp*1]=(bp[sp] intersectionpoint
70       (((0,0.8)-(1,0.8)) transformed xfa))-
```

```

71     ((0.5,0.8) transformed xfb);
72     bq[sp*1]=(1.5,1.5)-(1.6,1.6);
73     bo_serif[sp*1][1]=9;
74
75     bp[sp*2]=((0.8,0.4) transformed xfa)-((0.15,0.4) transformed xfb);
76     bq[sp*2]=(1.6,1.6)-(1.6,1.6);
77     bo_serif[sp*2][1]=9;
78
79     bp[sp*3]=((0.2,0) transformed xfa)-(interpath(mincho,
80         (0,1)..tension 1.6..(0.4,0)..(0.6,0)..tension 1.5..
81         (0.73,0.2)..(0.8,0.4),
82         (0,1)..tension 1.6..(0.25,0.2)..{right}(0.8,0){curl 1}..
83         (0.6,0.2)..(0.6,0.4)
84     ) transformed xfd);
85     bq[sp*3]=(1.6,1.6)-(1.6,1.6)-(1.4,1.4)-
86     (1.4,1.4)-(1.2,1.2)-(0.9,0.9);
87     bo_serif[sp*3][1]=4;
88     bo_tip[sp*3][1]=1;
89
90     bo_size[sp]=bo_size[sp*1]=bo_size[sp*2]=bo_size[sp*3]=90;
91     sp=sp*4;
92     endgroup;
93 enddef;
94
95

```

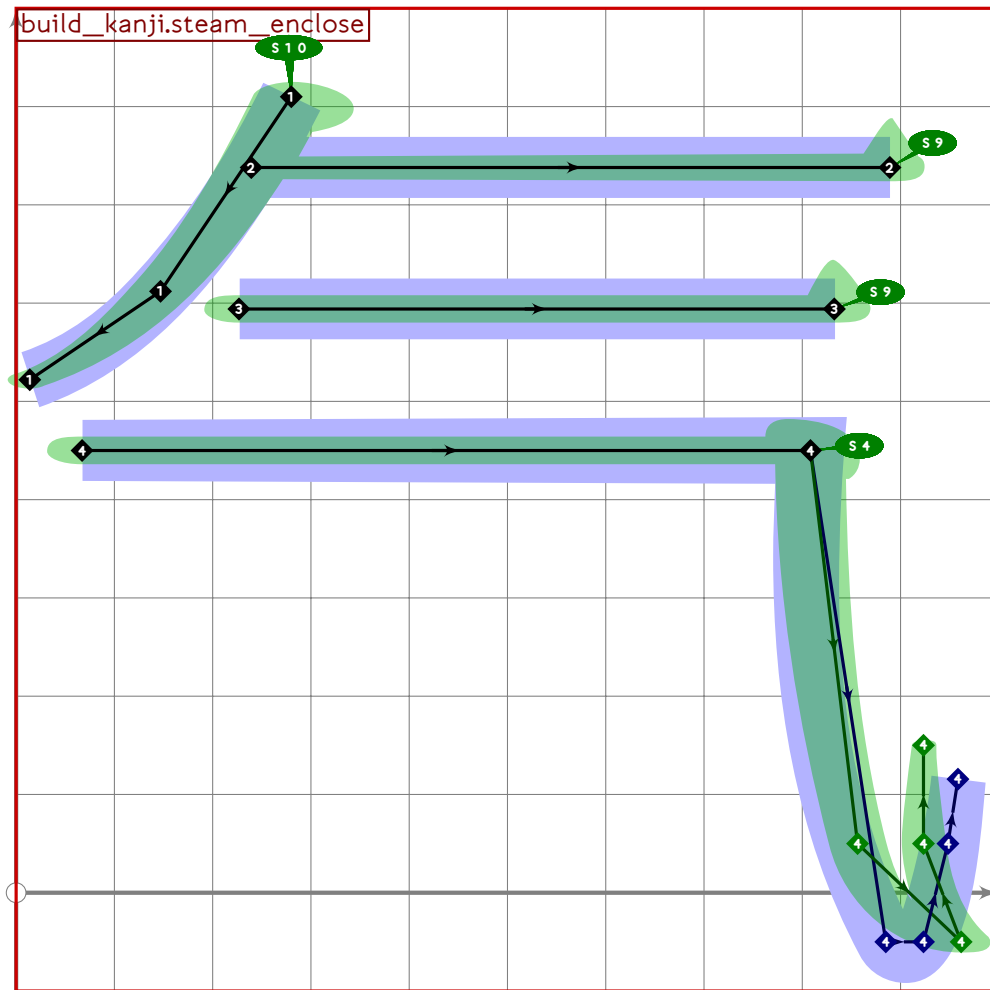
---



```

96
97 vardef tsu_curve.kanji.grone.spirit =
98   add_proof_box("kanji.grone.spirit");
99   build_kanji.steam_enclose((700,400))
100   (tsu_curve.kanji.radical.cut_the_grass);
101 enddef;
102
103
104

```

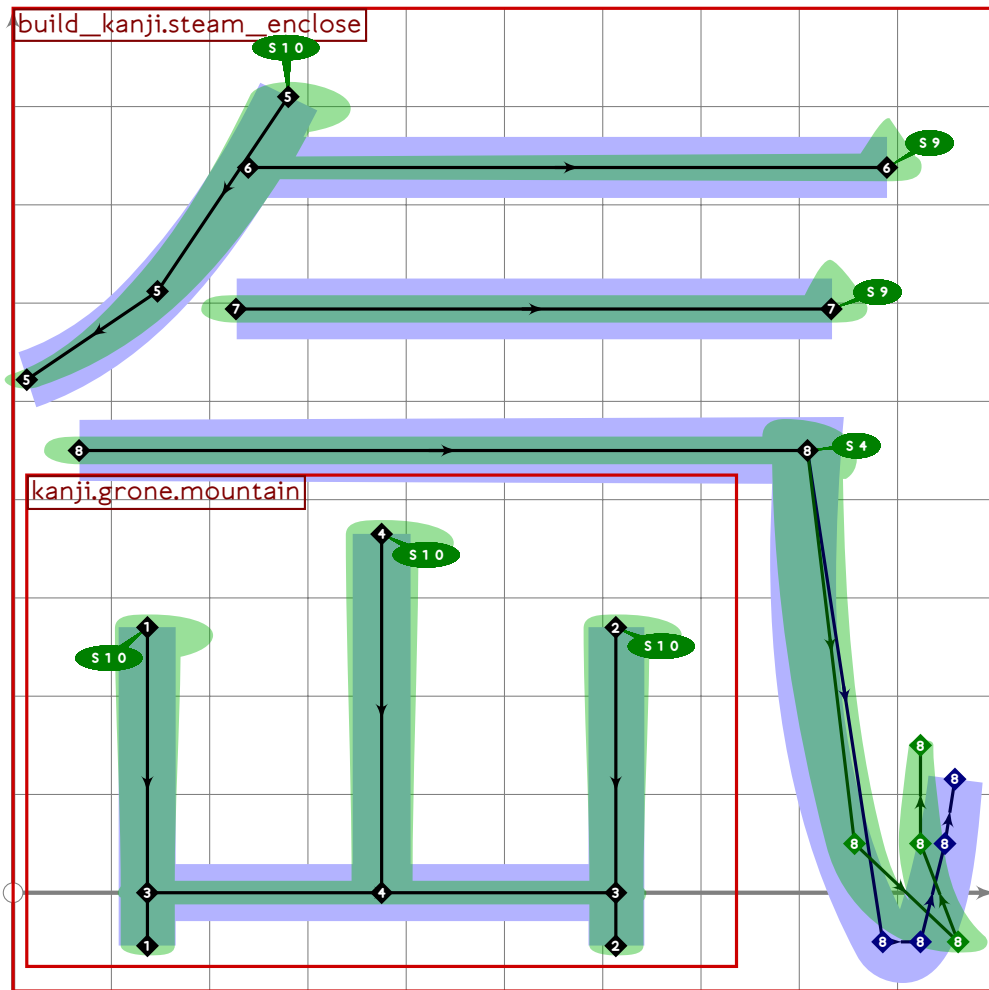


```

105 % sei/tada/machi "correct"
106 begintsuglyph("uni6C14",20);
107 build_kanji.steam_enclose((700,400))();
108 tsu_render;
109 endsuglyph;
110
111 % ki/iki "spirit"
112 begintsuglyph("uni6C17",23);
113 tsu_curve.kanji.grone.spirit;
114 tsu_render;
115 endsuglyph;
116

```

[see page 1310]

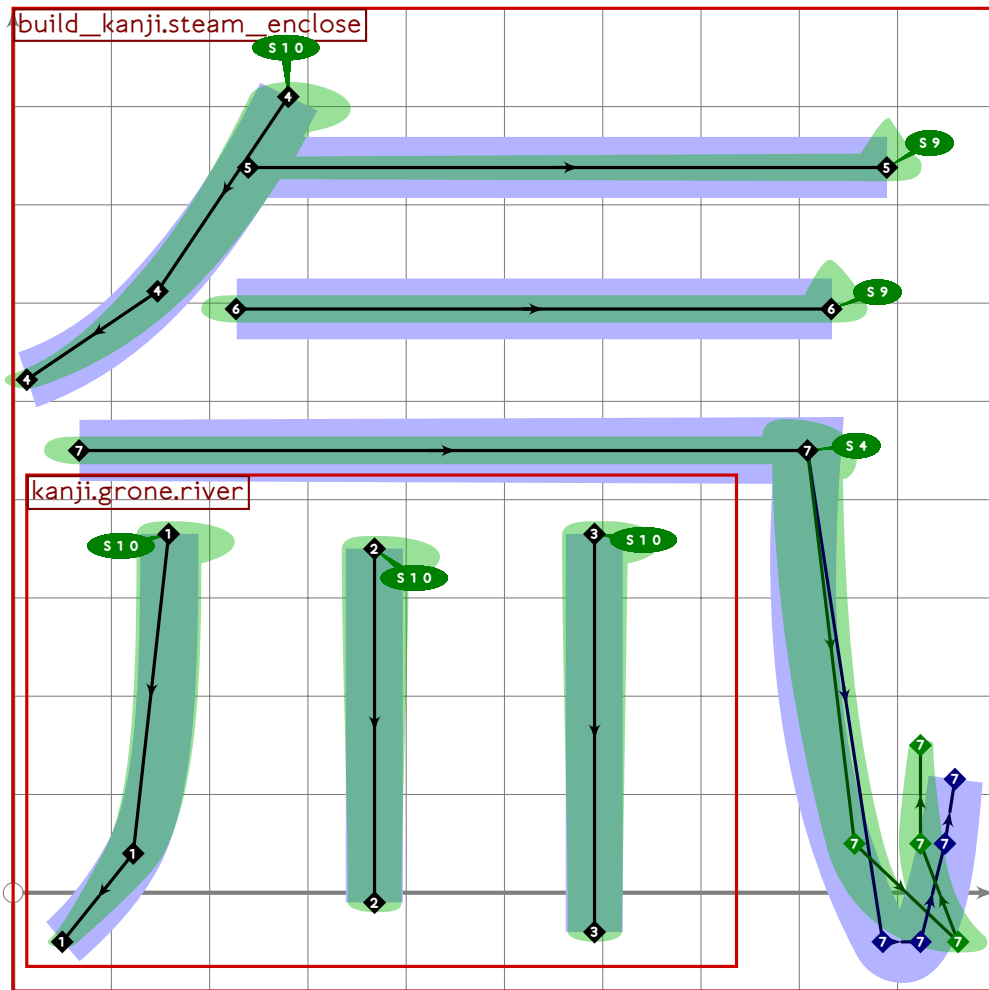


```

117 % extra
118 begint Suglyph("uni6C19",25);
119 build_kanji.steam_enclose((700,400))(tsu_curve.kanji.grone.mountain);
120 tsu_render;
121 endtsuglyph;
122

```

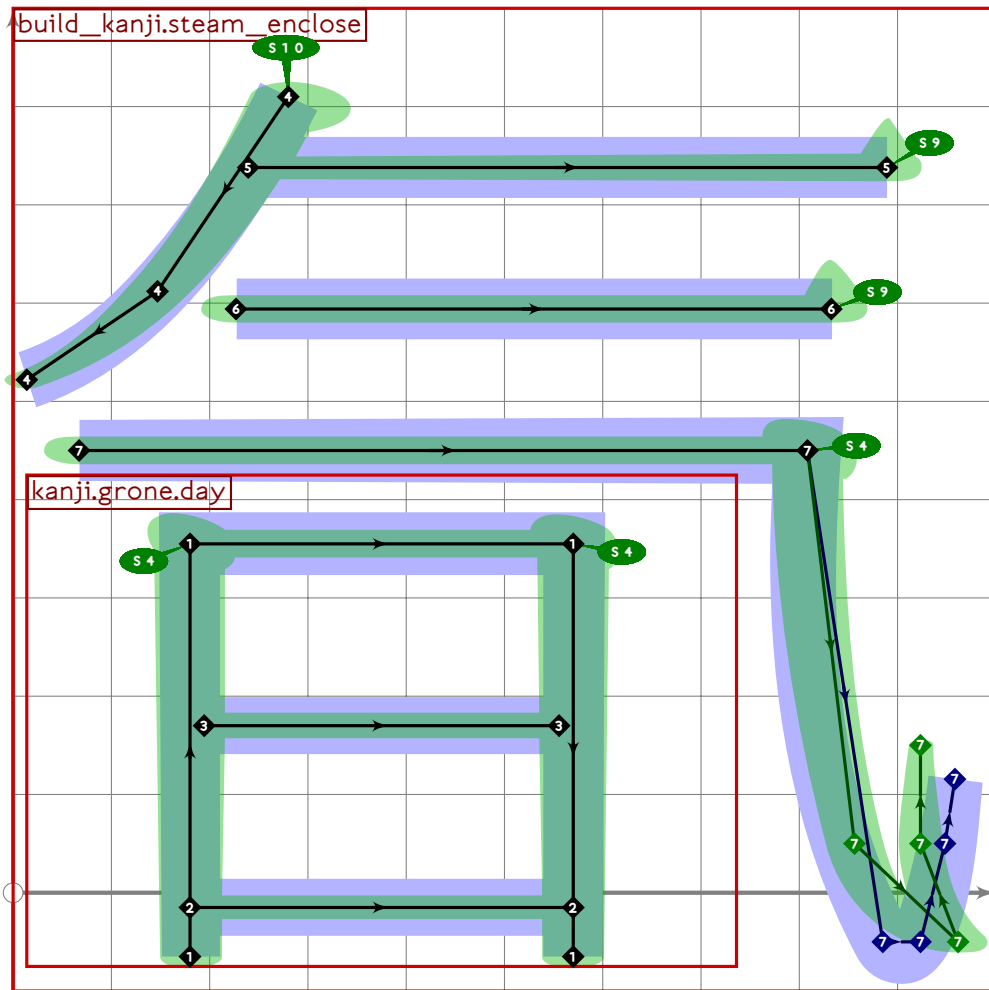




```

123 % extra
124 begint Suglyph("uni6C1A",26);
125 build_kanji.steam_enclose((700,400))(tsu_curve.kanji.grone.river);
126 tsu_render;
127 endtsuglyph;
128

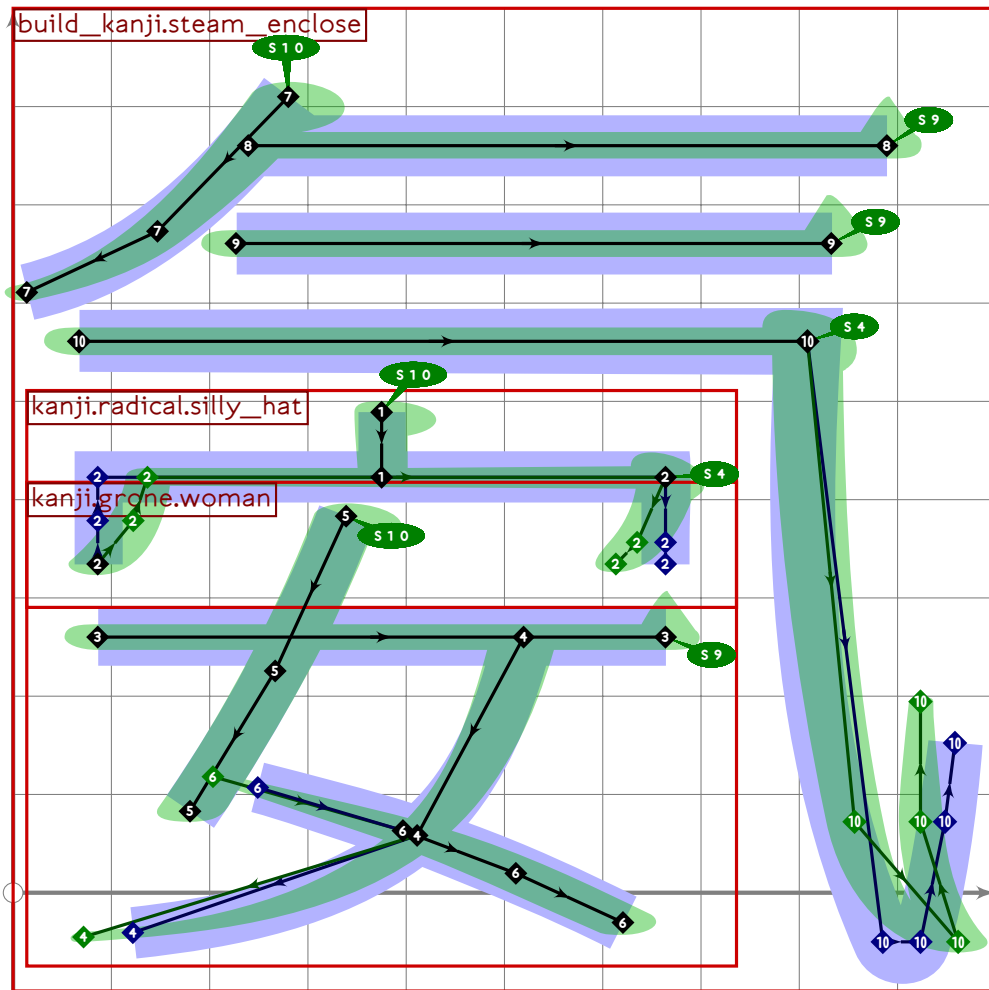
```



```

129 % extra
130 begint Suglyph("uni6C1C",28);
131 build_kanji.steam_enclose((700,400))(tsu_curve.kanji.grone.day);
132 tsu_render;
133 endtsuglyph;
134

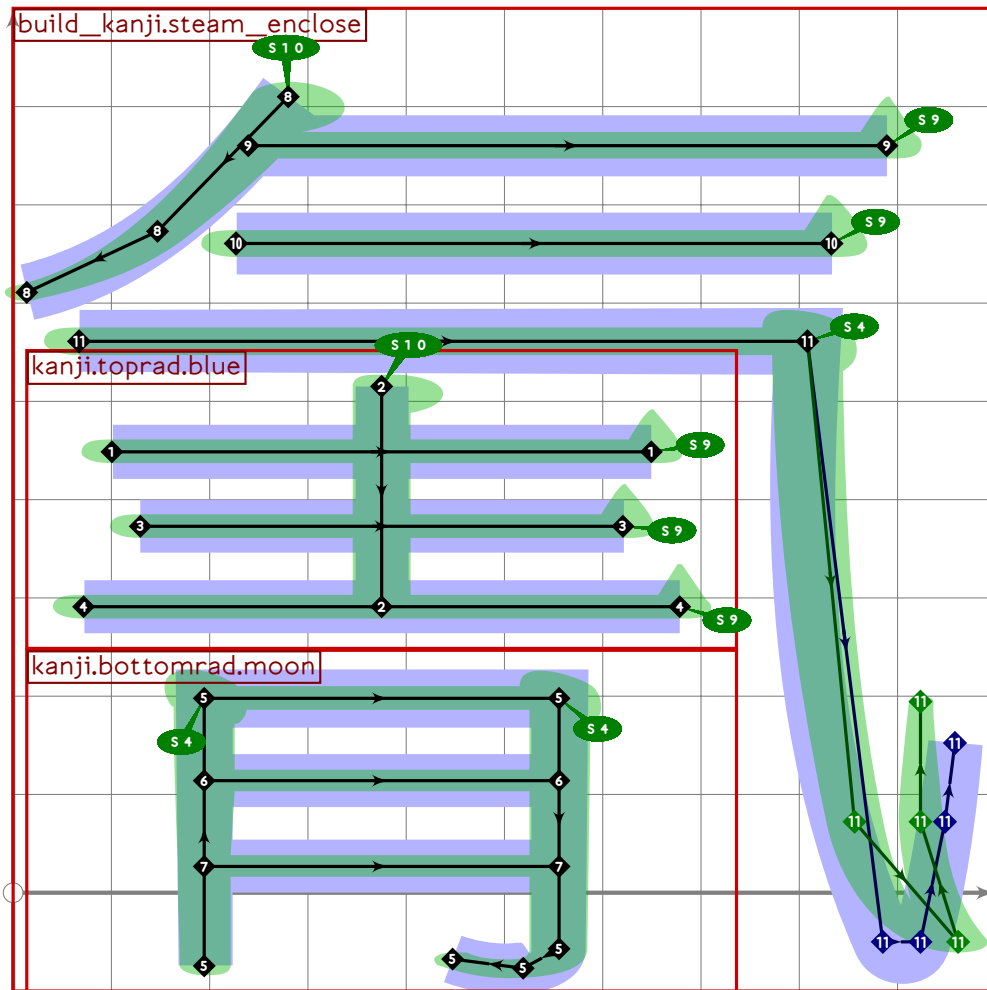
```



```

135 % extra
136 begint Suglyph("uni6C28";40);
137 build_kanji.steam_enclose((700,500))(tsu_curve.kanji.grthree.easy);
138 tsu_render;
139 endtsuglyph;
140

```



```

141 % extra
142 begintsuglyph("uni6C30";48);
143   build_kanji.steam_enclose((700,500))
144     (build_kanji.sscale(yscaled 1,13)(tsu_curve.kanji.grone.blue));
145   tsu_render;
146 endsuglyph;
147
148 % sui/mizu "water"
149 begintsuglyph("uni6C34";52);
150   tsu_curve.kanji.grone.water;
151   tsu_render;
152 endsuglyph;
153
154 _____
155
156 endfont;
157
158 _____

```

[see page 369]

# tsuku-70.mp

```
1 %  
2 % Unicode page 70 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

```
36 input bottomrad.mp;
```

```
37 input buildkanji.mp;
```

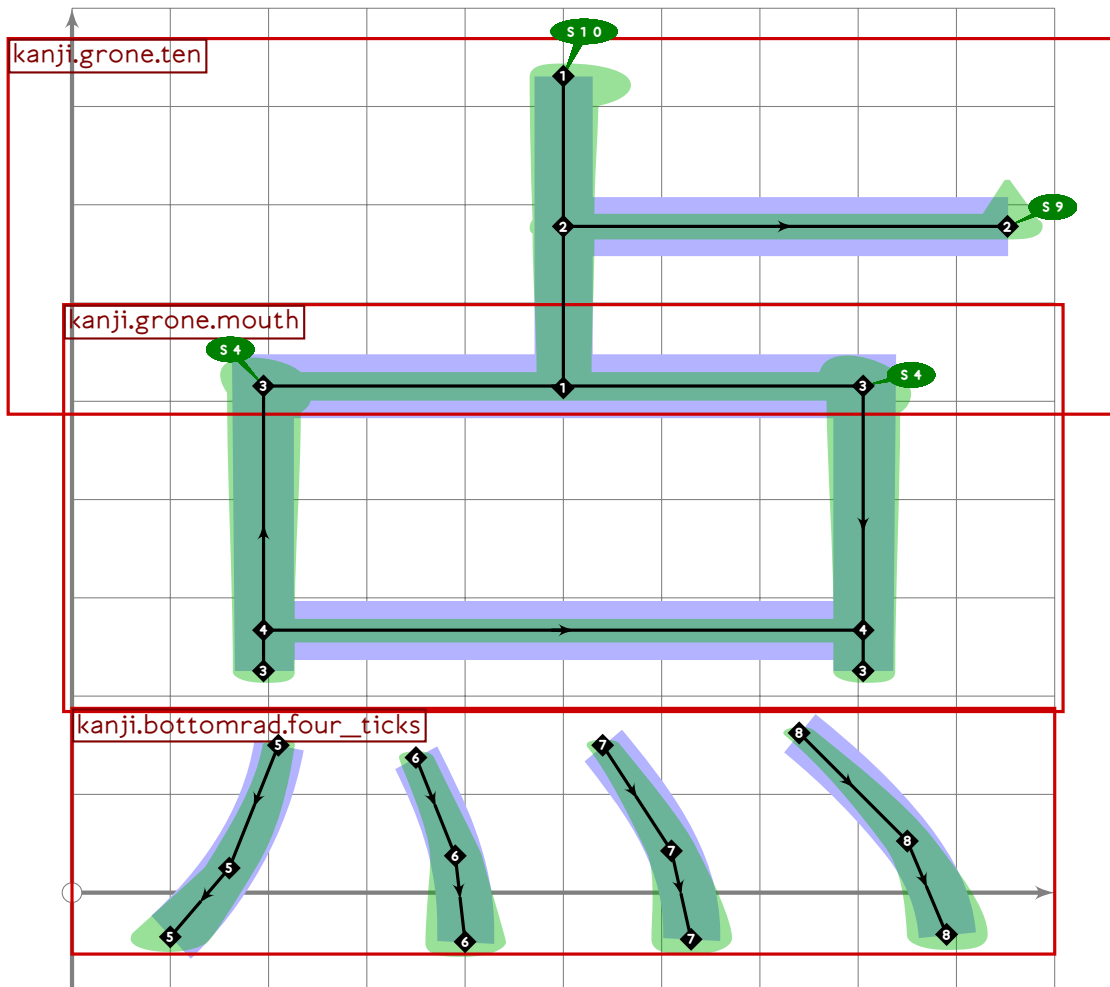
```
38 input gradeeight.mp;
```

```
39 input gradeone.mp;
```

```
40
```

```
41
```

```
42
```



```
43 % "point" is a reserved word
```

```

44 vardef tsu_curve.kanji.grtwo.dot =
45   add_proof_box("kanji.grtwo.dot");
46   build_kanji.tb(190,-30)
47     (build_kanji.sscale(xscaled 1.13)
48       (tsu_curve.kanji.greight.divination))
49     (tsu_curve.kanji.bottomrad.four_ticks);
50 enddef;
51
52 

---


53
54 % hi/ka "fire"
55 begintsuglyph("uni706B",107); [see page 336]
56   tsu_curve.kanji.grone.fire;
57   tsu_render;
58 endtsuglyph;
59
60 % ten/tsu "point"
61 begintsuglyph("uni70B9",185); [see page 1318]
62   tsu_curve.kanji.grtwo.dot;
63   tsu_render;
64 endtsuglyph;
65
66 

---


67
68 endfont;
69
70 

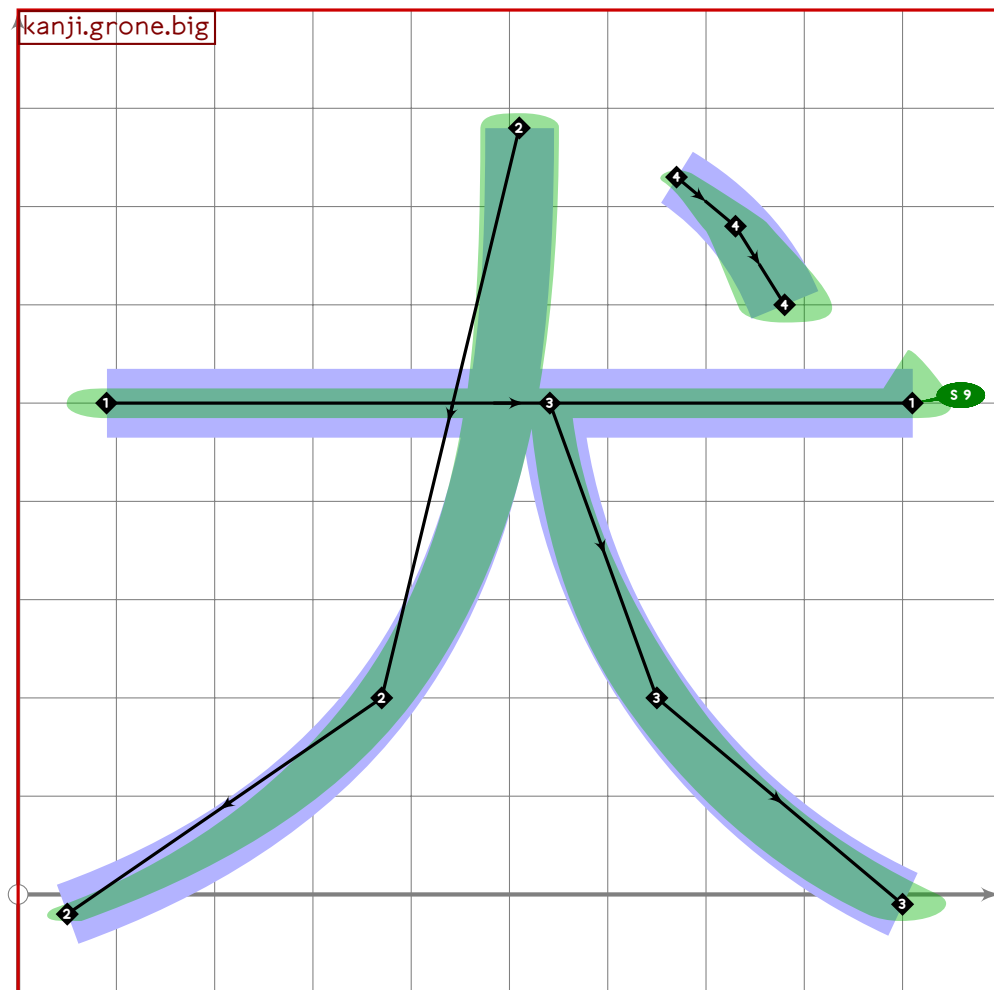
---



```

# tsuku-72.mp

```
1 %  
2 % Unicode page 72 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input radical.mp;  
40  
41 _____
```

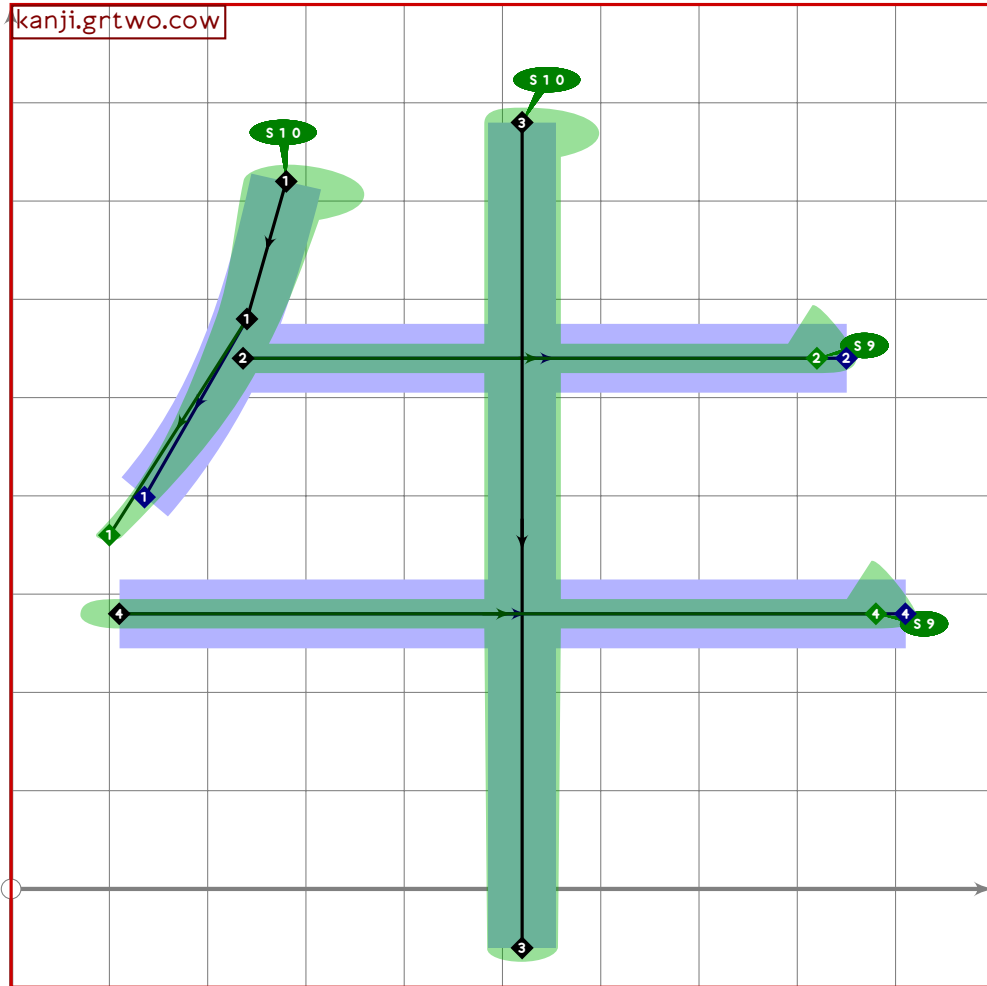


```
42  
43 vardef tsu_curve.kanji.grone.dog =
```

```

44 add_proof_box("kanji.grone.dog");
45 tsu_curve.kanji.grone.big;
46 bp[sp]:=(670,730)..(730,680)..(780,600);
47 bq[sp]:=(1,1)-(1.4,1.4)-(1.8,1.8);
48 sp:=sp*1;
49 enddef;
50
51

```



```

52
53 vardef tsu_curve.kanji.grtwo.cow =
54 add_proof_box("kanji.grtwo.cow");
55 bp[sp]:=(280,720)..tension 1.2..(240,580)..(100,360);
56 bq[sp]:=(1.7,1.7)-(1.4,1.4)-(0.9,0.9);
57 bo_serif[sp][0]:=10;
58 bp[sp*1]:((((0,540)-(1000,540)) intersectionpoint bp[sp])*(12,0))-
59 (850-30*mincho,540);
60 bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
61 bo_serif[sp*1][1]:=9;
62 bp[sp*2]:=(520,780)-(520,-60);
63 bq[sp*2]:=(1.6,1.6)-(1.5,1.5);
64 bo_serif[sp*2][0]:=10;

```



```

65 bp[sp+3]:=(110,280)-(910-30*mincho,280);
66 bq[sp+3]:=(1.6,1.6)-(1.6,1.6);
67 bo_serif[sp+3][1]:=9;
68 sp:=sp+4;
69 enddef;
70
71 

---


72
73 % chichi "father"
74 begintsuglyph("uni7236",54); [see page 379]
75 tsu_curve.kanji.grtwo.father;
76 tsu_render;
77 endtsuglyph;
78
79 % kyuu/ushi "cow"
80 begintsuglyph("uni725B",91); [see page 1320]
81 tsu_curve.kanji.grtwo.cow;
82 tsu_render;
83 endtsuglyph;
84
85 % inu "dog"
86 begintsuglyph("uni72AC",172); [see page 1319]
87 tsu_curve.kanji.grone.dog;
88 tsu_render;
89 endtsuglyph;
90
91 

---


92
93 endfont;
94
95 

---



```

# tsuku-73.mp

```
1 %
2 % Unicode page 73 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input gradeone.mp;
37
38 

---


39
40 % gyoku/tama "ball" or "precious"
41 begintsuglyph("uni7389",137); [see page 320]
42   tsu_curve.kanji.grone.ball;
43   tsu_render;
44 endtsuglyph;
45
46 % ou "king"
47 begintsuglyph("uni738B",139); [see page 341]
48   tsu_curve.kanji.grone.king;
49   tsu_render;
50 endtsuglyph;
51
52 

---


53
54 endfont;
55
56 

---


```

# tsuku-75.mp

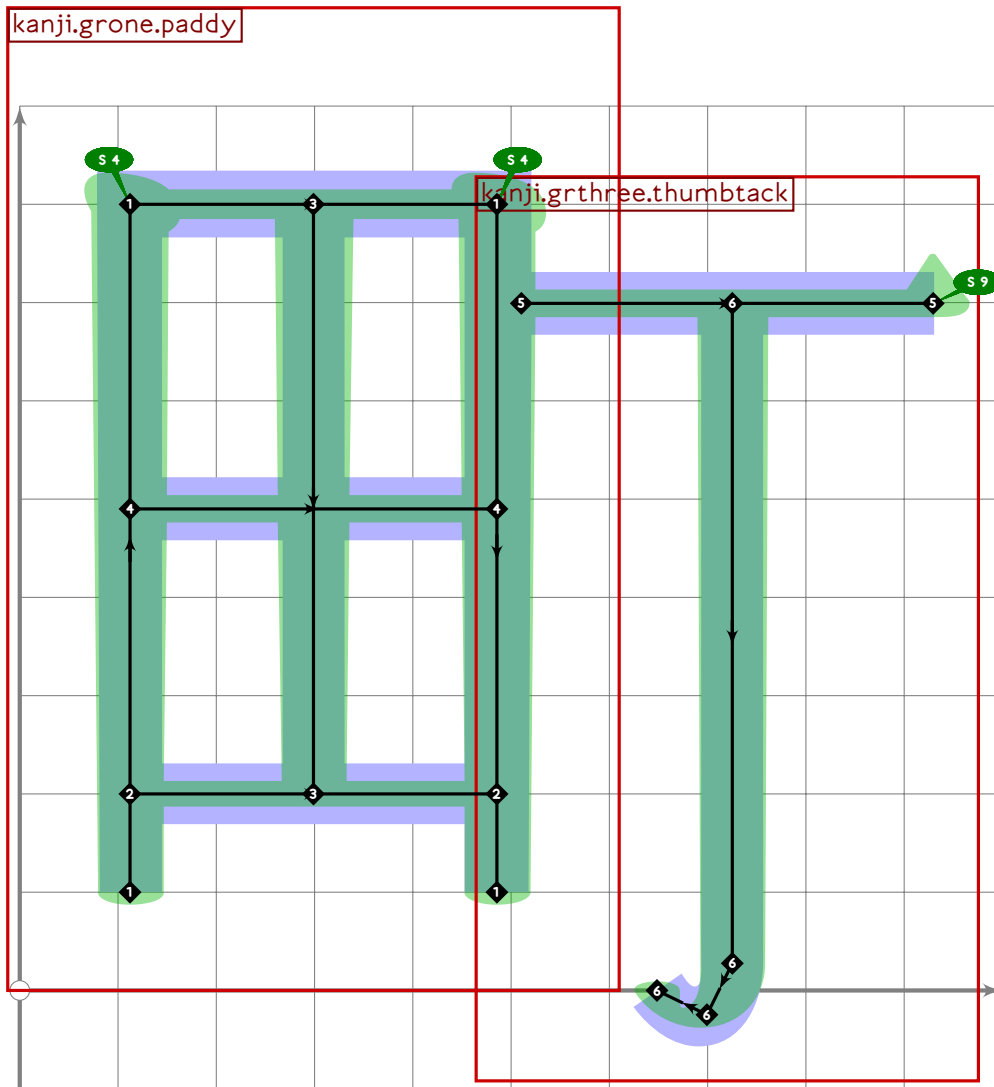
```
1 %  
2 % Unicode page 75 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 

---

  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradethree.mp;  
39 input gradetwo.mp;  
40 input toprad.mp;  
41  
42 

---

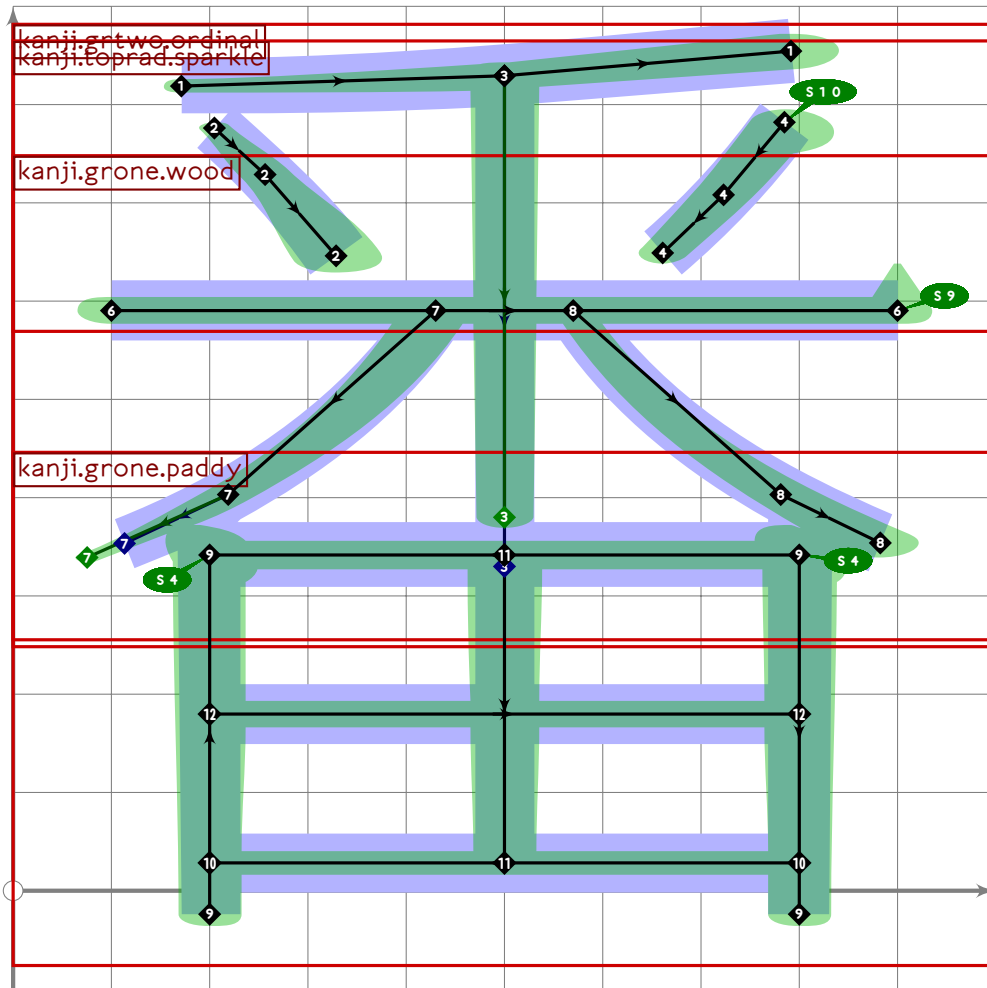

```



```

43
44 vardef tsu_curve.kanji.grone.town =
45   add_proof_box("kanji.grone.town");
46   build_kanji.level(build_kanji.lr(550,120)
47     (tsu_xform(identity shifted (-50,100))(tsu_curve.kanji.grone.paddy))
48     (tsu_xform(identity yscaled 0.92)
49       (tsu_curve.kanji.grthree.thumbtack)));
50 enddef;
51
52

```



```

53
54 vardef tsu_curve.kanji.grtwo.ordinal =
55   add_proof_box("kanji.grtwo.ordinal");
56   build_kanji.level(build_kanji.tb(350,140)
57     (build_kanji.spread_legs(140)(build_kanji.add_beret(
58       tsu_curve.kanji.grtwo.rice)))
59     (tsu_curve.kanji.grone.paddy));
60   bp[sp-10]:=(point 0 of bp[sp-10])-(500,330+50*mincho);
61 enddef;

```

62  
63  
64

```

65 % sei/ki "life"
66 begint Suglyph("uni751F";31);
67   tsu_curve.kanji.grone.life;
68   tsu_render;
69 endtsuglyph;
70
71 %you/mochi "job"
72 begint Suglyph("uni7528";40);
73   tsu_curve.kanji.grtwo.job;

```

[see page 342]

[see page 381]

```
74 tsu_render;
75 endtsuglyph;
76
77 % ta "rice paddy"
78 begintsuglyph("uni7530",48); [see page 353]
79 tsu_curve.kanji.grone.paddy;
80 tsu_render;
81 endtsuglyph;
82
83 % otoko "man"
84 begintsuglyph("uni7537",55); [see page 344]
85 tsu_curve.kanji.grone.man;
86 tsu_render;
87 endtsuglyph;
88
89 % chuu/machi "town"
90 begintsuglyph("uni753A",58); [see page 1324]
91 tsu_curve.kanji.grone.town;
92 tsu_render;
93 endtsuglyph;
94
95 % ban/tsuga "ordinal number"
96 begintsuglyph("uni756A",106); [see page 1325]
97 tsu_curve.kanji.grtwo.ordinal;
98 tsu_render;
99 endtsuglyph;
```

100-101

---

```
102
103
104 endfont;
105
106
```

---

# tsuku-76.mp

```
1 %
2 % Unicode page 76 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38
39 

---


40
41 % shiro "white"
42 begintsuglyph("uni767D";125); [see page 371]
43 tsu_curve.kanji.grone.white;
44 tsu_render;
45 endtsuglyph;
46
47 % hyako/momo "hundred"
48 begintsuglyph("uni767E";126); [see page 340]
49 tsu_curve.kanji.grone.hundred;
50 tsu_render;
51 endtsuglyph;
52
53 % moku/me "eye"
54 begintsuglyph("uni76EE";238); [see page 335]
55 tsu_curve.kanji.grone.eye;
56 tsu_render;
57 endtsuglyph;
58
59 

---


60
61 endfont;
62
63 

---


```

# tsuku-77.mp

```
1 %  
2 % Unicode page 77 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

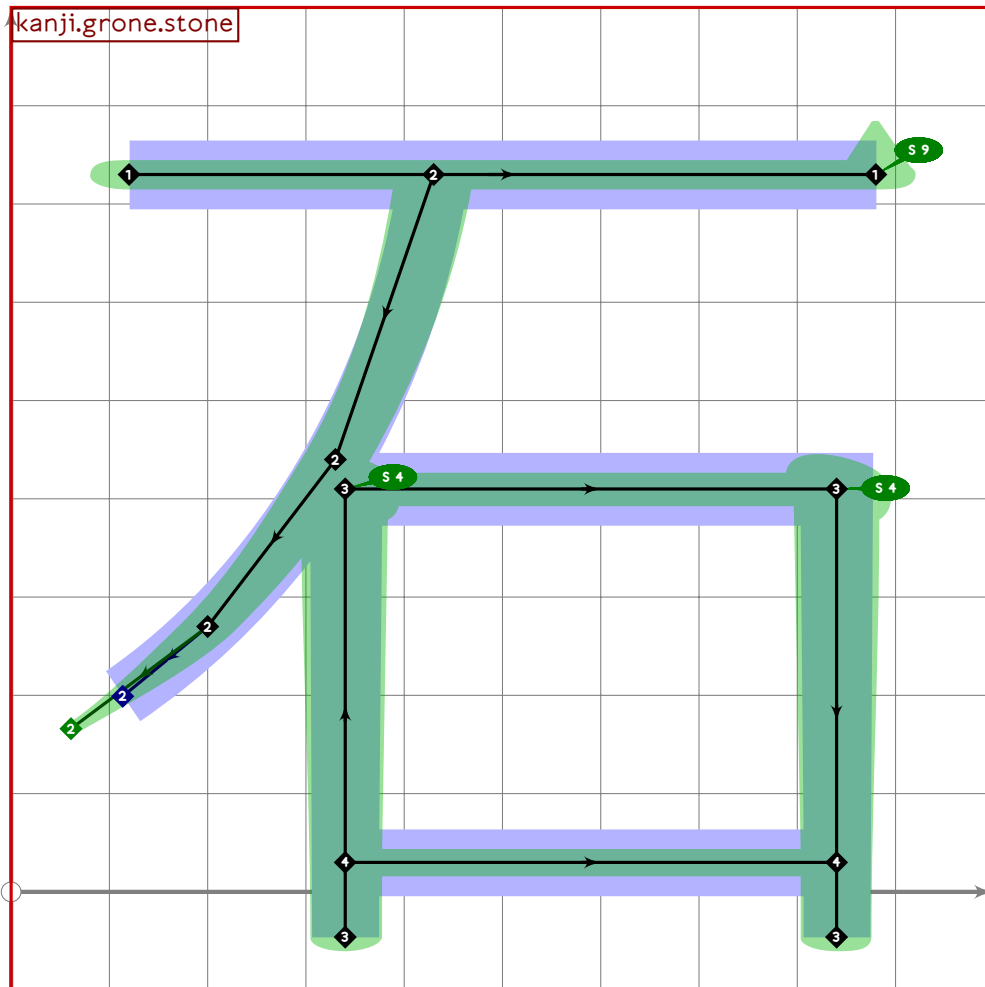
```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

```
37
```

```
38
```



```
39
```

```
40 vardef tsu_curve.kanji.grone.stone =  
41   add_proof_box("kanji.grone.stone");  
42   bp[sp]:=(120,730)..(880,730);  
43   bq[sp]:=(1.6,1.6)-(1.6,1.6);
```



```
44 bo_serif[sp][1]:=9;
45 bp[sp*1]:=(430,730)..(330,440)..(200,270)..(50,160);
46 bq[sp*1]:=(1.6,1.6)-(1.5,1.5)-(1.3,1.3)-(0.8,0.8);
47 sp:=sp*2;
48 build_kanji.box((340,410),(840,30));
49 enddef;
50
51 

---


52
53 % seki/ishi "stone"
54 begintsuglyph("uni77F3",243); [see page 1328]
55 tsu_curve.kanji.grone.stone;
56 tsu_render;
57 endtsuglyph;
58
59 

---

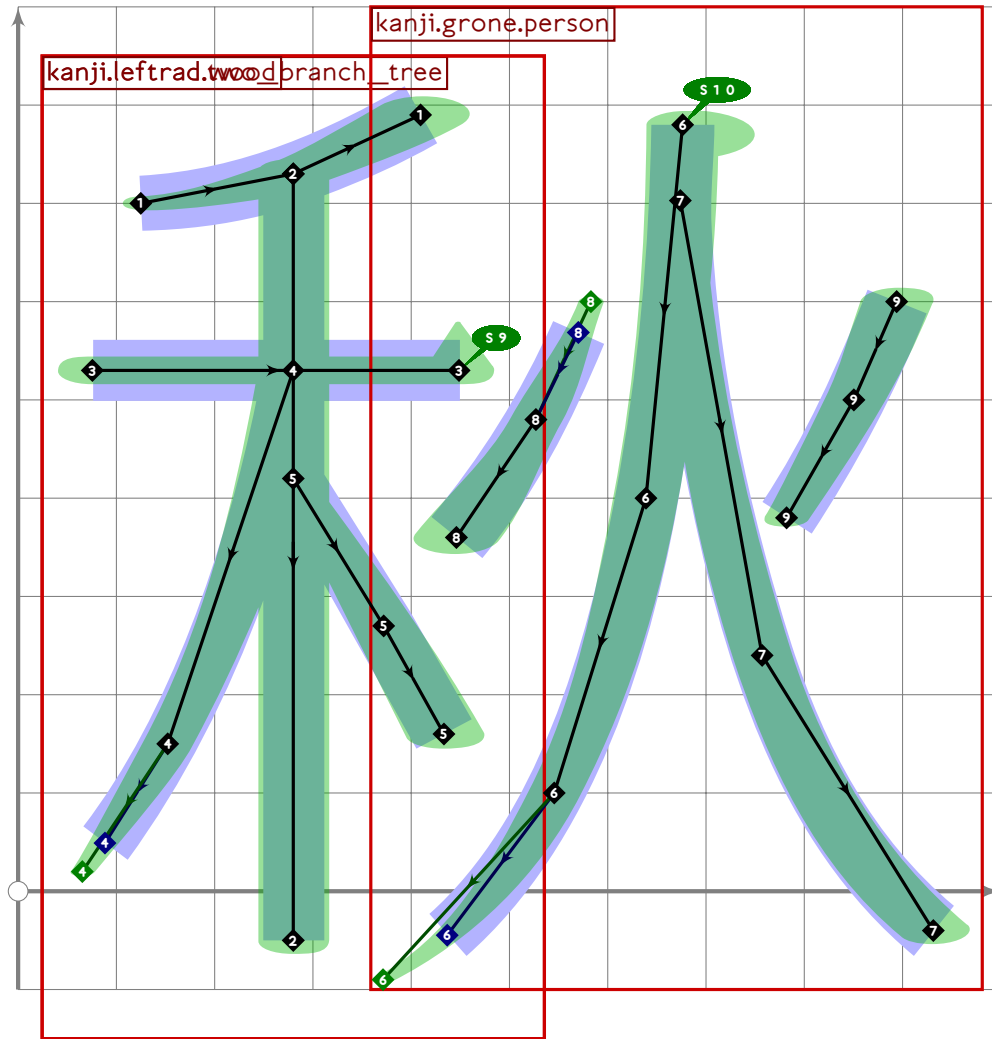

60
61 endfont;
62
63 

---


```

# tsuku-79.mp

```
1 %  
2 % Unicode page 79 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input leftrad.mp;  
39  
40 _____
```

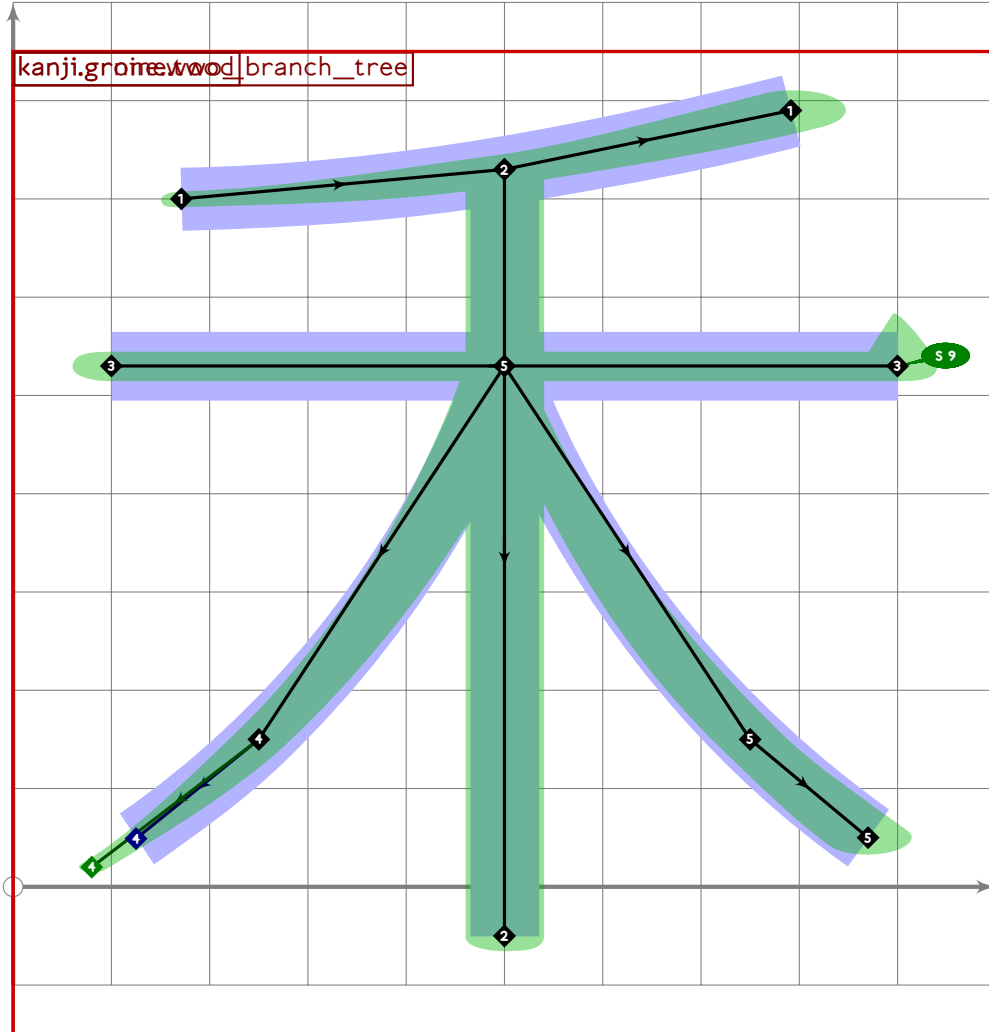


```
41  
42 vardef tsu_curve.kanji.grtwo.autumn =
```

```

43 add_proof_box("kanji.grtwo.autumn");
44 build_kanji.lr(450,120)
45   (tsu_curve.kanji.leftrad.two_branch_tree)
46   (tsu_curve.kanji.grone.fire);
47 enddef;
48
49

```



```

50
51 vardef tsu_curve.kanji.grnine.two_branch_tree =
52   add_proof_box("kanji.grnine.two_branch_tree");
53   tsu_xform(identity shifted (0,-50))
54   (build_kanji.add_beret(tsu_curve.kanji.grone.wood));
55 enddef;
56
57
58
59 vardef tsu_curve.kanji.leftrad.two_branch_tree =
60   add_proof_box("kanji.leftrad.two_branch_tree");
61   tsu_xform(identity shifted (0,-50))
62   (build_kanji.add_beret(tsu_curve.kanji.leftrad.wood));

```

```
63 enddef;
64
65 

---


66
67 % ka/ine little meaning by itself, called "two-branch tree" as a radical
68 begintsuglyph("uni79BE";190); [see page 1331]
69 tsu_curve.kanji.grnine.two_branch_tree;
70 tsu_render;
71 endtsuglyph;
72
73 % shuu/aki "autumn"
74 begintsuglyph("uni79CB";203); [see page 1330]
75 tsu_curve.kanji.grtwo.autumn;
76 tsu_render;
77 endtsuglyph;
78
79 

---

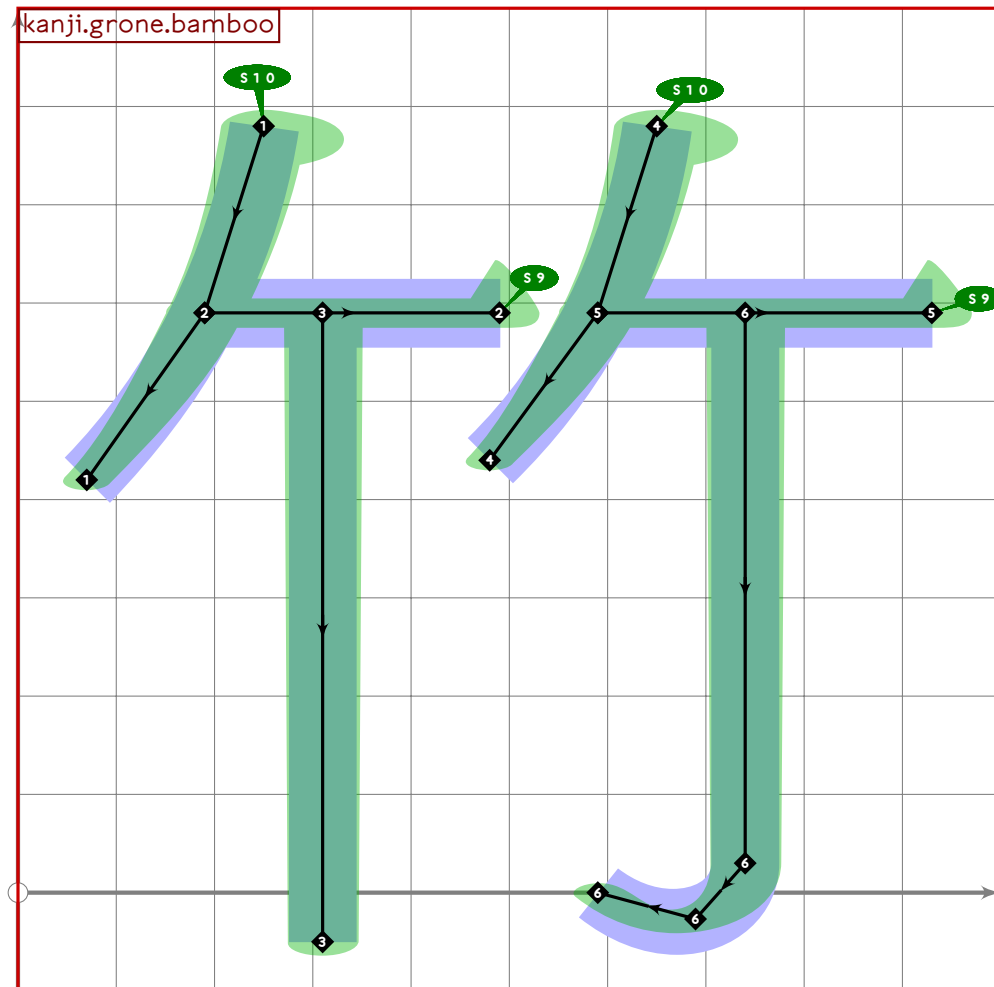

80
81 endfont;
82
83 

---


```

# tsuku-7a.mp

```
1 %  
2 % Unicode page 7a (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input radical.mp;  
40 input toprad.mp;  
41  
42 _____
```

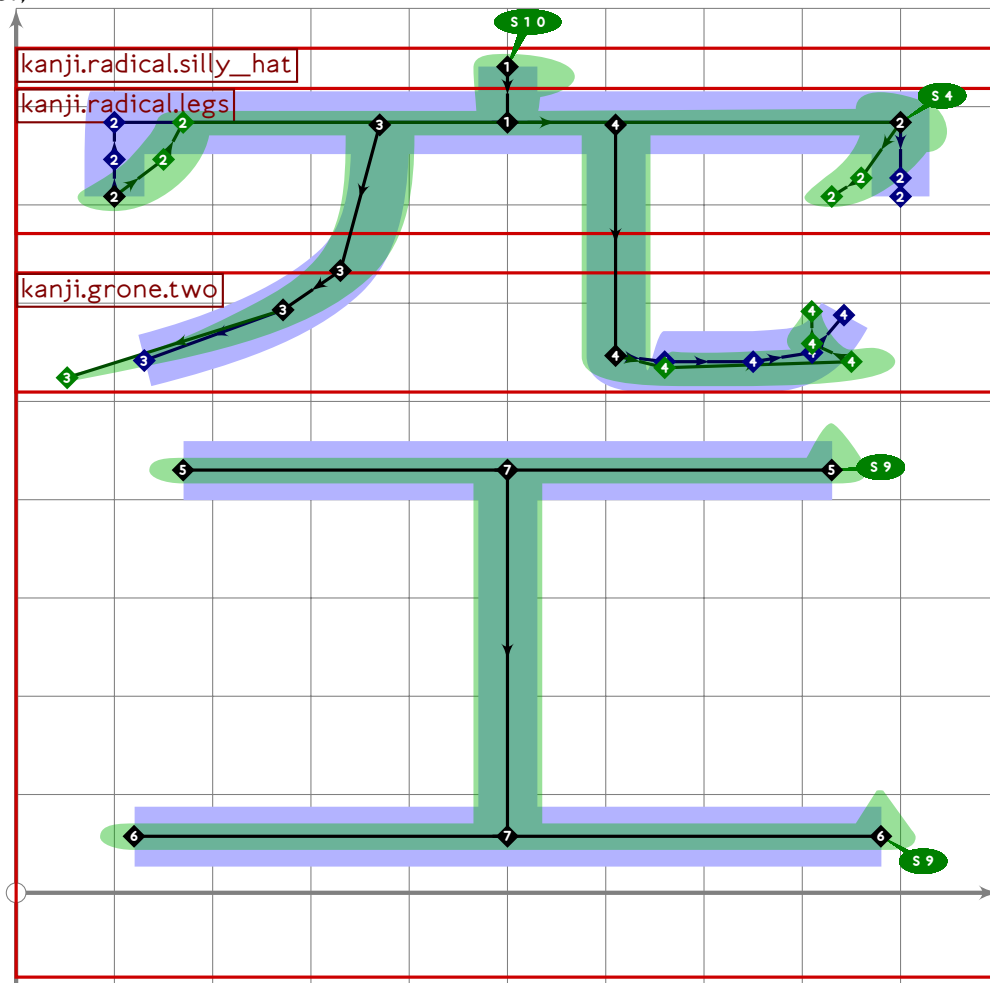


43

```

44 vardef tsu_curve.kanji.grone.bamboo =
45   add_proof_box("kanji.grone.bamboo");
46   bp[sp]:= (250,780)..(190,590)..(70,420);
47   bq[sp]:= (1.7,1.7)-(1.6,1.6)-(1.2,1.2);
48   bo_serif[sp][0]:=10;
49   bp[sp*1]:= (190,590)-(490,590);
50   bq[sp*1]:= (1.6,1.6)-(1.6,1.6);
51   bo_serif[sp*1][1]:=9;
52   bp[sp*2]:= (310,590)-(310,-50);
53   bq[sp*2]:= (1.6,1.6)-(1.5,1.5);
54   bp[sp*3]:= (650,780)..(590,590)..(480,440);
55   bq[sp*3]:= (1.7,1.7)-(1.6,1.6)-(1.2,1.2);
56   bo_serif[sp*3][0]:=10;
57   bp[sp*4]:= (590,590)-(930,590);
58   bq[sp*4]:= (1.6,1.6)-(1.6,1.6);
59   bo_serif[sp*4][1]:=9;
60   bp[sp*5]:= (740,590);
61   bq[sp*5]:= (1.6,1.6);
62   build_kanji.add_jtail(sp*5);
63   sp:=sp*6;
64 enddef;

```



```

65
66 vardef tsu_curve.kanji.grone.sky =
67   add_proof_box("kanji.grone.sky");
68   build_kanji.level(build_kanji.tb(560,70)
69     (tsu_curve.kanji.toprad.cave)
70     (tsu_curve.kanji.grtwo.craft));
71 enddef;
72
73 

---


74
75 % kara/sora "sky"
76 begintsuglyph("uni7A7A";122); [see page 1335]
77   tsu_curve.kanji.grone.sky;
78   tsu_render;
79 endsuglyph;
80
81 % ta "stand up"
82 begintsuglyph("uni7ACB";203); [see page 362]
83   tsu_curve.kanji.grone.stand_up;
84   tsu_render;
85 endsuglyph;
86
87 % chiku/take "bamboo"
88 begintsuglyph("uni7AF9";249); [see page 1334]
89   tsu_curve.kanji.grone.bamboo;
90   tsu_render;
91 endsuglyph;
92
93 

---


94
95 endfont;
96
97 

---



```

# tsuku-7b.mp

```
1 %
2 % Unicode page 7b (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38 input gradetwo.mp;
39 input radical.mp;
40
41 

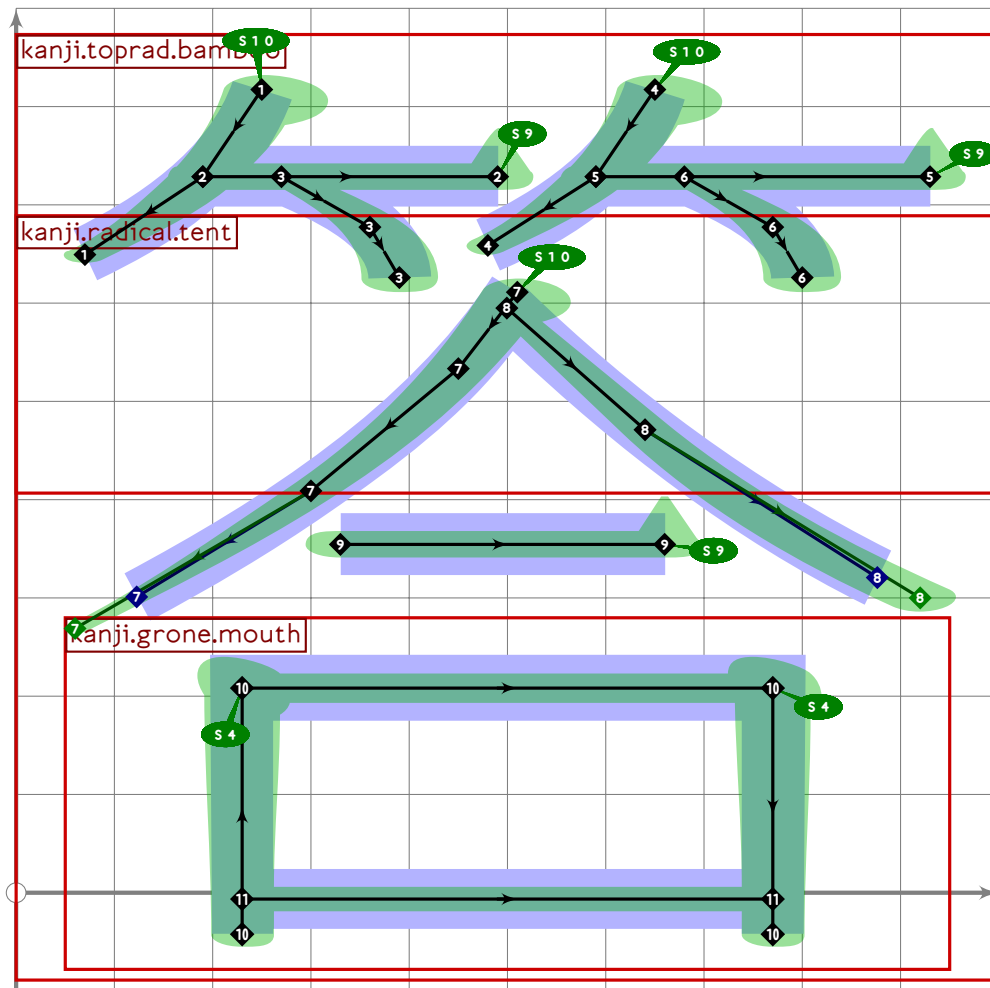
---


42
43 vardef tsu_curve.kanji.toprad.bamboo =
44   add_proof_box("kanji.toprad.bamboo");
45   bp[sp]:=(250,780)..(190,590)..(70,420);
46   bq[sp]:=(1.7,1.7)-(1.6,1.6)-(1.2,1.2);
47   bo_serif[sp][0]:=10;
48   bp[sp*1]:=(190,590)-(490,590);
49   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
50   bo_serif[sp*1][1]:=9;
51   bp[sp*2]:=(270,590)..tension 1.2..(360,480)..(390,370);
52   bq[sp*2]:=(1.1,1.1)-(1.5,1.5)-(1.7,1.7);
53   bp[sp*3]:=(650,780)..(590,590)..(480,440);
54   bq[sp*3]:=(1.7,1.7)-(1.6,1.6)-(1.2,1.2);
55   bo_serif[sp*3][0]:=10;
56   bp[sp*4]:=(590,590)-(930,590);
57   bq[sp*4]:=(1.6,1.6)-(1.6,1.6);
58   bo_serif[sp*4][1]:=9;
59   bp[sp*5]:=(680,590)..tension 1.2..(770,480)..(800,370);
60   bq[sp*5]:=(1.1,1.1)-(1.5,1.5)-(1.7,1.7);
61   sp:=sp*6;
62 enddef;
63
64 

---


```





```

65
66 vardef tsu_curve.kanji.grtwo.answer =
67   add_proof_box("kanji.grtwo.answer");
68   build_kanji.level(build_kanji.tb(540,220)
69     (tsu_curve.kanji.toprad.bamboo)
70     (tsu_curve.kanji.grtwo.join));
71 enddef;

```

```

72
73
74

```

```

75 % tou/kota "answer"
76 begint Suglyph("uni7B54",84); [see page 1337]
77   tsu_curve.kanji.grtwo.answer;
78   tsu_render;
79 endtsuglyph;

```

```

80
81
82
83 endfont;
84
85

```

# tsuku-7c.mp

```
1 %
2 % Unicode page 7c (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38 input gradetwo.mp;
39 input toprad.mp;
40
41 

---


42
43 % bei/kome "rice", also "USA" and "metre"
44 begintsuglyph\("uni7C73",115\); [see page 397]
45 tsu\_curve.kanji.grtwo.rice;
46 tsu\_render;
47 endtsuglyph;
48
49 % shi/ito "thread"
50 begintsuglyph\("uni7CF8",248\); [see page 364]
51 tsu\_curve.kanji.grone.thread;
52 tsu\_render;
53 endtsuglyph;
54
55 

---


56
57 endfont;
58
59 

---


```

# tsuku-7d.mp

```
1 %  
2 % Unicode page 7d (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

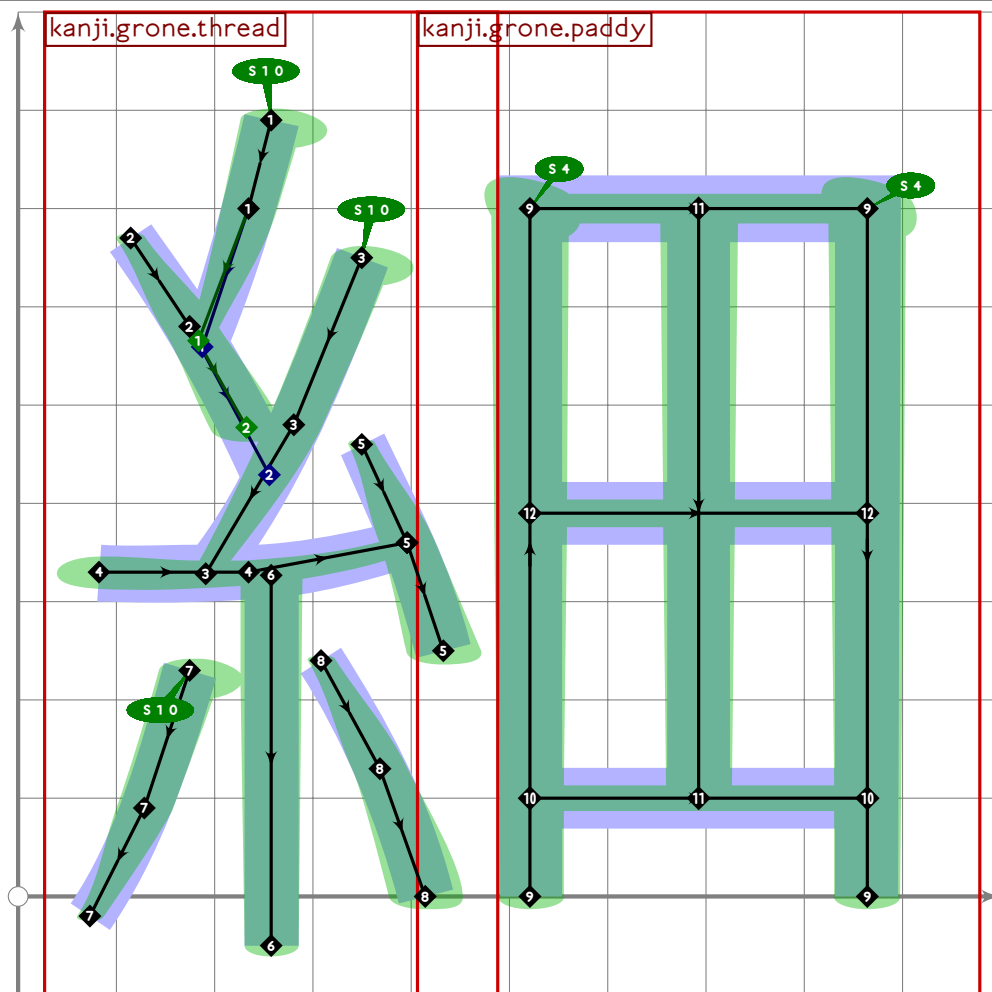
```
37 input gradeone.mp;
```

```
38 input gradetwo.mp;
```

```
39 input radical.mp;
```

```
40
```

```
41
```



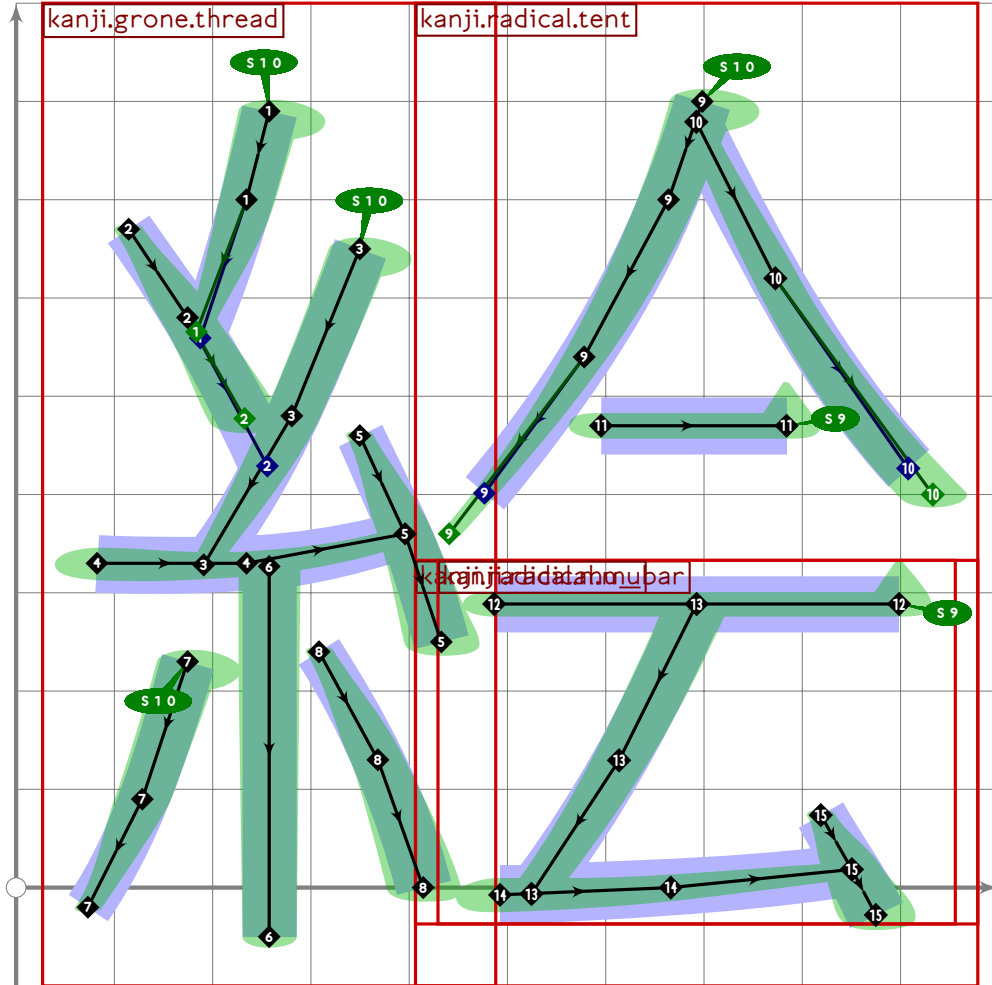
```
42
```

```
43 vardef tsu_curve.kanji.grtwo.dainty =
```

```

44 add_proof_box("kanji.grtwo.dainty");
45 build_kanji.lr(450,30)
46 (tsu_curve.kanji.grone.thread)
47 (tsu_curve.kanji.grone.paddy);
48 endif;
49

```



```

50 % "picture" is a reserved word
51 vardef tsu_curve.kanji.grtwo.drawing =
52 add_proof_box("kanji.grtwo.drawing");
53 build_kanji.lr(450,30)
54 (tsu_curve.kanji.grone.thread)
55 (tsu_curve.kanji.grtwo.meet);
56 endif;
57

```

58

59

```

60 % dai/hoso "dainty"
61 beginsuglyph("uni7D30",48);
62 tsu_curve.kanji.grtwo.dainty;
63 tsu_render;
64 endsuglyph;

```

[see page 1339]

```
65
66 % kai/e "picture"
67 begintsuglyph("uni7D75",117); [see page 1340]
68 tsu_curve.kanji.grtwo.drawing;
69 tsu_render;
70 endtsuglyph;
71
72 

---


73
74 endfont;
75
76 

---


```

# tsuku-80.mp

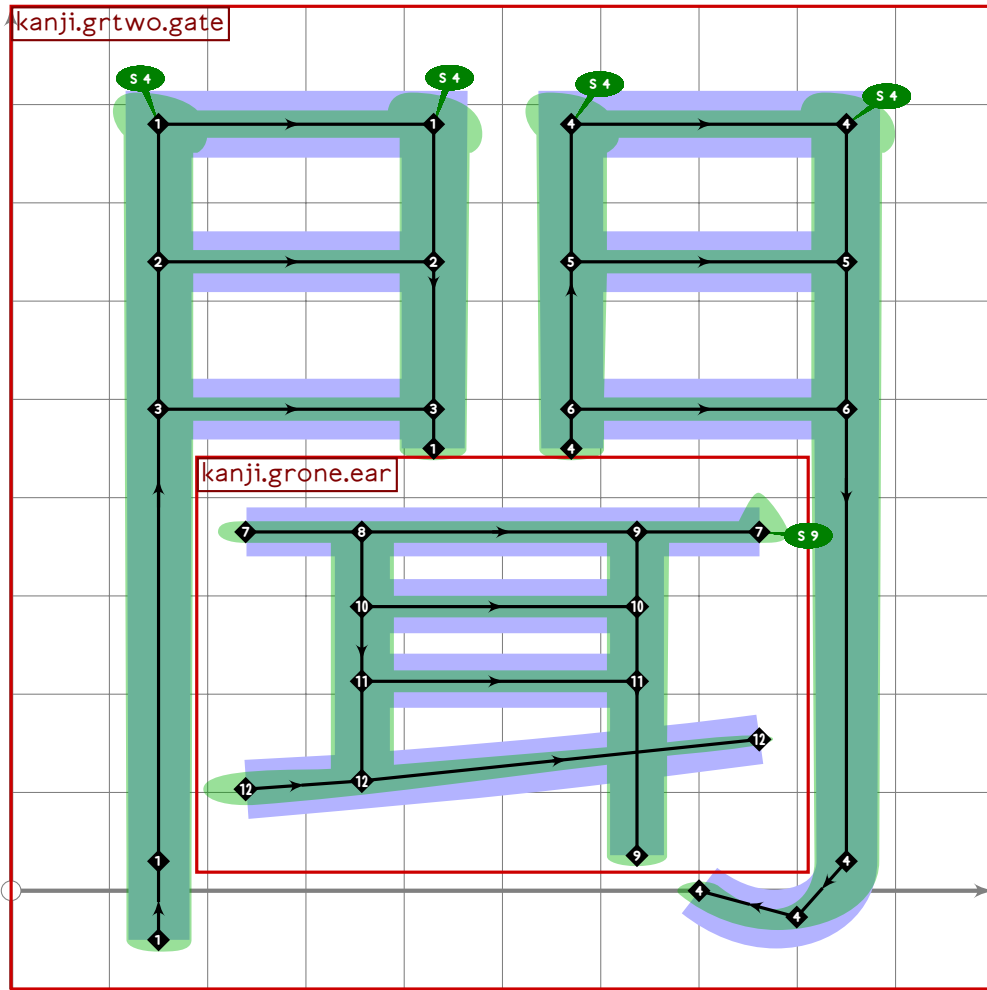
```
1 %
2 % Unicode page 80 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input bottomrad.mp;
37 input buildkanji.mp;
38 input gradeeight.mp;
39 input gradeone.mp;
40 input gradetwo.mp;
41 input radical.mp;
42 input toprad.mp;
43
44 

---

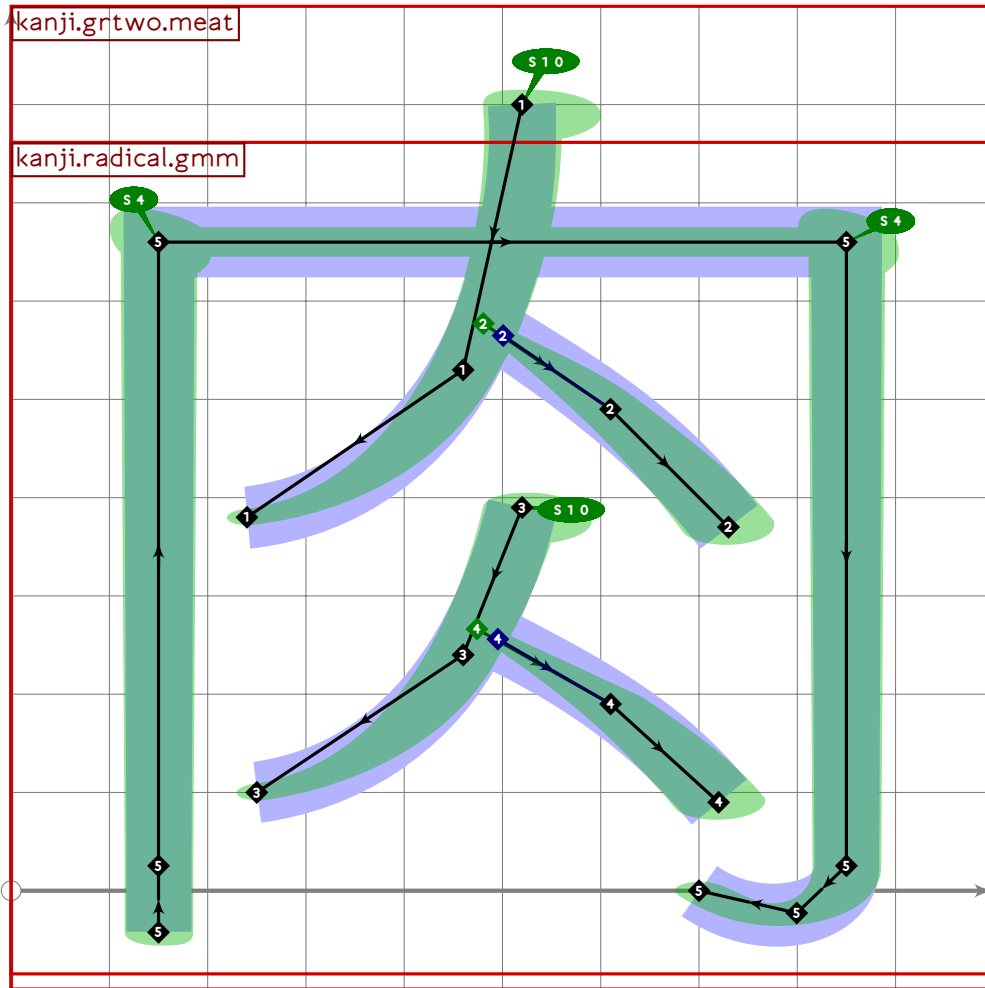

```



```

45
46 vardef tsu_curve.kanji.grtwo.hear =
47   add_proof_box("kanji.grtwo.hear");
48   build_kanji.gate_enclose(tsu_curve.kanji.grone.ear);
49 enddef;

```



```

50
51 vardef tsu_curve.kanji.grtwo.meat =
52   add_proof_box("kanji.grtwo.meat");
53   bp[sp]:=(520,800)..tension 1.2..(460,530)..(240,380);
54   bq[sp]:=(1.6,1.6)-(1.5,1.5)-(1.1,1.1);
55   bo_serif[sp][0]:=10;
56   bp[sp*1]:=(point 0.8 of bp[sp])..tension 1.2..(610,490)..(730,370);
57   bq[sp*1]:=(0.9,0.9)-(1.5,1.5)-(1.8,1.8);
58   bp[sp*2]:=(520,390)..tension 1.2..(460,240)..(250,100);
59   bq[sp*2]:=(1.6,1.6)-(1.5,1.5)-(1.1,1.1);
60   bo_serif[sp*2][0]:=10;
61   bp[sp*3]:=(point 0.8 of bp[sp*2])..tension 1.2..(610,190)..(720,90);
62   bq[sp*3]:=(0.9,0.9)-(1.5,1.5)-(1.8,1.8);
63   sp:=sp*4;
64   tsu_xform(identity yscaled (660/780))(tsu_curve.kanji.radical.gmm);
65 enddef;

```

66

67

68

69 % ken/mi "ear"

70 [begintsuglyph](#)("uni8033",51);

[see page 330]



```

71 tsu_curve.kanji.grone.ear;
72 tsu_render;
73 endtsuglyph;
74
75 % bun/ki "hear"
76 begintsuglyph("uni805E";94); [see page 1343]
77 tsu_curve.kanji.grtwo.hear;
78 tsu_render;
79 endtsuglyph;
80
81 % brush radical
82 begintsuglyph("uni807F";127); [see page 308]
83 tsu_curve.kanji.radical.brush;
84 tsu_render;
85 endtsuglyph;
86
87 % niku "meat"
88 begintsuglyph("uni8089";137); [see page 1344]
89 tsu_curve.kanji.grtwo.meat;
90 tsu_render;
91 endtsuglyph;
92
93 % shou/ayaka "resemblance"
94 begintsuglyph("uni8096";150); [see page 415]
95 tsu_curve.kanji.greight.resemblance;
96 tsu_render;
97 endtsuglyph;
98
99 _____
100
101 endfont;
102
103 _____

```

# tsuku-81.mp

```
1 %  
2 % Unicode page 81 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

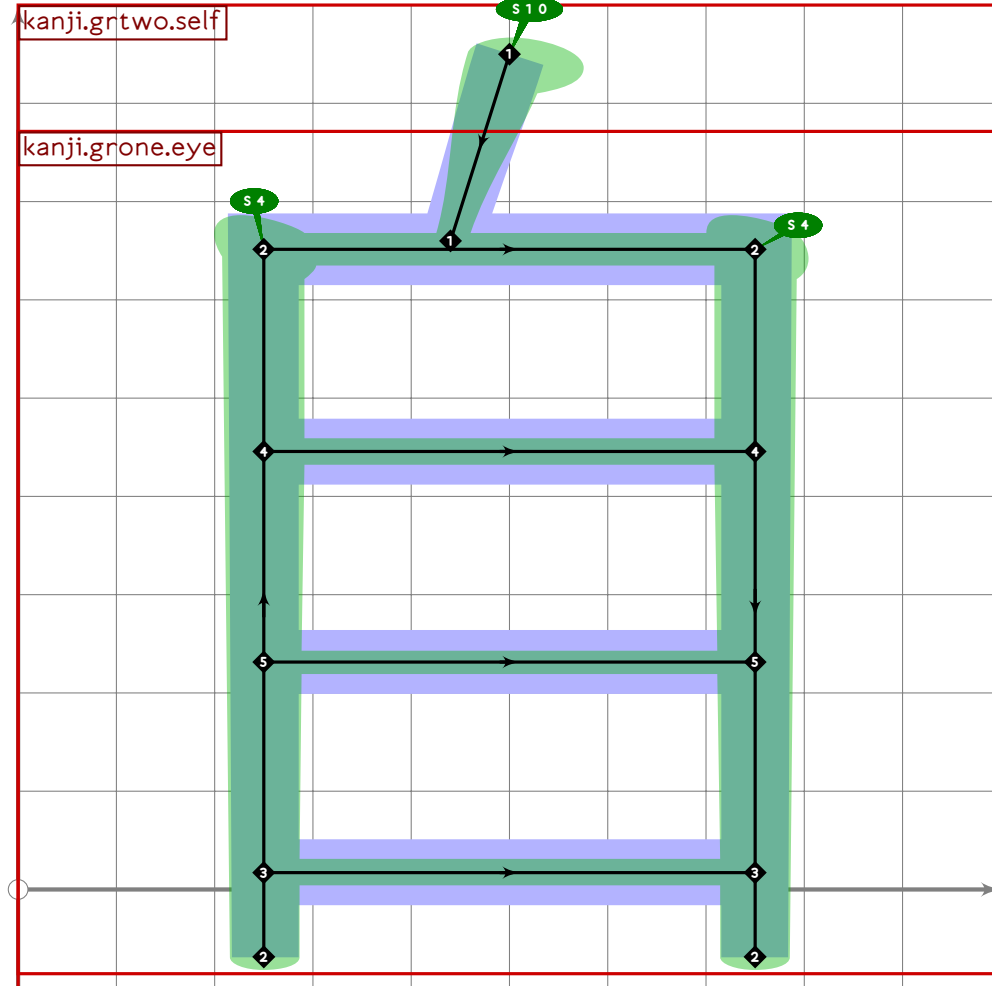
```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

```
37 input gradeone.mp;
```

```
38
```

```
39
```



```
40
```

```
41 vardef tsu_curve.kanji.grtwo.self =  
42   add_proof_box("kanji.grtwo.self");  
43   bp[sp]:=(500,850)-(440,660);
```

```
44 bq[sp]:=(1.7,1.7)-(1,1);
45 bo_serif[sp][0]:=10;
46 sp:=sp*1;
47 tsu_xform(identity yscaled (660/770))(tsu_curve.kanji.grone.ey);
48 enddef;
49
50 

---


51
52 % ji as in jibun "self"
53 begintsuglyph("uni81EA",234); [see page 1346]
54 tsu_curve.kanji.grtwo.self;
55 tsu_render;
56 endtsuglyph;
57
58 

---


59
60 endfont;
61
62 

---


```

# tsuku-82.mp

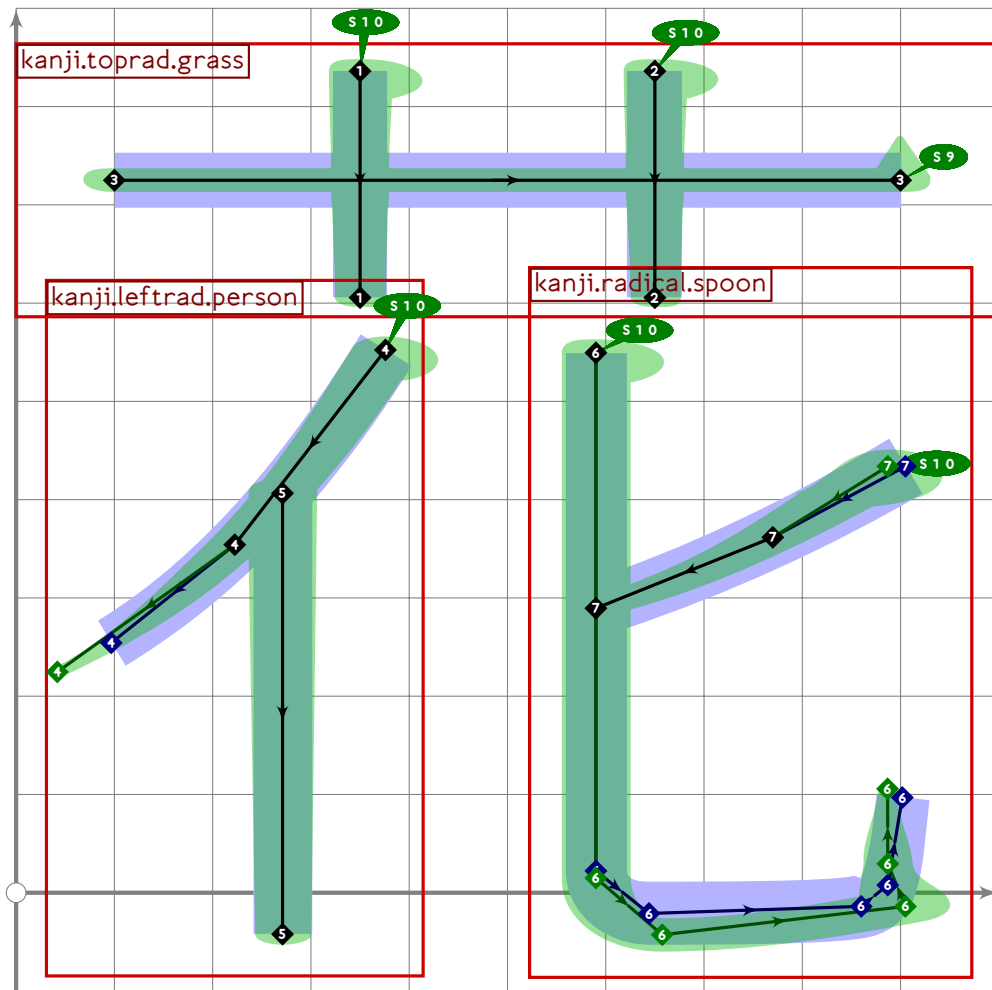
```
1 %
2 % Unicode page 82 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeeight.mp;
38 input gradefive.mp;
39 input gradefour.mp;
40 input gradeone.mp;
41 input gradethree.mp;
42 input gradetwo.mp;
43 input leftrad.mp;
44 input radical.mp;
45 input rare.mp;
46 input toprad.mp;
47
48 

---

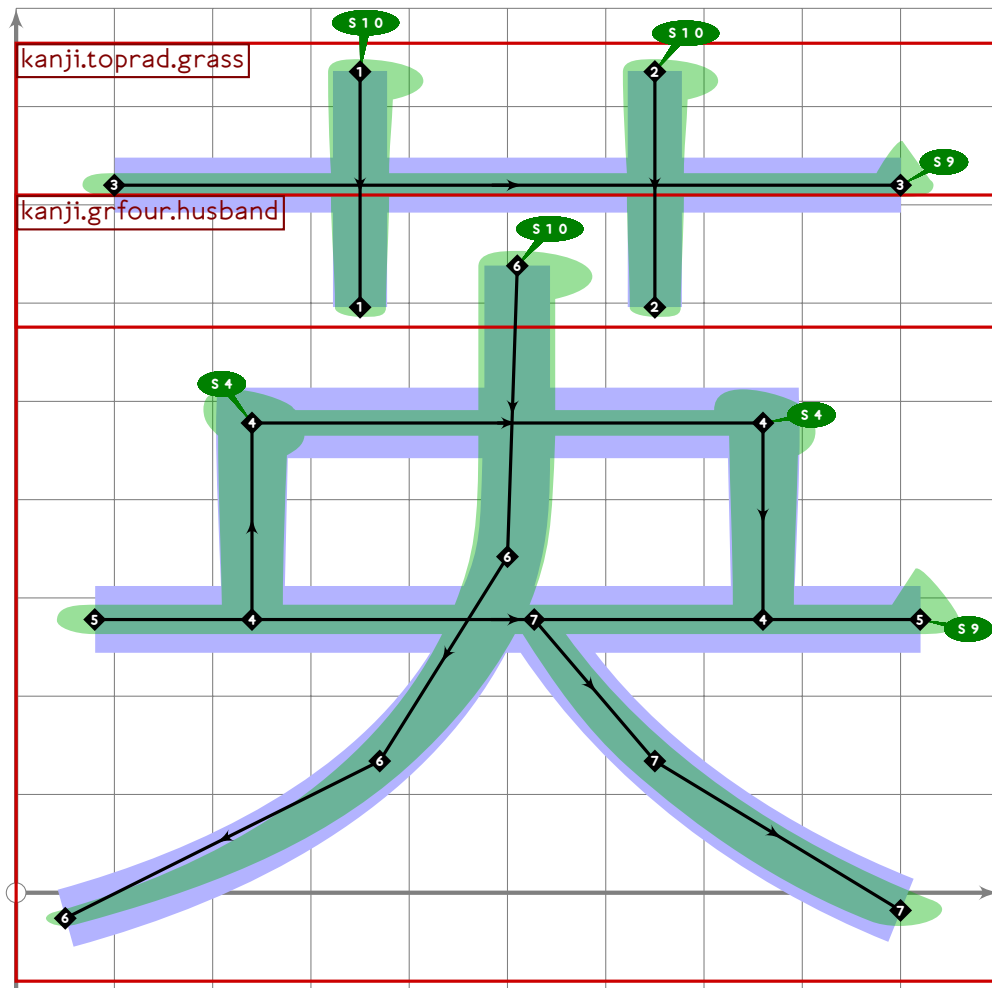

```



```

49
50 vardef tsu_curve.kanji.grone.flower =
51   add_proof_box("kanji.grone.flower");
52   build_kanji.tb(600,0)
53     (tsu_curve.kanji.toprad.grass)
54     (tsu_curve.kanji.grthree.change);
55 enddef;
56
57

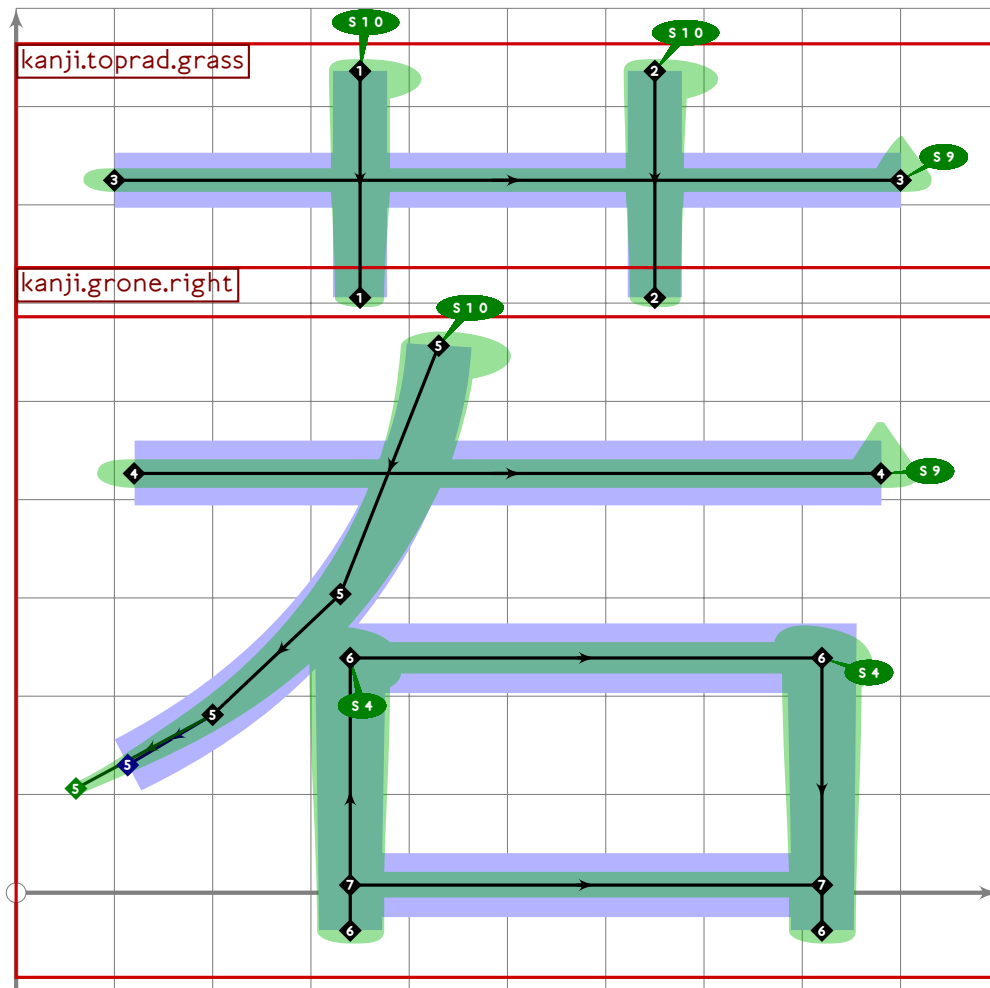
```



```

58
59 vardef tsu_curve.kanji.grfour.english =
60   add_proof_box("kanji.grfour.english");
61   build_kanji.tb(630,80)
62     (tsu_curve.kanji.toprad.grass)
63     (tsu_curve.kanji.grthree.centre);
64 enddef;
65
66

```



```

67
68 vardef tsu_curve.kanji.grsix.young_master =
69   add_proof_box("kanji.grsix.young_master");
70   build_kanji.tb(600,0)
71     (tsu_curve.kanji.toprad.grass)
72     (tsu_curve.kanji.grone.right);
73 enddef;

```

74

75

76

```
77 % zetsu/shita "tongue"
```

```
78 begint Suglyph("uni820C";12);
```

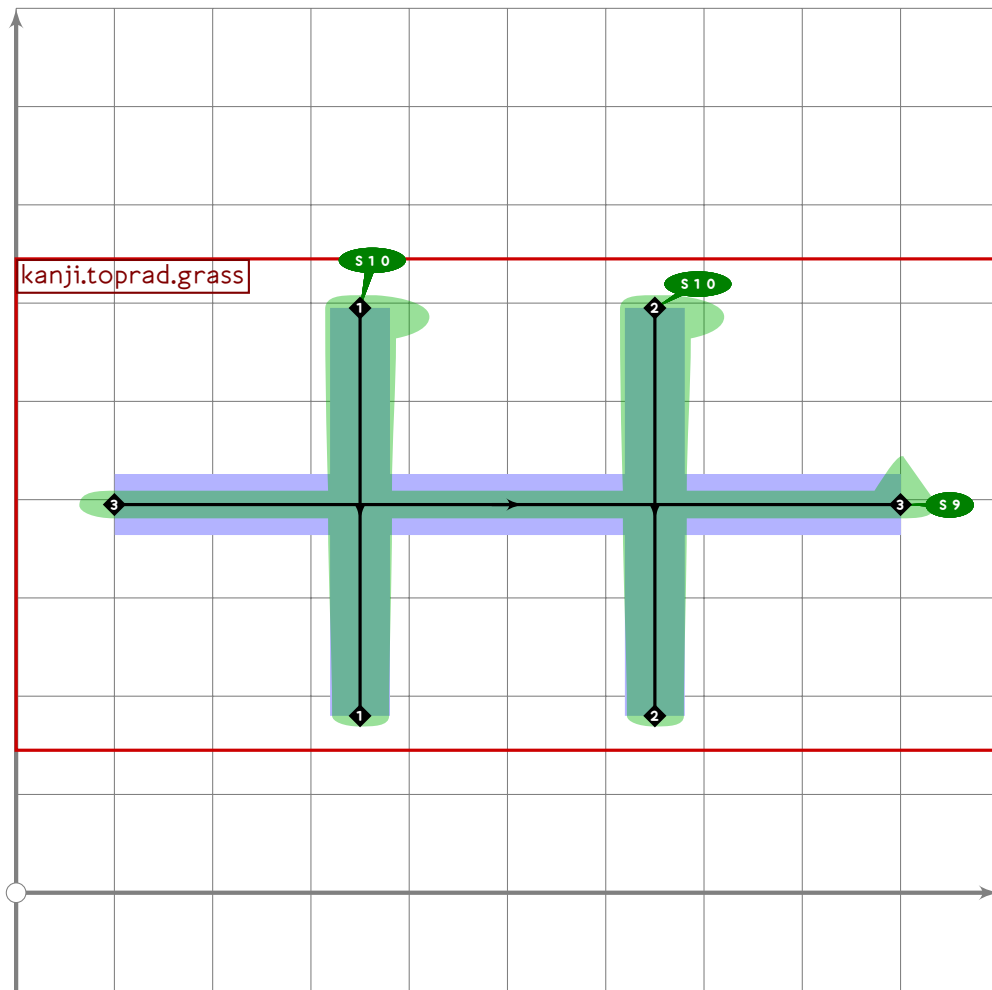
[see page 410]

```
79   tsu_curve.kanji.grfive.tongue;
```

```
80   tsu_render;
```

```
81   endtsuglyph;
```

82

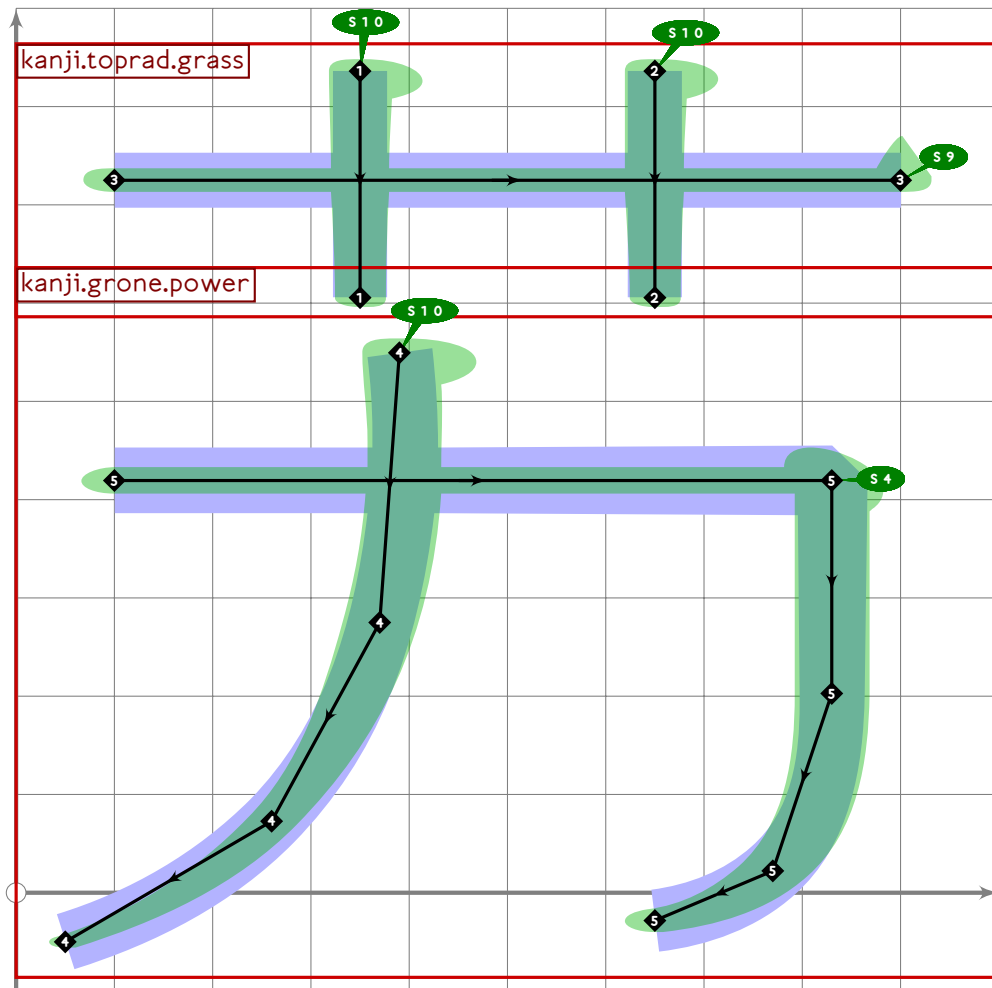


```

83 % extra "naked grass radical"
84 begint Suglyph("uni8279";121);
85 build_kanji.sscale(yscaled 0.5)(tsu_curve.kanji.toprad.grass);
86 tsu_render;
87 endtsuglyph;
88

```

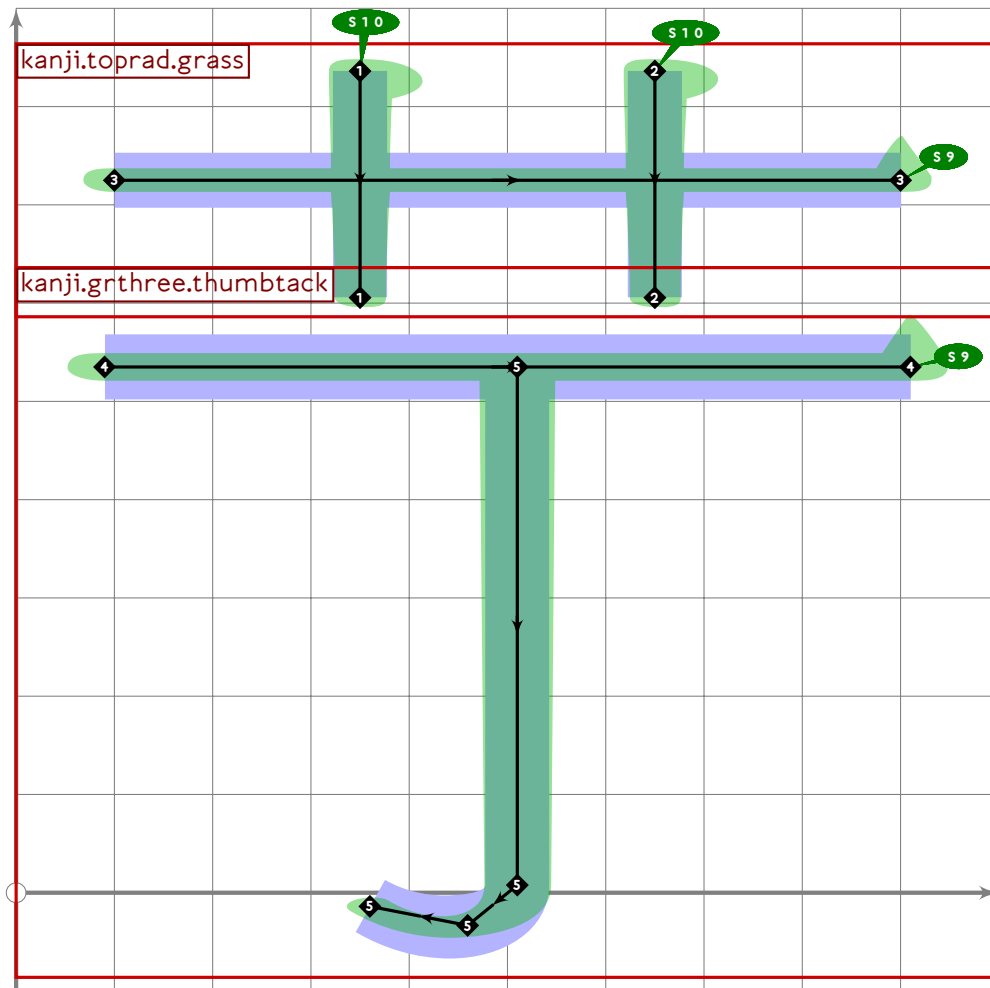




```

89 % extra
90 begint Suglyph("uni827B",123);
91 build_kanji.tb(600,0)
92   (tsu_curve.kanji.toprad.grass)
93   (tsu_curve.kanji.grone.power);
94   tsu_render;
95   endtsuglyph;
96

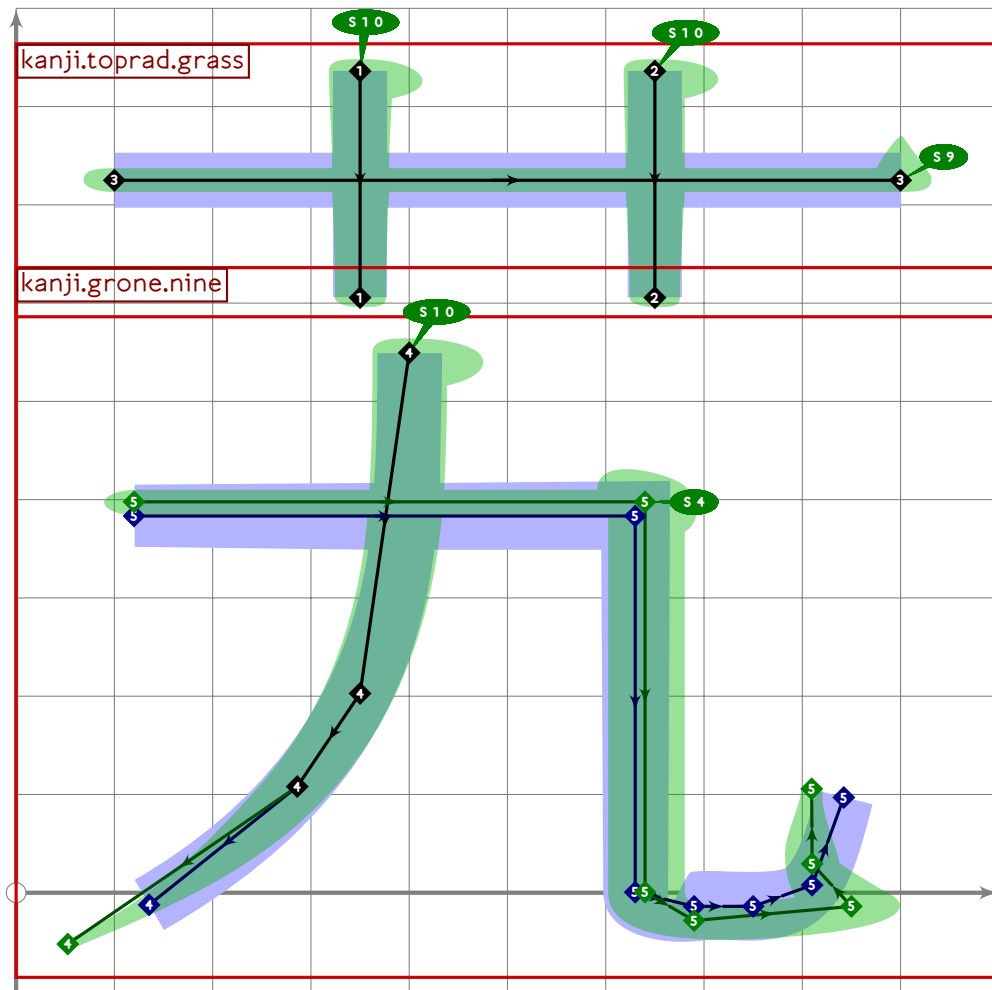
```



```

97 % extra
98 begintsuglyph("uni827C",124);
99 build_kanji.tb(600,0)
100 (tsu_curve.kanji.toprad.grass)
101 (tsu_curve.kanji.grthree.thumbtack);
102 tsu_render;
103 endsuglyph;
104

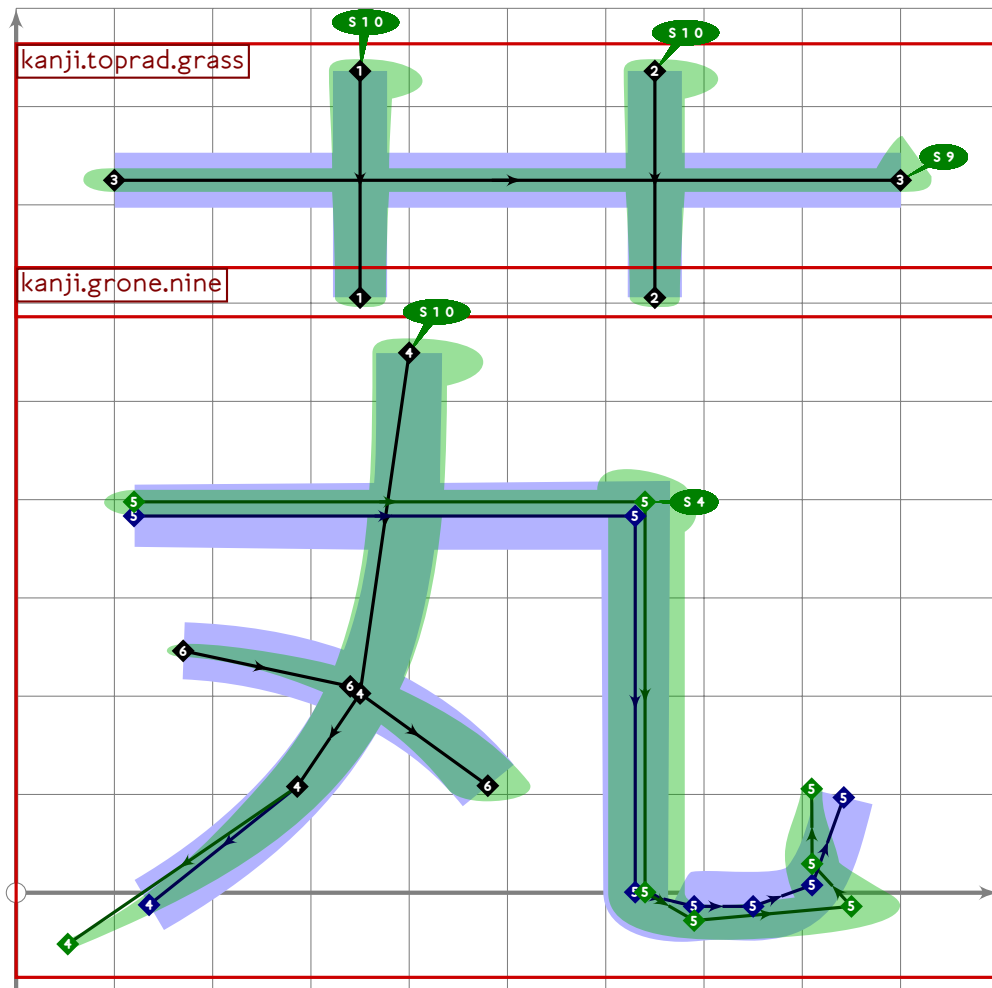
```



```

105 % extra
106 begint Suglyph("uni827D",125);
107 build_kanji.tb(600,0)
108   (tsu_curve.kanji.toprad.grass)
109   (tsu_curve.kanji.grone.nine);
110   tsu_render;
111   endtsuglyph;
112

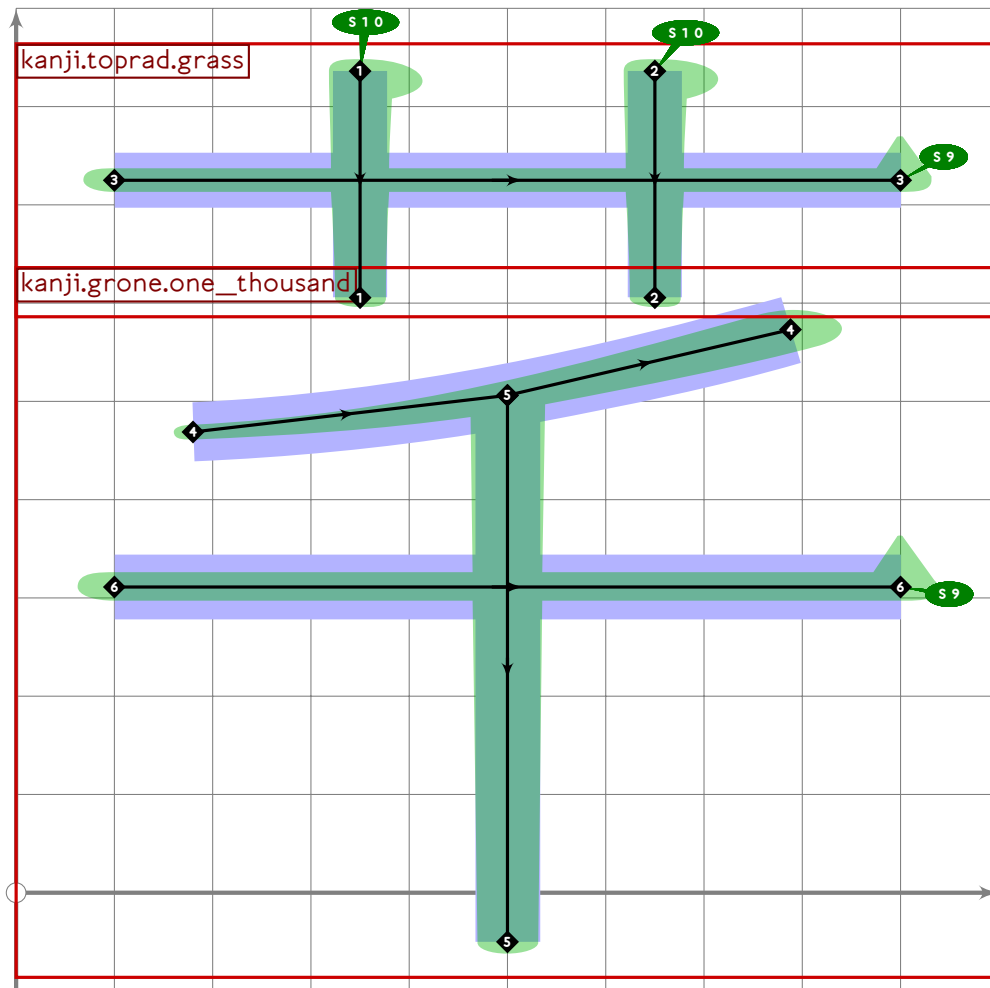
```



```

113 % extra
114 begint Suglyph("uni8284",132);
115 build_kanji.tb(600,0)
116   (tsu_curve.kanji.toprad.grass)
117   (tsu_curve.kanji.grtwo.circle);
118   tsu_render;
119   endtsuglyph;
120

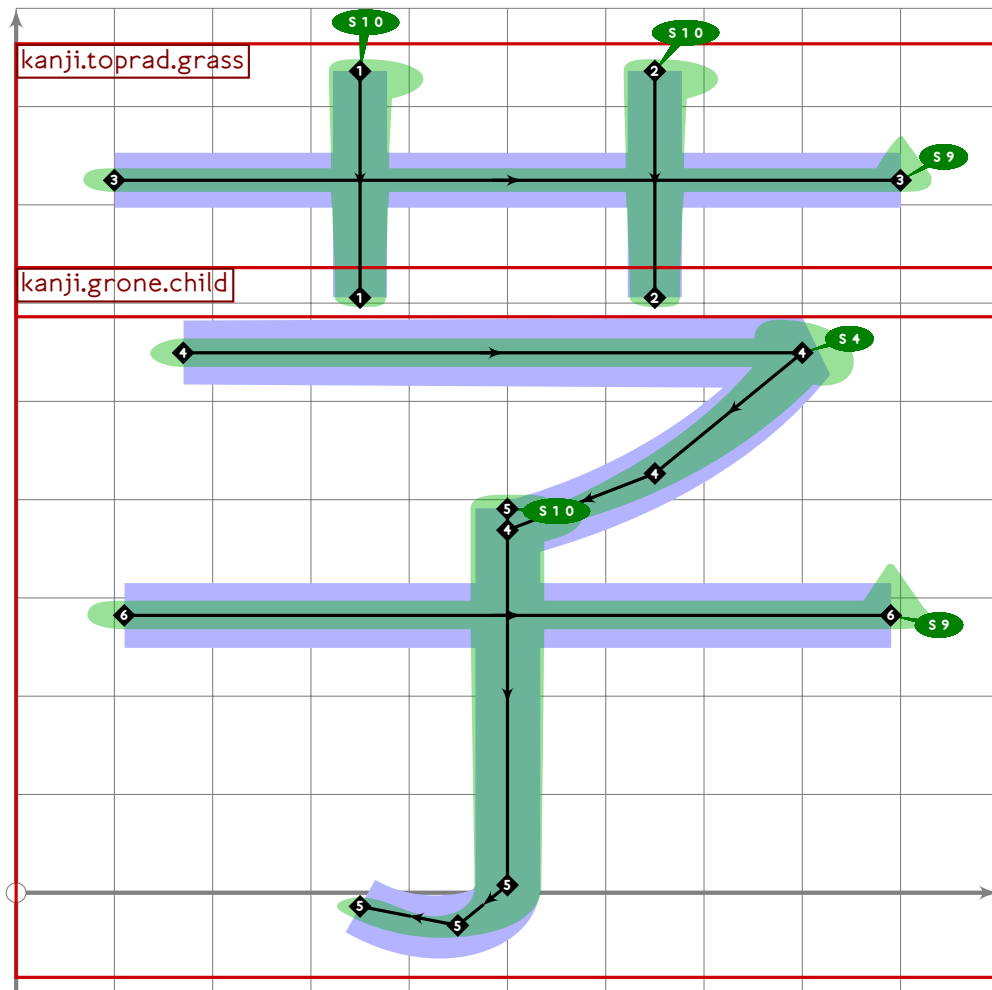
```



```

121 % extra
122 begintsuglyph("uni828A",138);
123 build_kanji.tb(600,0)
124   (tsu_curve.kanji.toprad.grass)
125   (tsu_curve.kanji.grone.one_thousand);
126   tsu_render;
127 endsuglyph;
128

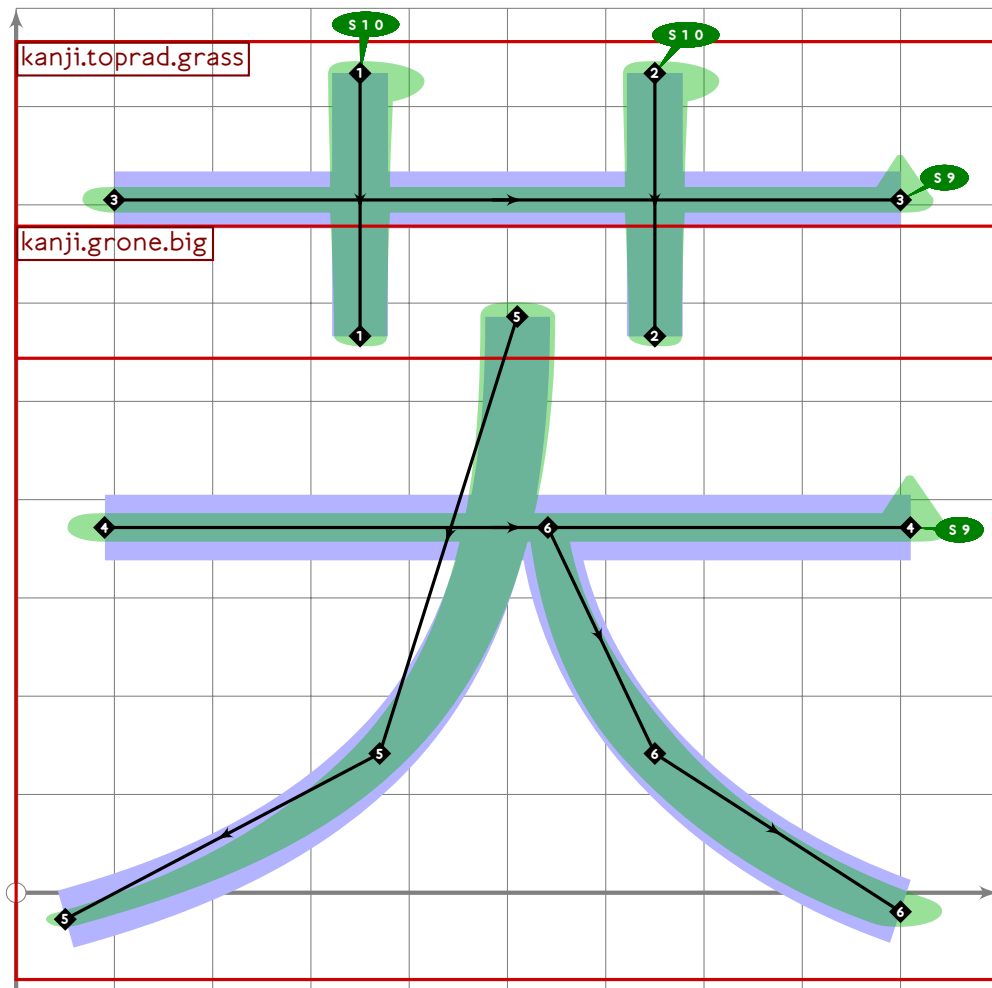
```



```

129 % extra
130 begint Suglyph("uni8293",147);
131 build_kanji.tb(600,0)
132   (tsu_curve.kanji.toprad.grass)
133   (tsu_curve.kanji.grone.child);
134   tsu_render;
135   endtsuglyph;
136

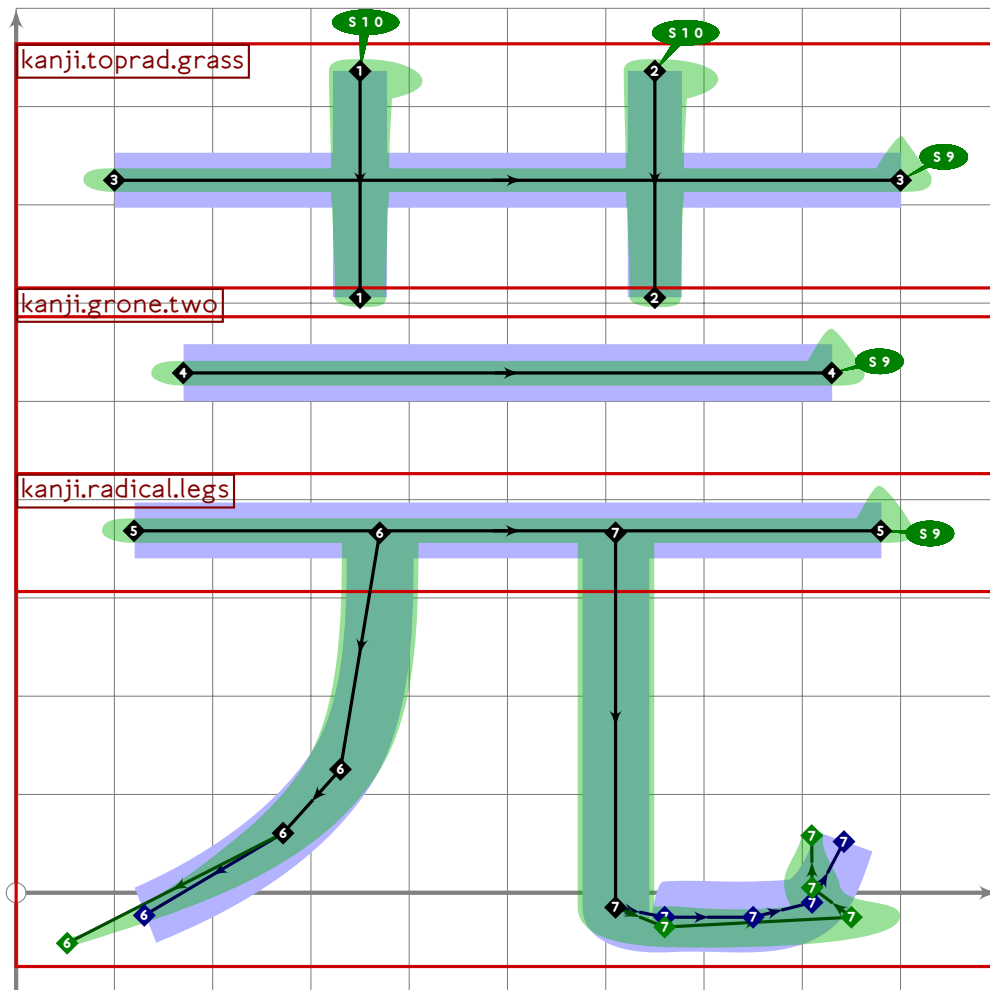
```



```

137 % extra
138 begint Suglyph("uni8296",150);
139 build_kanji.tb(600,80)
140   (tsu_curve.kanji.toprad.grass)
141   (tsu_curve.kanji.grone.big);
142   tsu_render;
143   endtsuglyph;
144

```



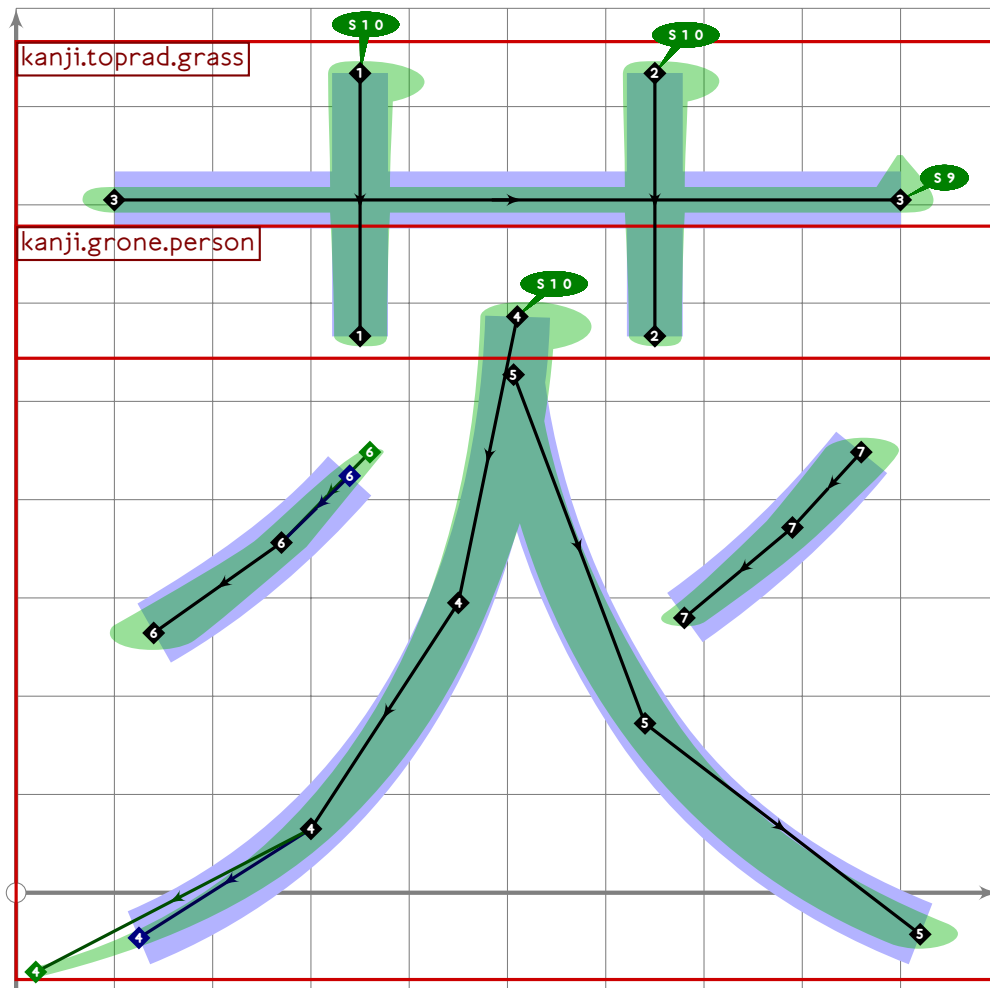
```

145 % extra
146 begintsuglyph("uni82AB";171);
147 build_kanji.tb(600,0)
148 (tsu_curve.kanji.toprad.grass)
149 (tsu_curve.kanji.grtwo.origin);
150 tsu_render;
151 endtsuglyph;
152
153 % hana "flower"
154 begintsuglyph("uni82B1";177);
155 tsu_curve.kanji.grone.flower;
156 tsu_render;
157 endtsuglyph;
158

```

[see page 1349]



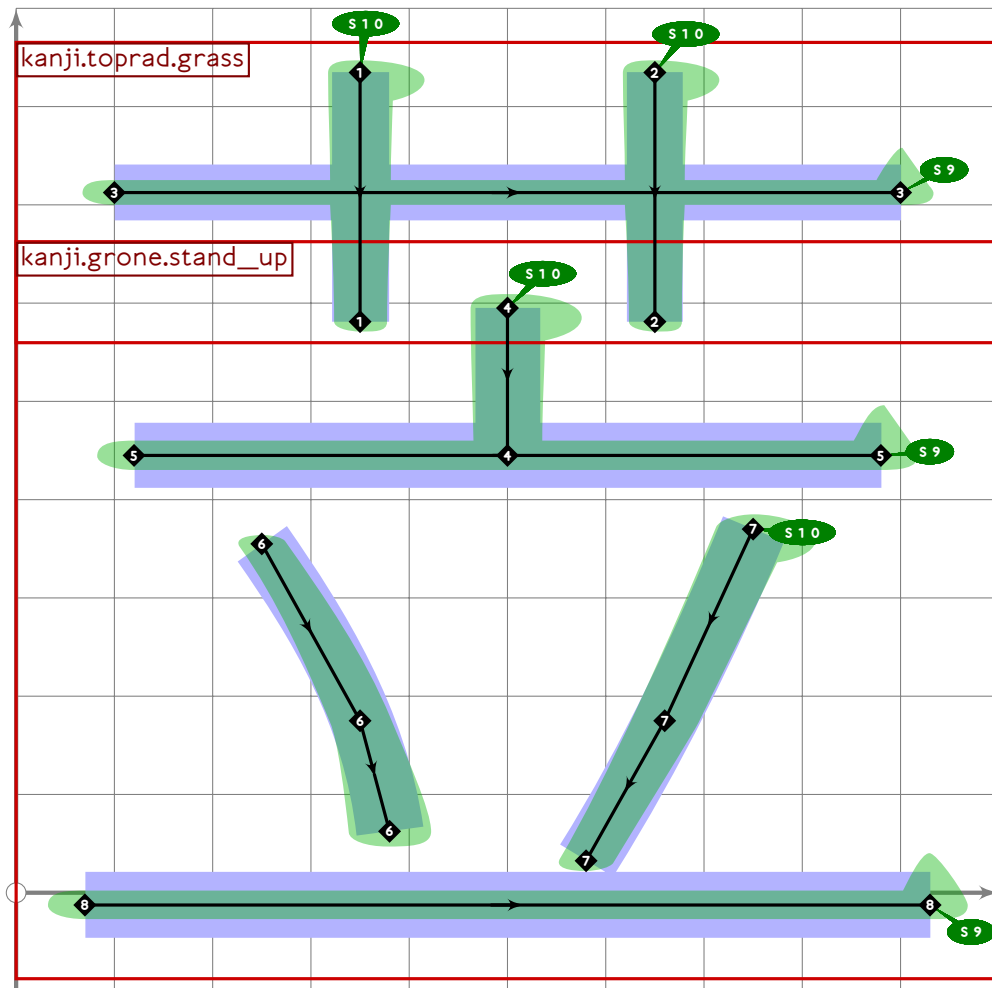


```

159 % extra
160 begint Suglyph("uni82C2",194);
161 build_kanji.tb(600,80)
162   (tsu_curve.kanji.toprad.grass)
163   (tsu_curve.kanji.grone.fire);
164   tsu_render;
165 endtsuglyph;
166
167 % byo/nae "rice seedling"
168 begint Suglyph("uni82D7",215);
169   tsu_curve.kanji.greight.seedling;
170   tsu_render;
171 endtsuglyph;
172

```

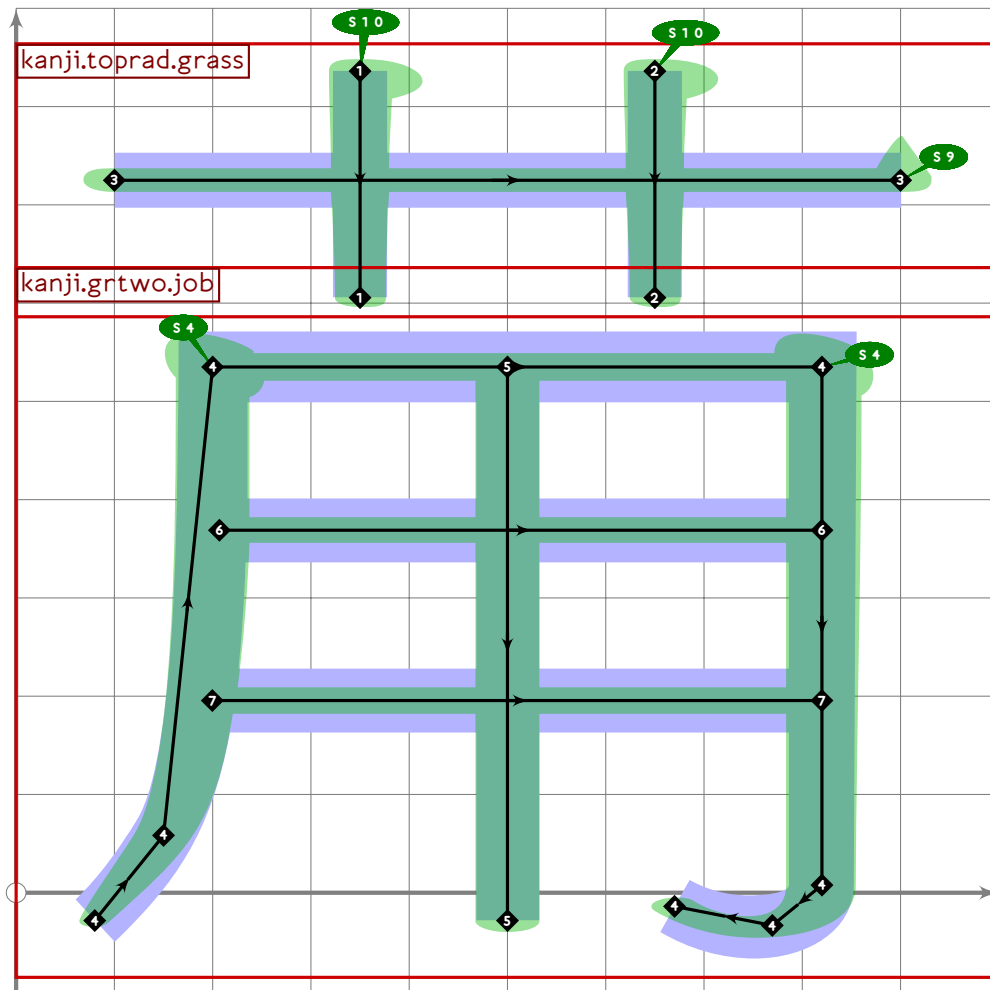
[see page 416]



```

173 % extra
174 begint Suglyph("uni82D9",217);
175 build_kanji.tb(600,50)
176   (tsu_curve.kanji.toprad.grass)
177   (tsu_curve.kanji.grone.stand_up);
178   tsu_render;
179   endtsuglyph;
180

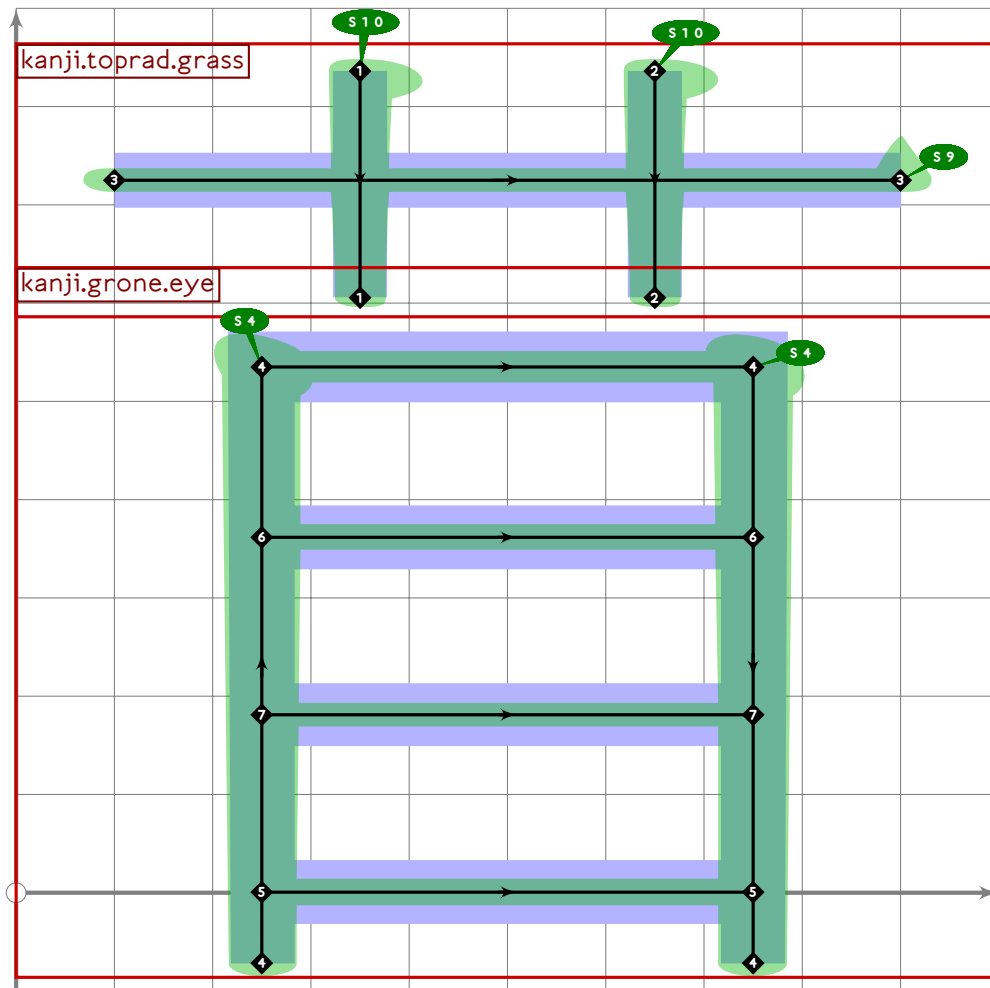
```



```

181 % extra
182 begintsuglyph("uni82DA";218);
183 build_kanji.tb(600,0)
184   (tsu_curve.kanji.toprad.grass)
185   (tsu_curve.kanji.grtwo.job);
186   tsu_render;
187   endtsuglyph;
188

```

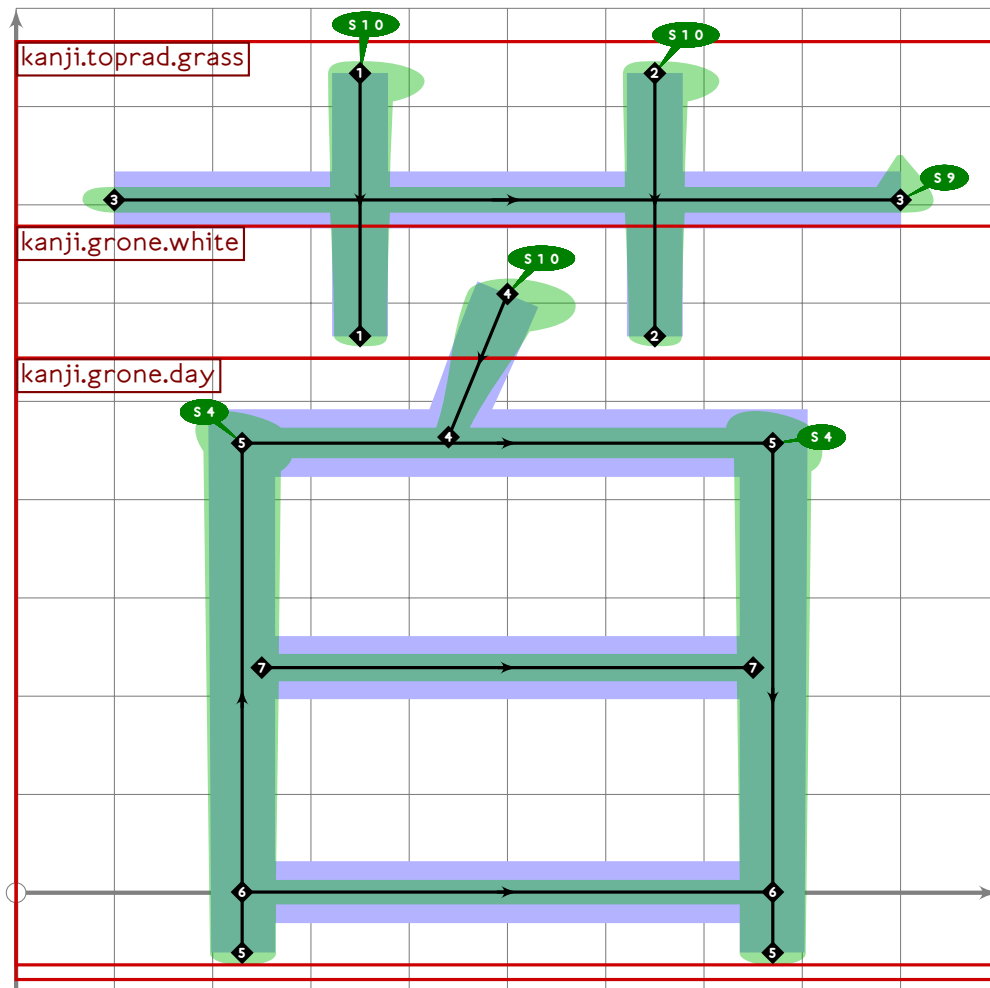


```

189 % extra
190 beginsuglyph("uni82DC";220);
191 build_kanji.tb(600,0)
192   (tsu_curve.kanji.toprad.grass)
193   (tsu_curve.kanji.grone.eye);
194   tsu_render;
195 endsuglyph;
196
197 % waka "young master"
198 beginsuglyph("uni82E5";229);
199   tsu_curve.kanji.grsix.young_master;
200   tsu_render;
201 endsuglyph;
202

```

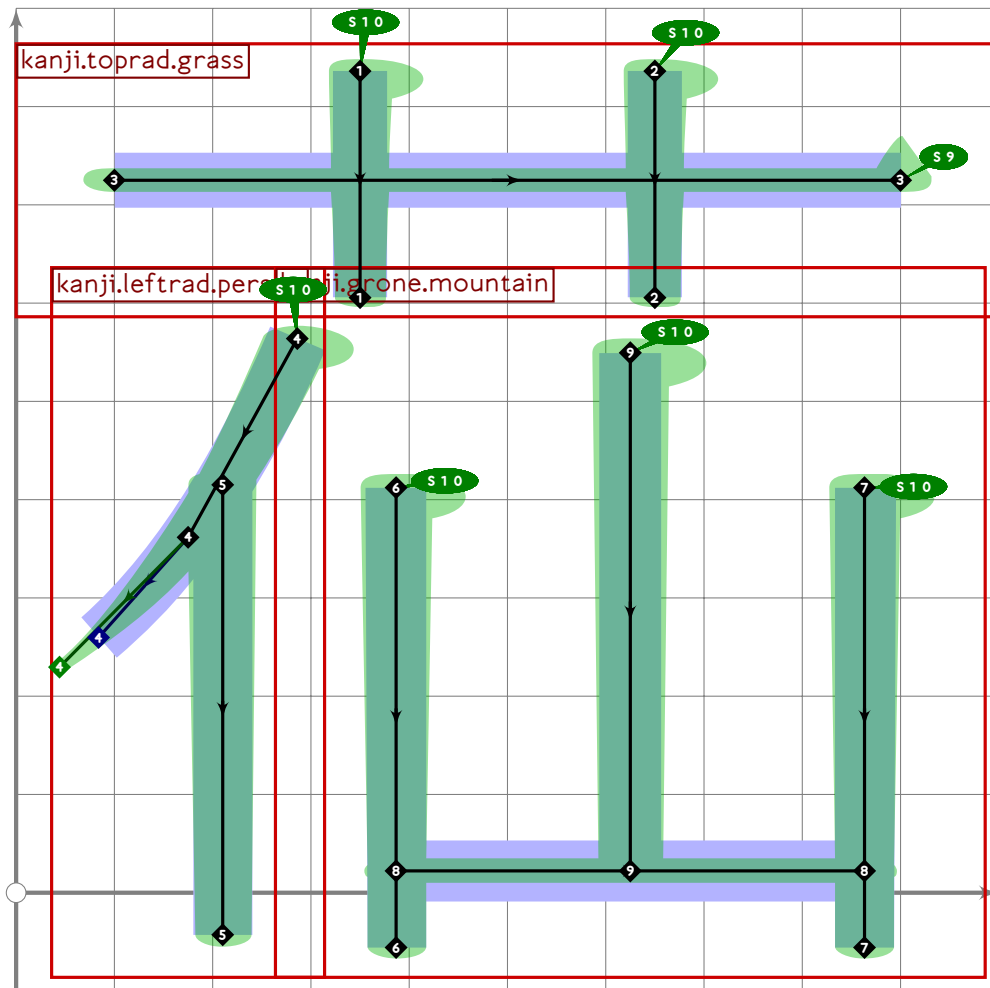
[see page 1351]



```

203 % extra
204 begint Suglyph("uni82E9",233);
205 build_kanji.tb(600,80)
206   (tsu_curve.kanji.toprad.grass)
207   (tsu_curve.kanji.grone.white);
208   tsu_render;
209 endtsuglyph;
210

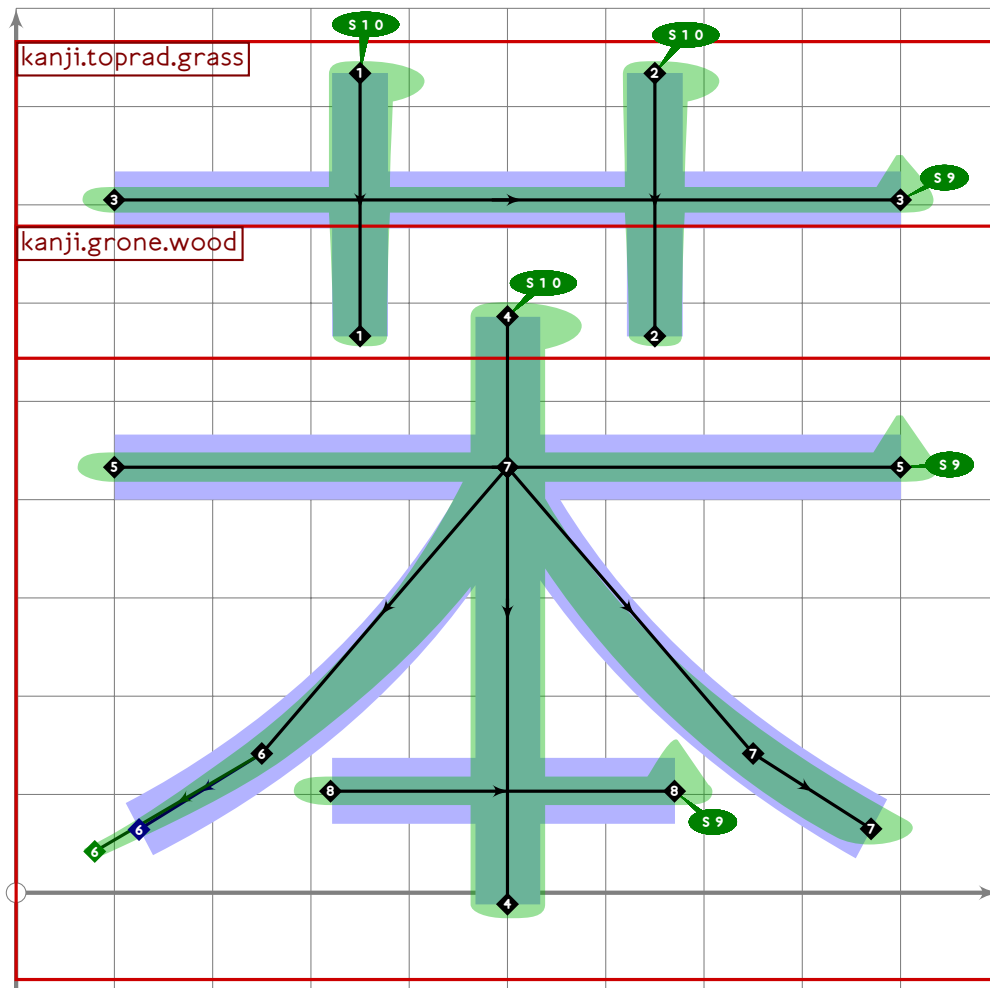
```



```

211 % extra
212 begintsuglyph("uni82EE",238);
213 build_kanji.tb(600,0)
214 (tsu_curve.kanji.toprad.grass)
215 (tsu_curve.kanji.greight.wizard);
216 tsu_render;
217 endsuglyph;
218

```

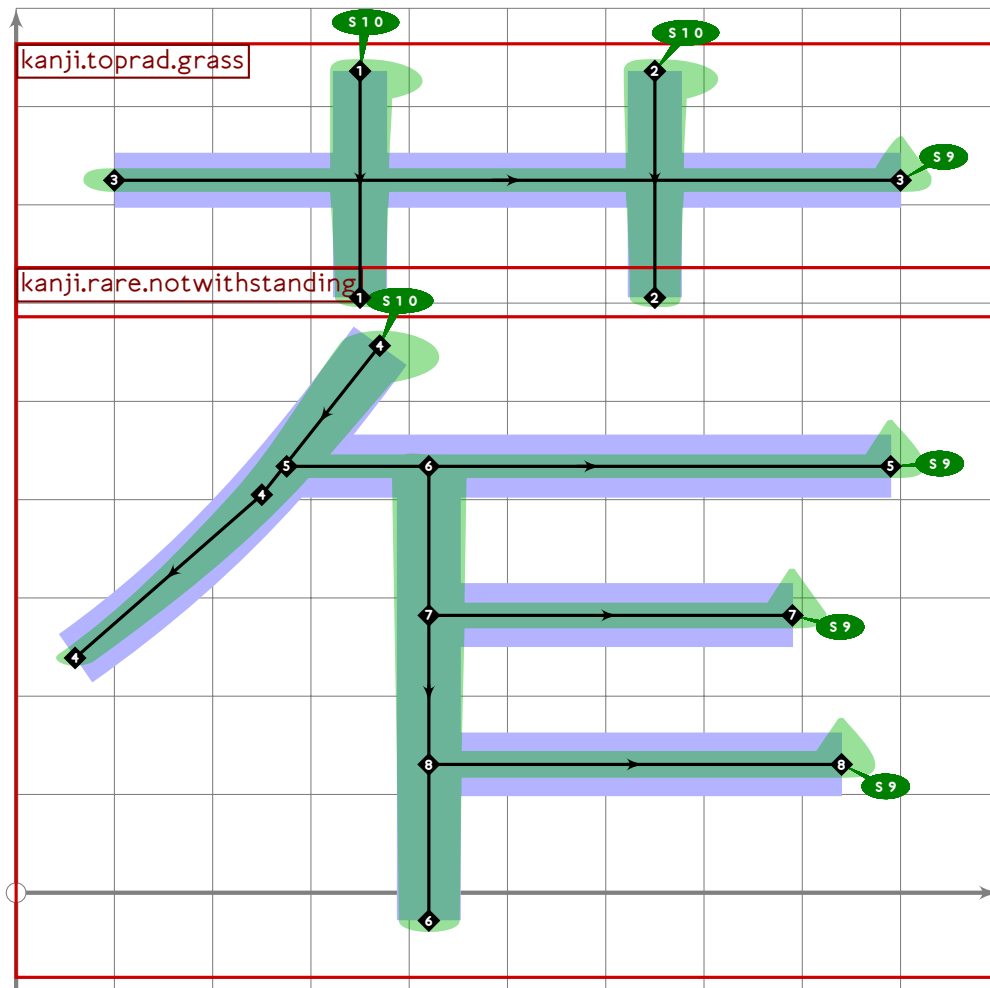


```

219 % extra
220 begintsuglyph("uni82EF",239);
221 build_kanji.tb(600,80)
222   (tsu_curve.kanji.toprad.grass)
223   (tsu_curve.kanji.grone.book);
224   tsu_render;
225 endtsuglyph;
226
227 % ei "English"
228 begintsuglyph("uni82F1",241);
229   tsu_curve.kanji.grfour.english;
230   tsu_render;
231 endtsuglyph;
232

```

[see page 1350]

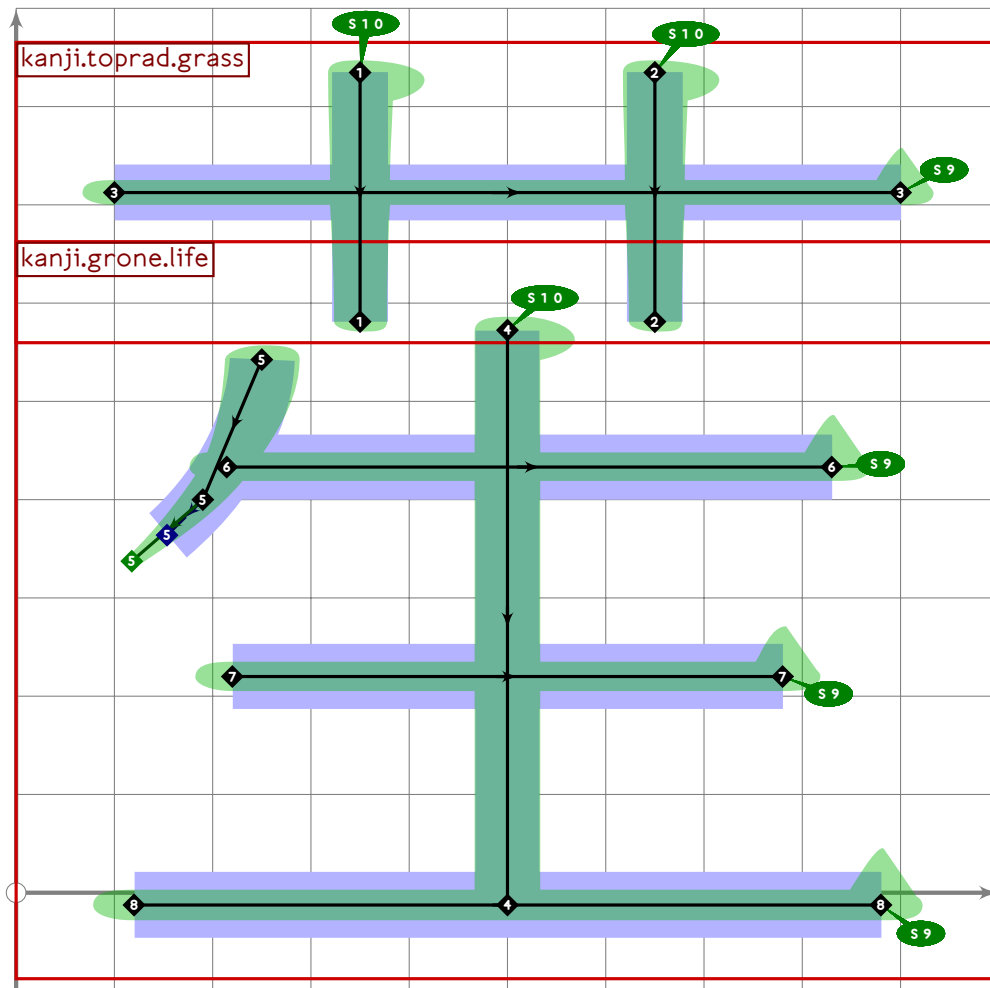


```

233 % extra
234 begint Suglyph("uni82F2",242);
235 build_kanji.tb(600,0)
236 (tsu_curve.kanji.toprad.grass)
237 (tsu_curve.kanji.rare.notwithstanding);
238 tsu_render;
239 endsuglyph;
240

```





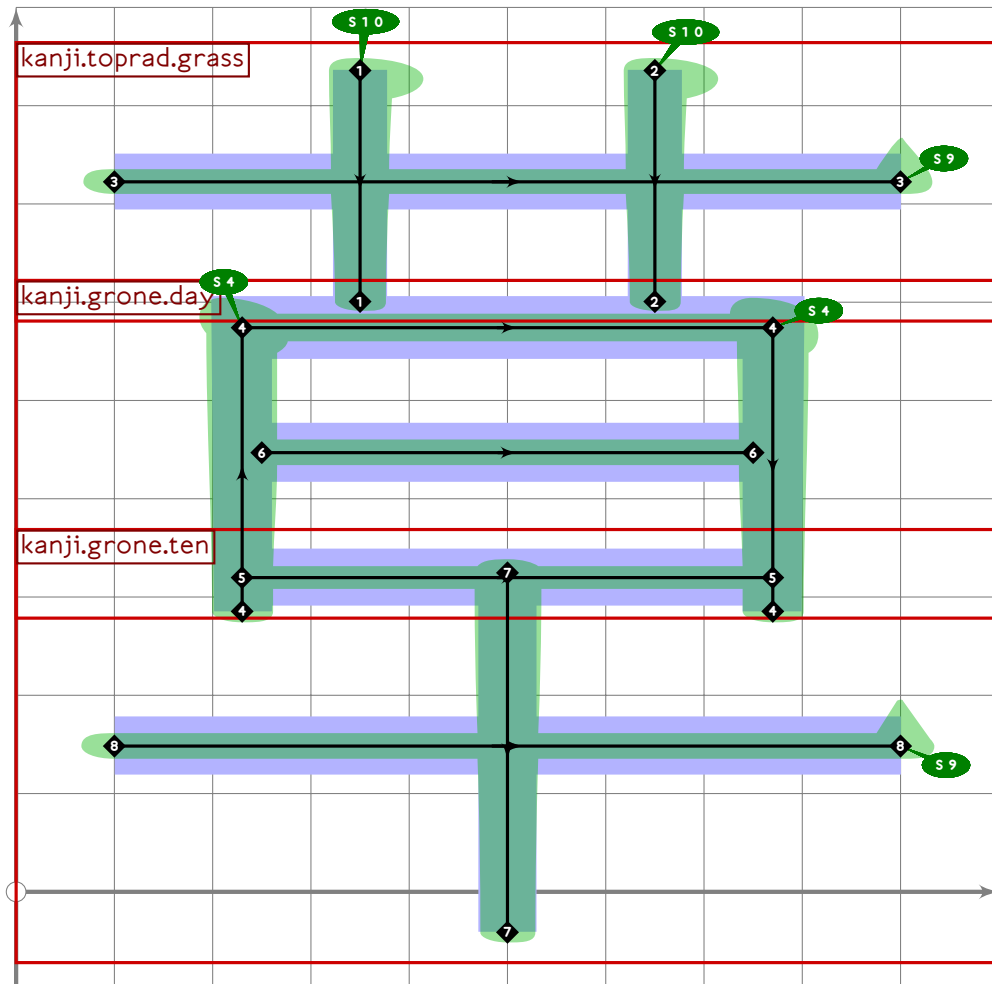
```

241 % extra
242 begint Suglyph("uni82FC";252);
243 build_kanji.tb(600,50)
244   (tsu_curve.kanji.toprad.grass)
245   (tsu_curve.kanji.grone.life);
246   tsu_render;
247 endtsuglyph;
248
249 _____
250
251 endfont;
252
253 _____

```

# tsuku-83.mp

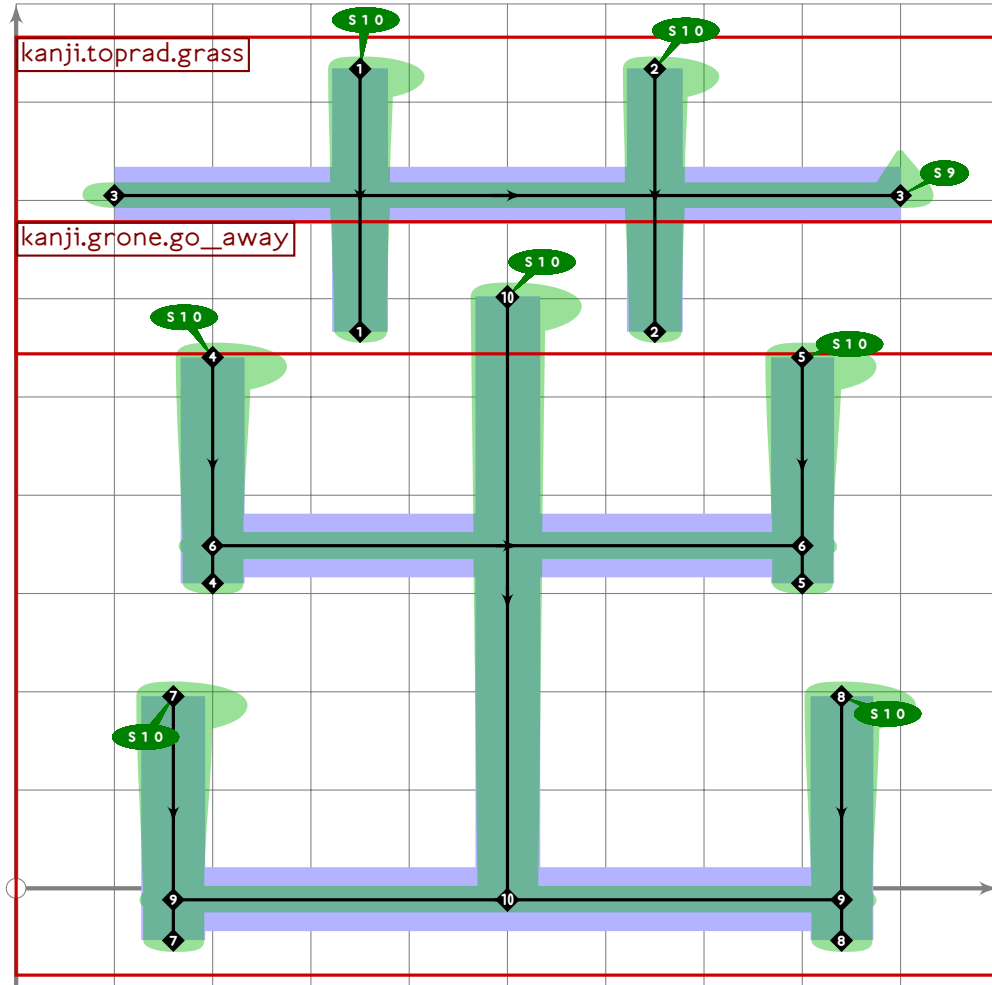
```
1 %  
2 % Unicode page 83 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input leftrad.mp;  
40 input radical.mp;  
41 input toprad.mp;  
42  
43 _____
```



```

44
45 vardef tsu_curve.kanji.grone.grass =
46   add_proof_box("kanji.grone.grass");
47   build_kanji.tb(600,10)
48     (tsu_curve.kanji.toprad.grass)
49     (tsu_curve.kanji.grone.early);
50 enddef;
51
52
53

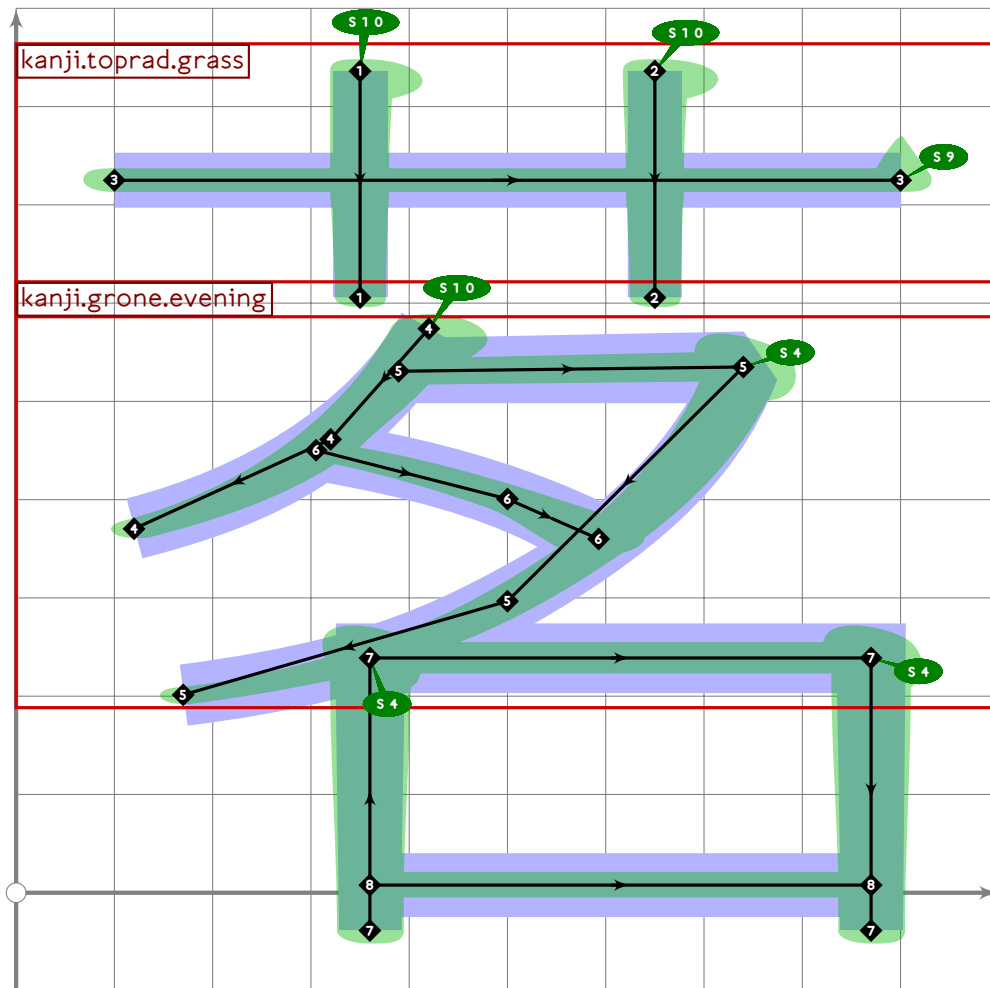
```



```

54 % extra
55 begintsuglyph("uni8301";1);
56   build_kanji.tb(600,80)
57     (tsu_curve.kanji.toprad.grass)
58     (tsu_curve.kanji.grone.go_away);
59   tsu_render;
60 endtsuglyph;
61

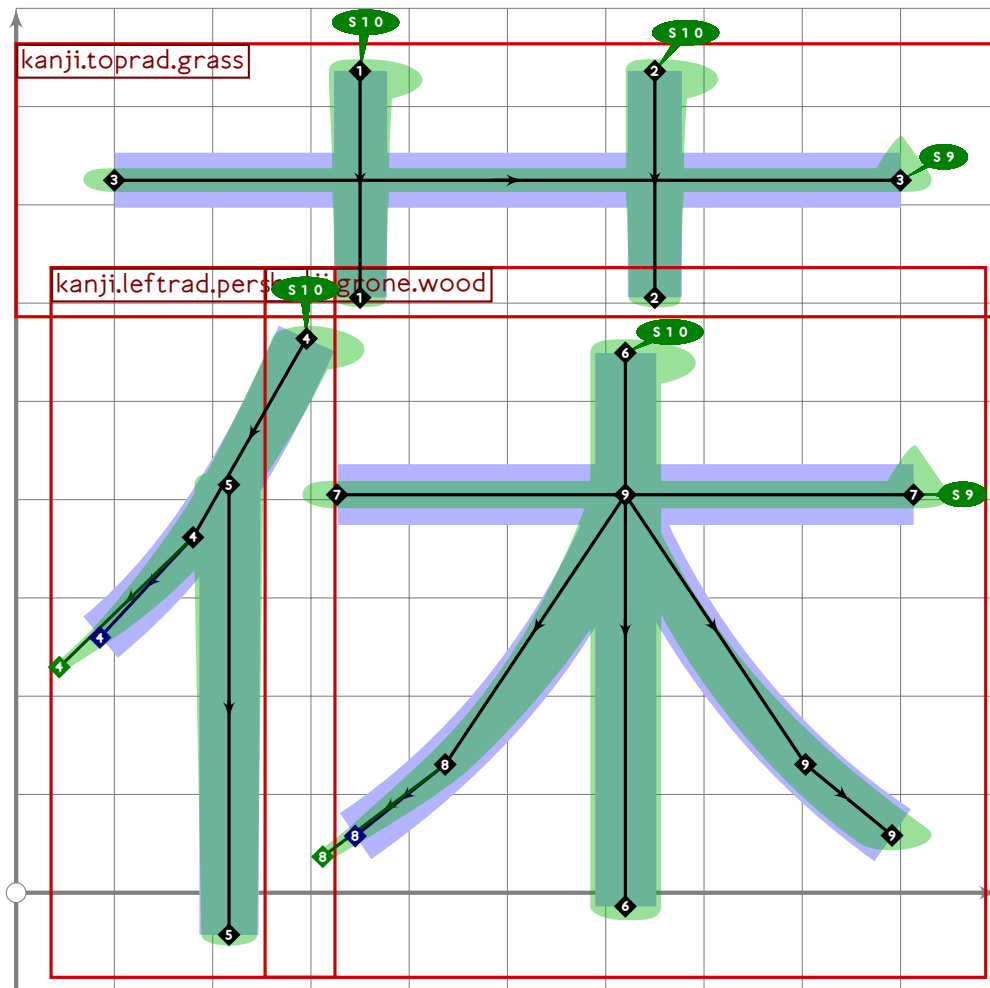
```



```

62 % myou/cha "tea"
63 begint Suglyph("uni8317",23);
64 build_kanji.tb(600,0)
65   (tsu_curve.kanji.toprad.grass)
66   (tsu_curve.kanji.grone.name);
67   tsu_render;
68   endtsuglyph;
69

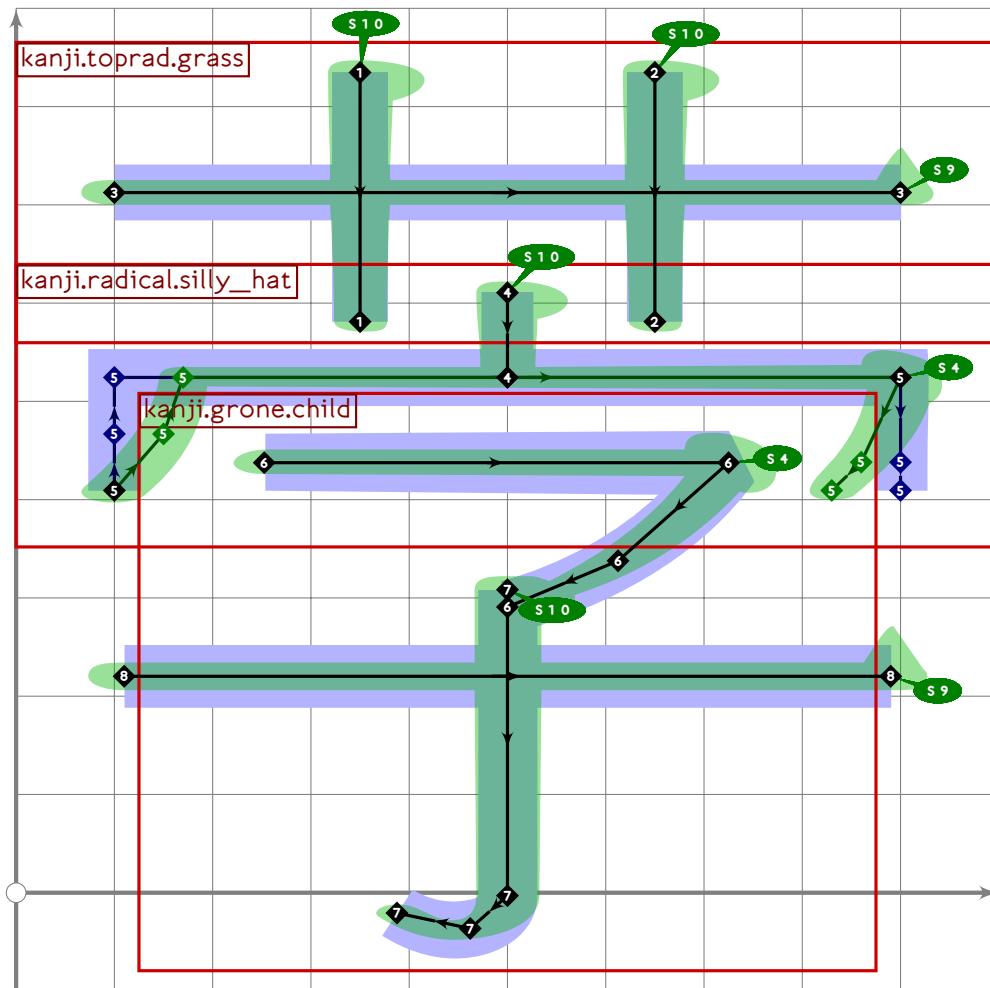
```



```

70 % extra
71 begint Suglyph("uni8320",32);
72 build_kanji.tb(600,0)
73   (tsu_curve.kanji.toprad.grass)
74   (tsu_curve.kanji.grone.vacation);
75   tsu_render;
76   endtsuglyph;
77

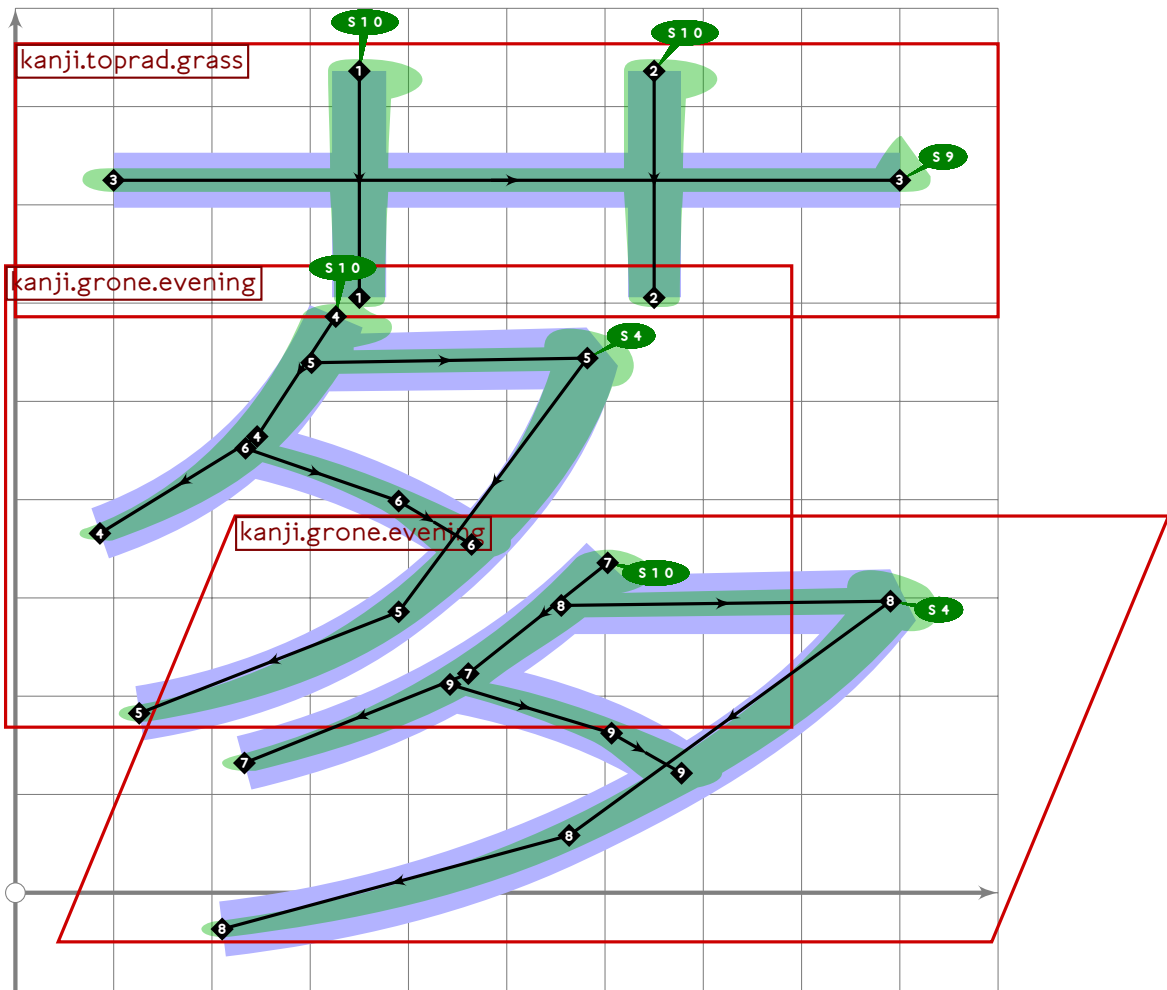
```



```

78 % extra
79 begint Suglyph("uni8321";33);
80 build_kanji.tb(600,50)
81   (tsu_curve.kanji.toprad.grass)
82   (tsu_curve.kanji.grone.character);
83   tsu_render;
84   endtsuglyph;
85

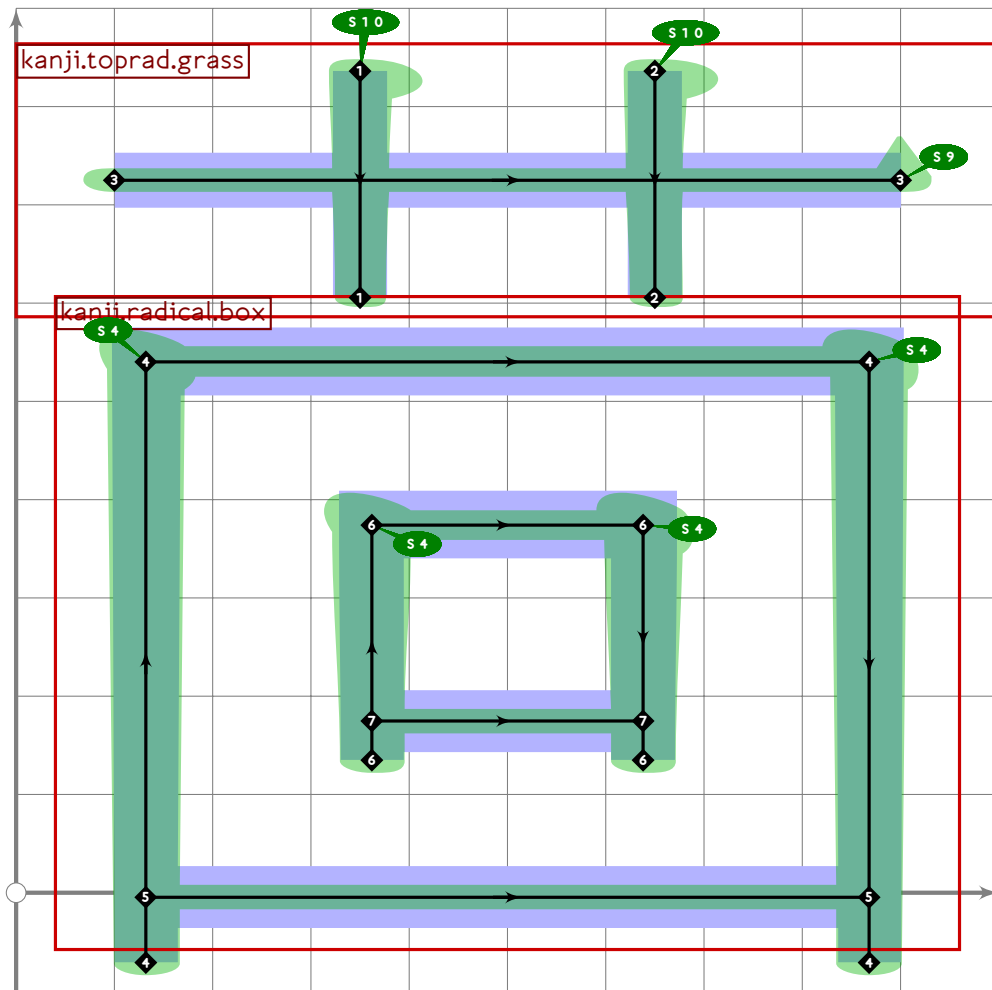
```



```

86 % extra
87 begint Suglyph("uni8324",36);
88 build_kanji.tb(600,0)
89   (tsu_curve.kanji.toprad.grass)
90   (tsu_curve.kanji.grtwo.many);
91   tsu_render;
92 endtsuglyph;
93

```

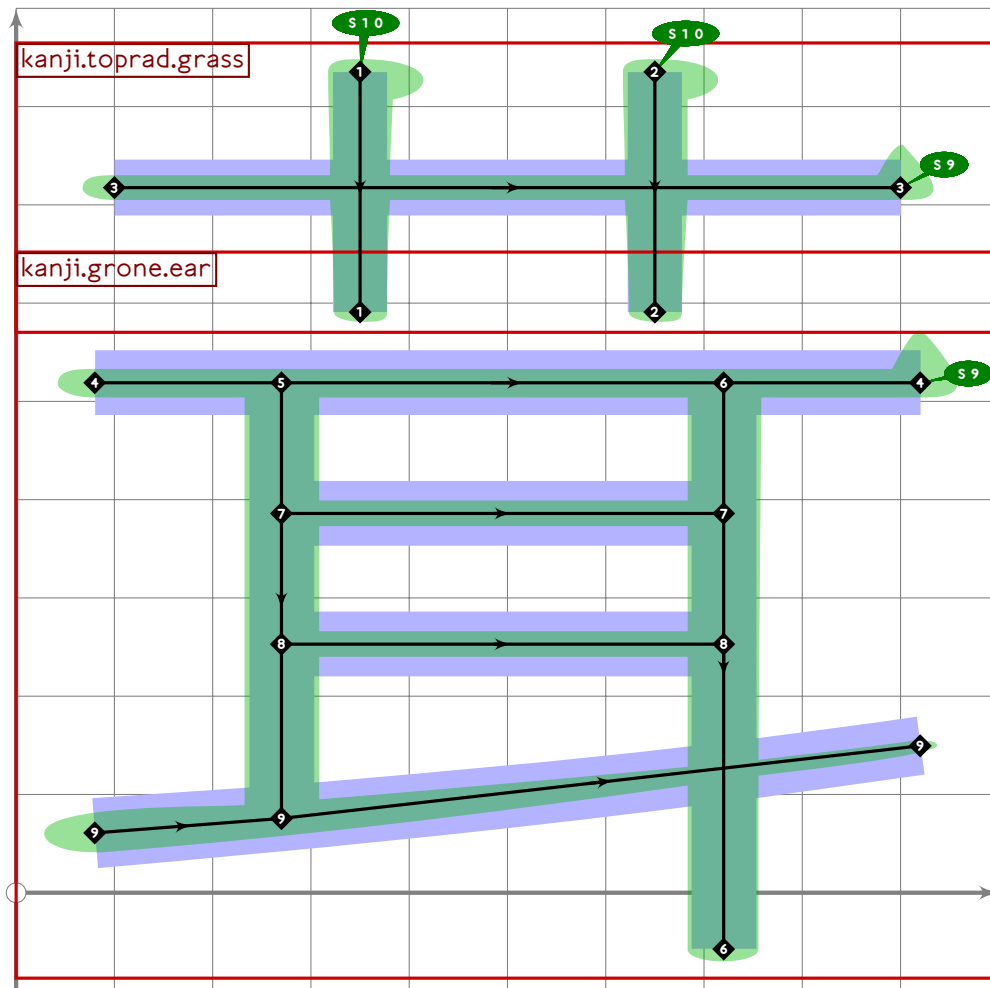


```

94 % extra
95 begint Suglyph("uni8334",52);
96 build_kanji.tb(600,0)
97   (tsu_curve.kanji.toprad.grass)
98   (build_kanji.sscale(scaled 0.92)(tsu_curve.kanji.grtwo.occurrences));
99   tsu_render;
100 endsuglyph;
101

```





```

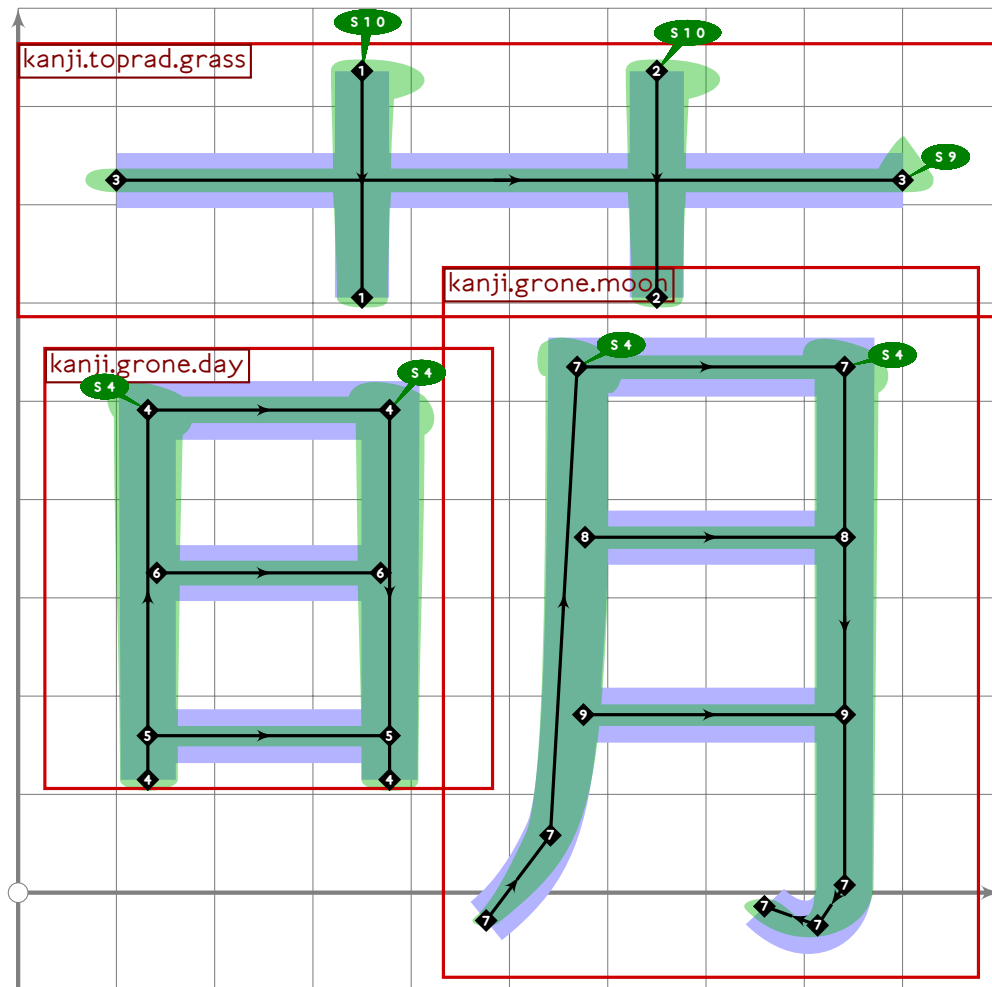
102 % extra
103 begintsuglyph("uni8338",56);
104 build_kanji.tb(600,30)
105 (tsu_curve.kanji.toprad.grass)
106 (tsu_curve.kanji.grone.ear);
107 tsu_render;
108 endtsuglyph;
109
110 % sou/kusa "grass"
111 begintsuglyph("uni8349",73);
112 tsu_curve.kanji.grone.grass;
113 tsu_render;
114 endtsuglyph;
115
116 _____
117
118 endfont;
119
120 _____

```

[see page 1371]

# tsuku-84.mp

```
1 %  
2 % Unicode page 84 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input gradetwo.mp;  
39 input leftrad.mp;  
40 input topfad.mp;  
41  
42 _____
```



43

```
44 vardef tsu_curve.kanji.grnine.moe =
45   add_proof_box("kanji.grnine.moe");
46   build_kanji.tb(600,0)
47     (tsu_curve.kanji.toprad.grass)
48     (tsu_curve.kanji.grtwo.light);
49 enddef;
50
51 

---


52
53 % moe (untranslatable)
54 beginsuglyph("uni840C";12); [see page 1379]
55   tsu_curve.kanji.grnine.moe;
56   tsu_render;
57 endsuglyph;
58
59 

---


60
61 endfont;
62
63 

---


```

# tsuku-86.mp

```
1 %
2 % Unicode page 86 (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38
39 

---


40
41 % mushi "bug"
42 begintsuglyph("uni866B";107); [see page 324]
43 tsu_curve.kanji.grone.bug;
44 tsu_render;
45 endtsuglyph;
46
47 

---

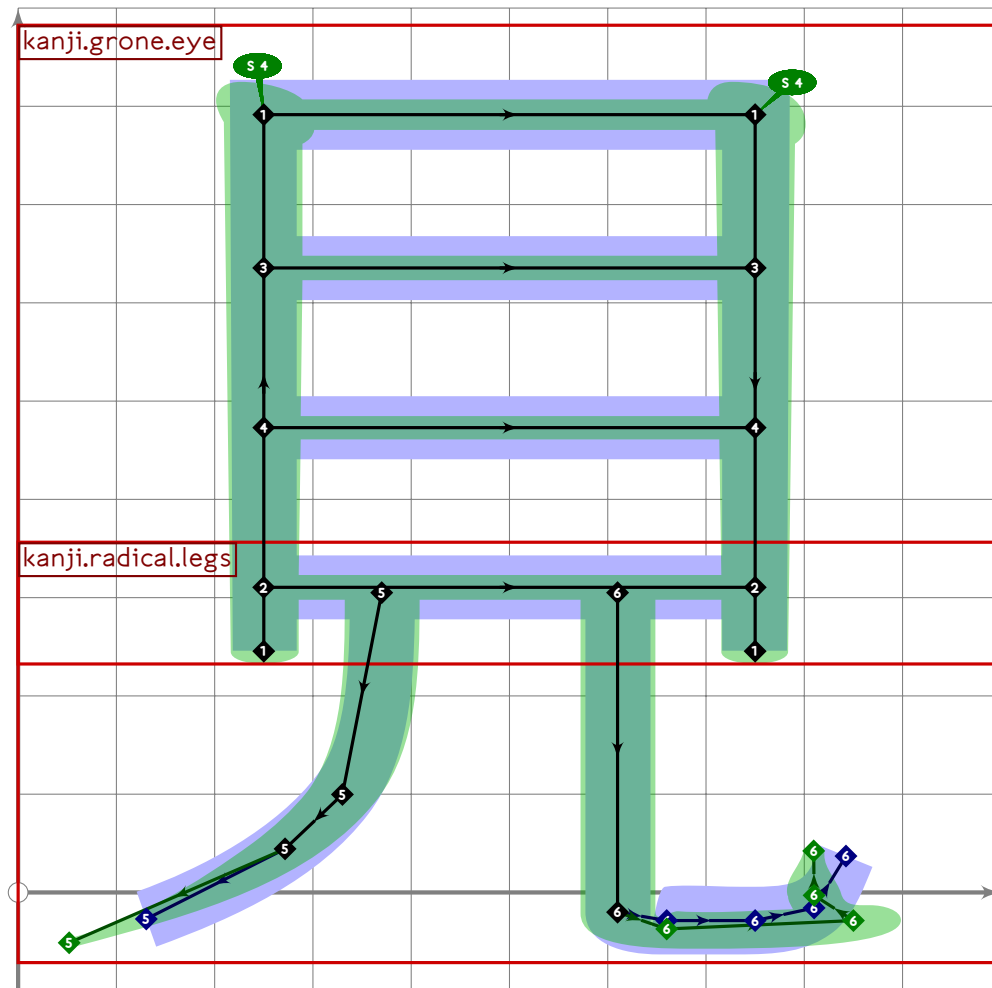

48
49 endfont;
50
51 

---


```

# tsuku-89.mp

```
1 %  
2 % Unicode page 89 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradeone.mp;  
38 input leftrad.mp;  
39 input radical.mp;  
40  
41 _____
```

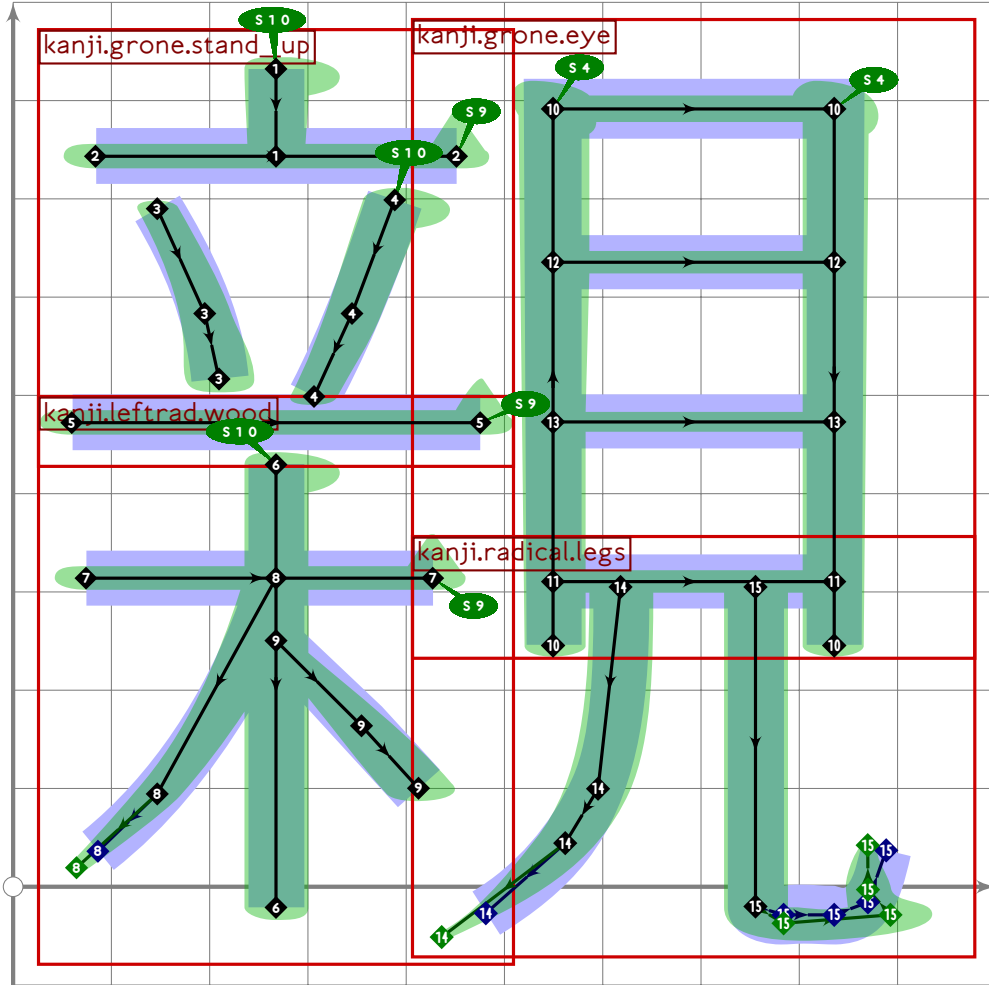


```
42  
43 vardef tsu_curve.kanji.grone.see =
```

```

44 add_proof_box("kanji.grone.see");
45 build_kanji.level(build_kanji.tb(300,70)
46   (tsu_curve.kanji.grone.eye)
47   (tsu_curve.kanji.radical.legs));
48 enddef;
49
50

```



```

51
52 vardef tsu_curve.kanji.grtwo.parent =
53   add_proof_box("kanji.grtwo.parent");
54   build_kanji.level(build_kanji.lr(460,50)
55     (build_kanji.tb(460,20)
56       (tsu_curve.kanji.grone.see)
57       (tsu_curve.kanji.grone.see))
58     (tsu_curve.kanji.grone.see));
59 enddef;
60
61
62
63 % ken/mi "see"
64 begint Suglyph("uni898B";139);

```

[see page 1381]

```
65 tsu_curve.kanji.grone.see;
66 tsu_render;
67 endtsuglyph;
68
69 % shin/oya/shita "parent"
70 begintsuglyph("uni89AA",170); [see page 1382]
71 tsu_curve.kanji.grtwo.parent;
72 tsu_render;
73 endtsuglyph;
74
75 _____
76
77 endfont;
78
79 _____
```

# tsuku-8a.mp

```
1 %
2 % Unicode page 8a (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

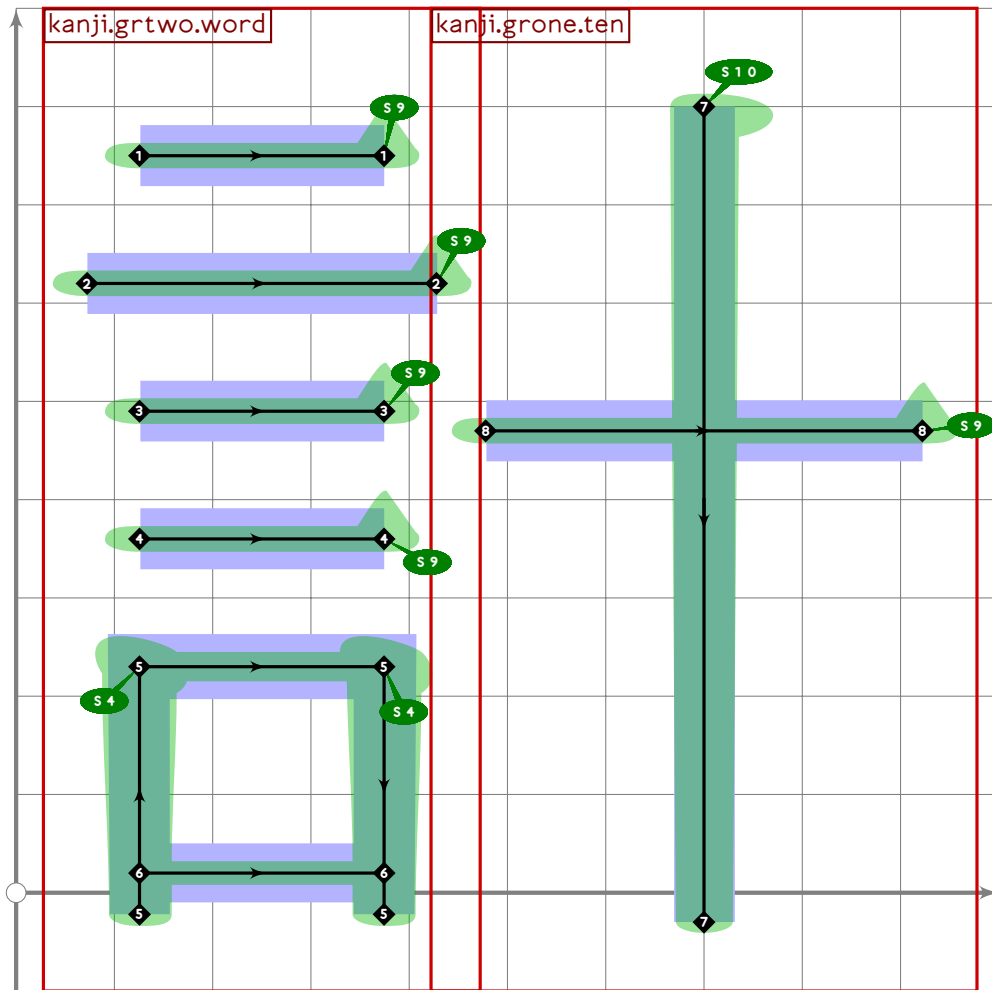
---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradefive.mp;
38 input gradefour.mp;
39 input gradenine.mp;
40 input gradeone.mp;
41 input gradesix.mp;
42 input gradethree.mp;
43 input gradetwo.mp;
44 input leftrad.mp;
45 input radical.mp;
46 input rare.mp;
47
48 

---


```

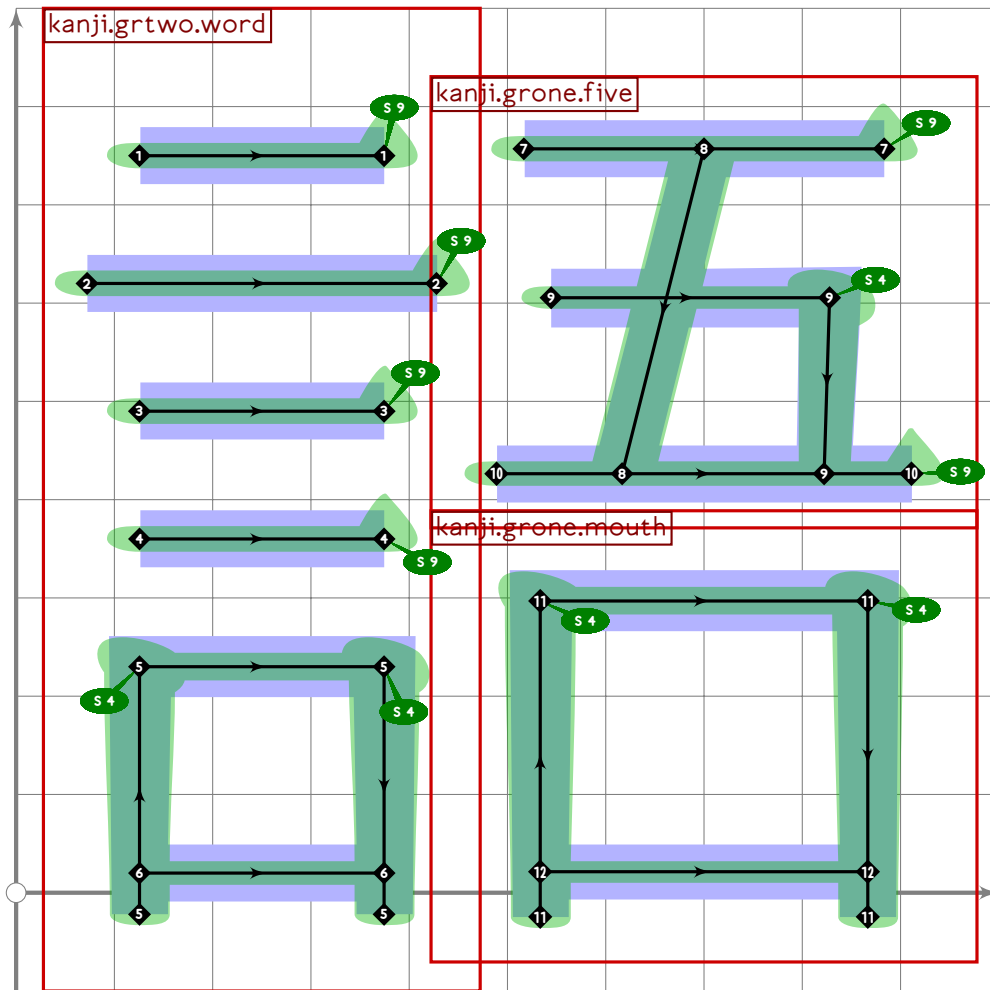




```

49
50 vardef tsu_curve.kanji.grtwo.plan =
51   add_proof_box("kanji.grtwo.plan");
52   build_kanji.level(build_kanji.lr(450,0)
53     (tsu_curve.kanji.grtwo.word)
54     (tsu_curve.kanji.grone.ten;
55     bp[sp-1]:=bp[sp-1] shifted (0,70)));
56 enddef;

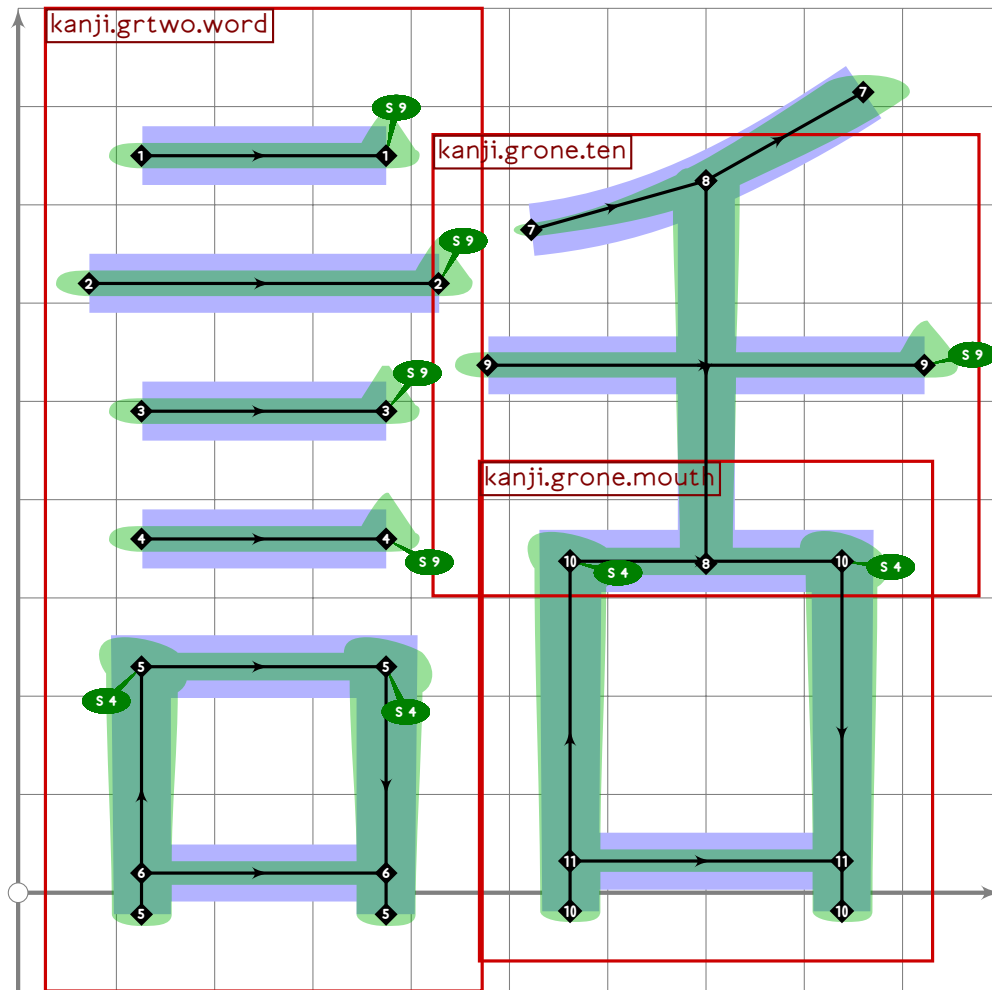
```



```

57
58 vardef tsu_curve.kanji.grtwo.language =
59   add_proof_box("kanji.grtwo.language");
60   build_kanji.level(build_kanji.lr(450,0)
61     (tsu_curve.kanji.grtwo.word)
62     (tsu_xform(identity yscaled 0.95)
63       (tsu_curve.kanji.grnine.my)));
64 enddef;

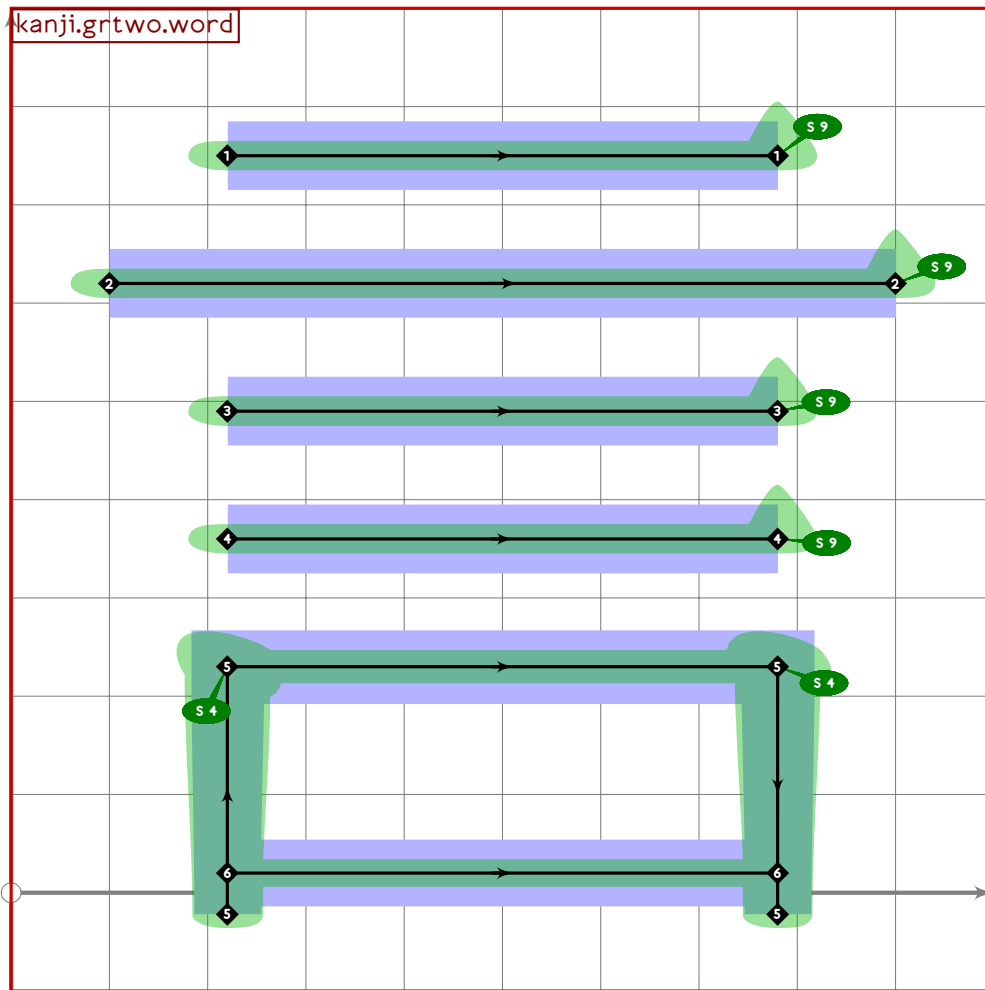
```



```

65
66 vardef tsu_curve.kanji.grtwo.talk =
67   add_proof_box("kanji.grtwo.talk");
68   build_kanji.level(build_kanji.lr(450,0)
69     (tsu_curve.kanji.grtwo.word)
70     (build_kanji.add_beret(tsu_xform(identity yscaled 0.88)
71       (tsu_curve.kanji.grtwo.old))));
72 enddef;

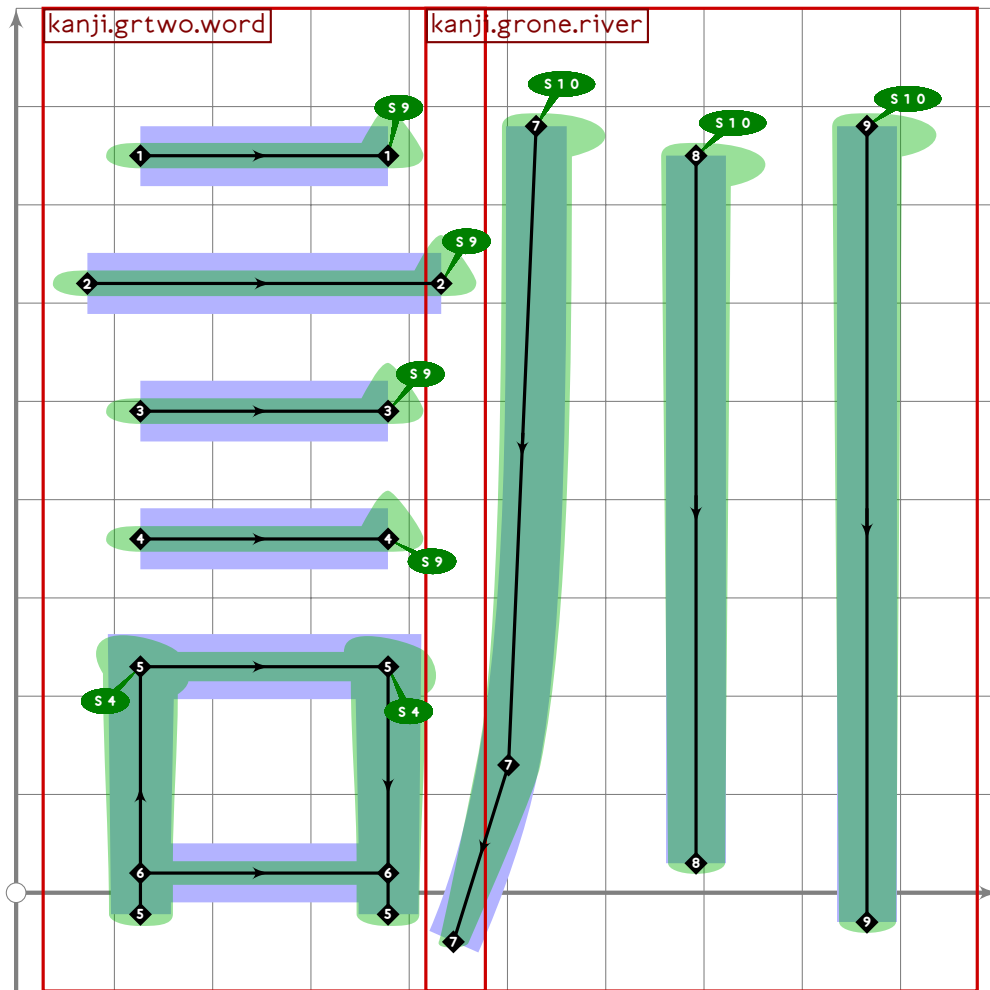
```



```

73
74 vardef tsu_curve.kanji.grtwo.word =
75   add_proof_box("kanji.grtwo.word");
76   bp[sp]:=(220,750)-(780,750);
77   bq[sp]:=(1.6,1.6)-(1.6,1.6);
78   bo_serif[sp][1]:=9;
79   bp[sp*1]:=(100,620)-(900,620);
80   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
81   bo_serif[sp*1][1]:=9;
82   bp[sp*2]:=(220,490)-(780,490);
83   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
84   bo_serif[sp*2][1]:=9;
85   bp[sp*3]:=(220,360)-(780,360);
86   bq[sp*3]:=(1.6,1.6)-(1.6,1.6);
87   bo_serif[sp*3][1]:=9;
88   sp:=sp*4;
89   build_kanji.box((220,230),(780,20));
90 enddef;
91
92

```



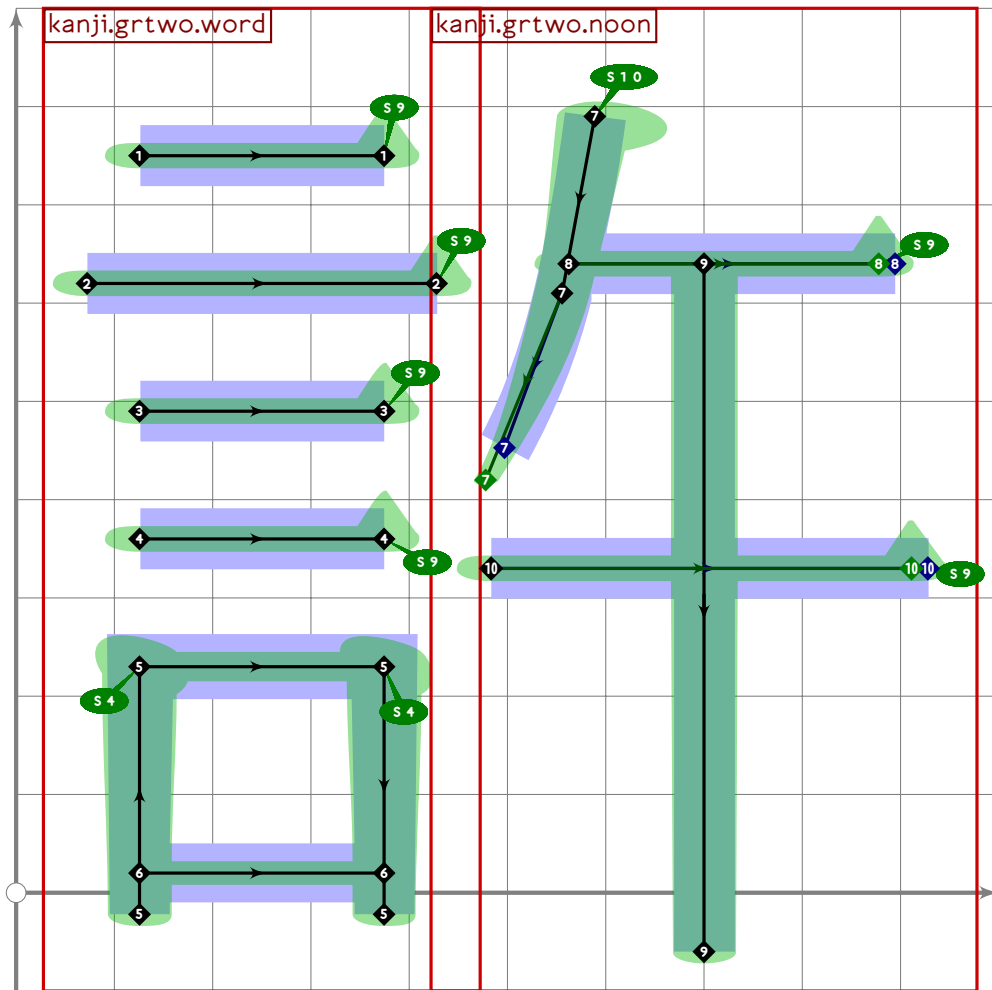
```

93
94 vardef tsu_curve.kanji.grfour.kunyomi =
95   add_proof_box("kanji.grfour.kunyomi");
96   build_kanji.level(build_kanji.lr(450,10)
97     (tsu_curve.kanji.grtwo.word)
98     (tsu_curve.kanji.grone.river));
99 enddef;

```

100

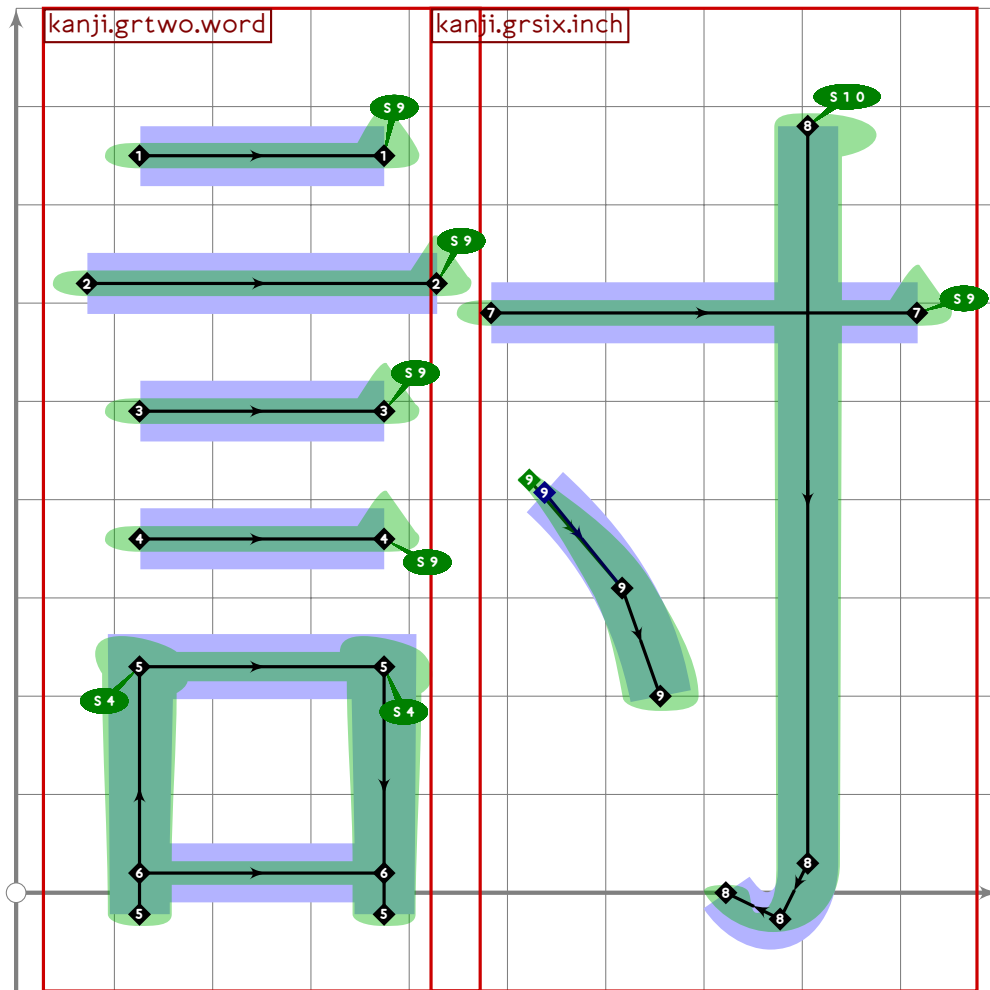
101



```

102
103 vardef tsu_curve.kanji.grfive.permit =
104   add_proof_box("kanji.grfive.permit");
105   build_kanji.level(build_kanji.lr(450,0)
106     (tsu_curve.kanji.grtwo.word)
107     (tsu_curve.kanji.grtwo.noon));
108 enddef;
109
110

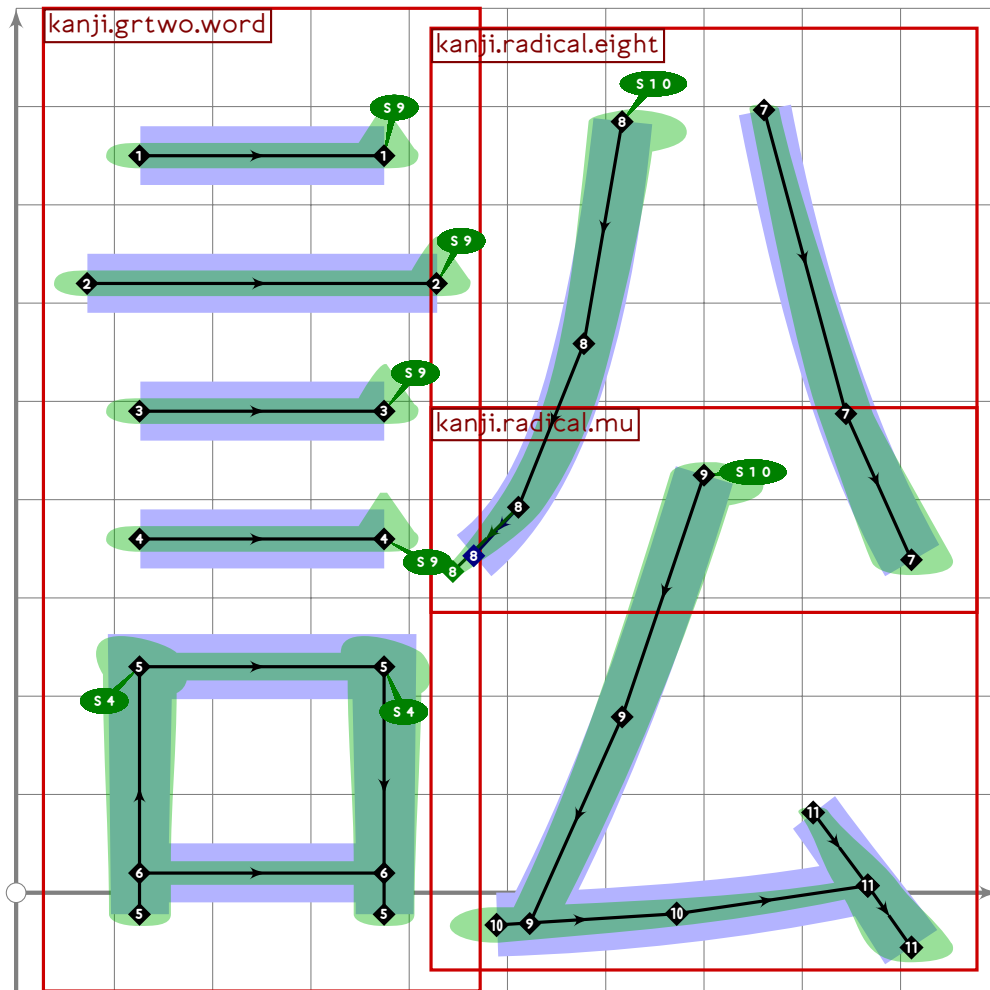
```



```

111
112 vardef tsu_curve.kanji.grsix.attack =
113   add_proof_box("kanji.grsix.attack");
114   build_kanji.level(build_kanji.lr(450,0)
115     (tsu_curve.kanji.grtwo.word)
116     (tsu_curve.kanji.grsix.inch));
117 enddef;
118
119
120
121 vardef tsu_curve.kanji.greight.revise =
122   add_proof_box("kanji.greight.revise");
123   build_kanji.level(build_kanji.lr(450,0)
124     (tsu_curve.kanji.grtwo.word)
125     (tsu_curve.kanji.grthree.thumbtack));
126 enddef;

```



```

127
128 vardef tsu_curve.kanji.greight.sue =
129   add_proof_box("kanji.greight.sue");
130   build_kanji.level(build_kanji.lr(450,0)
131     (tsu_curve.kanji.grtwo.word)
132     (tsu_curve.kanji.grtwo.public));
133 enddef;

```

134  
135

```

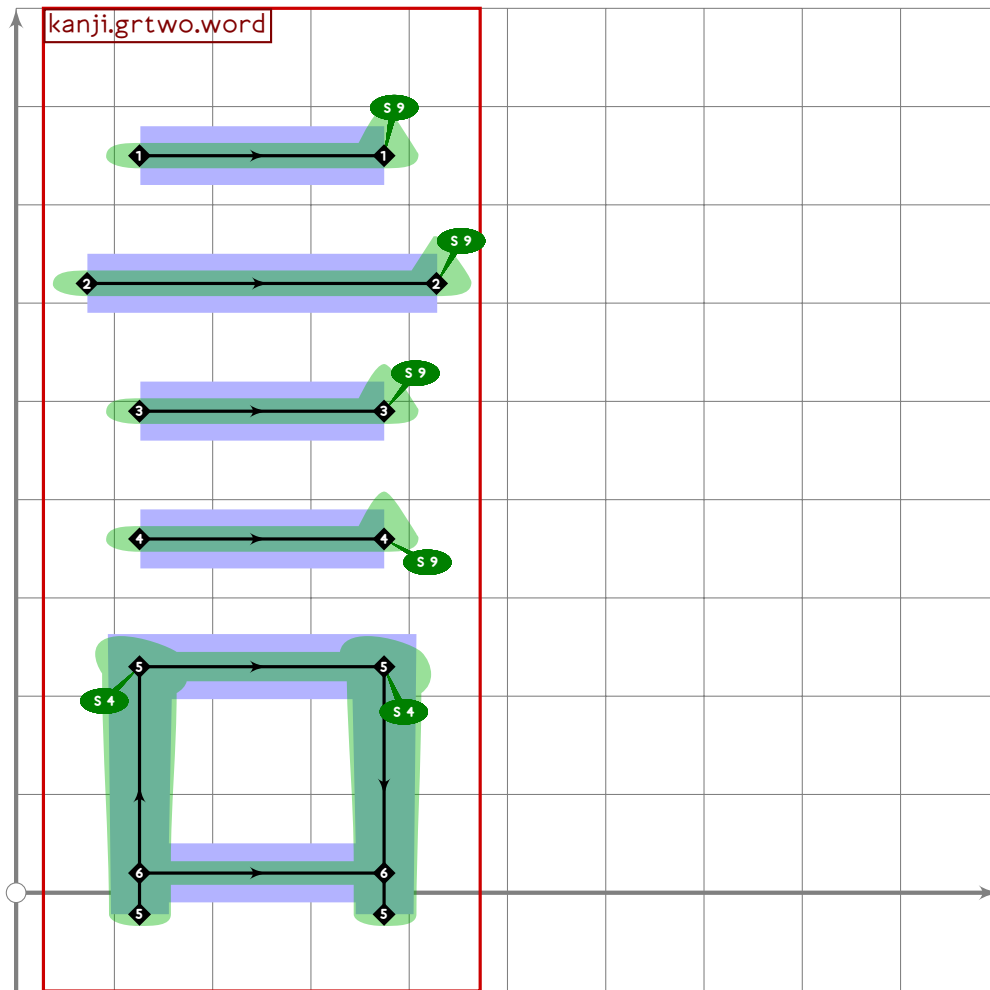
136
137 % gen/i "word"
138 begint Suglyph("uni8A00",0);
139   tsu_curve.kanji.grtwo.word;
140   tsu_render;
141   endtsuglyph;

```

[see page 1388]

142



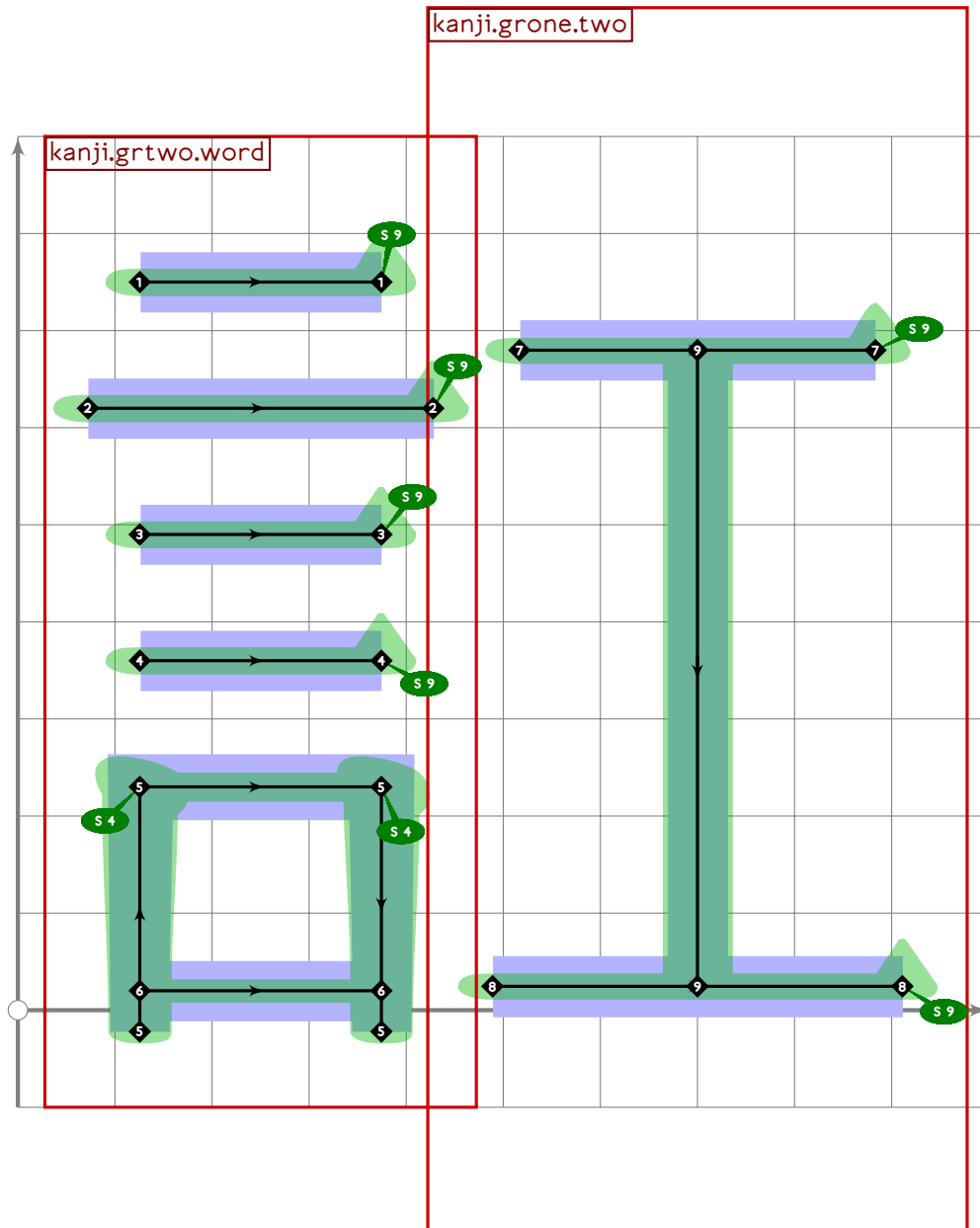


```

143 % extra (word left radical)
144 begintsuglyph("uni8A01";1);
145 build_kanji.lr(450,0)
146 (tsu_curve.kanji.grtwo.word)
147 ();
148 tsu_render;
149 endtsuglyph;
150
151 % kei/haka "plan"
152 begintsuglyph("uni8A08";8);
153 tsu_curve.kanji.grtwo.plan;
154 tsu_render;
155 endtsuglyph;
156

```

[see page 1385]



```

157 % extra: kou "become confused"
158 begintsuglyph("uni8A0C";12);
159 build_kanji.level(build_kanji.lr(450,0)
160   (tsu_curve.kanji.grtwo.word)
161   (build_kanji.sscale(yscaled 1.26)(tsu_curve.kanji.grtwo.craft)));
162 tsu_render;
163 endsuglyph;
164
165 % tou/u "attack"
166 begintsuglyph("uni8A0E";14);
167 tsu_curve.kanji.grsix.attack;
168 tsu_render;
169 endsuglyph;
170

```

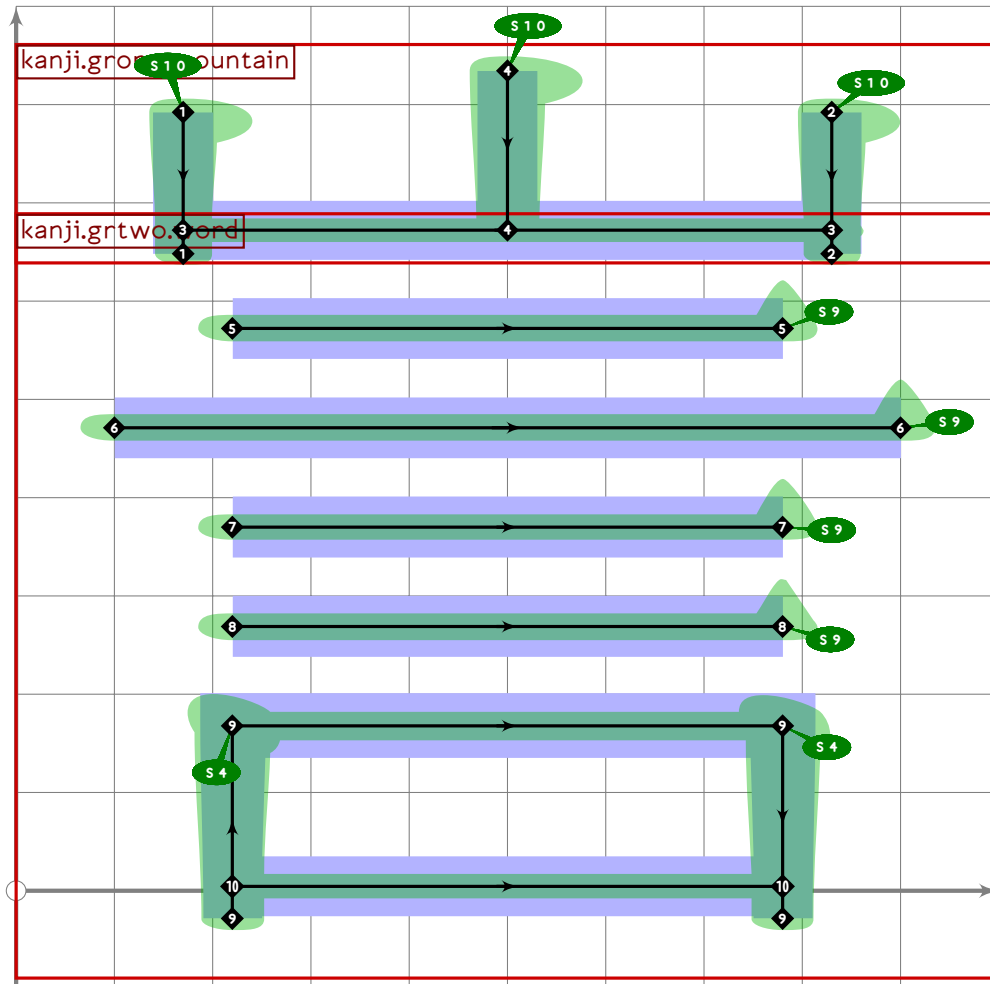
[see page 1391]

```

171 % kun "native Japanese kanji pronunciation"
172 % of course "kun" is the "on" reading of this kanji, don't be silly
173 begintsuglyph("uni8A13";19);
174 tsu_curve.kanji.grfour.kunyomi;
175 tsu_render;
176 endsuglyph;
177

```

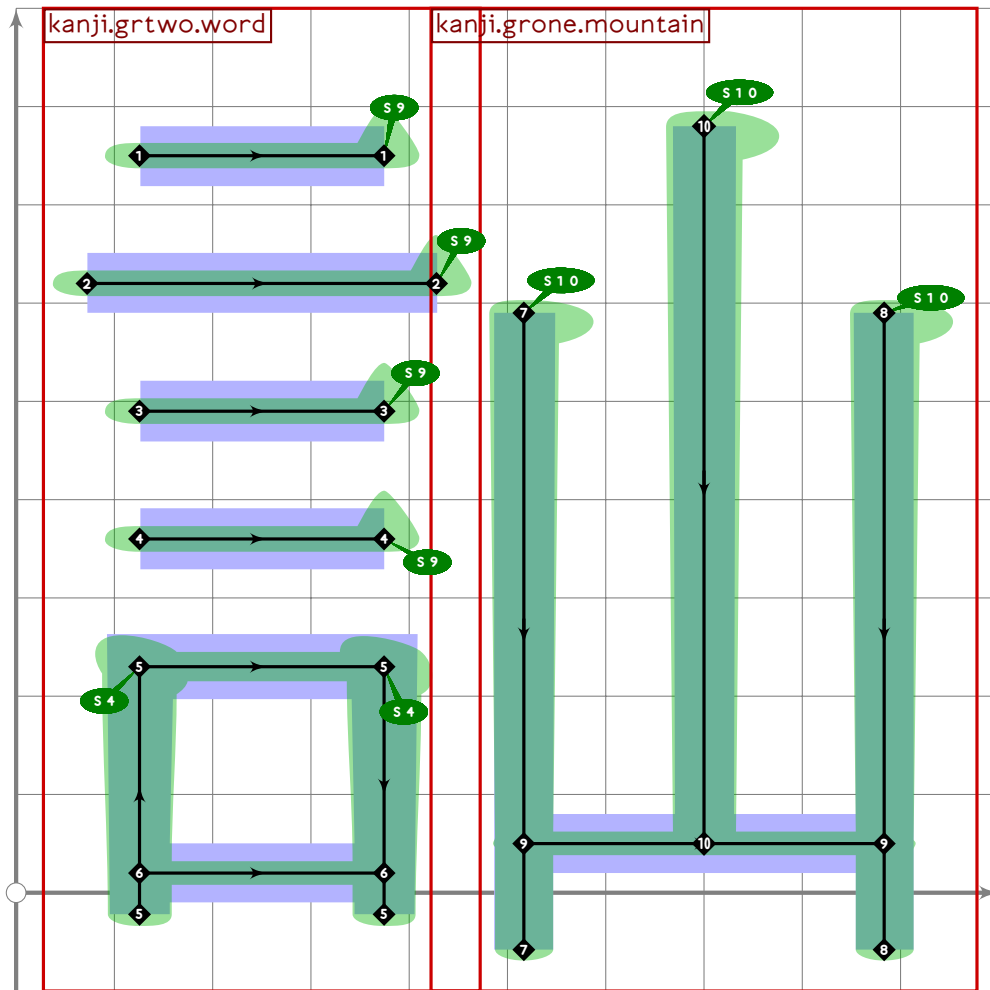
[see page 1389]



```

178 % extra
179 begintsuglyph("uni8A14";20);
180 build_kanji.level(build_kanji.tb(650,0)
181   (tsu_curve.kanji.grone.mountain)
182   (tsu_curve.kanji.grtwo.word));
183 tsu_render;
184 endsuglyph;
185

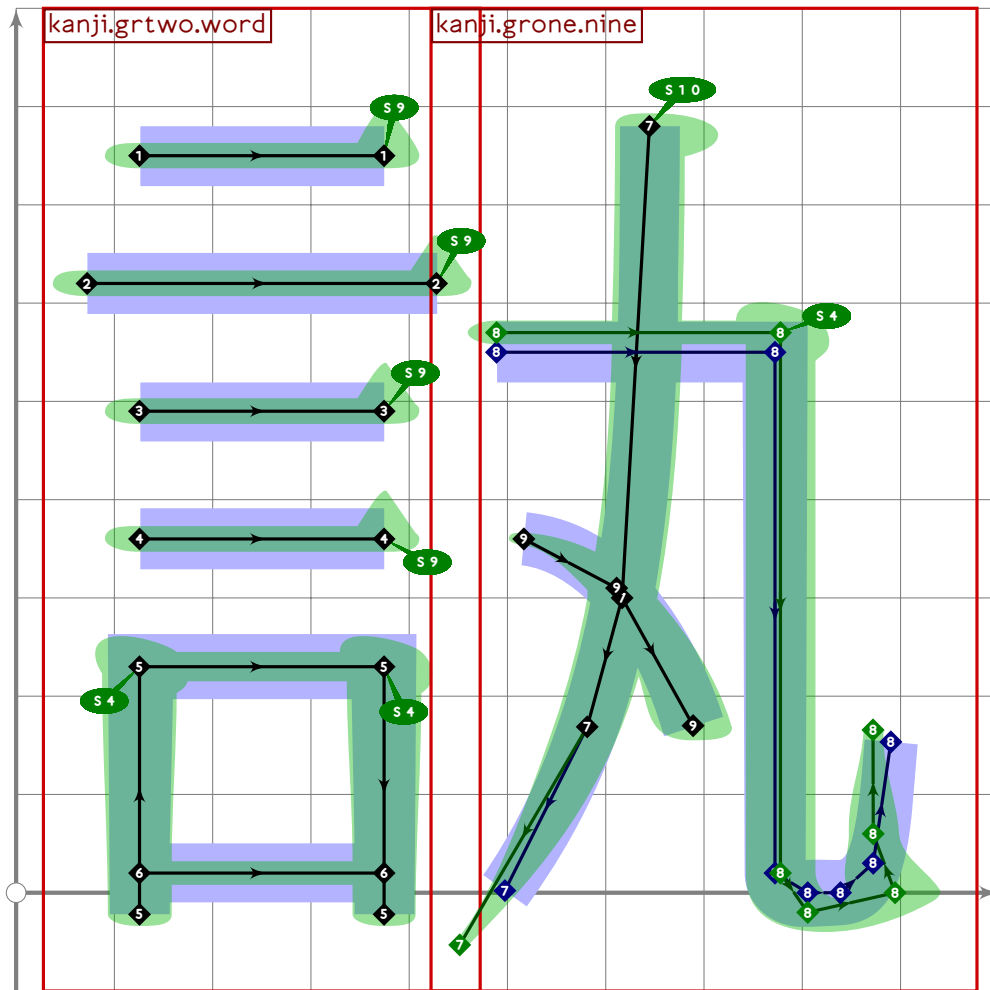
```



```

186 % extra
187 begint Suglyph("uni8A15";21);
188   build_kanji.level(build_kanji.lr(450,0)
189     (tsu_curve.kanji.grtwo.word)
190     (tsu_curve.kanji.grone.mountain));
191   tsu_render;
192   endtsuglyph;
193

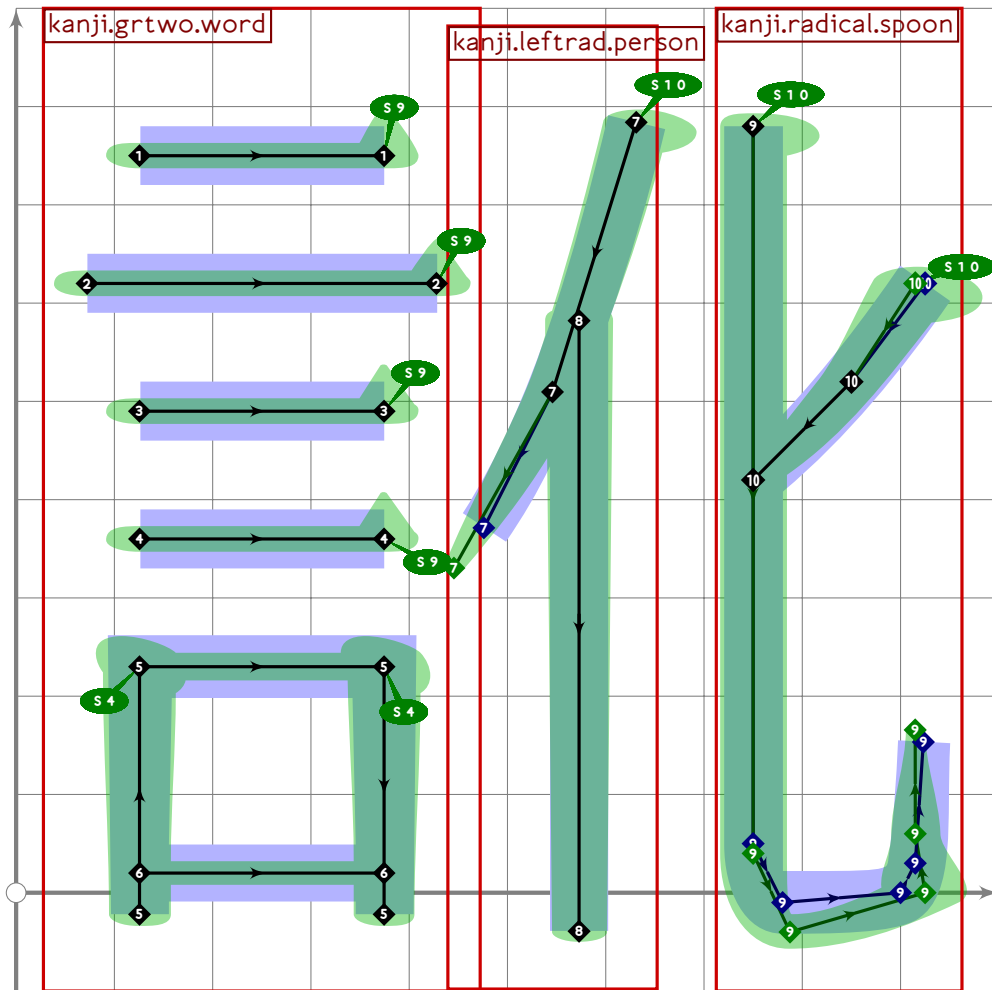
```



```

194 % extra
195 begint Suglyph("uni8A19";25);
196 build_kanji.level(build_kanji.lr(450,0)
197   (tsu_curve.kanji.grtwo.word)
198   (tsu_curve.kanji.grtwo.circle));
199 tsu_render;
200 endsuglyph;
201

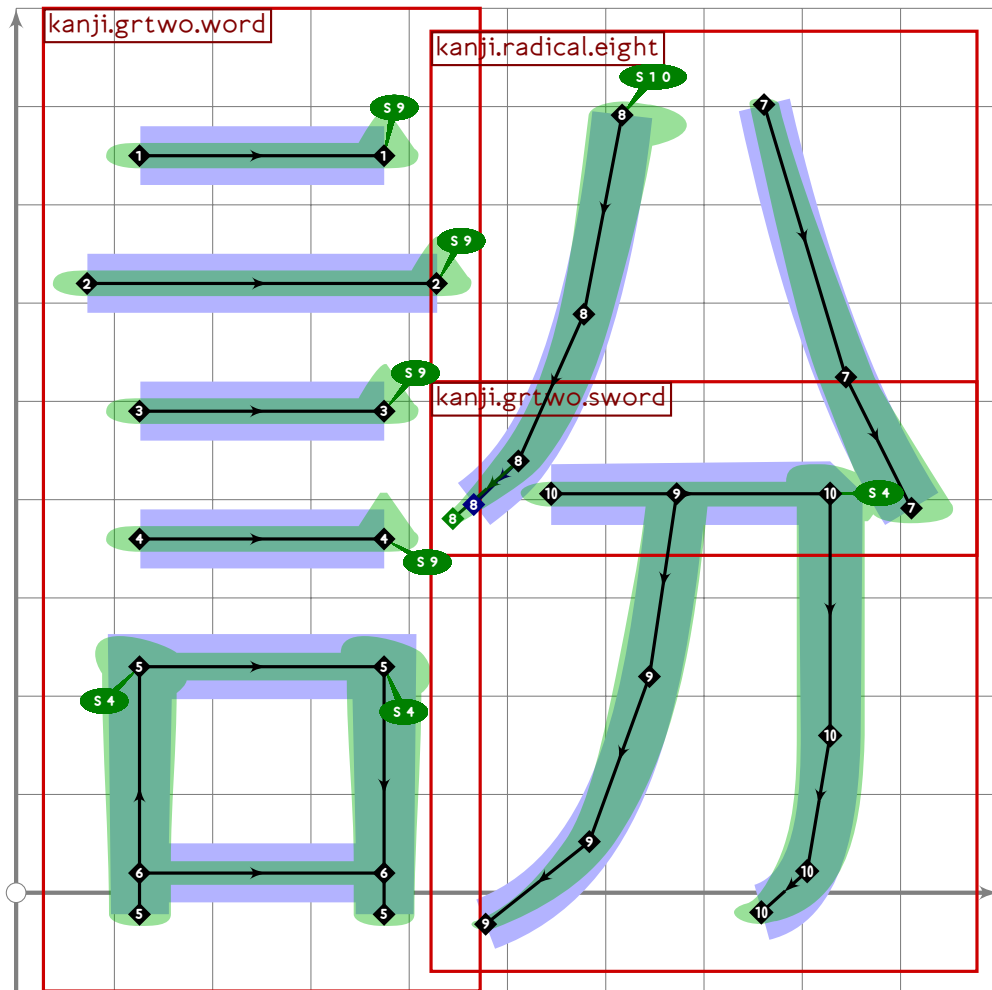
```



```

202 % ka/nama "accent (speech)"
203 begint Suglyph("uni8A1B";27);
204 build_kanji.level(build_kanji.lr(450,0)
205   (tsu_curve.kanji.grtwo.word)
206   (tsu_curve.kanji.grthree.change));
207 tsu_render;
208 endsuglyph;
209

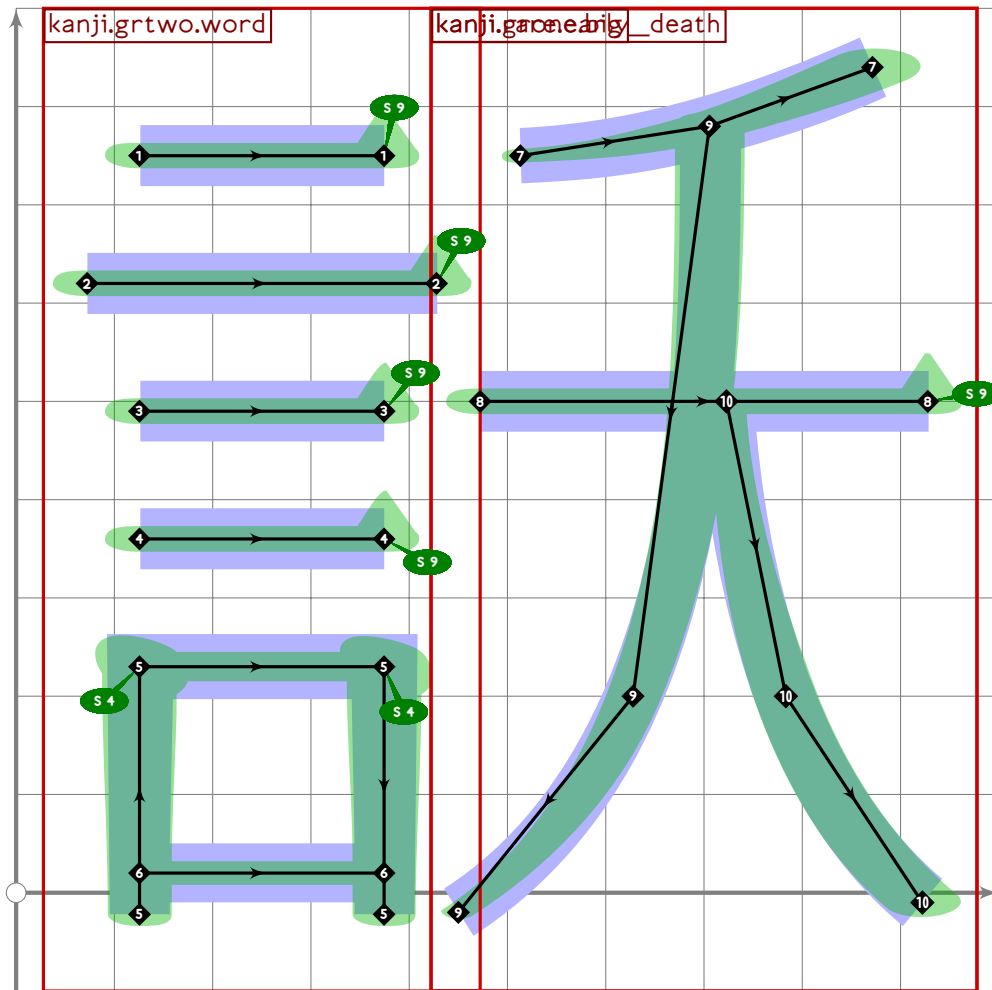
```



```

210 % extra
211 begint Suglyph("uni8A1C",28);
212 build_kanji.level(build_kanji.lr(450,0)
213   (tsu_curve.kanji.grtwo.word)
214   (tsu_curve.kanji.grtwo.minute));
215 tsu_render;
216 endsuglyph;
217

```



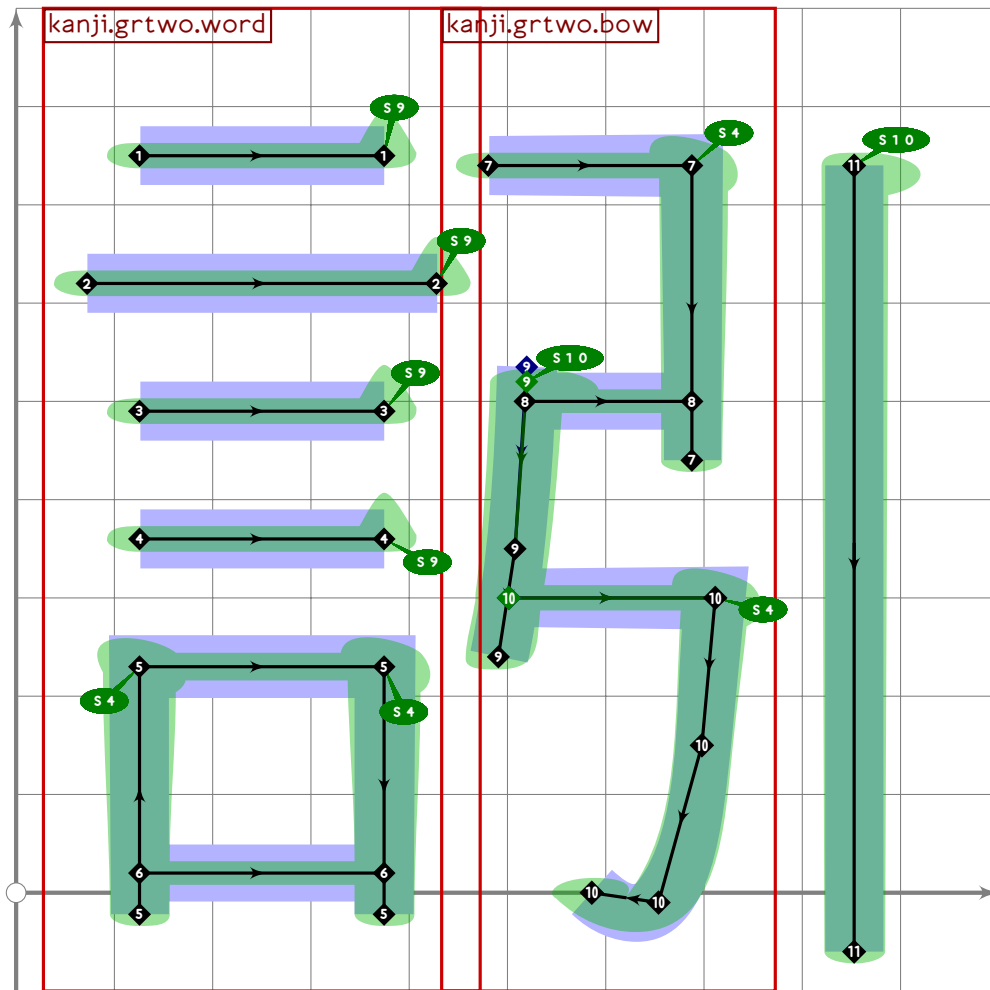
```

218 % extra
219 begintsuglyph("uni8A1E";30);
220 build_kanji.level(build_kanji.lr(450,0)
221   (tsu_curve.kanji.grtwo.word)
222   (tsu_curve.kanji.rare.early_death));
223 tsu_render;
224 endsuglyph;
225
226 % shou "sue"
227 begintsuglyph("uni8A1F";31);
228 tsu_curve.kanji.greight.sue;
229 tsu_render;
230 endsuglyph;
231

```

[see page 1392]

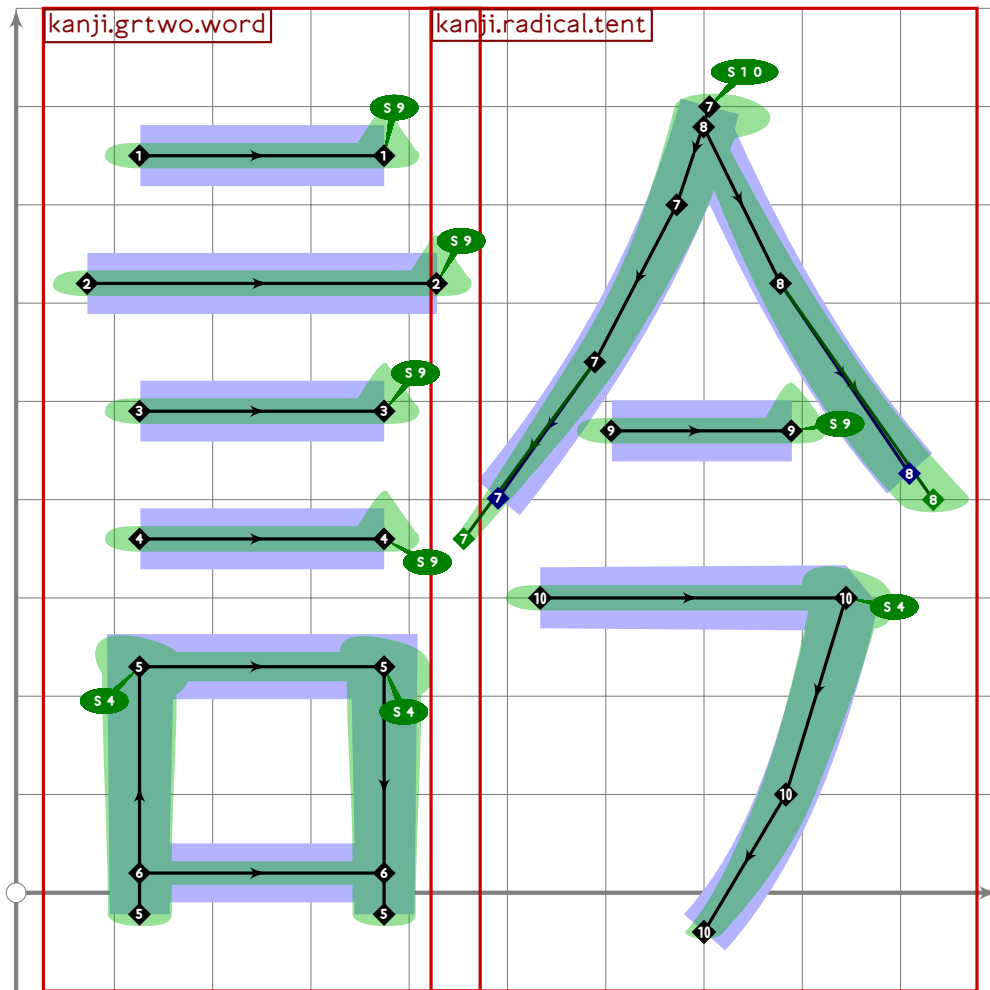




```

232 % extra
233 begint Suglyph("uni8A20";32);
234 build_kanji.level(build_kanji.lr(450,0)
235   (tsu_curve.kanji.grtwo.word)
236   (tsu_curve.kanji.grtwo.pull));
237 tsu_render;
238 endsuglyph;
239

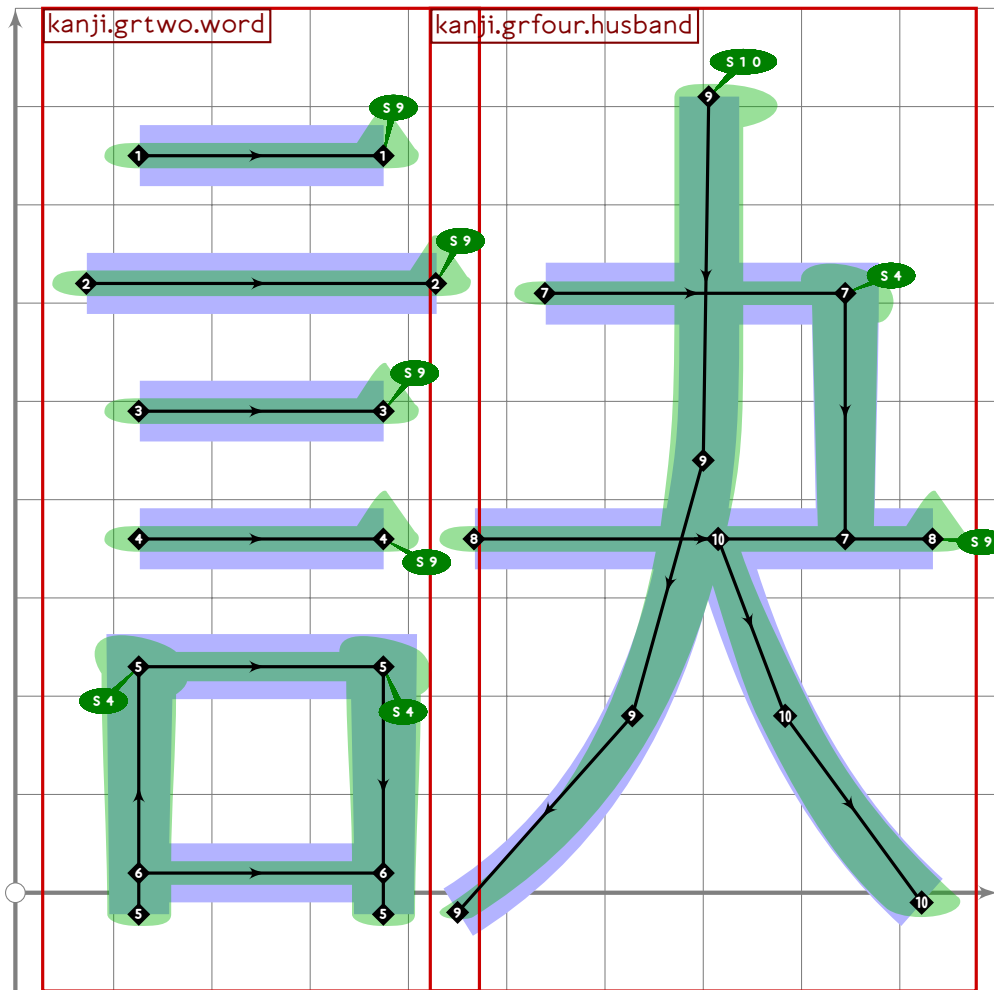
```



```

240 % extra
241 begint Suglyph("uni8A21",33);
242 build_kanji.level(build_kanji.lr(450,0)
243   (tsu_curve.kanji.grtwo.word)
244   (tsu_curve.kanji.grtwo.now));
245 tsu_render;
246 endsuglyph;
247

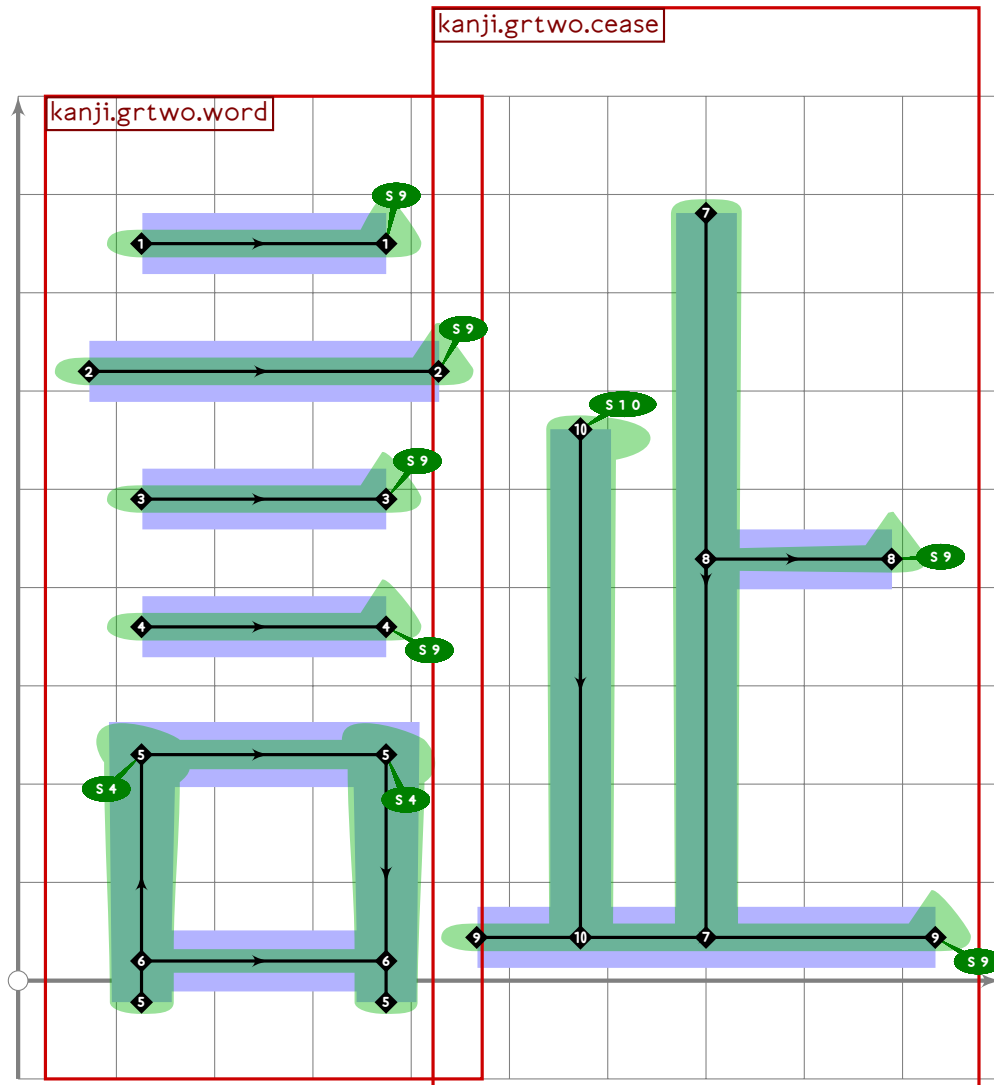
```



```

248 % extra: separation
249 begint Suglyph("uni8A23",35);
250 build_kanji.level(build_kanji.lr(450,0)
251   (tsu_curve.kanji.grtwo.word)
252   (tsu_curve.kanji.rare.decide));
253 tsu_render;
254 ends Suglyph;
255

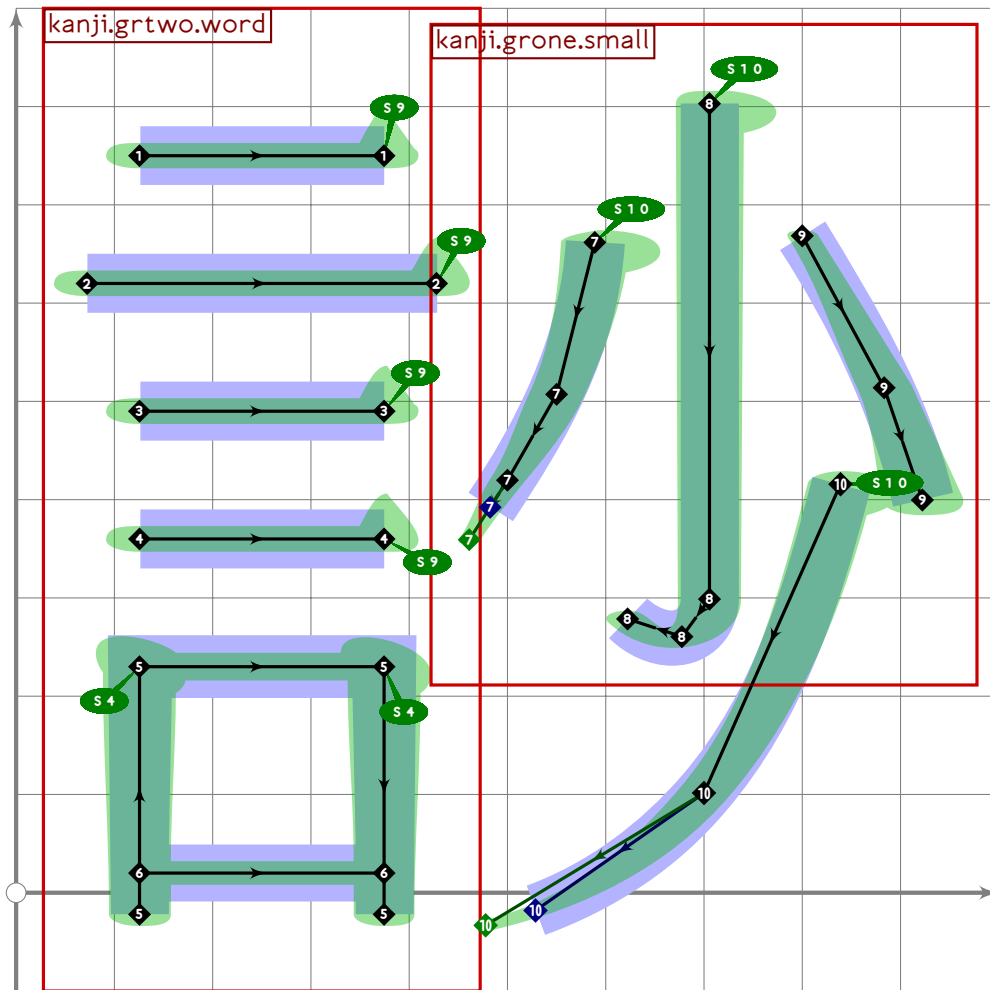
```



```

256 % extra
257 begint Suglyph("uni8A28";40);
258 build_kanji.level(build_kanji.lr(450,0)
259 (tsu_curve.kanji.grtwo.word)
260 (tsu_xform(identity yscaled 1.1)(tsu_curve.kanji.grtwo.cease)));
261 tsu_render;
262 endsuglyph;
263

```

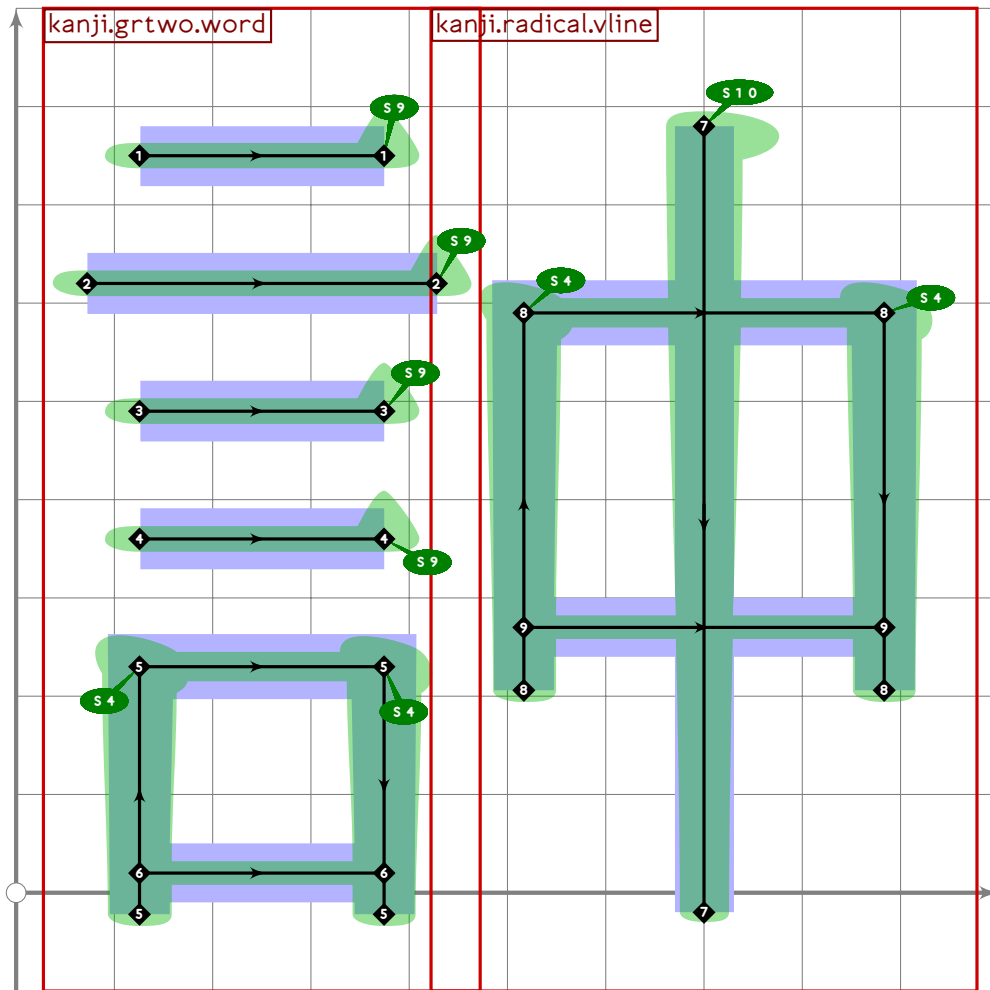


```

264 % extra
265 begintsuglyph("uni8A2C";44);
266 build_kanji.level(build_kanji.lr(450,0)
267   (tsu_curve.kanji.grtwo.word)
268   (tsu_curve.kanji.grtwo.little));
269 tsu_render;
270 endsuglyph;
271
272 % kyo/yuru "permit" (forgive)
273 begintsuglyph("uni8A31";49);
274 tsu_curve.kanji.grfive.permit;
275 tsu_render;
276 endsuglyph;
277

```

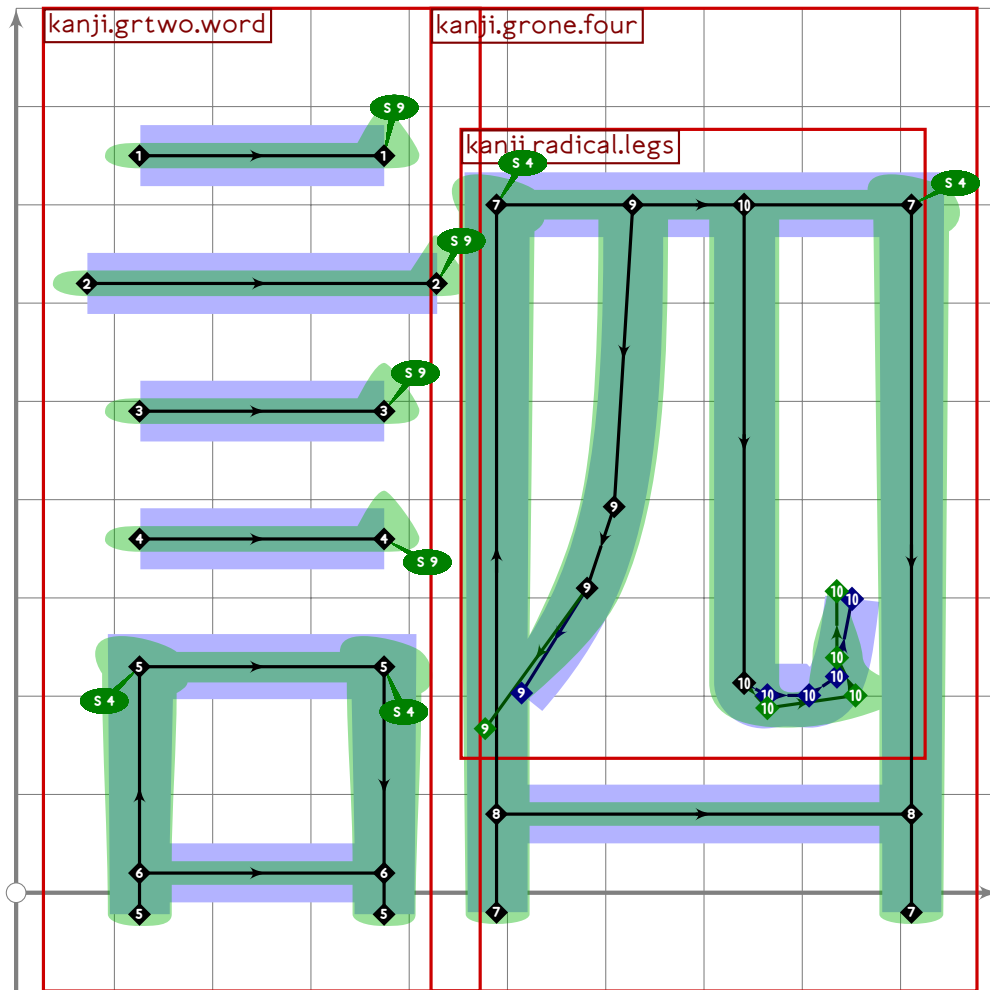
[see page 1390]



```

278 % extra
279 begint Suglyph("uni8A32",50);
280 build_kanji.level(build_kanji.lr(450,0)
281   (tsu_curve.kanji.grtwo.word)
282   (tsu_curve.kanji.grone.middle));
283 tsu_render;
284 endsuglyph;
285

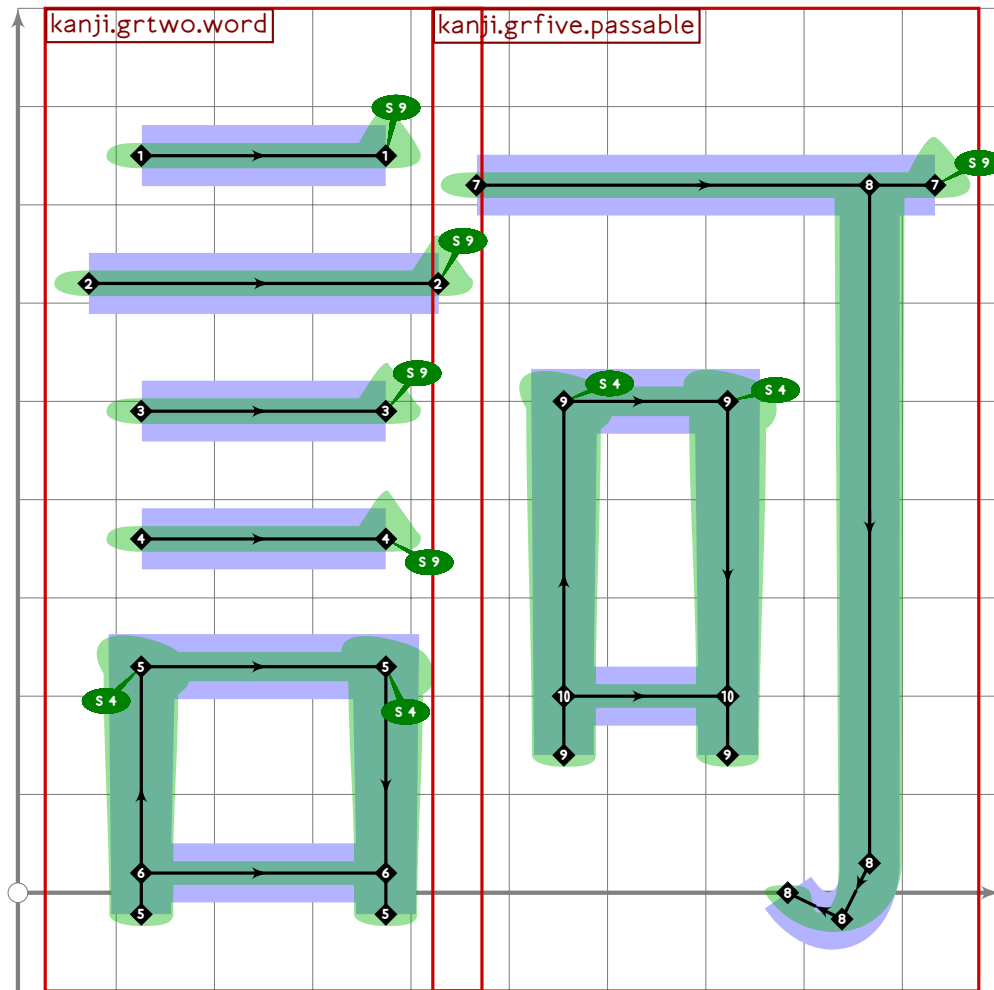
```



```

286 % extra
287 begint Suglyph("uni8A35",53);
288 build_kanji.level(build_kanji.lr(450,0)
289   (tsu_curve.kanji.grtwo.word)
290   (tsu_curve.kanji.grone.four));
291 tsu_render;
292 endsuglyph;
293

```

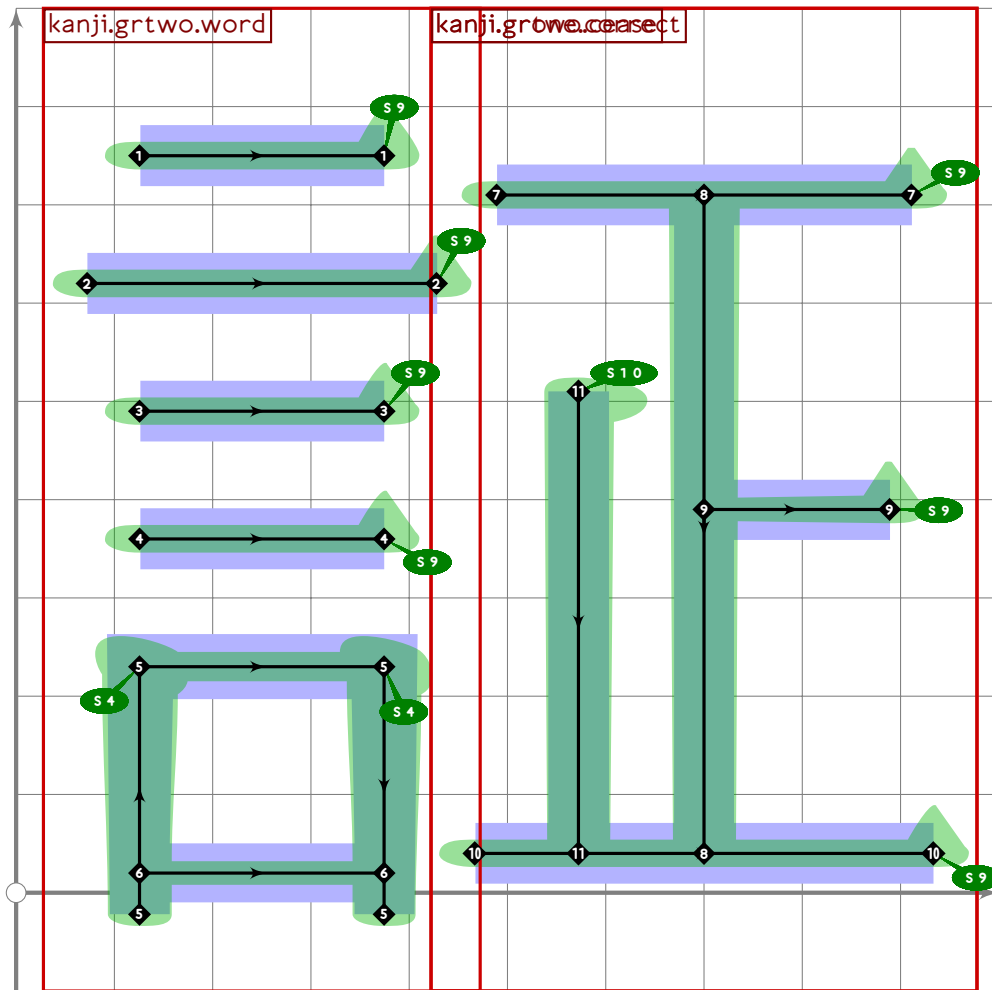


```

294 % extra
295 begint Suglyph("uni8A36",54);
296 build_kanji.level(build_kanji.lr(450,0)
297   (tsu_curve.kanji.grtwo.word)
298   (tsu_curve.kanji.grfive.passable));
299 tsu_render;
300 endsuglyph;
301

```





```

302 % extra
303 begintsuglyph("uni8A3C";60);
304 build_kanji.level(build_kanji.lr(450,0)
305   (tsu_curve.kanji.grtwo.word)
306   (tsu_curve.kanji.grone.correct));
307 tsu_render;
308 endsuglyph;
309
310 % wa/hana "talk"
311 begintsuglyph("uni8A71";113);
312 tsu_curve.kanji.grtwo.talk;
313 tsu_render;
314 endsuglyph;
315
316 % go/kata "language"
317 begintsuglyph("uni8A9E";158);
318 tsu_curve.kanji.grtwo.language;
319 tsu_render;
320 endsuglyph;
321
322

```

[see page 1387]

[see page 1386]

323

324 **endfont;**

325

326

---

# tsuku-8c.mp

```
1 %
2 % Unicode page 8c (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38 input radical.mp;
39
40 

---


41
42 % bai/kai "shellfish"
43 begintsuglyph\("uni8C9D";157\); [see page 359]
44 tsu\_curve.kanji.grone.shell;
45 tsu\_render;
46 endtsuglyph;
47
48 

---


49
50 endfont;
51
52 

---


```

# tsuku-8d.mp

```
1 %  
2 % Unicode page 8d (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

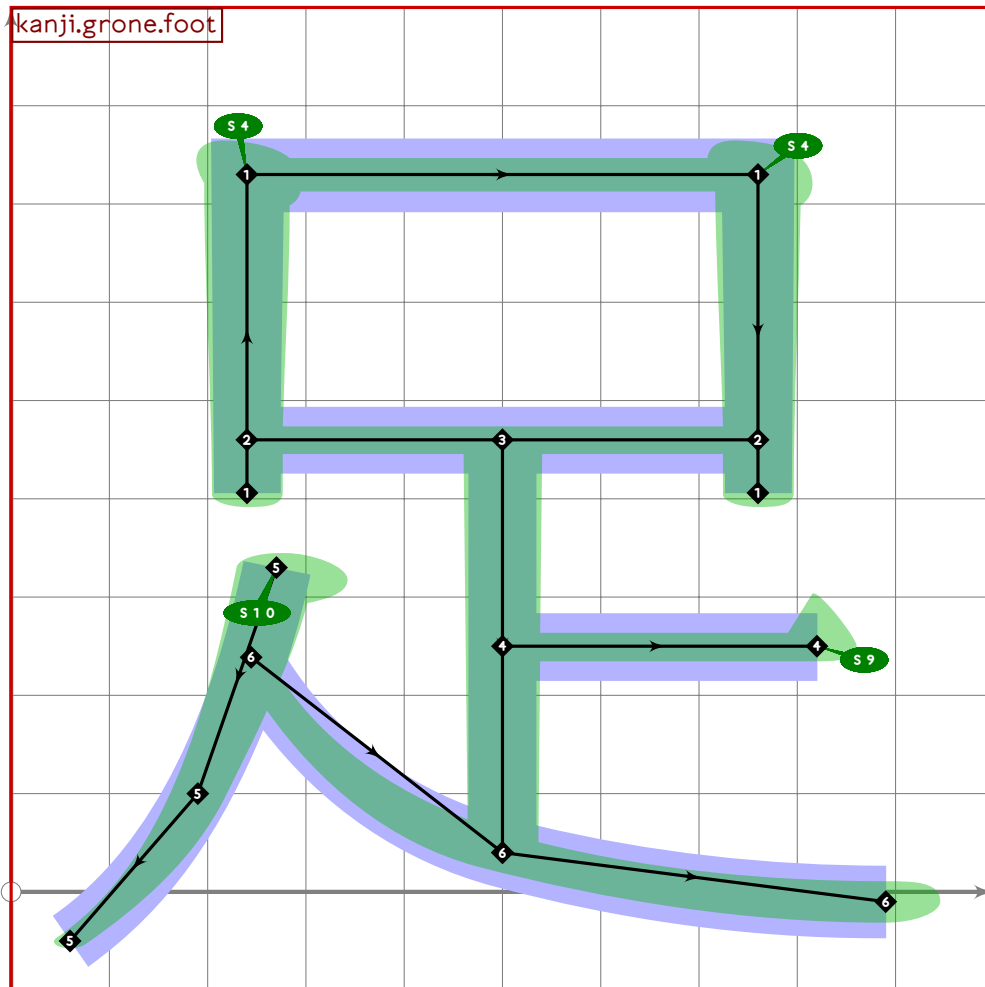
```
34
```

```
35 % AUTODEPS
```

```
36 input buildkanji.mp;
```

```
37
```

```
38
```



```
39
```

```
40 vardef tsu_curve.kanji.grone.foot =
```

```
41   add_proof_box("kanji.grone.foot");
```

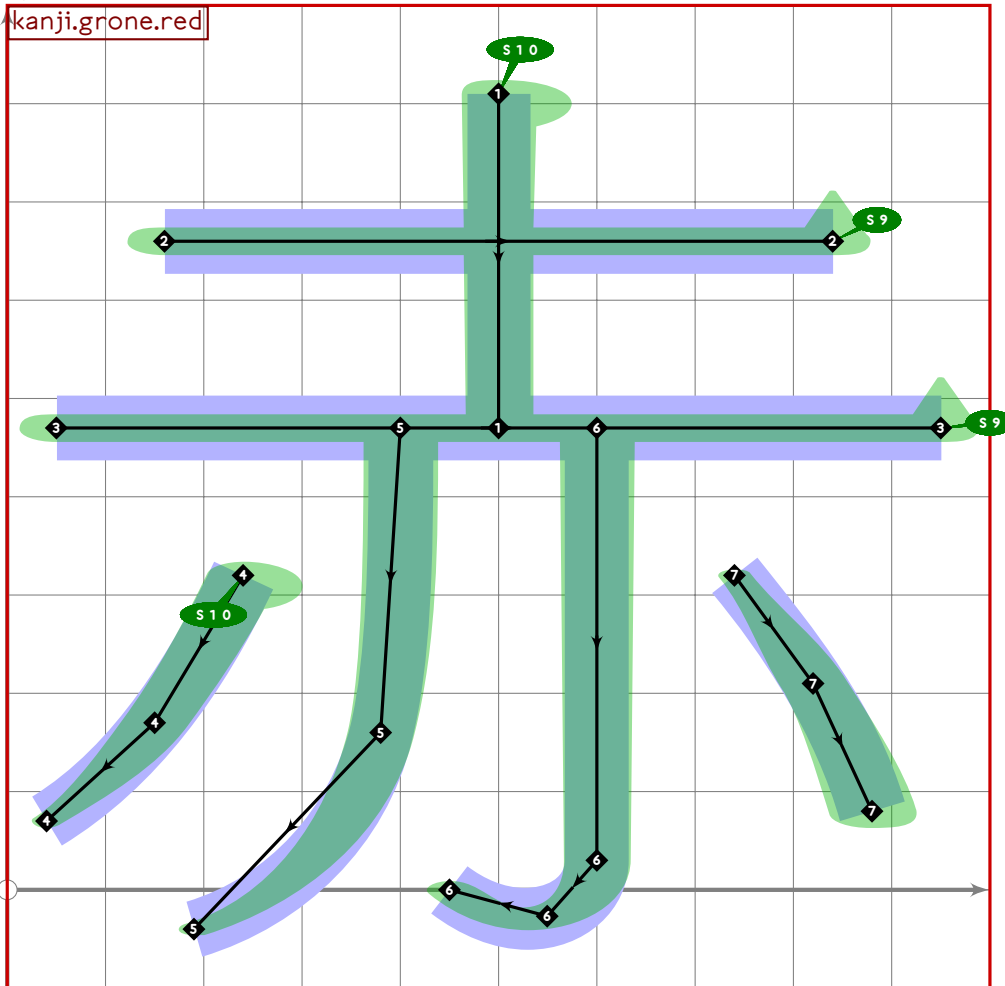
```
42   build_kanji.box((240,730),(760,460));
```

```
43   bp[sp]:=(500,460)-(500,40);
```

```

44 bq[sp]:=(1.6,1.6)-(1.5,1.5);
45 bp[sp*1]:=(500,250)-(820,250);
46 bq[sp*1]:=(1.5,1.5)-(1.6,1.6);
47 bo_serif[sp*1][1]:=9;
48 bp[sp*2]:=(270,330)..tension 1.3..(190,100)..(60,-50);
49 bq[sp*2]:=(1.6,1.6)-(1.3,1.3)-(1,1);
50 bo_serif[sp*2][0]:=10;
51 bp[sp*3]:=(point 0.4 of bp[sp*2])..(500,40)..tension 1.5..(890,-10);
52 bq[sp*3]:=(1,1)-(1.7,1.7)-(2,2);
53 sp:=sp*4;
54 enddef;

```



```

55
56 vardef tsu_curve.kanji.grone.red =
57   add_proof_box("kanji.grone.red");
58   bp[sp]:=(500,810)-(500,470);
59   bq[sp]:=(1.6,1.6)-(1.5,1.5);
60   bo_serif[sp][0]:=10;
61   bp[sp*1]:=(160,660)-(840,660);
62   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
63   bo_serif[sp*1][1]:=9;
64   bp[sp*2]:=(50,470)-(950,470);

```

```

65 bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
66 bo_serif[sp*2][1]:=9;
67 bp[sp*3]:=(240,320)..tension 1.3..(150,170)..(40,70);
68 bq[sp*3]:=(1.6,1.6)-(1.5,1.5)-(1,1);
69 bo_serif[bp*3][0]:=10;
70 bp[sp*4]:=(400,470){down}..tension 1.3..(380,160)..(190,-40);
71 bq[sp*4]:=(1.6,1.6)-(1.5,1.5)-(1,1);
72 bp[sp*5]:=(600,470);
73 bq[sp*5]:=(1.6,1.6);
74 build_kanji.add_jtail(bp*5);
75 bp[sp*6]:=(740,320)..tension 1.3..(820,210)..(880,80);
76 bq[sp*6]:=(1,1)-(1.5,1.5)-(1.8,1.8);
77 for i=sp upto sp*6: bo_size[i]:=94; endfor;
78 sp:=sp*7;
79 enddef;
80
81 

---


82
83 % aka/seki "red"
84 begintsuglyph("uni8D64";100); [see page 1413]
85 tsu_curve.kanji.grone.red;
86 tsu_render;
87 endtsuglyph;
88
89 % ashi/soku "foot"
90 begintsuglyph("uni8DB3";179); [see page 1412]
91 tsu_curve.kanji.grone.foot;
92 tsu_render;
93 endtsuglyph;
94
95 

---


96
97 endfont;
98
99 

---



```

# tsuku-8e.mp

```
1 %
2 % Unicode page 8e (Kanji) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 % AUTODEPS
36 input buildkanji.mp;
37 input gradeone.mp;
38
39 

---


40
41 % kuruma "car/wheel"
42 begintsuglyph("uni8ECA";202); [see page 370]
43 tsu_curve.kanji.grone.wheel;
44 tsu_render;
45 endtsuglyph;
46
47 

---


48
49 endfont;
50
51 

---


```

# tsuku-91.mp

1 %  
2 % Unicode page 91 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %

5-29 [Standard copyright notice]

30

31

32

33 beginfont

34

35 % AUTODEPS

36 input buildkanji.mp;

37 input gradeone.mp;

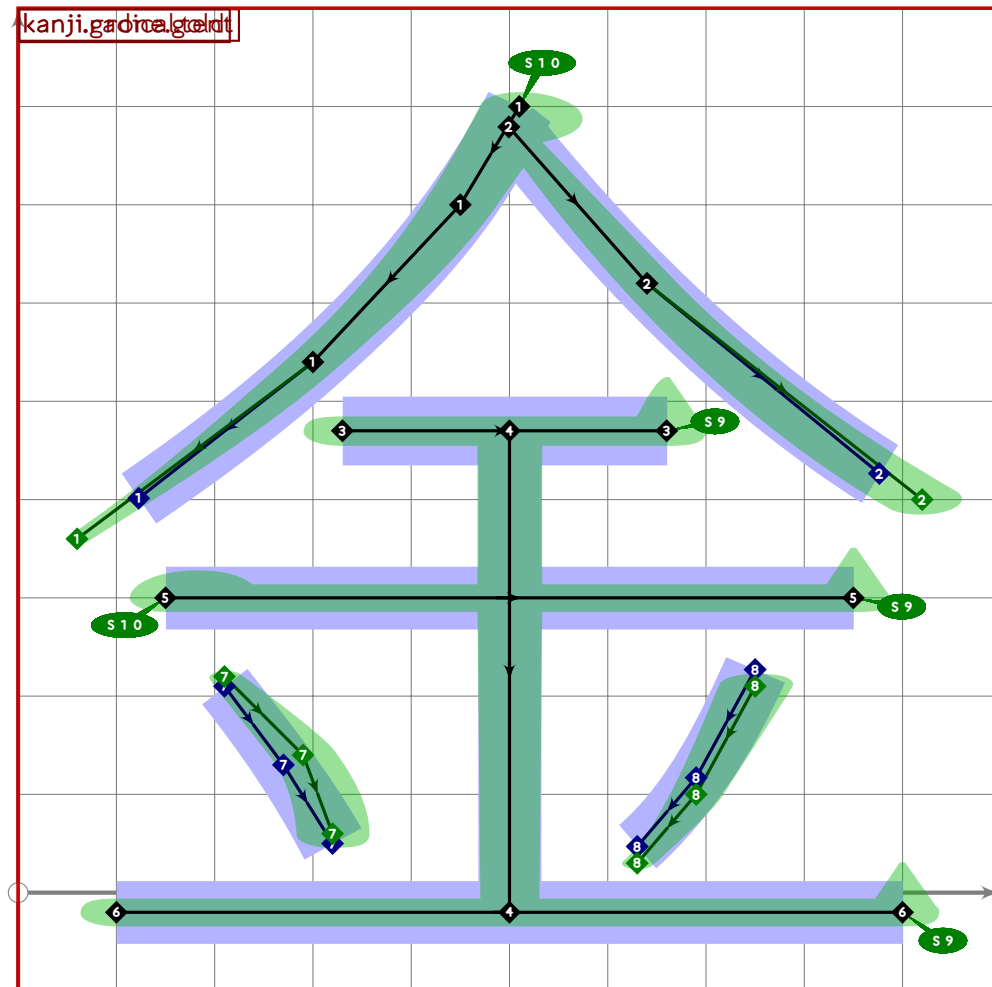
38 input gradetwo.mp;

39 input radical.mp;

40 input toprad.mp;

41

42



43



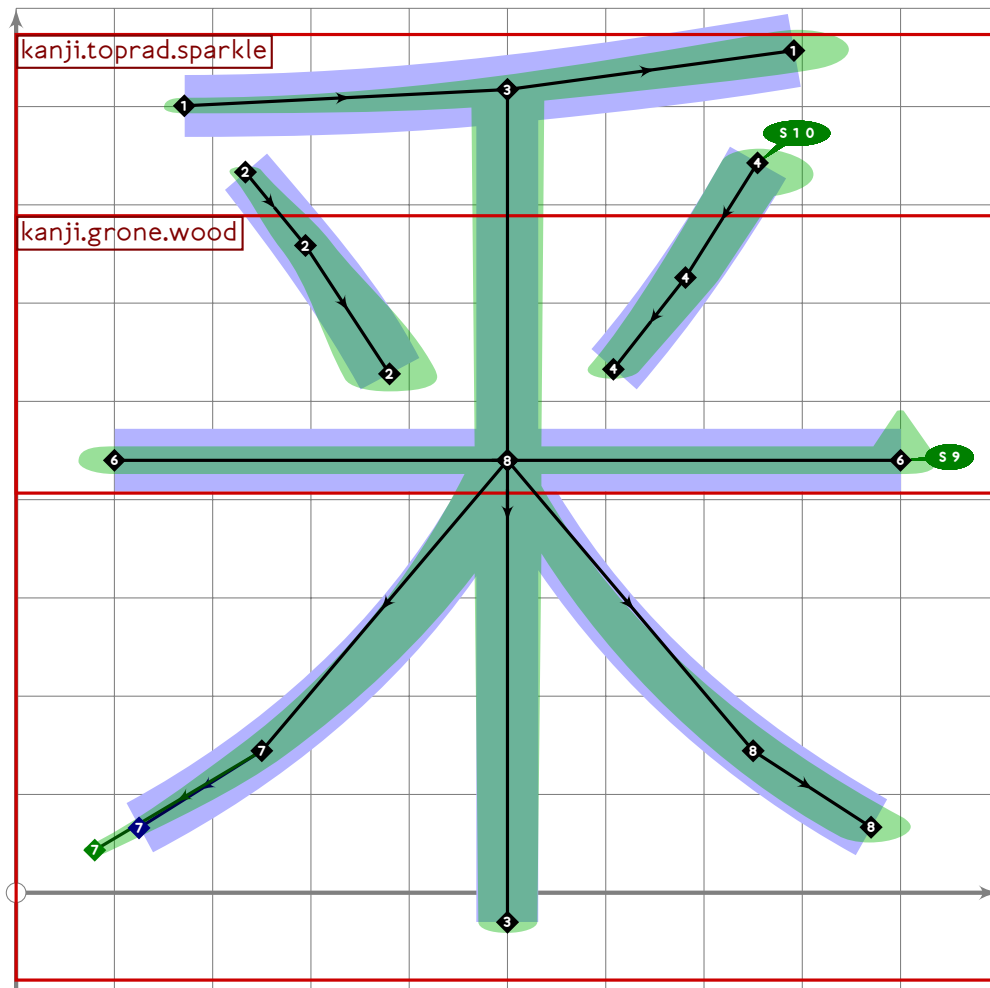
```

44 vardef tsu_curve.kanji.grone.gold =
45   tsu_curve.kanji.radical.tent;
46   add_proof_box("kanji.grone.gold");
47   bp[sp]:=(500,470)-(500,-20);
48   bq[sp]:=(1.5,1.5)-(1.4,1.4);
49   bp[sp*1]:=(150,300)-(850,300);
50   bq[sp*1]:=(1.6,1.6)-(1.6,1.6);
51   bo_serif[sp*1][1]:=9;
52   bp[sp*2]:=(100,-20)-(900,-20);
53   bq[sp*2]:=(1.6,1.6)-(1.6,1.6);
54   bo_serif[sp*2][1]:=9;
55   bp[sp*3]:=(210,220)..tension 1.3..(270*20*mincho,140)..(320,60);
56   bp[sp*3]:=bp[sp*3] shifted ((1-mincho)*10*down);
57   bq[sp*3]:=(1,1)-(1.5,1.5)-(1.6,1.6);
58   bp[sp*4]:=(750,210)..tension 1.3..(690,100)..(630,30);
59   bp[sp*4]:=bp[sp*4] shifted ((1-mincho)*17*up);
60   bq[sp*4]:=(1.6,1.6)-(1.3,1.3)-(1,1);
61   bo_serif[bp*4][0]:=10;
62   for i=sp upto sp*4: bo_size[i]:=93; endfor;
63   sp:=sp*5;
64 enddef;
65
66 

---


67

```



68 % han/irodori "separate" or "divide" but mostly "topped rice radical"

69 `begintsuglyph("uni91C6";198);`

70 `build_kanji.add_beret(tsu_curve.kanji.grtwo.rice);`

71 `tsu_render;`

72 `endtsuglyph;`

73

74 % ri/sato, multiple meanings including 3.929km and "neighbourhood"

75 `begintsuglyph("uni91CC";204);`

[see page 389]

76 `tsu_curve.kanji.grtwo.neighbourhood;`

77 `tsu_render;`

78 `endtsuglyph;`

79

80 % kane/kin "gold"

81 `begintsuglyph("uni91D1";209);`

[see page 1417]

82 `tsu_curve.kanji.grone.gold;`

83 `tsu_render;`

84 `endtsuglyph;`

85

86

87

88 `endfont;`

89

90

---

# tsuku-95.mp

```
1 %  
2 % Unicode page 95 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

5-29 [Standard copyright notice]

30

31

32

33 beginfont

34

35 % AUTODEPS

36 input buildkanji.mp;

37 input gradeone.mp;

38 input gradesix.mp;

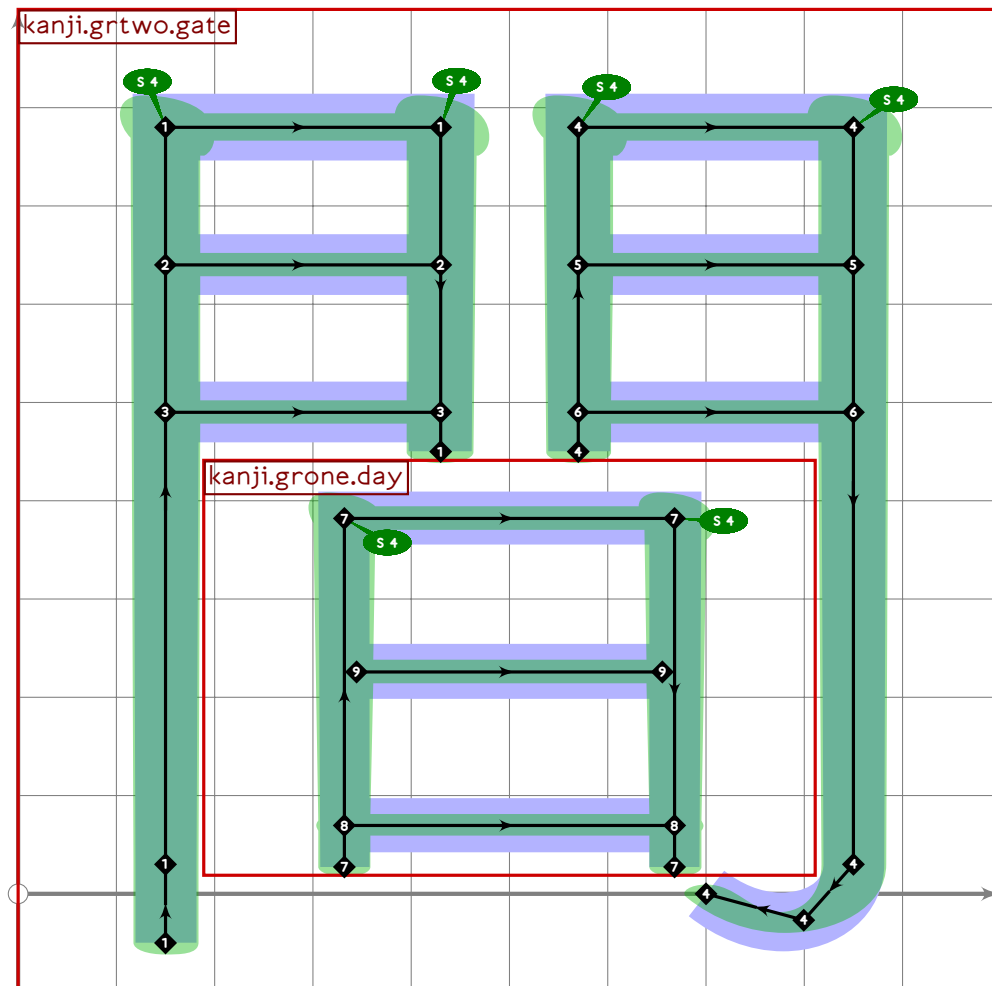
39 input gradethree.mp;

40 input gradetwo.mp;

41 input radical.mp;

42

43



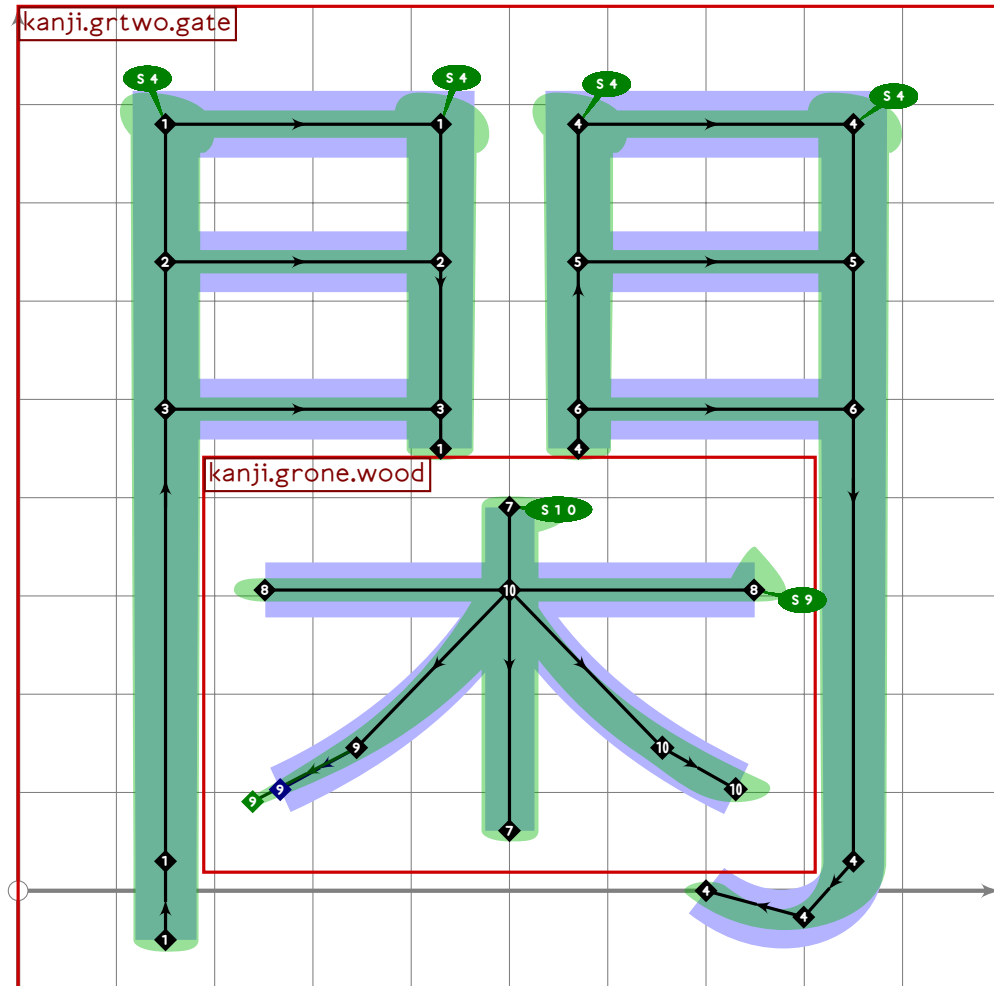
```

44
45 vardef tsu_curve.kanji.grtwo.interval =
46   add_proof_box("kanji.grtwo.interval");
47   build_kanji.gate_enclose(tsu_curve.kanji.grone.day);
48 enddef;

```

49

50



51

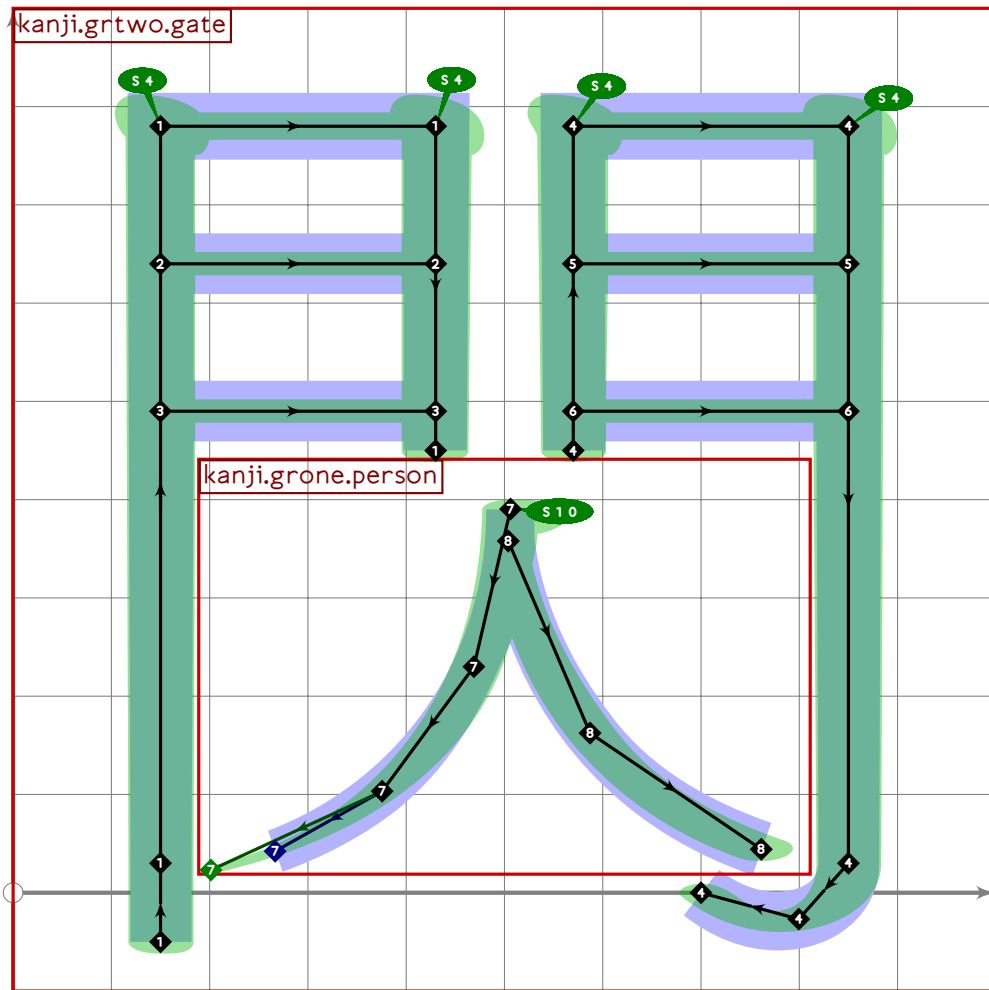
```

52 vardef tsu_curve.kanji.greight.leisure =
53   add_proof_box("kanji.greight.leisure");
54   build_kanji.gate_enclose(tsu_curve.kanji.grone.wood);
55 enddef;

```

56

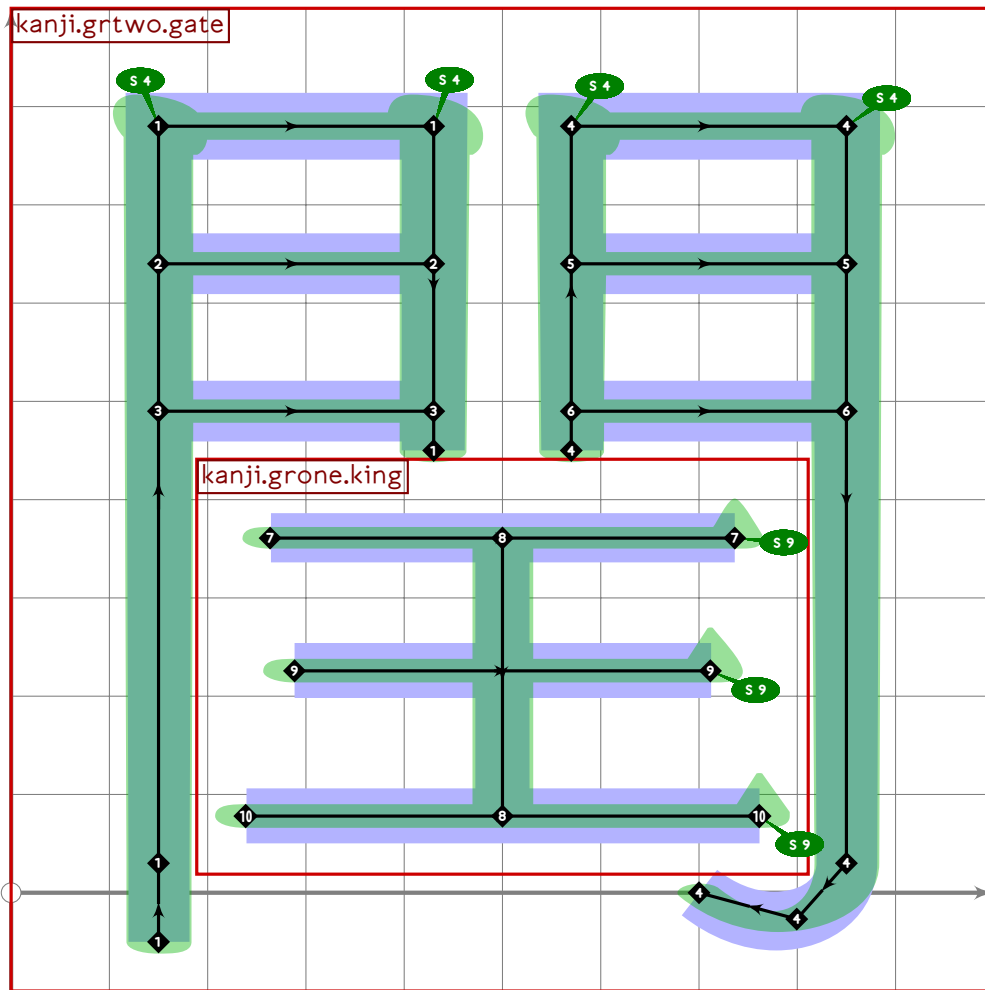
57



```

58
59 vardef tsu_curve.kanji.grnine.brandish =
60   add_proof_box("kanji.grnine.brandish");
61   build_kanji.gate_enclose(tsu_curve.kanji.grnine.person);
62 enddef;

```



```

63
64 vardef tsu_curve.kanji.grnine.leap_year =
65   add_proof_box("kanji.grnine.leap_year");
66   build_kanji.gate_enclose(tsu_curve.kanji.grnine.king);
67 enddef;

```

68

69

70

71 % mon/kado "gate"

72 begintsuglyph("uni9580",128);

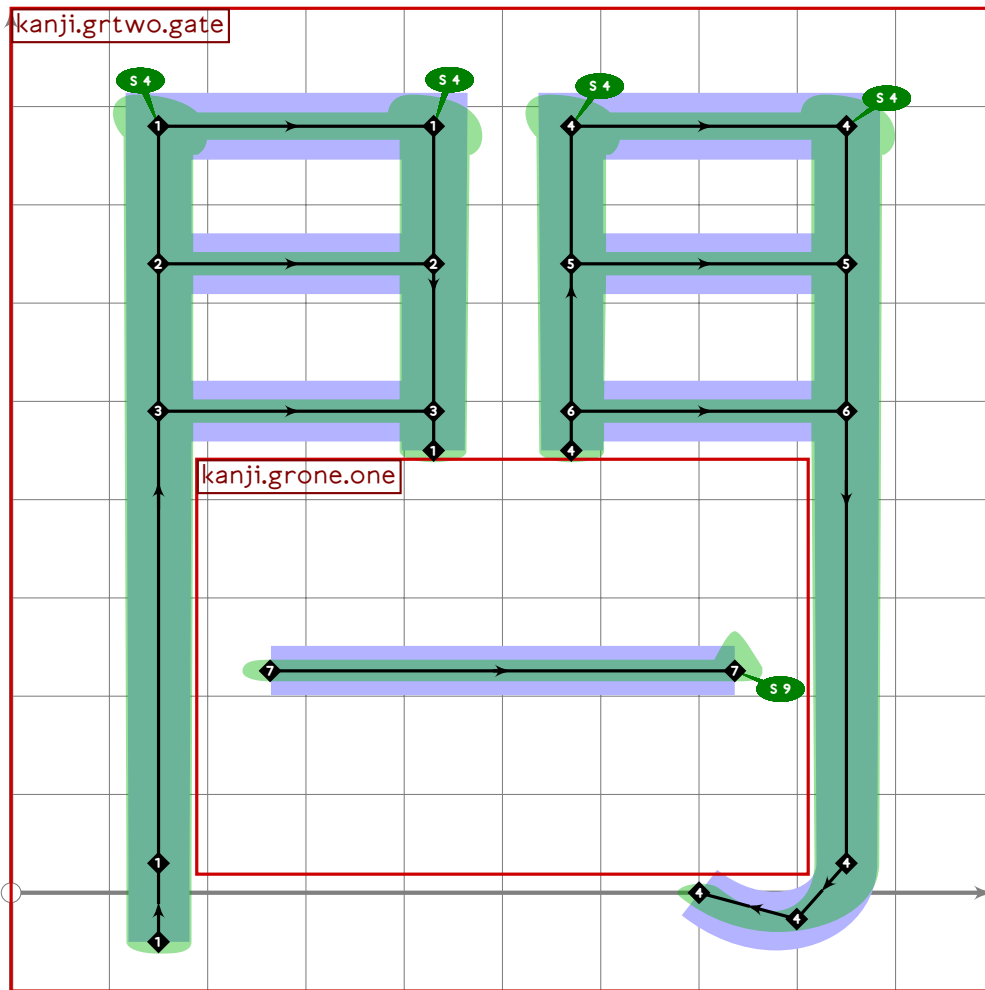
[see page 380]

73 tsu\_curve.kanji.grtwo.gate;

74 tsu\_render;

75 endtsuglyph;

76



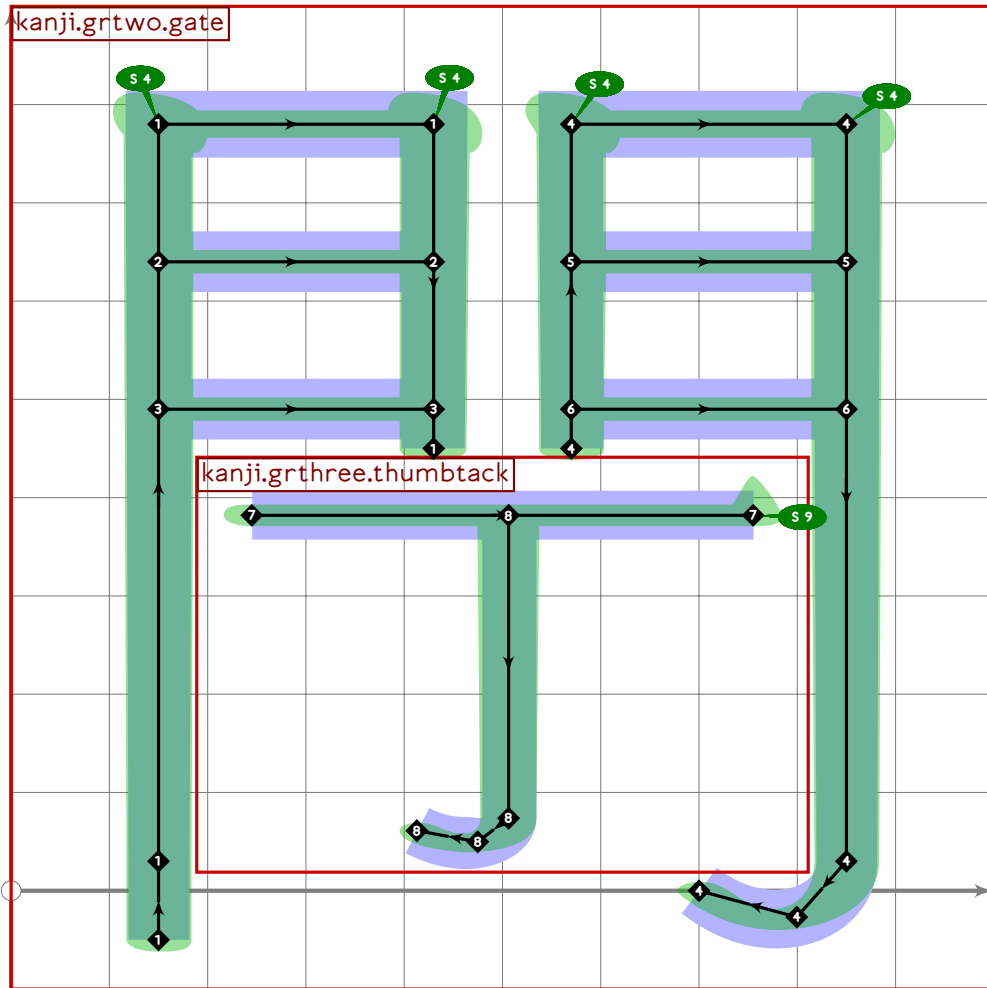
```

77 % extra
78 begint Suglyph("uni9582",130);
79 build_kanji.gate_enclose(tsu_curve.kanji.grone.one);
80 tsu_render;
81 endtsuglyph;
82
83 % sen/hirame "brandish"
84 begint Suglyph("uni9583",131);
85 tsu_curve.kanji.grnine.brandish;
86 tsu_render;
87 endtsuglyph;
88

```

[see page 1422]

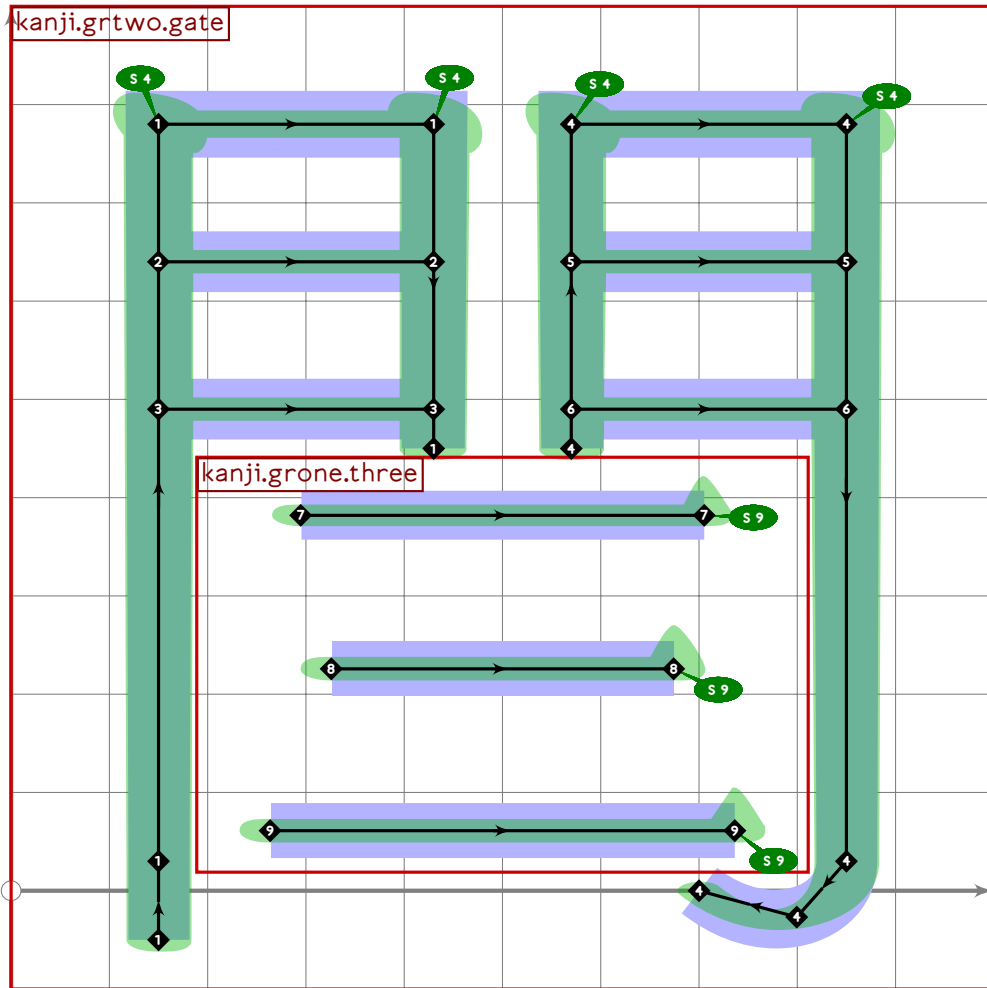




```

89 % extra
90 begint Suglyph("uni9585",133);
91   build_kanji.gate_enclose(tsu_curve.kanji.grthree.thumbtack);
92   tsu_render;
93   endtsuglyph;
94

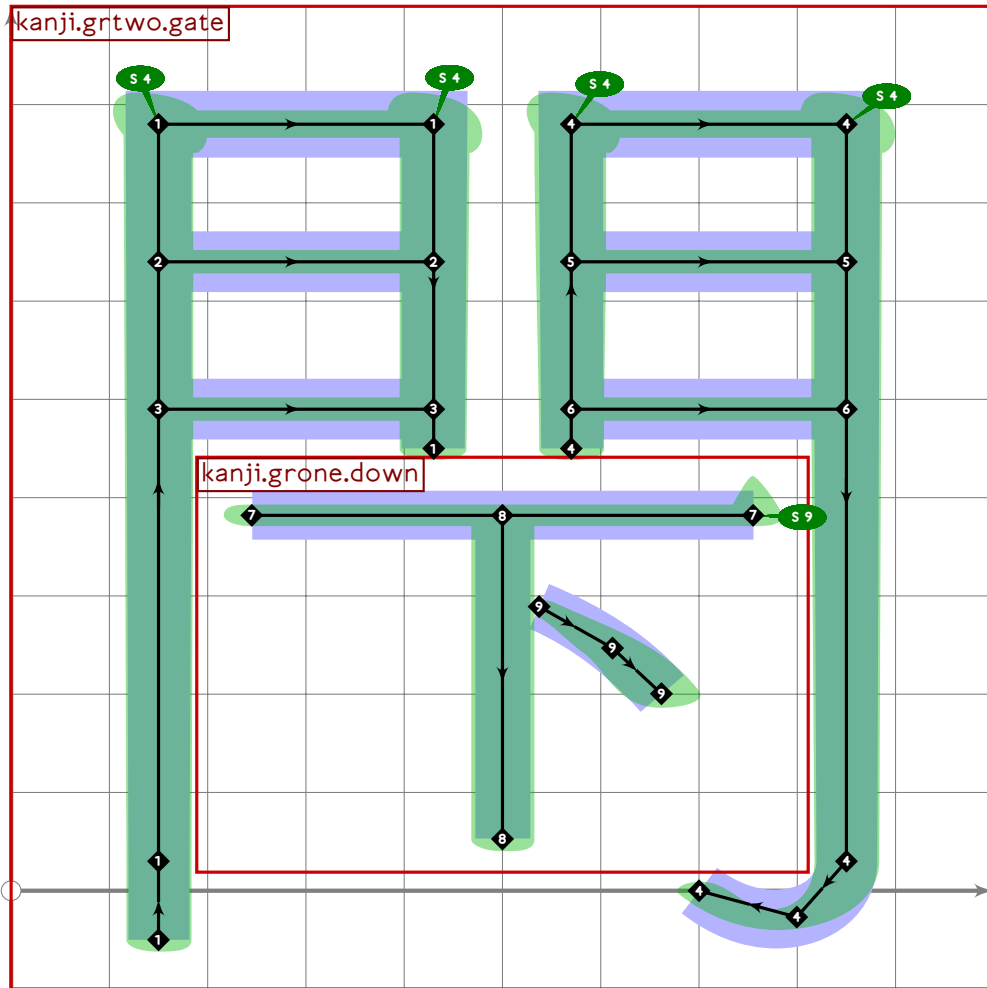
```



```

95 % extra
96 begint Suglyph("uni9586",134);
97 build_kanji.gate_enclose(tsu_curve.kanji.grone.three);
98 tsu_render;
99 endtsuglyph;
100

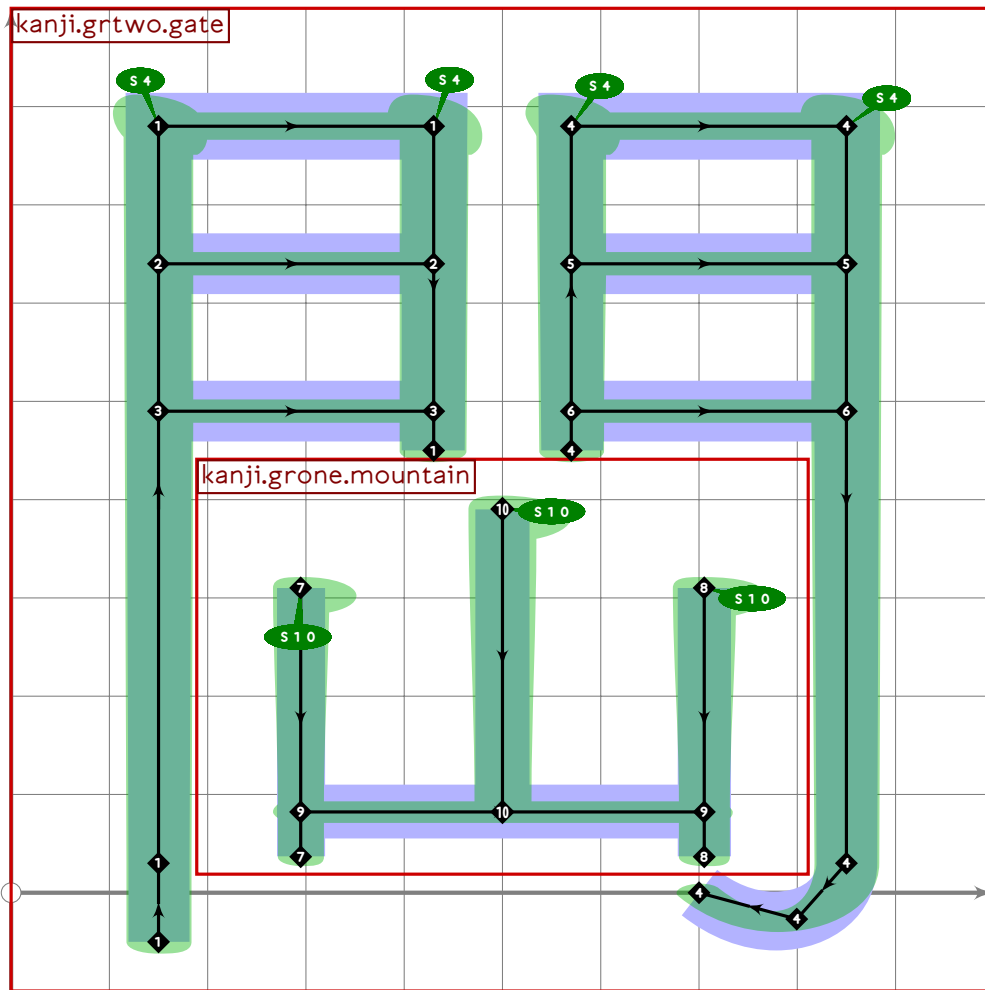
```



```

101 % hei/to "block up"
102 beginsuglyph("uni9587",135);
103   build_kanji.gate_enclose(tsu_curve.kanji.grone.down);
104   tsu_render;
105   endsuglyph;
106

```



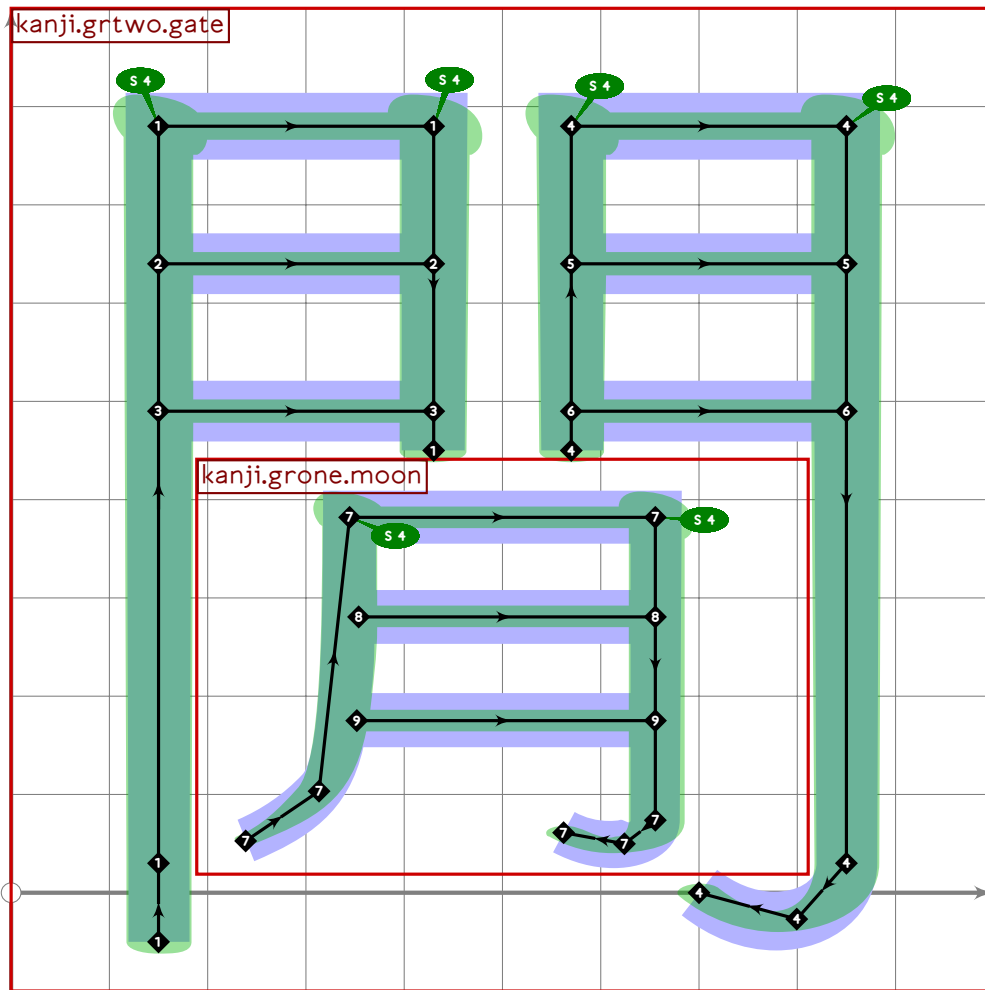
```

107 % tsuka "choke"
108 begintsuglyph("uni958A",138);
109   tsu_curve.kanji.grtwo.gate;
110   tsu_render;
111 endtsuglyph;
112
113 % jun/uruu "leap year"
114 begintsuglyph("uni958F",143);
115   tsu_curve.kanji.grnine.leap_year;
116   tsu_render;
117 endtsuglyph;
118
119 % kan/hima "leisure"
120 begintsuglyph("uni9591",145);
121   tsu_curve.kanji.greight.leisure;
122   tsu_render;
123 endtsuglyph;
124

```

[see page 1423]

[see page 1421]

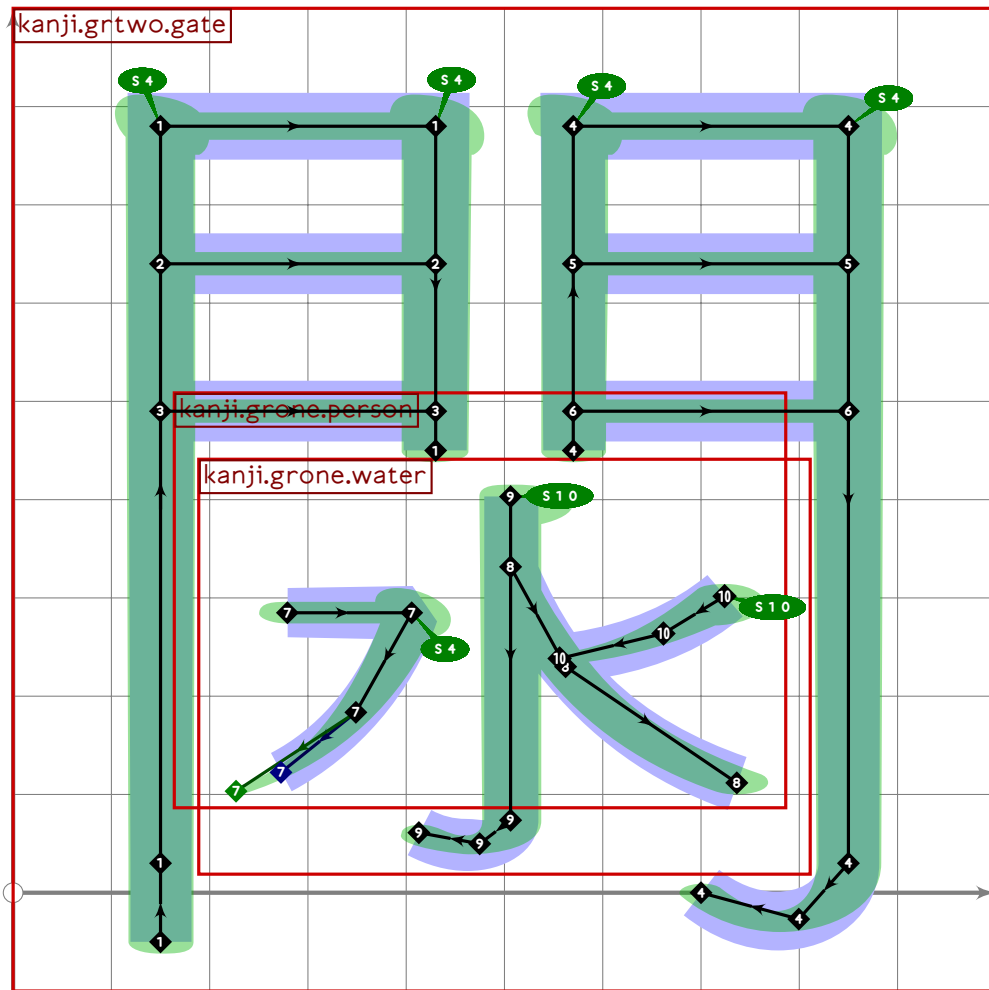


```

125 % extra
126 begintsuglyph("uni9592";146);
127 build_kanji.gate_enclose(tsu_curve.kanji.grone.moon);
128 tsu_render;
129 endtsuglyph;
130
131 % kan/aida "interval"
132 begintsuglyph("uni9593";147);
133 tsu_curve.kanji.grtwo.interval;
134 tsu_render;
135 endtsuglyph;
136

```

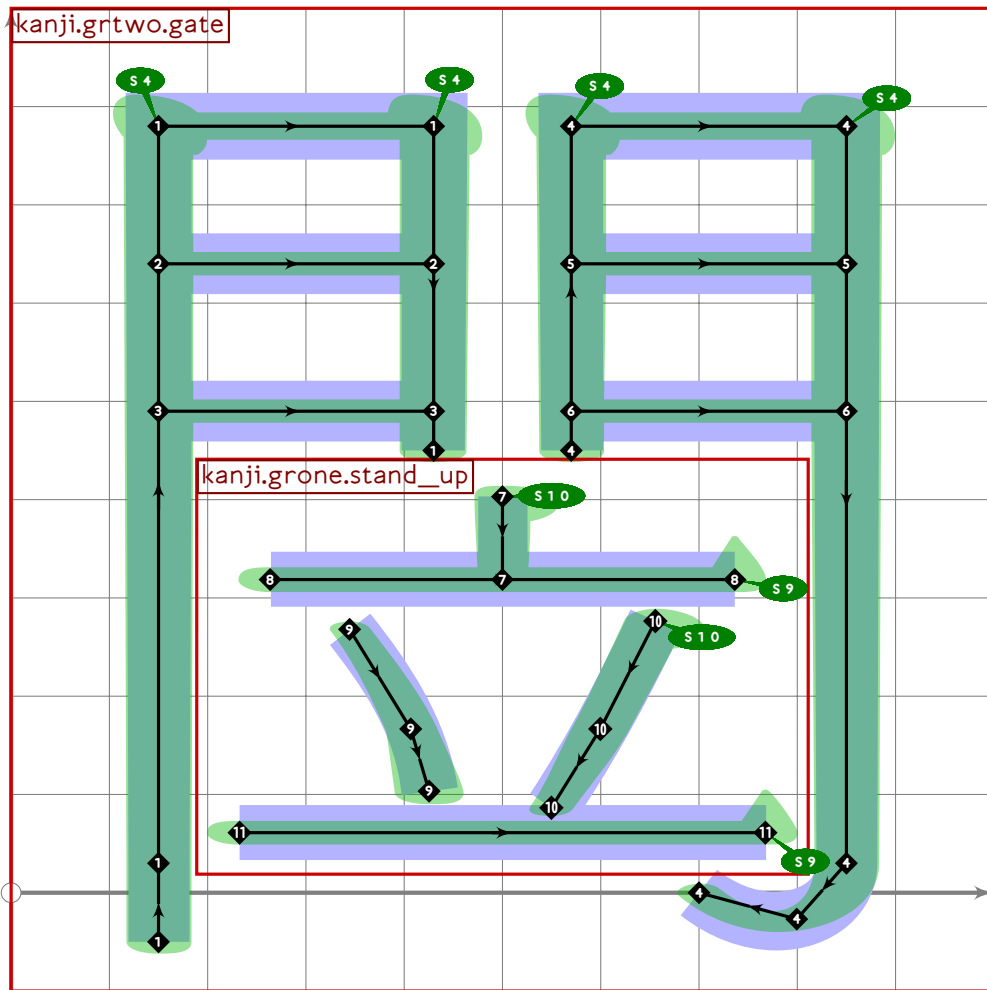
[see page 142]



```

137 % extra
138 begint Suglyph("uni9596";150);
139 build_kanji.gate_enclose(tsu_curve.kanji.grone.water);
140 tsu_render;
141 endtsuglyph;
142

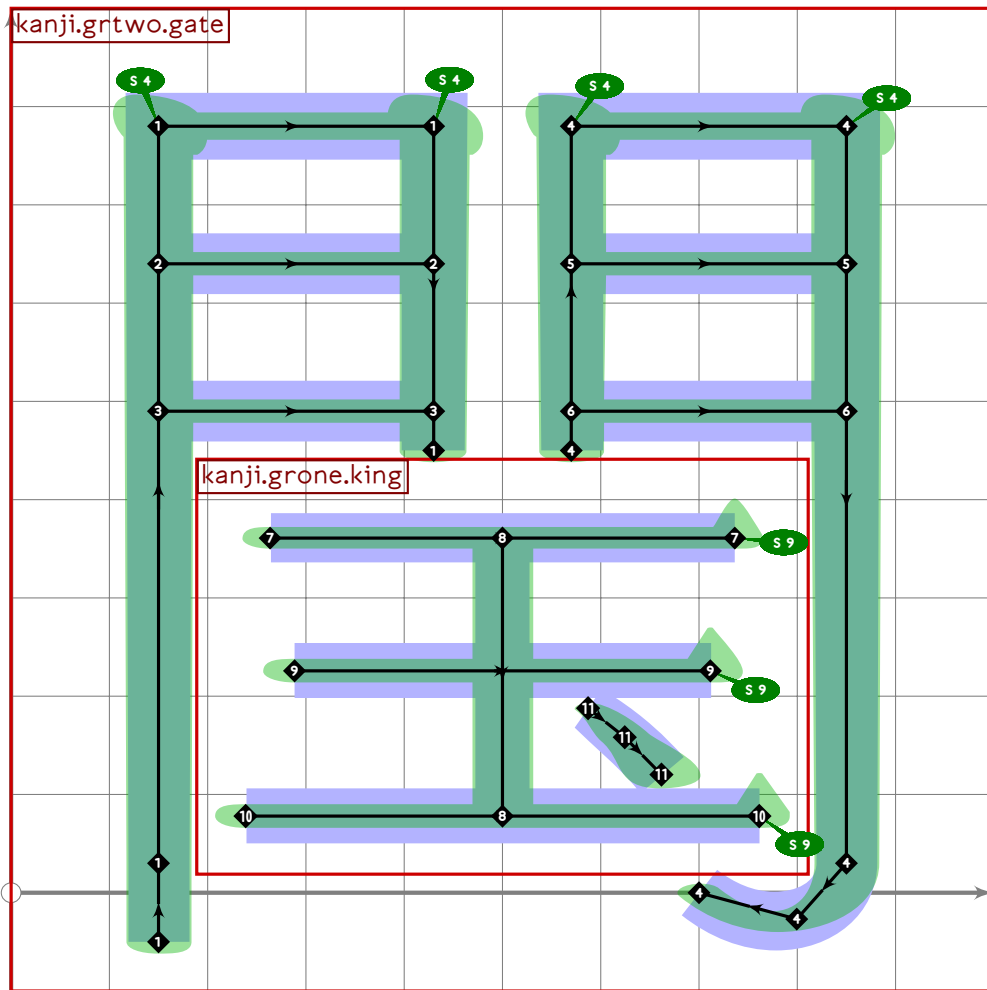
```



```

143 % extra
144 begint Suglyph("uni959A";154);
145 build_kanji.gate_enclose(tsu_curve.kanji.grone.stand_up);
146 tsu_render;
147 endtsuglyph;
148

```

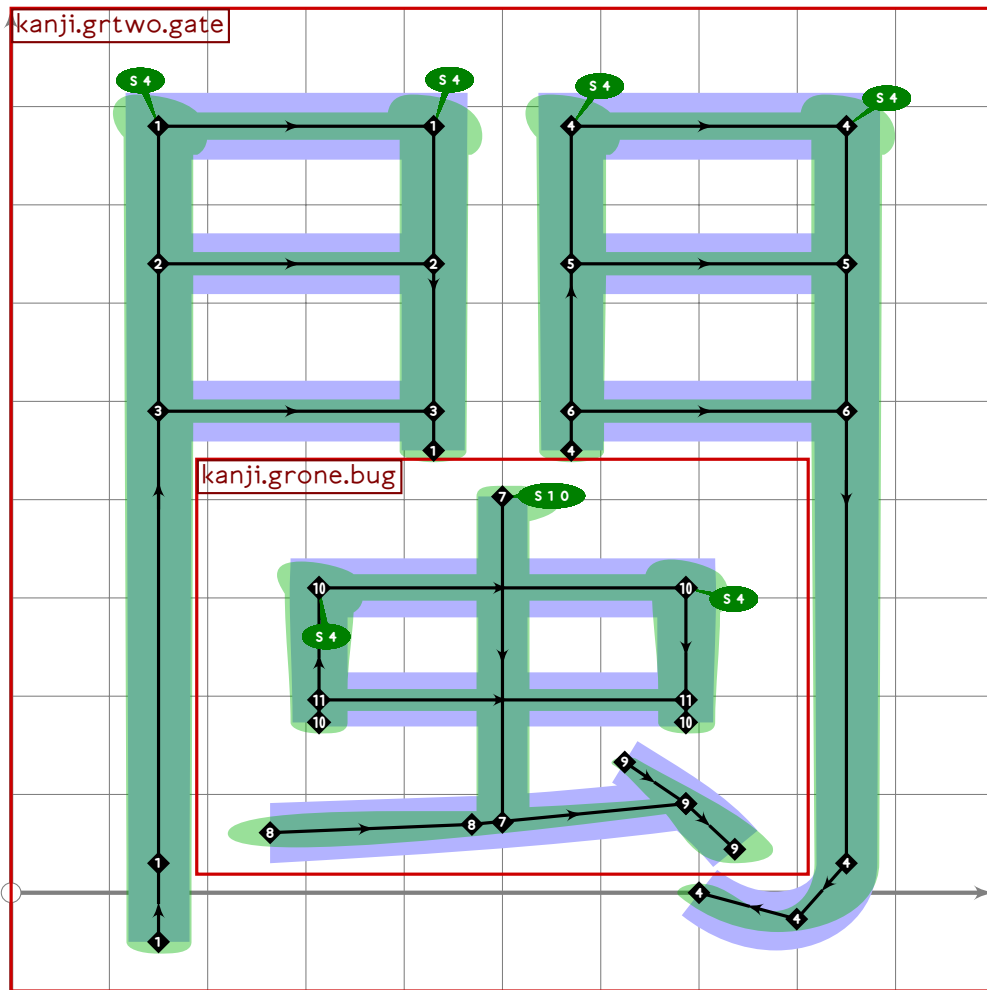


```

149 % extra
150 beginsuglyph("uni95A0",160);
151 build_kanji.gate_enclose(tsu_curve.kanji.grone.ball);
152 tsu_render;
153 endsuglyph;
154

```

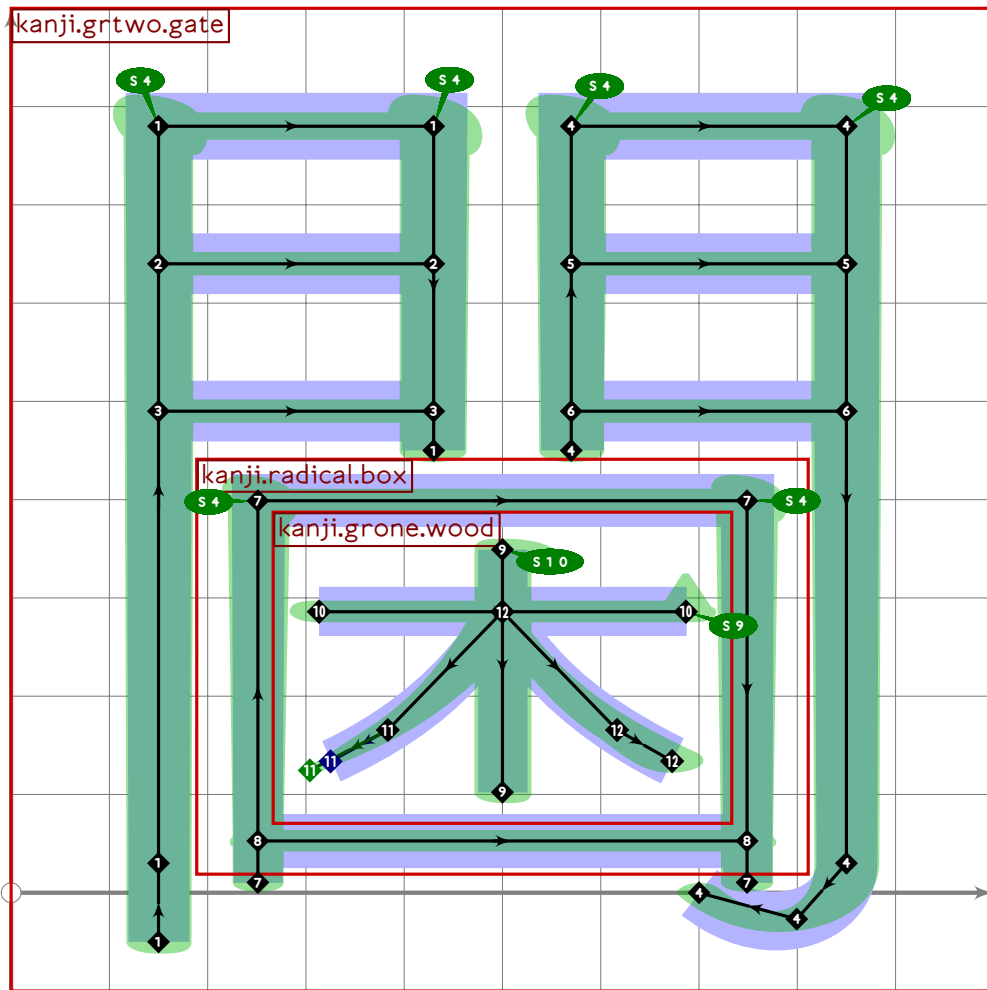




```

155 % extra
156 begintuglyph("uni95A9",169);
157 build_kanji.gate_enclose(tsu_curve.kanji.grone.bug);
158 tsu_render;
159 endtsuglyph;
160

```



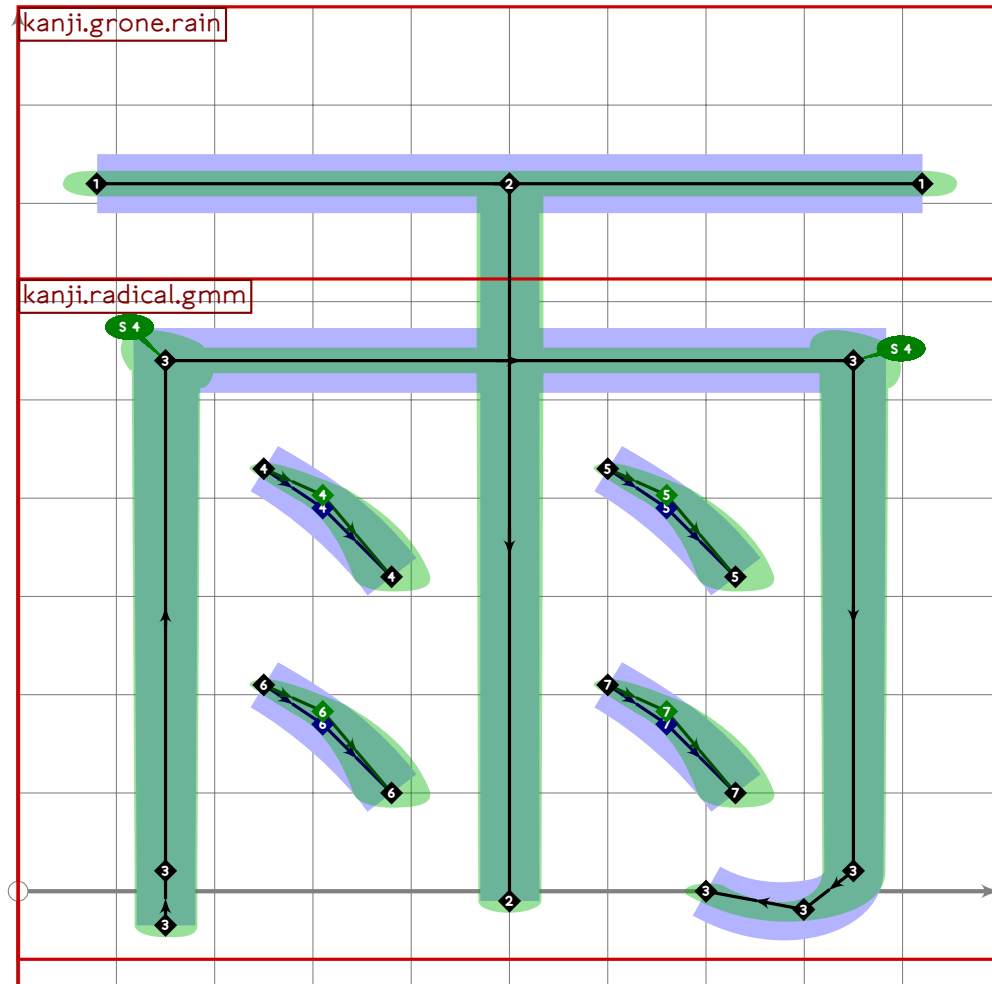
```

161 % extra
162 begint Suglyph("uni95AB",171);
163   build_kanji.gate_enclose(tsu_curve.kanji.grsix.bothered);
164   tsu_render;
165   endtsuglyph;
166
167 _____
168
169 endfont;
170
171 _____

```

# tsuku-96.mp

```
1 %  
2 % Unicode page 96 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %  
5-29 [Standard copyright notice]  
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input buildkanji.mp;  
37 input gradenine.mp;  
38 input radical.mp;  
39  
40 _____
```



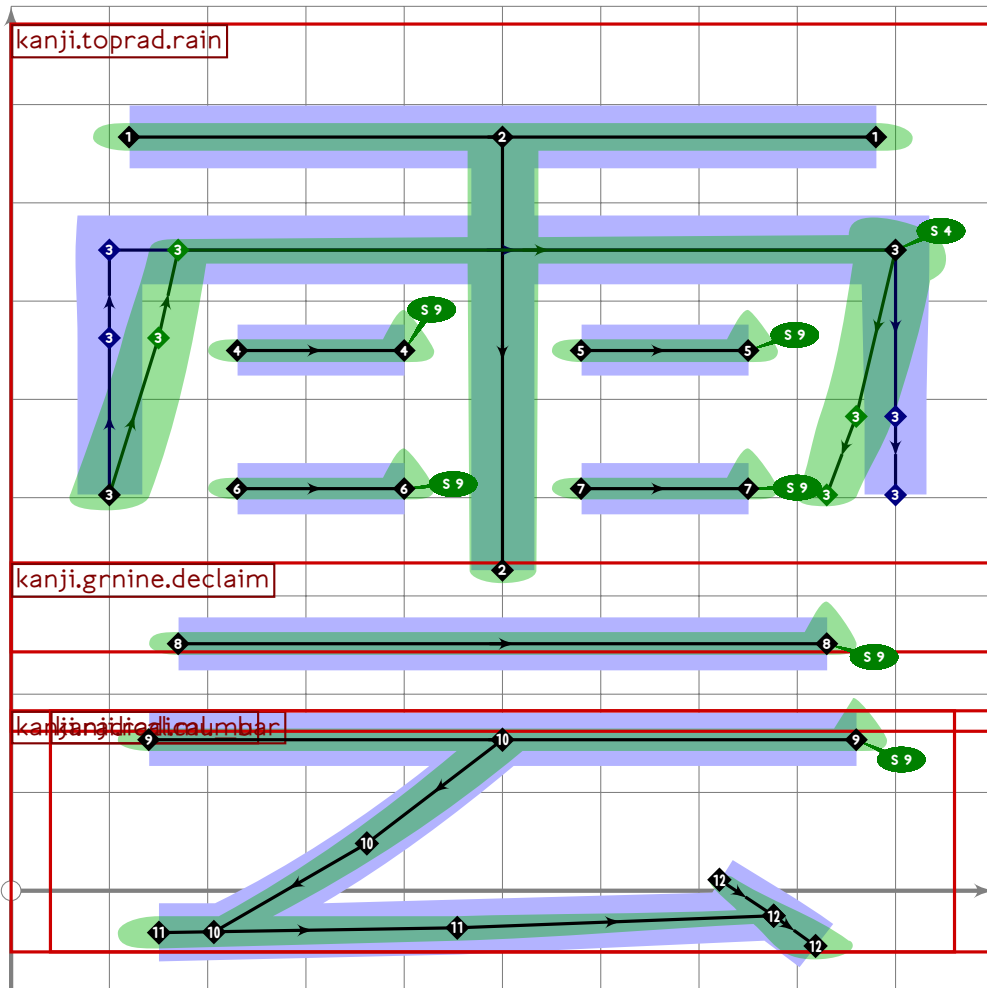
```
41  
42 vardef tsu_curve.kanji.grone.rain =  
43   add_proof_box("kanji.grone.rain");
```

```

44 build_kanji.level(
45   bp[sp]:=(80,720)-(920,720);
46   bq[sp]:=(1.6,1.6)-(1.6,1.6);
47   bo_serif[sp]:=9;
48   bp[sp*1]:=(500,720)-(500,-10);
49   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
50   sp:=sp*2;
51   tsu_xform(identity yscaled (540/780))(tsu_curve.kanji.radical.gmm);
52   bp[sp]:=(250,430)..tension 1.2..(310,390*13*mincho)..(380,320);
53   bq[sp]:=(1,1)-(1.4,1.4)-(1.7,1.7);
54   bp[sp*1]:=bp[sp] shifted (350,0);
55   bq[sp*1]=bq[sp];
56   bp[sp*2]:=bp[sp] shifted (0,-220);
57   bq[sp*2]=bq[sp];
58   bp[sp*3]:=bp[sp] shifted (350,-220);
59   bq[sp*3]=bq[sp];
60   bo_size[sp]=bo_size[sp*1]=bo_size[sp*2]=bo_size[sp*3]=80;
61   sp:=sp*4;
62 );
63 enddef;
64
65

```

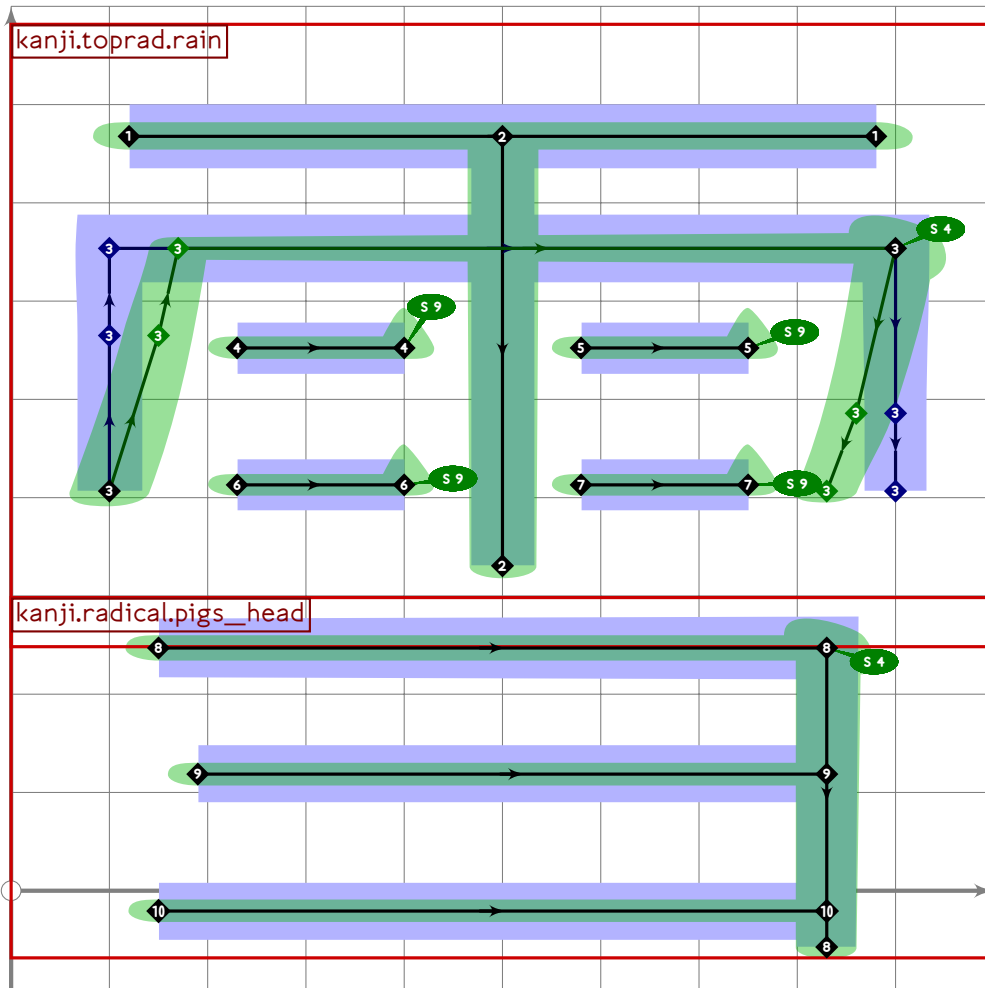
---



```

66
67 vardef tsu_curve.kanji.grtwo.cloud =
68   add_proof_box("kanji.grtwo.cloud");
69   build_kanji.tb(300,50)
70     (tsu_curve.kanji.toprad.rain)
71     (tsu_curve.kanji.grnine.declaim);
72 enddef;

```



```

73
74 vardef tsu_curve.kanji.grtwo.snow =
75   add_proof_box("kanji.grtwo.snow");
76   build_kanji.tb(280,0)
77     (tsu_curve.kanji.toprad.rain)
78     (tsu_curve.kanji.radical.pigs_head);
79 enddef;
80
81
82
83 vardef tsu_curve.kanji.toprad.rain =
84   add_proof_box("kanji.toprad.rain");
85   bp[sp]:=(120,720)-(880,720);
86   bq[sp]:=(1.6,1.6)-(1.6,1.6);
87   bo_serif[sp]:=9;
88   bp[sp*1]:=(500,720)-(500,30);
89   bq[sp*1]:=(1.6,1.6)-(1.5,1.5);
90   bp[sp*2]:=(100,150)..(100+50*mincho,400)..(100+70*mincho,540)-
91     (900,540)..(900-40*mincho,275)..(900-70*mincho,150);
92   bq[sp*2]:=(1.7,1.7)-(1.6,1.6)-(1.4,1.4)-
93     (1.7,1.7)-(1.6,1.6)-(1.4,1.4);

```

```

94 bo_tip[sp+2][2]:=1;
95 bo_tip[sp+2][3]:=1;
96 bo_serif[sp+2][3]:=4;
97 bp[sp+3]:=(230,380)..(400,380);
98 bq[sp+3]:=(1.6,1.6)-(1.6,1.6);
99 bo_serif[sp+3][1]:=9;
100 bp[sp+4]:=bp[sp+3] shifted (350,0);
101 bq[sp+4]=bq[sp+3];
102 bo_serif[sp+4][1]:=9;
103 bp[sp+5]:=bp[sp+3] shifted (0,-220);
104 bq[sp+5]=bq[sp+3];
105 bo_serif[sp+5][1]:=9;
106 bp[sp+6]:=bp[sp+3] shifted (350,-220);
107 bq[sp+6]=bq[sp+3];
108 bo_serif[sp+6][1]:=9;
109 bo_size[sp+3]=bo_size[sp+4]=bo_size[sp+5]=bo_size[sp+6]=80;
110 sp:=sp+7;
111 endif;
112
113 

---


114
115 % u/ame "rain"
116 begintsuglyph("uni96E8",232); [see page 1435]
117 tsu_curve.kanji.grone.rain;
118 tsu_render;
119 endtsuglyph;
120
121 % satsu/yuki "snow"
122 begintsuglyph("uni96EA",234); [see page 1438]
123 tsu_curve.kanji.grtwo.snow;
124 tsu_render;
125 endtsuglyph;
126
127 % un/kumo "cloud"
128 begintsuglyph("uni96F2",242); [see page 1437]
129 tsu_curve.kanji.grtwo.cloud;
130 tsu_render;
131 endtsuglyph;
132
133 

---


134
135 endfont;
136
137 

---



```

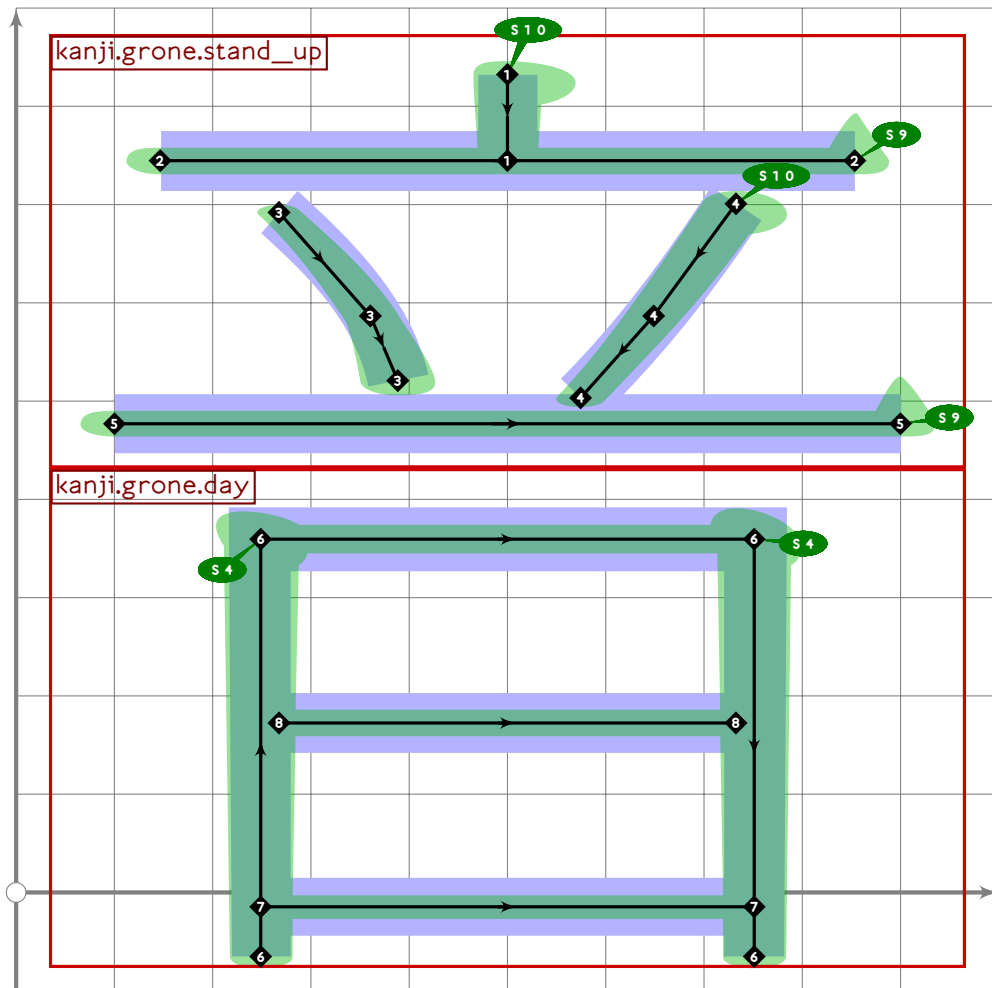
# tsuku-97.mp

```
1 %  
2 % Unicode page 97 (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

5-29 [Standard copyright notice]

```
30  
31 _____  
32  
33 beginfont  
34  
35 % AUTODEPS  
36 input bottomrad.mp;  
37 input buildkanji.mp;  
38 input gradeone.mp;  
39 input toprad.mp;
```

```
40  
41 _____
```



```
42  
43 vardef tsu_curve.kanji.grone.noise =
```



```
44 add_proof_box("kanji.grone.noise");
45 build_kanji.level(build_kanji.sscale(xscaled 0.93)(
46   build_kanji.tb(430,-50)
47   (tsu_curve.kanji.grone.stand_up)
48   (tsu_curve.kanji.grone.day)));
49 endif;
50
51 

---


52
53 % ao "blue"
54 begintsuglyph("uni9752",82); [see page 322]
55   tsu_curve.kanji.grone.blue;
56   tsu_render;
57 endtsuglyph;
58
59 % oto/on "noise"
60 begintsuglyph("uni97F3",243); [see page 1440]
61   tsu_curve.kanji.grone.noise;
62   tsu_render;
63 endtsuglyph;
64
65 

---


66
67 endfont;
68
69 

---


```

# tsuku-9a.mp

```
1 %  
2 % Unicode page 9a (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

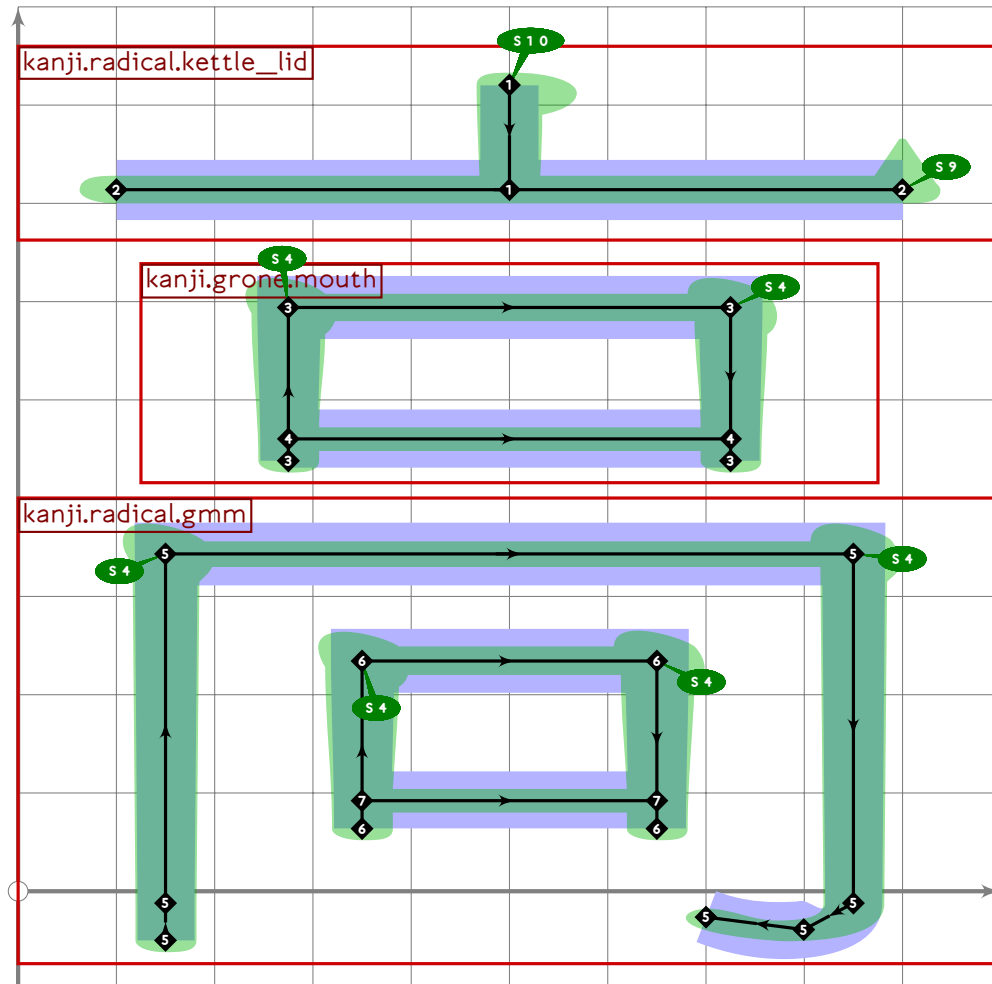
```
36 input buildkanji.mp;
```

```
37 input gradeone.mp;
```

```
38 input radical.mp;
```

```
39
```

```
40
```



```
41
```

```
42 vardef tsu_curve.kanji.grtwo.high =
```

```
43   add_proof_box("kanji.grtwo.high");
```

```
44 build_kanji.level(build_kanji.tb(650,-45)
45   (tsu_curve.kanji.radical.kettle_lid)
46   (build_kanji.tb(550,-67)
47     (build_kanji.sscale(xscaled 0.75)(tsu_curve.kanji.grone.mouth))
48     (tsu_curve.kanji.radical.gmm;
49       build_kanji.box((350,550),(650,250));
50     ));
51 enddef;
52
53 

---


54
55 % kou/taka "high"
56 begintsuglyph("uni9AD8",216); [see page 1442]
57   tsu_curve.kanji.grtwo.high;
58   tsu_render;
59 endtsuglyph;
60
61 

---


62
63 endfont;
64
65 

---


```

# tsuku-9e.mp

```
1 %  
2 % Unicode page 9e (Kanji) for Tsukurimashou  
3 % Copyright (C) 2011 Matthew Skala  
4 %
```

```
5-29 [Standard copyright notice]
```

```
30
```

```
31
```

```
32
```

```
33 beginfont
```

```
34
```

```
35 % AUTODEPS
```

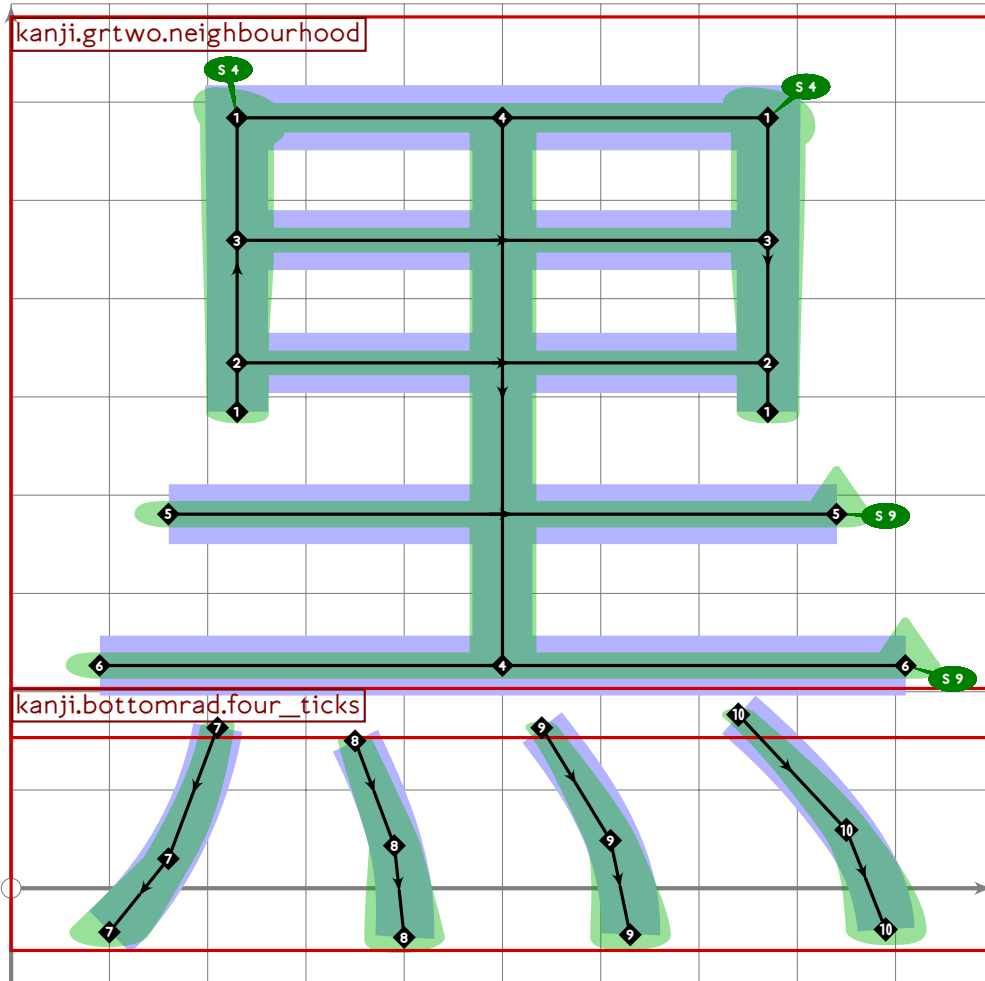
```
36 input bottomrad.mp;
```

```
37 input buildkanji.mp;
```

```
38 input gradetwo.mp;
```

```
39
```

```
40
```



```
41
```

```
42 vardef tsu_curve.kanji.grtwo.black =
```

```
43   add_proof_box("kanji.grtwo.black");
```

```
44 build_kanji.tb(190,0)
45   (tsu_curve.kanji.grtwo.neighbourhood)
46   (tsu_curve.kanji.bottomrad.four_ticks);
47 enddef;
48
49 

---


50
51 % koku/kuro "black"
52 begintsuglyph("uni9ED2",210); [see page 1444]
53   tsu_curve.kanji.grtwo.black;
54   tsu_render;
55 endtsuglyph;
56
57 

---


58
59 endfont;
60
61 

---


```

Part V

U+A000 to U+10FFFF

# tsuku-f7.mp

```
1 %
2 % Unicode page F7 (Adobe PUA) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

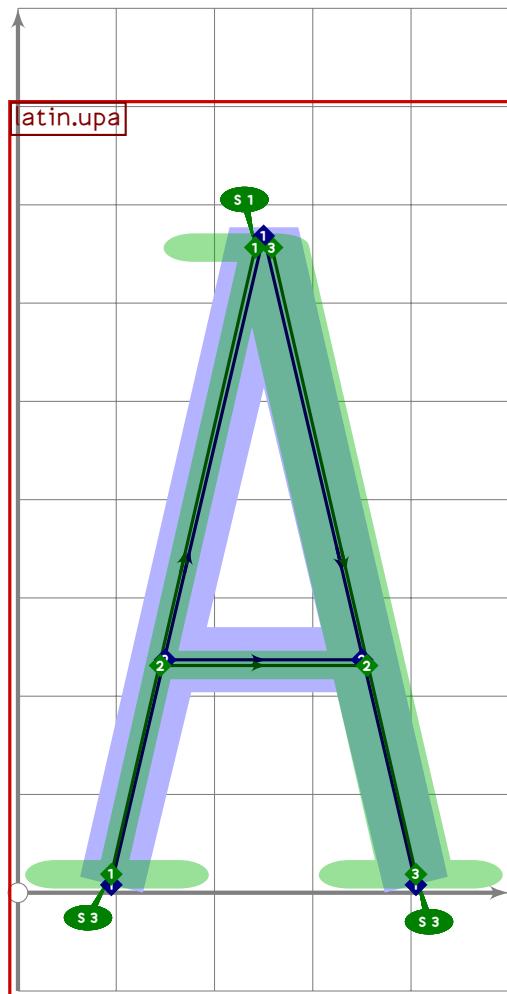

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input latin.mp;
39
40 latin_wide_sc_top:=0.4[latin_wide_xheight,latin_wide_top];
41
42 transform tsu_xf.sc;
43
44 (0,latin_wide_low_h) transformed tsu_xf.sc = (20,latin_wide_low_h);
45 (1000,latin_wide_low_h) transformed tsu_xf.sc = (980,latin_wide_low_h);
46 (0,latin_wide_top) transformed tsu_xf.sc = (20,latin_wide_sc_top);
47
48 

---


49
```

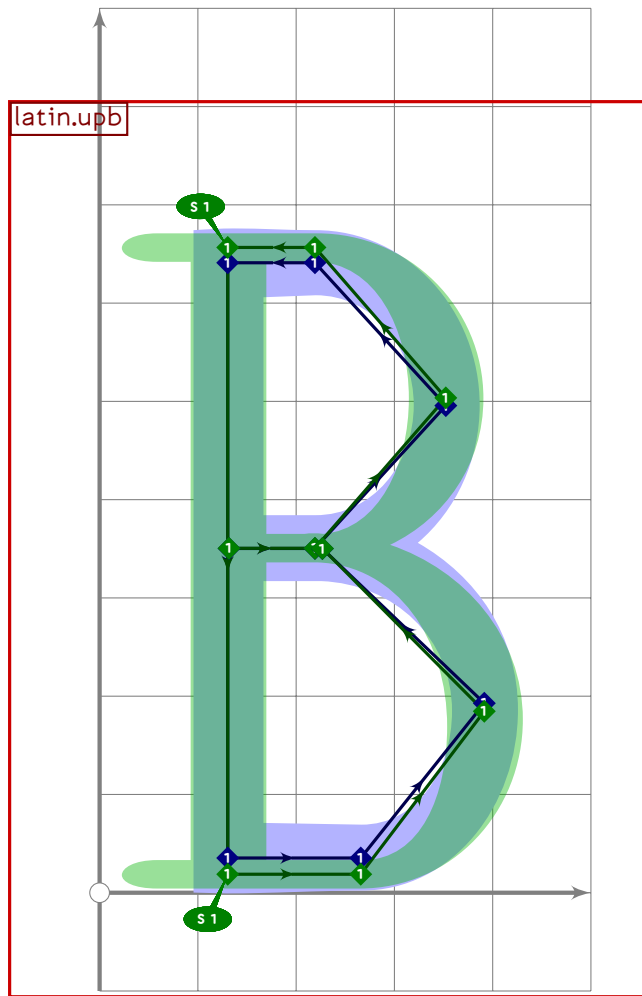
## Latin Small Caps

```
50 % LATIN SMALL CAPS
51
52 % WARNING changing rescale setting
53 tsu_rescale_half;
54
```

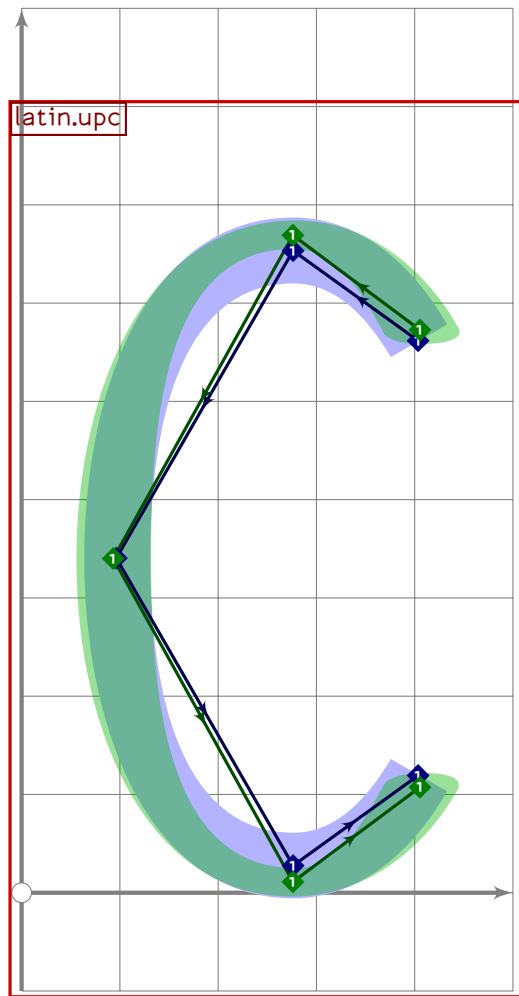


```
55 % A
56 beginsuglyph("uniF761";97);
57 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upa);
58 tsu_render;
59 endsuglyph;
60
```

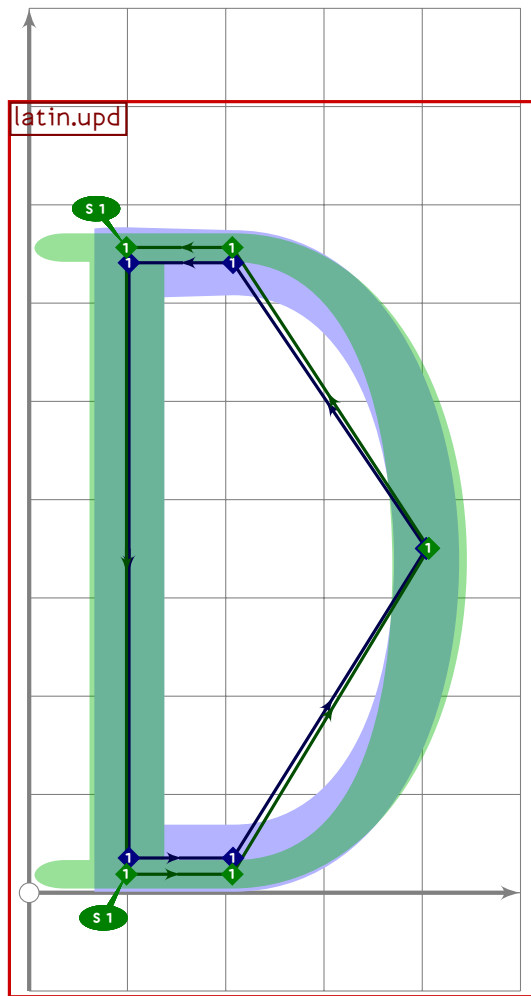




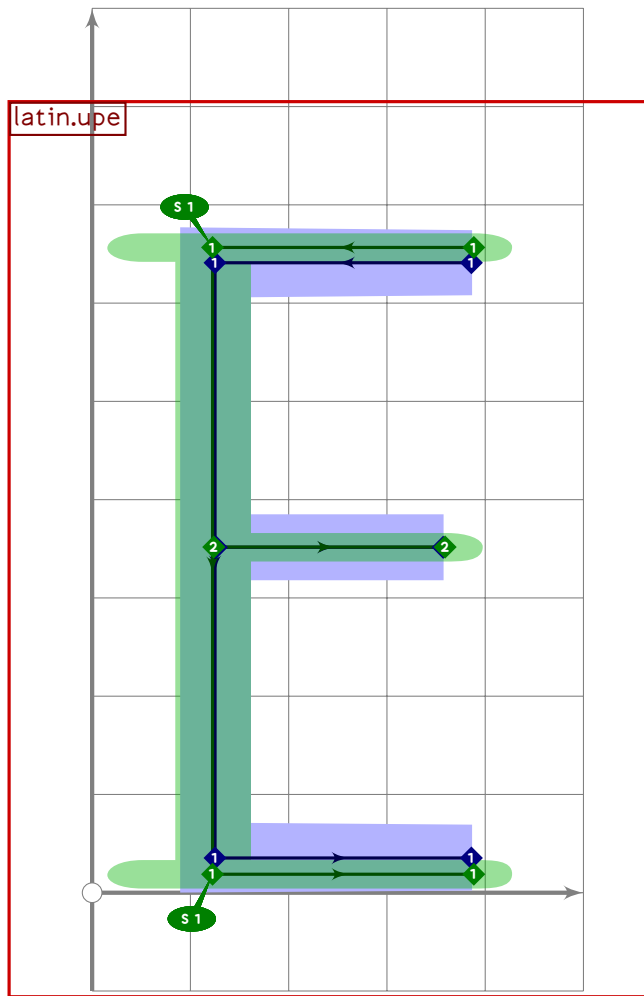
```
61 % B
62 beginsuglyph("uniF762";98);
63 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upb);
64 tsu_render;
65 endsuglyph;
66
```



```
67 % C
68 beginsuglyph("uniF763";99);
69   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upc);
70   tsu_render;
71 endsuglyph;
72
```



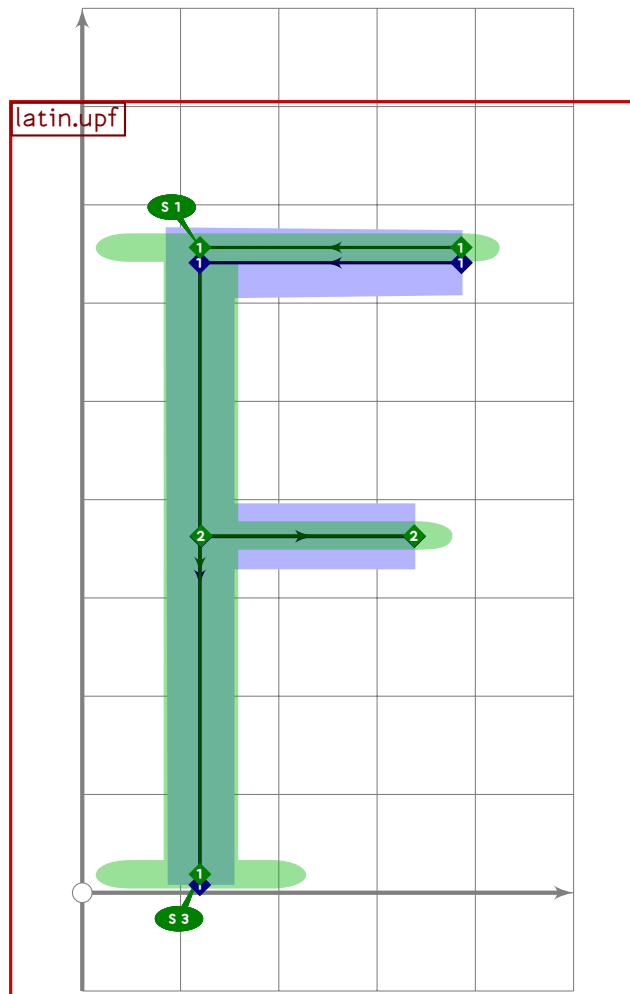
```
73 % D
74 beginsuglyph("uniF764",100);
75   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upd);
76   tsu_render;
77 endsuglyph;
78
```



```

79 % E
80 beginsuglyph("uniF765";101);
81   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upe);
82   tsu_render;
83 endsuglyph;
84

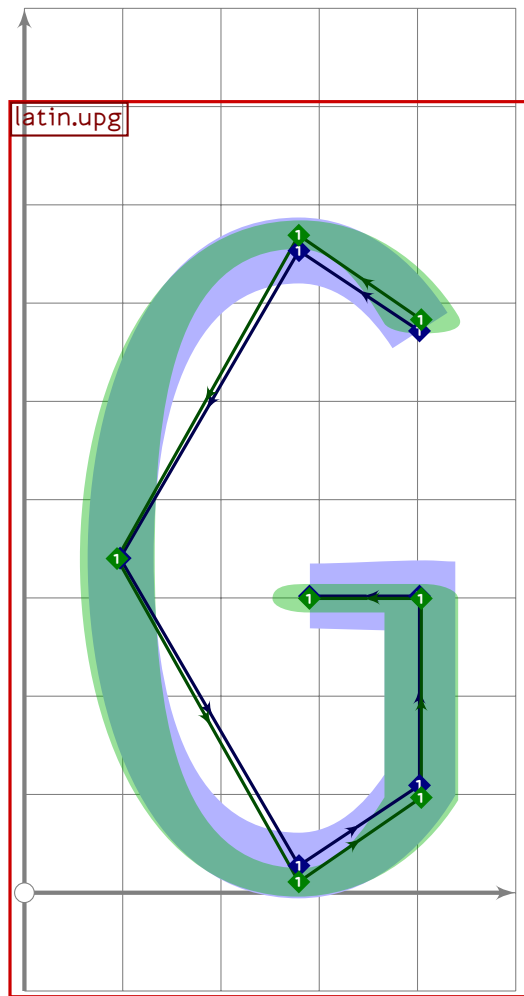
```



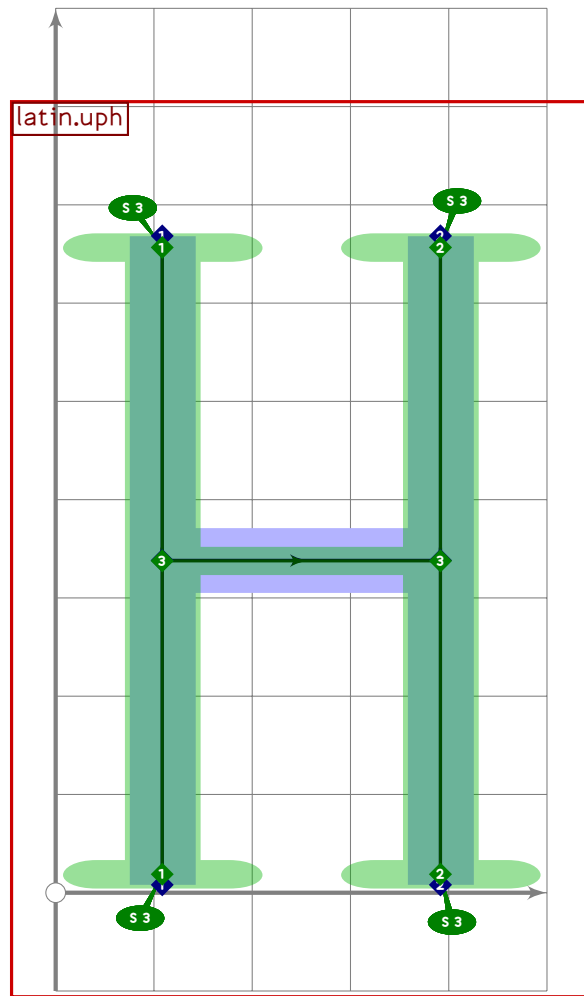
```

85 % F
86 beginsuglyph("uniF766";102);
87   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upf);
88   tsu_render;
89 endsuglyph;
90

```



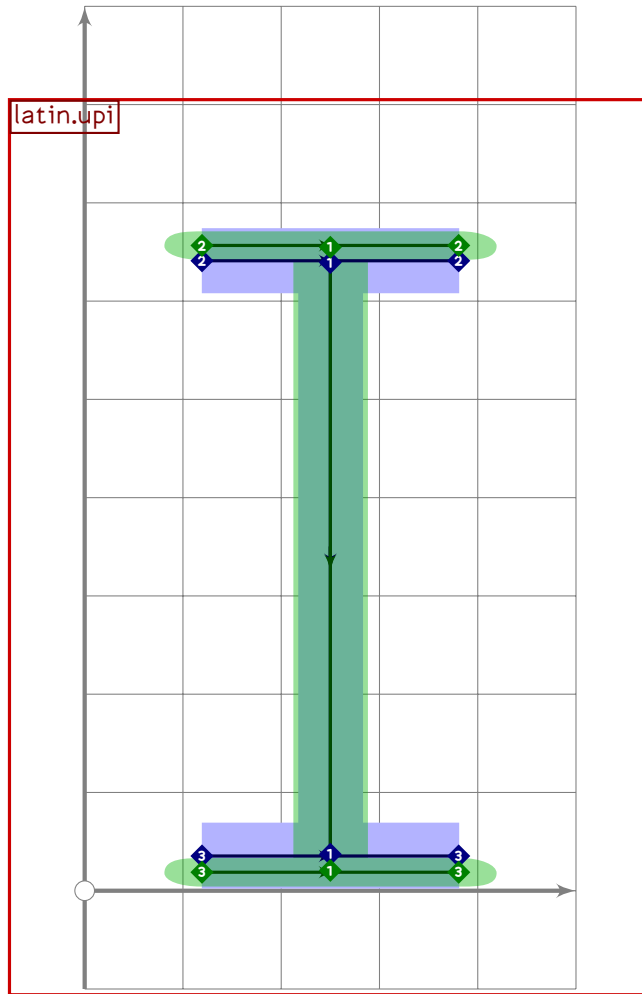
```
91 % G
92 beginsuglyph("uniF767";103);
93   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upg);
94   tsu_render;
95 endsuglyph;
96
```



```

97 % H
98 beginsuglyph("uniF768",104);
99   tsu_xform(tsu_xf.sc)(tsu_curve.latin.uph);
100   tsu_render;
101 endsuglyph;
102

```

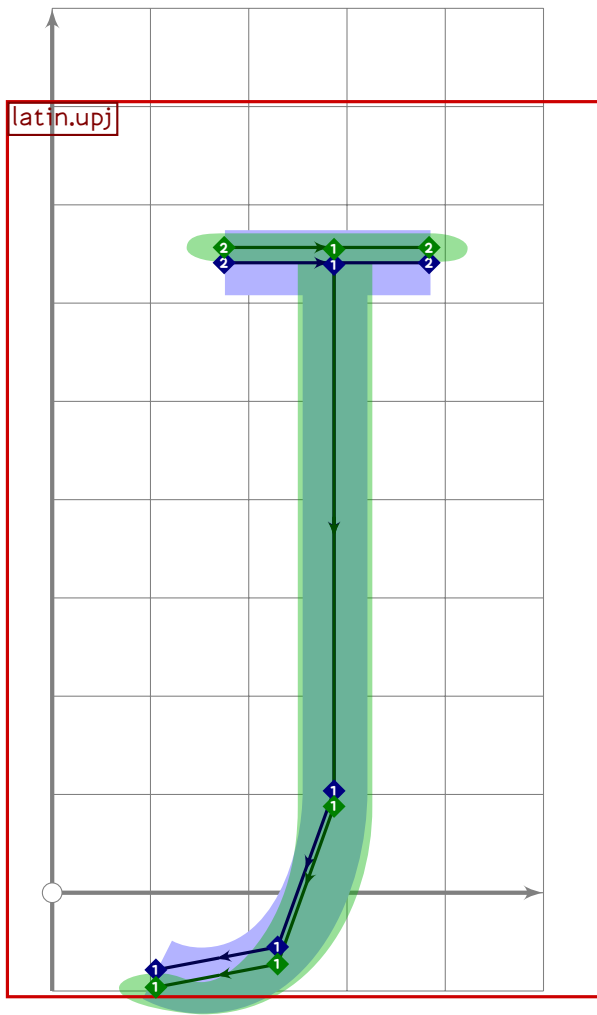


```

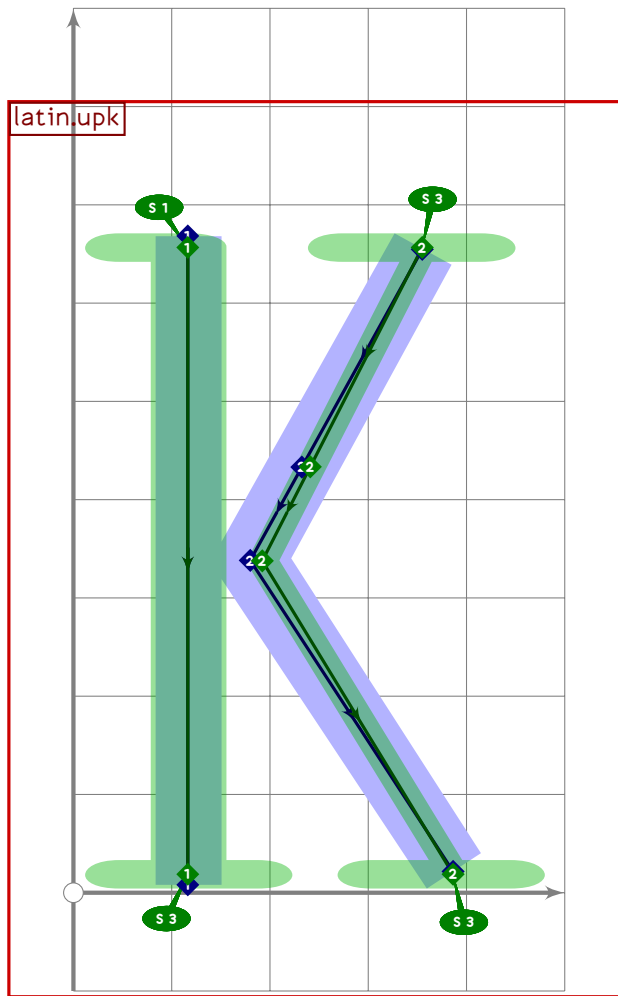
103 % I
104 begintsuglyph("uniF769";105);
105   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upi);
106   tsu_render;
107 endsuglyph;
108

```





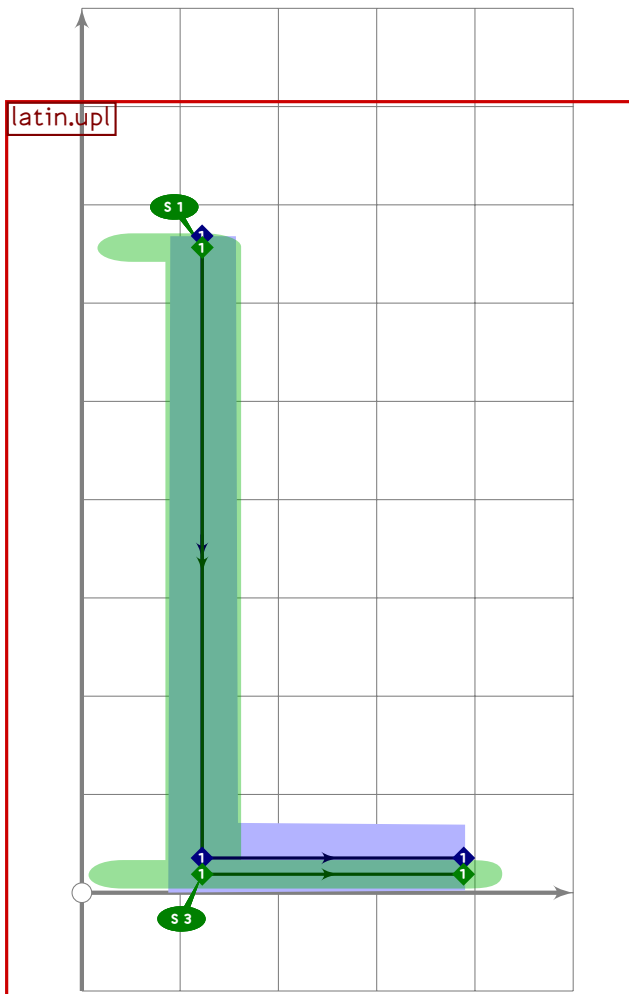
```
109 % J
110 beginsuglyph("uniF76A",106);
111 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upj);
112 tsu_render;
113 endsuglyph;
114
```



```

115 % K
116 beginsuglyph("uniF76B",107);
117   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upk);
118   tsu_render;
119 endsuglyph;
120

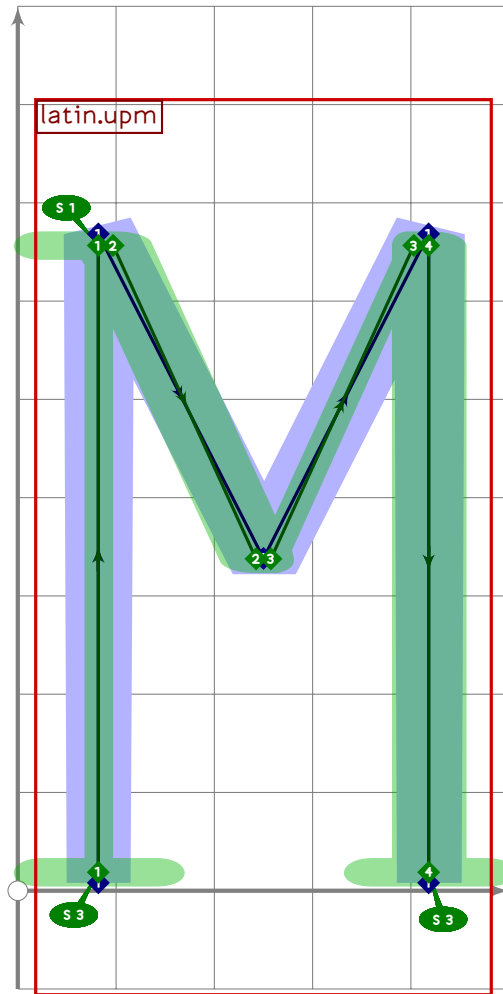
```



```

121 % L
122 beginsuglyph("uniF76C";108);
123   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upl);
124   tsu_render;
125 endsuglyph;
126

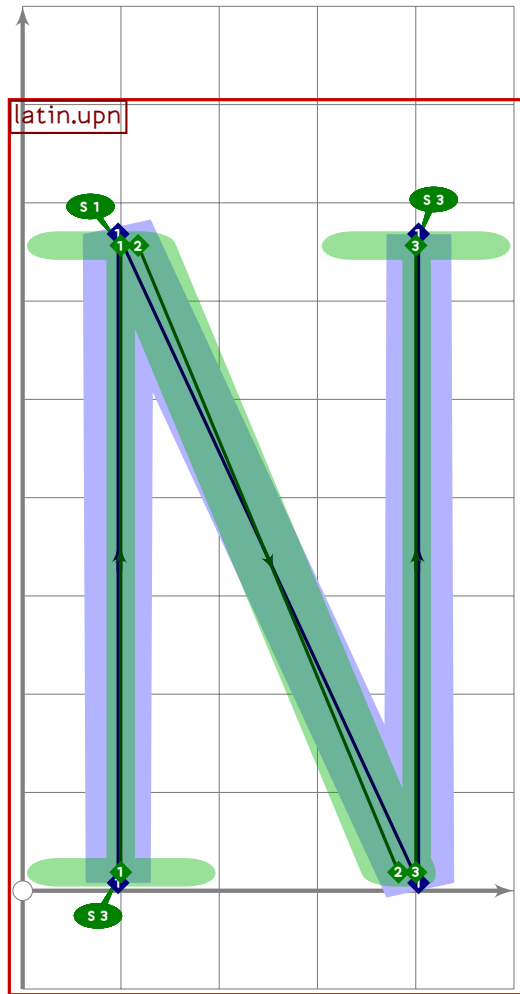
```



```

127 % M
128 beginsuglyph("uniF76D";109);
129 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upm);
130 tsu_render;
131 endsuglyph;
132

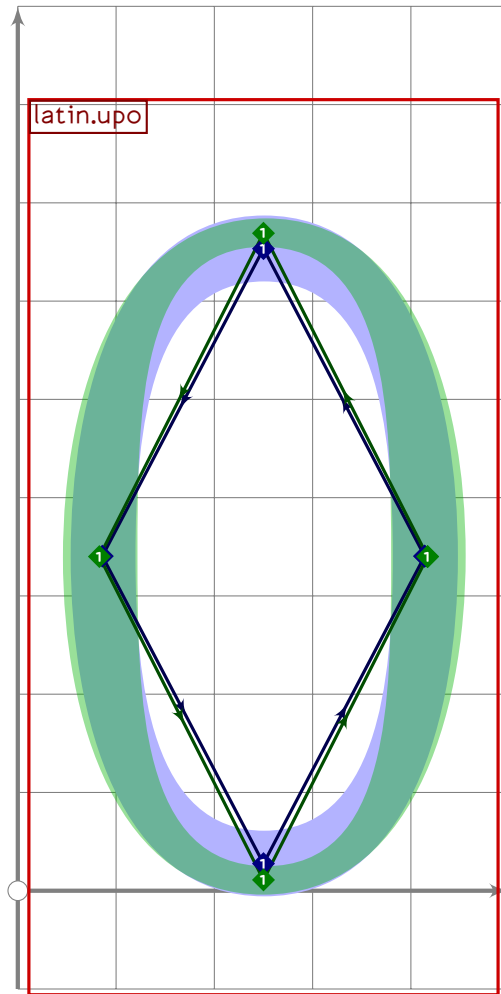
```



```

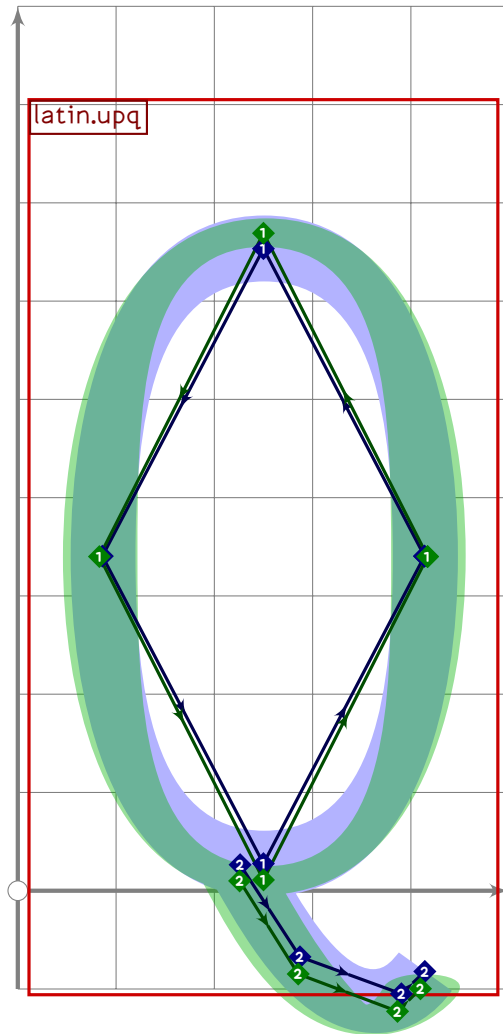
133 % N
134 beginsuglyph("uniF76E";110);
135 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upn);
136 tsu_render;
137 endsuglyph;
138

```



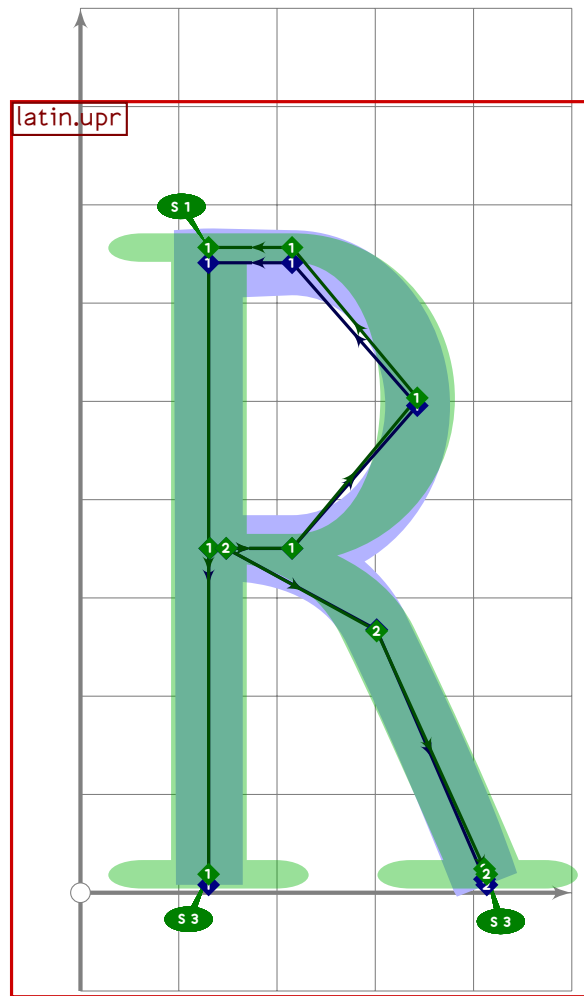
```
139 % ○  
140 beginsuglyph("uniF76F";111);  
141   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upo);  
142   tsu_render;  
143 endsuglyph;  
144
```





```
151 % Q
152 beginsuglyph("uniF771";113);
153 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upq);
154 tsu_render;
155 endsuglyph;
156
```

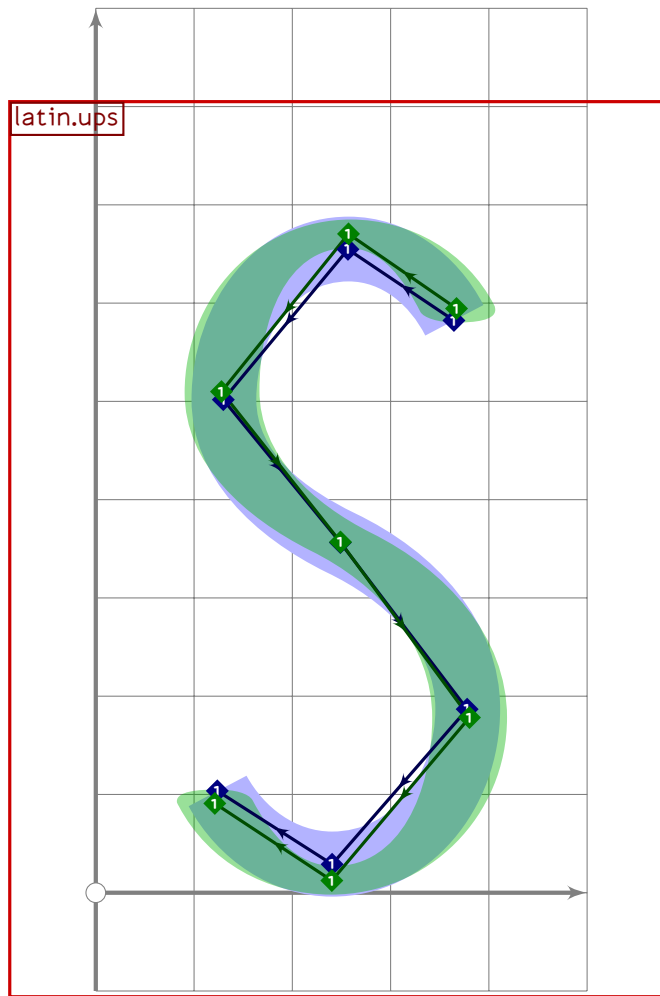




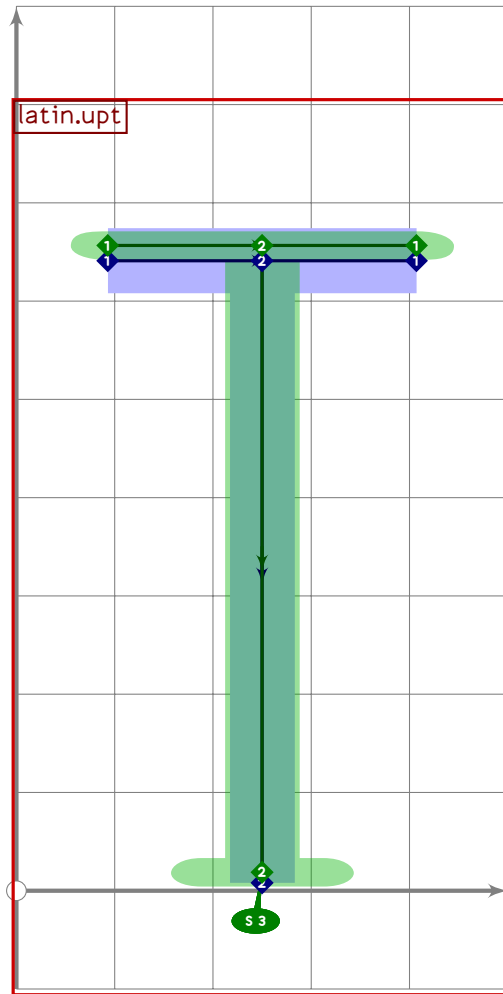
```

157 % R
158 begint Suglyph("uniF772",114);
159   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upr);
160   tsu_render;
161   endtsuglyph;
162

```



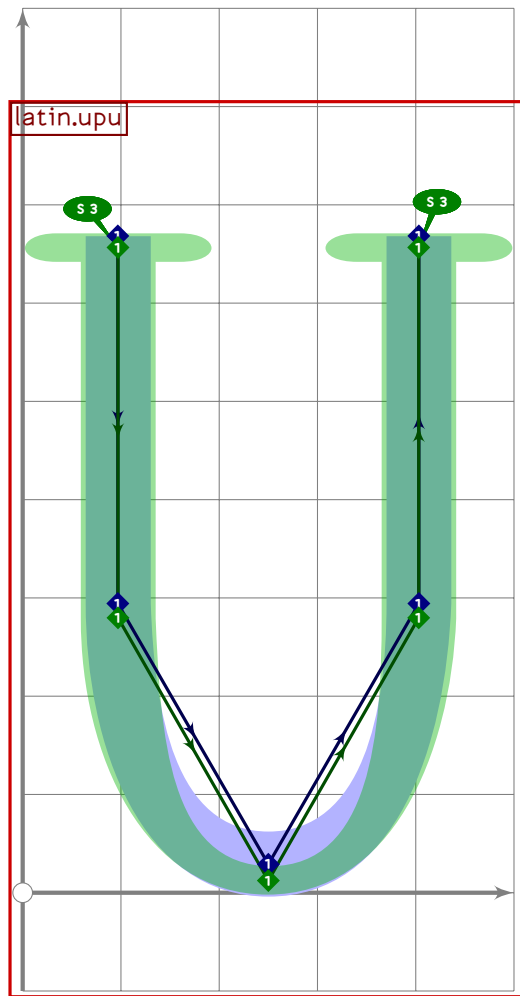
```
163 % S
164 beginsuglyph("uniF773",115);
165 tsu_xform(tsu_xf.sc)(tsu_curve.latin.ups);
166 tsu_render;
167 endsuglyph;
168
```



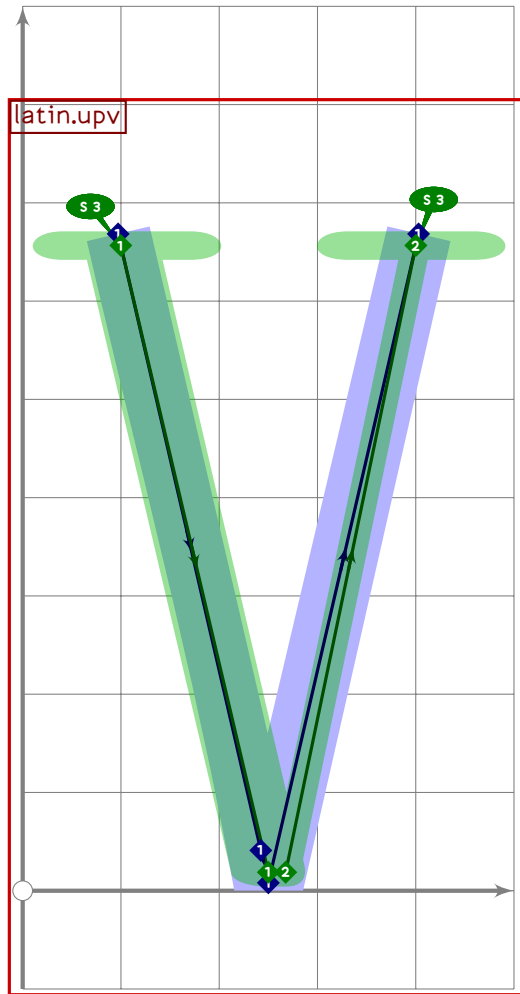
```

169 % T
170 beginsuglyph("uniF774";116);
171   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upt);
172   tsu_render;
173 endsuglyph;
174

```



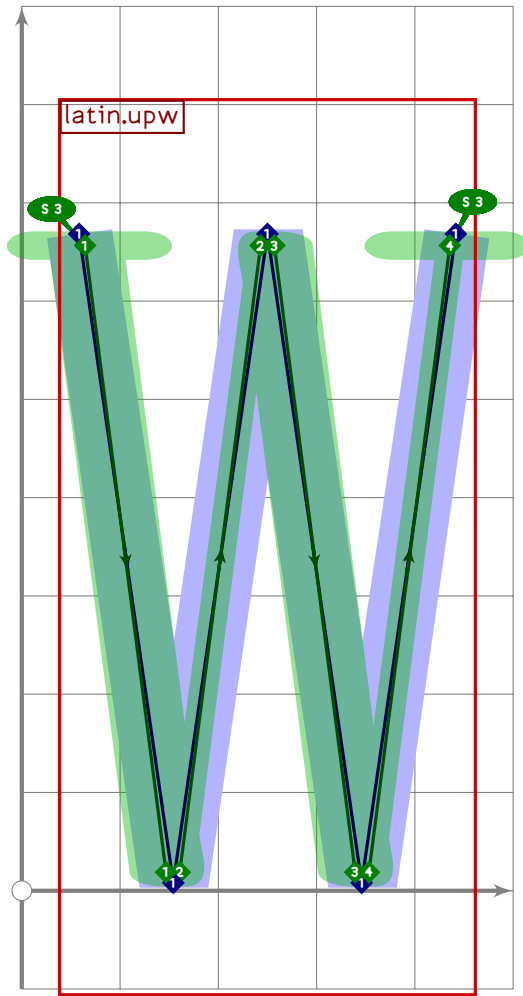
```
175 % U
176 beginsuglyph("uniF775";117);
177 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upu);
178 tsu_render;
179 endsuglyph;
180
```



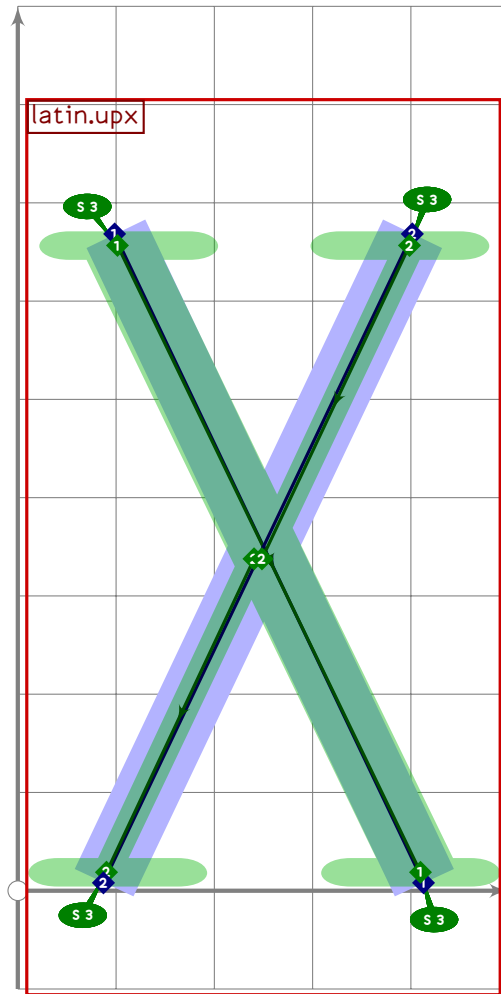
```

181 % V
182 beginsuglyph("uniF776",118);
183 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upv);
184 tsu_render;
185 endsuglyph;
186

```



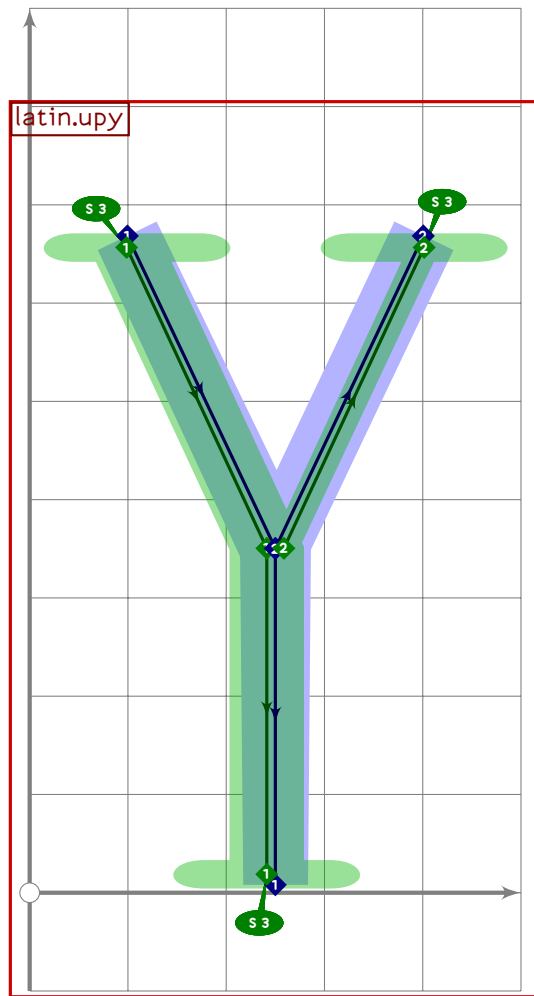
```
187 % W
188 beginsuglyph("uniF777";119);
189 tsu_xform(tsu_xf.sc)(tsu_curve.latin.upw);
190 tsu_render;
191 endsuglyph;
192
```



```

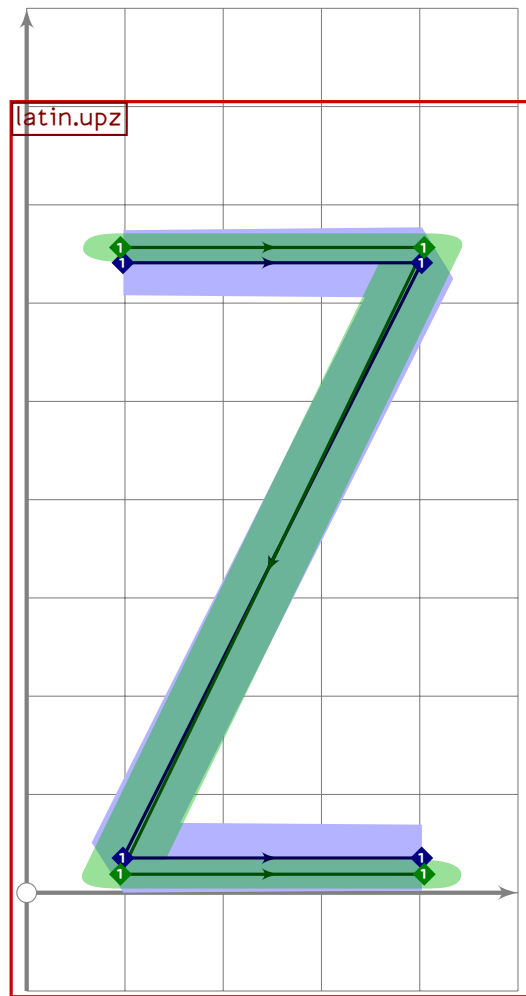
193 % X
194 beginsuglyph("uniF778",120);
195   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upx);
196   tsu_render;
197 endsuglyph;
198

```



```
199 % Y
200 beginsuglyph("uniF779";121);
201   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upy);
202   tsu_render;
203 endsuglyph;
204
```





```

205 % Z
206 begint Suglyph("uniF77A";122);
207   tsu_xform(tsu_xf.sc)(tsu_curve.latin.upz);
208   tsu_render;
209 endsuglyph;
210
211 _____
212
213 endfont;
214
215 _____

```

# tsuku-ff.mp

```
1 %
2 % Unicode page FF (Full-width and Half-width Forms) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

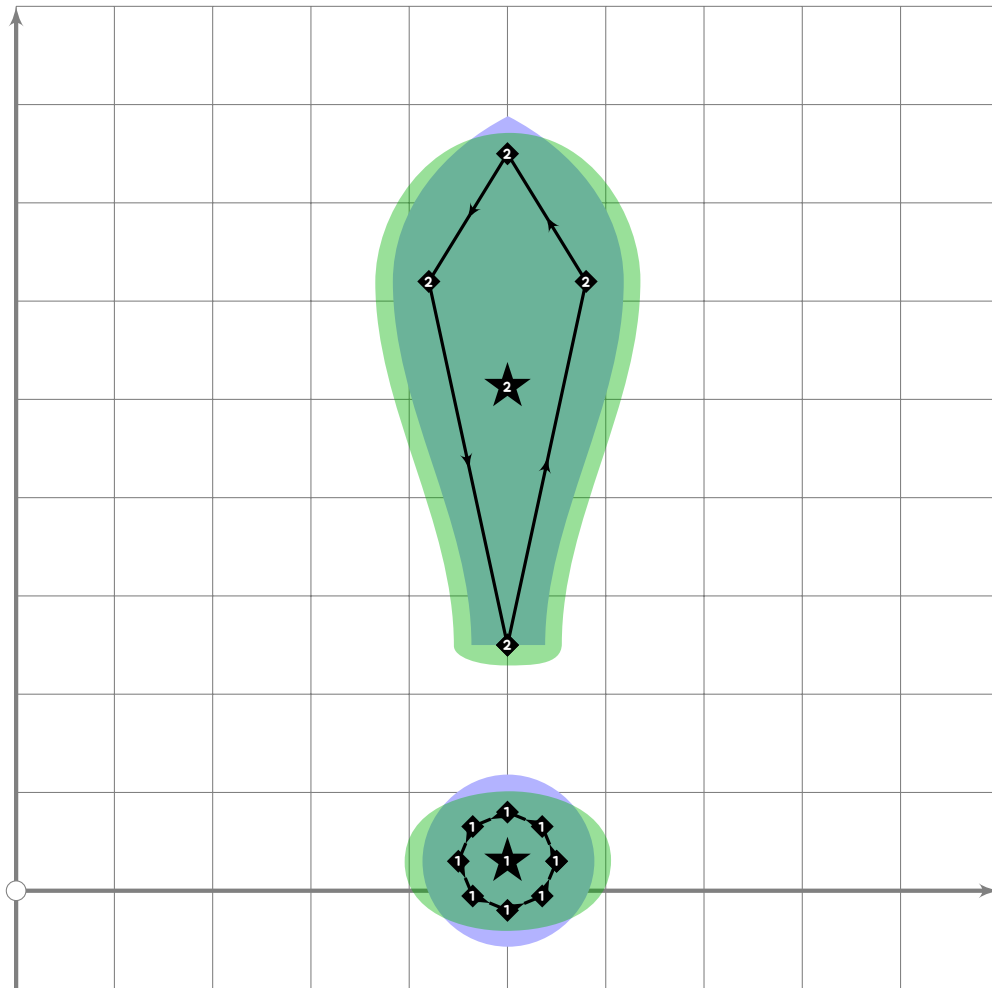

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input accent.mp;
39 input dakuten.mp;
40 input katakana.mp;
41 input latin.mp;
42 input numerals.mp;
43 input punct.mp;
44
45 path bracket[];
46
47 

---


48
```

## Full-Width Forms

```
49 % FULL-WIDTH FORMS
50
51 % WARNING this code is substantially duplicated in tsuku-00; just
52 % enough differences to make sharing impractical
53
```



```

54 % exclamation point
55 begintsuglyph("uniFF01";1);
56 if tsu_pbrush_size>=tsu_punct_size:
57     lcblob1:=fullcircle
58         xscaled (tsu_punct_size*tsu_pbrush_size)
59         yscaled (tsu_punct_size*tsu_pbrush_size*tsu_pbrush_shape)
60         rotated tsu_pbrush_angle
61         shifted (500,30);
62 else:
63     bp[sp]:=fullcircle scaled tsu_punct_size shifted (500,30);
64     bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-cycle;
65     if tsu_pbrush_size>=3:
66         lcblob1:=bp[sp];
67     fi;
68     sp:=sp+1;
69 fi;
70
71 bp[sp]:=(500,250){up}..(580,620){up}..{curl 1}(500,750){curl 1}..
72     (420,620){down}..{down}(500,250);
73 bq[sp]:=(2,2)-(2,2)-(2,2)-(2,2)-(2,2);
74 sp:=sp+1;

```

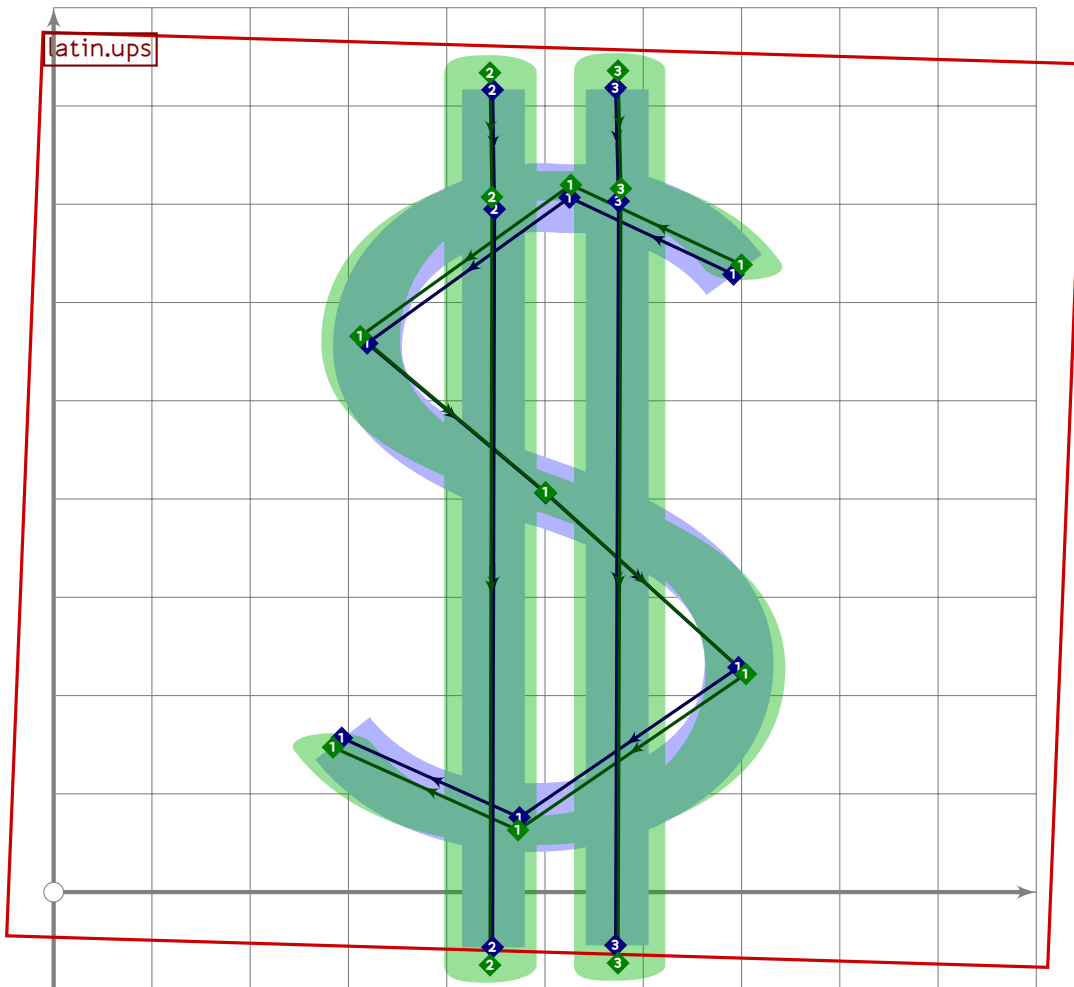
```

75
76 if tsu_pbrush_size>=30:
77     lcblob2:=(subpath (0.1,3.9) of bp[sp-1])~cycle;
78     fi;
79     tsu_render;
80 endsuglyph;
81
82 % ASCII (neither left nor right) quotation mark
83 begintsuglyph("uniFF02";2);
84     tsu_curve.punct.asciiquote;
85     tsu_render;
86 endsuglyph;
87
88 % number sign
89 begintsuglyph("uniFF03";3);
90     tsu_curve.punct.numbersign;
91     tsu_render;
92 endsuglyph;
93

```

[see page 253]

[see page 276]



```

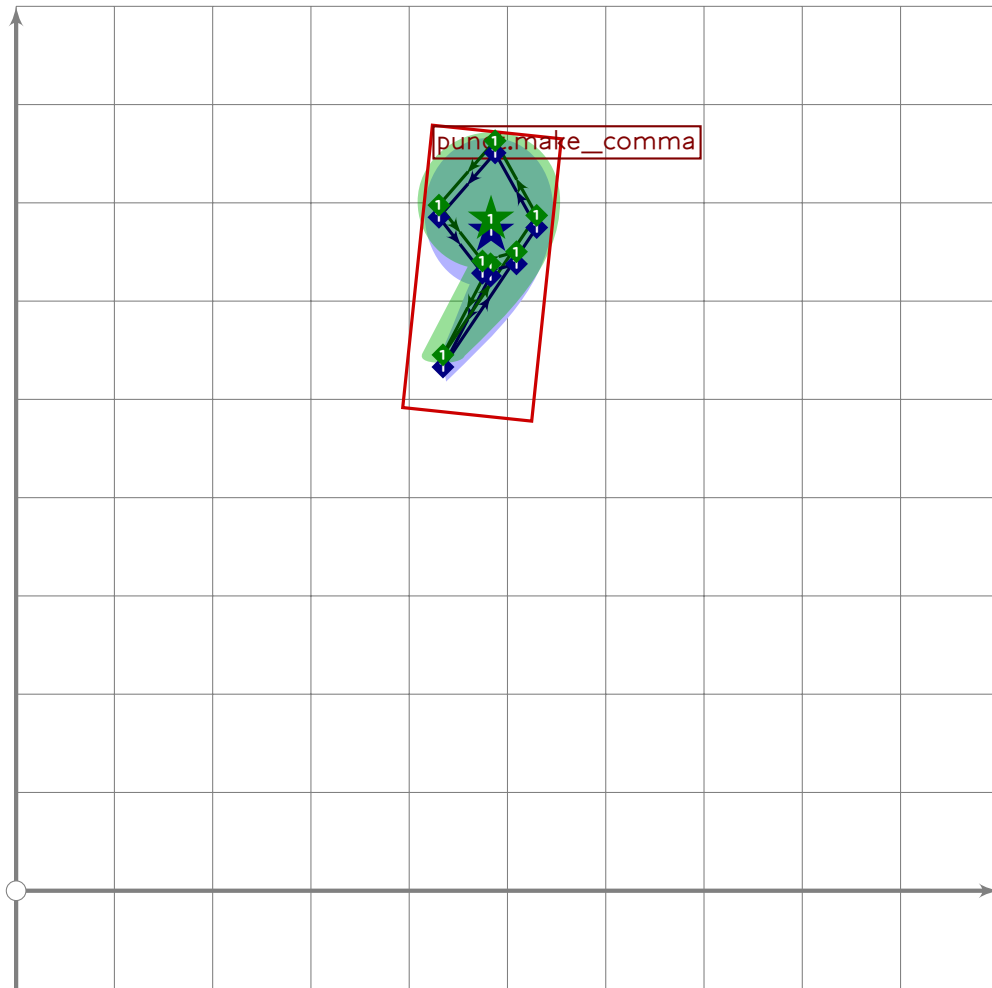
94 % dollar sign
95 begintsuglyph("uniFF04";4);

```

```

96  tsu_xform(identity shifted -centre_pt
97    rotated -2 xyscaled (1.06,0.92) shifted centre_pt)(tsu_curve.latin.ups);
98
99  numeric x[],y[];
100 x1=x2=0.38[xpart llcorner bp1,xpart lrcorner bp1];
101 x3=x4=0.69[xpart llcorner bp1,xpart lrcorner bp1];
102 y1=y3=1.12[latin_wide_low_r,latin_wide_high_r];
103 y2=y4=(-0.15)[latin_wide_low_r,latin_wide_high_r];
104
105 bp2:=z1-z2;
106 z5=(bp1 intersectionpoint bp2)*(2,-1);
107 bp2:=(z1-z5-z2) shifted (0,1);
108 bq2:=(2,2)-(2,2)-(2,2);
109 bo_size2:=85;
110
111 bp3:=z3-z4;
112 z6=(bp1 intersectionpoint bp3)*(3,1);
113 bp3:=(z3-z6-z4) shifted (0,1);
114 bq3:=(2,2)-(2,2)-(2,2);
115 bo_size3:=85;
116
117 sp:=4;
118  tsu_render;
119 endtsuglyph;
120
121 % percent
122 begintsuglyph("uniFF05",5); [see page 281]
123  tsu_curve.punct.percent;
124  tsu_render;
125 endtsuglyph;
126
127 % ampersand
128 begintsuglyph("uniFF06",6); [see page 252]
129  tsu_curve.punct.ampersand;
130  tsu_render;
131 endtsuglyph;
132

```



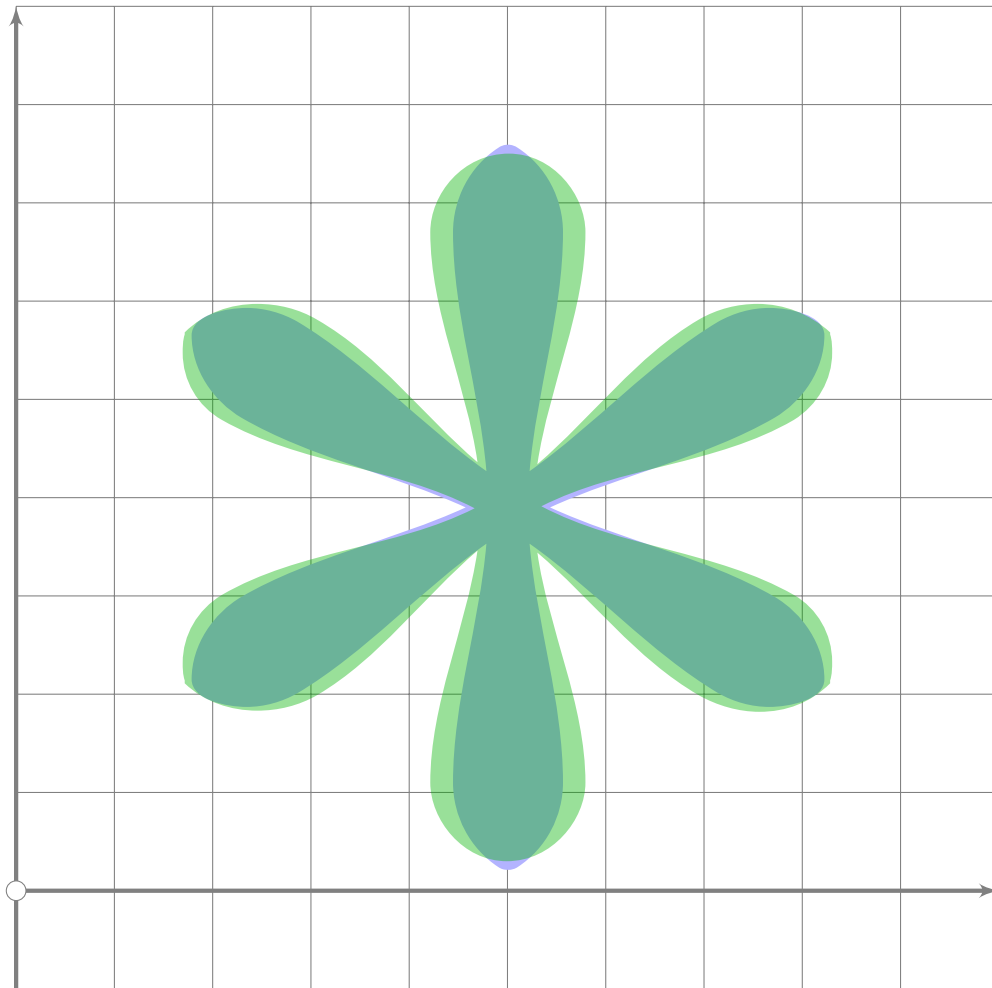
```

133 % apostrophe
134 begintsuglyph("uniFF07";7);
135 tsu_curve.punct.make_comma((480,vmetric(0.94)),0);
136 tsu_render;
137 endsuglyph;
138
139 % left and right parentheses
140 tsu_curve.punct.paren_intro;
141 begintsuglyph("uniFF08";8);
142 tsu_curve.punct.paren_left;
143 tsu_render;
144 endsuglyph;
145 begintsuglyph("uniFF09";9);
146 tsu_curve.punct.paren_right;
147 tsu_render;
148 endsuglyph;
149

```

[see page 279]

[see page 280]

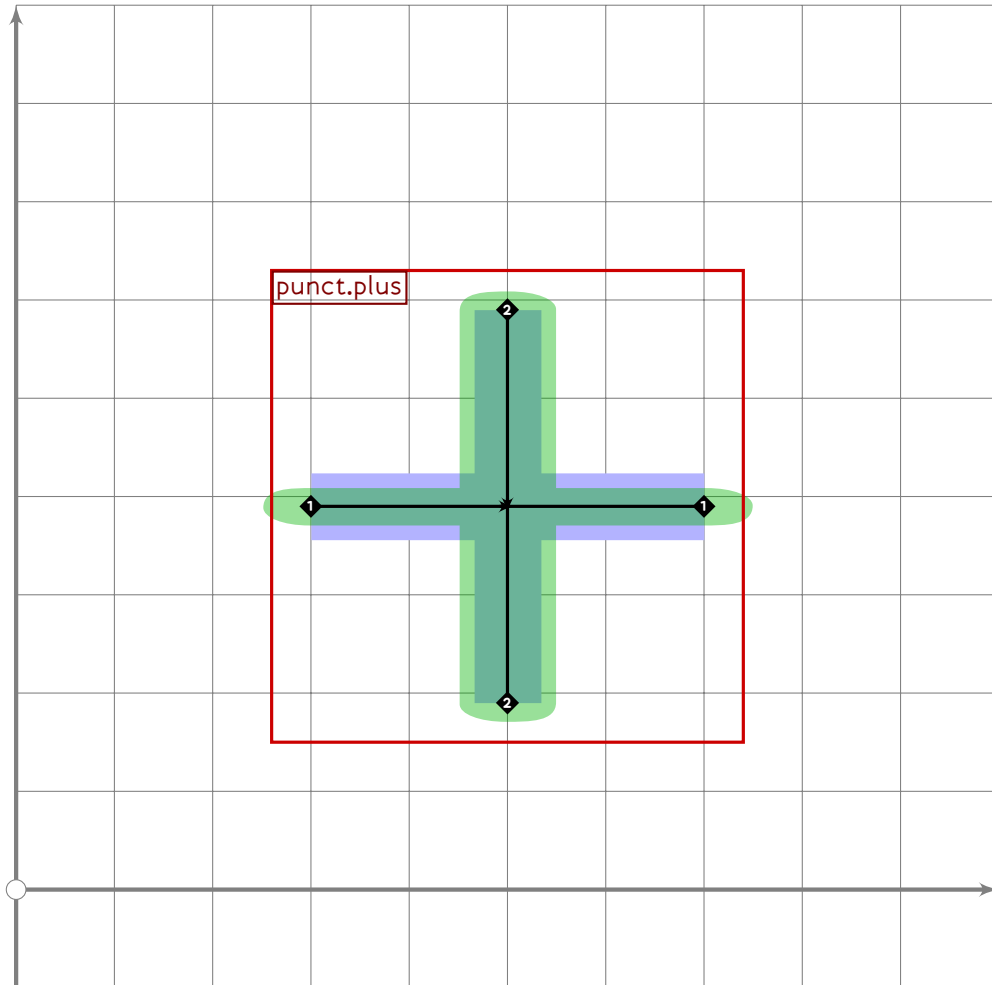


```

150 % asterisk
151 begintsuglyph("uniFF0A",10);
152   begingroup
153     path lobe,glyph[];
154
155     lobe:=(1,0){up}..(tsu_brush_max*tsu_punct_size/2,280){up}
156       ..{curl 1}(0,350){curl 1}..(-tsu_brush_max*tsu_punct_size/2,280){down};
157     lobe:=(lobe..(lobe rotated 180)..cycle) scaled (tsu_punct_size/100);
158
159     default_nib:=fix_nib(50*tsu_brush_max,
160       50*tsu_brush_max*tsu_brush_shape,
161       tsu_brush_angle);
162     pen_stroke()(lobe shifted centre_pt)(glyph1);
163     pen_stroke()(lobe rotated 60 shifted centre_pt)(glyph2);
164     pen_stroke()(lobe rotated 120 shifted centre_pt)(glyph3);
165
166     dangerousFill glyph1.r;
167     dangerousFill glyph2.r;
168     dangerousFill glyph3.r;
169   endgroup;
170 endtsuglyph;

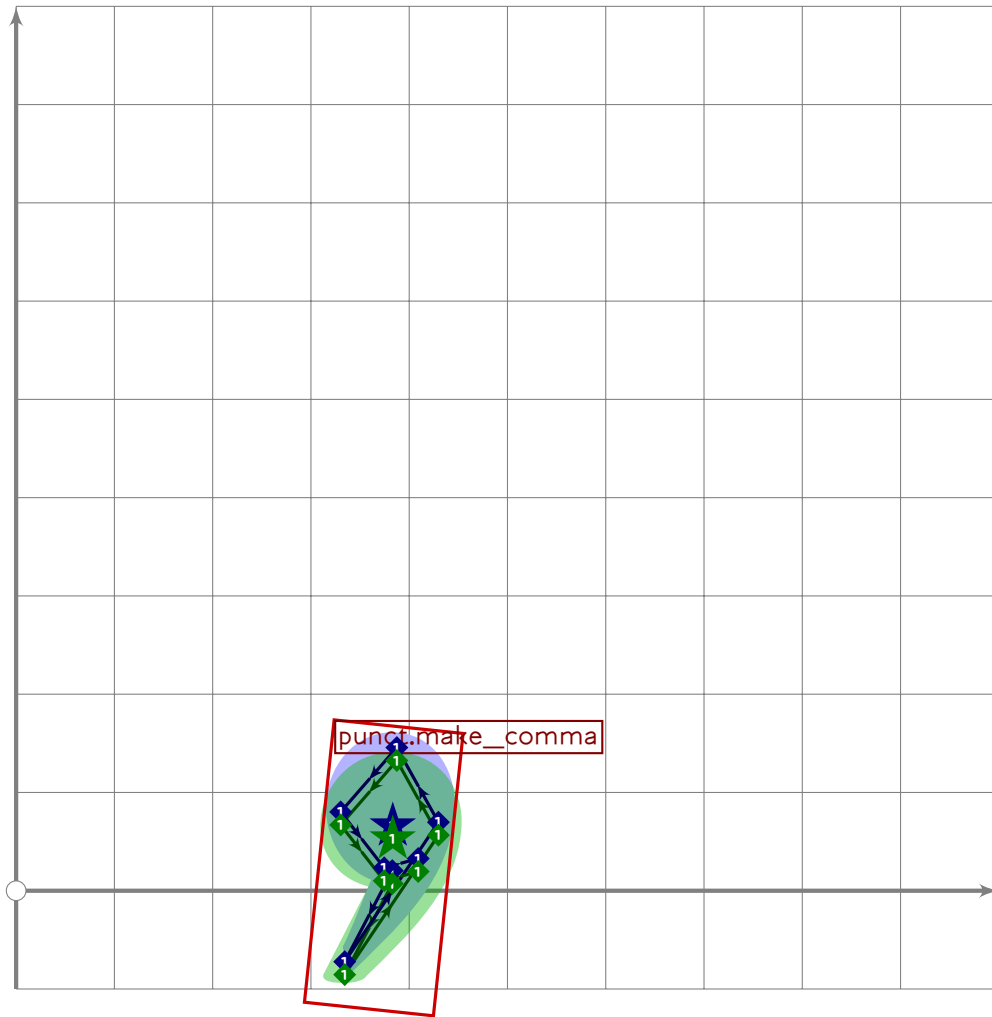
```

171



```
172 % plus
173 beginsuglyph("uniFF0B";11);
174   tsu_curve.punct.plus
175     (identity scaled (2*tsu_punct_size) shifted centre_pt);
176   tsu_render;
177 endsuglyph;
178
```

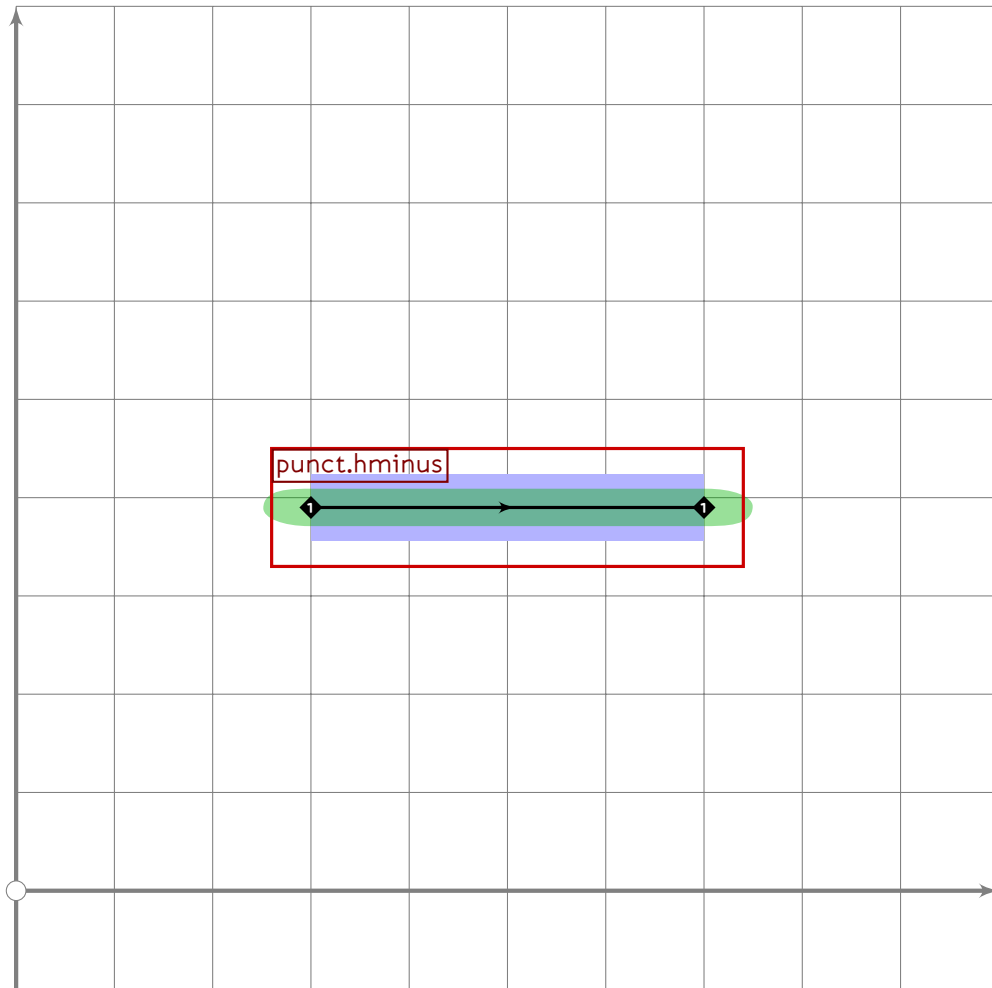




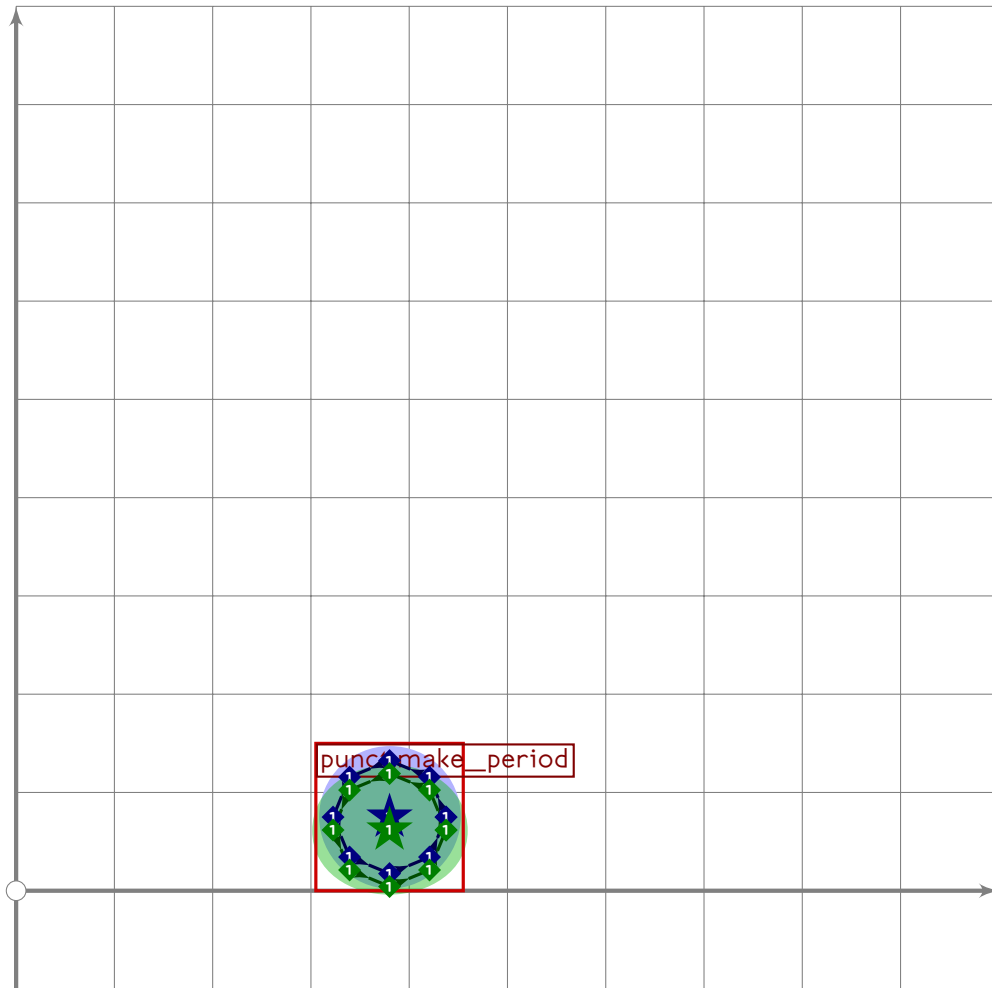
```

179 % comma
180 begint Suglyph("uniFFOC",12);
181 tsu_curve.punct.make_comma((380,vmetric(0.03)),0);
182 tsu_render;
183 endsuglyph;
184

```



```
185 % hyphen-minus
186 begintsuglyph("uniFF0D";13);
187 tsu_curve,punct.hminus
188   (identity scaled (2*tsu_punct_size) shifted centre_pt);
189 tsu_render;
190 endsuglyph;
191
```



```

192 % period
193 begintsuglyph("uniFF0E";14);
194 tsu_curve.punct.make__period((380,vmetric(0.03)));
195 tsu_render;
196 endtsuglyph;

```

197

```

198 % slash
199 begintsuglyph("uniFF0F";15);
200 tsu_curve.punct.slash;
201 tsu_render;
202 endtsuglyph;

```

[see page 287]

203

```

204 % 0
205 begintsuglyph("uniFF10";16);
206 tsu_curve.numeral.zero;
207 tsu_render;
208 endtsuglyph;

```

[see page 229]

209

```

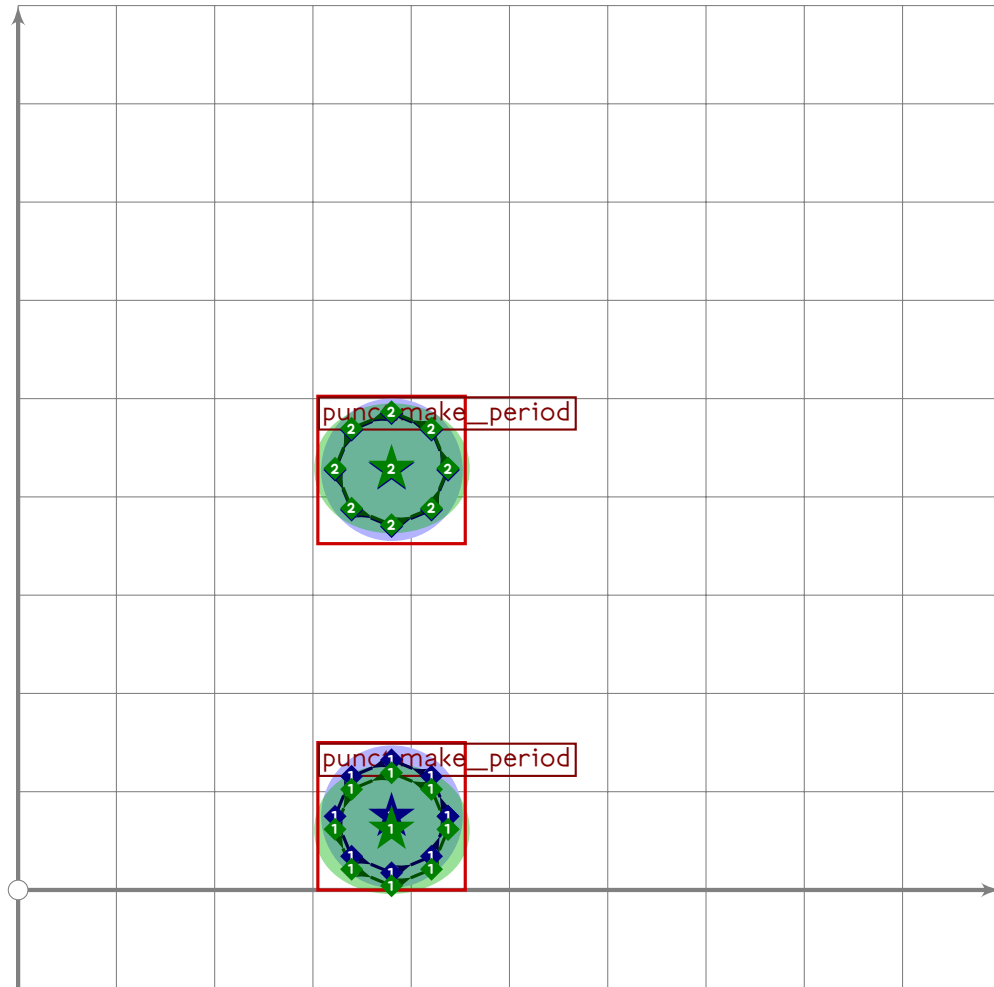
210 % 1
211 begintsuglyph("uniFF11";17);
212 tsu_curve.numeral.one;

```

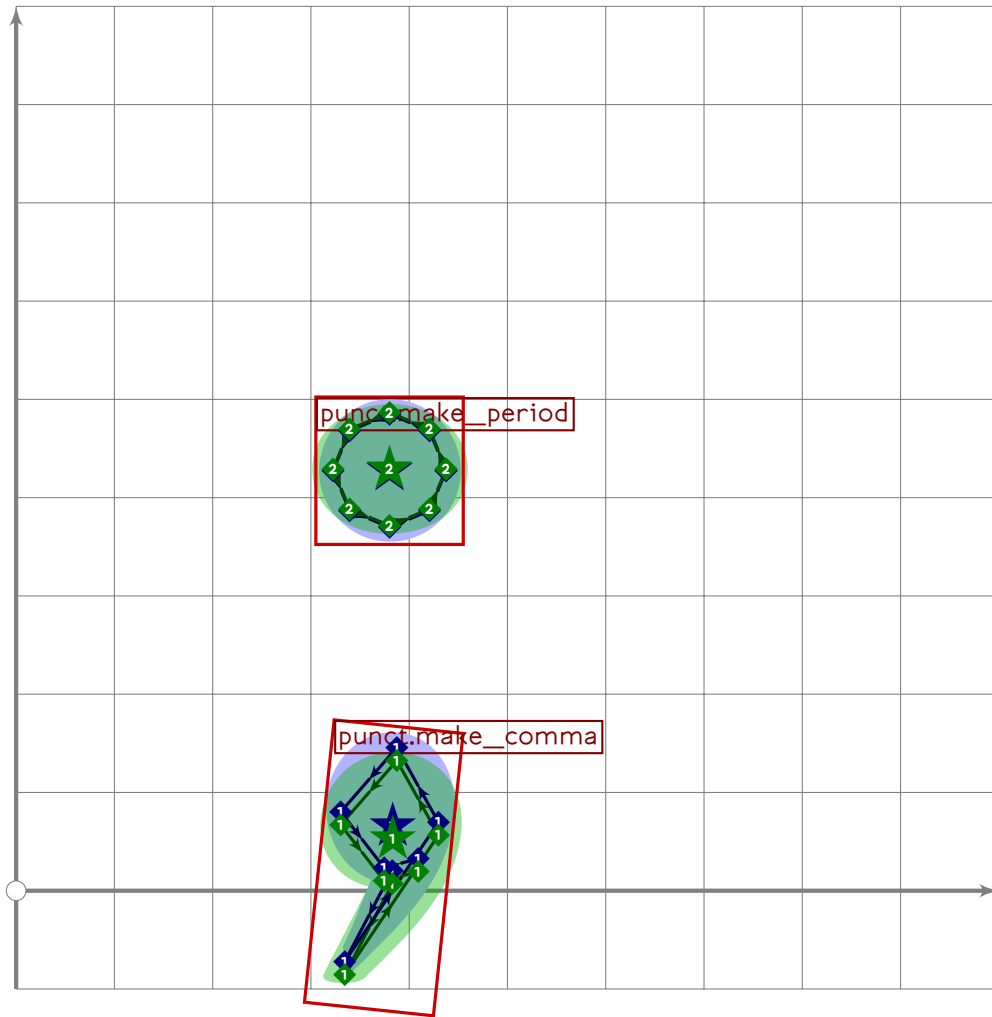
[see page 230]

213 `tsu_render;`  
214 `endtsuglyph;`  
215  
216 `% 2`  
217 `begintsuglyph("uniFF12";18);` [see page 231]  
218 `tsu_curve.numeral.two;`  
219 `tsu_render;`  
220 `endtsuglyph;`  
221  
222 `% 3`  
223 `begintsuglyph("uniFF13";19);` [see page 232]  
224 `tsu_curve.numeral.three;`  
225 `tsu_render;`  
226 `endtsuglyph;`  
227  
228 `% 4`  
229 `begintsuglyph("uniFF14";20);` [see page 233]  
230 `tsu_curve.numeral.four;`  
231 `tsu_render;`  
232 `endtsuglyph;`  
233  
234 `% 5`  
235 `begintsuglyph("uniFF15";21);` [see page 234]  
236 `tsu_curve.numeral.five;`  
237 `tsu_render;`  
238 `endtsuglyph;`  
239  
240 `% 6`  
241 `begintsuglyph("uniFF16";22);` [see page 235]  
242 `tsu_curve.numeral.six;`  
243 `tsu_render;`  
244 `endtsuglyph;`  
245  
246 `% 7`  
247 `begintsuglyph("uniFF17";23);` [see page 236]  
248 `tsu_curve.numeral.seven;`  
249 `tsu_render;`  
250 `endtsuglyph;`  
251  
252 `% 8`  
253 `begintsuglyph("uniFF18";24);` [see page 237]  
254 `tsu_curve.numeral.eight;`  
255 `tsu_render;`  
256 `endtsuglyph;`  
257  
258 `% 9`  
259 `begintsuglyph("uniFF19";25);` [see page 238]  
260 `tsu_curve.numeral.nine;`

```
261 tsu_render;  
262 endsuglyph;  
263
```



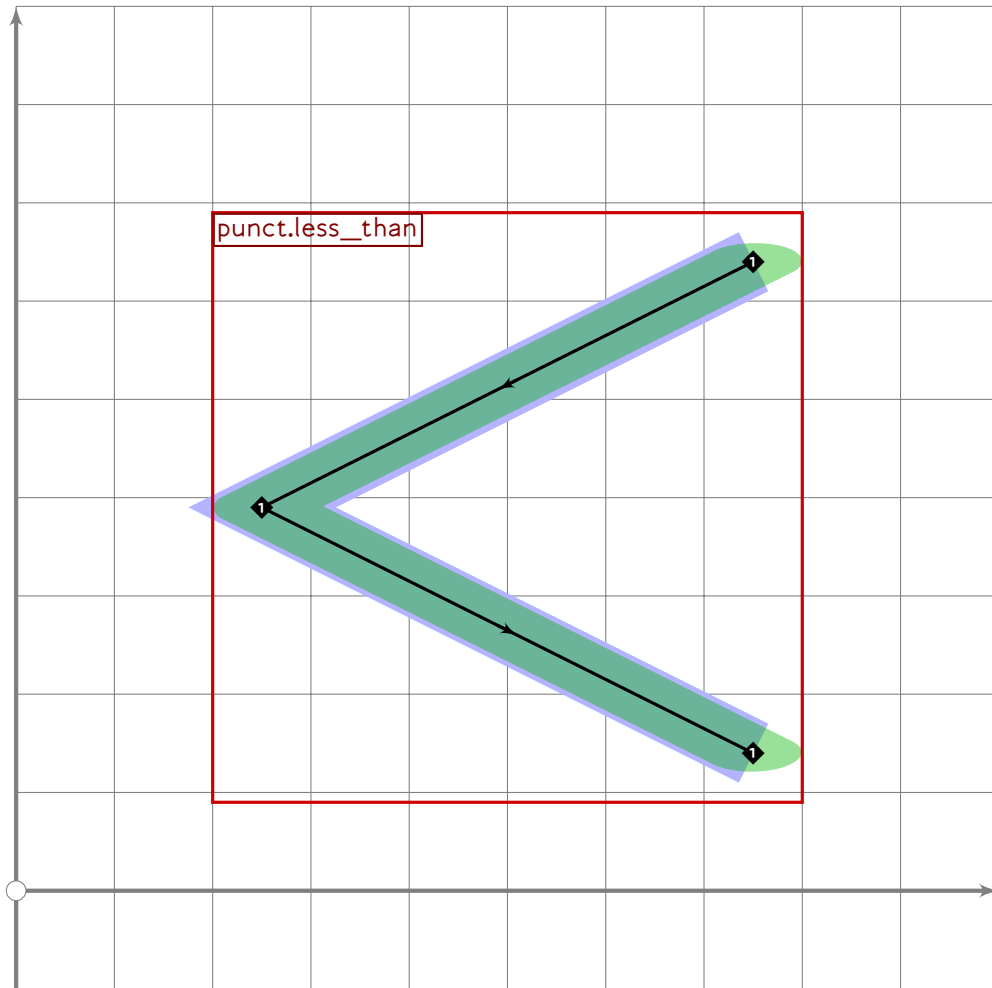
```
264 % colon  
265 beginsuglyph("uniFF1A";26);  
266 tsu_curve.punct.make_period((380,vmetric(0.03)));  
267 tsu_curve.punct.make_period((380,vmetric(0.56)));  
268 tsu_render;  
269 endsuglyph;  
270
```



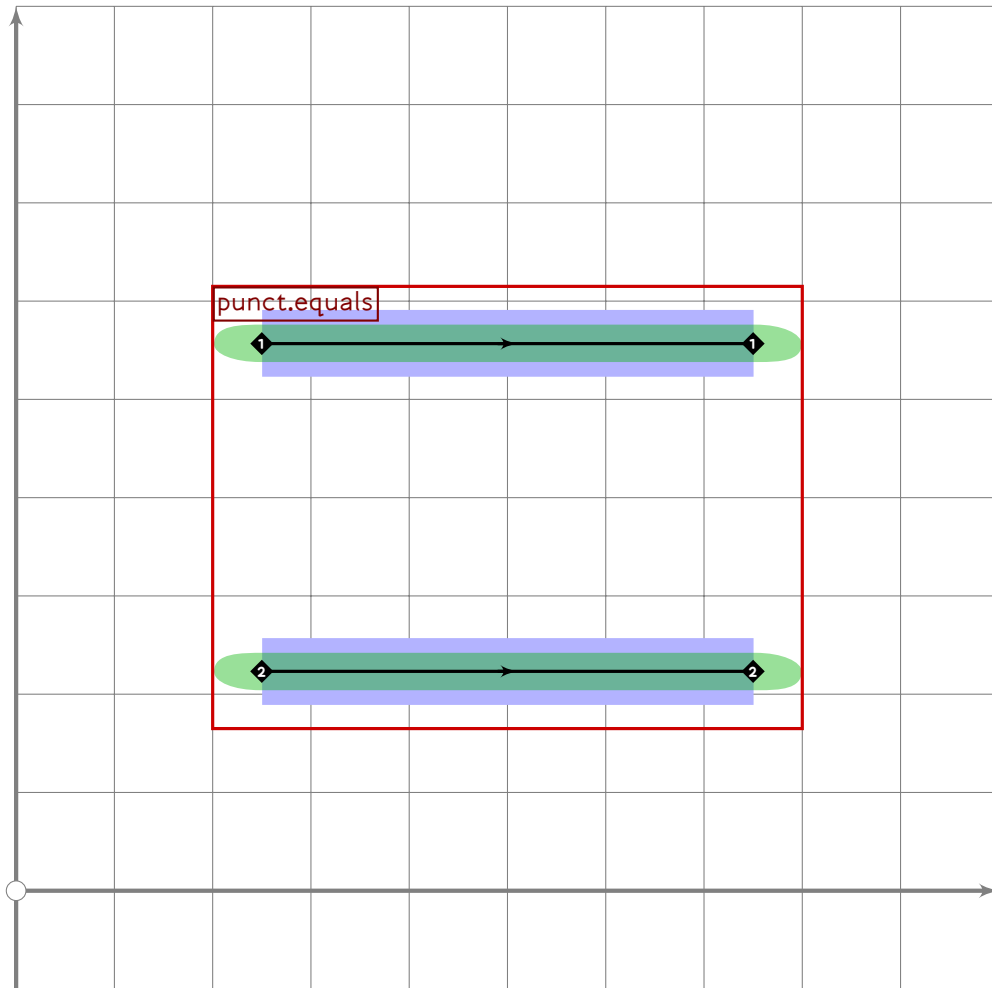
```

271 % semicolon
272 begint Suglyph("uniFF1B";27);
273 tsu_curve.punct.make_comma((380,vmetric(0.03)),0);
274 tsu_curve.punct.make_period((380,vmetric(0.56)));
275 tsu_render;
276 endtsuglyph;
277

```



```
278 % less than
279 begint Suglyph("uniFF1C",28);
280 tsu_curve.punct.less_than
281   (identity scaled (2.5*tsu_punct_size) shifted centre_pt);
282 tsu_render;
283 endsuglyph;
284
```

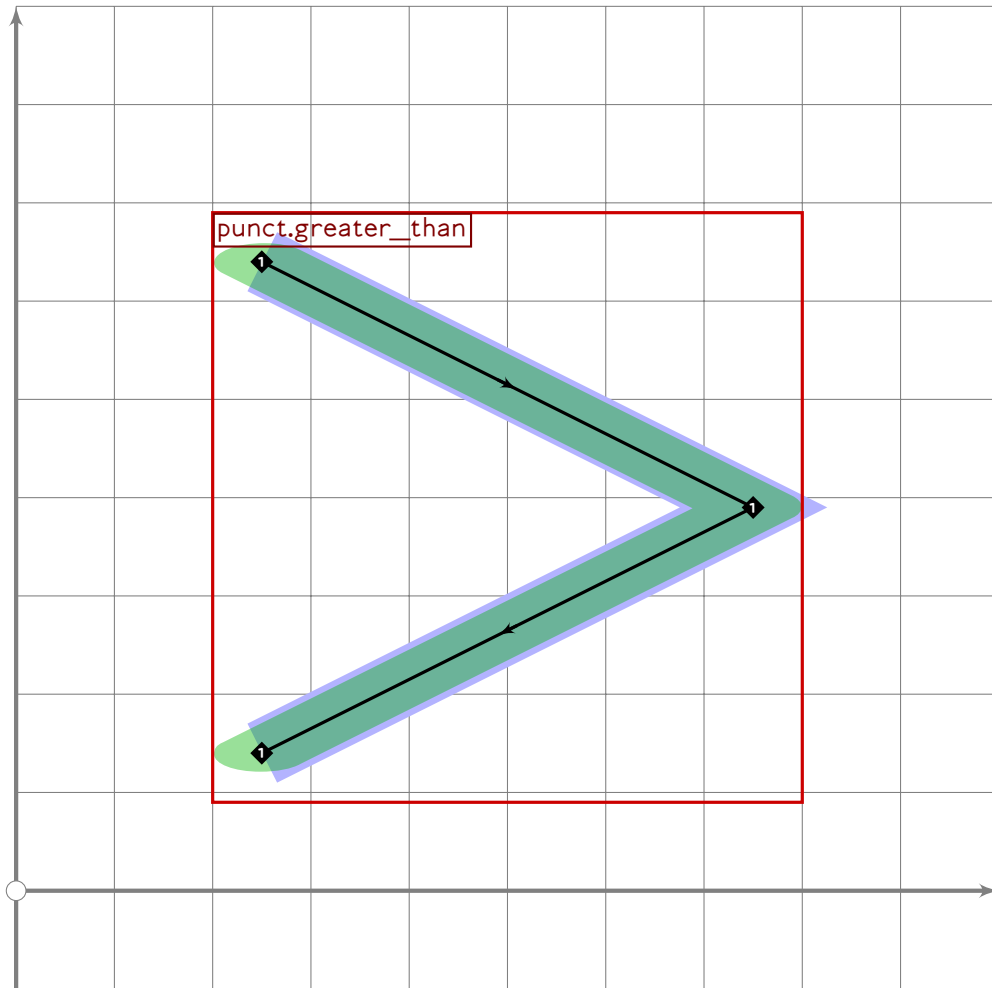


```

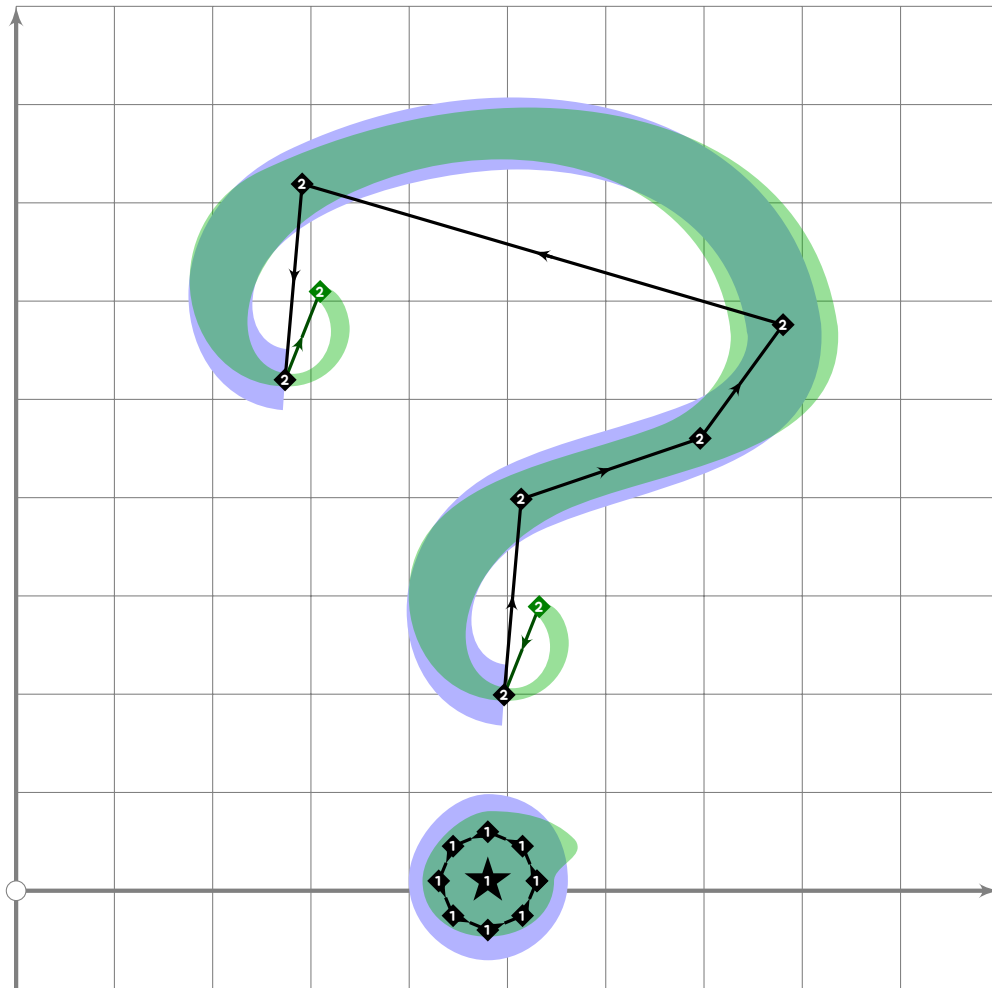
285 % equals
286 begint Suglyph("uniFF1D";29);
287   tsu_curve.punct.equals
288   (identity scaled (2.5*tsu_punct_size) shifted centre_pt);
289   tsu_render;
290 endsuglyph;
291

```





```
292 % greater than
293 begint Suglyph("uniFF1E";30);
294 tsu_curve.punct.greater_than
295     (identity scaled (2.5*tsu_punct_size) shifted centre_pt);
296 tsu_render;
297 endsuglyph;
298
```



```

299 % question mark
300 begintsuglyph("uniFF1F";31);
301   numeric r;
302   if tsu_pbrush_size>=tsu_punct_size:
303     lcblob1:=fullcircle
304       xscaled (tsu_punct_size*tsu_pbrush_size)
305       yscaled (tsu_punct_size*tsu_pbrush_size*tsu_pbrush_shape)
306       rotated tsu_pbrush_angle
307       shifted (480,10);
308     r:=tsu_pbrush_size;
309   else:
310     bp1:=fullcircle scaled tsu_punct_size shifted (480,10);
311     bq1:=(1,1)..(2,2)..(2,2)..(1,1);
312     if tsu_pbrush_size>=30:
313       lcblob1:=bp[sp];
314     fi;
315     sp:=sp+1;
316     r:=tsu_punct_size;
317   fi;
318
319   bp[sp]:=(480,300){right}..(480,300-r){left}..

```

```

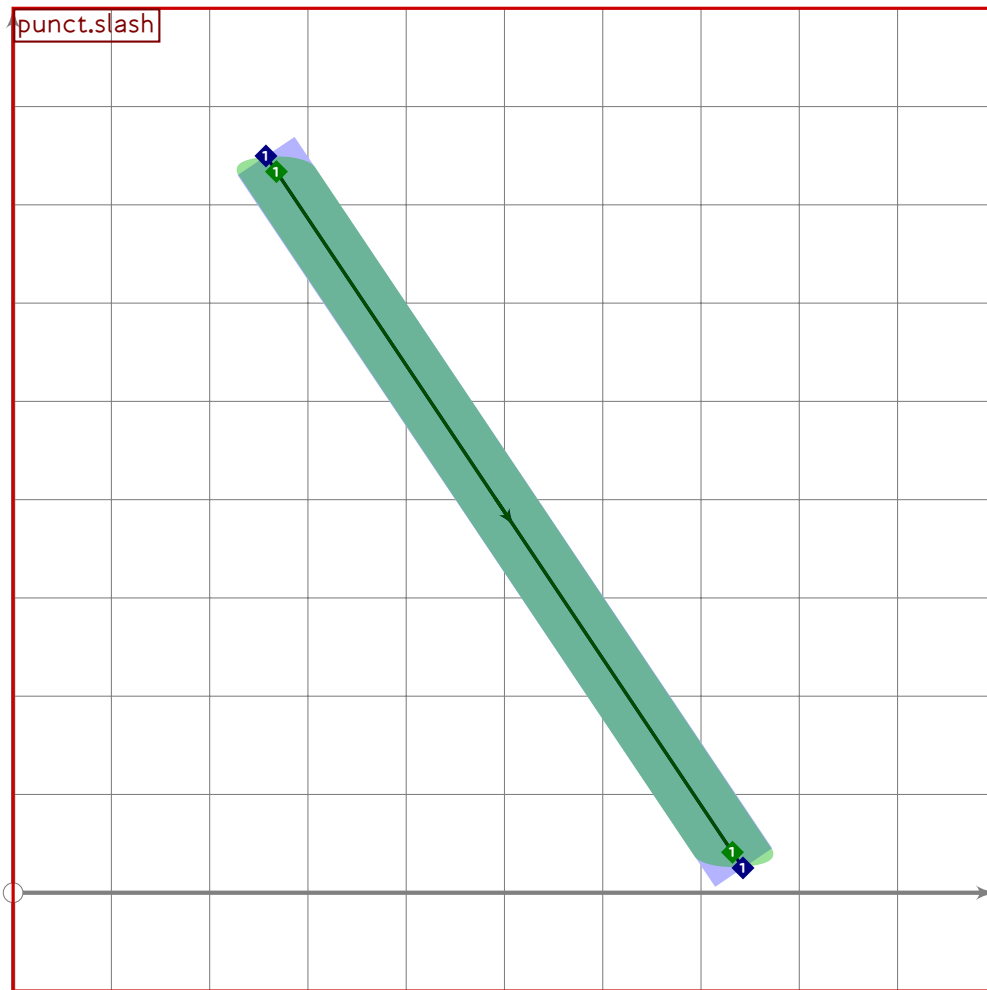
320     (480,300+r)..(480+2.5*r,600)..
321     tension 1.3..(480-2.5*r,600+r)..
322     (480-2.5*r,600-r){right}..
323     (480-2.5*r,600){left};
324     bp[sp]:=insert__nodes(bp[sp])(2.5);
325     bp[sp]:=bp[sp] rotatedaround ((480,10),-5);
326     bq[sp]:=(0.8,0.8)-(1,1)-(2,2)-(2,2)-(2,2)-(2,2)-(1,1)-(0.8,0.8);
327     sp:=sp+1;
328
329     tsu_render;
330 endtsuglyph;
331
332 % commercial at
333 begintsuglyph("uniFF20",32); [see page 255]
334 tsu_curve.punct.atsign;
335 tsu_render;
336 endtsuglyph;
337
338 % A
339 begintsuglyph("uniFF21",33); [see page 149]
340 tsu_curve.latin.upa;
341 tsu_render;
342 endtsuglyph;
343
344 % B
345 begintsuglyph("uniFF22",34); [see page 153]
346 tsu_curve.latin.upb;
347 tsu_render;
348 endtsuglyph;
349
350 % C
351 begintsuglyph("uniFF23",35); [see page 154]
352 tsu_curve.latin.upc;
353 tsu_render;
354 endtsuglyph;
355
356 % D
357 begintsuglyph("uniFF24",36); [see page 155]
358 tsu_curve.latin.upd;
359 tsu_render;
360 endtsuglyph;
361
362 % E
363 begintsuglyph("uniFF25",37); [see page 157]
364 tsu_curve.latin.upe;
365 tsu_render;
366 endtsuglyph;
367

```

368 % F  
369 `begintsuglyph("uniFF26",38);` [see page 158]  
370 `tsu_curve.latin.upf;`  
371 `tsu_render;`  
372 `endtsuglyph;`  
373  
374 % G  
375 `begintsuglyph("uniFF27",39);` [see page 159]  
376 `tsu_curve.latin.upg;`  
377 `tsu_render;`  
378 `endtsuglyph;`  
379  
380 % H  
381 `begintsuglyph("uniFF28",40);` [see page 160]  
382 `tsu_curve.latin.uph;`  
383 `tsu_render;`  
384 `endtsuglyph;`  
385  
386 % I  
387 `begintsuglyph("uniFF29",41);` [see page 161]  
388 `tsu_curve.latin.upi;`  
389 `tsu_render;`  
390 `endtsuglyph;`  
391  
392 % J  
393 `begintsuglyph("uniFF2A",42);` [see page 162]  
394 `tsu_curve.latin.upj;`  
395 `tsu_render;`  
396 `endtsuglyph;`  
397  
398 % K  
399 `begintsuglyph("uniFF2B",43);` [see page 164]  
400 `tsu_curve.latin.upk;`  
401 `tsu_render;`  
402 `endtsuglyph;`  
403  
404 % L  
405 `begintsuglyph("uniFF2C",44);` [see page 165]  
406 `tsu_curve.latin.upl;`  
407 `tsu_render;`  
408 `endtsuglyph;`  
409  
410 % M  
411 `begintsuglyph("uniFF2D",45);` [see page 166]  
412 `tsu_curve.latin.upm;`  
413 `tsu_render;`  
414 `endtsuglyph;`  
415

416 % N  
417 `begintsuglyph("uniFF2E",46);` [see page 168]  
418 `tsu_curve.latin.upn;`  
419 `tsu_render;`  
420 `endtsuglyph;`  
421  
422 % O  
423 `begintsuglyph("uniFF2F",47);` [see page 171]  
424 `tsu_curve.latin.upo;`  
425 `tsu_render;`  
426 `endtsuglyph;`  
427  
428 % P  
429 `begintsuglyph("uniFF30",48);` [see page 173]  
430 `tsu_curve.latin.upp;`  
431 `tsu_render;`  
432 `endtsuglyph;`  
433  
434 % Q  
435 `begintsuglyph("uniFF31",49);` [see page 174]  
436 `tsu_curve.latin.upq;`  
437 `tsu_render;`  
438 `endtsuglyph;`  
439  
440 % R  
441 `begintsuglyph("uniFF32",50);` [see page 175]  
442 `tsu_curve.latin.upr;`  
443 `tsu_render;`  
444 `endtsuglyph;`  
445  
446 % S  
447 `begintsuglyph("uniFF33",51);` [see page 176]  
448 `tsu_curve.latin.ups;`  
449 `tsu_render;`  
450 `endtsuglyph;`  
451  
452 % T  
453 `begintsuglyph("uniFF34",52);` [see page 177]  
454 `tsu_curve.latin.upt;`  
455 `tsu_render;`  
456 `endtsuglyph;`  
457  
458 % U  
459 `begintsuglyph("uniFF35",53);` [see page 179]  
460 `tsu_curve.latin.upu;`  
461 `tsu_render;`  
462 `endtsuglyph;`  
463

464 % V  
465 `begintsuglyph("uniFF36",54);` [see page 180]  
466 `tsu_curve.latin.upv;`  
467 `tsu_render;`  
468 `endtsuglyph;`  
469  
470 % W  
471 `begintsuglyph("uniFF37",55);` [see page 182]  
472 `tsu_curve.latin.upw;`  
473 `tsu_render;`  
474 `endtsuglyph;`  
475  
476 % X  
477 `begintsuglyph("uniFF38",56);` [see page 183]  
478 `tsu_curve.latin.upx;`  
479 `tsu_render;`  
480 `endtsuglyph;`  
481  
482 % Y  
483 `begintsuglyph("uniFF39",57);` [see page 184]  
484 `tsu_curve.latin.upy;`  
485 `tsu_render;`  
486 `endtsuglyph;`  
487  
488 % Z  
489 `begintsuglyph("uniFF3A",58);` [see page 185]  
490 `tsu_curve.latin.upz;`  
491 `tsu_render;`  
492 `endtsuglyph;`  
493  
494 % left and right square brackets  
495 `tsu_curve.punct.sqb_intro;`  
496 `begintsuglyph("uniFF3B",59);` [see page 288]  
497 `tsu_curve.punct.sqb_left;`  
498 `tsu_render;`  
499 `endtsuglyph;`

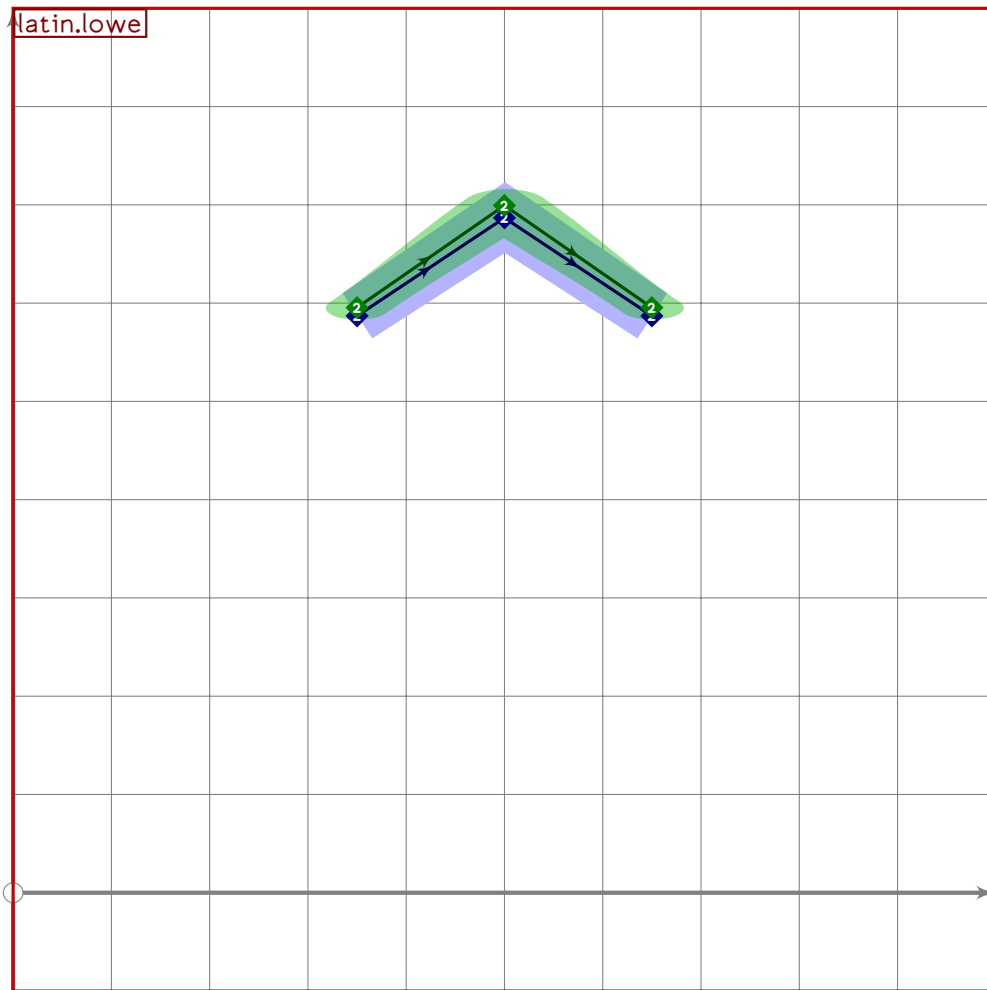


```

500 % backslash
501 begintsuglyph("uniFF3C",60);
502 tsu_curve.punct.slash;
503 bp1:=bp1 reflectedabout (centre_pt,(centre_pt*down));
504 tsu_render;
505 endtsuglyph;
506 begintsuglyph("uniFF3D",61);
507 tsu_curve.punct.sqb_right;
508 tsu_render;
509 endtsuglyph;
510

```

[see page 289]



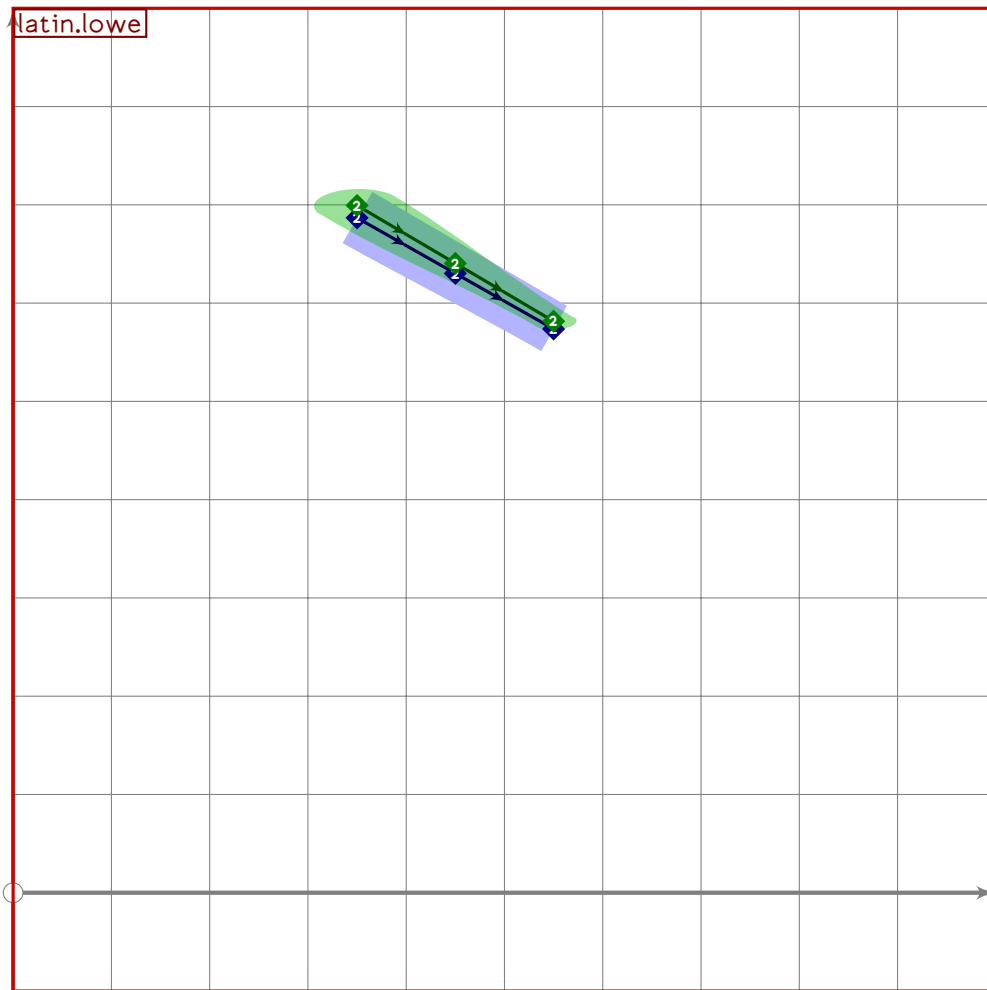
```

511 % circumflex/caret
512 beginsuglyph("uniFF3E",62);
513   tsu_accent.circumflex(tsu_curve.latin.love);
514   bo_size1:=0;
515   tsu_render;
516 endsuglyph;
517
518 % underscore
519 beginsuglyph("uniFF3F",63);
520   tsu_curve.punct.underscore;
521   tsu_render;
522 endsuglyph;
523

```

[see page 290]





```

524 % grave accent
525 begintsuglyph("uniFF40",64);
526 tsu_accent.grave(tsu_curve.latin.lowe);
527 bo_size:=0;
528 tsu_render;
529 endsuglyph;

```

530

531 % a

```

532 begintsuglyph("uniFF41",65);
533 tsu_curve.latin.lowa;
534 tsu_render;
535 endsuglyph;

```

[see page 186]

536

537 % b

```

538 begintsuglyph("uniFF42",66);
539 tsu_curve.latin.lowb;
540 tsu_render;
541 endsuglyph;

```

[see page 190]

542

543 % c

```

544 begintsuglyph("uniFF43",67);

```

[see page 191]

545 `tsu_curve.latin.lowc;`  
546 `tsu_render;`  
547 `endsuglyph;`  
548  
549 `% d`  
550 `begintsuglyph("uniFF44",68);` [see page 192]  
551 `tsu_curve.latin.lowd;`  
552 `tsu_render;`  
553 `endsuglyph;`  
554  
555 `% e`  
556 `begintsuglyph("uniFF45",69);` [see page 193]  
557 `tsu_curve.latin.lowe;`  
558 `tsu_render;`  
559 `endsuglyph;`  
560  
561 `% f`  
562 `begintsuglyph("uniFF46",70);` [see page 197]  
563 `tsu_curve.latin.lowf;`  
564 `tsu_render;`  
565 `endsuglyph;`  
566  
567 `% g`  
568 `begintsuglyph("uniFF47",71);` [see page 199]  
569 `tsu_curve.latin.lowg;`  
570 `tsu_render;`  
571 `endsuglyph;`  
572  
573 `% h`  
574 `begintsuglyph("uniFF48",72);` [see page 200]  
575 `tsu_curve.latin.lowh;`  
576 `tsu_render;`  
577 `endsuglyph;`  
578  
579 `% i`  
580 `begintsuglyph("uniFF49",73);` [see page 201]  
581 `tsu_curve.latin.lowi;`  
582 `tsu_render;`  
583 `endsuglyph;`  
584  
585 `% j`  
586 `begintsuglyph("uniFF4A",74);` [see page 202]  
587 `tsu_curve.latin.lowj;`  
588 `tsu_render;`  
589 `endsuglyph;`  
590  
591 `% k`  
592 `begintsuglyph("uniFF4B",75);` [see page 204]

593 `tsu_curve.latin.lowk;`  
594 `tsu_render;`  
595 `endsuglyph;`  
596  
597 `% l`  
598 `begintsuglyph("uniFF4C";76);` [see page 205]  
599 `tsu_curve.latin.lowl;`  
600 `tsu_render;`  
601 `endsuglyph;`  
602  
603 `% m`  
604 `begintsuglyph("uniFF4D";77);` [see page 206]  
605 `tsu_curve.latin.lowm;`  
606 `tsu_render;`  
607 `endsuglyph;`  
608  
609 `% n`  
610 `begintsuglyph("uniFF4E";78);` [see page 207]  
611 `tsu_curve.latin.lown;`  
612 `tsu_render;`  
613 `endsuglyph;`  
614  
615 `% o`  
616 `begintsuglyph("uniFF4F";79);` [see page 210]  
617 `tsu_curve.latin.lowo;`  
618 `tsu_render;`  
619 `endsuglyph;`  
620  
621 `% p`  
622 `begintsuglyph("uniFF50";80);` [see page 212]  
623 `tsu_curve.latin.lowp;`  
624 `tsu_render;`  
625 `endsuglyph;`  
626  
627 `% q`  
628 `begintsuglyph("uniFF51";81);` [see page 213]  
629 `tsu_curve.latin.lowq;`  
630 `tsu_render;`  
631 `endsuglyph;`  
632  
633 `% r`  
634 `begintsuglyph("uniFF52";82);` [see page 214]  
635 `tsu_curve.latin.lowr;`  
636 `tsu_render;`  
637 `endsuglyph;`  
638  
639 `% s`  
640 `begintsuglyph("uniFF53";83);` [see page 216]

```

641 tsu_curve.latin.lows;
642 tsu_render;
643 endtsuglyph;
644
645 % t
646 begintsuglyph("uniFF54",84); [see page 218]
647 tsu_curve.latin.lowt;
648 tsu_render;
649 endtsuglyph;
650
651 % u
652 begintsuglyph("uniFF55",85); [see page 221]
653 tsu_curve.latin.lowu;
654 tsu_render;
655 endtsuglyph;
656
657 % v
658 begintsuglyph("uniFF56",86); [see page 222]
659 tsu_curve.latin.lowv;
660 tsu_render;
661 endtsuglyph;
662
663 % w
664 begintsuglyph("uniFF57",87); [see page 223]
665 tsu_curve.latin.loww;
666 tsu_render;
667 endtsuglyph;
668
669 % x
670 begintsuglyph("uniFF58",88); [see page 225]
671 tsu_curve.latin.lowx;
672 tsu_render;
673 endtsuglyph;
674
675 % y
676 begintsuglyph("uniFF59",89); [see page 226]
677 tsu_curve.latin.lowy;
678 tsu_render;
679 endtsuglyph;
680
681 % z
682 begintsuglyph("uniFF5A",90); [see page 228]
683 tsu_curve.latin.lowz;
684 tsu_render;
685 endtsuglyph;
686
687 % left and right square brackets, around vertical line
688 tsu_curve.punct.brace_intro;

```

```

689 begintsuglyph("uniFF5B";91); [see page 256]
690 tsu_curve.punct.brace_left;
691 tsu_render;
692 endsuglyph;
693 begintsuglyph("uniFF5C";92); [see page 291]
694 tsu_curve.punct.vline;
695 tsu_render;
696 endsuglyph;
697 begintsuglyph("uniFF5D";93); [see page 257]
698 tsu_curve.punct.brace_right;
699 tsu_render;
700 endsuglyph;
701
702 % "fullwidth tilde" - identical to "wave dash"
703 begintsuglyph("uniFF5E";94); [see page 292]
704 tsu_curve.punct.wavedash;
705 tsu_render;
706 endsuglyph;
707
708 % left and right white parentheses
709 tsu_curve.punct.wparen_intro;
710 begintsuglyph("uniFF5F";95); [see page 293]
711 tsu_curve.punct.wparen_left;
712 tsu_render;
713 endsuglyph;
714 begintsuglyph("uniFF60";96); [see page 294]
715 tsu_curve.punct.wparen_right;
716 tsu_render;
717 endsuglyph;
718
719 _____
720

```

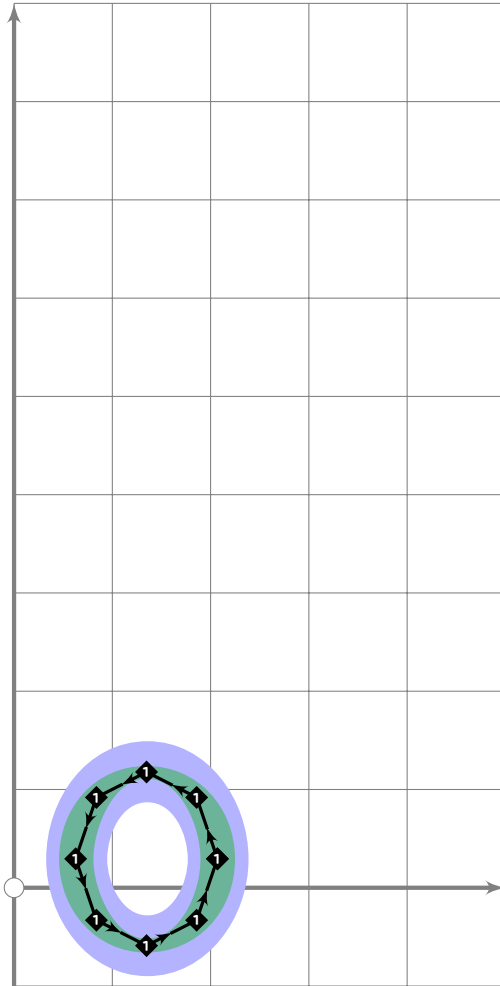
## Half-Width Punctuation

```

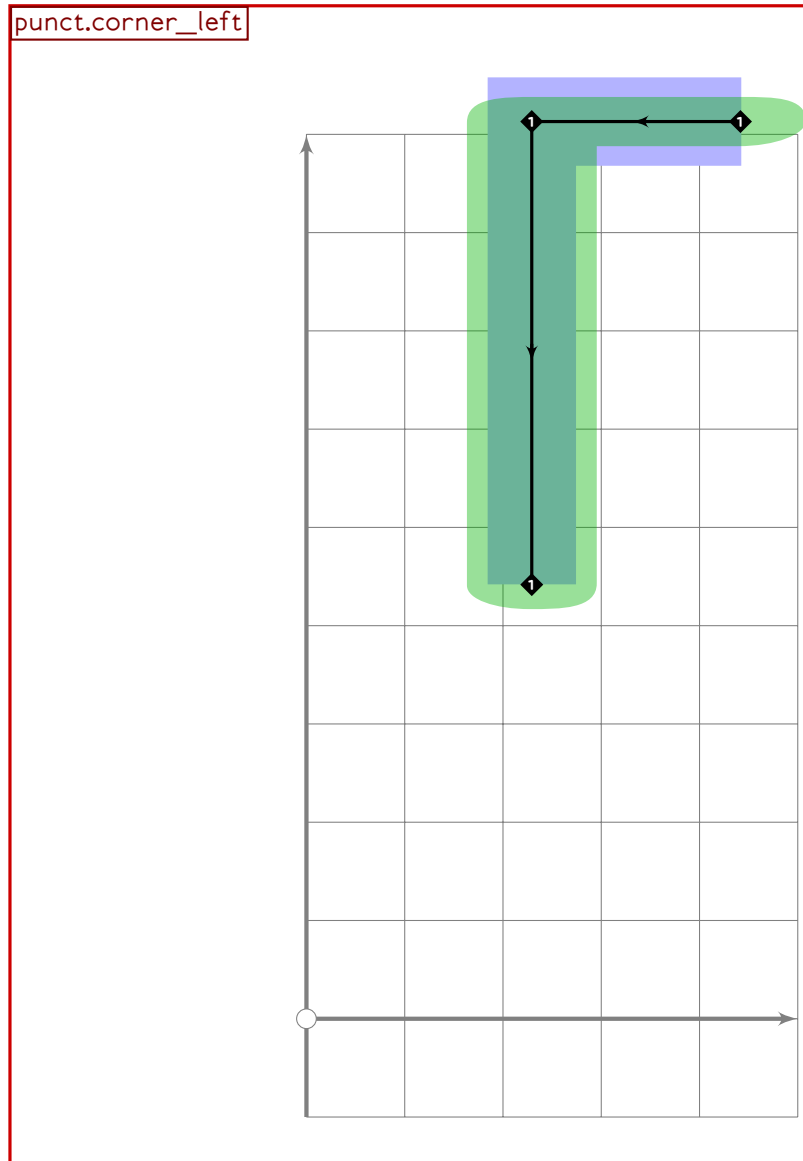
721 % HALF-WIDTH PUNCTUATION
722
723 % WARNING changing rescale setting
724 tsu_rescale_half;
725

```

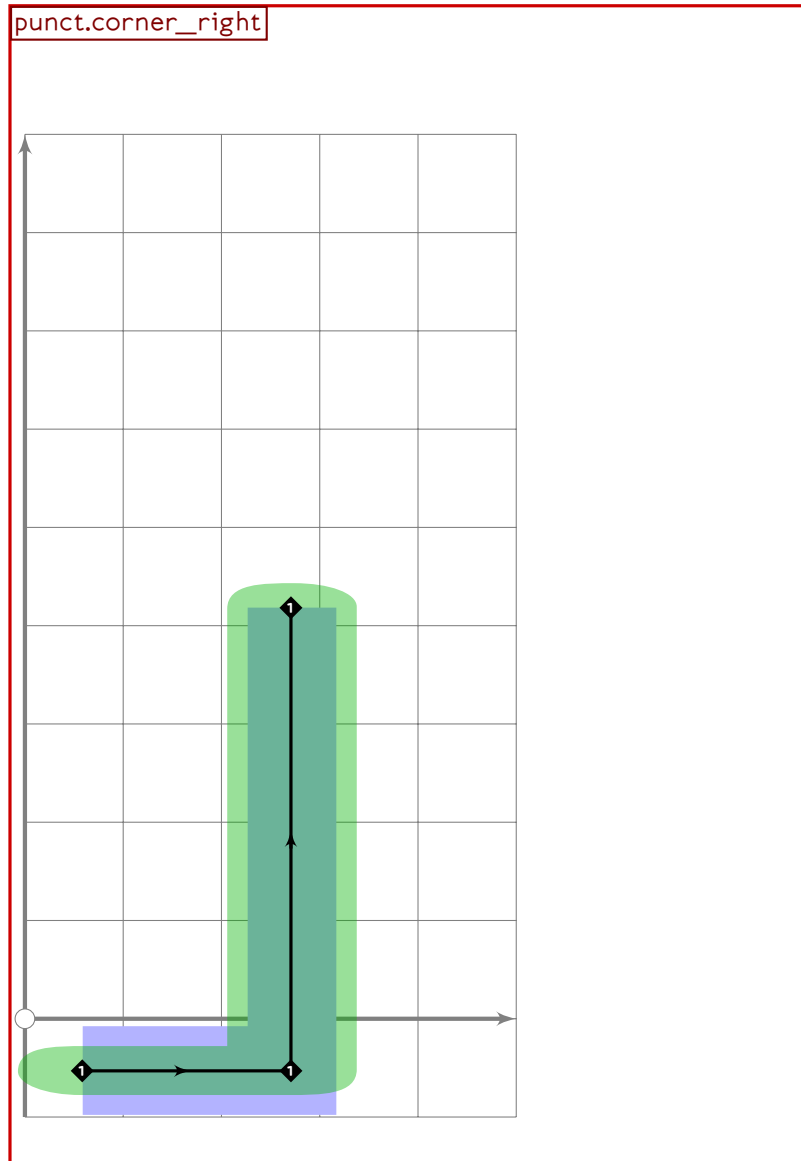
punct.full\_stop



```
726 % ideographic full stop
727 begintsuglyph("uniFF61";97);
728   tsu_curve.punct.full_stop;
729   tsu_render;
730 endsuglyph;
731
732 % left and right corner brackets
733 tsu_curve.punct.corner_intro;
```



```
734 begintuglyph("uniFF62";98);  
735 tsu_curve.punct.corner_left;  
736 tsu_render;  
737 endtsuglyph;
```



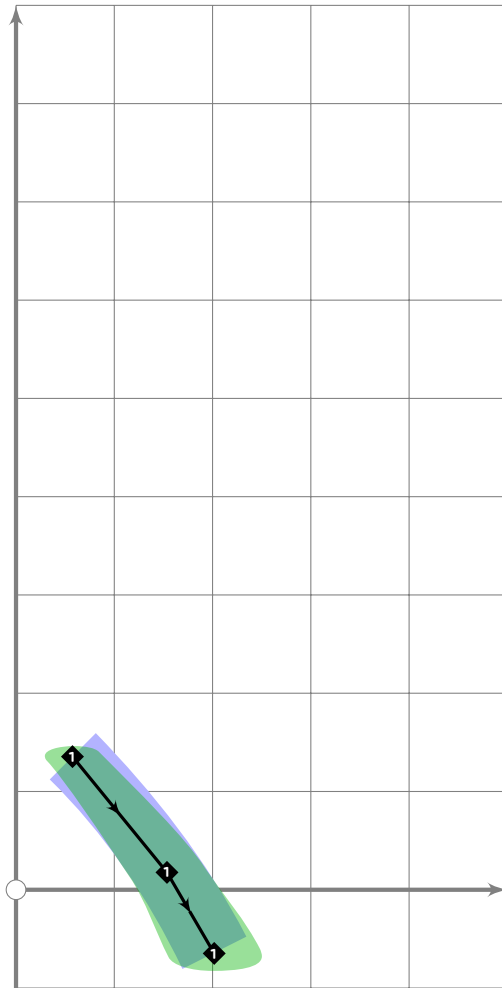
```

738 begint Suglyph("uniFF63";99);
739   tsu_curve.punct.corner_right;
740   tsu_render;
741   endtsuglyph;
742

```



punct.hancomma



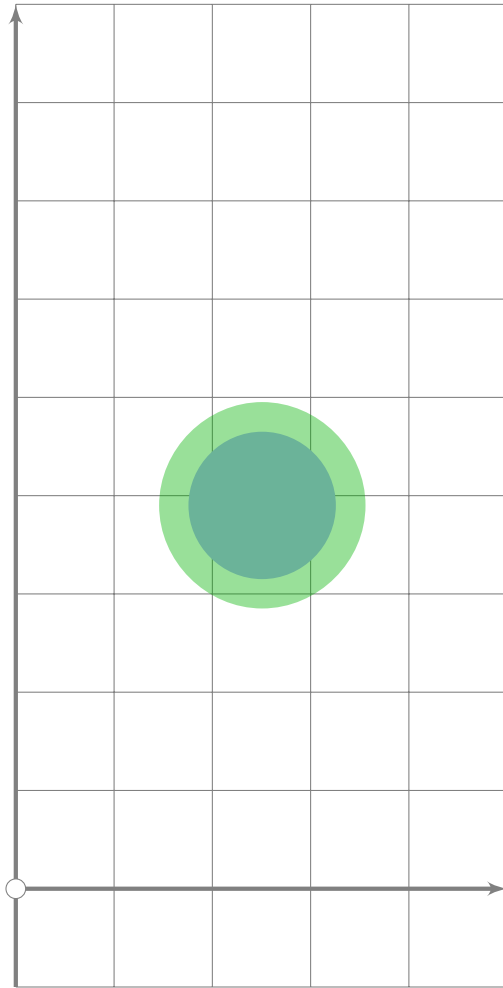
```
743 % ideographic comma
744 begintsuglyph("uniFF64",100);
745     tsu_curve.punct.hancomma;
746     tsu_render;
747 endsuglyph;
748
749 

---

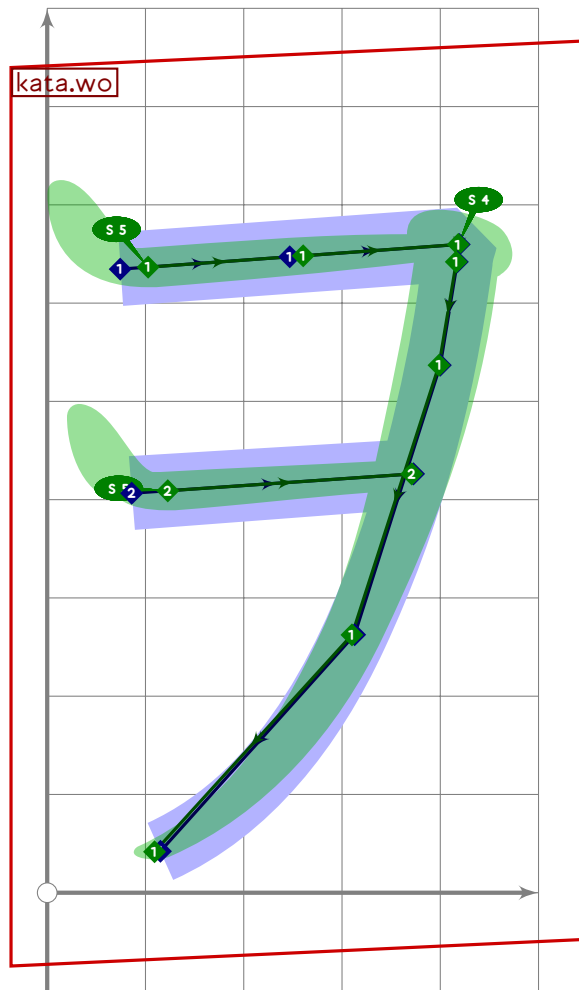

750
```

## Half-Width Katakana

```
751 % HALF-WIDTH KATAKANA
752
753 % WARNING changing rescale setting
754 tsu_rescale_half_katakana;
755
```



```
756 % katakana middle dot
757 begintsuglyph("uniFF65";101);
758   Fill fullcircle scaled (200*tsu_brush_max) shifted (250,ypart centre_pt);
759 endsuglyph;
760
```

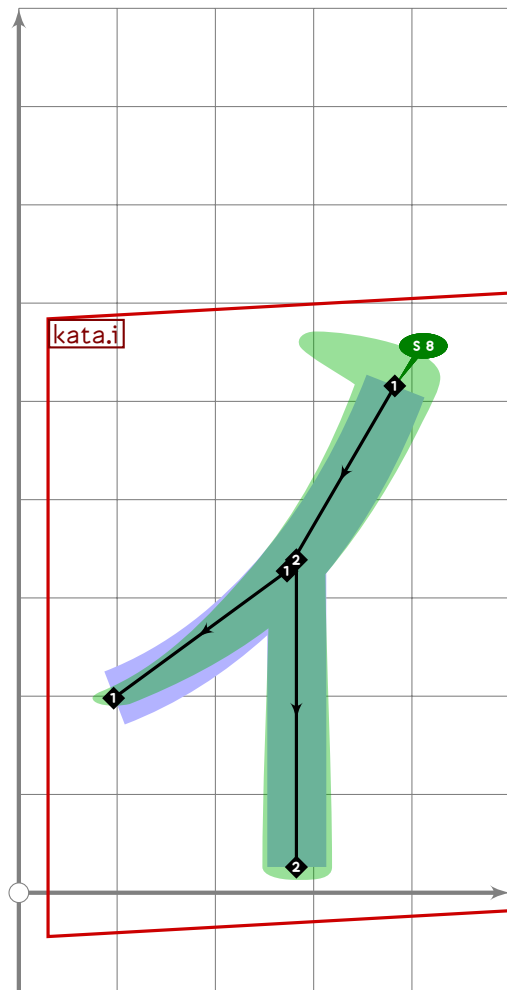


```

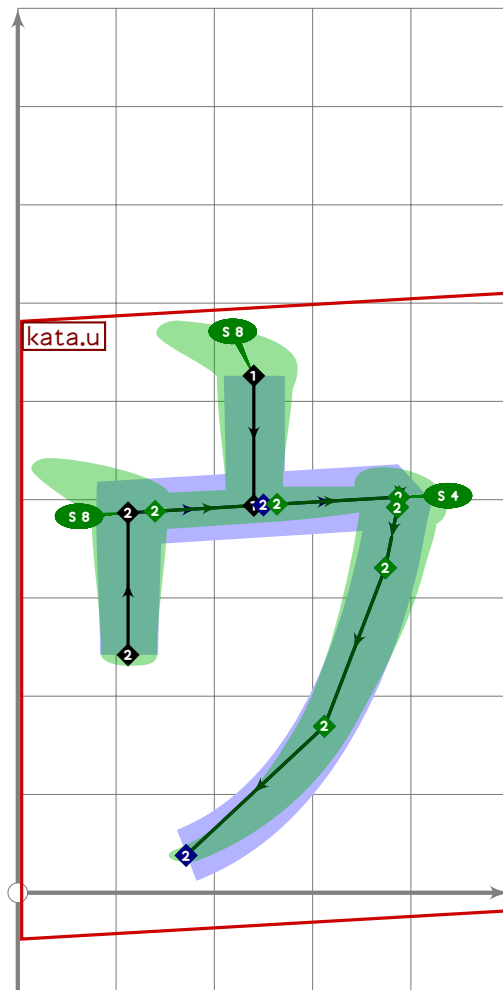
761 % katakana "wo"
762 begintsuglyph("uniFF66",102);
763 tsu_curve.kata.wo;
764 tsu_render;
765 endsuglyph;
766

```





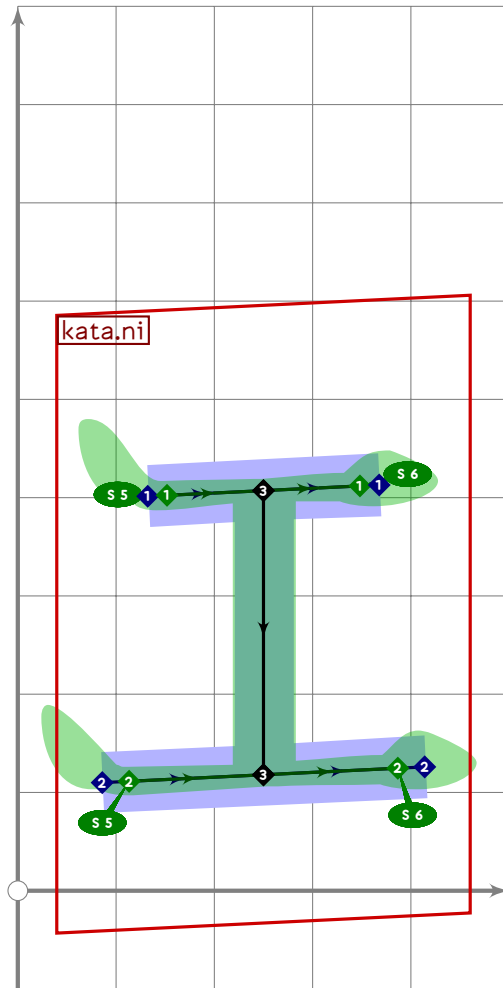
```
773 % katakana "small i"  
774 begintsuglyph("uniFF68",104);  
775 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.i);  
776 tsu_render;  
777 endtsuglyph;  
778
```



```

779 % katakana "small u"
780 begintsuglyph("uniFF69";105);
781 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.u);
782 tsu_render;
783 endtsuglyph;
784

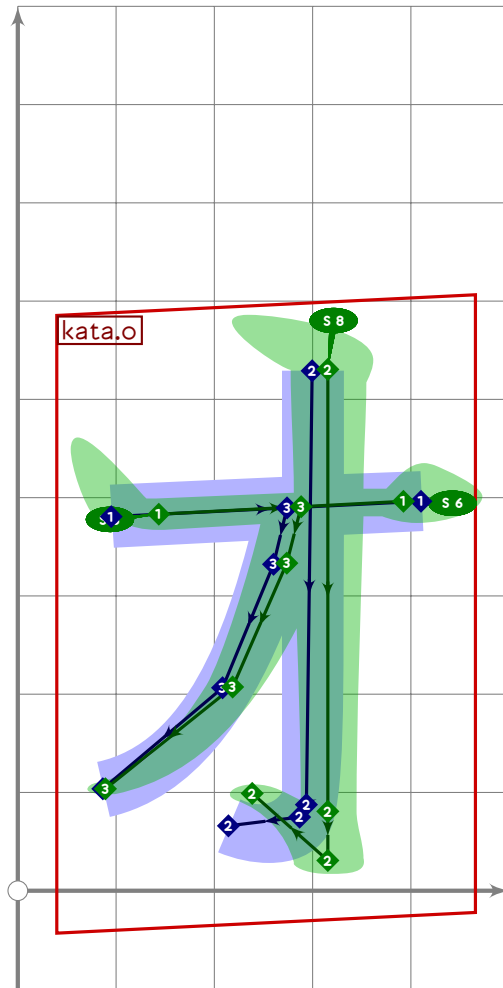
```



```

785 % katakana "small e"
786 begintsuglyph("uniFF6A",106);
787 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.e);
788 tsu_render;
789 endtsuglyph;
790

```

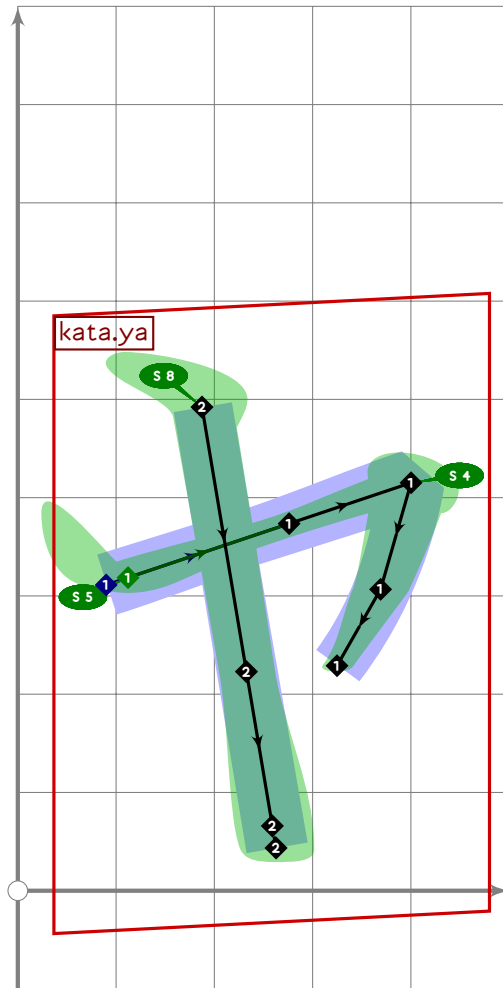


```

791 % katakana "small o"
792 begint Suglyph("uniFF6B",107);
793 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.o);
794 tsu_render;
795 endtsuglyph;
796

```

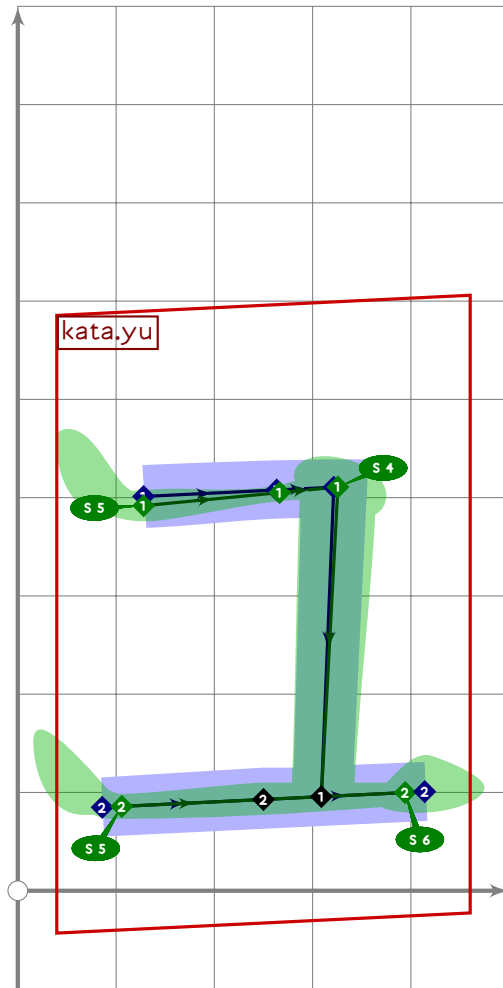




```

797 % katakana "small ya"
798 begintsuglyph("uniFF6C";108);
799 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.ya);
800 tsu_render;
801 endsuglyph;
802

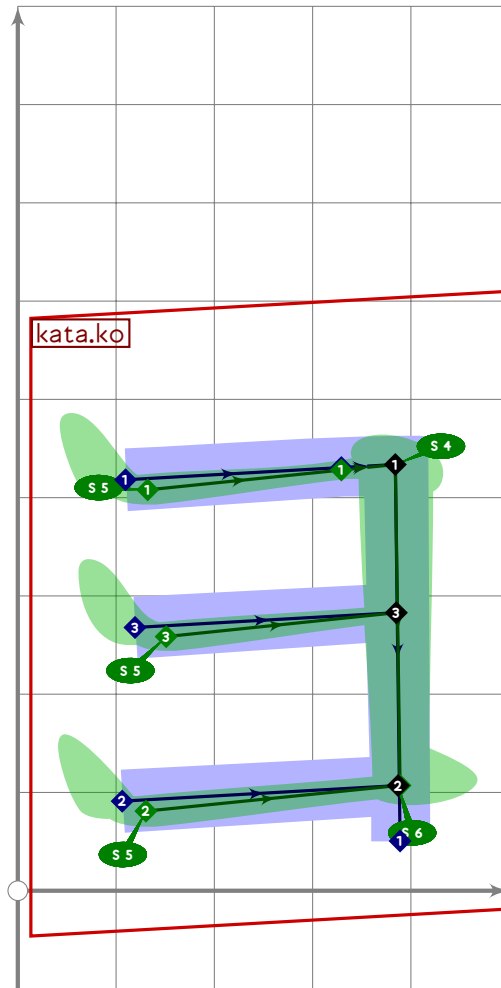
```



```

803 % katakana "small yu"
804 begintsuglyph("uniFF6D";109);
805 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.yu);
806 tsu_render;
807 endtsuglyph;
808

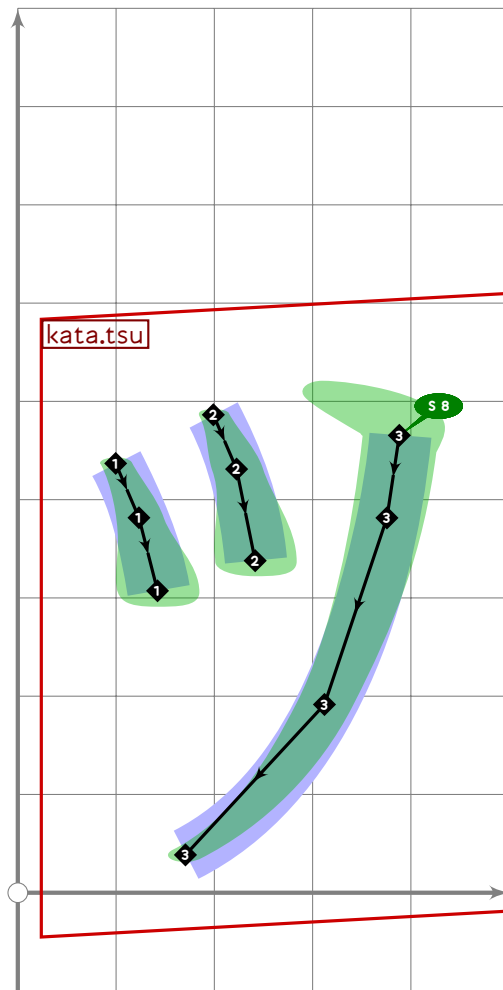
```



```

809 % katakana "small yo"
810 begintsuglyph("uniFF6E";110);
811 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.yo);
812 tsu_render;
813 endsuglyph;
814

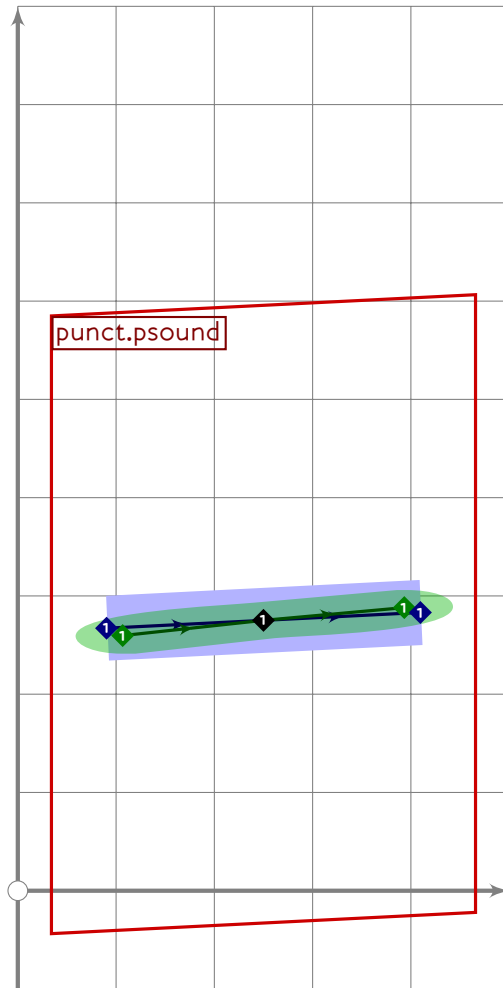
```



```

815 % katakana "small tsu"
816 begintsuglyph("uniFF6F",111);
817 tsu_xform(tsu_xf.smallkana)(tsu_curve.kata.tsu);
818 tsu_render;
819 endtsuglyph;
820

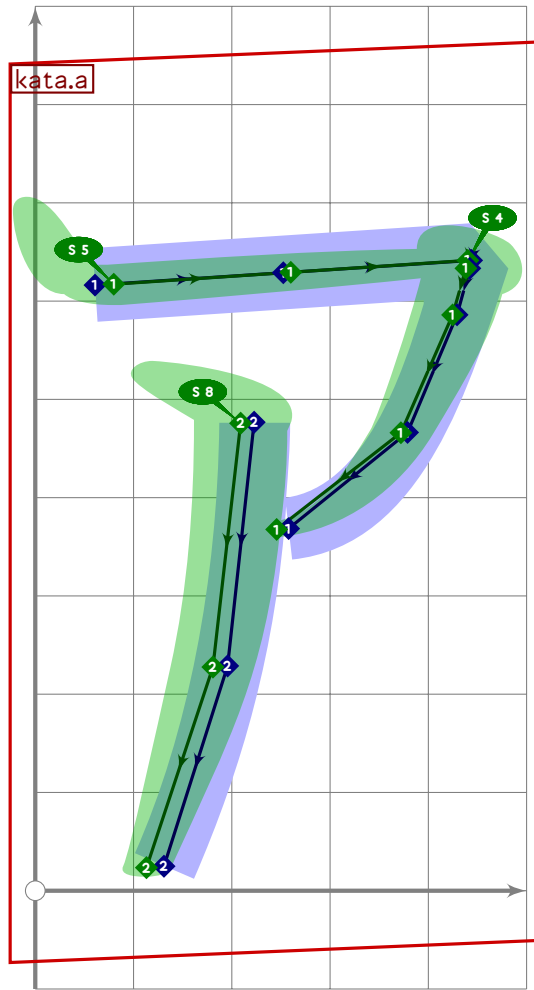
```



```

821 % hira/kata "prolonged sound mark"
822 begintsuglyph("uniFF70",112);
823 tsu_xform(tsu_xf.smallkana)(tsu_curve.punct.psound);
824 tsu_render;
825 endtsuglyph;
826

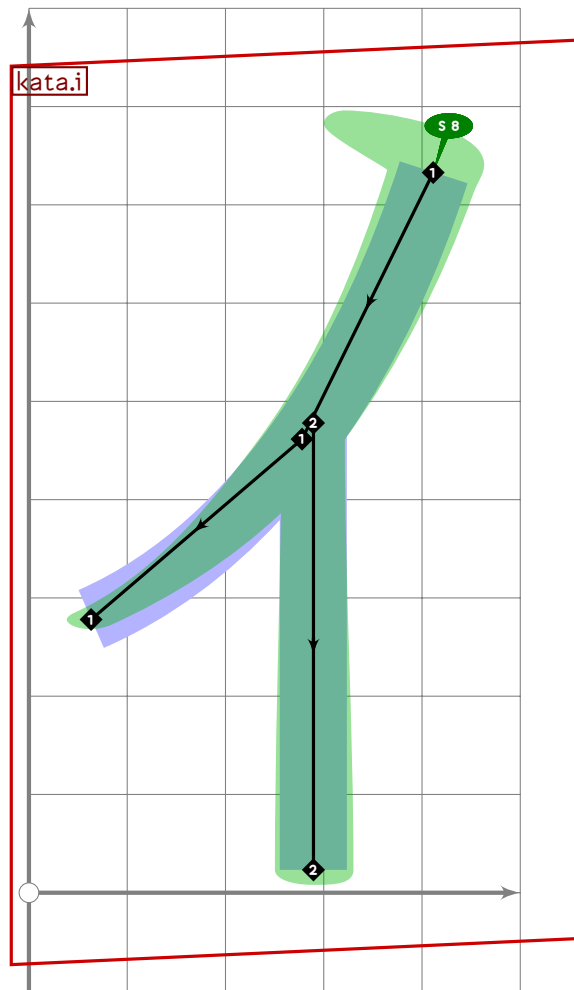
```



```

827 % katakana "a"
828 begintsuglyph("uniFF71";113);
829 tsu_curve.kata.a;
830 tsu_render;
831 endsuglyph;
832

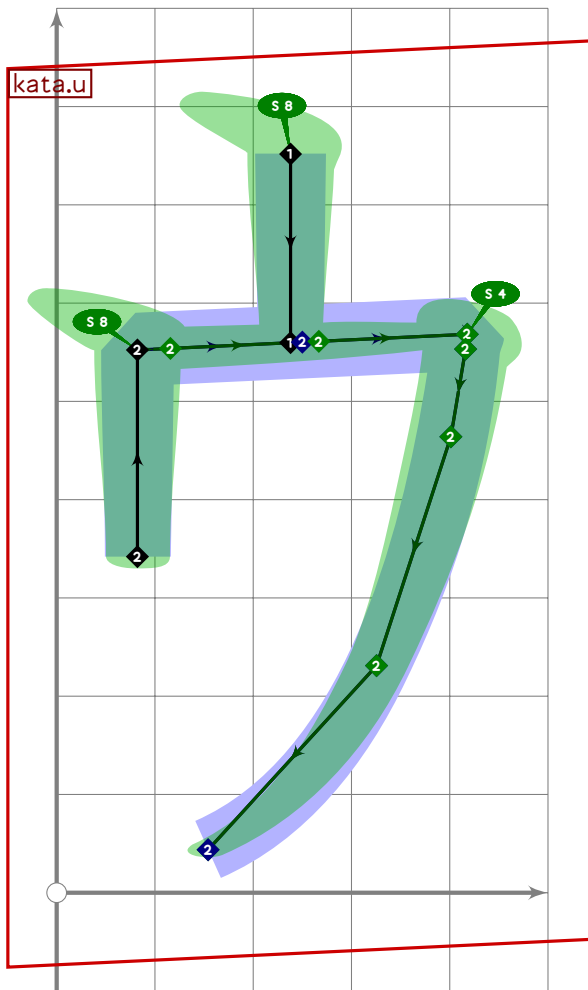
```



```

833 % katakana "い"
834 begintsuglyph("uniFF72",114);
835 tsu_curve.kata.i;
836 tsu_render;
837 endsuglyph;
838

```

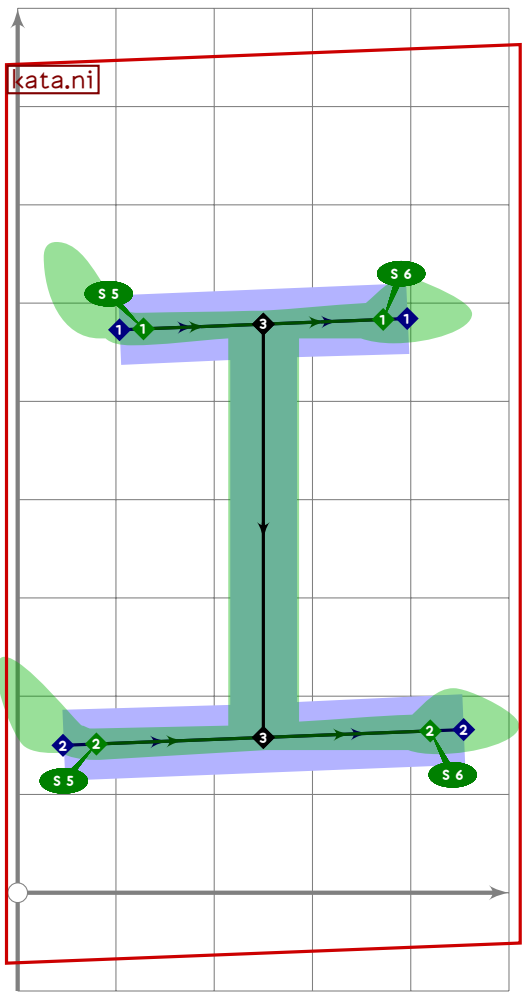


```

839 % katakana "u"
840 begintsuglyph("uniFF73",115);
841 tsu_curve.kata.u;
842 tsu_render;
843 endsuglyph;
844

```

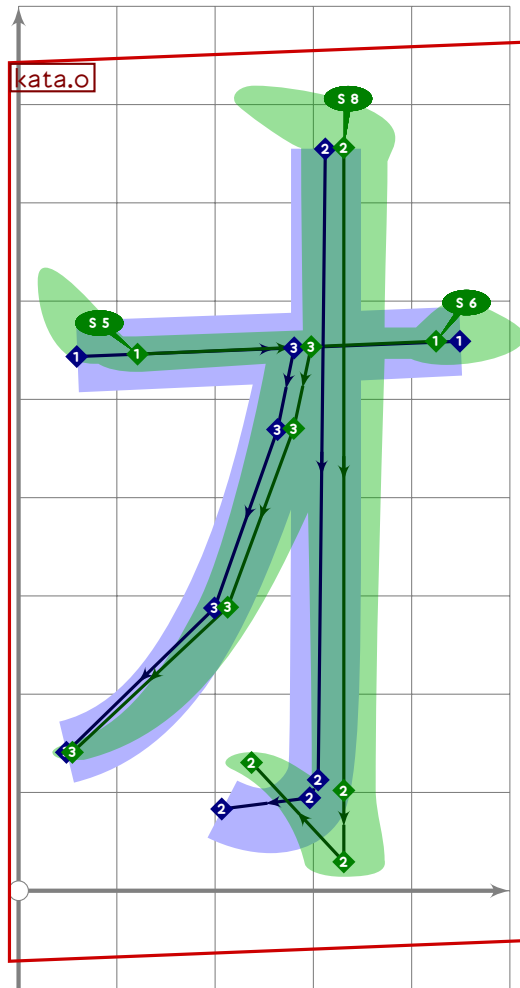




```

845 % katakana "e"
846 begintsuglyph("uniFF74",116);
847 tsu_curve.kata.e;
848 tsu_render;
849 endsuglyph;
850

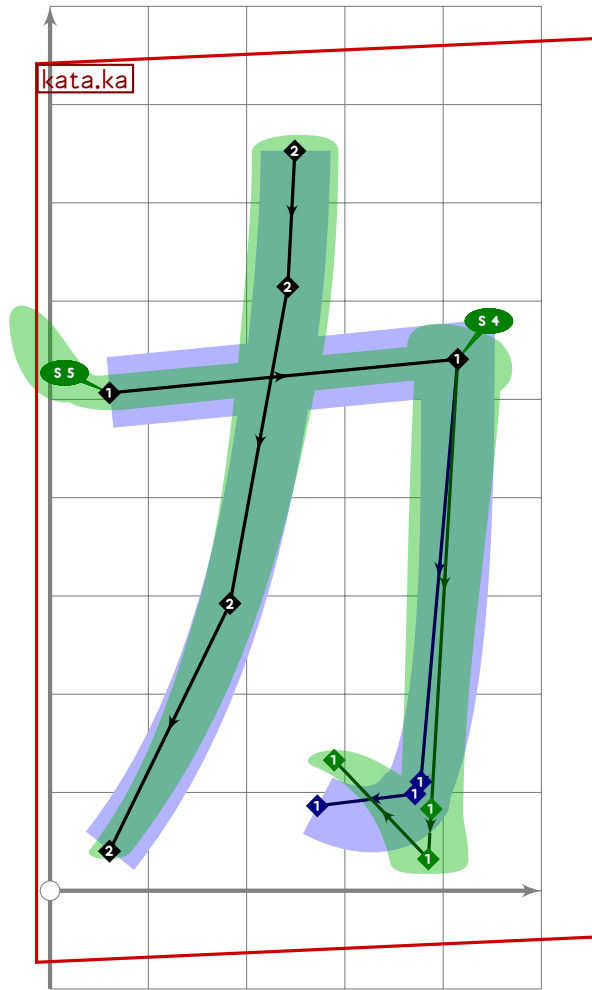
```



```

851 % katakana "o"
852 begintsuglyph("uniFF75";117);
853 tsu_curve.kata.o;
854 tsu_render;
855 endsuglyph;
856

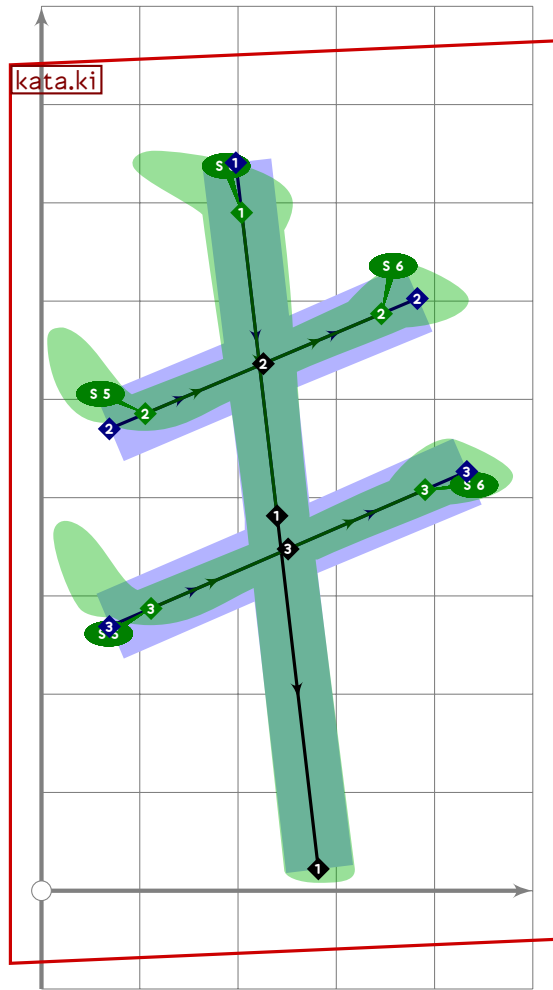
```



```

857 % katakana "ka"
858 begint Suglyph("uniFF76",118);
859 tsu_curve.kata.ka;
860 tsu_render;
861 endtsuglyph;
862

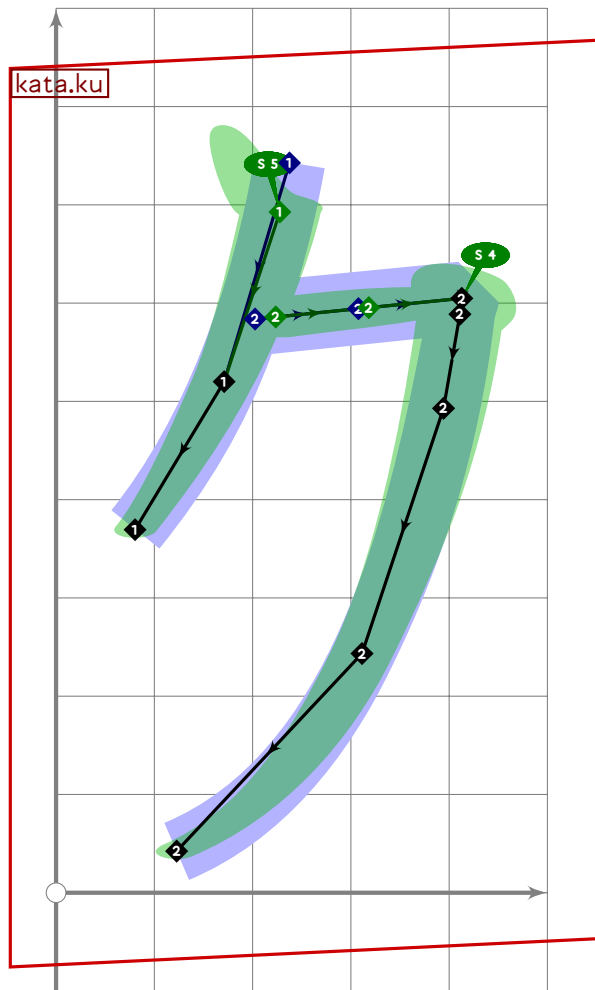
```



```

863 % katakana "ki"
864 begint Suglyph("uniFF77",119);
865   tsu_curve.kata.ki;
866   tsu_render;
867   endtsuglyph;
868

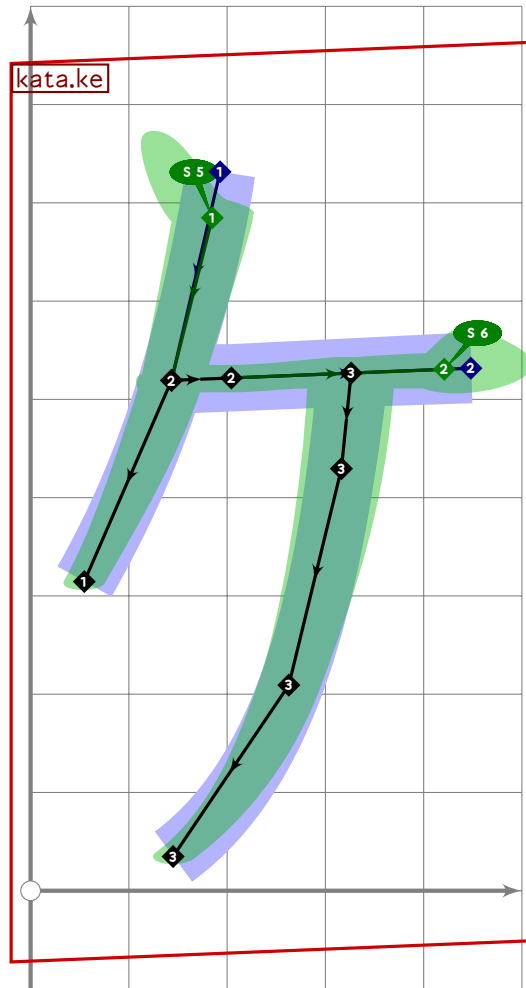
```



```

869 % katakana "ku"
870 begint Suglyph("\uniFF78",120);
871 tsu_curve.kata.ku;
872 tsu_render;
873 endtsuglyph;
874

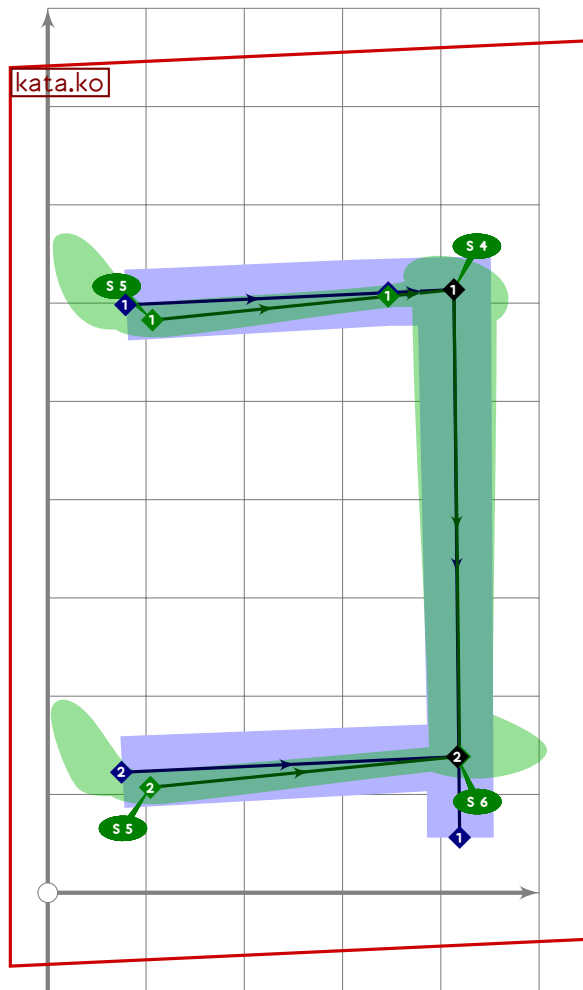
```



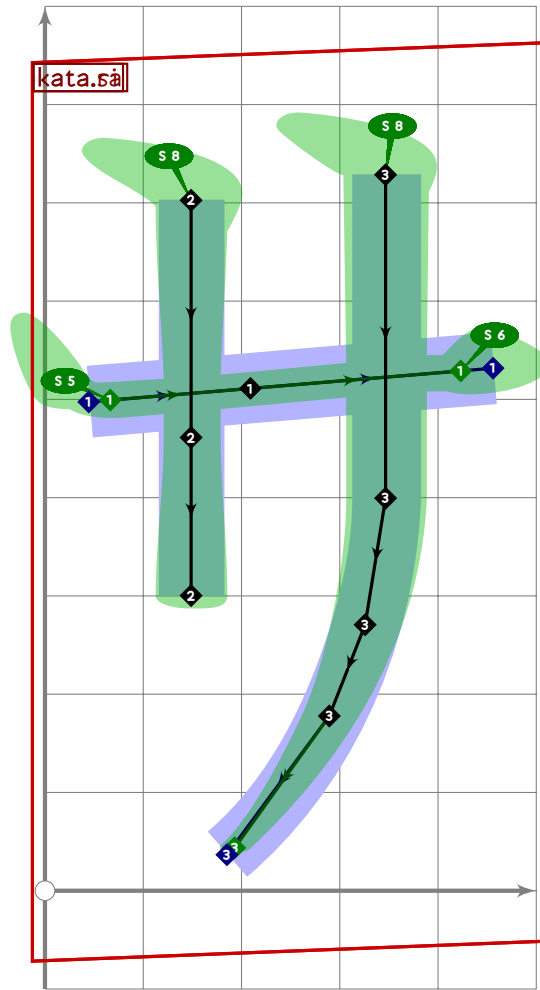
```

875 % katakana "ke"
876 begintsuglyph("uniFF79";121);
877 tsu_curve.kata.ke;
878 tsu_render;
879 endsuglyph;
880

```



```
881 % katakana "ko"  
882 begintsuglyph("uniFF7A";122);  
883 tsu_curve.kata.ko;  
884 tsu_render;  
885 endsuglyph;  
886
```

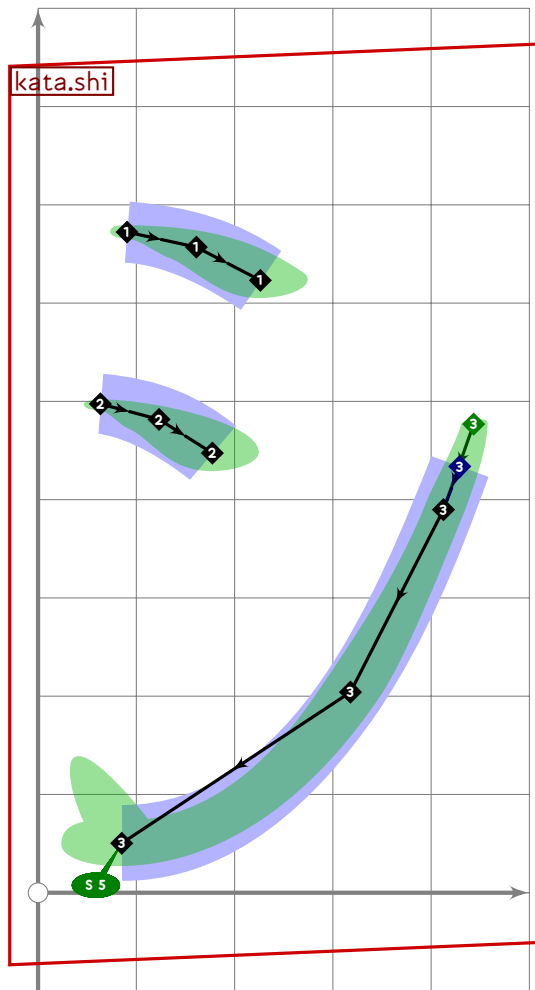


```

887 % katakana "sa"
888 begint Suglyph("\uniFF7B",123);
889 tsu_curve.kata.sa;
890 tsu_render;
891 endtsuglyph;
892

```

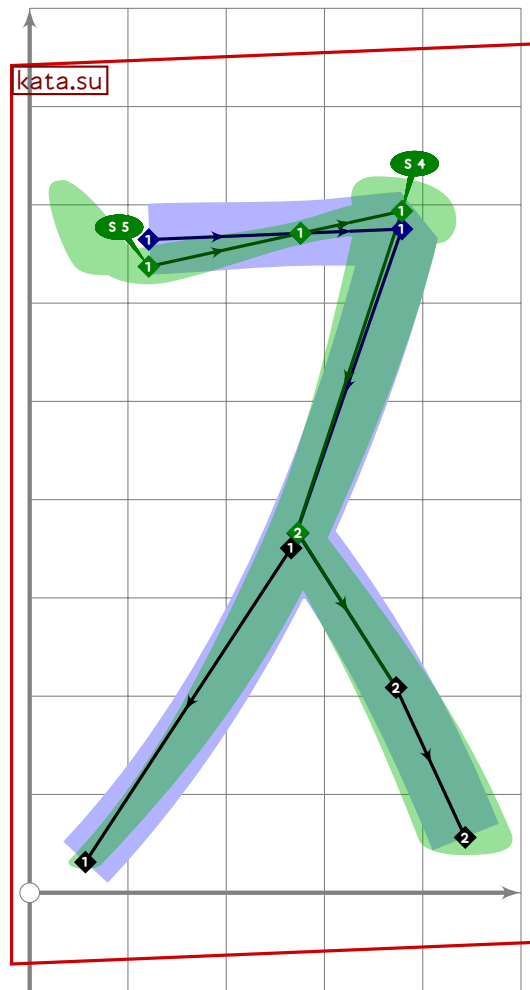




```

893 % katakana "shi"
894 begintsuglyph("uniFF7C";124);
895 tsu_curve.kata.shi;
896 tsu_render;
897 endtsuglyph;
898

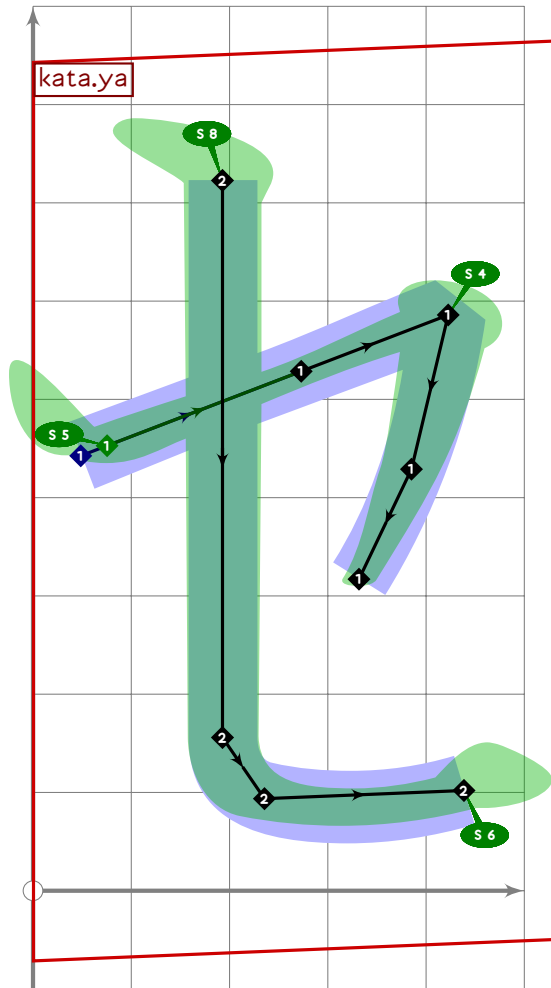
```



```

899 % katakana "su"
900 beginsuglyph("uniFF7D";125);
901   tsu_curve.kata.su;
902   tsu_render;
903 endsuglyph;
904

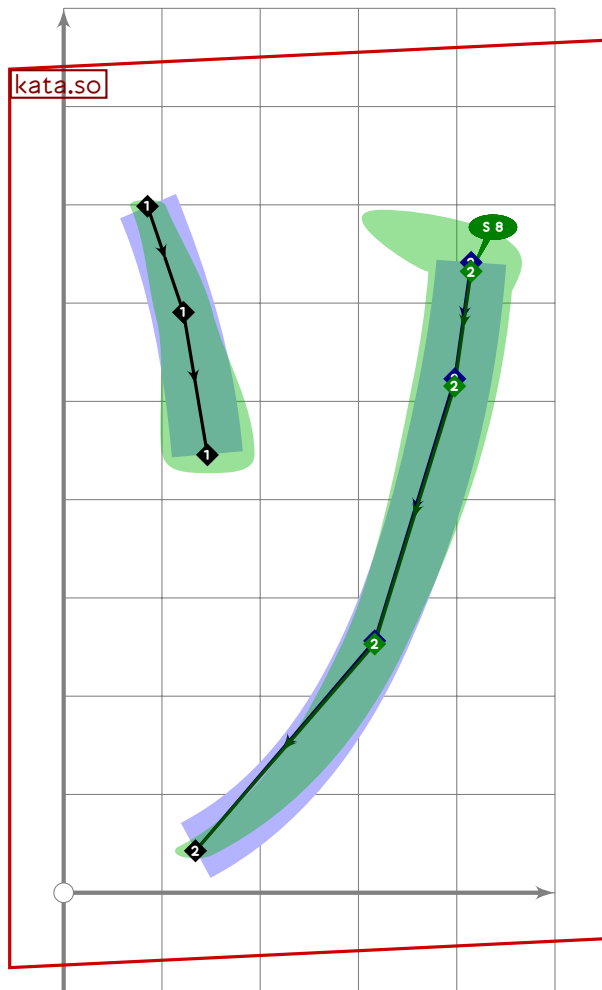
```



```

905 % katakana "se"
906 begint Suglyph("uniFF7E",126);
907   tsu_curve.kata.se;
908   tsu_render;
909 endtsuglyph;
910

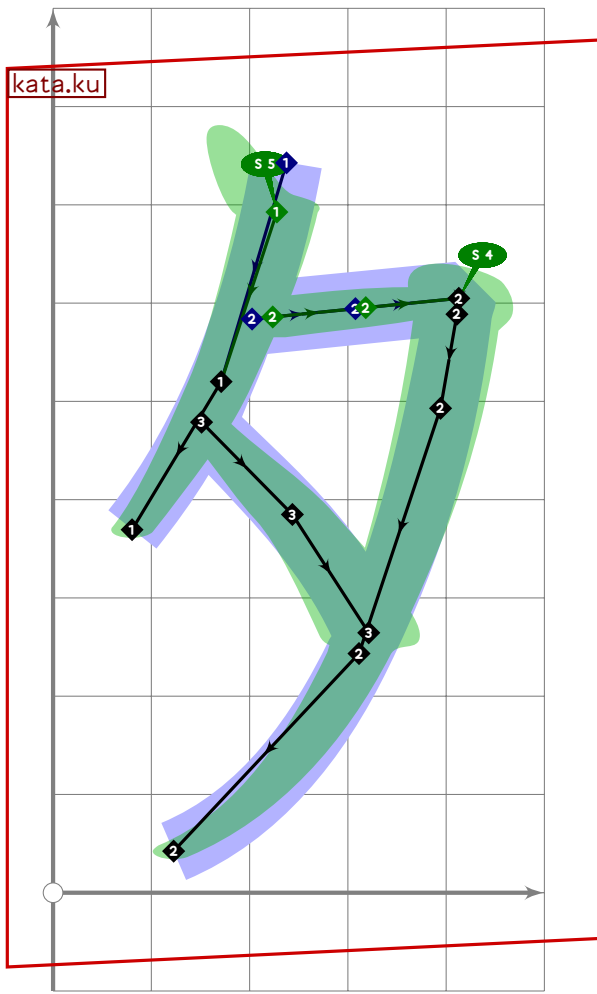
```



```

911 % katakana "so"
912 begint Suglyph("uniFF7F",127);
913   tsu_curve.kata.so;
914   tsu_render;
915   endtsuglyph;
916

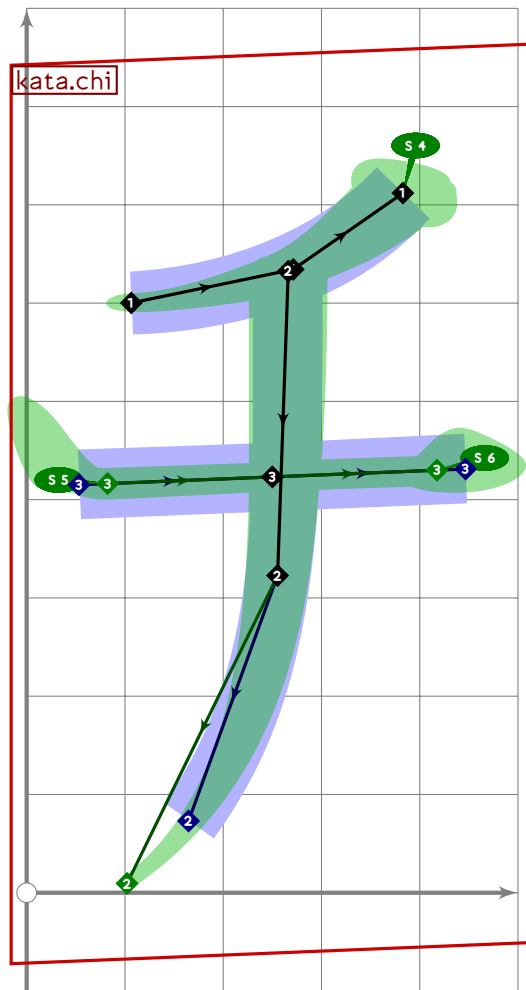
```



```

917 % katakana "ta"
918 begintsuglyph("uniFF80",128);
919 tsu_curve.kata.ta;
920 tsu_render;
921 endsuglyph;
922

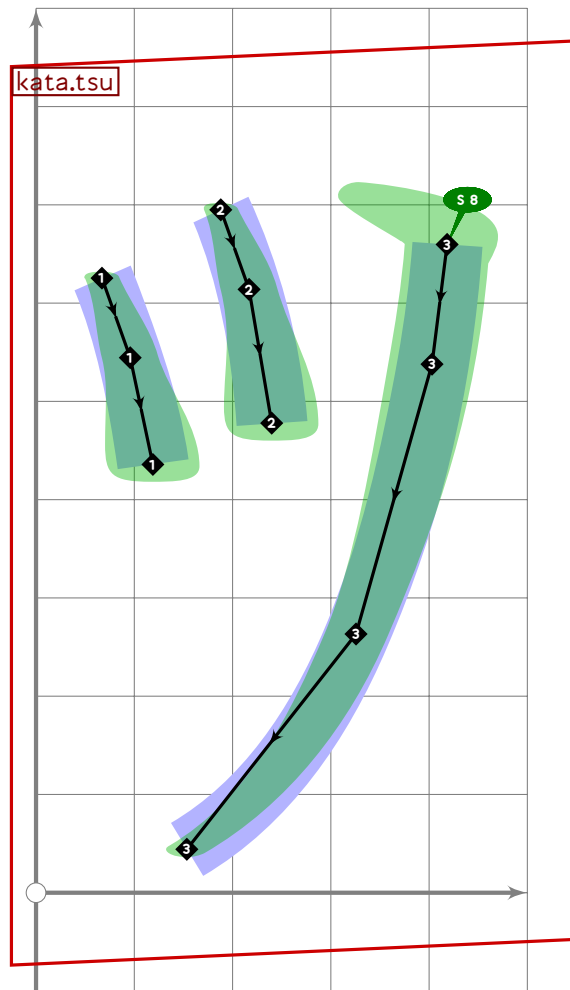
```



```

923 % katakana "chi"
924 begintsuglyph("uniFF81";129);
925 tsu_curve.kata.chi;
926 tsu_render;
927 endsuglyph;
928

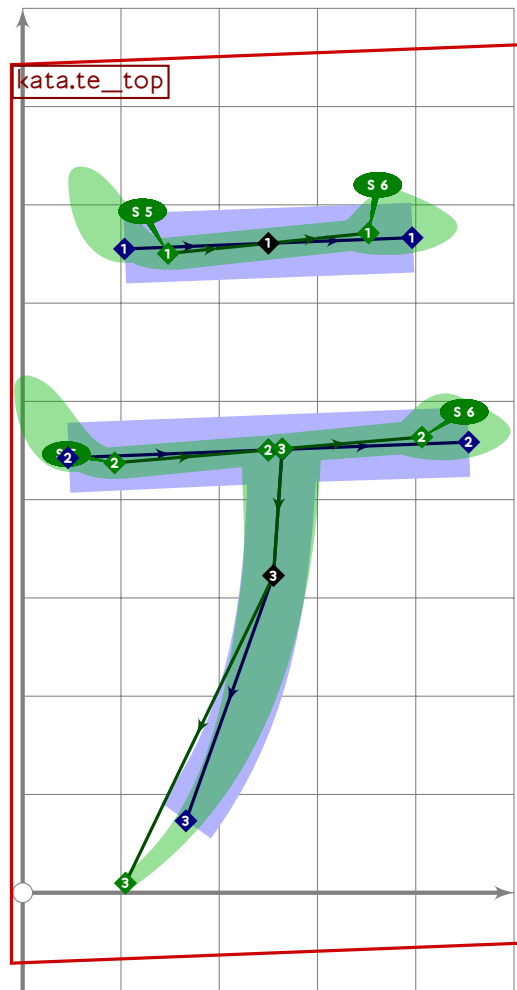
```



```

929 % katakana "tsu"
930 begint Suglyph("uniFF82",130);
931   tsu_curve.kata.tsu;
932   tsu_render;
933   endtsuglyph;
934

```

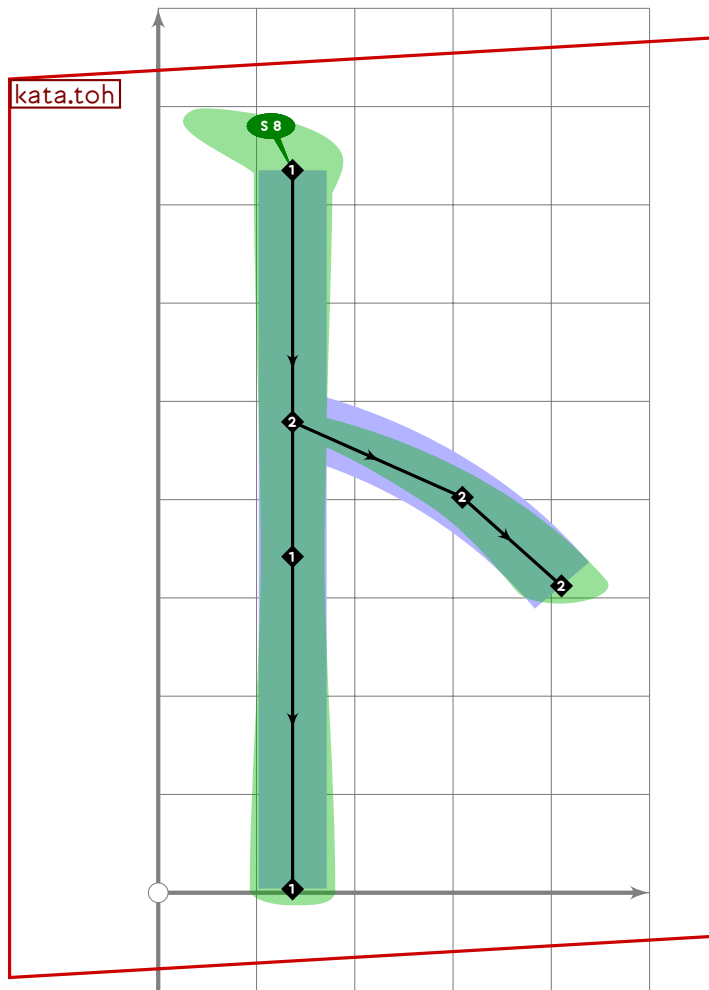


```

935 % katakana "te"
936 begint Suglyph("uniFF83",131);
937 tsu_curve.kata.te;
938 tsu_render;
939 endtsuglyph;
940

```

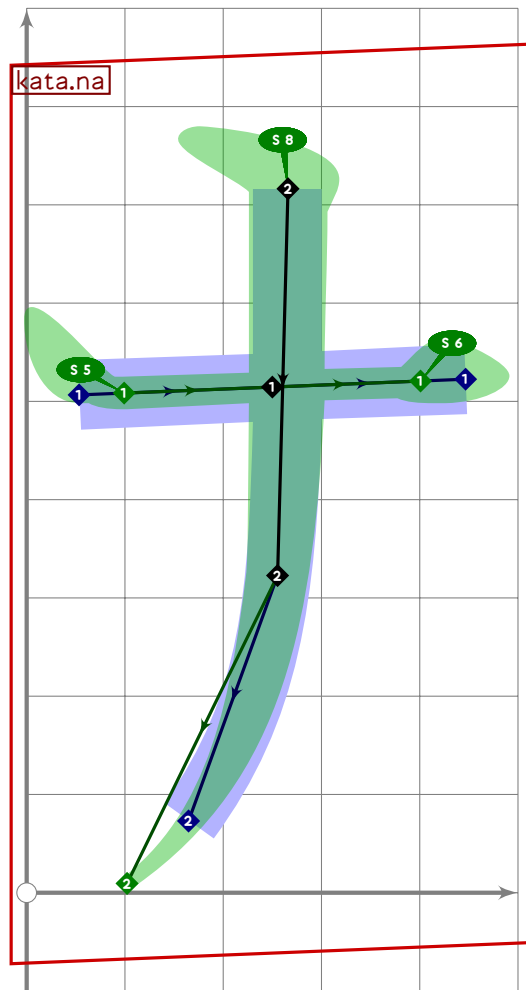




```

941 % katakana "to"
942 begintsuglyph("uniFF84",132);
943 tsu_curve.kata.toh;
944 tsu_render;
945 endtsuglyph;
946

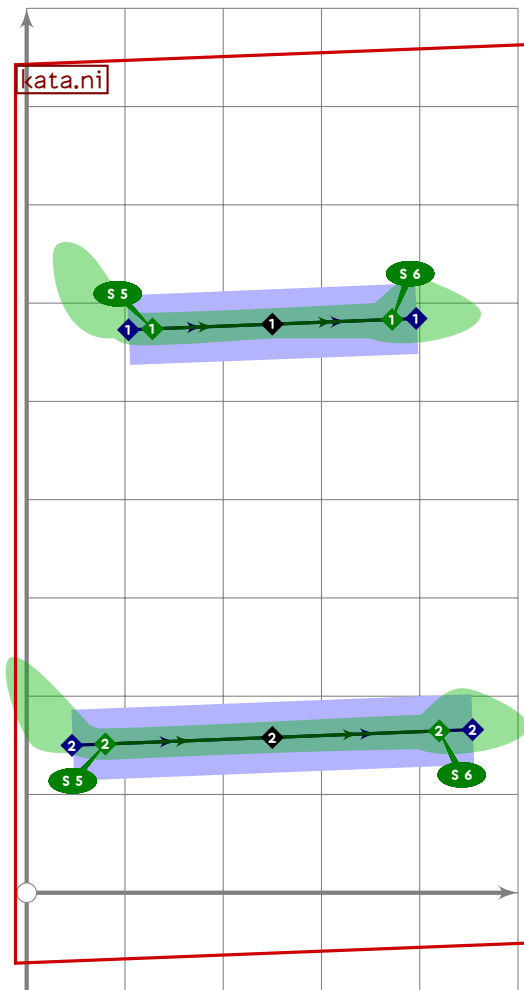
```



```

947 % katakana "na"
948 begintsuglyph("uniFF85",133);
949 tsu_curve.kata.na;
950 tsu_render;
951 endsuglyph;
952

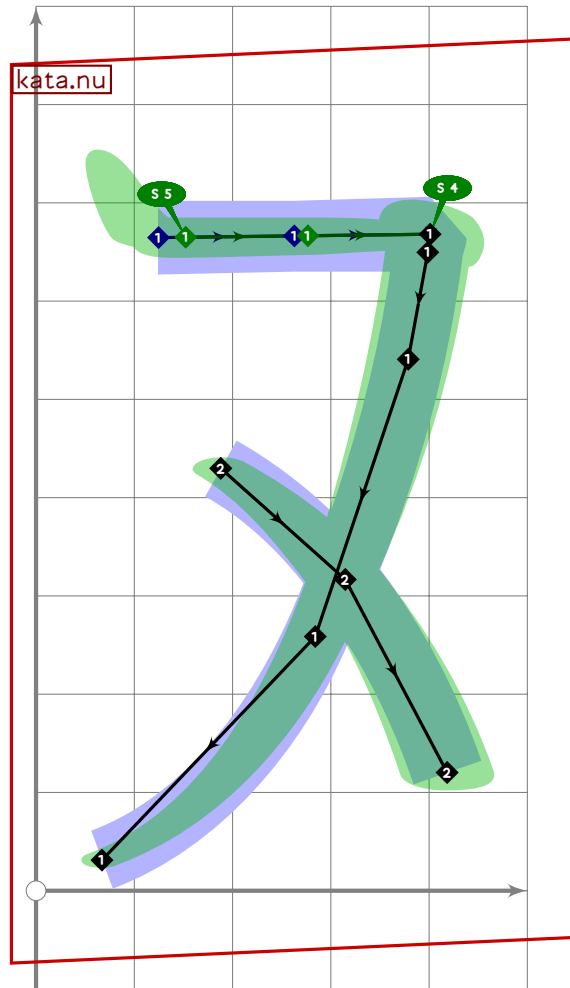
```



```

953 % katakana "ni"
954 begintsuglyph("uniFF86",134);
955 tsu_curve.kata.ni;
956 tsu_render;
957 endsuglyph;
958

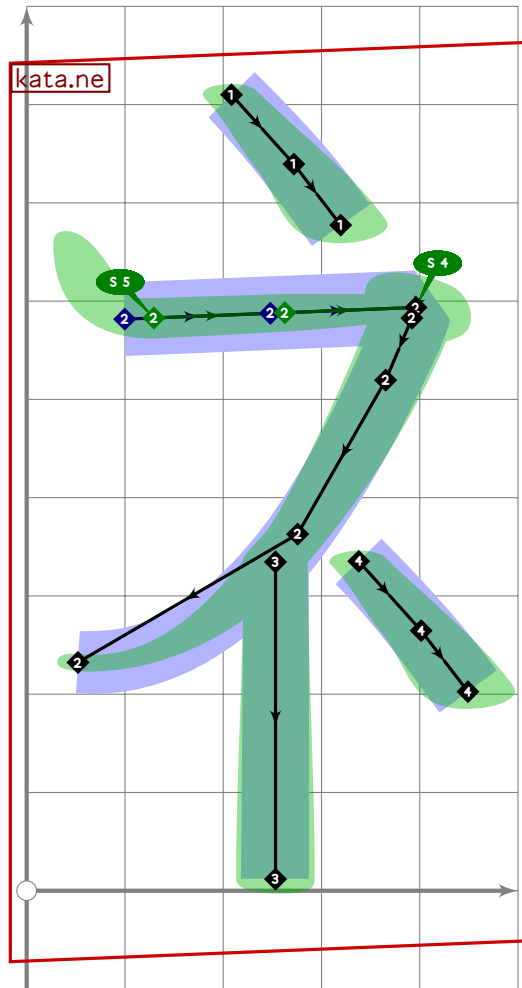
```



```

959 % katakana "nu"
960 begintsuglyph("uniFF87",135);
961 tsu_curve.kata.nu;
962 tsu_render;
963 endsuglyph;
964

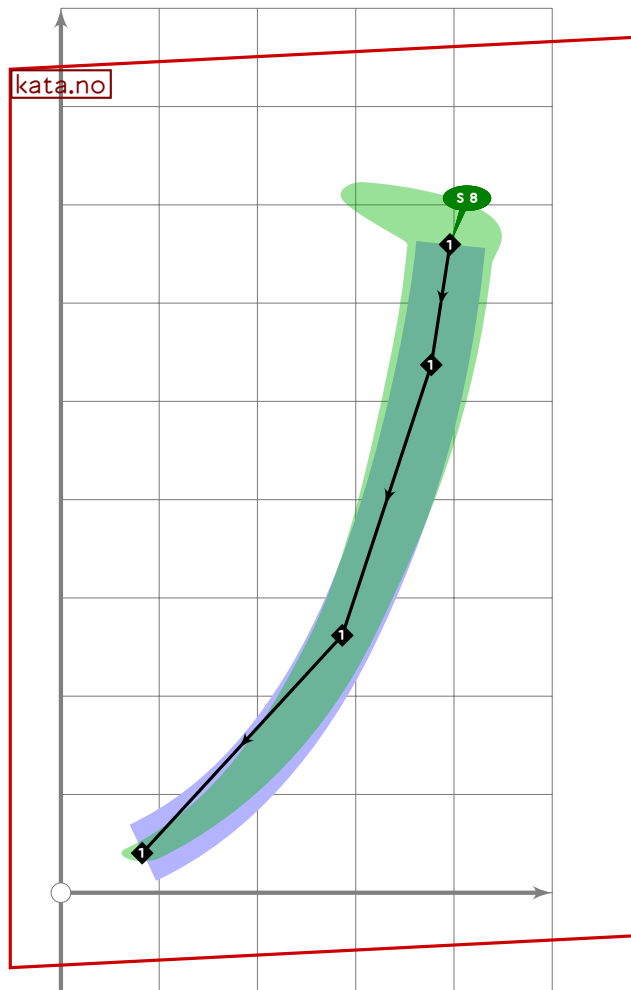
```



```

965 % katakana "ne"
966 begint Suglyph("\uniFF88",136);
967   tsu_curve.kata.ne;
968   tsu_render;
969   endtsuglyph;
970

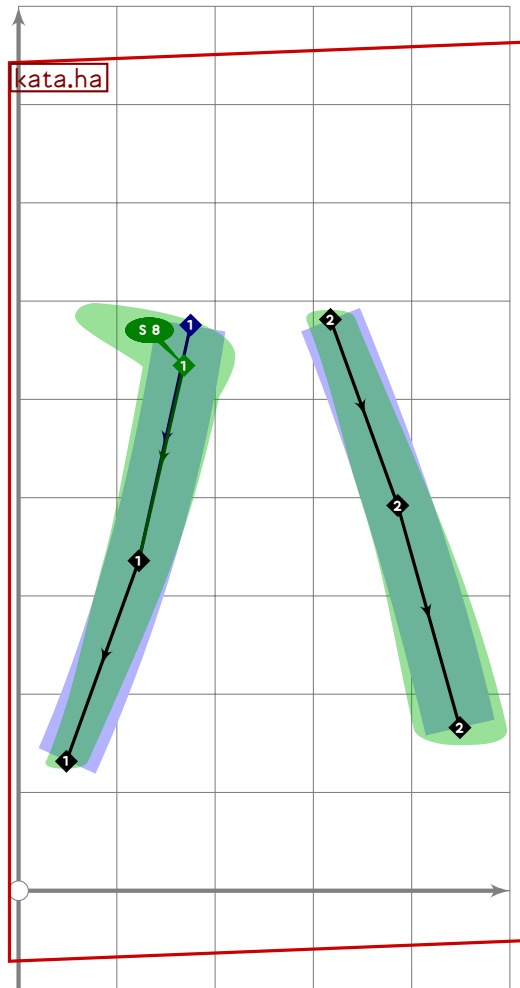
```



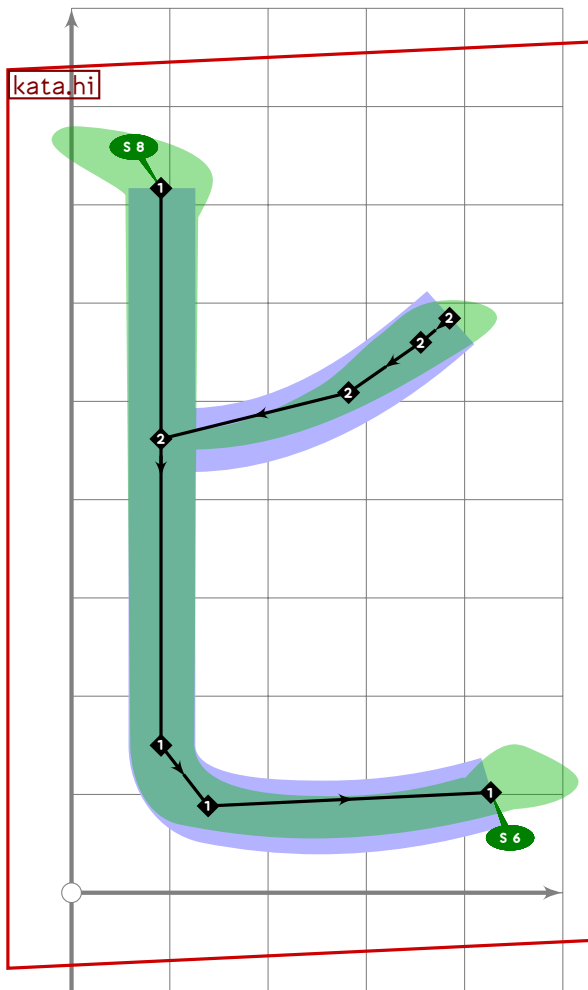
```

971 % katakana "no"
972 begintsuglyph("uniFF89",137);
973 tsu_curve.kata.no;
974 tsu_render;
975 endsuglyph;
976

```

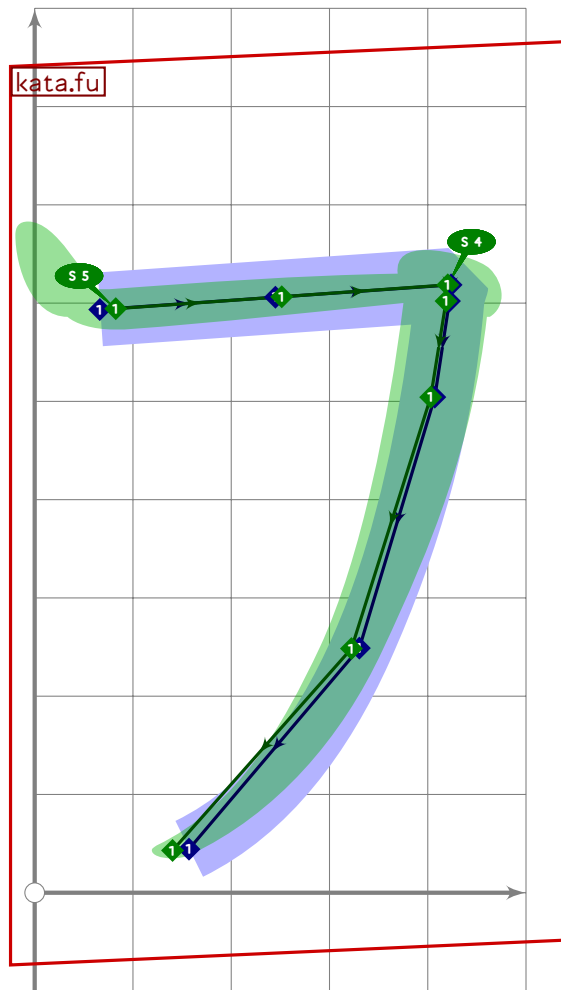


```
977 % katakana "ha"  
978 begintsuglyph("uniFF8A",138);  
979 tsu_curve.kata.ha;  
980 tsu_render;  
981 endsuglyph;  
982
```



```
983 % katakana "hi"  
984 begintsuglyph("uniFF8B",139);  
985 tsu_curve.kata.hi;  
986 tsu_render;  
987 endsuglyph;  
988
```

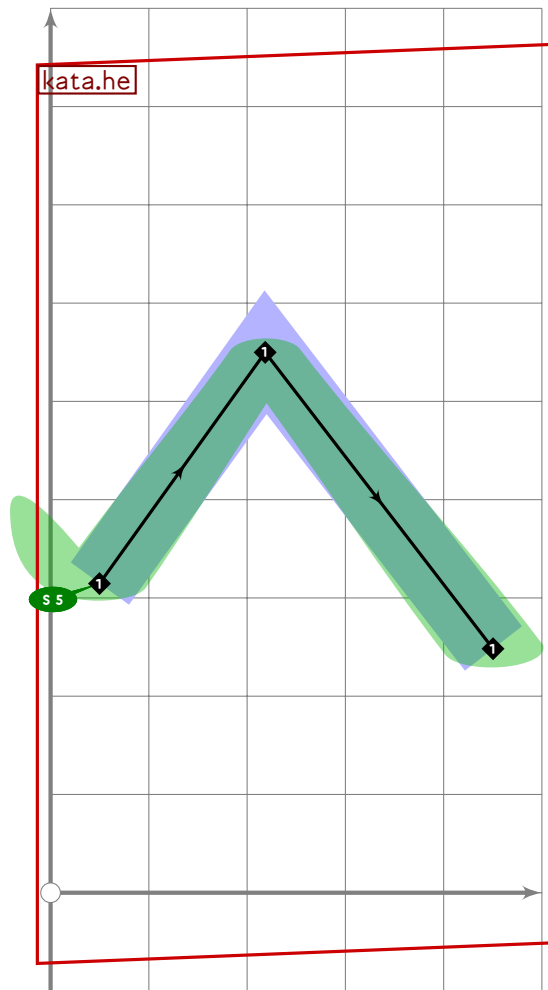




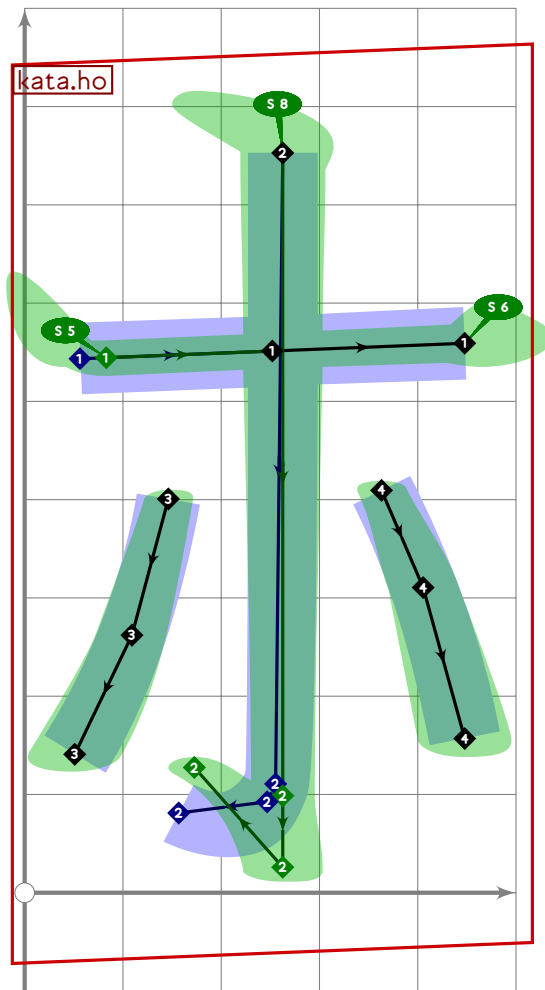
```

989 % katakana "fu"
990 begint Suglyph("uniFF8C",140);
991   tsu_curve.kata.fu;
992   tsu_render;
993   endtsuglyph;
994

```



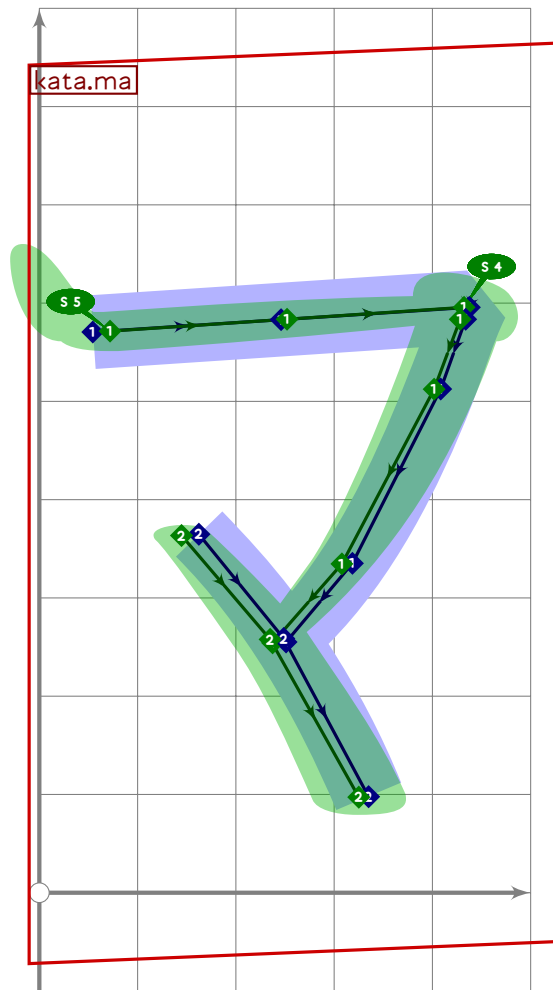
```
995 % katakana "he"  
996 begintsuglyph("uniFF8D",141);  
997 tsu_curve.kata.he;  
998 tsu_render;  
999 endsuglyph;  
1000
```



```

1001 % katakana "ho"
1002 begintsuglyph("uniFF8E",142);
1003 tsu_curve.kata.ho;
1004 tsu_render;
1005 endsuglyph;
1006

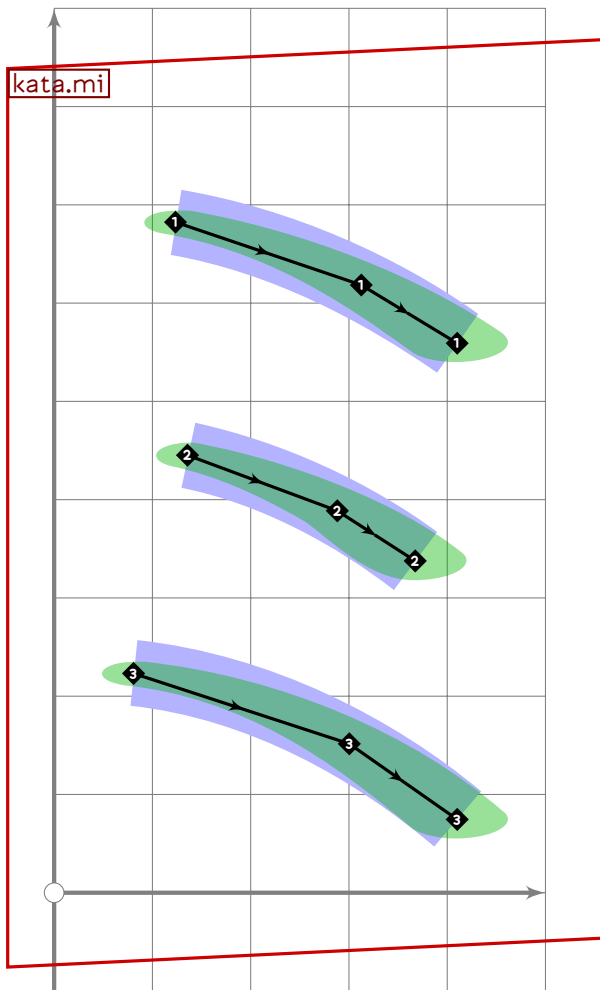
```



```

1007 % katakana "ma"
1008 begint Suglyph("uniFF8F",143);
1009   tsu_curve.kata.ma;
1010   tsu_render;
1011   endtsuglyph;
1012

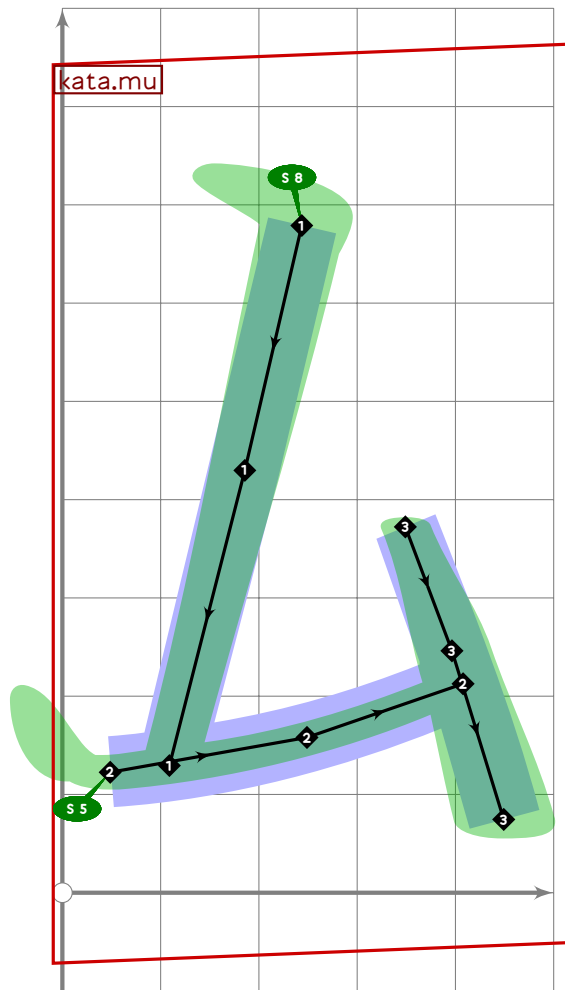
```



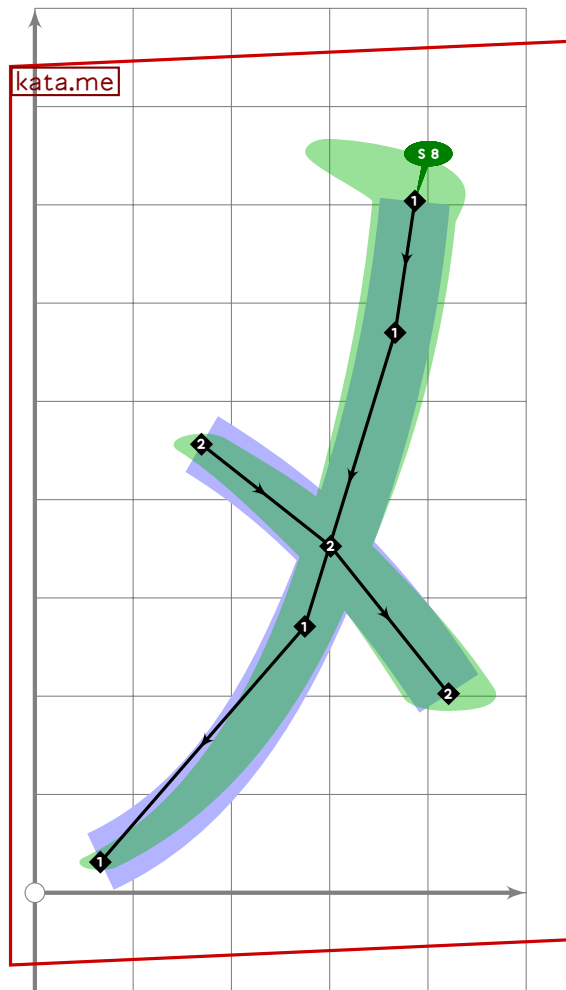
```

1013 % katakana "mi"
1014 begintsuglyph("uniFF90",144);
1015 tsu_curve.kata.mi;
1016 tsu_render;
1017 endtsuglyph;
1018

```



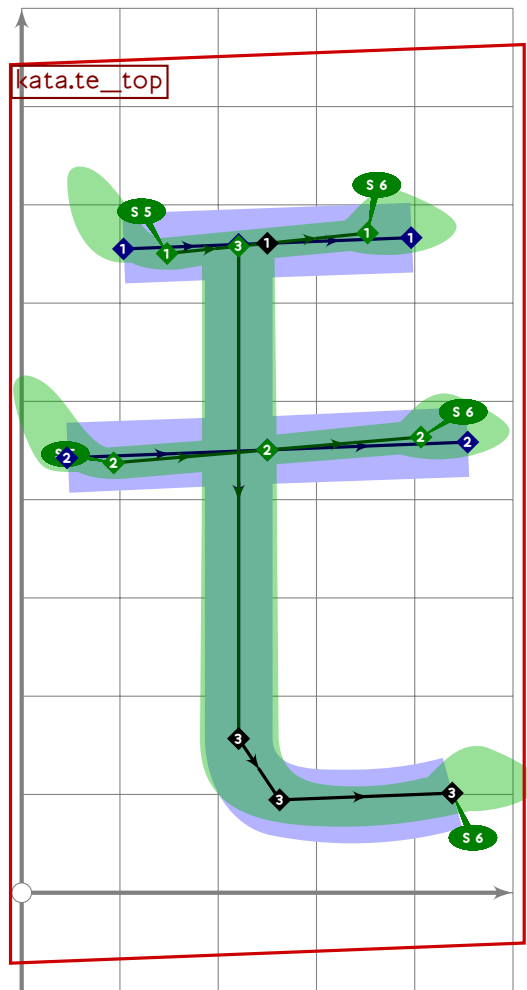
```
1019 % katakana "mu"  
1020 begintsuglyph("uniFF91";145);  
1021 tsu_curve.kata.mu;  
1022 tsu_render;  
1023 endsuglyph;  
1024
```



```

1025 % katakana "me"
1026 begintsuglyph("uniFF92",146);
1027 tsu_curve.kata.me;
1028 tsu_render;
1029 endsuglyph;
1030

```

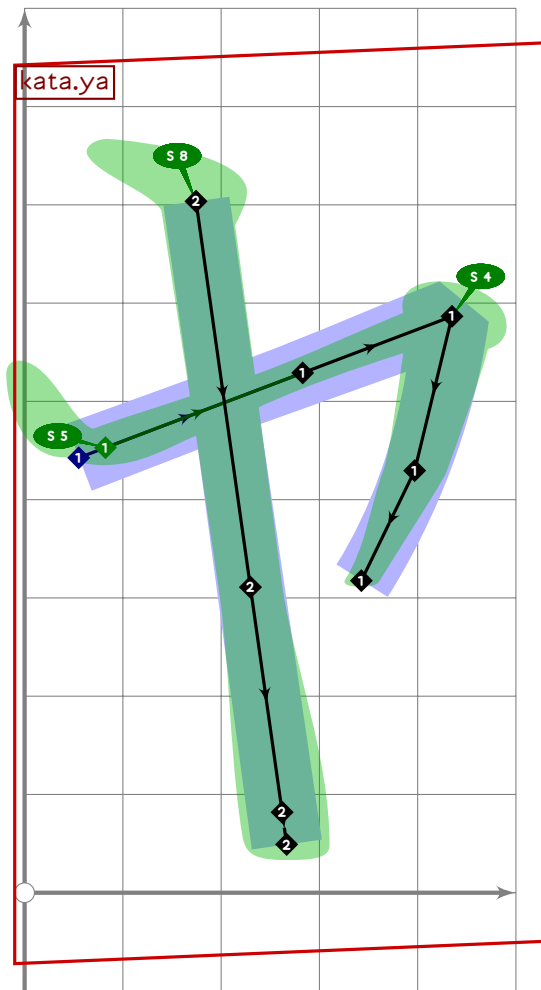


```

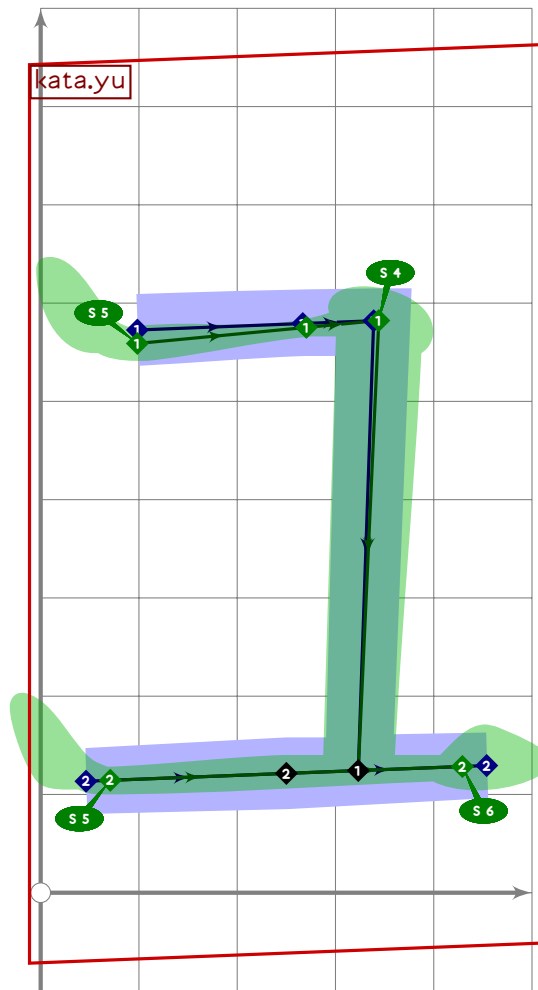
1031 % katakana "mo"
1032 begint Suglyph("uniFF93";147);
1033   tsu_curve.kata.mo;
1034   tsu_render;
1035 endtsuglyph;
1036

```

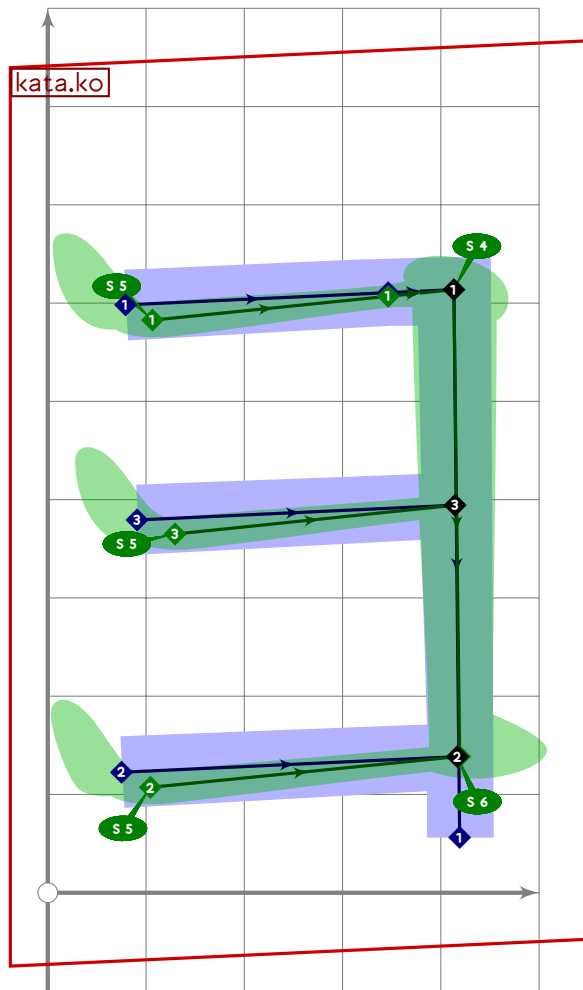




```
1037 % katakana "ya"  
1038 begintsuglyph("uniFF94",148);  
1039 tsu_curve.kata.ya;  
1040 tsu_render;  
1041 endsuglyph;  
1042
```



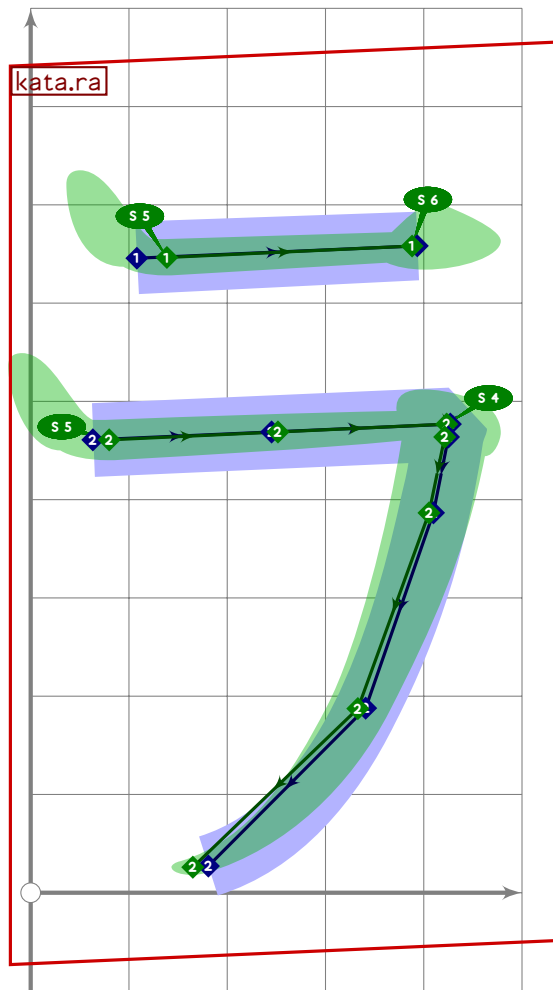
```
1043 % katakana "yu"  
1044 begintsuglyph("uniFF95";149);  
1045 tsu_curve.kata.yu;  
1046 tsu_render;  
1047 endsuglyph;  
1048
```



```

1049 % katakana "yo"
1050 begint Suglyph("uniFF96",150);
1051 tsu_curve.kata.yo;
1052 tsu_render;
1053 endtsuglyph;
1054

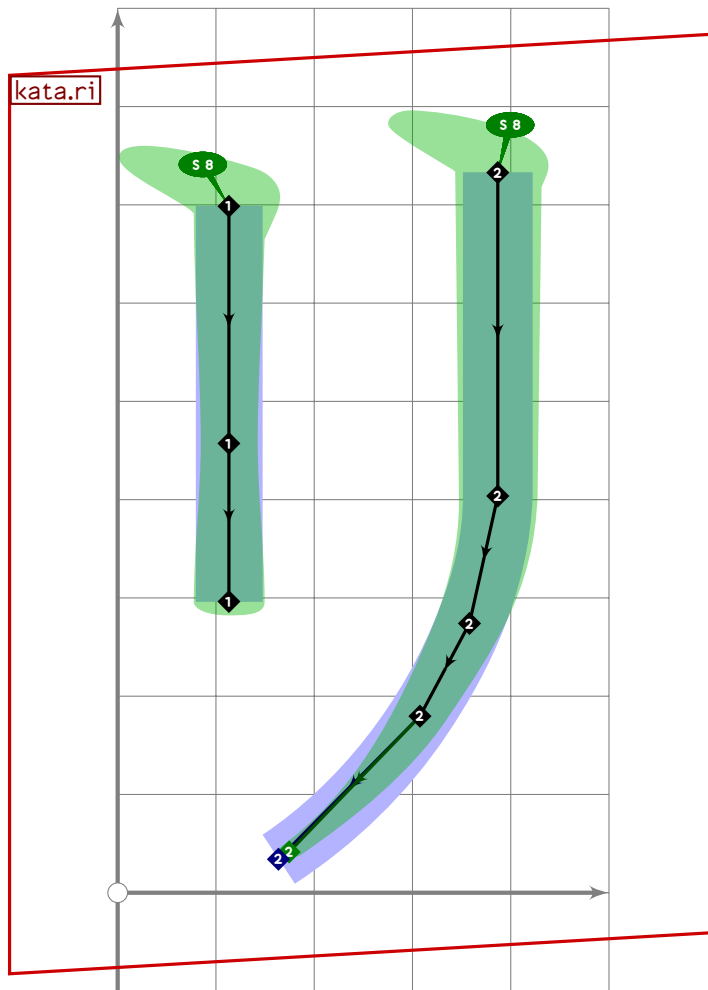
```



```

1055 % katakana "ra"
1056 begint Suglyph("uniFF97",151);
1057 tsu_curve.kata.ra;
1058 tsu_render;
1059 endtsuglyph;
1060

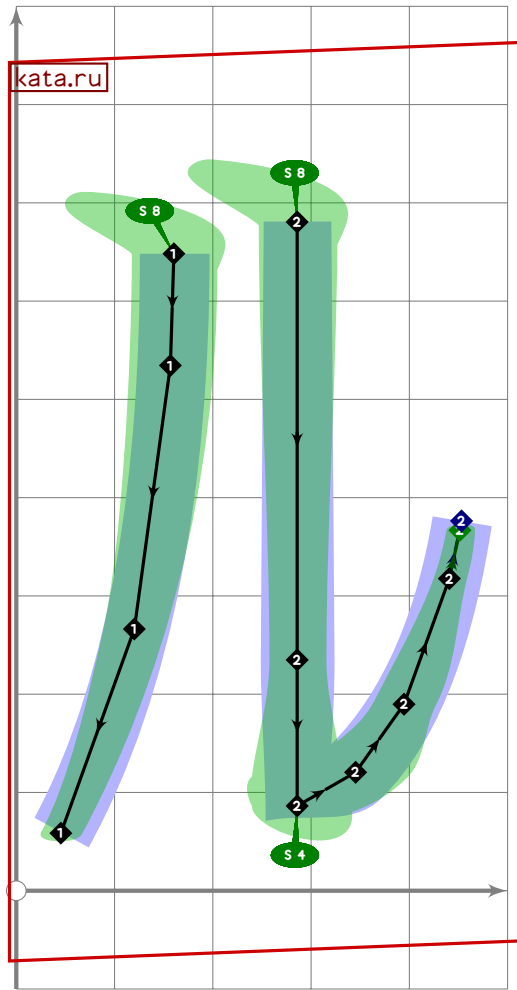
```



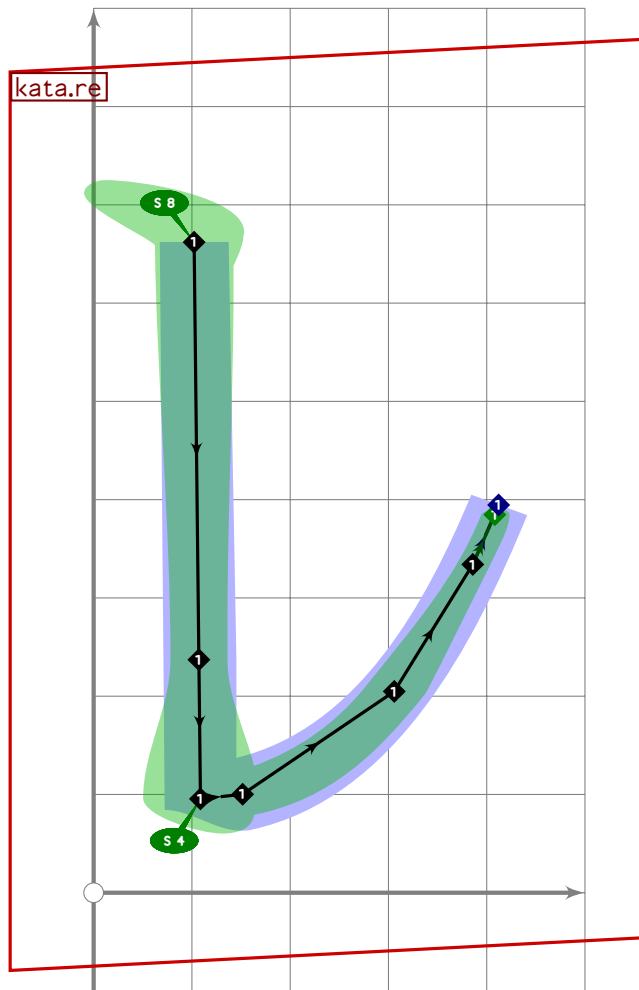
```

1061 % katakana "ri"
1062 begintsuglyph("uniFF98",152);
1063 tsu_curve.kata.ri;
1064 tsu_render;
1065 endsuglyph;
1066

```



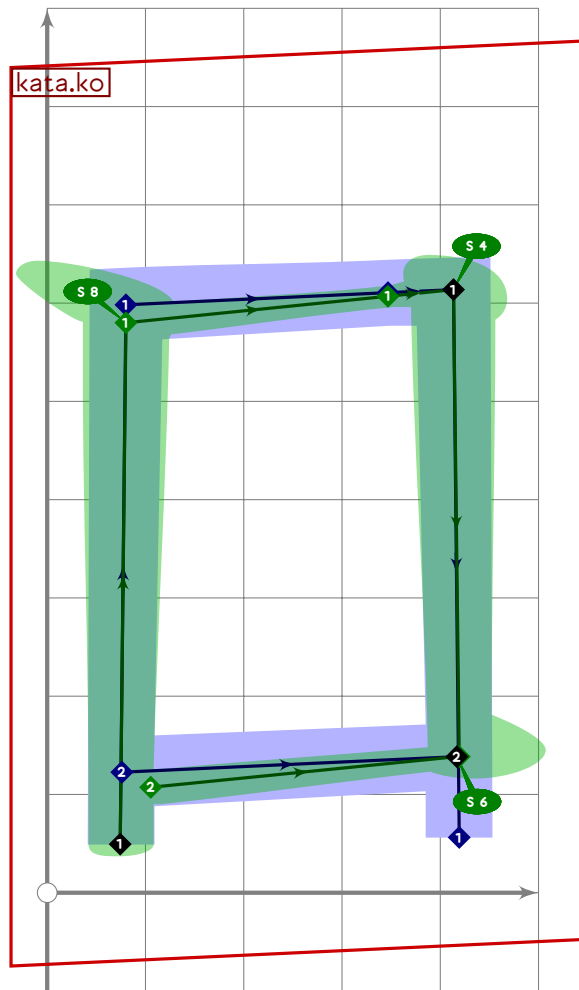
```
1067 % katakana "ru"  
1068 begintsuglyph("uniFF99",153);  
1069 tsu_curve.kata.ru;  
1070 tsu_render;  
1071 endsuglyph;  
1072
```



```

1073 % katakana "re"
1074 begintsuglyph("uniFF9A",154);
1075 tsu_curve.kata.re;
1076 tsu_render;
1077 endsuglyph;
1078

```

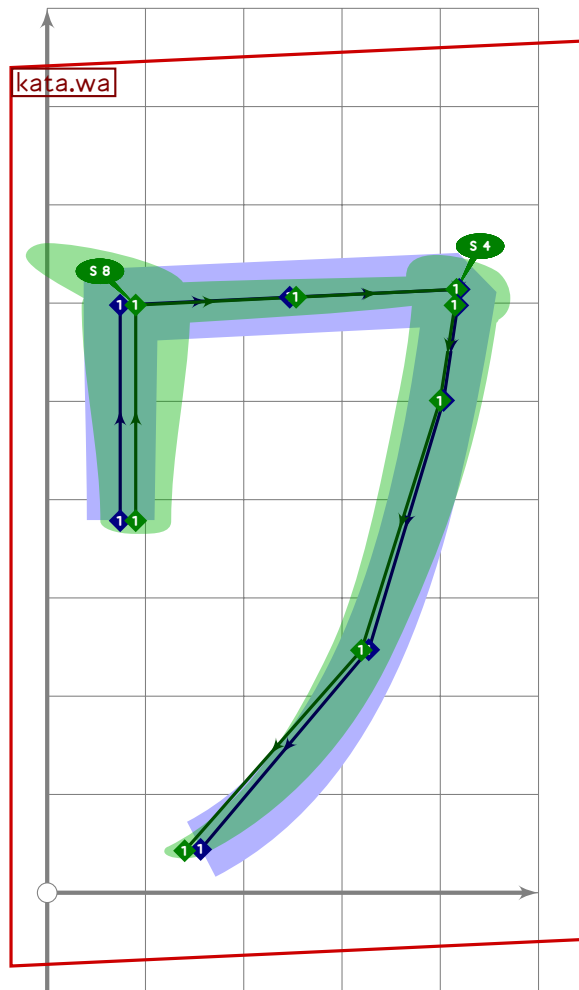


```

1079 % katakana "ro"
1080 begint Suglyph("\uniFF9B";155);
1081   tsu_curve.kata.ro;
1082   tsu_render;
1083   endtsuglyph;
1084

```

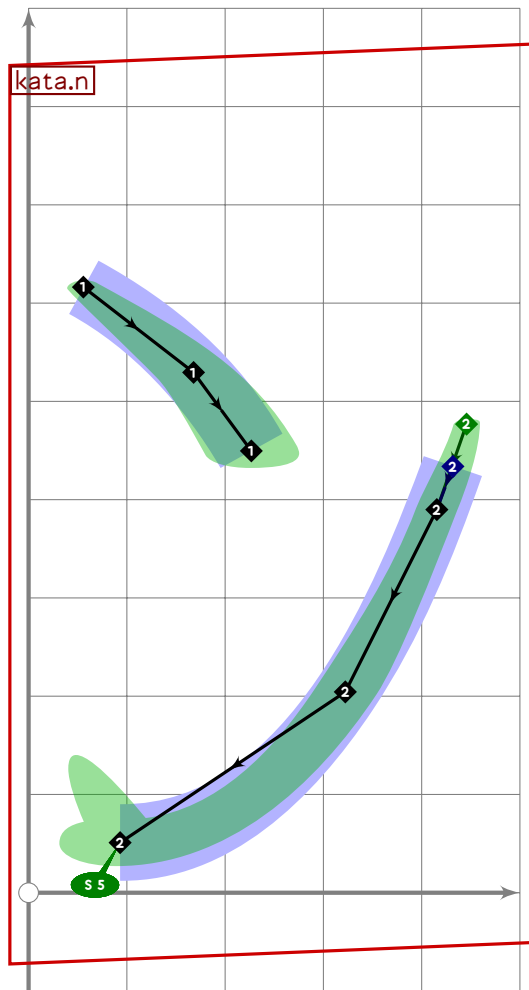




```

1085 % katakana "wa"
1086 begintsuglyph("uniFF9C";156);
1087 tsu_curve.kata.wa;
1088 tsu_render;
1089 endsuglyph;
1090

```



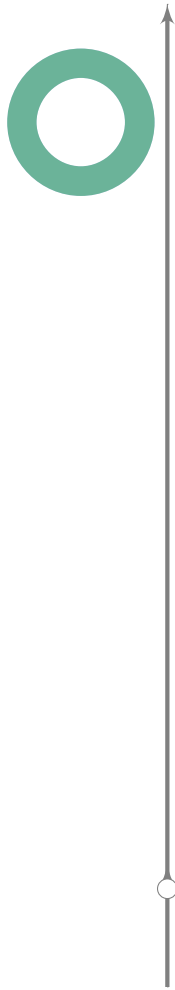
```

1091 % katakana "n"
1092 begintsuglyph("uniFF9D";157);
1093 tsu_curve.kata.n;
1094 tsu_render;
1095 endsuglyph;
1096
1097 % WARNING changing rescale setting
1098 tsu_rescale_native_zero;
1099

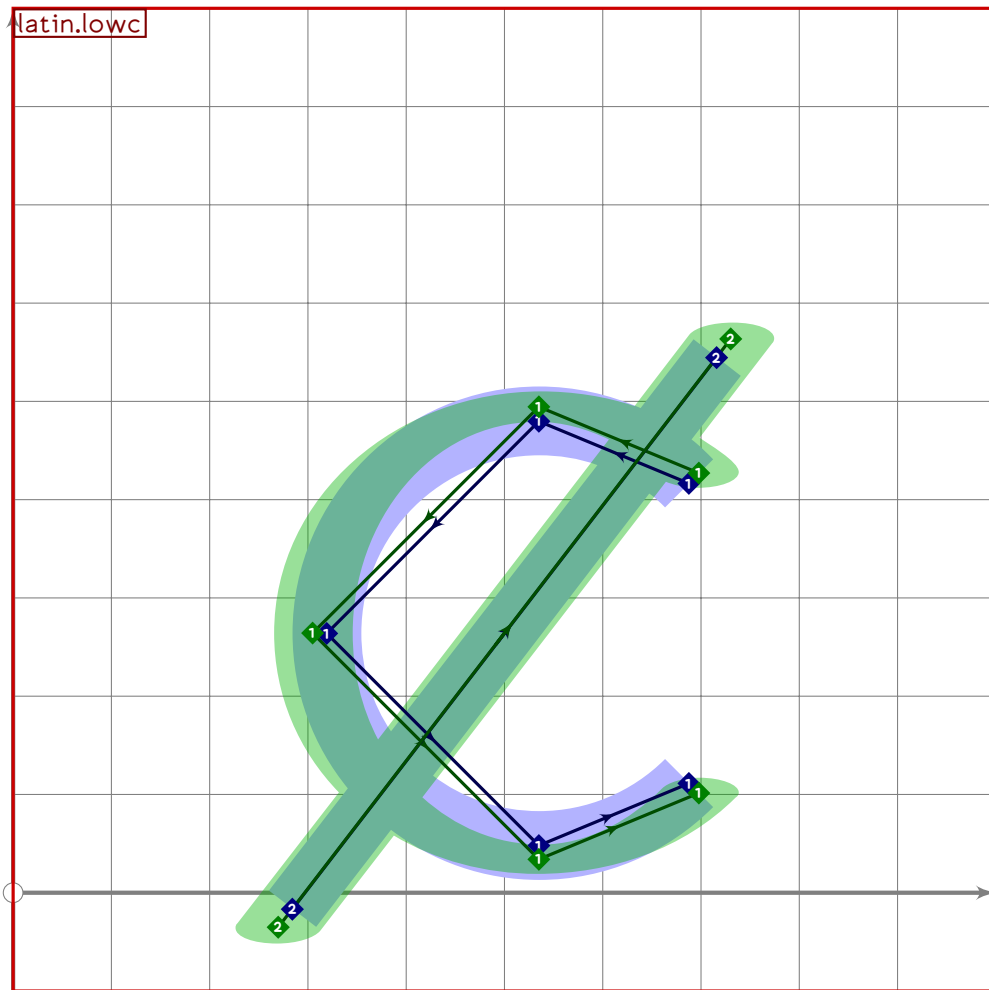
```



```
1100 % combining dakuten
1101 begintsuglyph("uniFF9E",158);
1102 tsu_curve.dakuten(identity
1103     scaled 0.8 rotated 25 shifted (-130,780) xscaled 0.7);
1104 tsu_render;
1105 endsuglyph;
1106
```



```
1107 % combining handakuten
1108 begintsuglyph("uniFF9F",159);
1109   Fill fullcircle scaled (handakuten_outer*0.75) shifted (-90,780);
1110   unFill reverse fullcircle scaled (handakuten_inner*0.75) shifted (-90,780);
1111 endsuglyph;
1112
1113 % WARNING changing rescale setting
1114 tsu_rescale_full;
```

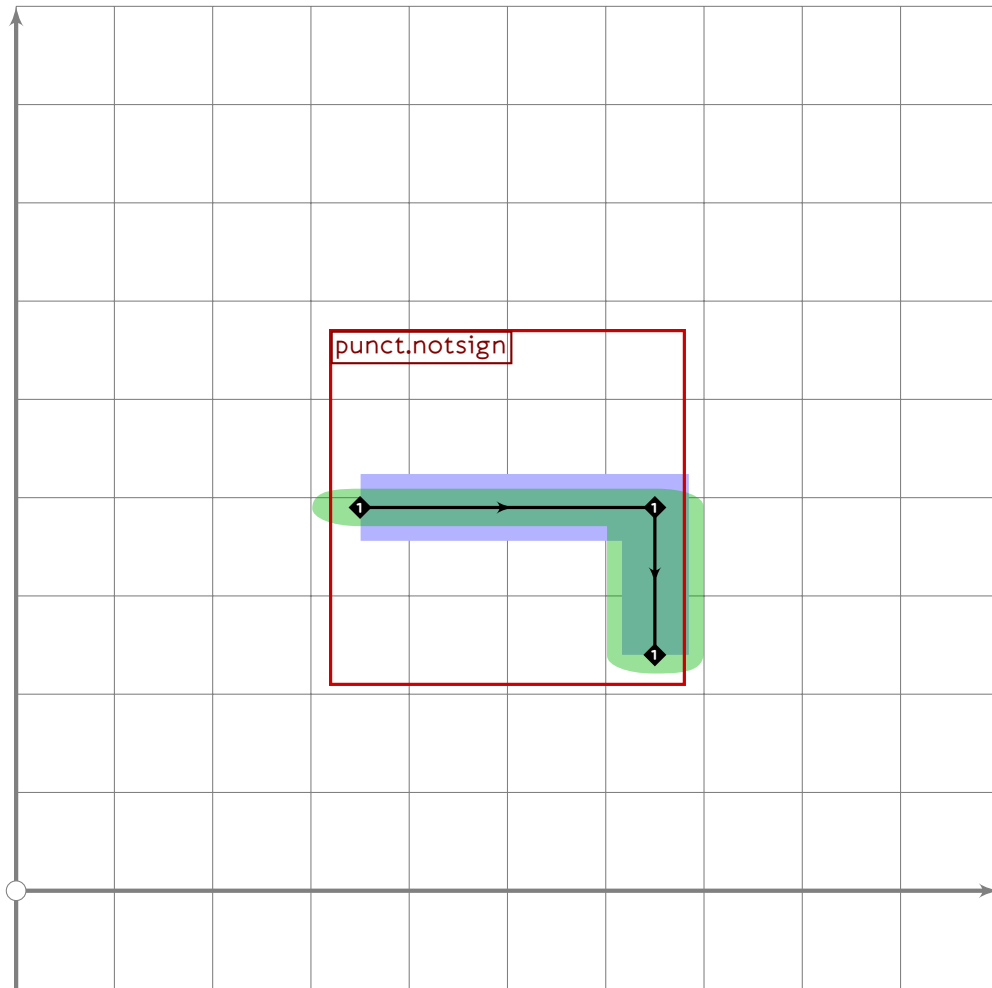


```

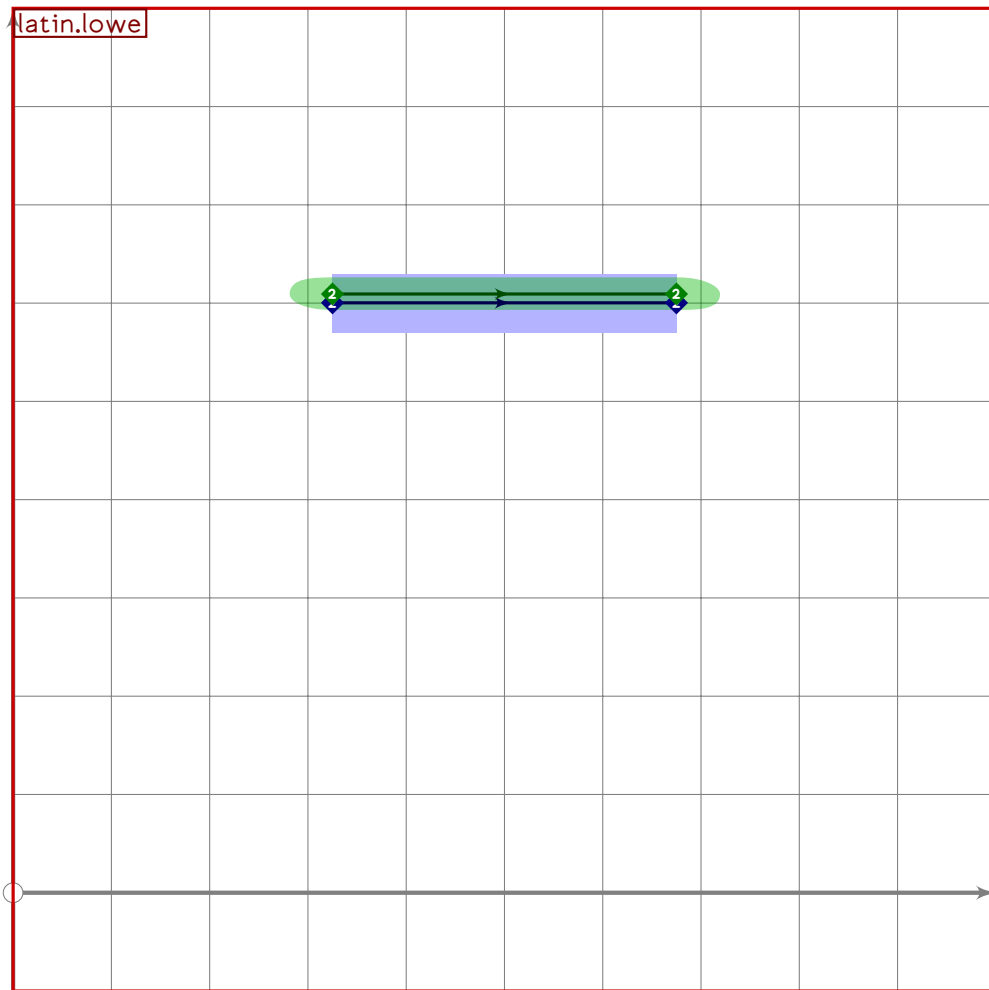
1115
1116 begintsuglyph("uniFFE0",224);
1117   tsu_accent.lcslash(tsu_curve.latin.lowc);
1118   tsu_render;
1119 endtsuglyph;
1120
1121 begintsuglyph("uniFFE1",225);
1122   tsu_curve.punct.pound;
1123   tsu_render;
1124 endtsuglyph;

```

[see page 284]



```
1125  
1126 begintsuglyph("uniFFE2",226);  
1127 tsu_curve,punct.notsign  
1128   (identity scaled (1.5*tsu_punct_size) shifted centre_pt);  
1129 tsu_render;  
1130 endsuglyph;
```

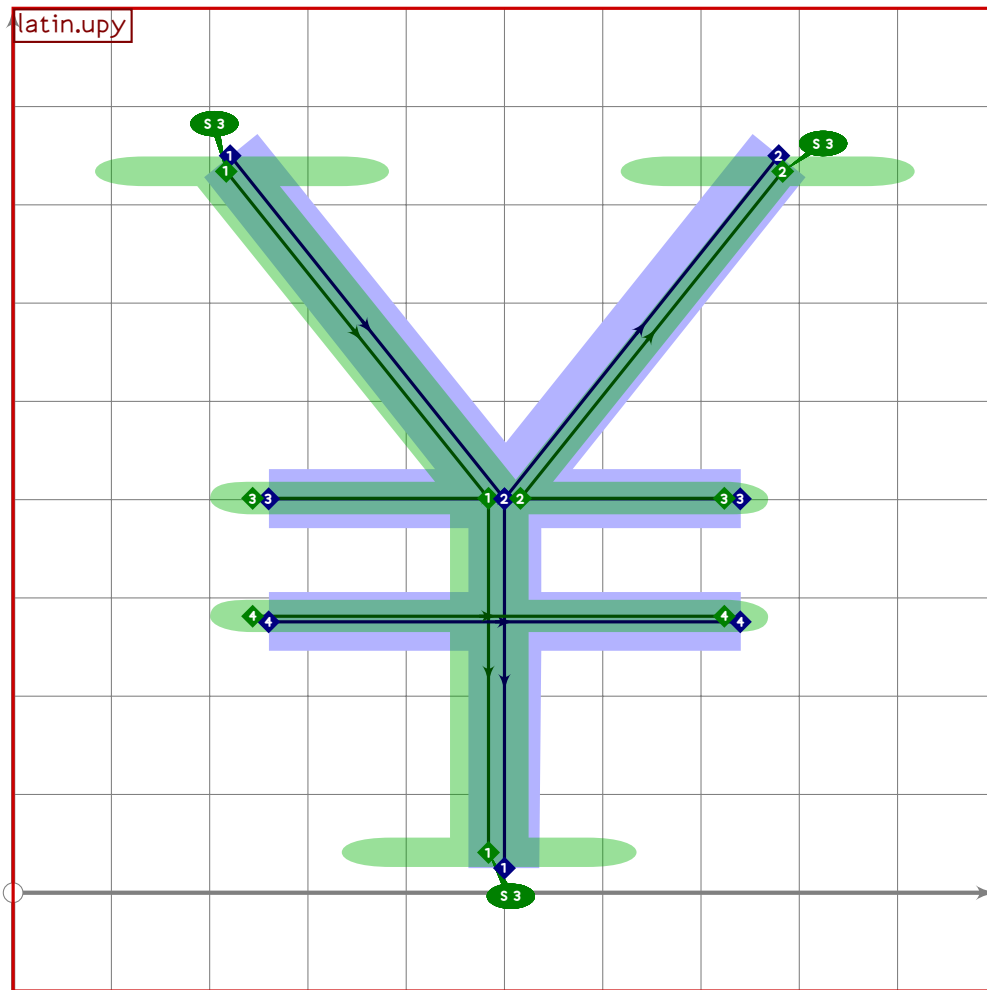


```

1131
1132 begintsuglyph("uniFFE3",227);
1133 tsu_accent.macron(tsu_curve.latin.lower);
1134 bo_size1:=0;
1135 tsu_render;
1136 endtsuglyph;
1137
1138 begintsuglyph("uniFFE4",228);
1139 tsu_curve.punct.bvline;
1140 tsu_render;
1141 endtsuglyph;

```

[see page 258]

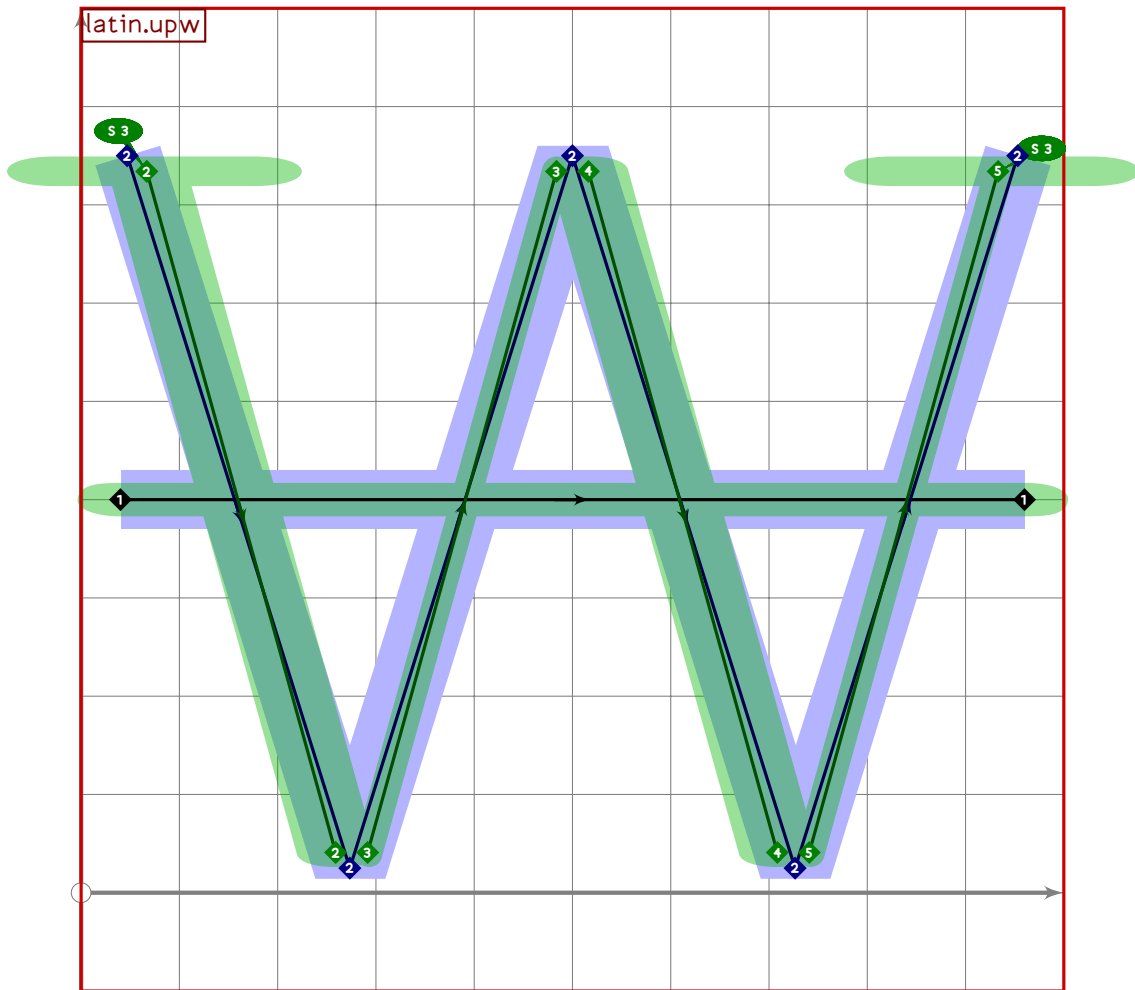


```

1142
1143 begintsuglyph("uniFFE5";229);
1144 tsu_curve.latin.upy;
1145 bp3:=((-240,0)-(240,0)) shifted point 1 of bp1;
1146 bq3:=(2,2)-(2,2);
1147 bo_size3:=80;
1148 bp4:=((-240,0)-(240,0)) shifted point 1.333 of bp1;
1149 bq4:=(2,2)-(2,2);
1150 bo_size4:=80;
1151 sp:=sp*2;
1152 tsu_render;
1153 endsuglyph;

```





```

1154
1155 begintsuglyph("uniFFE6";230);
1156   bp1:=(40,400)-(960,400);
1157   bq1:=(2,2)-(2,2);
1158   bo_size1:=80;
1159   sp:=sp*1;
1160   tsu_curve.latin.upw;
1161   tsu_render;
1162 endsuglyph;
1163
1164 _____
1165
1166 endfont;
1167
1168 _____

```

# tsuku-1f1.mp

```
1 %
2 % Unicode page 1F1 (Enclosed Supplement) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---

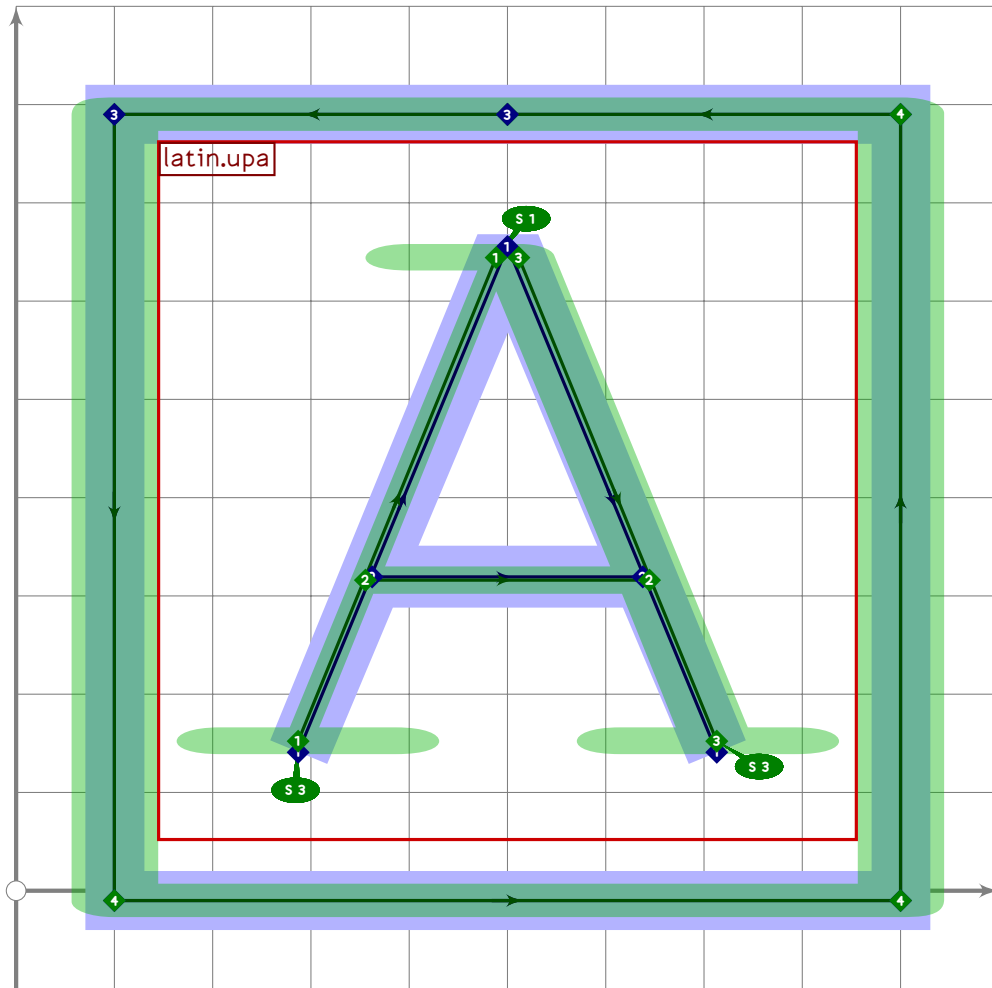

32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input enclosed.mp;
39 input latin.mp;
40
41 

---


42
```

## Squared Latin

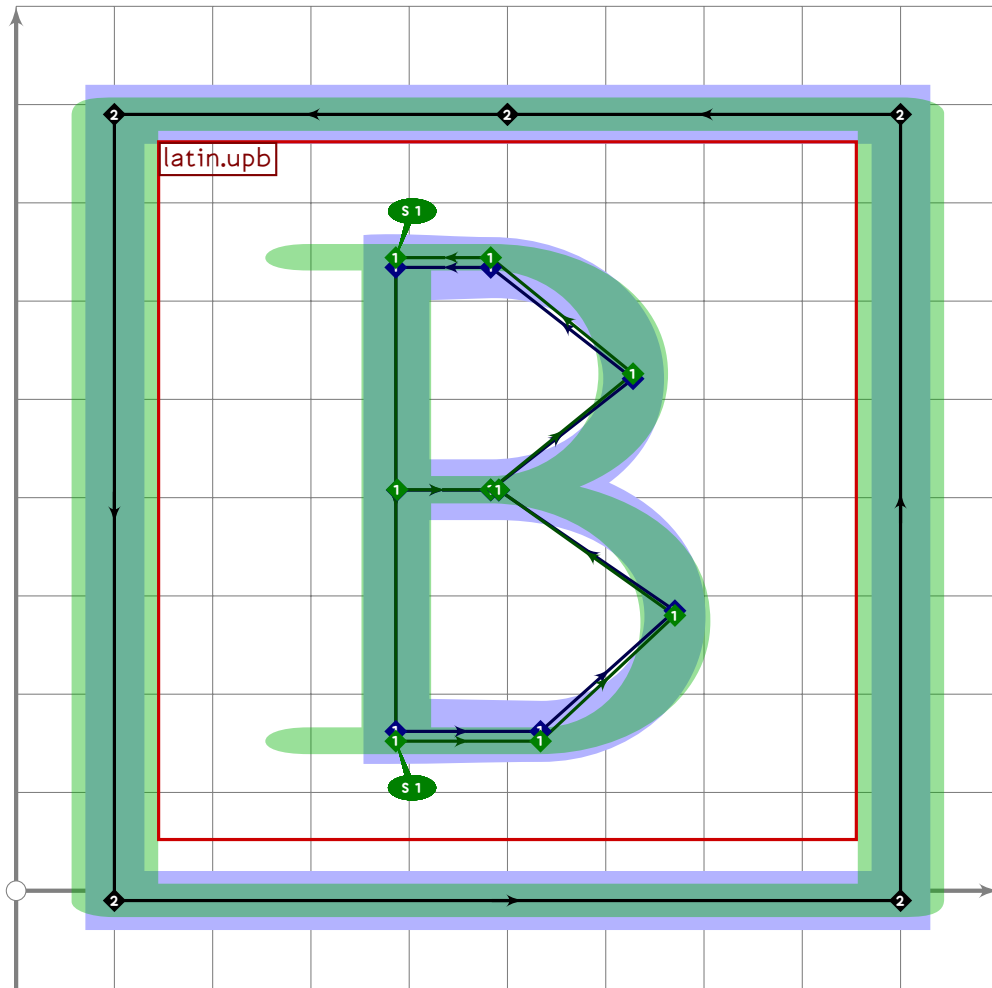
```
43 % SQUARED LATIN
44
```



```

45 % A
46 beginsuglyph("u1F130";48);
47   tsu_curve.square.single(tsu_curve.latin.upa);
48   tsu_render;
49 endsuglyph;
50

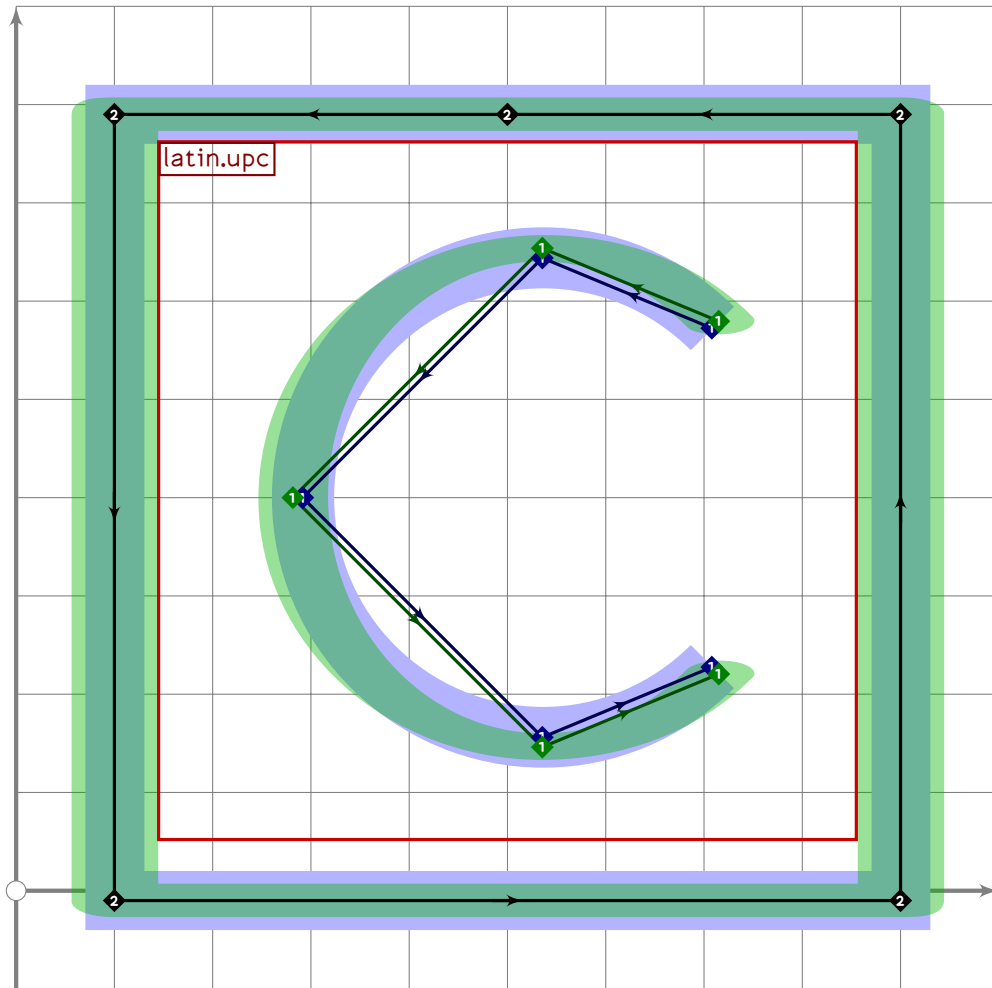
```



```

51 % B
52 begint Suglyph("u1F131",49);
53   tsu_curve.square.single(tsu_curve.latin.upb);
54   tsu_render;
55 endtsuglyph;
56

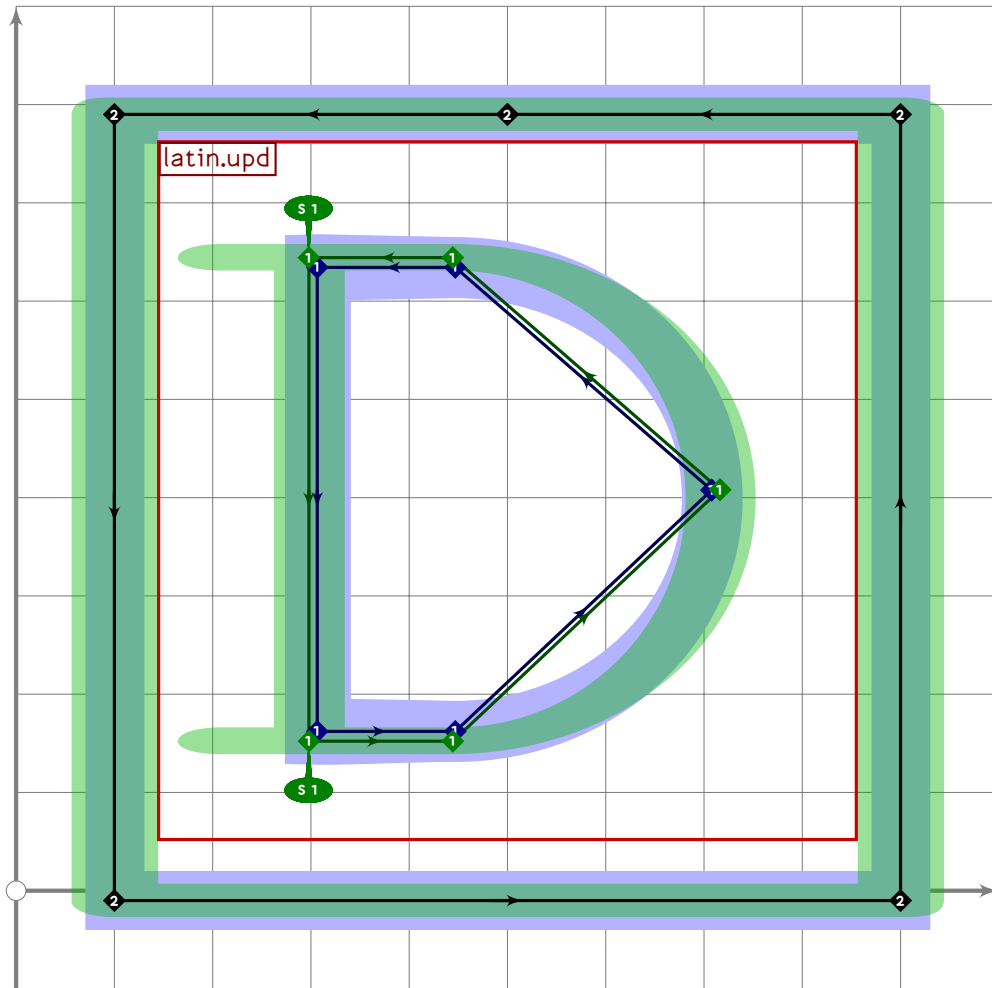
```



```

57 % C
58 begint Suglyph("u1F132";50);
59   tsu_curve.square.single(tsu_curve.latin.upc);
60   tsu_render;
61 endsuglyph;
62

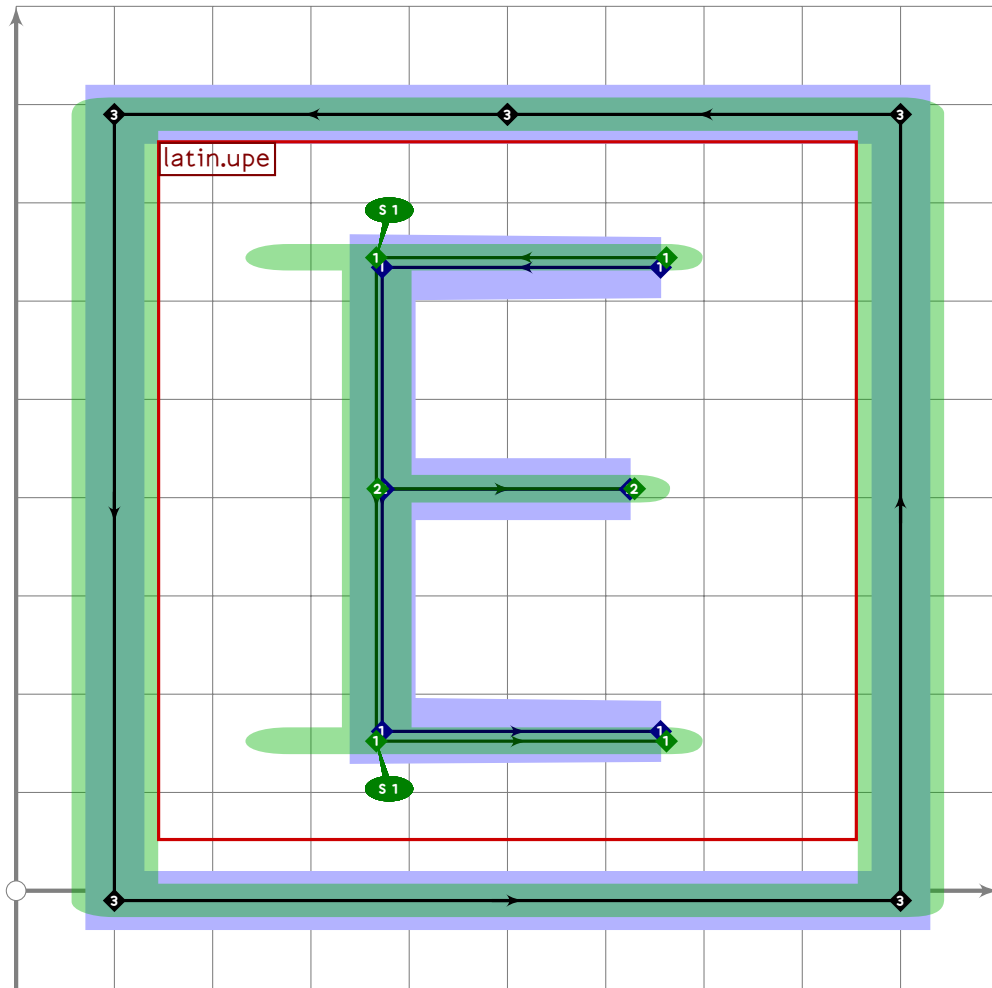
```



```

63 % D
64 beginsuglyph("u1F133";51);
65   tsu_curve.square.single(tsu_curve.latin.upd);
66   tsu_render;
67 endsuglyph;
68

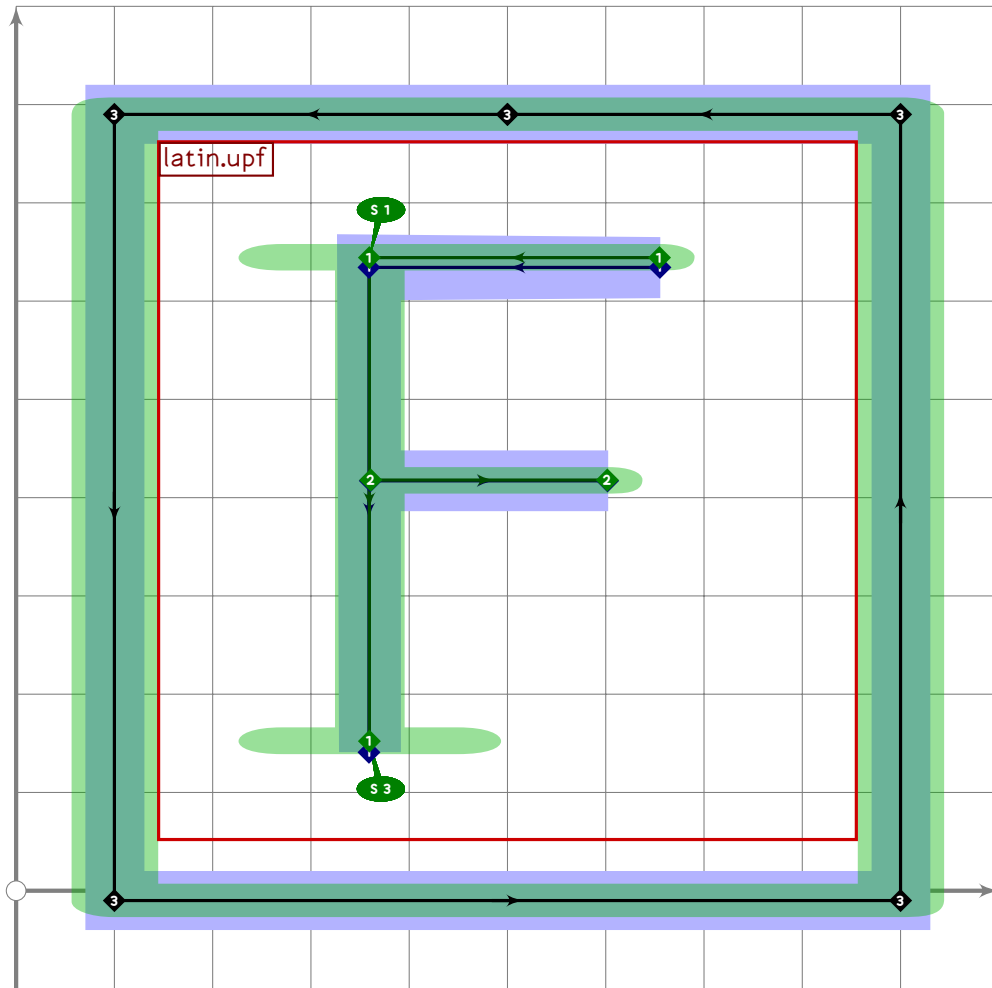
```



```

69 % E
70 begint Suglyph("u1F134";52);
71   tsu_curve.square.single(tsu_curve.latin.upe);
72   tsu_render;
73 endsuglyph;
74

```

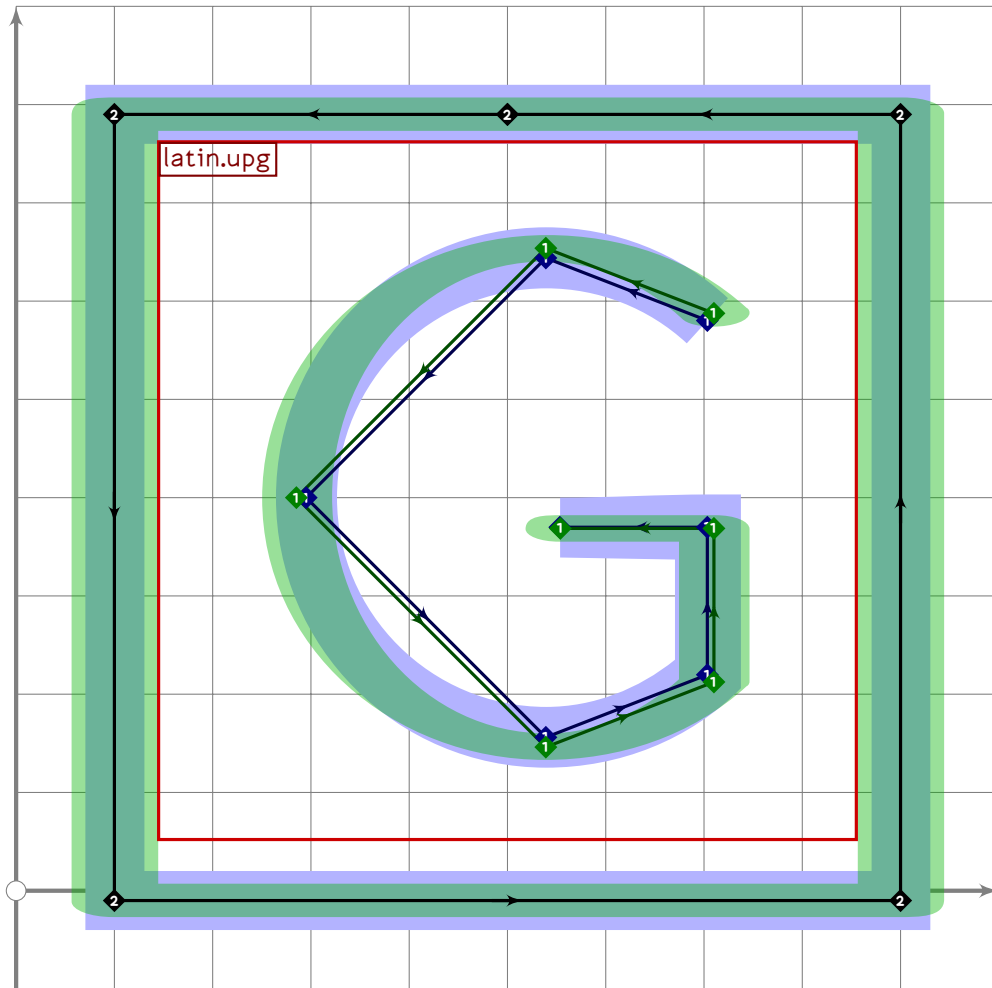


```

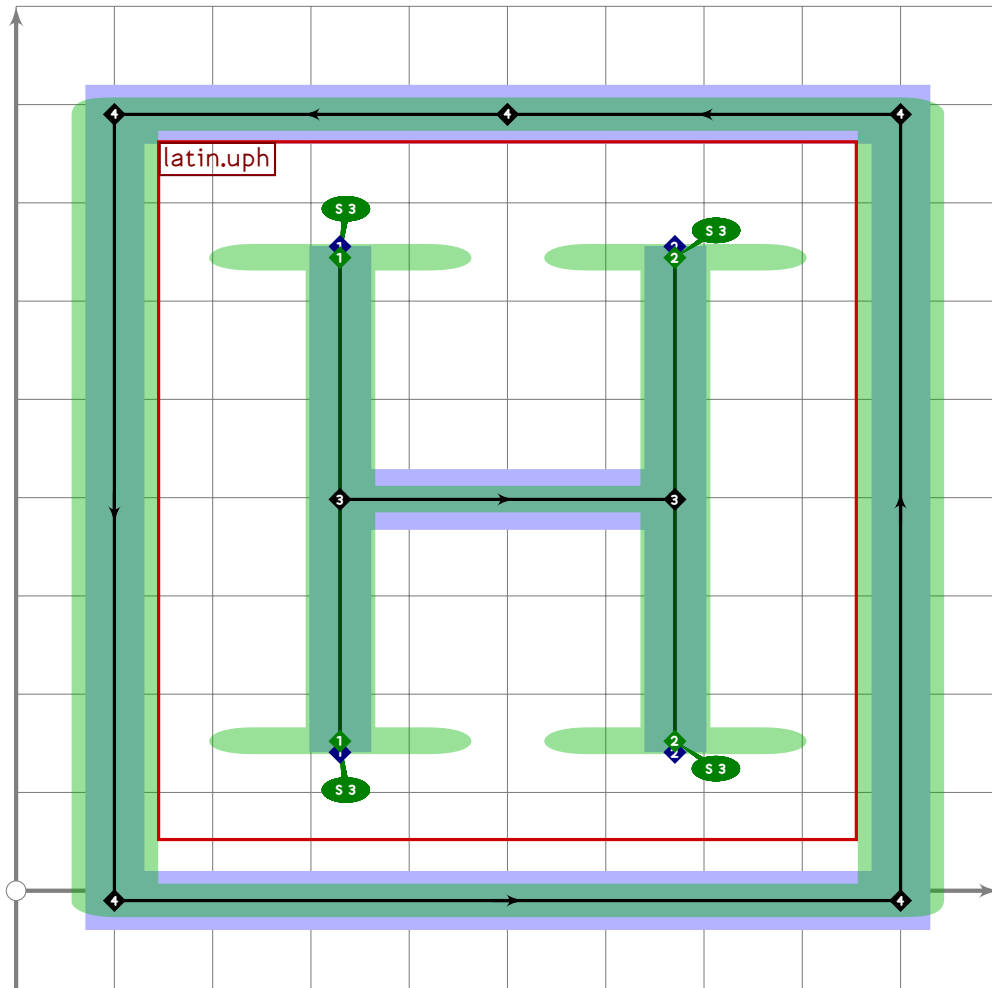
75 % F
76 begint Suglyph("u1F135";53);
77 tsu_curve.square.single(tsu_curve.latin.upf);
78 tsu_render;
79 endsuglyph;
80

```





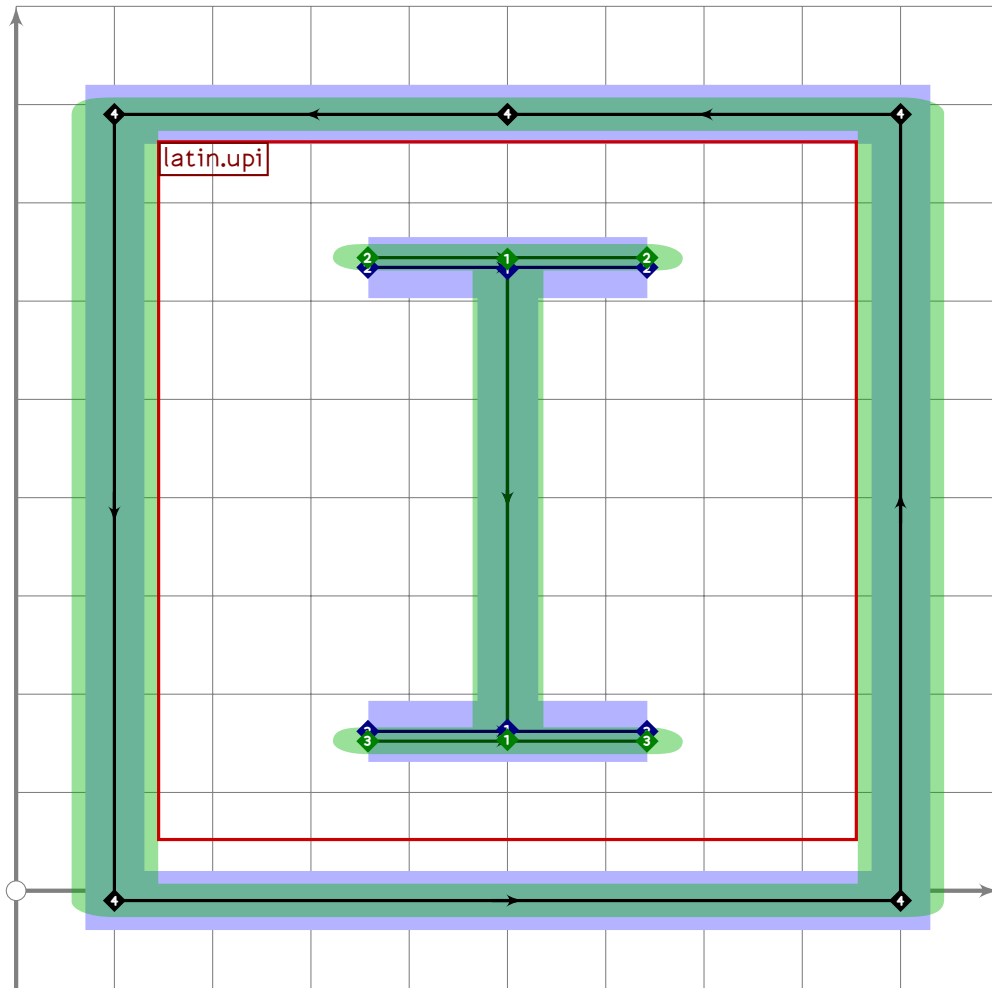
```
81 % G  
82 beginsuglyph("u1F136";54);  
83   tsu_curve.square.single(tsu_curve.latin.upg);  
84   tsu_render;  
85 endsuglyph;  
86
```



```

87 % H
88 beginsuglyph("u1F137";55);
89   tsu_curve.square.single(tsu_curve.latin.uph);
90   tsu_render;
91 endsuglyph;
92

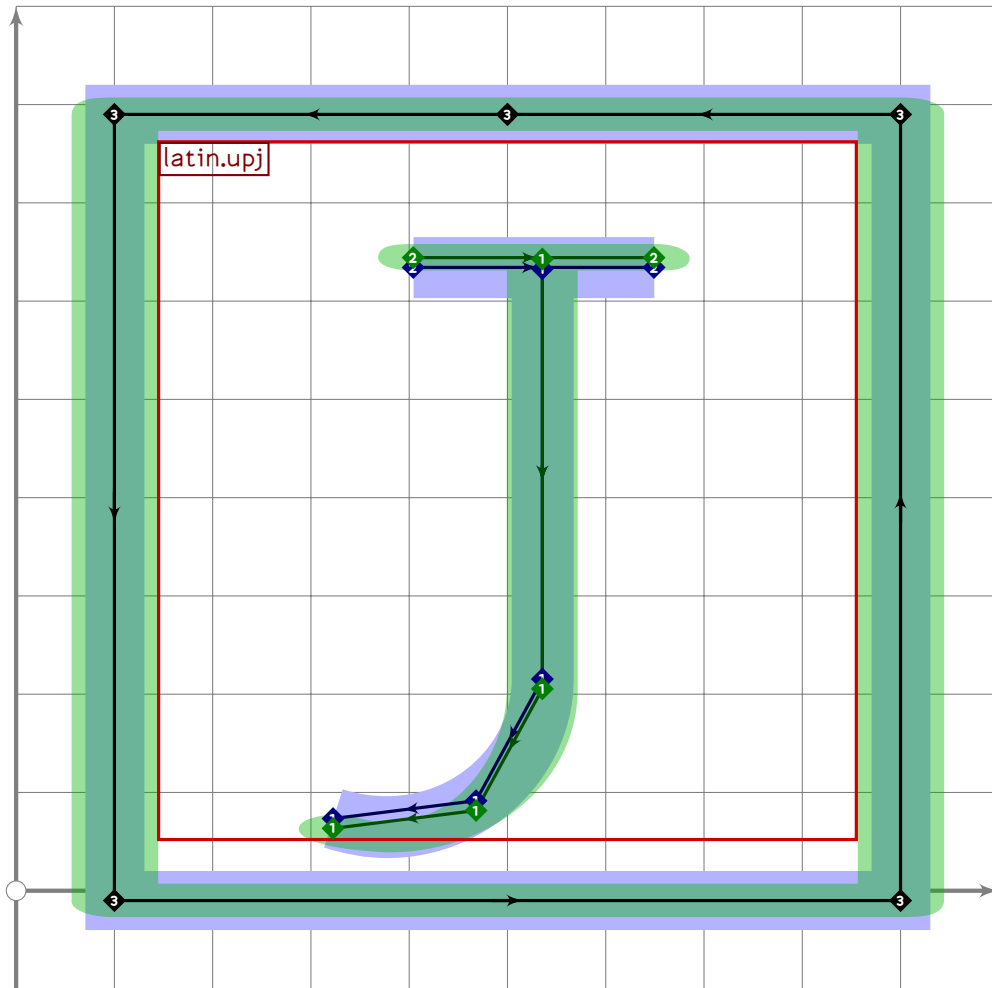
```



```

93 % I
94 beginsuglyph("u1F138";56);
95   tsu_curve.square.single(tsu_curve.latin.upi);
96   tsu_render;
97 endsuglyph;
98

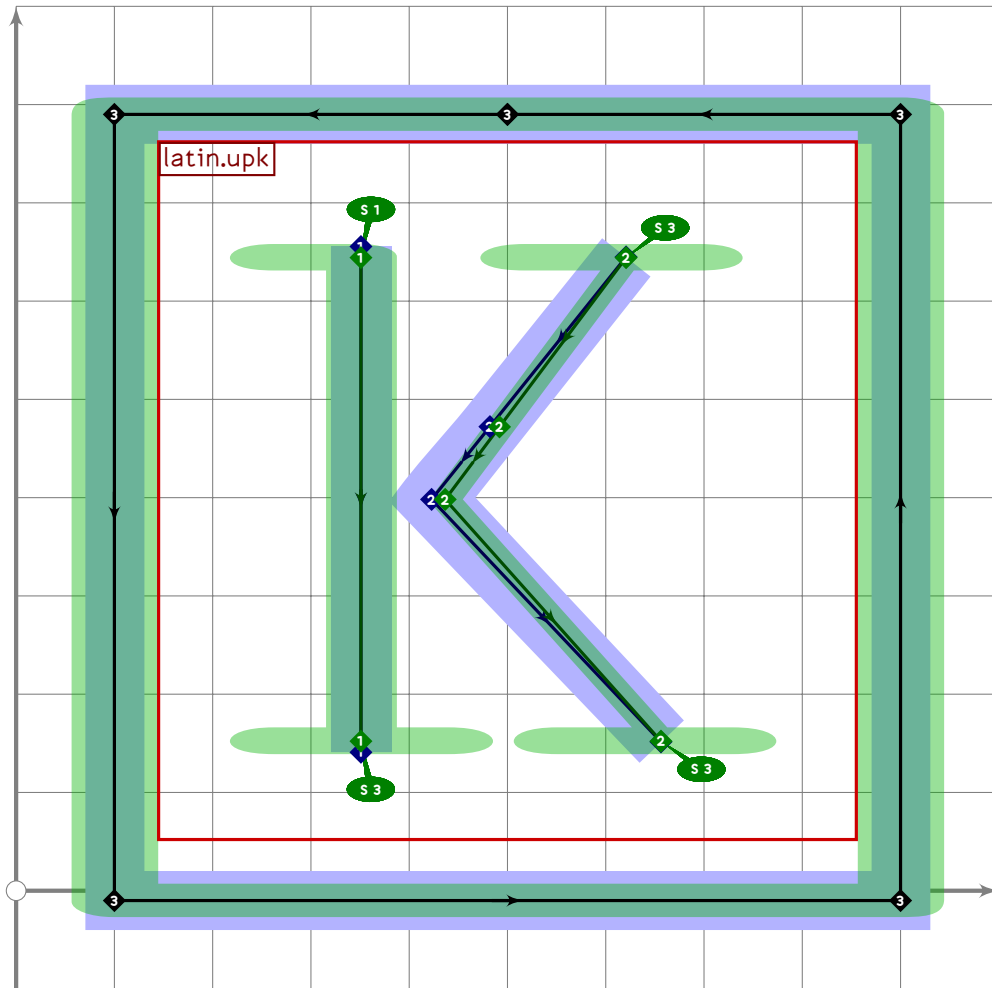
```



```

99 % J
100 beginsuglyph("u1F139";57);
101   tsu_curve.square.single(tsu_curve.latin.upj);
102   tsu_render;
103 endsuglyph;
104

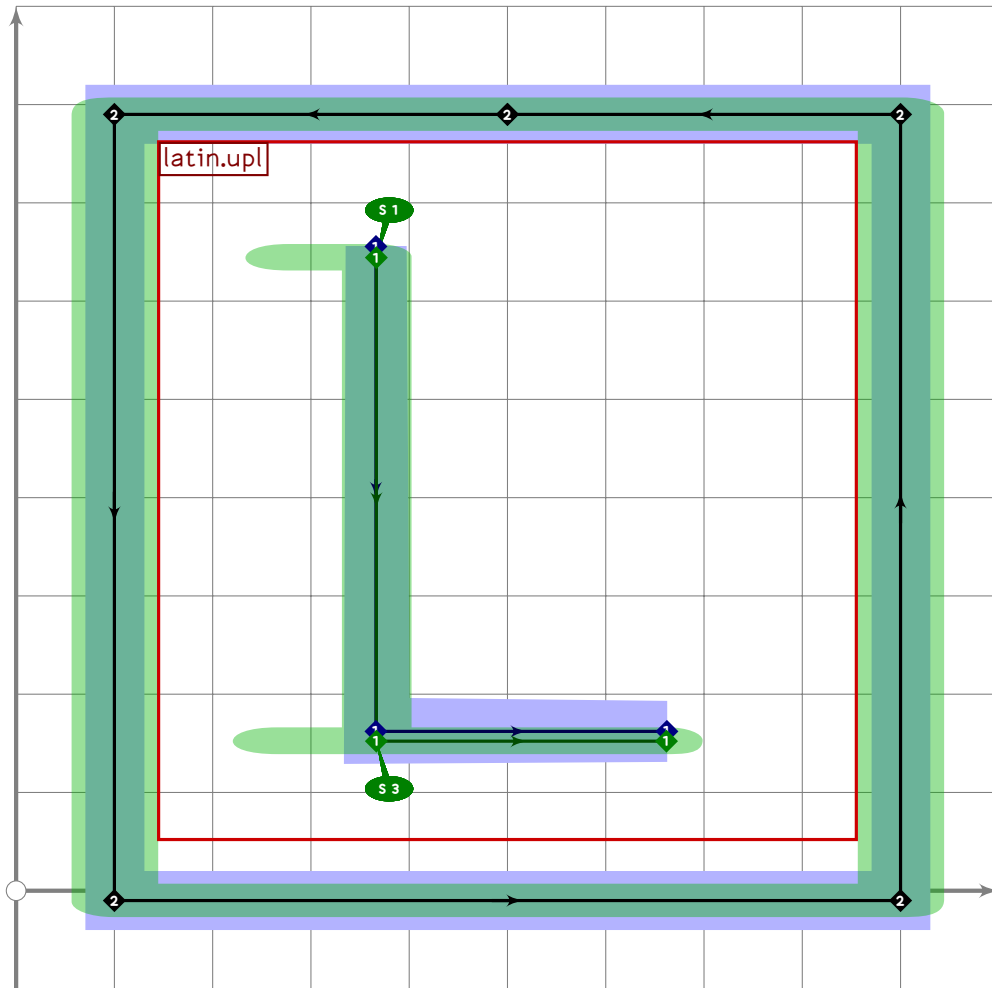
```



```

105 % K
106 begint Suglyph("u1F13A";58);
107 tsu_curve.square.single(tsu_curve.latin.upk);
108 tsu_render;
109 endsuglyph;
110

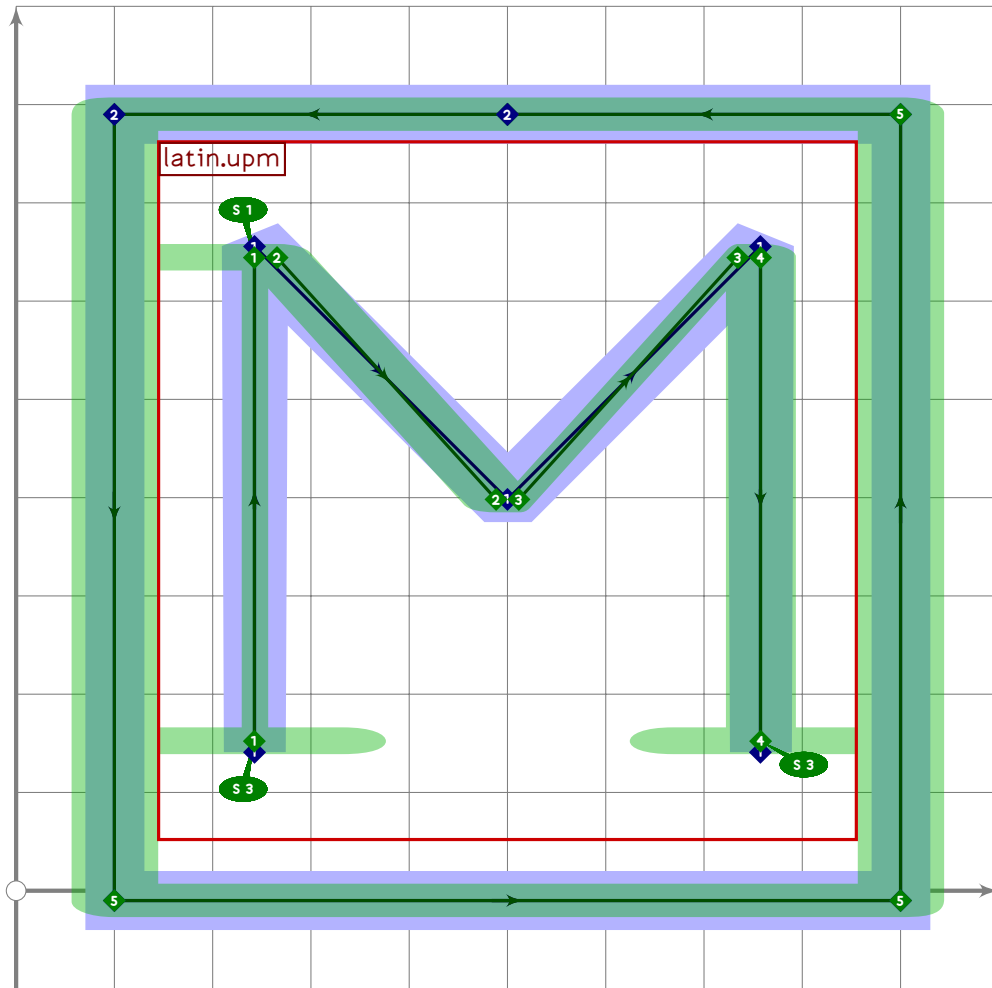
```



```

111 % L
112 begint Suglyph("u1F13B";59);
113   tsu_curve.square.single(tsu_curve.latin.upl);
114   tsu_render;
115 endtsuglyph;
116

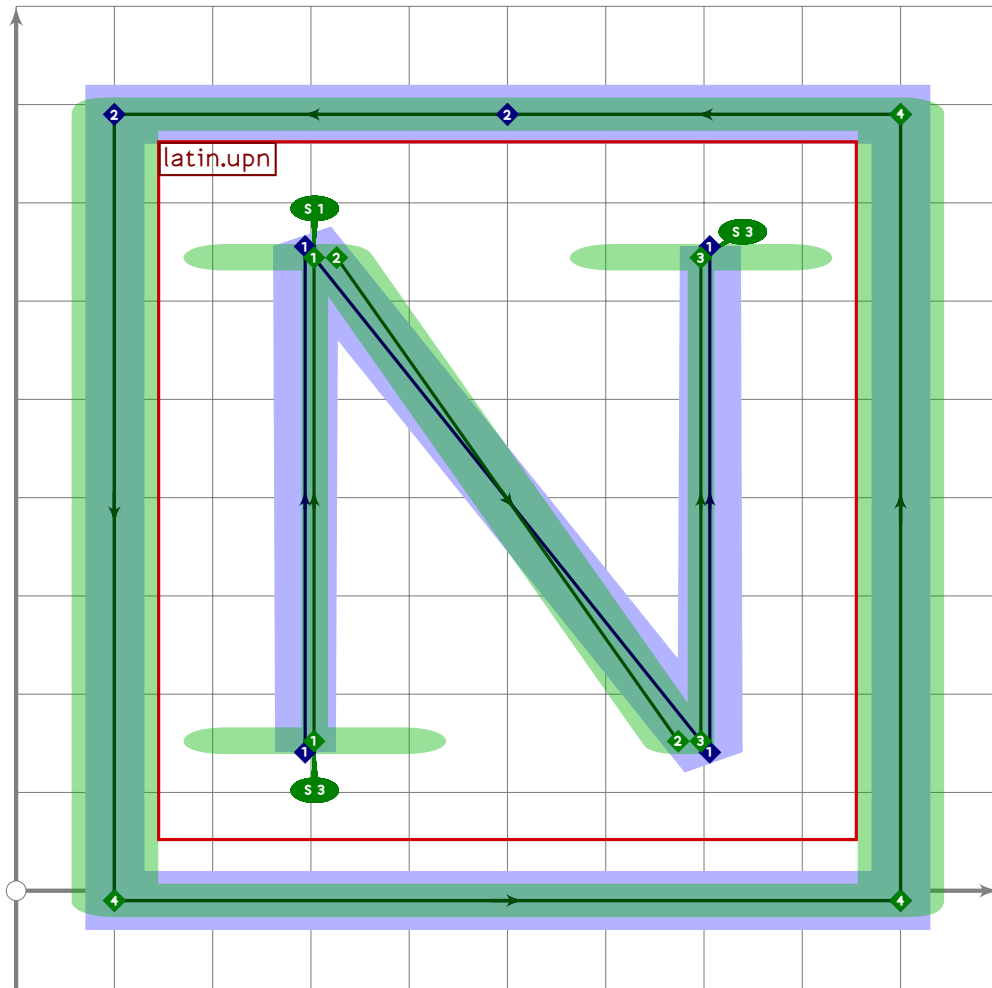
```



```

117 % M
118 beginsuglyph("u1F13C",60);
119   tsu_curve.square.single(tsu_curve.latin.upm);
120   tsu_render;
121 endsuglyph;
122

```

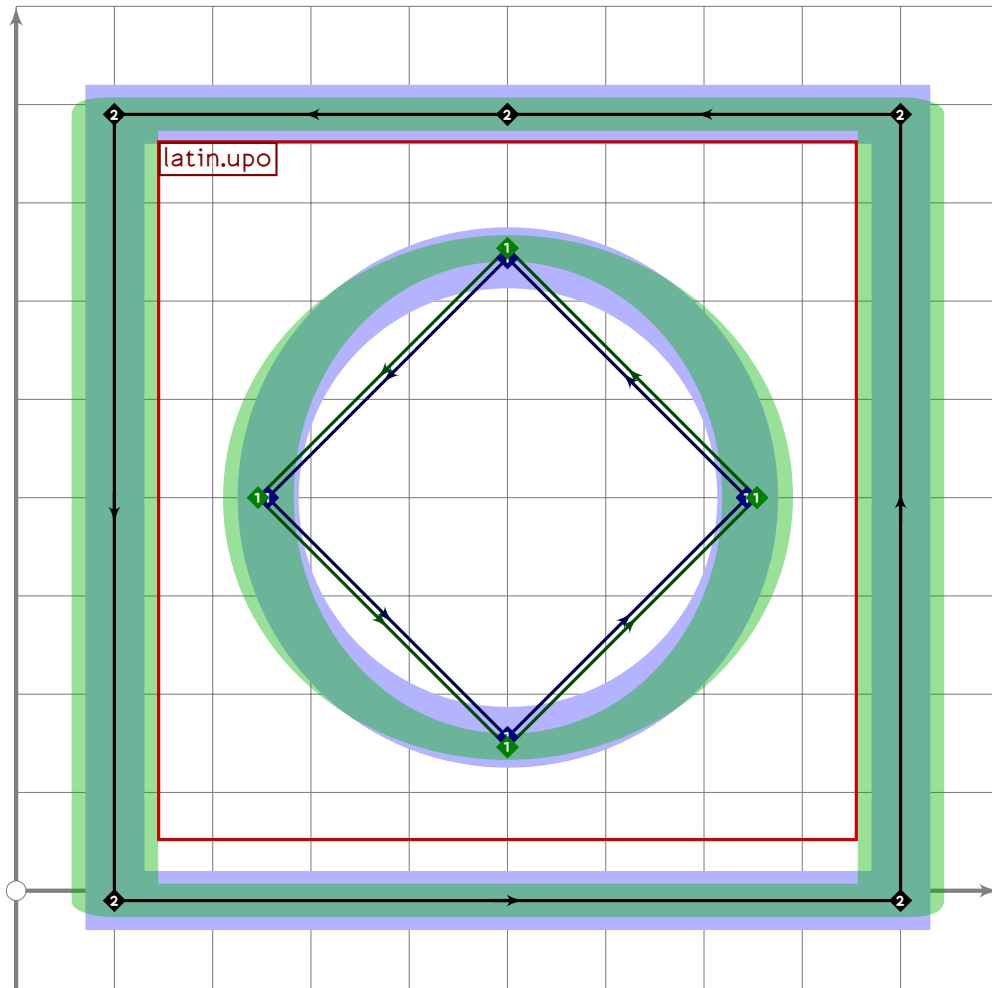


```

123 % N
124 beginsuglyph("u1F13D",61);
125   tsu_curve.square.single(tsu_curve.latin.upn);
126   tsu_render;
127 endsuglyph;
128

```



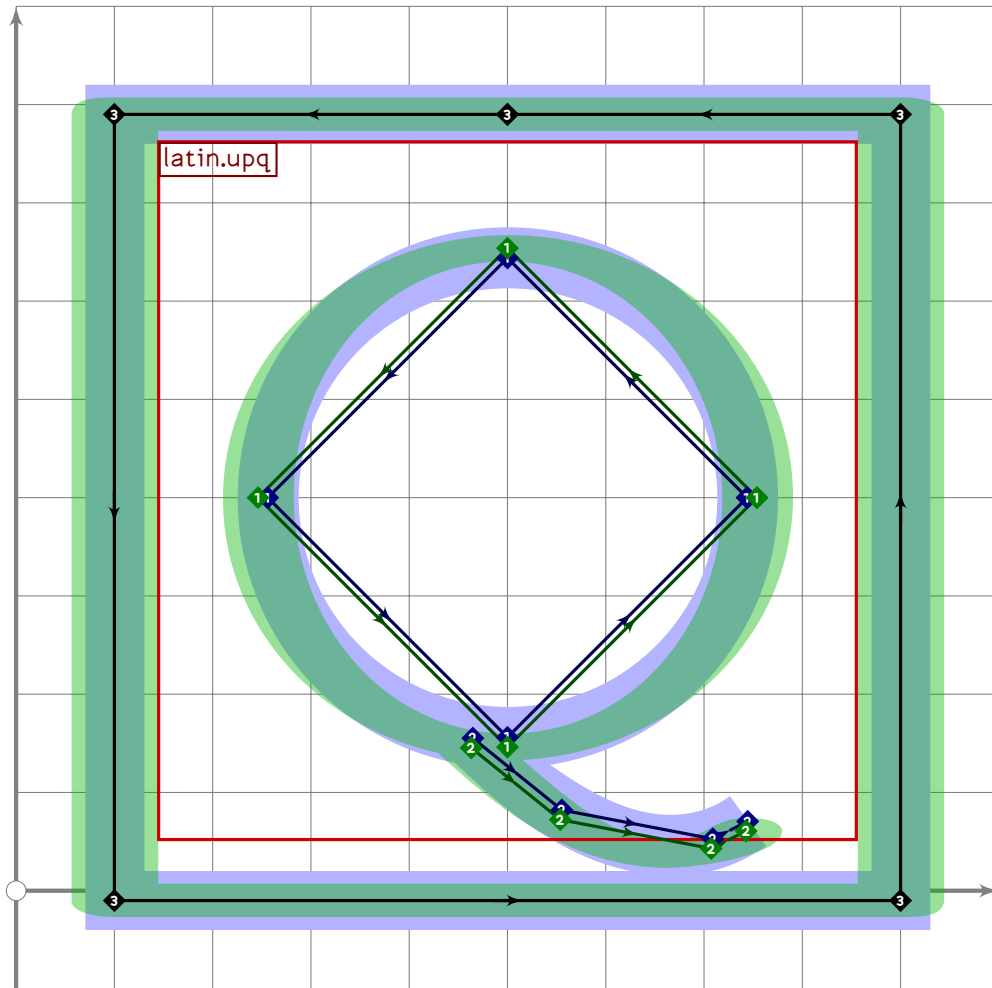


```

129 % O
130 beginsuglyph("u1F13E";62);
131   tsu_curve.square.single(tsu_curve.latin.upo);
132   tsu_render;
133 endsuglyph;
134

```

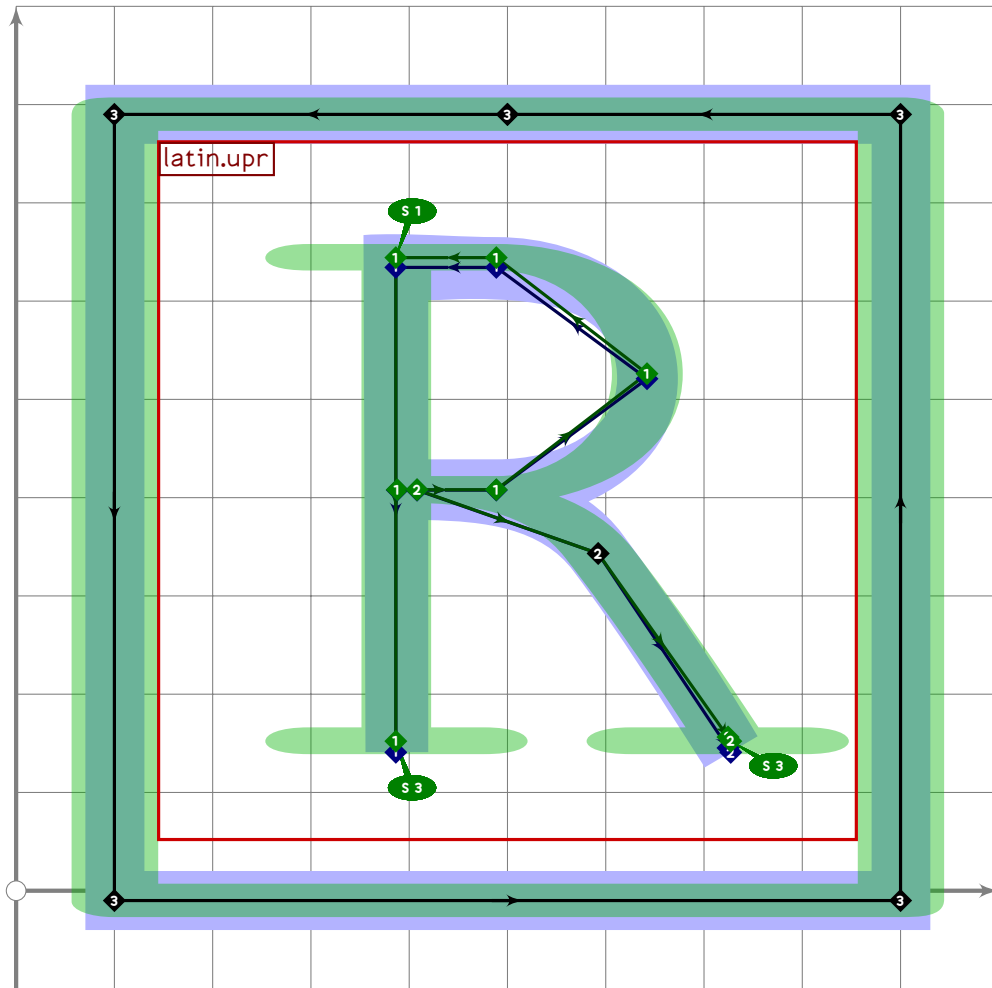




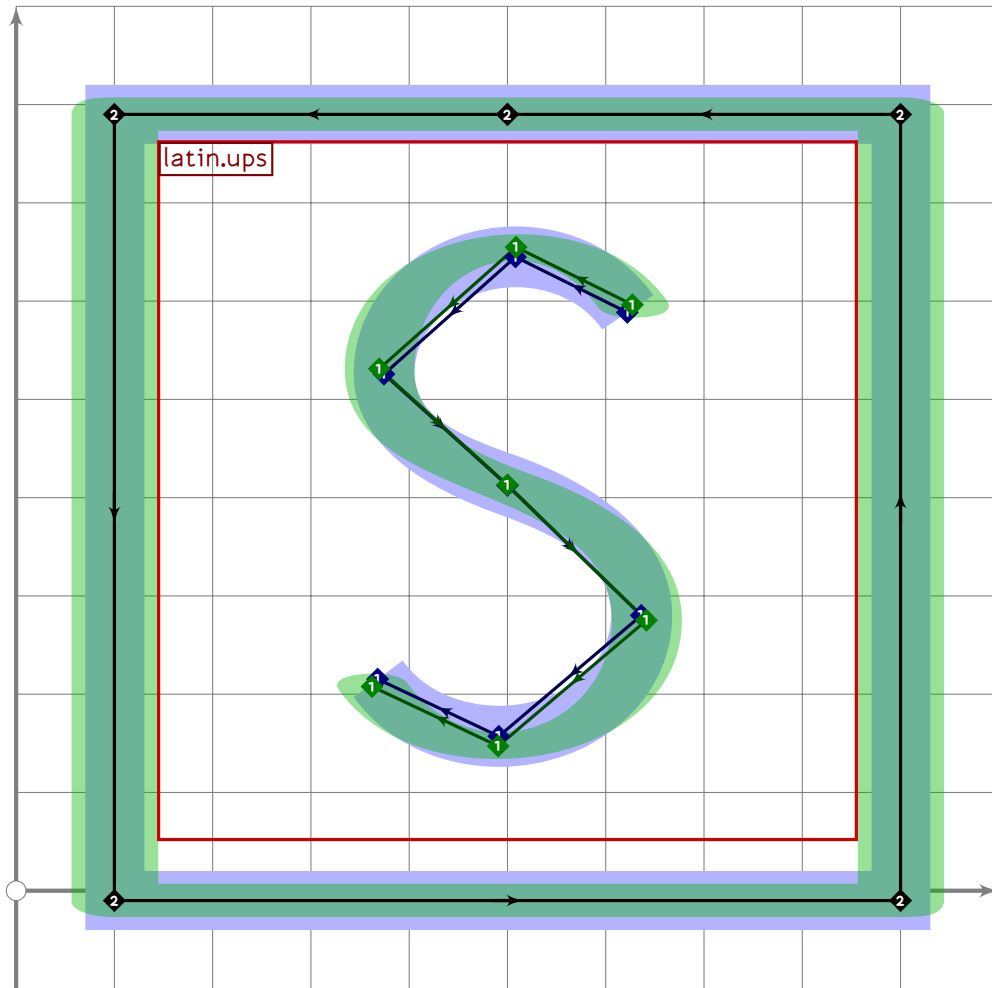
```

141 % Q
142 begint Suglyph("u1F140",64);
143   tsu_curve.square.single(tsu_curve.latin.upq);
144   tsu_render;
145 endtsuglyph;
146

```



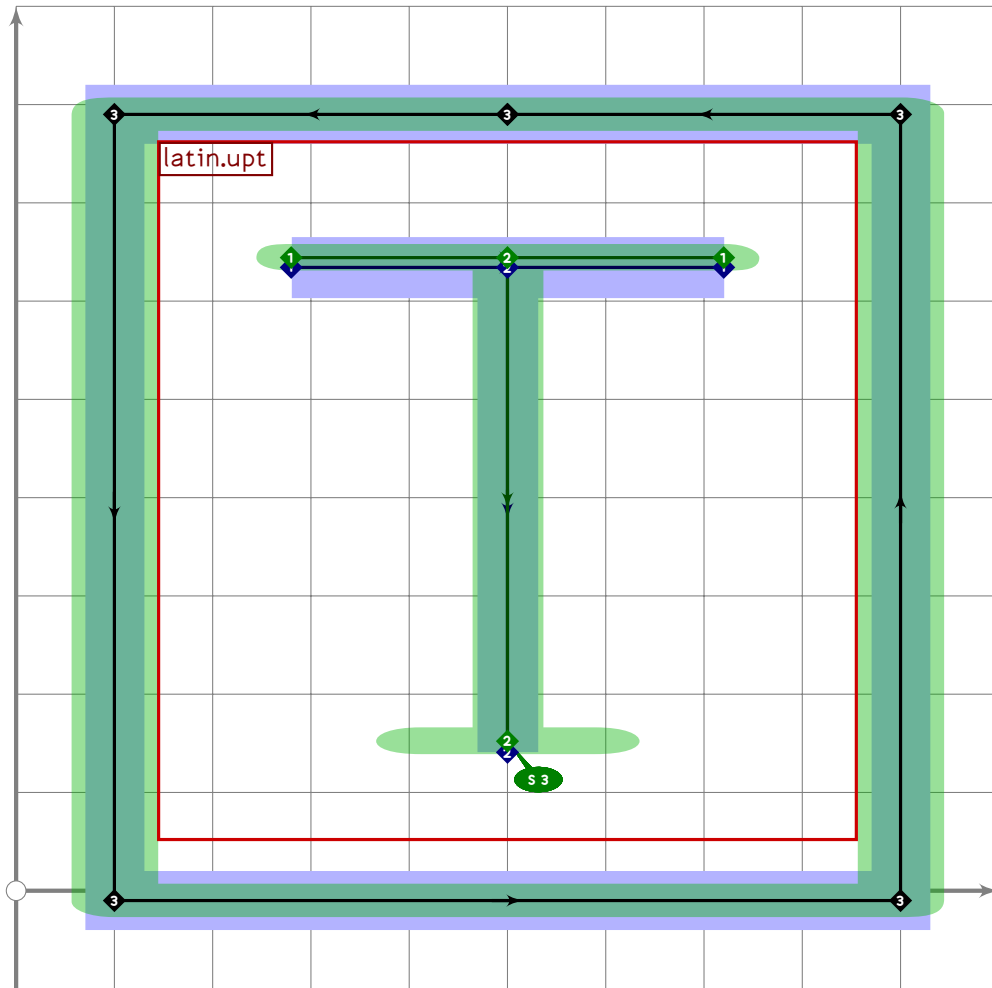
```
147 % R
148 begint Suglyph("u1F141",65);
149   tsu_curve.square.single(tsu_curve.latin.upr);
150   tsu_render;
151 endtsuglyph;
152
```



```

153 % S
154 begint Suglyph("u1F142";66);
155   tsu_curve.square.single(tsu_curve.latin.ups);
156   tsu_render;
157 endtsuglyph;
158

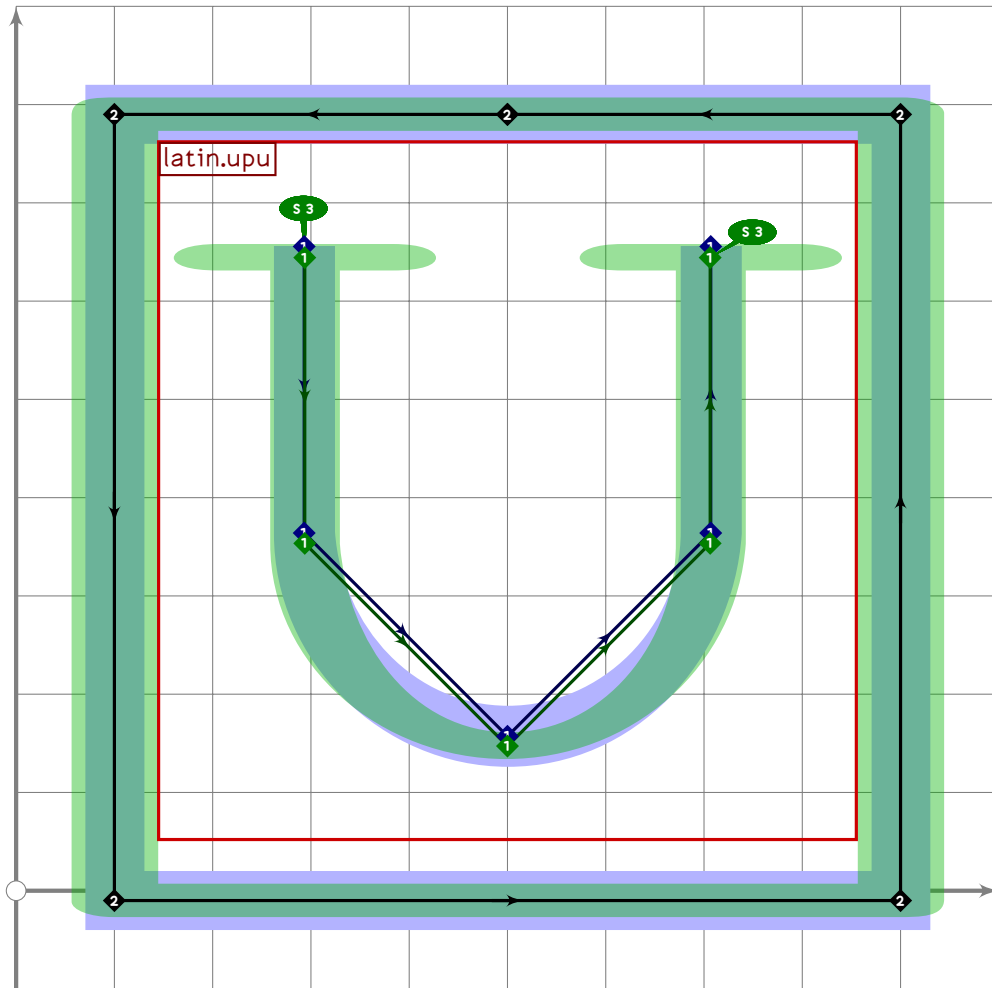
```



```

159 % T
160 begint Suglyph("u1F143";67);
161   tsu_curve.square.single(tsu_curve.latin.upt);
162   tsu_render;
163 endsuglyph;
164

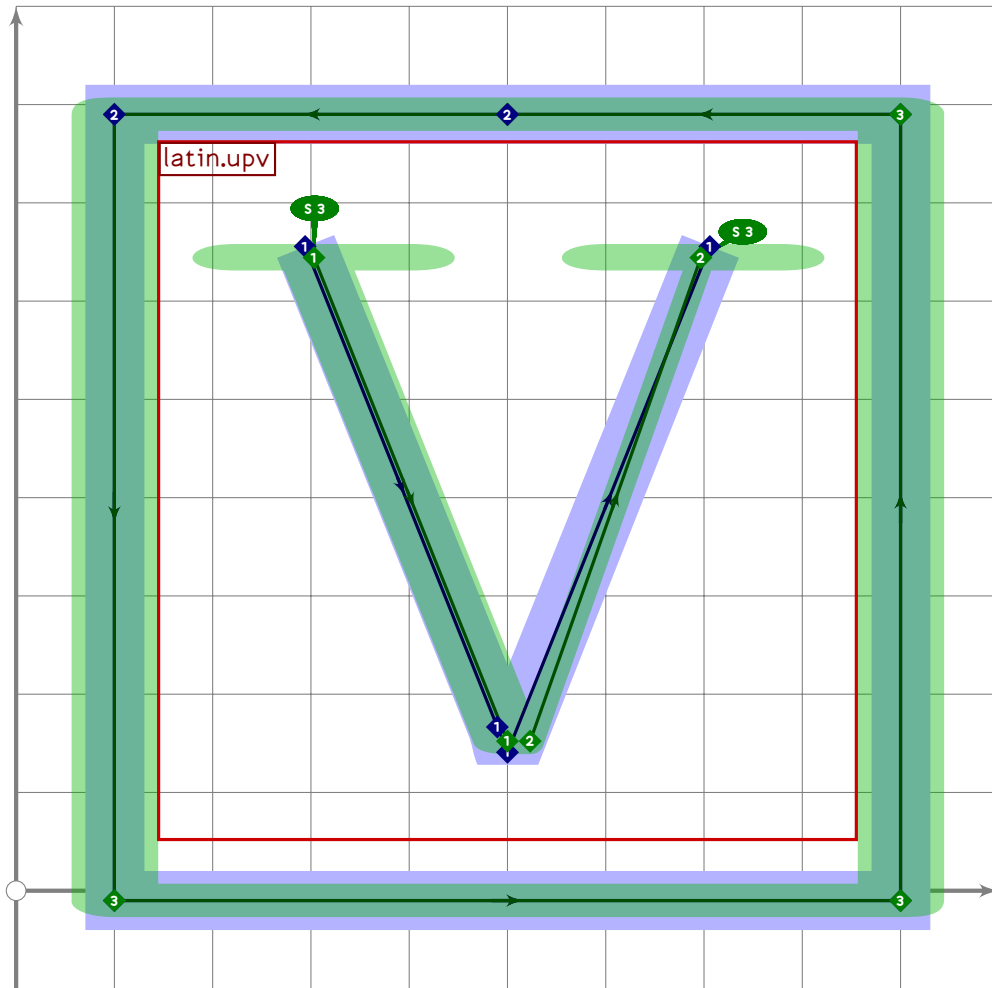
```



```

165 % U
166 begint Suglyph("u1F144";68);
167   tsu_curve.square.single(tsu_curve.latin.upu);
168   tsu_render;
169 endsuglyph;
170

```

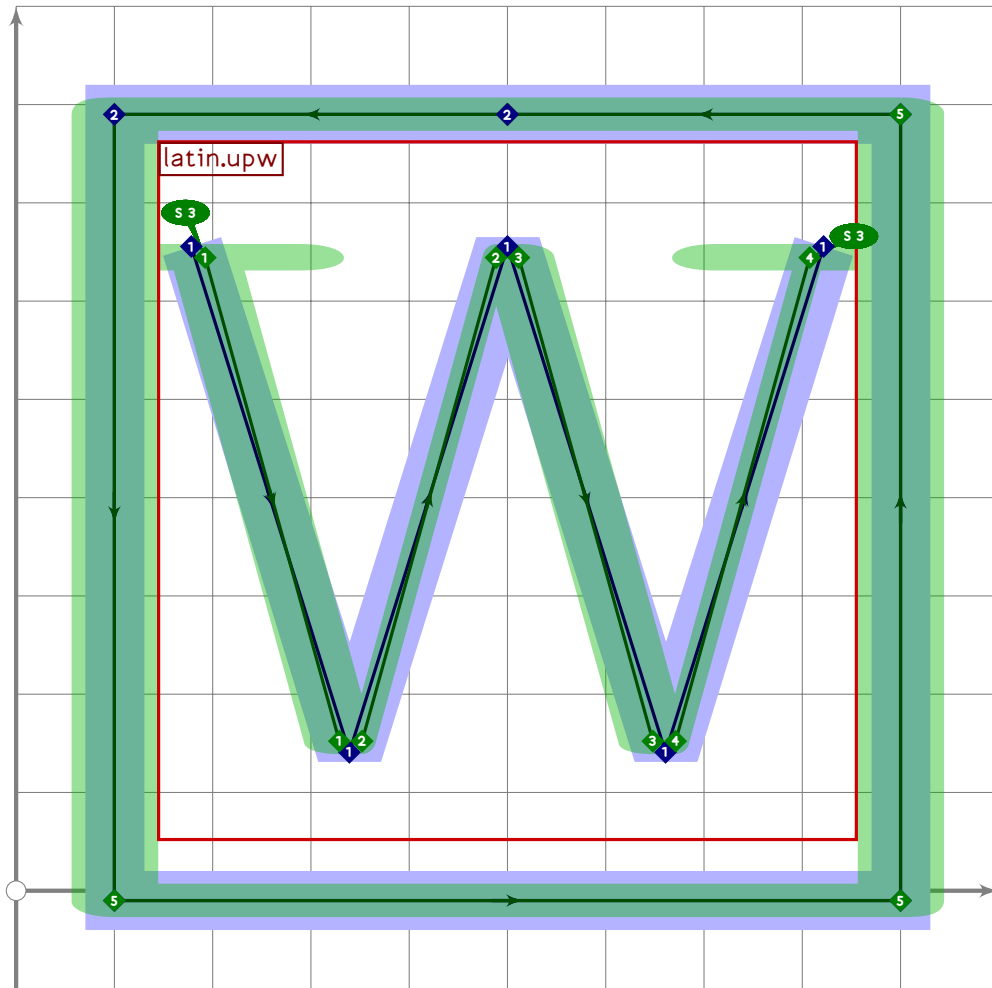


```

171 % V
172 beginsuglyph("u1F145";69);
173   tsu_curve.square.single(tsu_curve.latin.upv);
174   tsu_render;
175 endsuglyph;
176

```

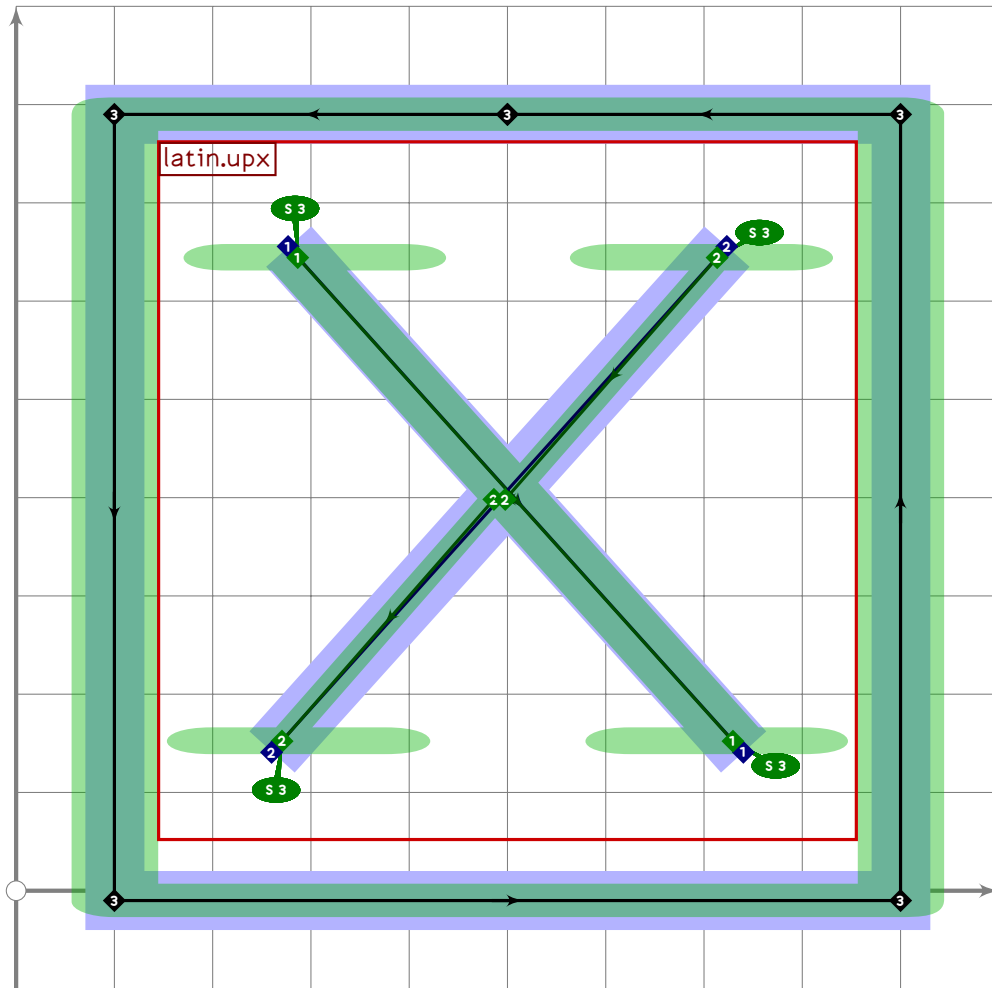




```

177 % W
178 beginsuglyph("u1F146";70);
179   tsu_curve.square.single(tsu_curve.latin.upw);
180   tsu_render;
181 endsuglyph;
182

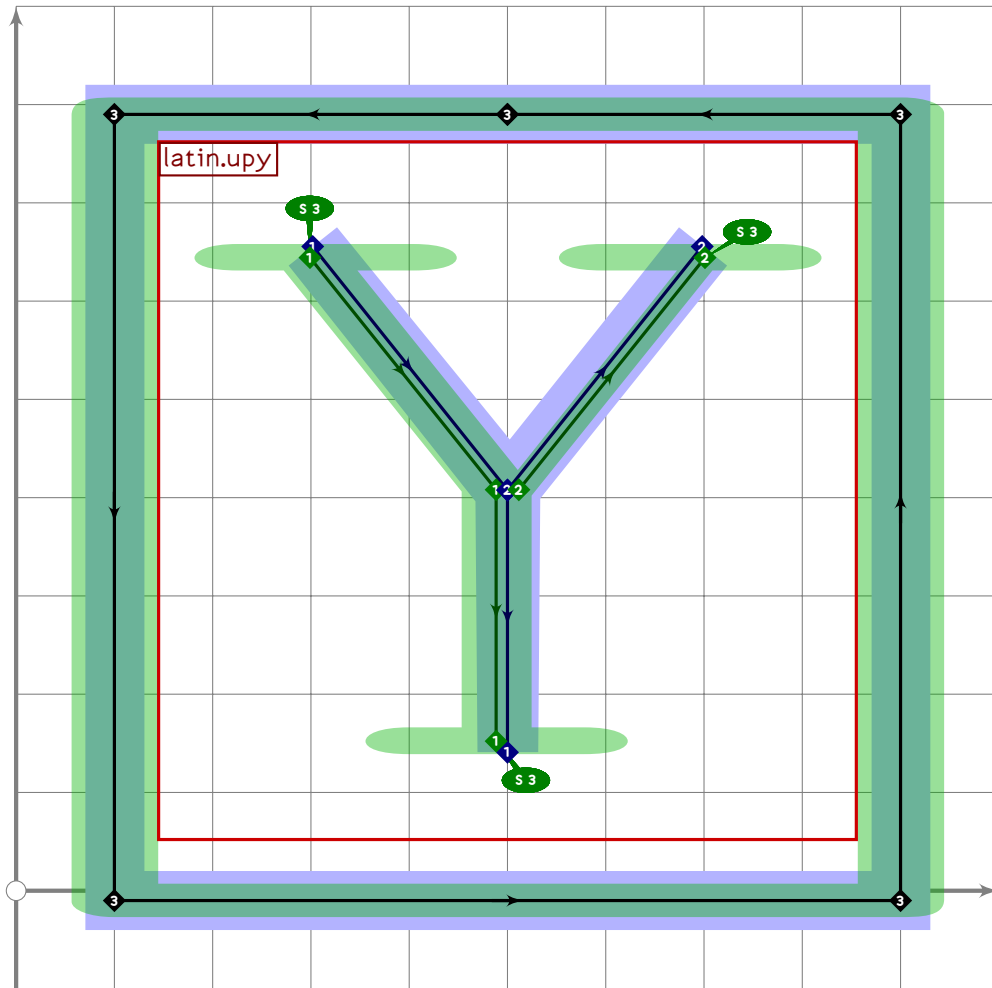
```



```

183 % X
184 beginsuglyph("u1F147";71);
185   tsu_curve.square.single(tsu_curve.latin.upx);
186   tsu_render;
187 endsuglyph;
188

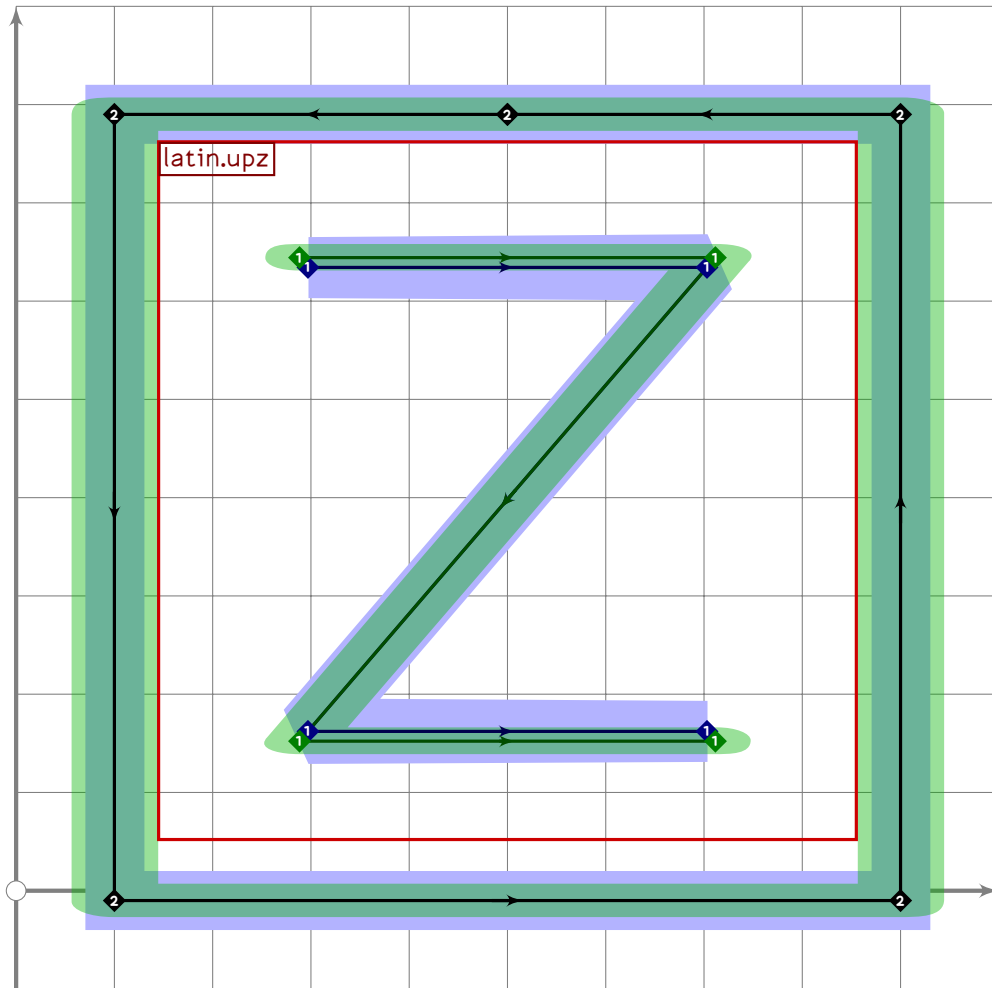
```



```

189 % Y
190 begint Suglyph("u1F148";72);
191   tsu_curve.square.single(tsu_curve.latin.upy);
192   tsu_render;
193 endtsuglyph;
194

```



```

195 % Z
196 begint Suglyph("u1F149";73);
197   tsu_curve.square.single(tsu_curve.latin.upz);
198   tsu_render;
199 endtsuglyph;
200
201
202

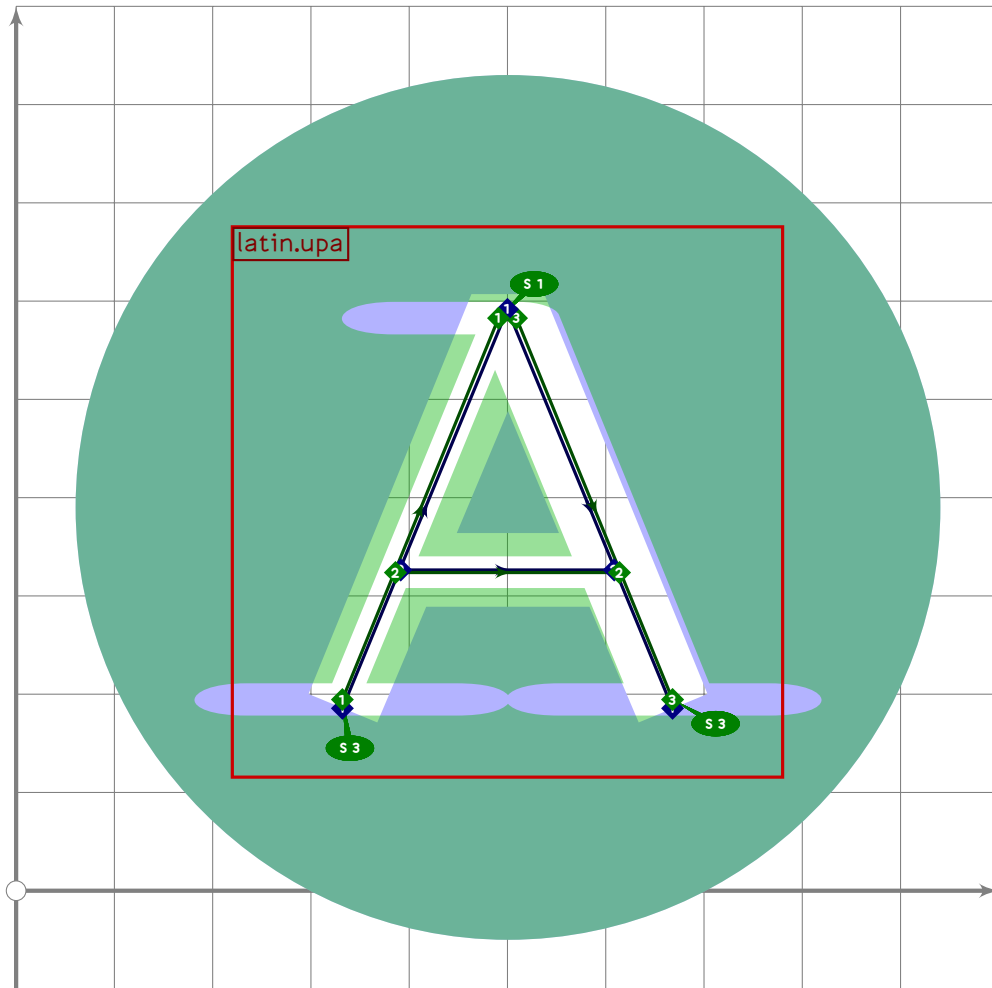
```

## Inverse Circled Latin

```

203 % INVERSE CIRCLED LATIN
204

```

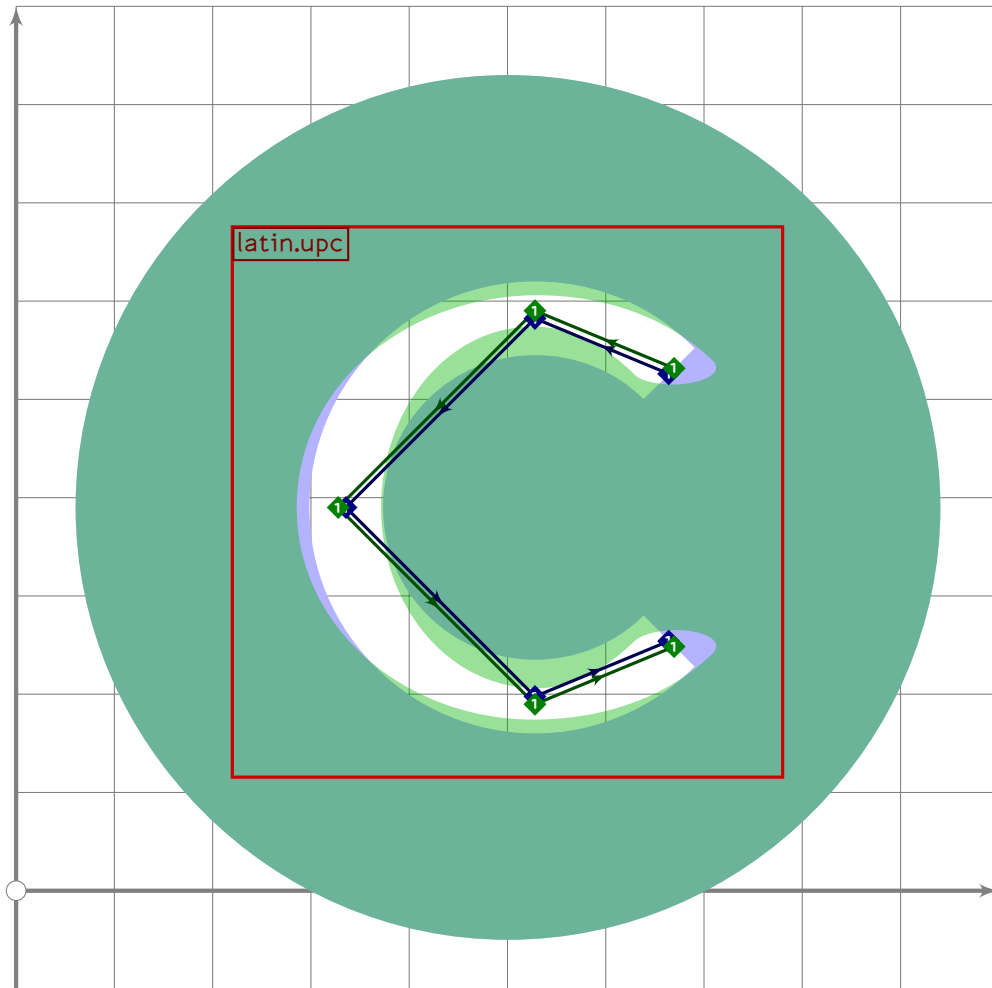


```

205 % A
206 % BACKGROUND 25CF
207 beginsuglyph("u1F150";80);
208 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upa);
209 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
210 tsu_render;
211 endsuglyph;
212

```

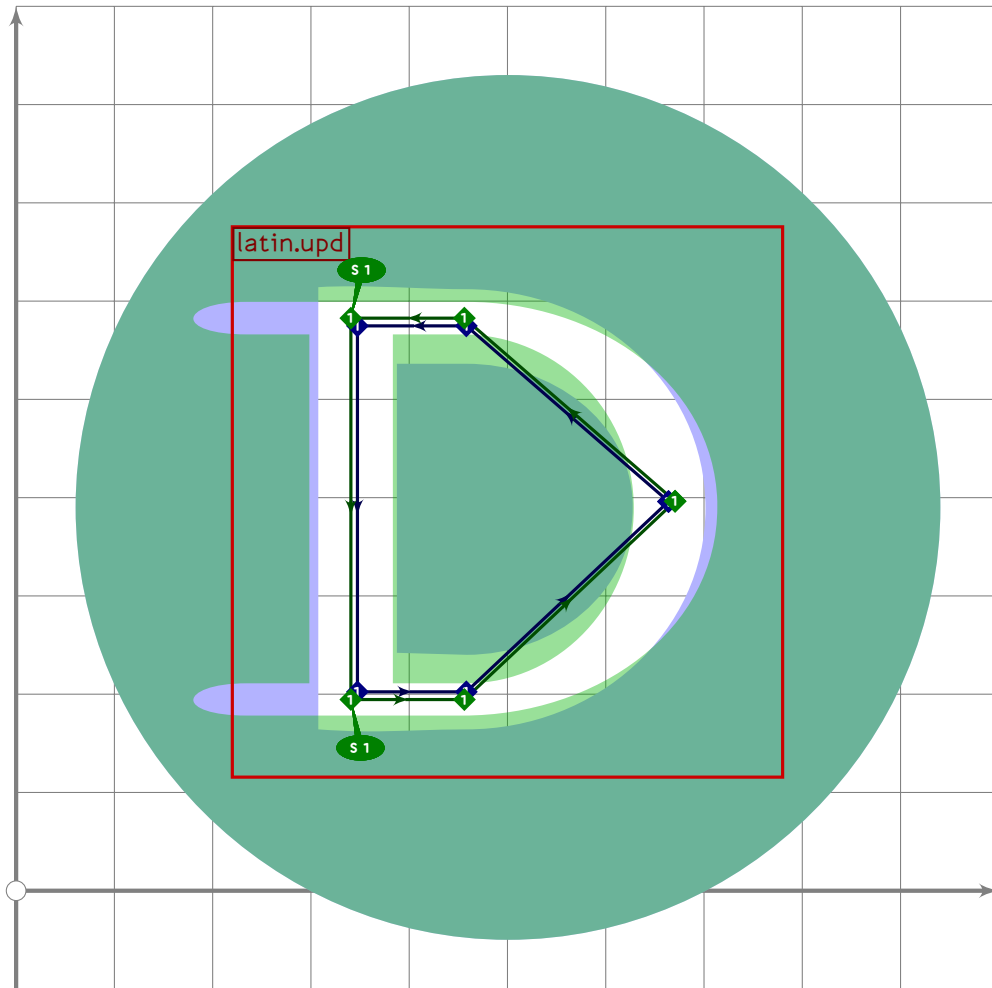




```

221 % C
222 % BACKGROUND 25CF
223 beginsuglyph("u1F152";82);
224 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upc);
225 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
226 tsu_render;
227 endsuglyph;
228

```

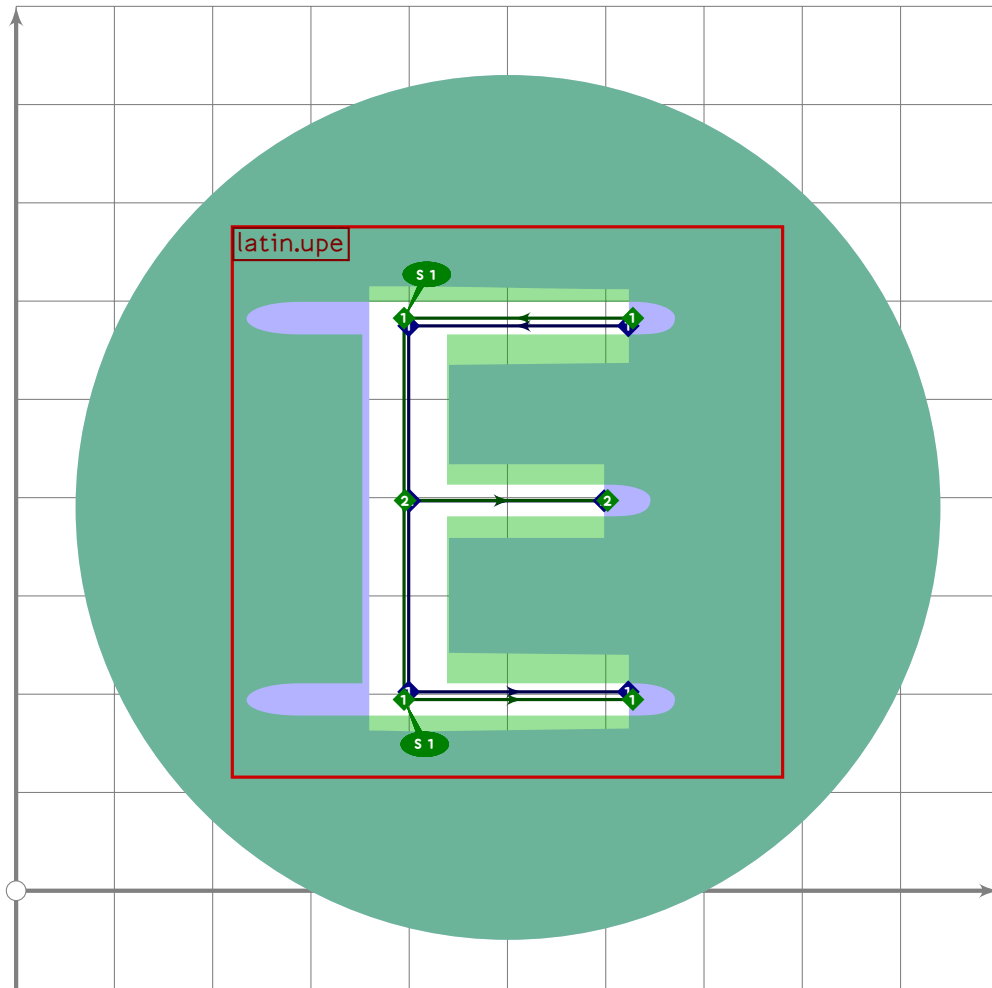


```

229 % D
230 % BACKGROUND 25CF
231 beginsuglyph("u1F153";83);
232 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upd);
233 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
234 tsu_render;
235 endsuglyph;
236

```

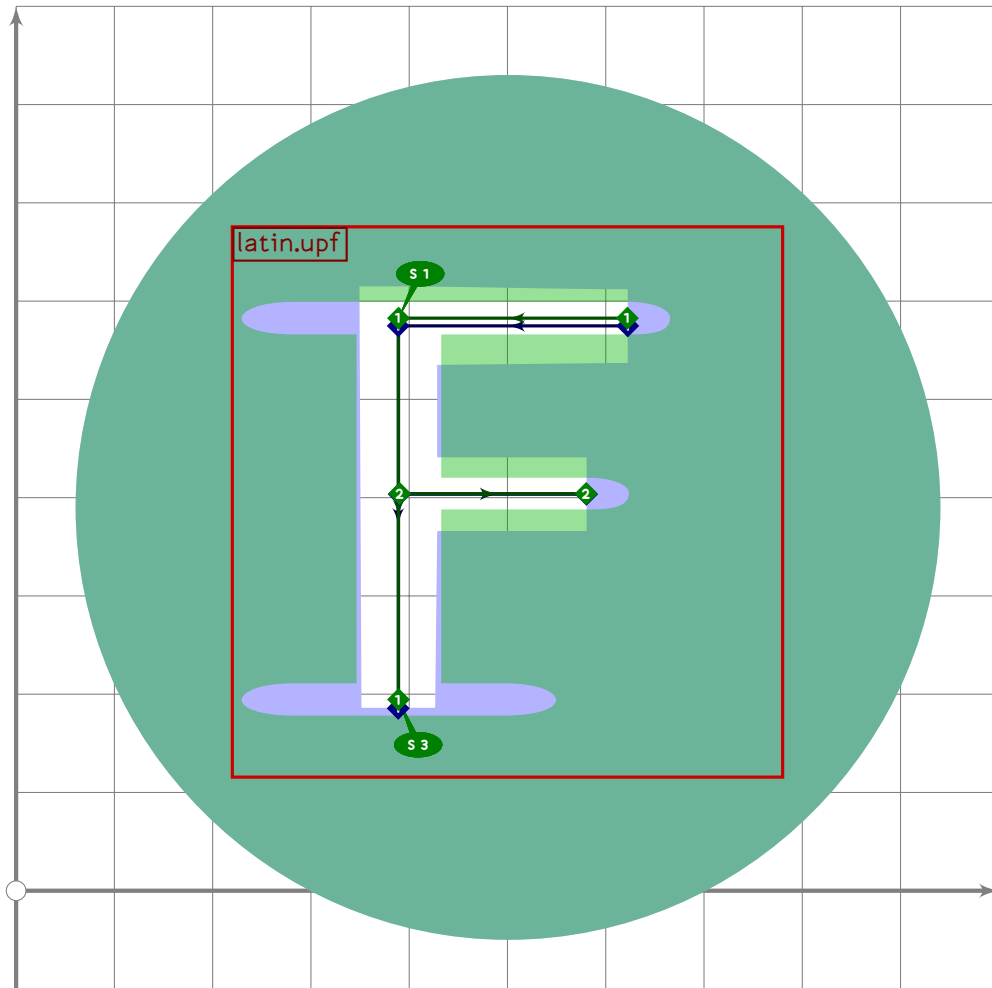




```

237 % E
238 % BACKGROUND 25CF
239 begintsuglyph("u1F154";84);
240 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upe);
241 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
242 tsu_render;
243 endsuglyph;
244

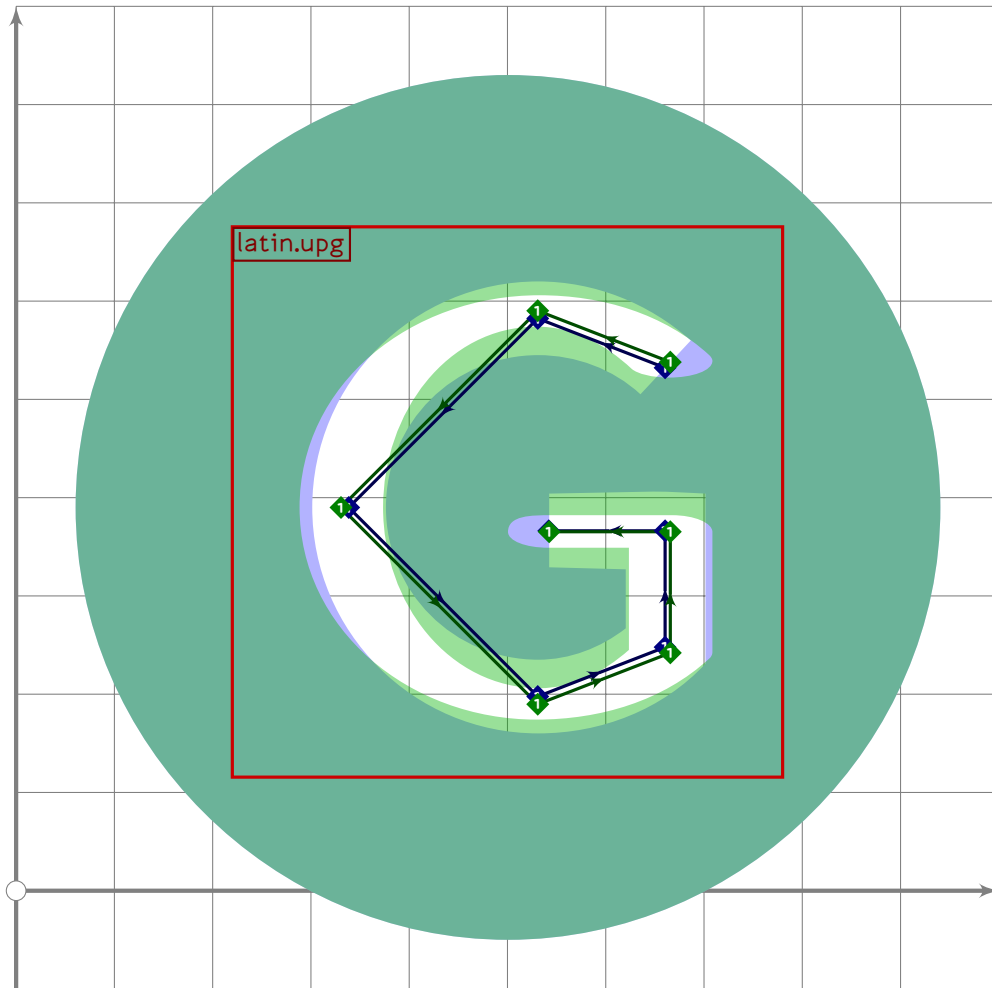
```



```

245 % F
246 % BACKGROUND 25CF
247 beginsuglyph("u1F155";85);
248 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upf);
249 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
250 tsu_render;
251 endsuglyph;
252

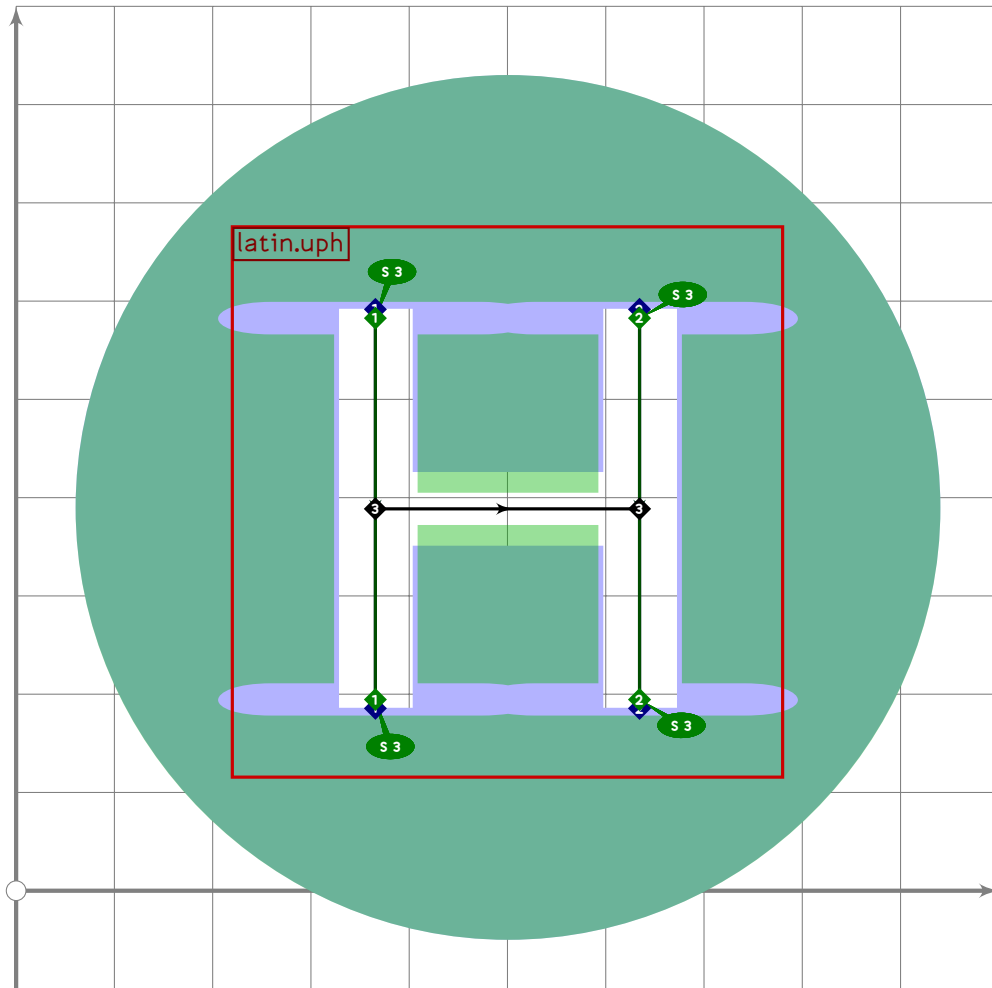
```



```

253 % G
254 % BACKGROUND 25CF
255 begintsuglyph("u1F156";86);
256 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upg);
257 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
258 tsu_render;
259 endtsuglyph;
260

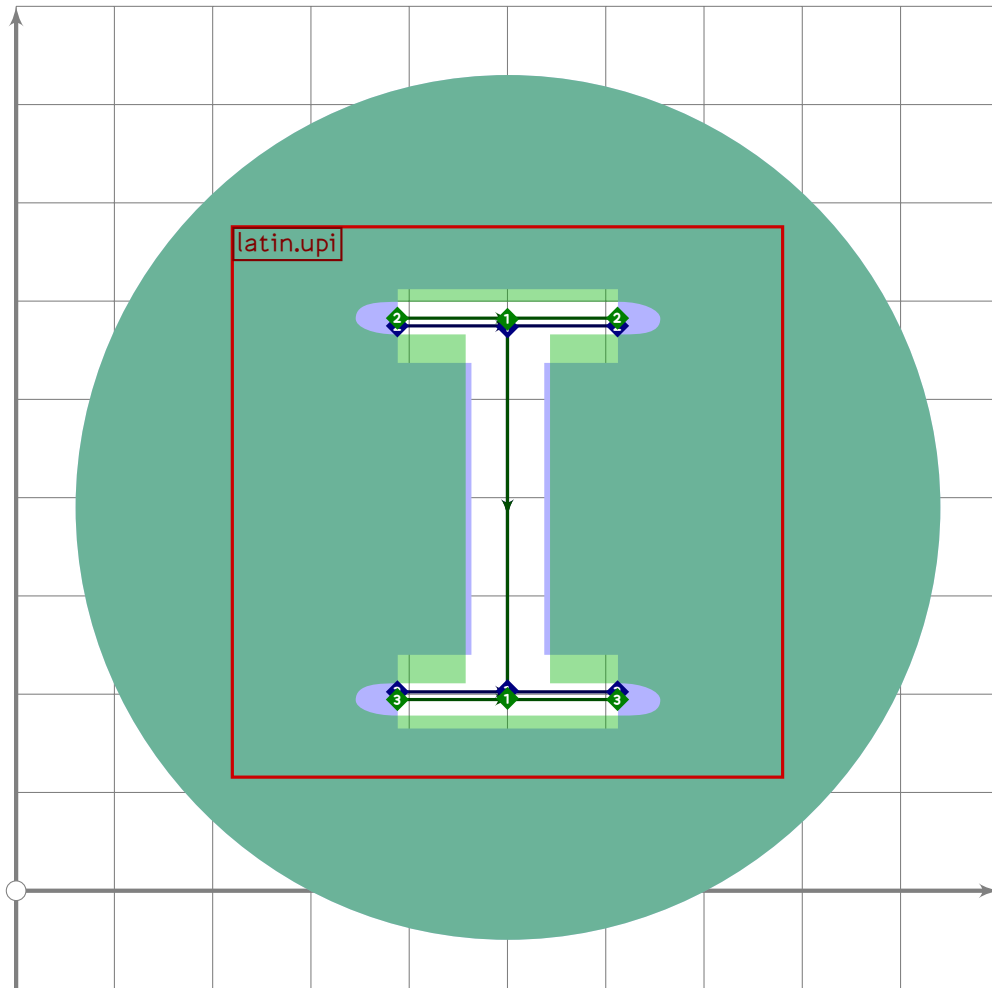
```



```

261 % H
262 % BACKGROUND 25CF
263 beginsuglyph("u1F157";87);
264 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.uph);
265 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
266 tsu_render;
267 endsuglyph;
268

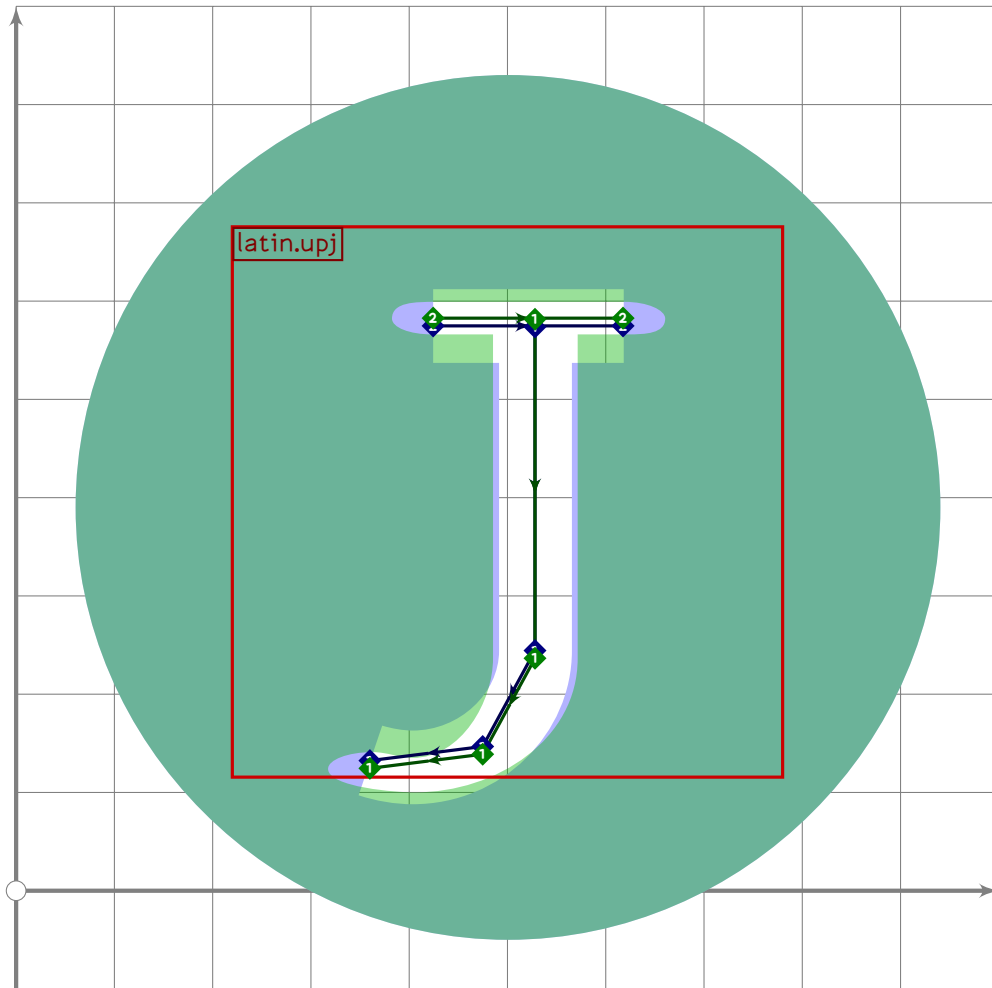
```



```

269 % I
270 % BACKGROUND 25CF
271 beginsuglyph("u1F158";88);
272 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upi);
273 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
274 tsu_render;
275 endsuglyph;
276

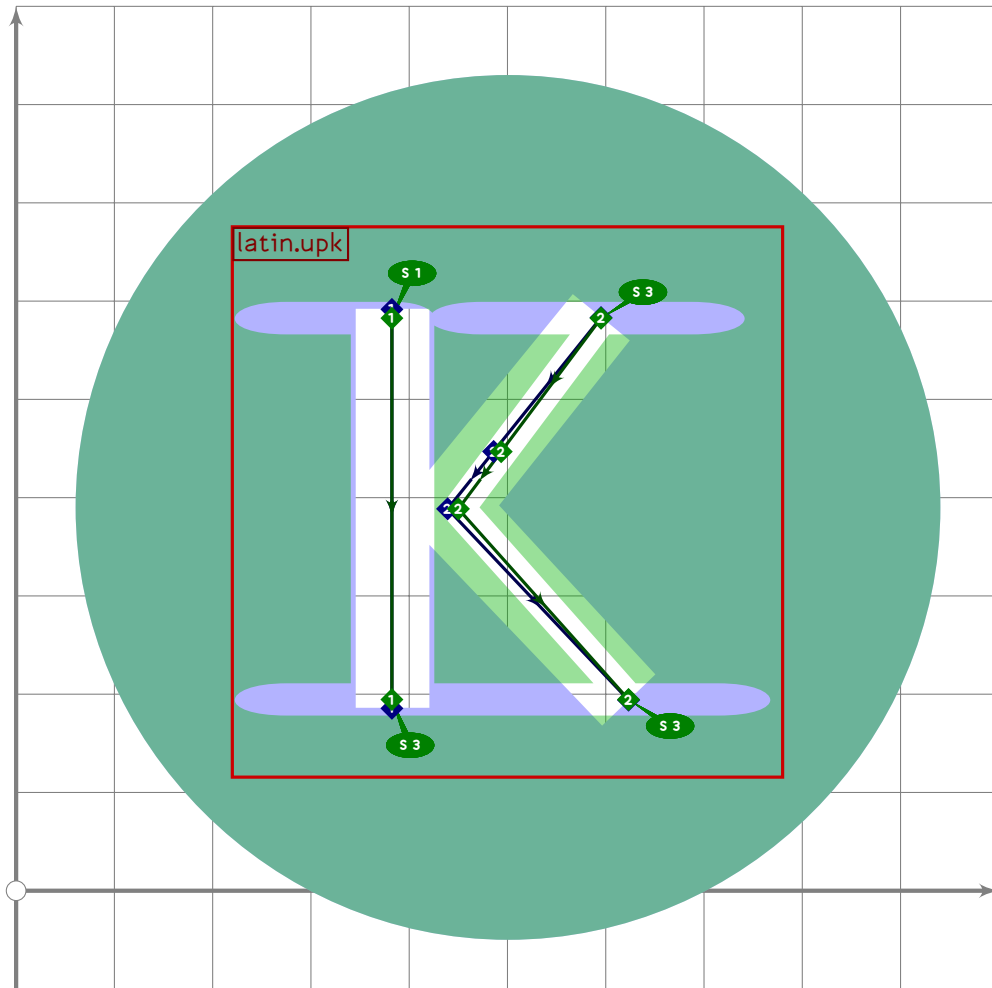
```



```

277 % J
278 % BACKGROUND 25CF
279 beginsuglyph("u1F159";89);
280 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upj);
281 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
282 tsu_render;
283 endsuglyph;
284

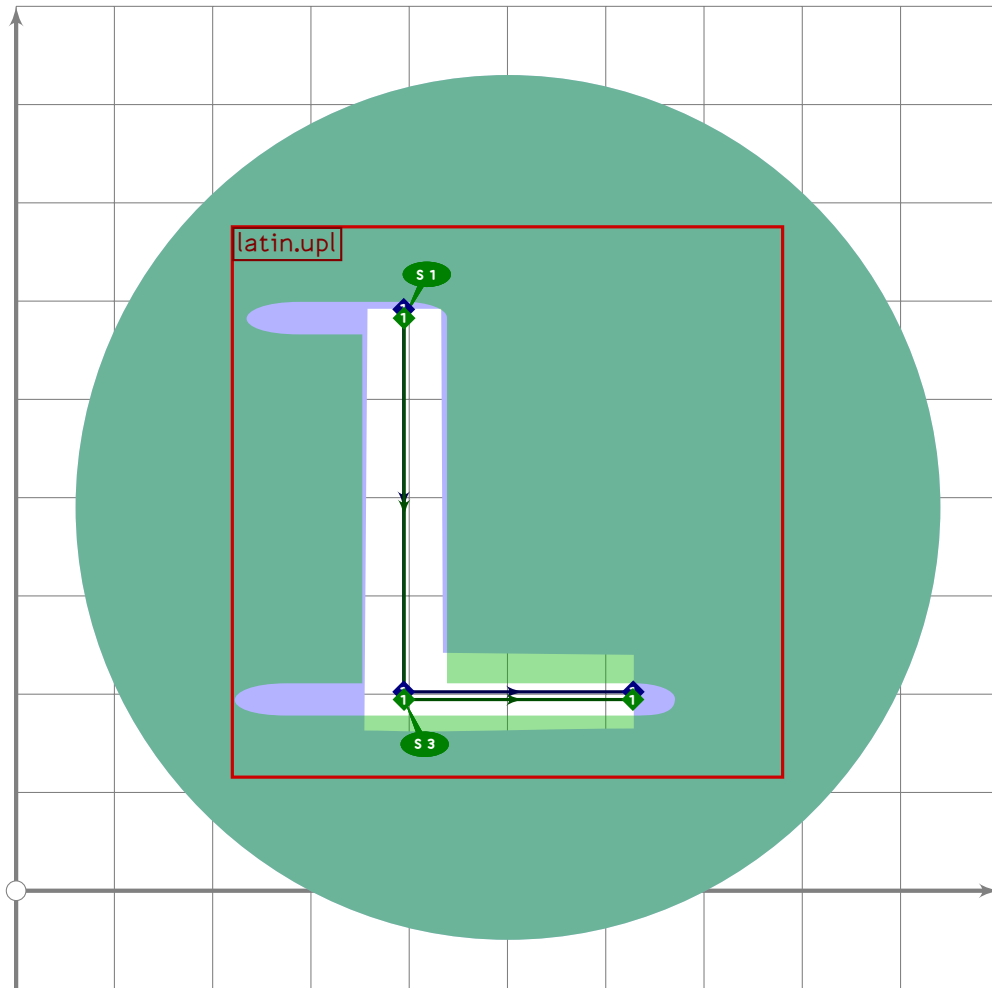
```



```

285 % K
286 % BACKGROUND 25CF
287 beginsuglyph("u1F15A";90);
288   tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upk);
289   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
290   tsu_render;
291 endsuglyph;
292

```

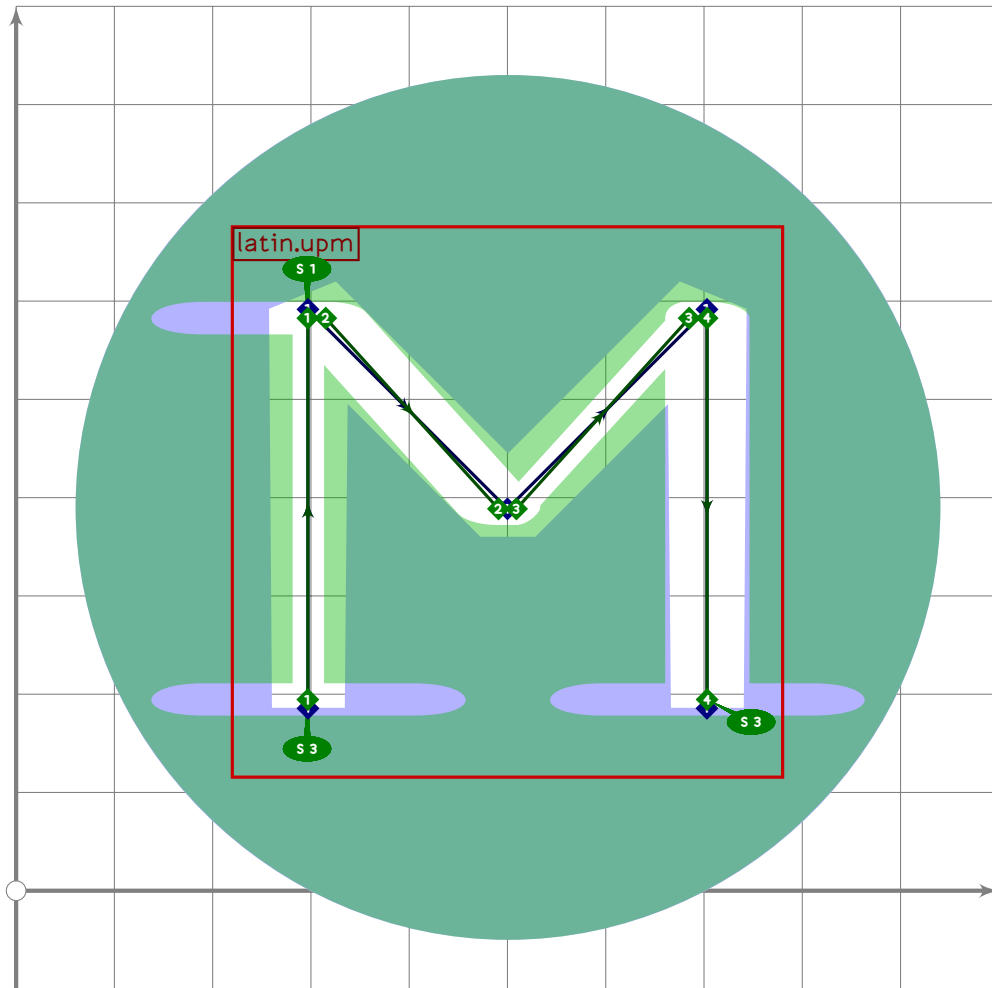


```

293 % L
294 % BACKGROUND 25CF
295 beginsuglyph("u1F15B";91);
296 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upl);
297 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
298 tsu_render;
299 endsuglyph;
300

```

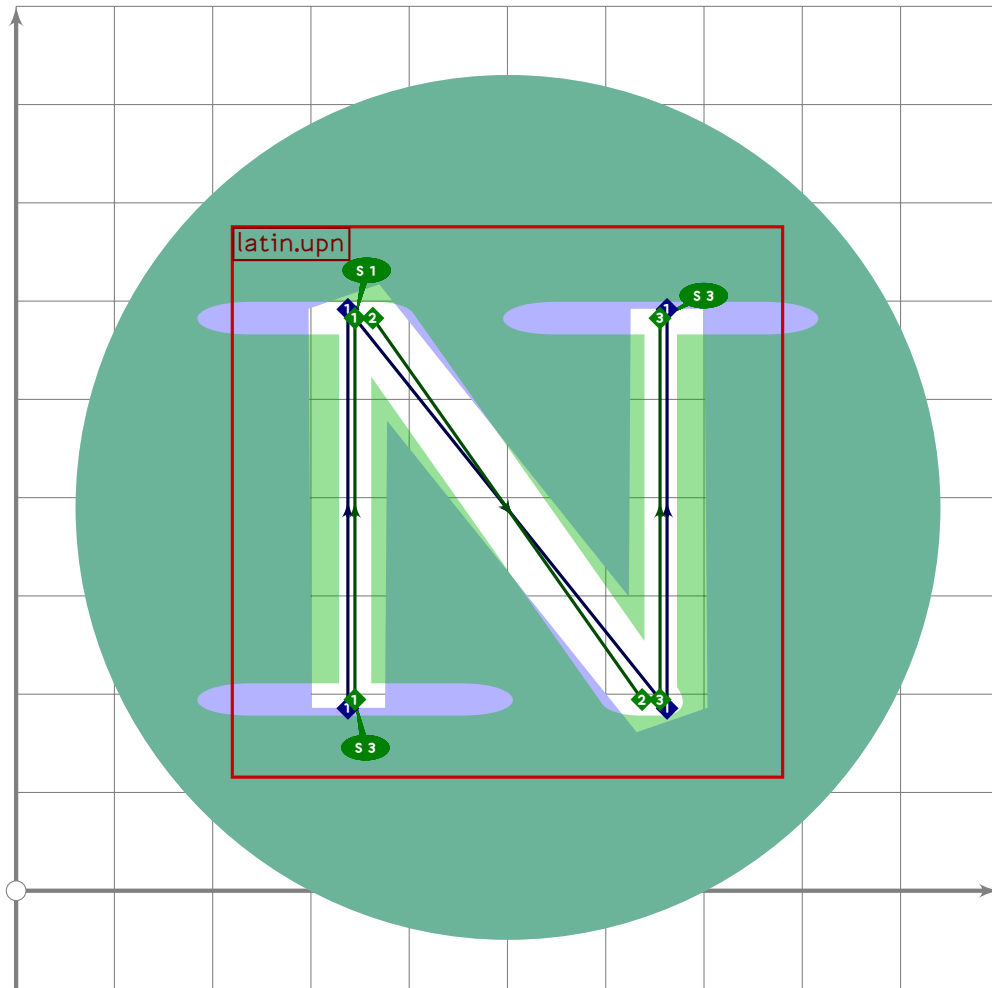




```

301 % M
302 % BACKGROUND 25CF
303 beginsuglyph("u1F15C";92);
304 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upm);
305 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
306 tsu_render;
307 endsuglyph;
308

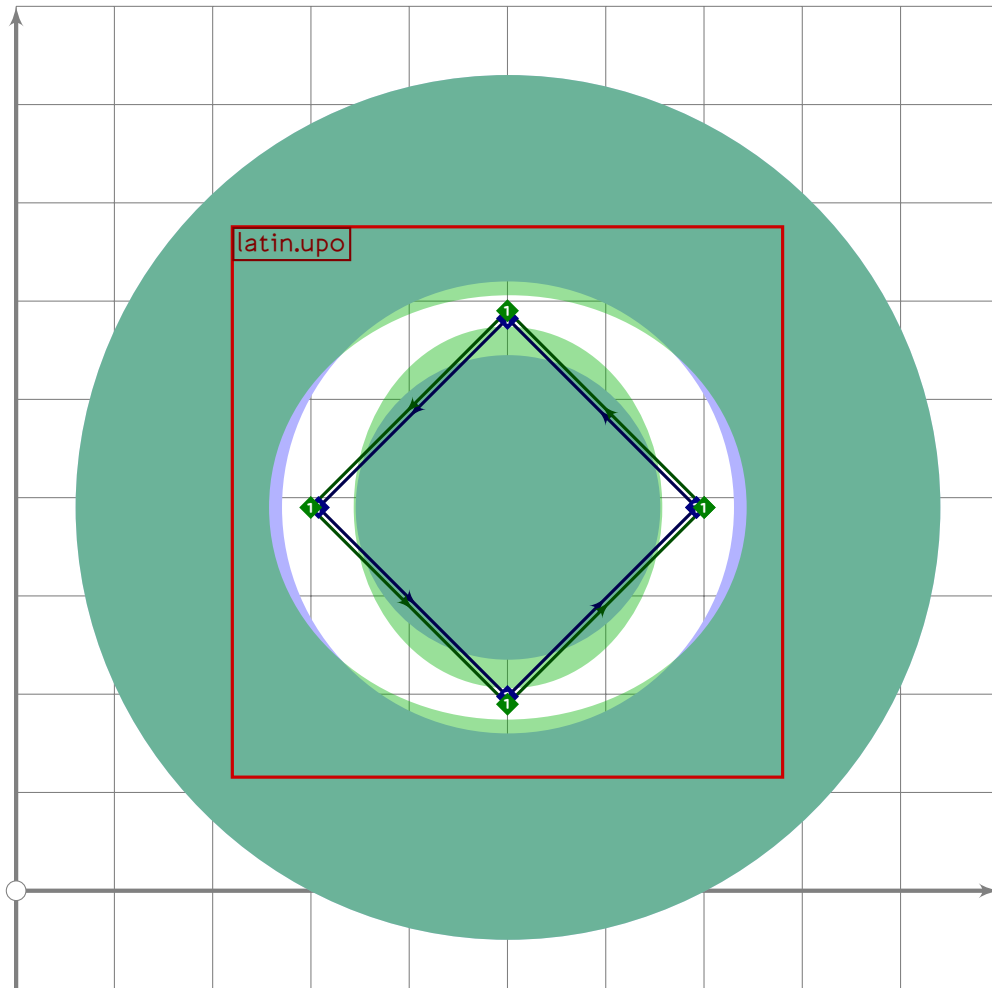
```



```

309 % N
310 % BACKGROUND 25CF
311 beginsuglyph("u1F15D";93);
312 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upn);
313 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
314 tsu_render;
315 endsuglyph;
316

```

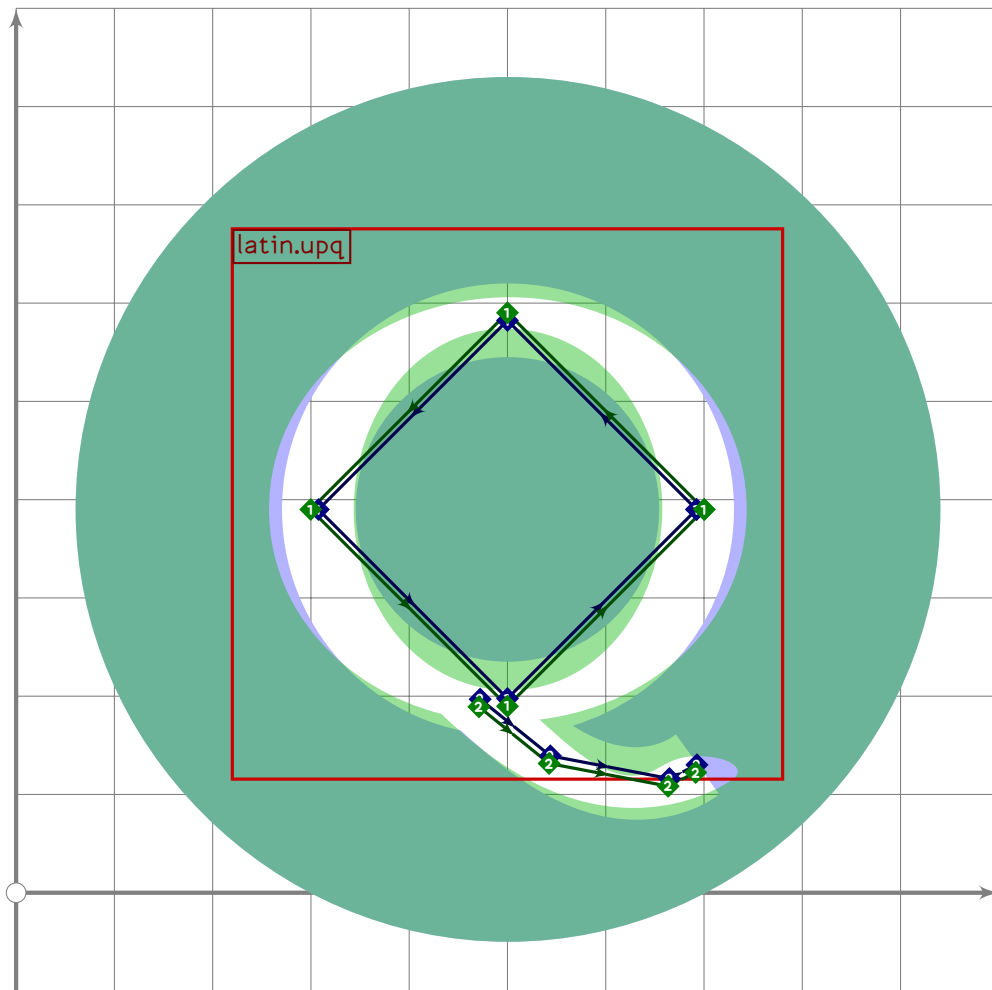


```

317 % O
318 % BACKGROUND 25CF
319 beginsuglyph("u1F15E";94);
320 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upo);
321 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
322 tsu_render;
323 endsuglyph;
324

```

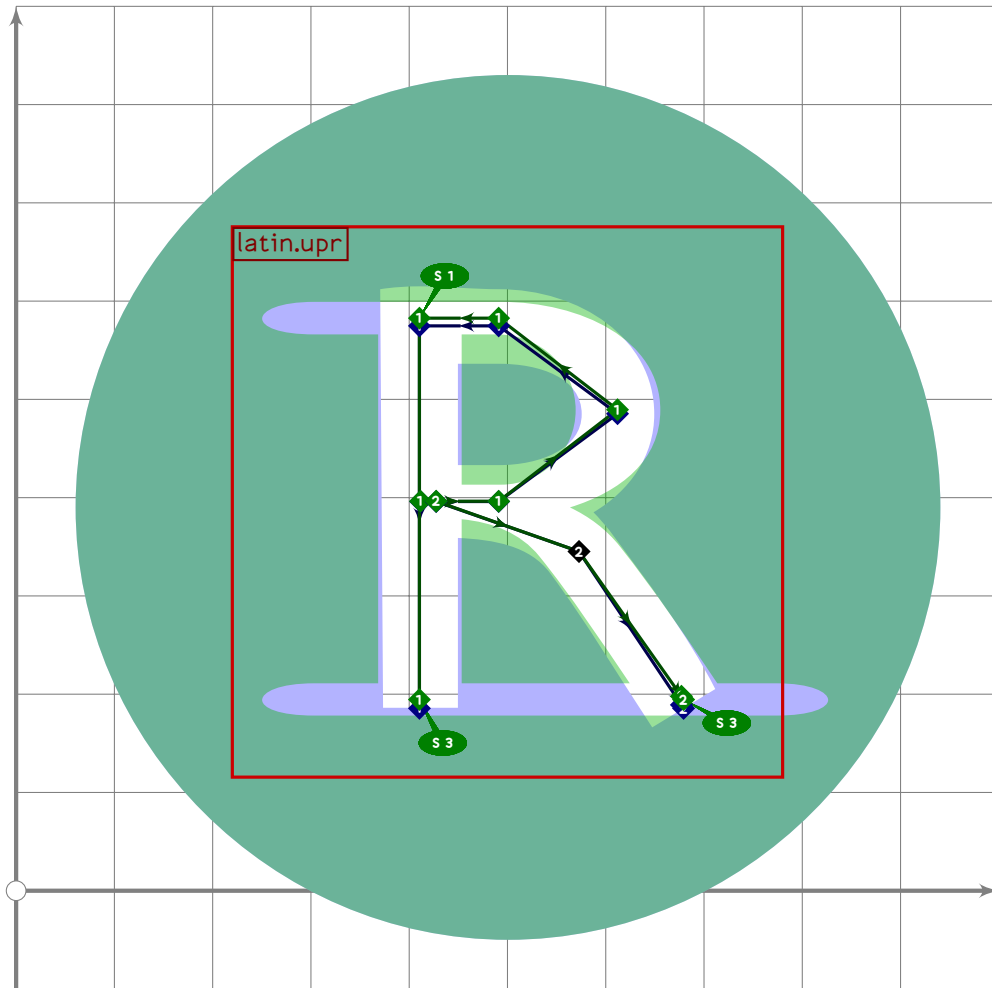




```

333 % Q
334 % BACKGROUND 25CF
335 begint Suglyph("u1F160";96);
336 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upq);
337 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
338 tsu_render;
339 endtsuglyph;
340

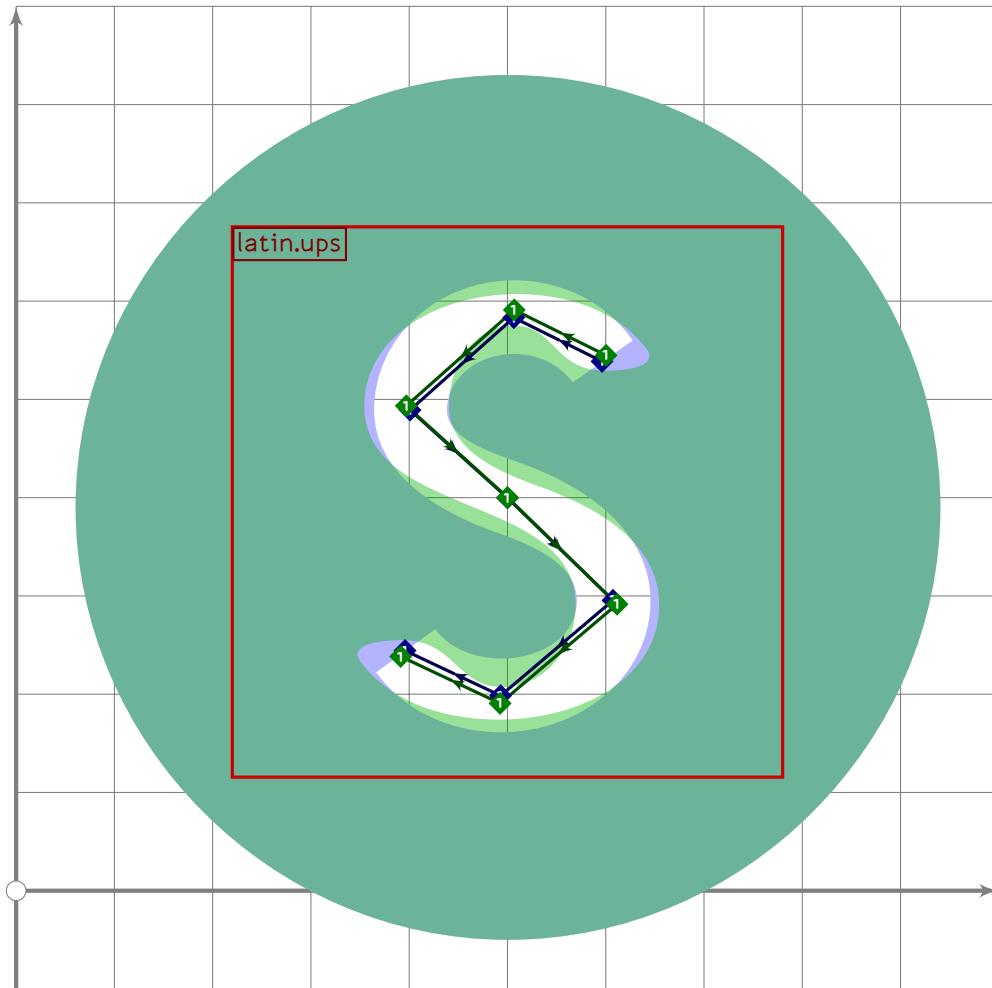
```



```

341 % R
342 % BACKGROUND 25CF
343 beginsuglyph("u1F161";97);
344 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upr);
345 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
346 tsu_render;
347 endsuglyph;
348

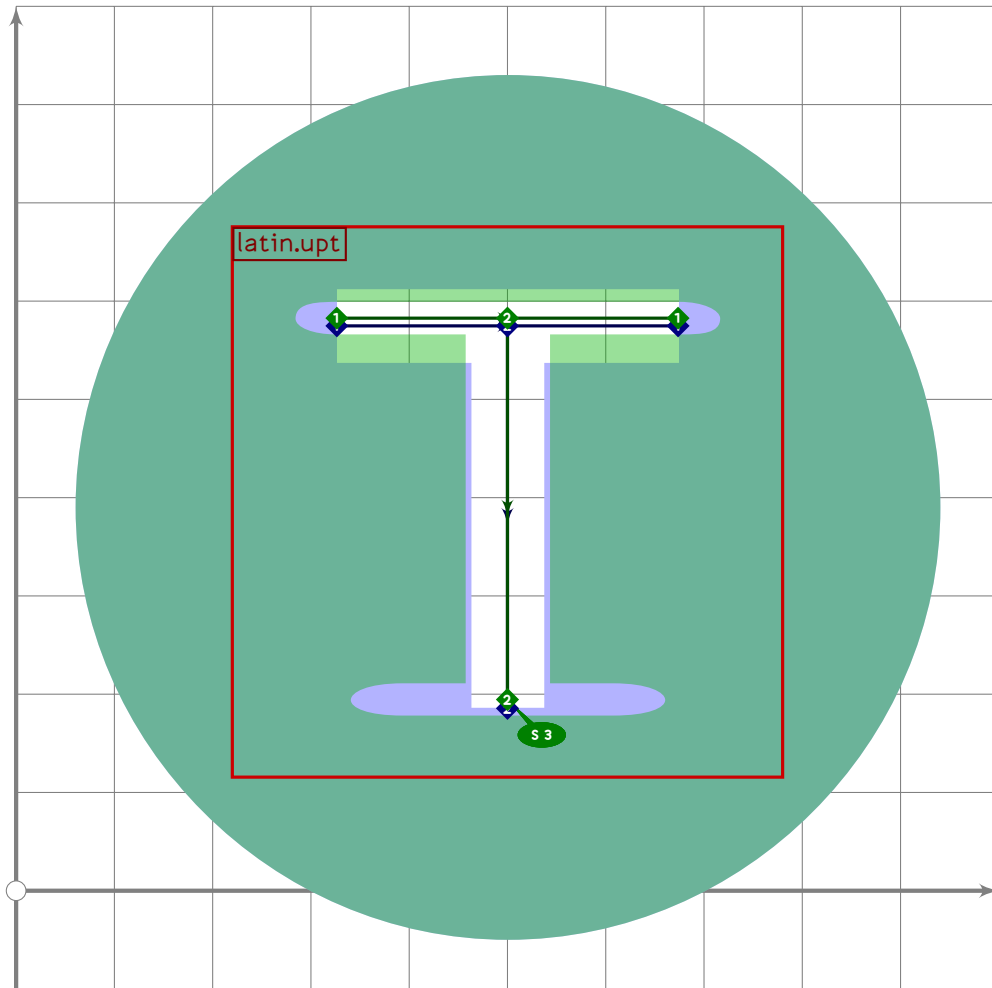
```



```

349 % S
350 % BACKGROUND 25CF
351 begint Suglyph("u1F162";98);
352 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.ups);
353 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
354 tsu_render;
355 endtsuglyph;
356

```

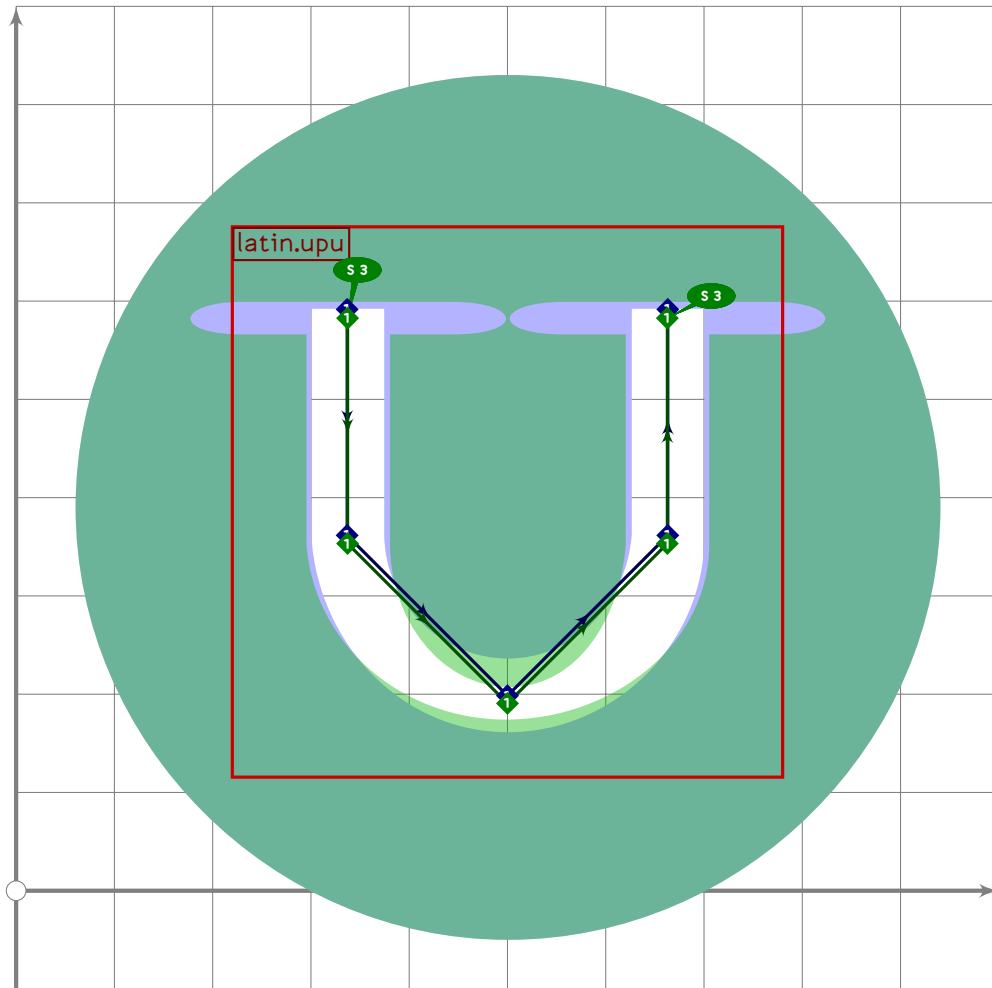


```

357 % T
358 % BACKGROUND 25CF
359 beginsuglyph("u1F163";99);
360 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upt);
361 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
362 tsu_render;
363 endsuglyph;
364

```

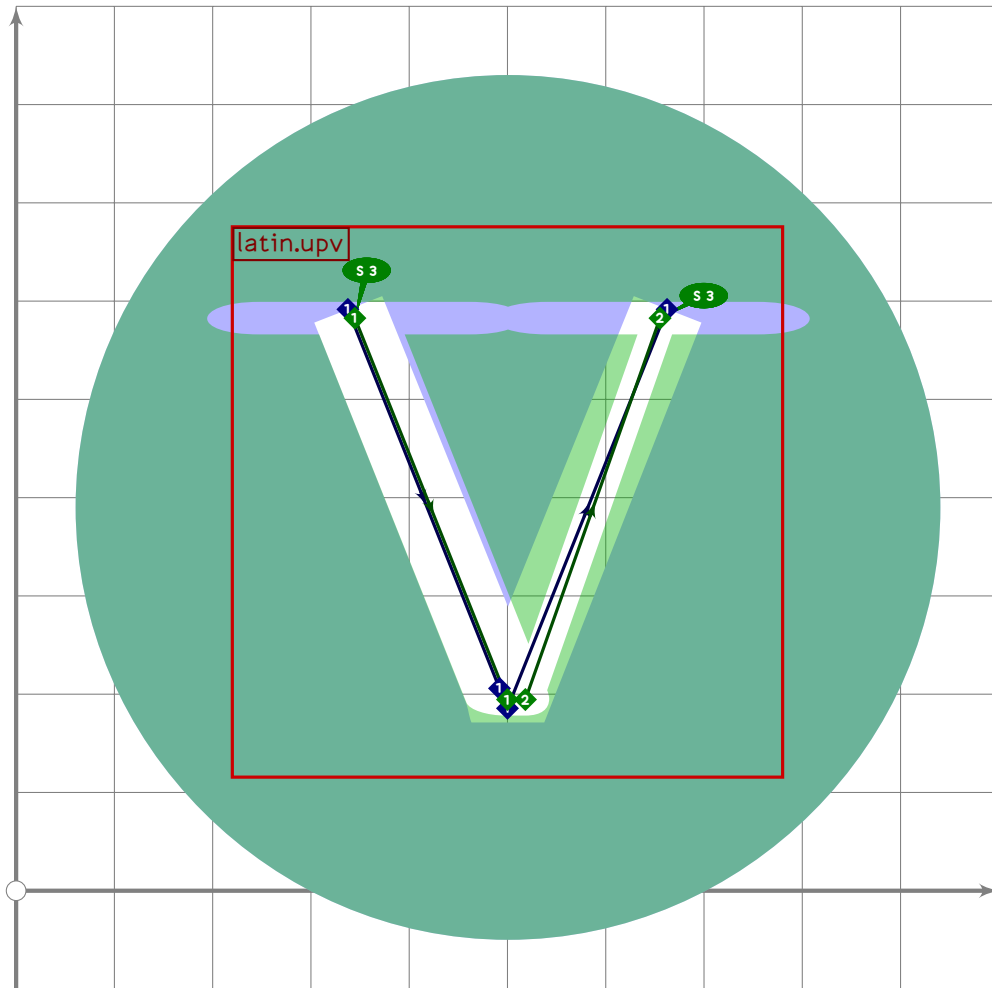




```

365 % U
366 % BACKGROUND 25CF
367 begint Suglyph("u1F164";100);
368 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upu);
369 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
370 tsu_render;
371 endtsuglyph;
372

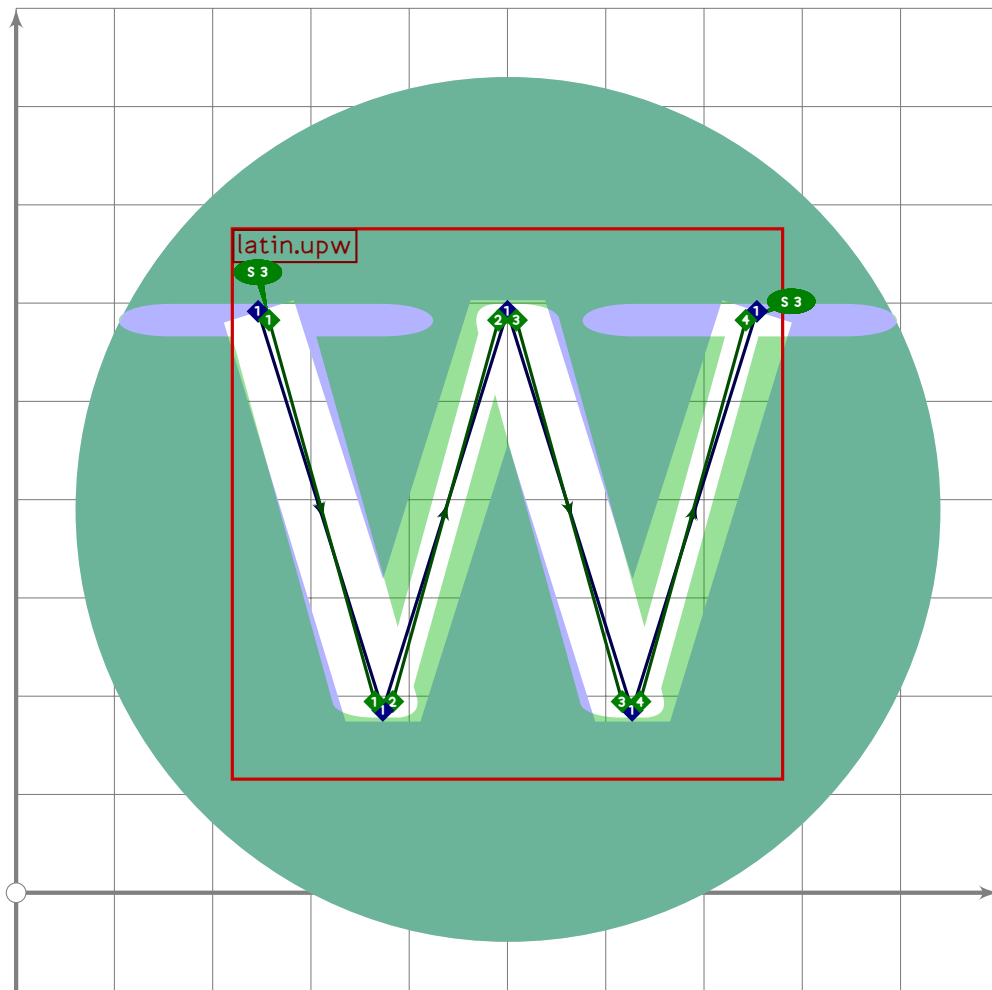
```



```

373 % V
374 % BACKGROUND 25CF
375 beginsuglyph("u1F165";101);
376 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upv);
377 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
378 tsu_render;
379 endsuglyph;
380

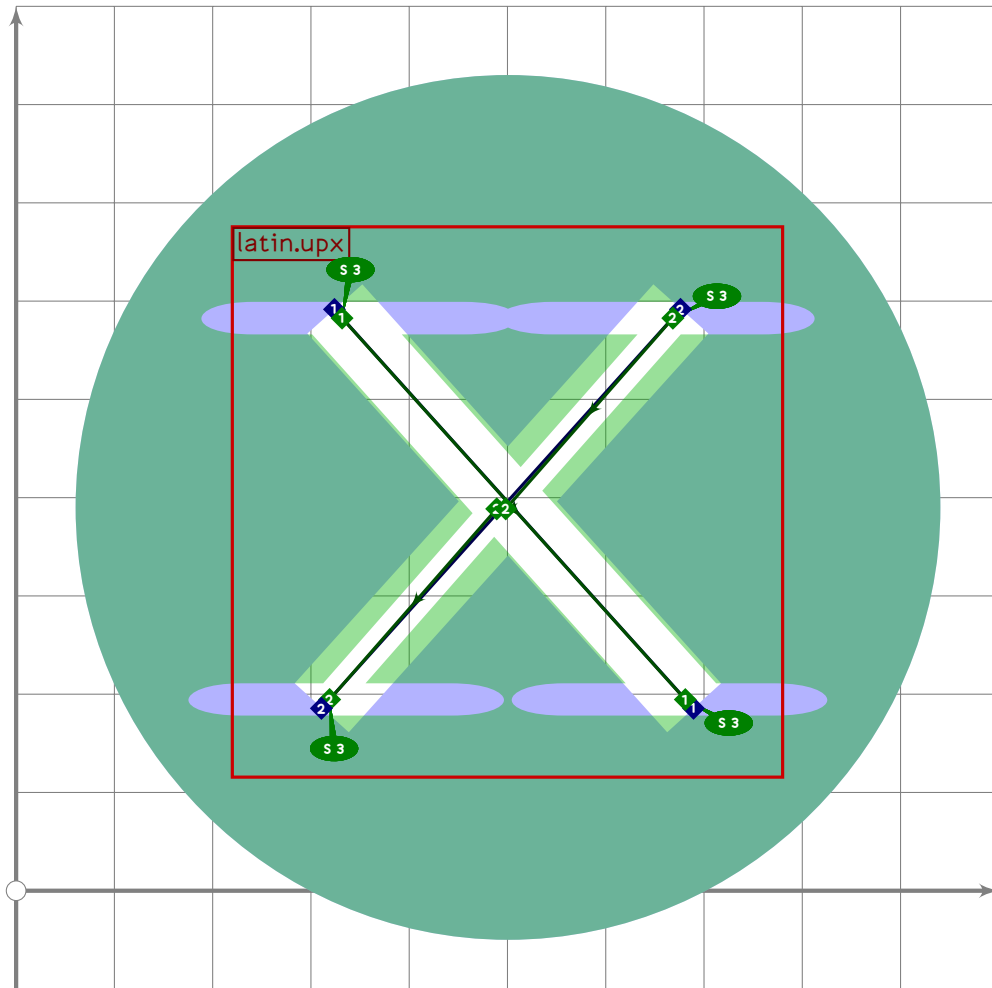
```



```

381 % W
382 % BACKGROUND 25CF
383 begint Suglyph("u1F166";102);
384 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upw);
385 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
386 tsu_render;
387 endtsuglyph;
388

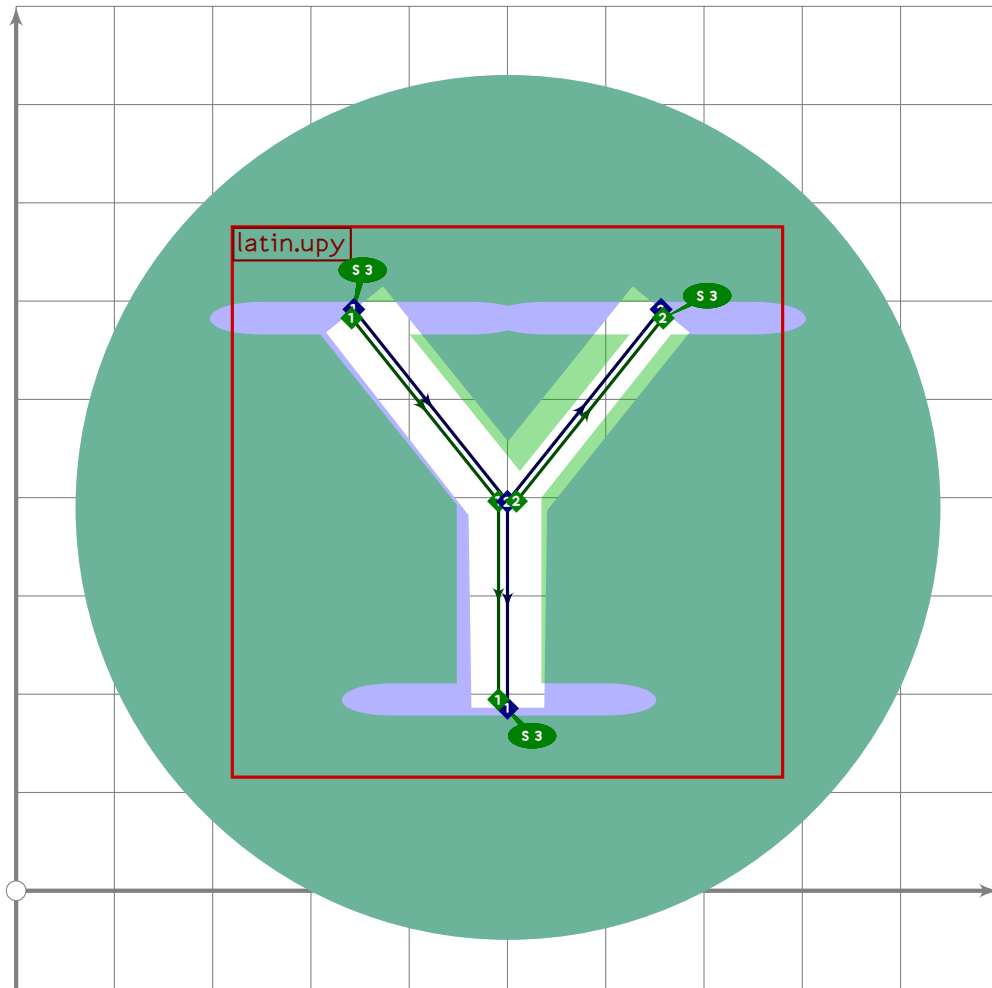
```



```

389 % X
390 % BACKGROUND 25CF
391 begint Suglyph("u1F167";103);
392 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upx);
393 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
394 tsu_render;
395 endtsuglyph;
396

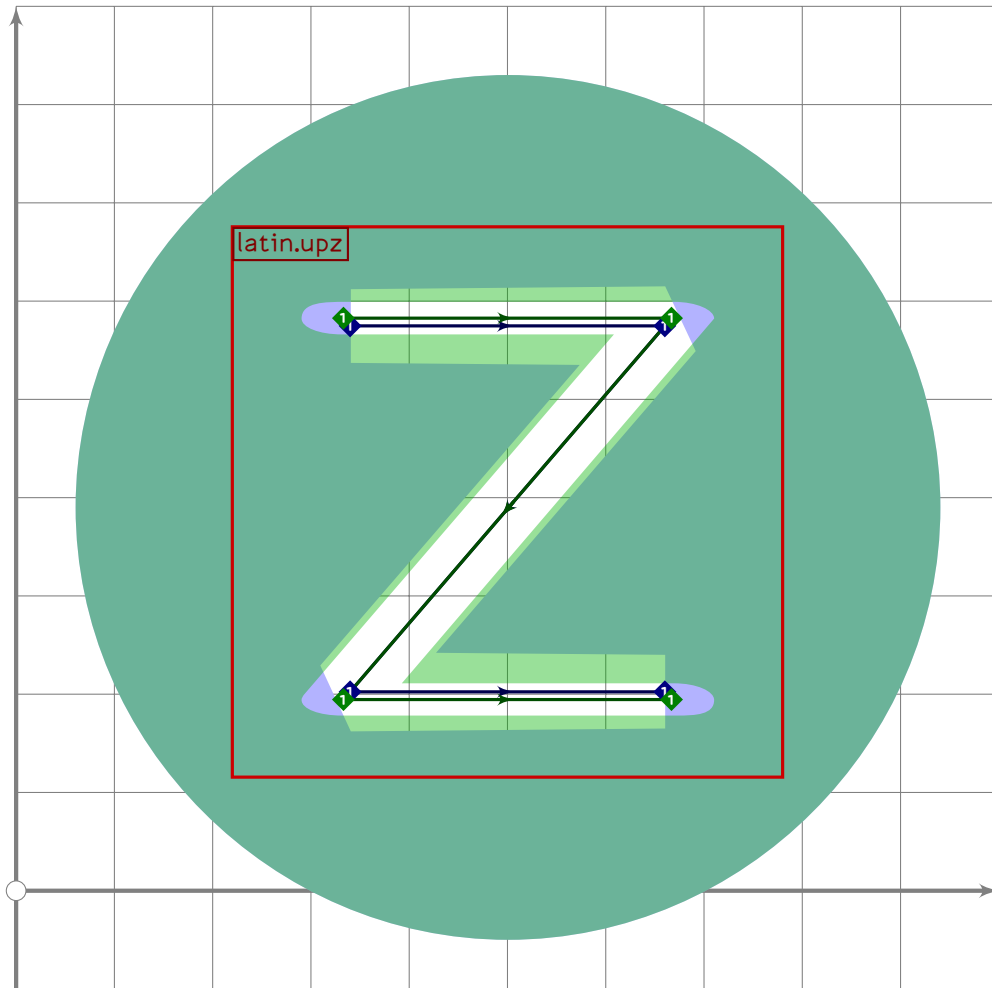
```



```

397 % Y
398 % BACKGROUND 25CF
399 beginsuglyph("u1F168"104);
400 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upy);
401 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
402 tsu_render;
403 endsuglyph;
404

```



```

405 % Z
406 % BACKGROUND 25CF
407 beginsuglyph("u1F169";105);
408 tsu_xform(tsu_xf.cletter)(tsu_curve.latin.upz);
409 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
410 tsu_render;
411 endsuglyph;
412
413
414

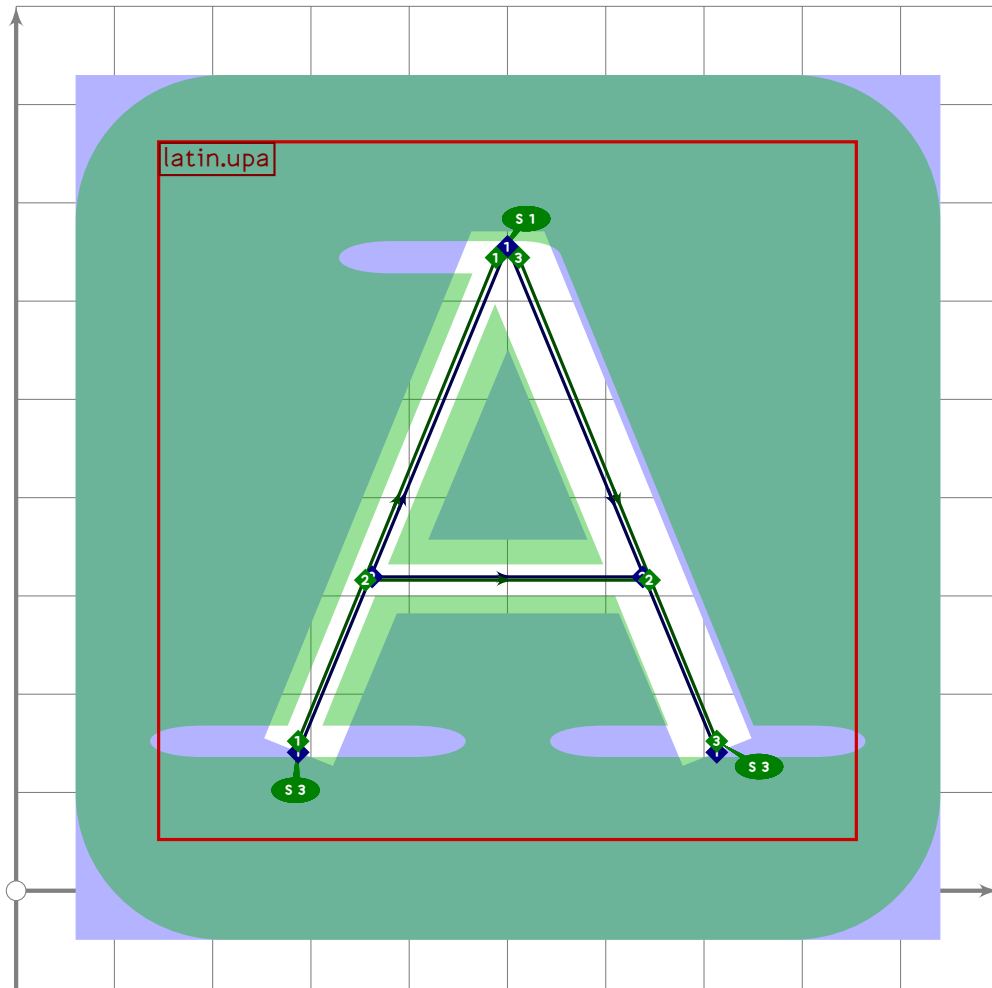
```

## Inverse Squared Latin

```

415 % INVERSE SQUARED LATIN
416

```



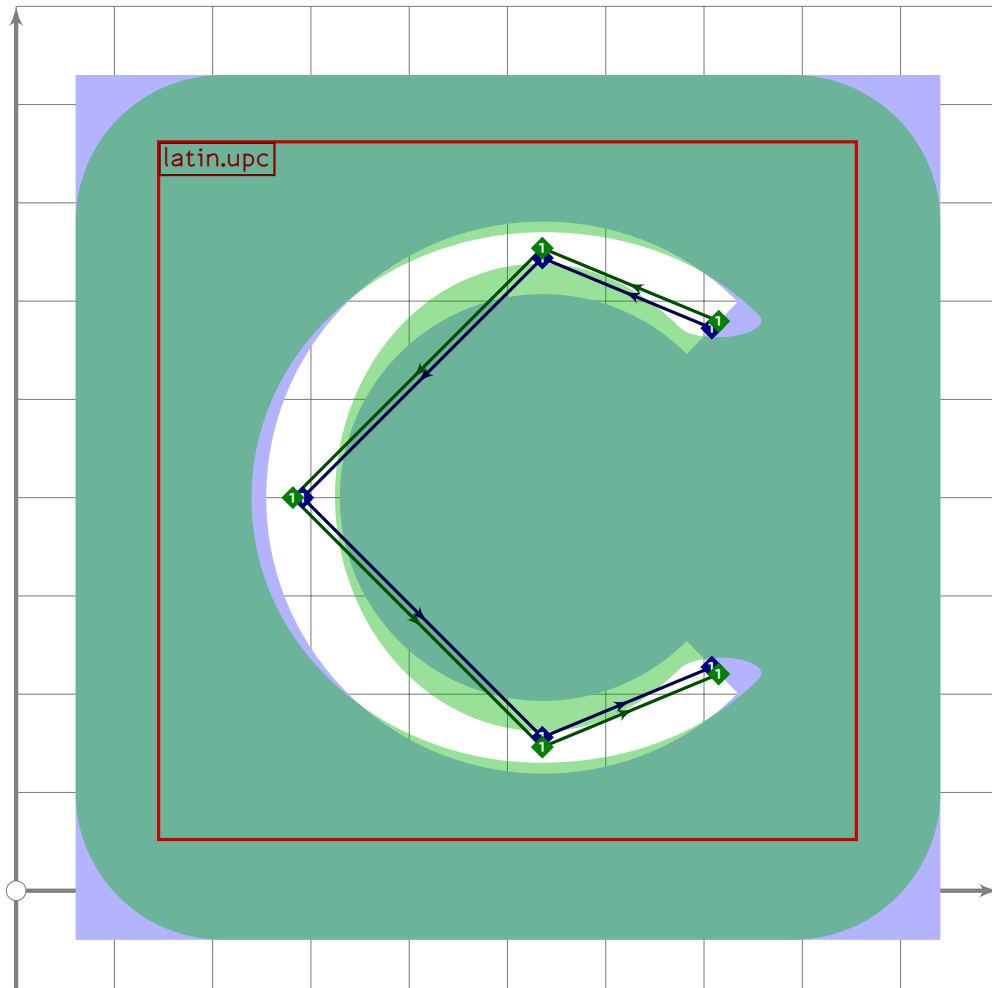
```

417 % A
418 % BACKGROUND F1712
419 beginsuglyph("u1F170";112);
420 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upa);
421 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
422 tsu_render;
423 endsuglyph;
424

```



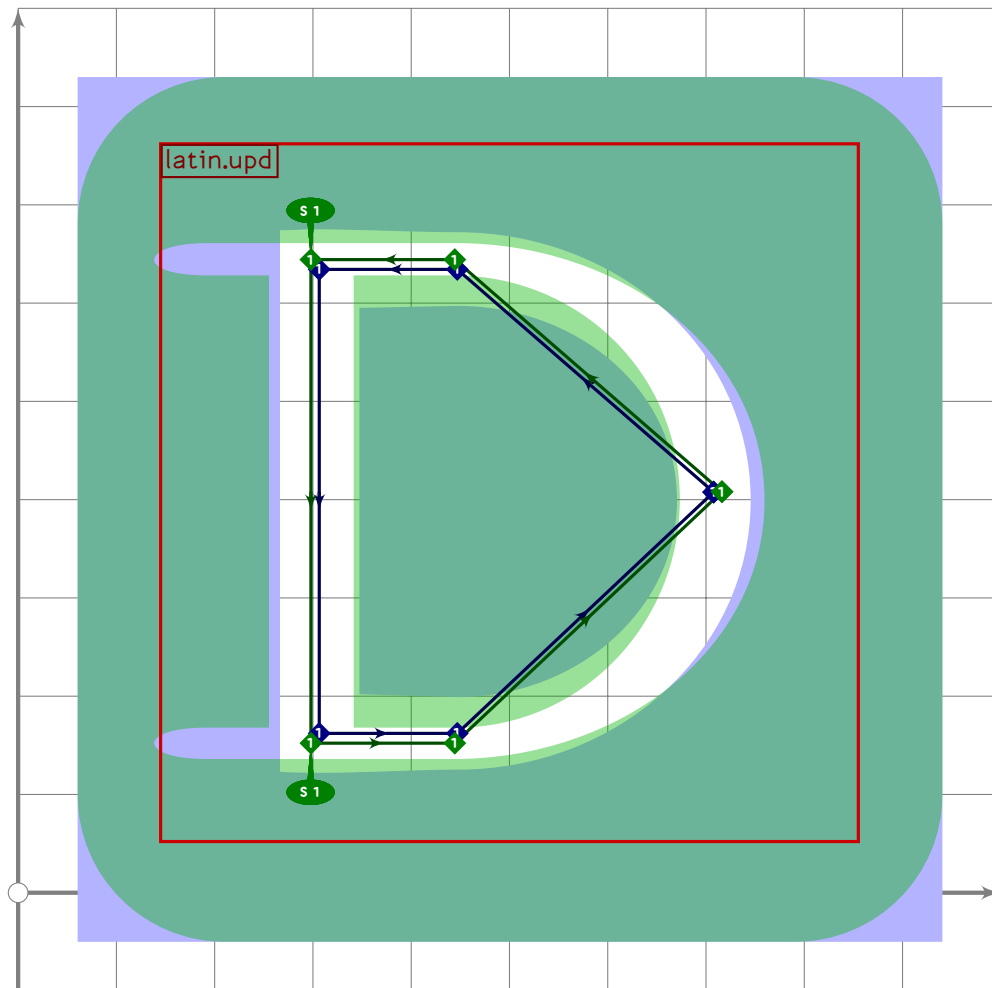




```

433 % C
434 % BACKGROUND F1712
435 begint Suglyph("u1F172";114);
436 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upc);
437 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
438 tsu_render;
439 endtsuglyph;
440

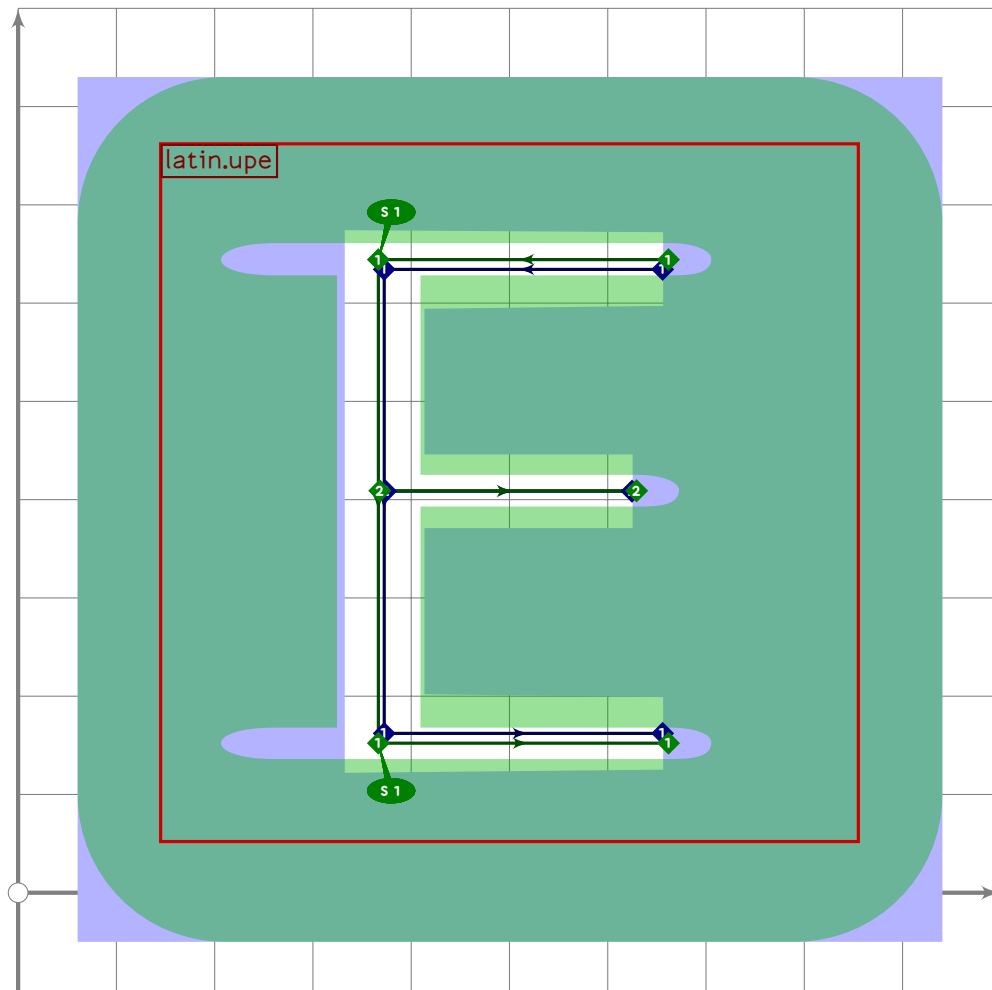
```



```

441 % D
442 % BACKGROUND F1712
443 beginsuglyph("u1F173";115);
444 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upd);
445 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
446 tsu_render;
447 endsuglyph;
448

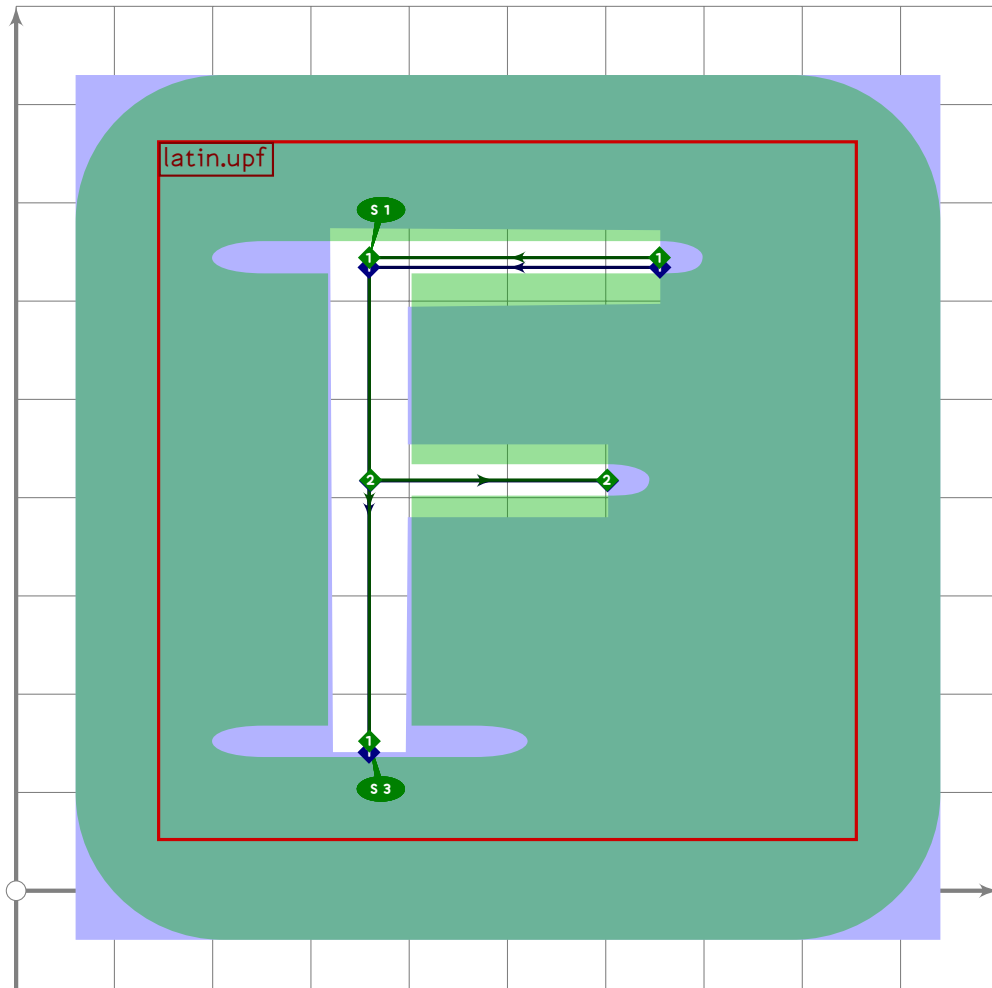
```



```

449 % E
450 % BACKGROUND F1712
451 begint Suglyph("u1F174";116);
452 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upe);
453 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
454 tsu_render;
455 endtsuglyph;
456

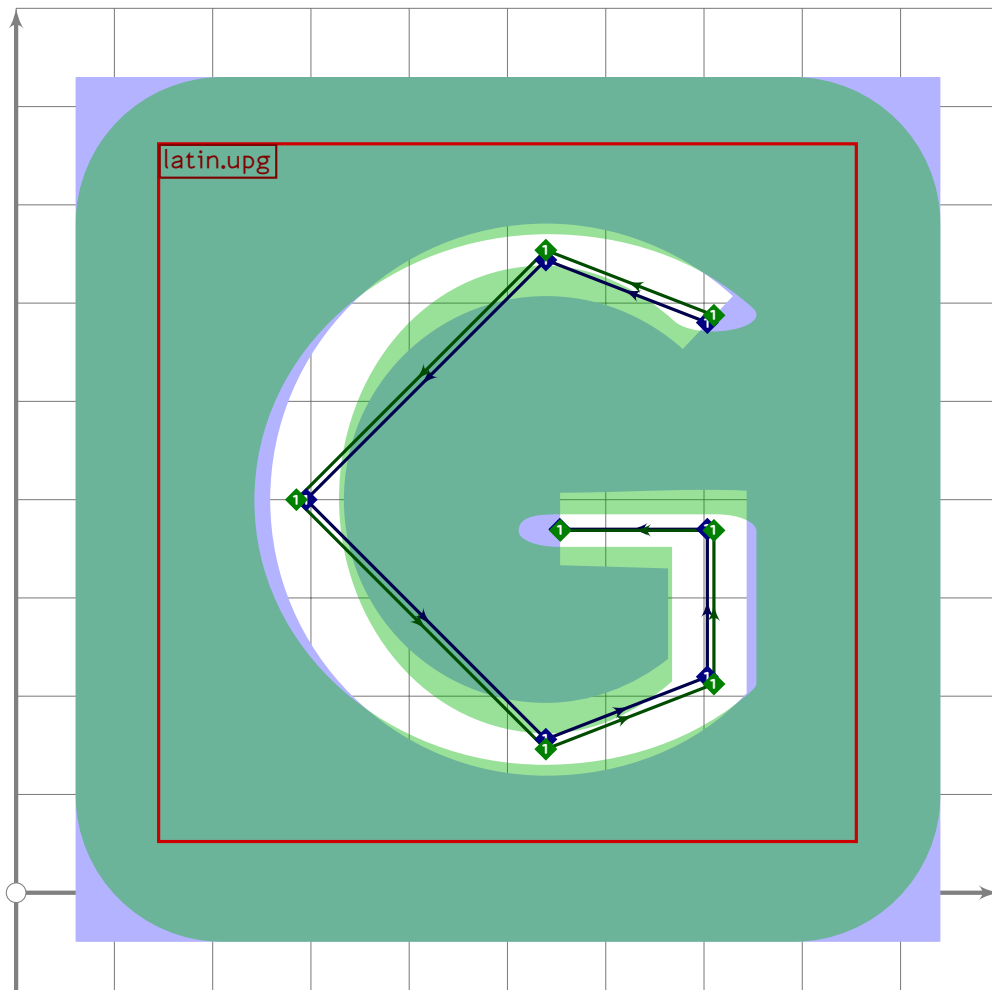
```



```

457 % F
458 % BACKGROUND F1712
459 beginsuglyph("u1F175";117);
460 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upf);
461 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
462 tsu_render;
463 endsuglyph;
464

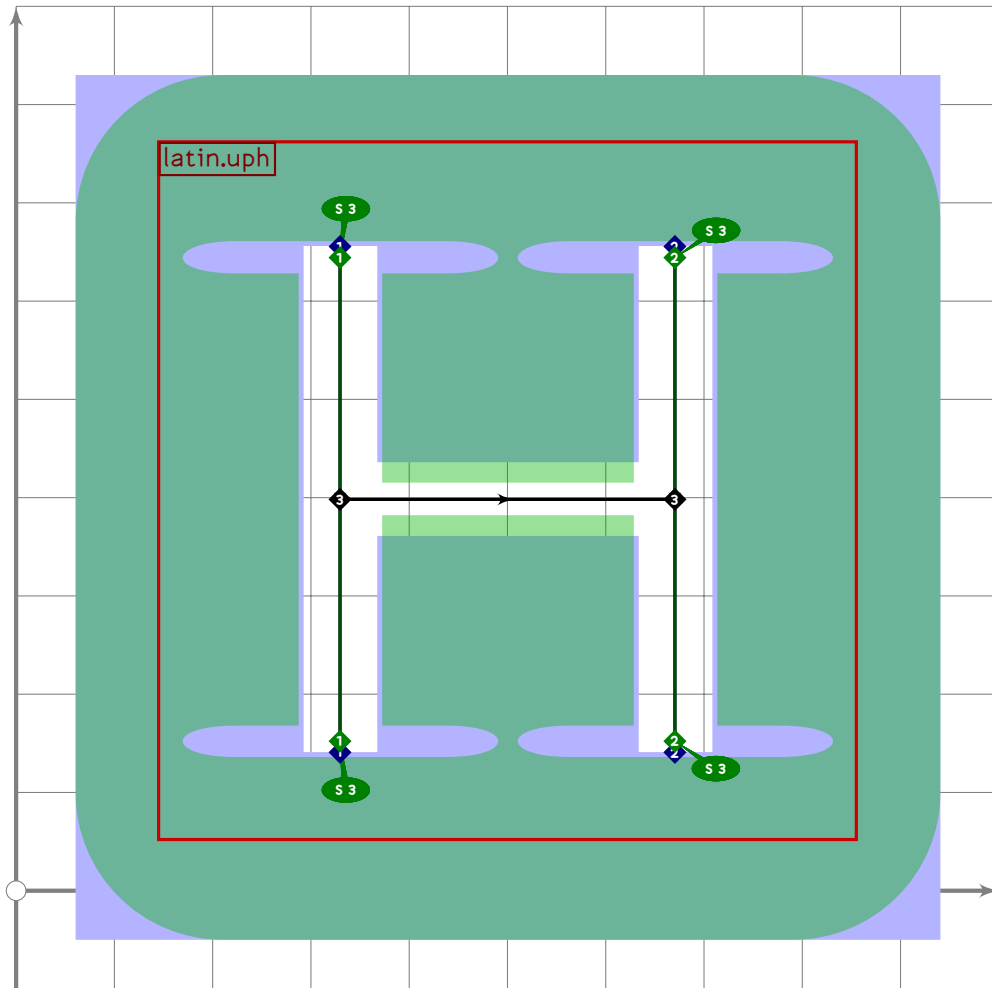
```



```

465 % G
466 % BACKGROUND F1712
467 begint Suglyph("u1F176";118);
468   tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upg);
469   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
470   tsu_render;
471 endtsuglyph;
472

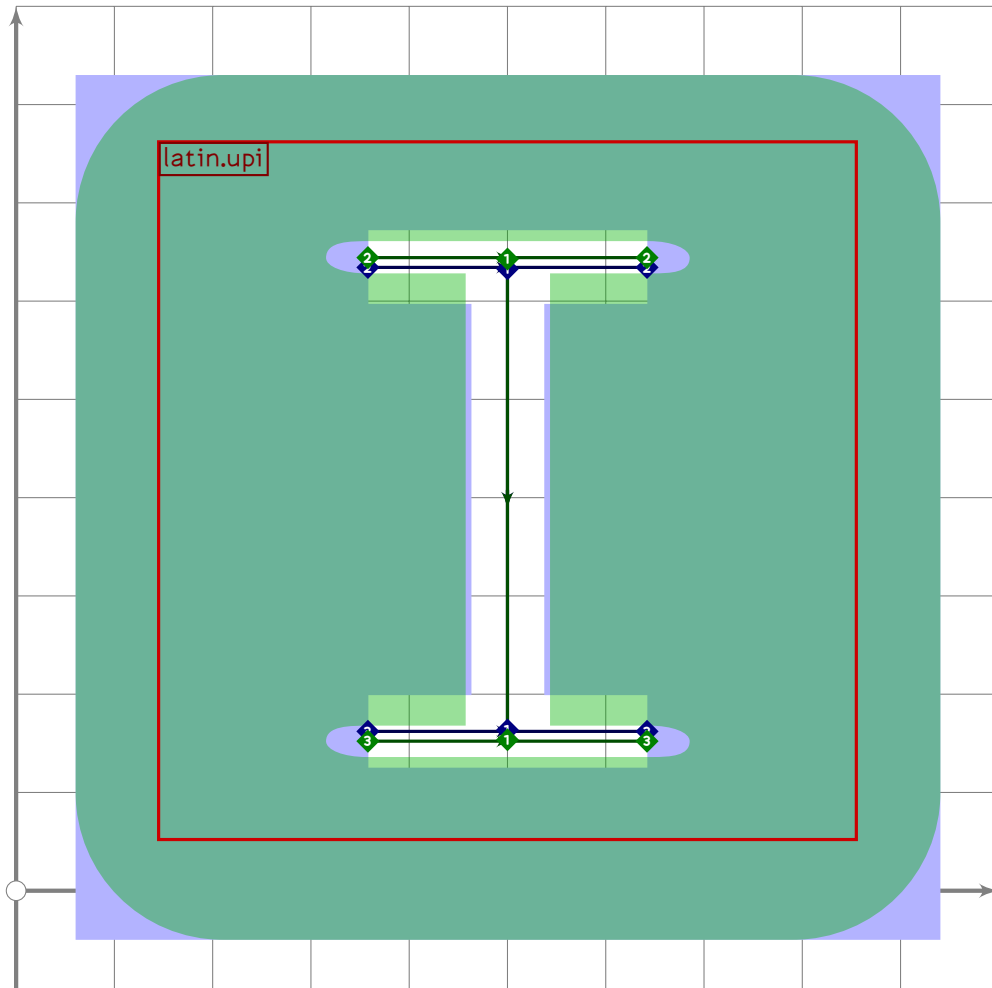
```



```

473 % H
474 % BACKGROUND F1712
475 beginsuglyph("u1F177";119);
476 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.uph);
477 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
478 tsu_render;
479 endsuglyph;
480

```



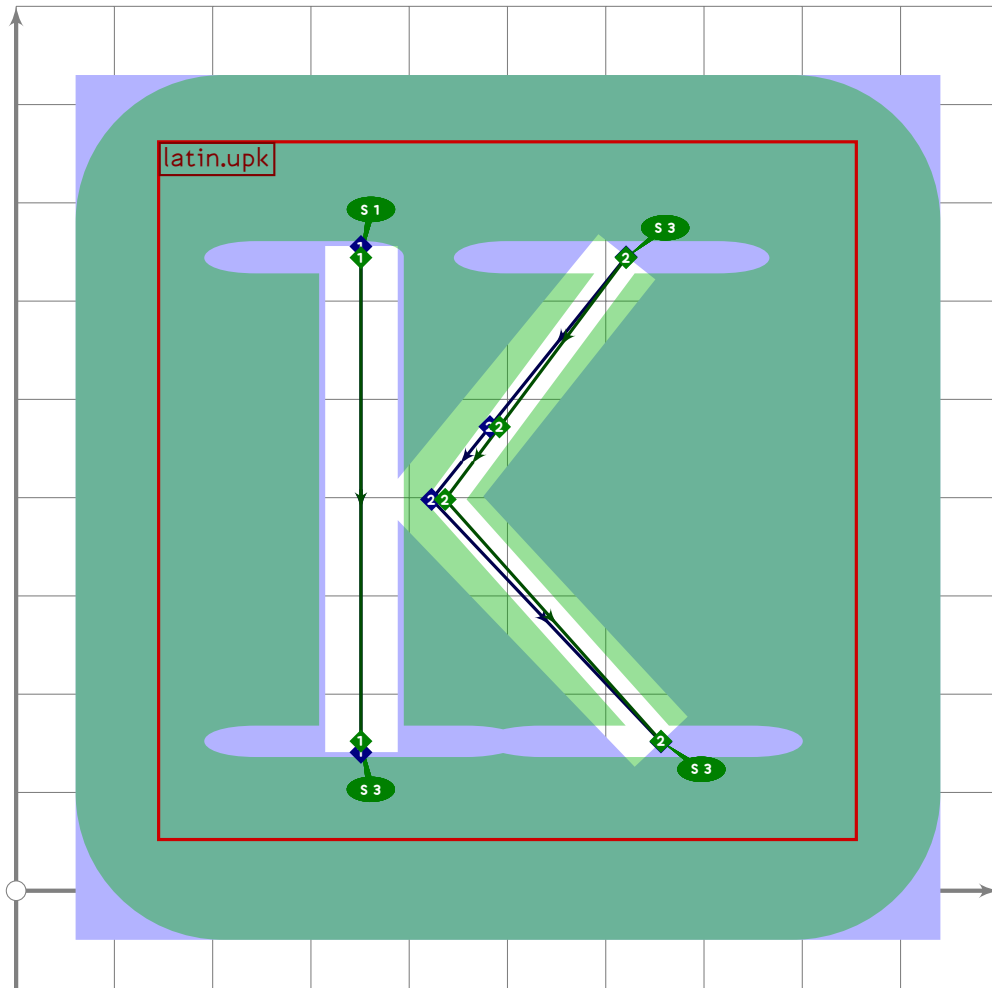
```

481 % I
482 % BACKGROUND F1712
483 begint Suglyph("u1F178";120);
484 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upi);
485 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
486 tsu_render;
487 endtsuglyph;
488

```



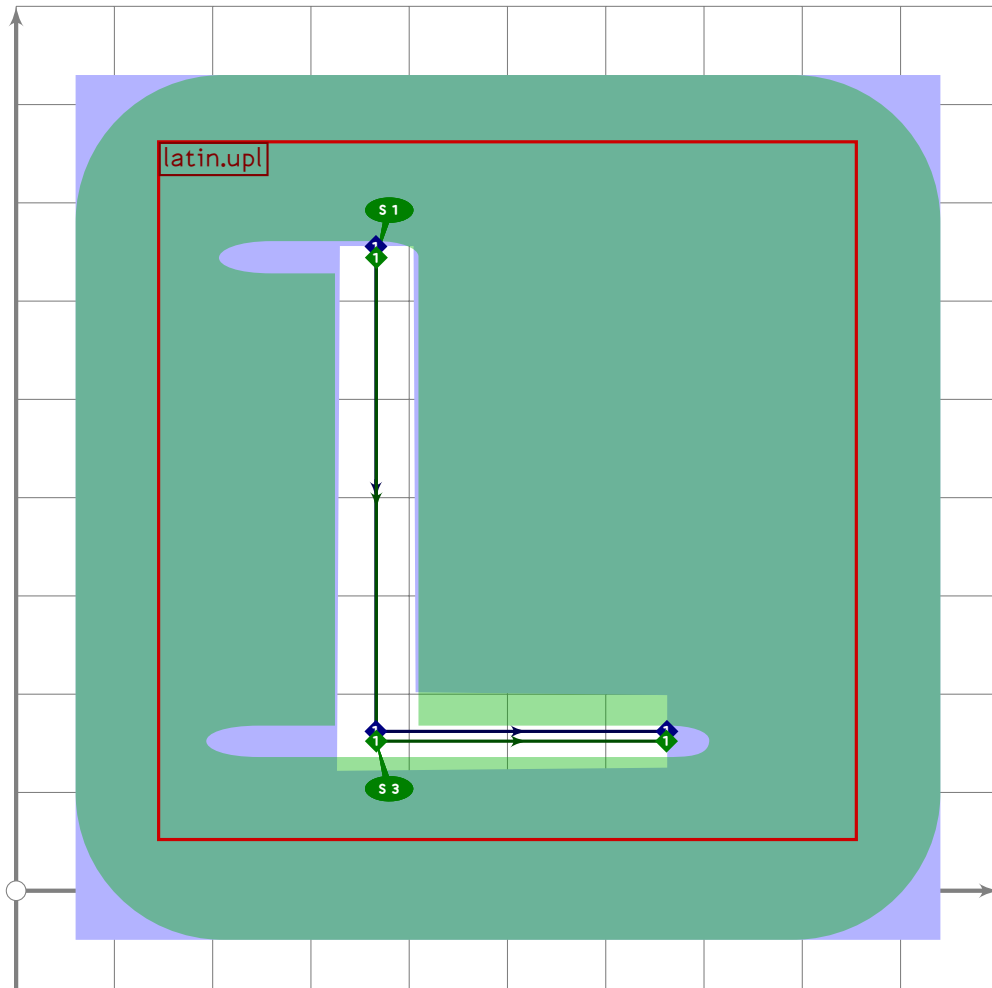




```

497 % K
498 % BACKGROUND F1712
499 begintsuglyph("u1F17A";122);
500 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upk);
501 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
502 tsu_render;
503 endsuglyph;
504

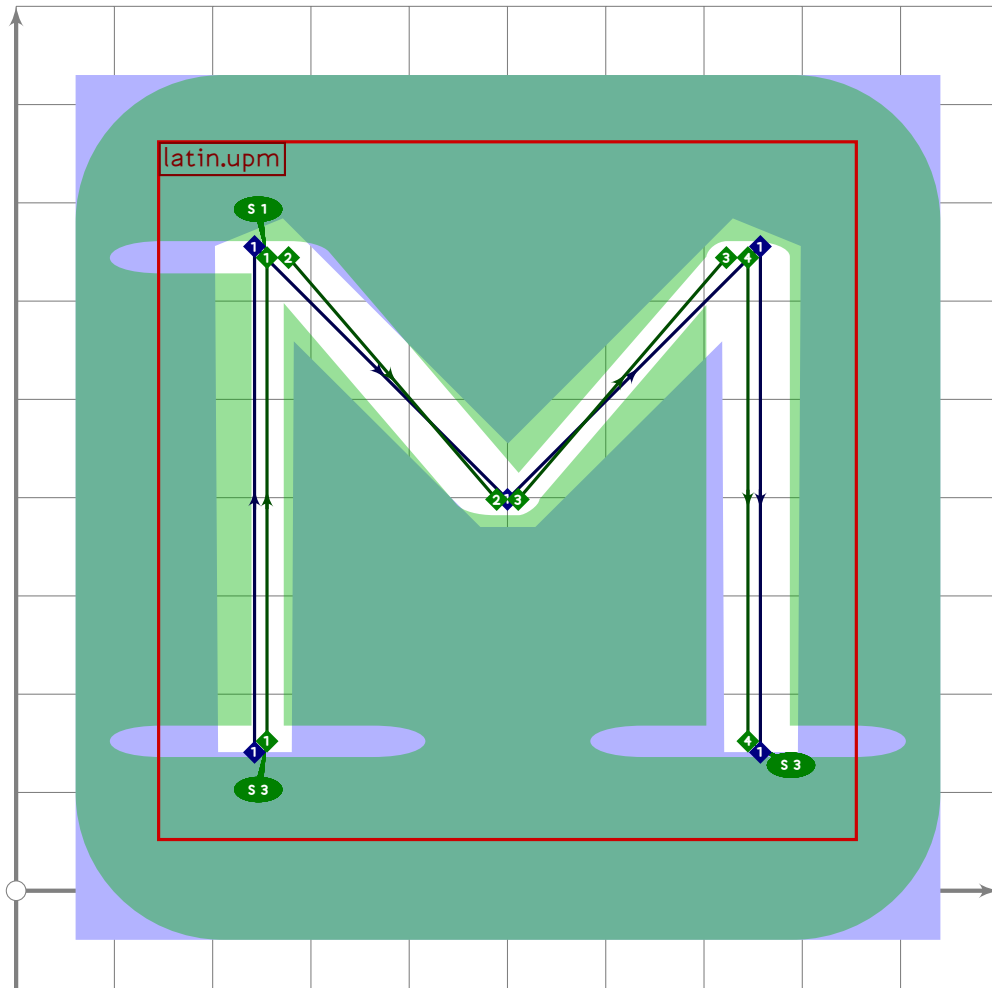
```



```

505 % L
506 % BACKGROUND F1712
507 begint Suglyph("u1F17B";123);
508   tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upl);
509   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
510   tsu_render;
511   endtsuglyph;
512

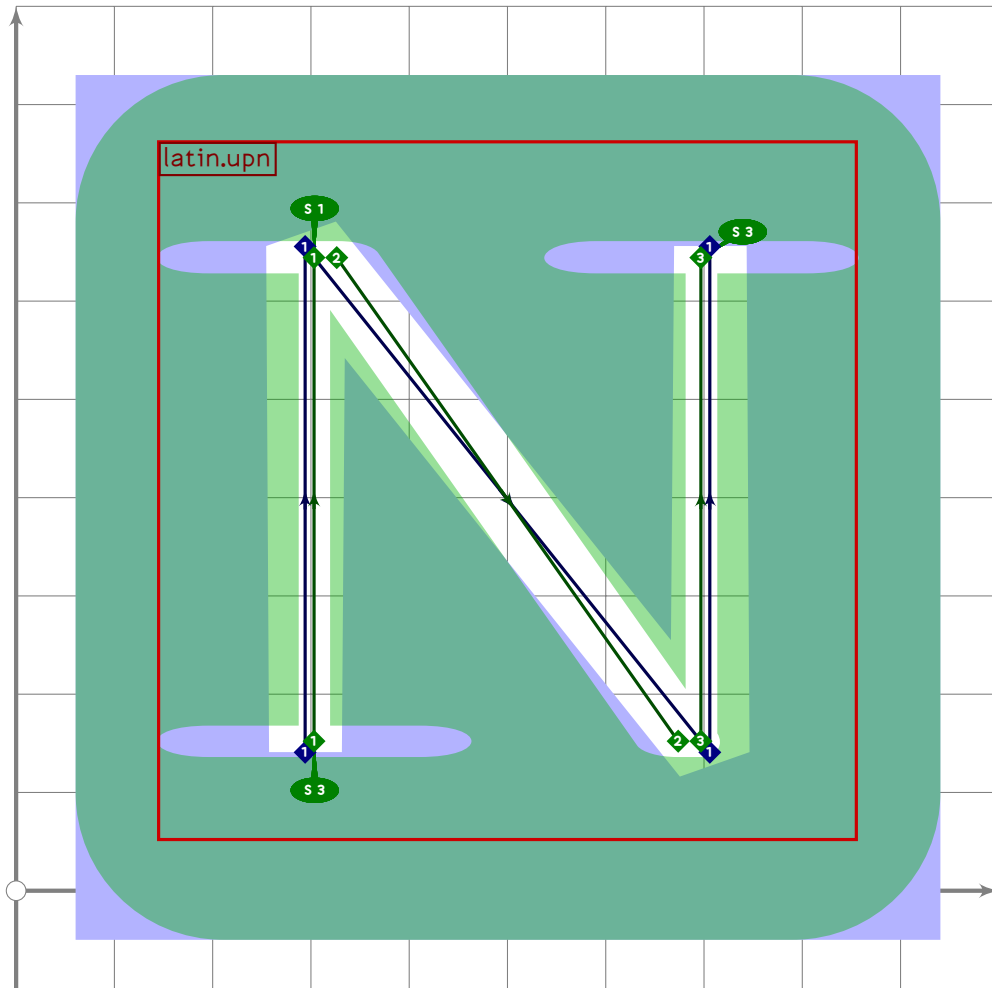
```



```

513 % M
514 % BACKGROUND F1712
515 begint Suglyph("u1F17C",124);
516 if do_alteration:
517     tsu_xform(tsu_xf.sletter
518         shifted -centre_pt xscaled 0.95 shifted centre_pt)(tsu_curve.latin.upm);
519 else:
520     tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upm);
521 fi;
522 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
523 tsu_render;
524 endtsuglyph;
525

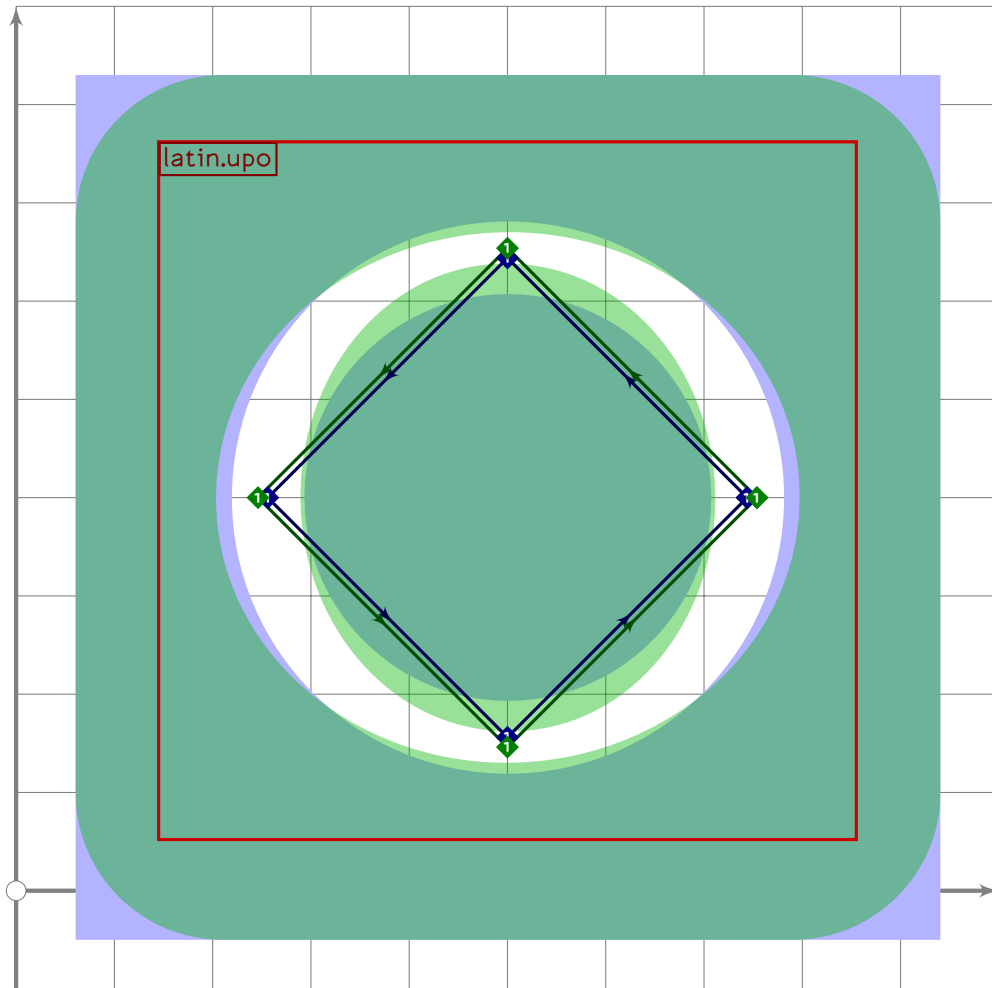
```



```

526 % N
527 % BACKGROUND F1712
528 beginsuglyph("u1F17D";125);
529 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upn);
530 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
531 tsu_render;
532 endsuglyph;
533

```

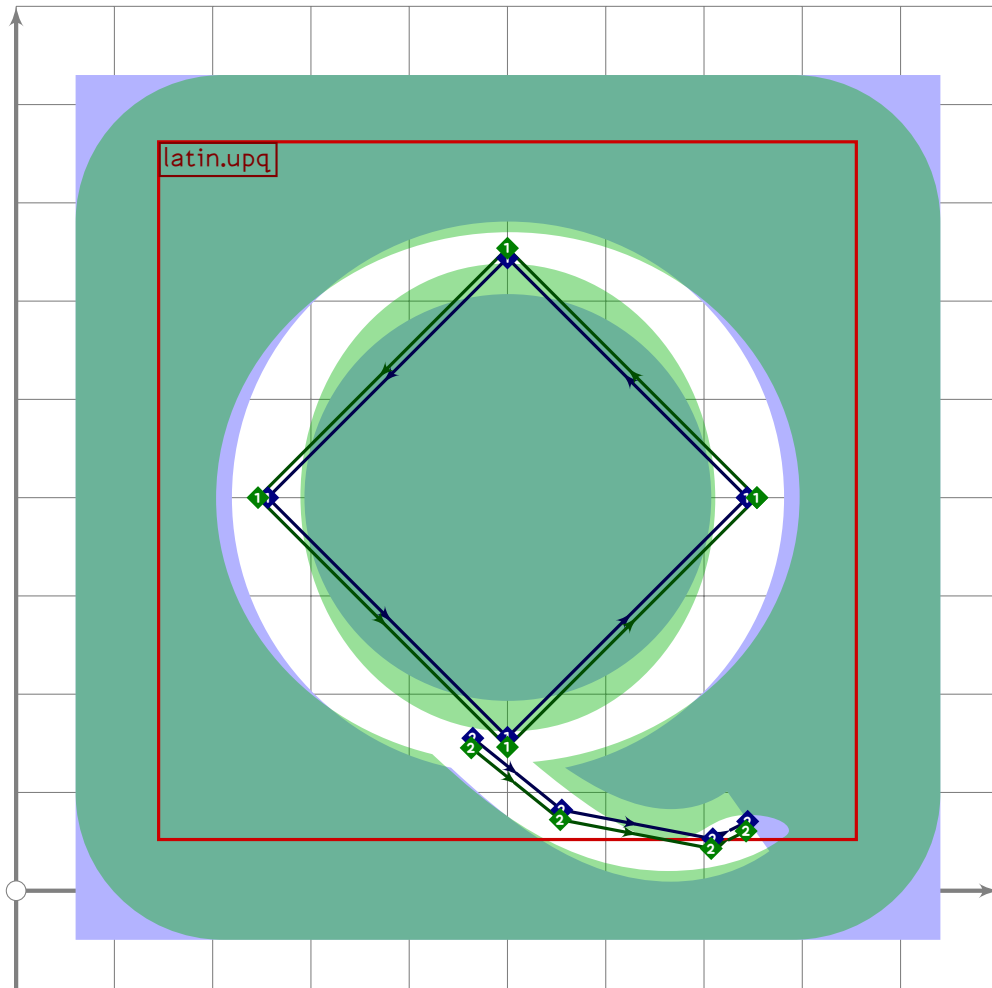


```

534 % O
535 % BACKGROUND F1712
536 beginsuglyph("u1F17E";126);
537 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upo);
538 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
539 tsu_render;
540 endsuglyph;
541

```





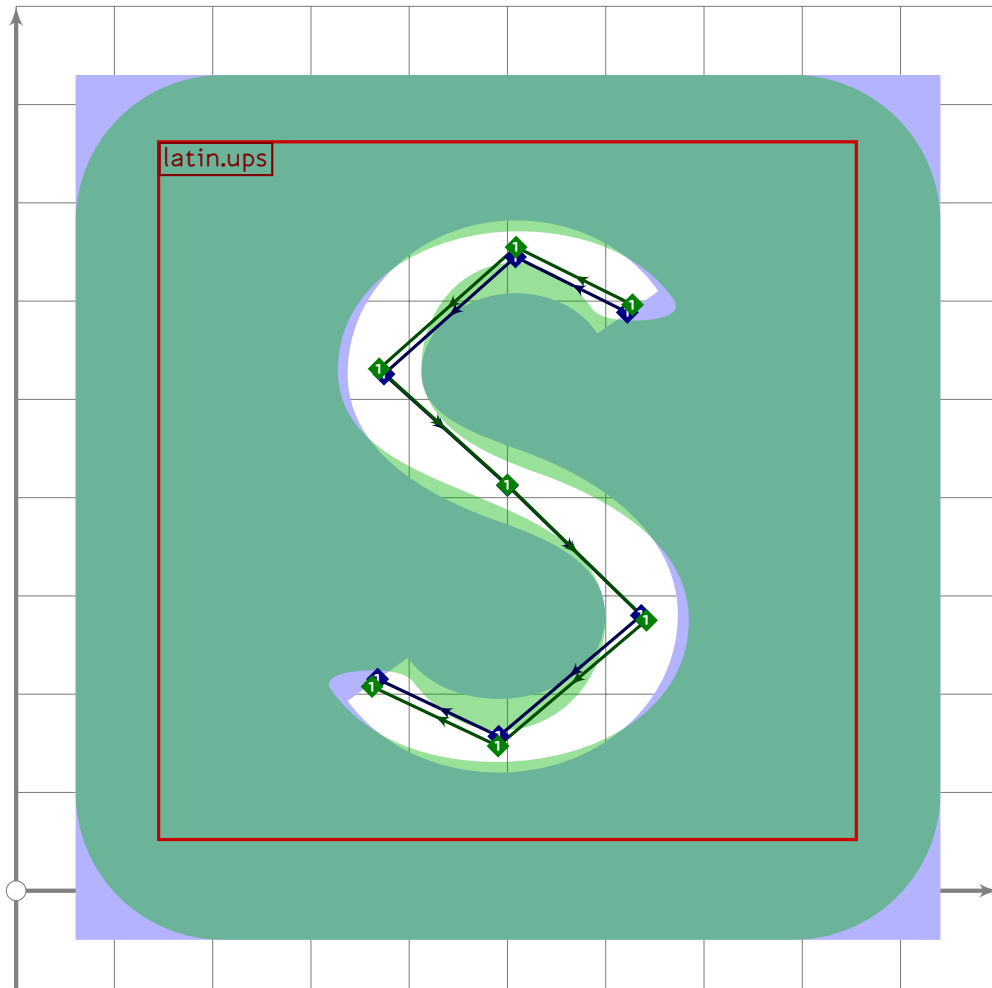
```

550 % Q
551 % BACKGROUND F1712
552 beginsuglyph("u1F180",128);
553 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upq);
554 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
555 tsu_render;
556 endsuglyph;
557

```



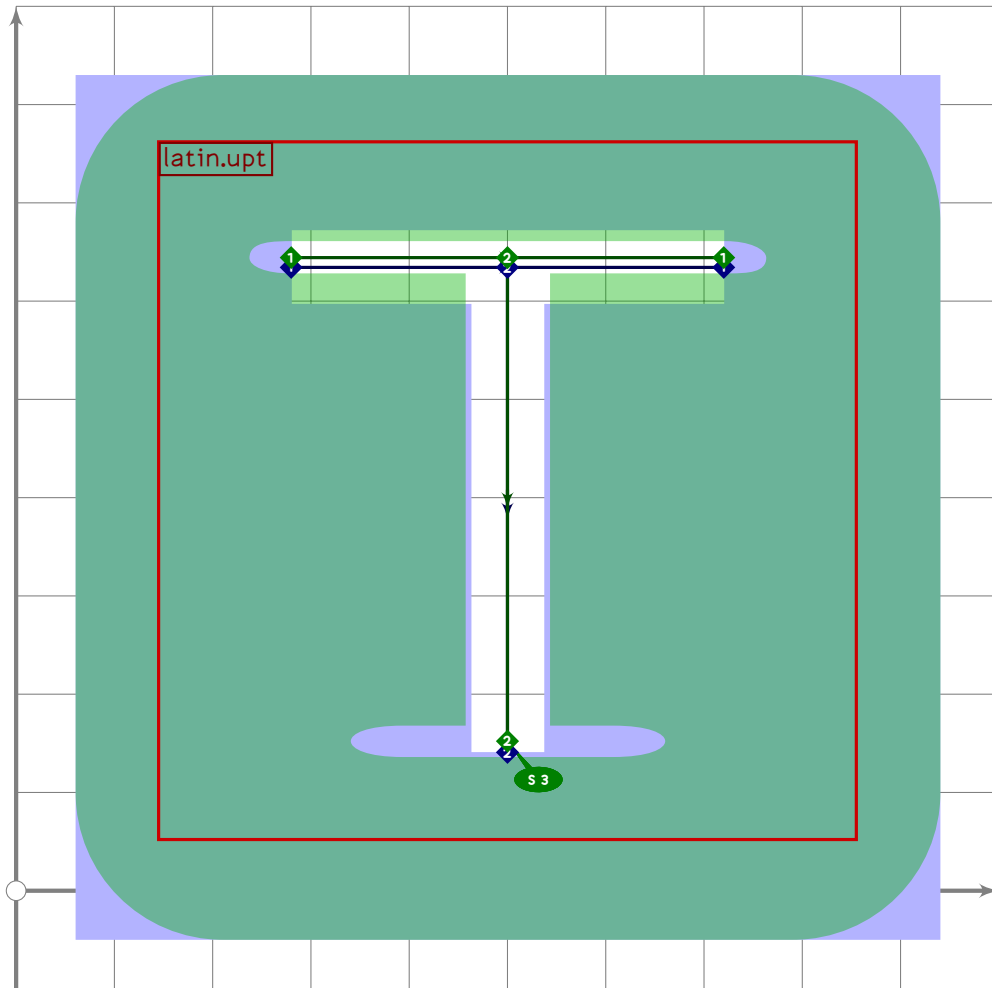




```

566 % S
567 % BACKGROUND F1712
568 begintsuglyph("u1F182";130);
569 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.ups);
570 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
571 tsu_render;
572 endtsuglyph;
573

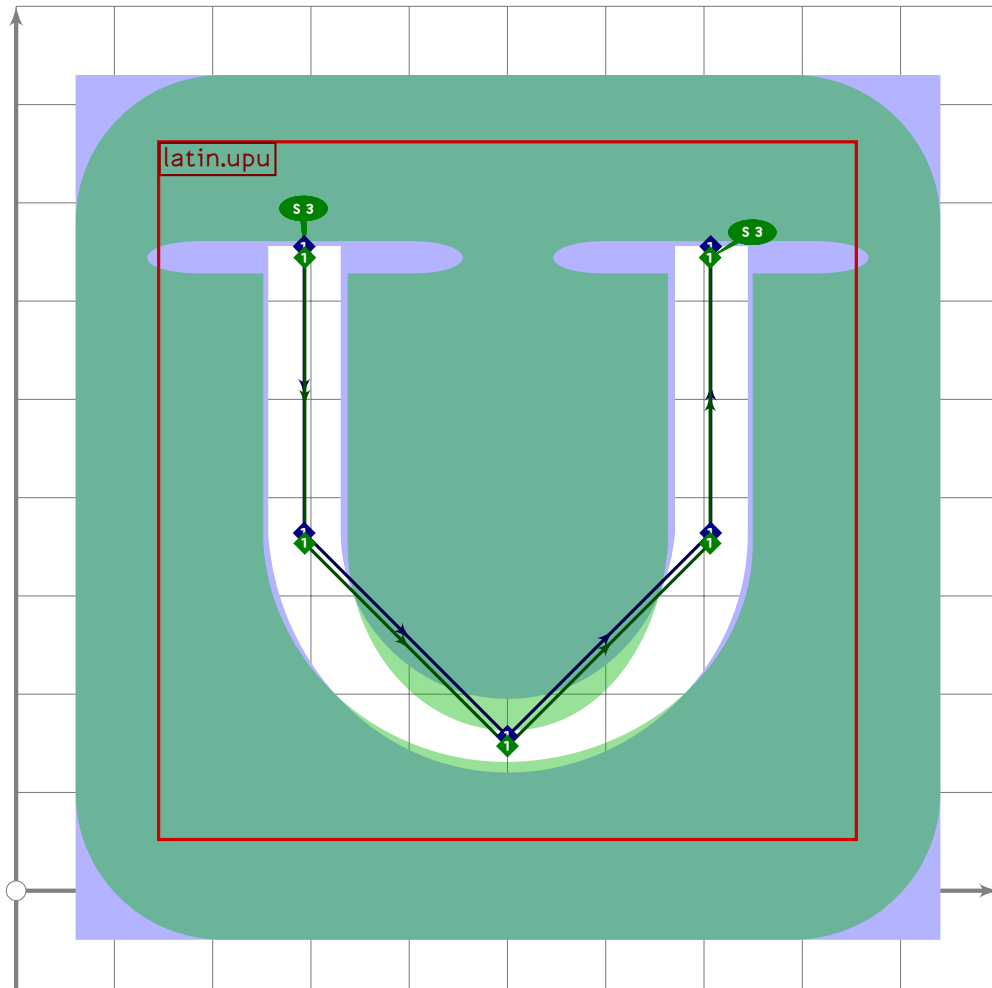
```



```

574 % T
575 % BACKGROUND F1712
576 beginsuglyph("u1F183";131);
577 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upt);
578 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
579 tsu_render;
580 endsuglyph;
581

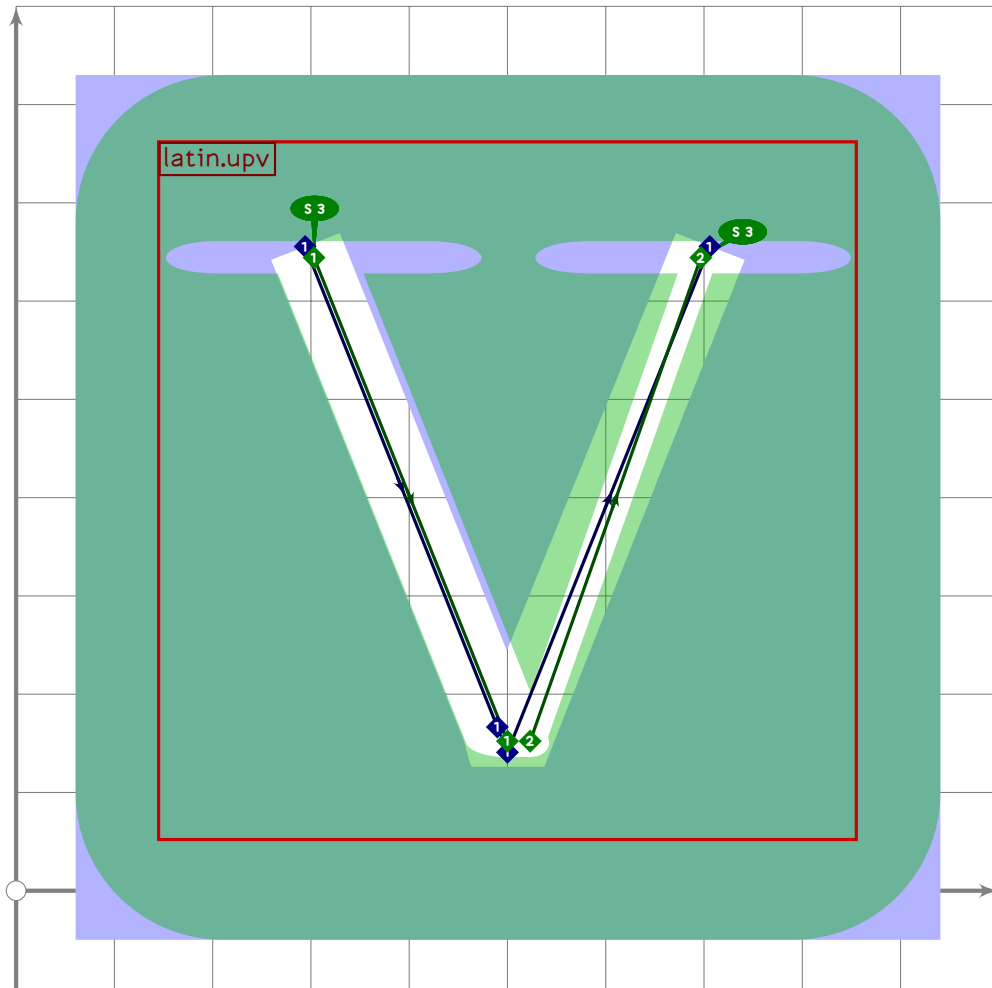
```



```

582 % U
583 % BACKGROUND F1712
584 begint Suglyph("u1F184";132);
585 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upu);
586 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
587 tsu_render;
588 endtsuglyph;
589

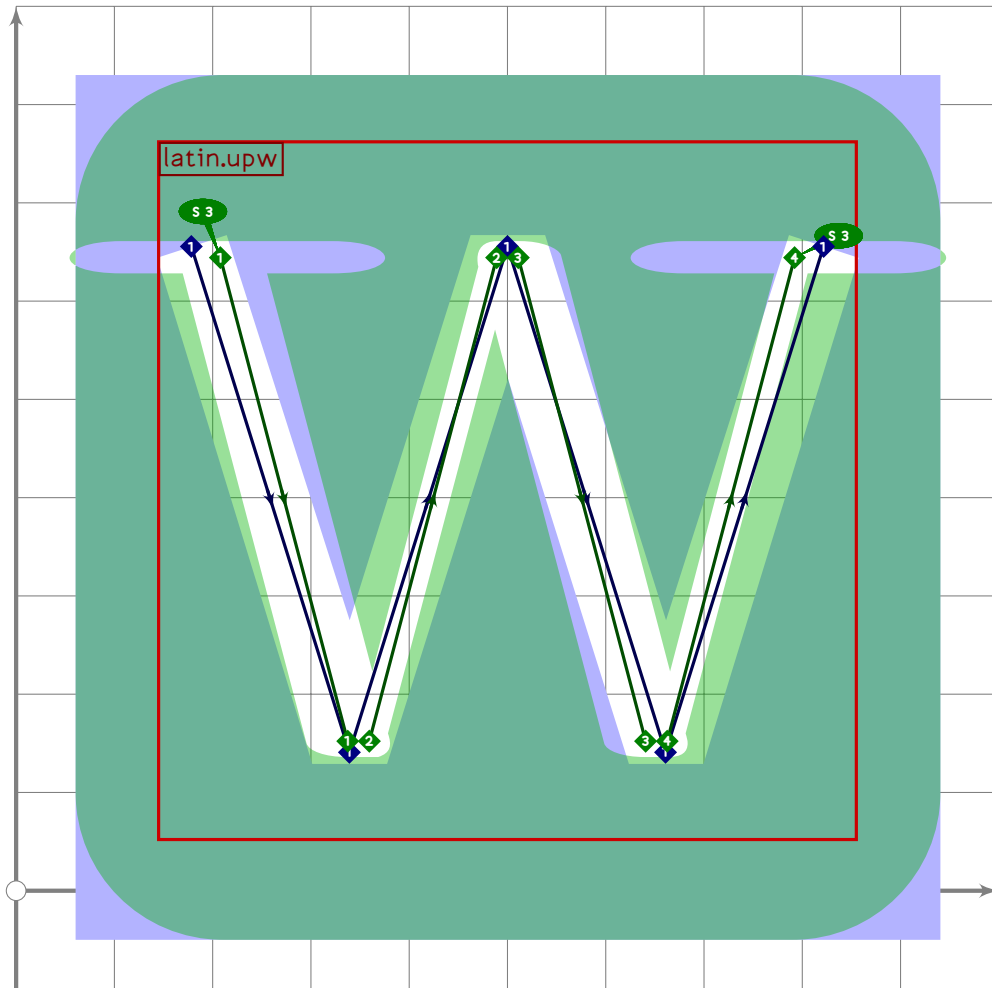
```



```

590 % V
591 % BACKGROUND F1712
592 beginsuglyph("u1F185";133);
593 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upv);
594 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
595 tsu_render;
596 endsuglyph;
597

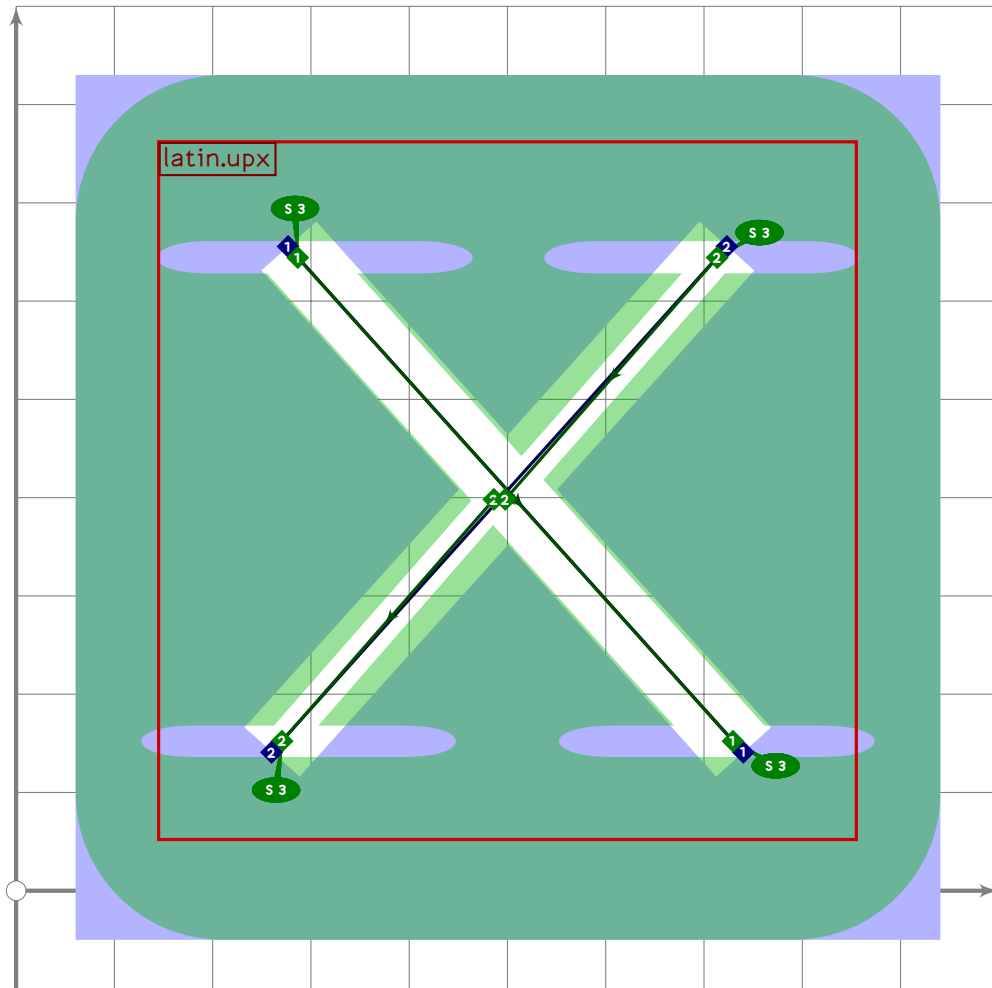
```



```

598 % W
599 % BACKGROUND F1712
600 begint Suglyph("u1F186";134);
601 if do_alteration:
602     tsu_xform(tsu_xf.sletter
603         shifted -centre_pt xscaled 0.95 shifted centre_pt)(tsu_curve.latin.upw);
604 else:
605     tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upw);
606 fi;
607 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
608 tsu_render;
609 endtsuglyph;
610

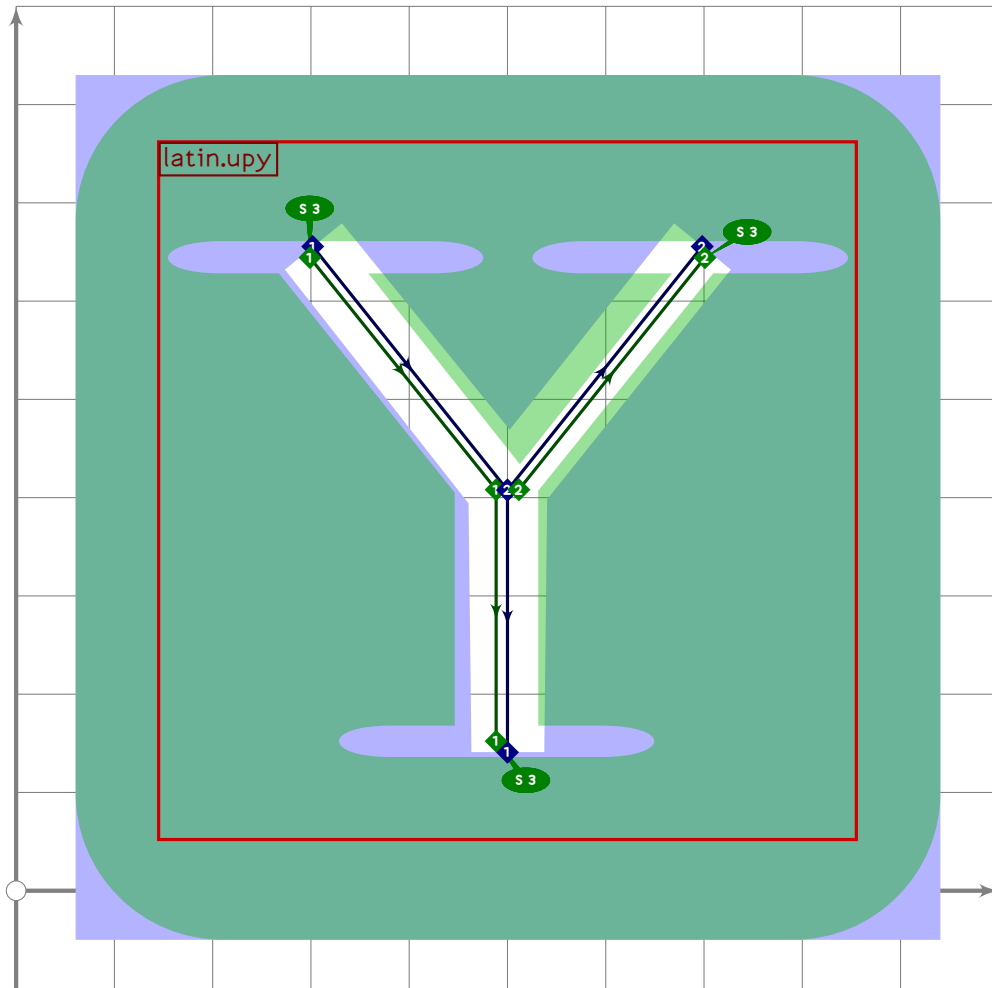
```



```

611 % X
612 % BACKGROUND F1712
613 begintsuglyph("u1F187";135);
614   tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upx);
615   i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
616   tsu_render;
617 endsuglyph;
618

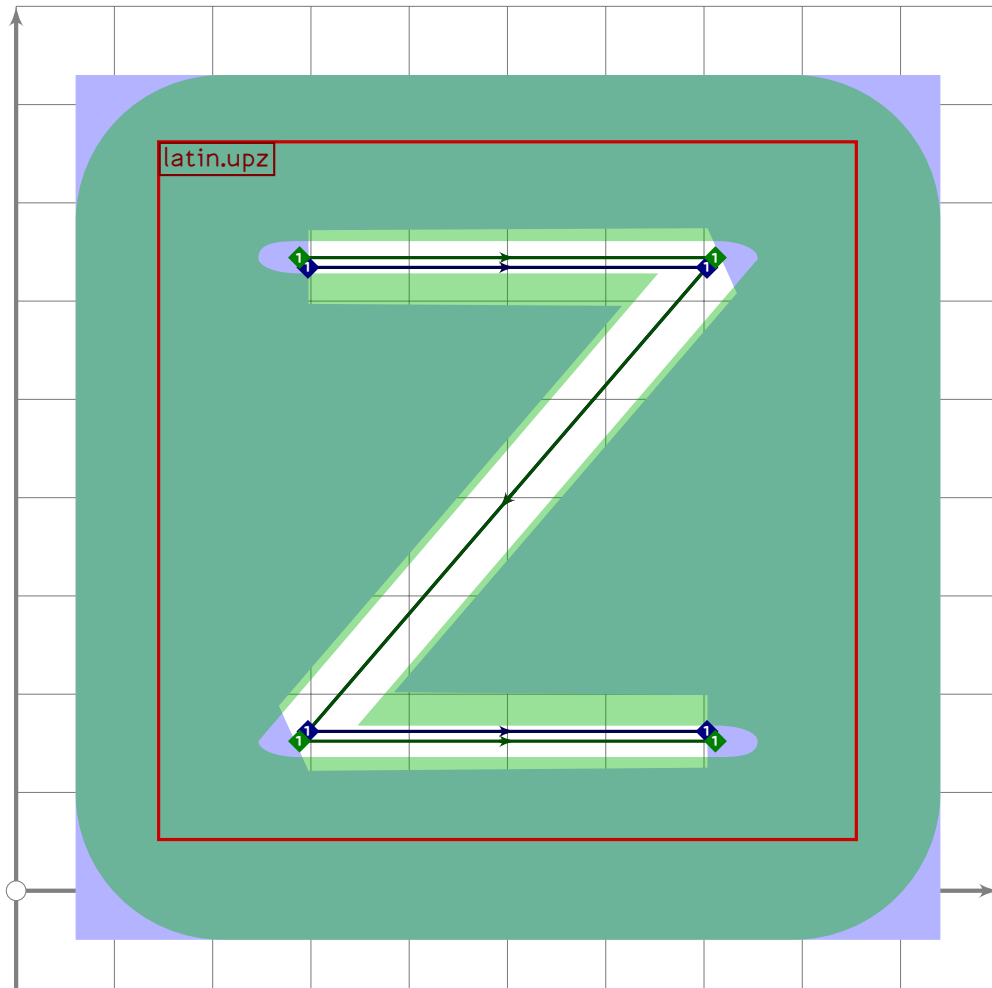
```



```

619 % Y
620 % BACKGROUND F1712
621 begint Suglyph("u1F188",136);
622 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upy);
623 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
624 tsu_render;
625 endtsuglyph;
626

```



```

627 % Z
628 % BACKGROUND F1712
629 beginsuglyph("u1F189";137);
630 tsu_xform(tsu_xf.sletter)(tsu_curve.latin.upz);
631 i:=1; forever: exitif unknown bp[i]; bo_size[i]:=107; i:=i+1; endfor;
632 tsu_render;
633 endsuglyph;
634
635 _____
636
637 endfont;
638
639 _____

```



# tsuku-f17.mp

```
1 %
2 % Unicode page F17 (Tsukurimashou-specific extensions) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36
37 % AUTODEPS
38 input accent.mp;
39 input buildkanji.mp;
40 input enclosed.mp;
41 input gradeone.mp;
42 input iching.mp;
43 input katakana.mp;
44 input latin.mp;
45 input leftrad.mp;
46
47 

---


48
```

## Combining Dots For I Ching

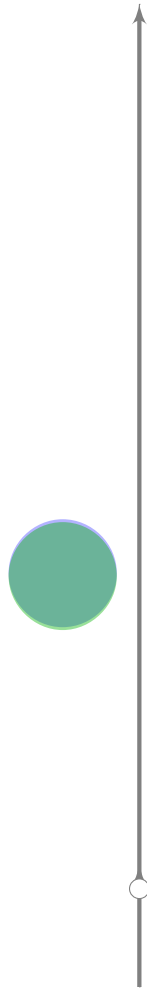
```
49 % COMBINING DOTS FOR I CHING
50
51 % WARNING changing rescale setting
52 tsu\_rescale\_native\_zero;
```



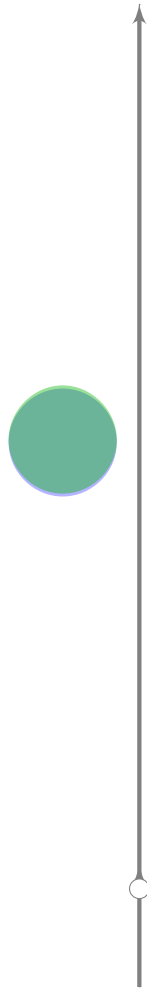
```
53  
54 begintsuglyph("ichingdot1.6",1);  
55 Fill tsu_curve.iching.dot(1,6) shifted (-1000,0);  
56 endsuglyph;
```



```
57  
58 begintsuglyph("ichingdot2.6";2);  
59 Fill tsu_curve.iching.dot(2,6) shifted (-1000,0);  
60 endsuglyph;
```



```
61  
62 begintsuglyph("ichingdot3.6",3);  
63 Fill tsu_curve.iching.dot(3,6) shifted (-1000,0);  
64 endsuglyph;
```



```
65  
66 begintsuglyph("ichingdot4.6";4);  
67 Fill tsu_curve.iching.dot(4,6) shifted (-1000,0);  
68 endsuglyph;
```



```
69  
70 begintsuglyph("ichingdot5.6",5);  
71 Fill tsu_curve.iching.dot(5,6) shifted (-1000,0);  
72 endsuglyph;
```

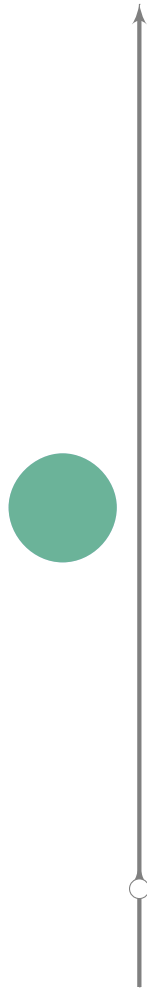


```
73  
74 begintsuglyph("ichingdot6.6";6);  
75 Fill tsu_curve.iching.dot(6,6) shifted (-1000,0);  
76 endsuglyph;
```

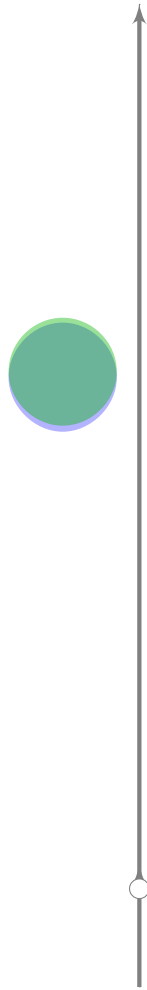


```
77  
78 begintsuglyph("ichingdot1.3";7);  
79 Fill tsu_curve.iching.dot(1,3) shifted (-1000,0);  
80 endsuglyph;
```





```
81  
82 begintsuglyph("ichingdot2.3",8);  
83 Fill tsu_curve.iching.dot(2,3) shifted (-1000,0);  
84 endsuglyph;
```



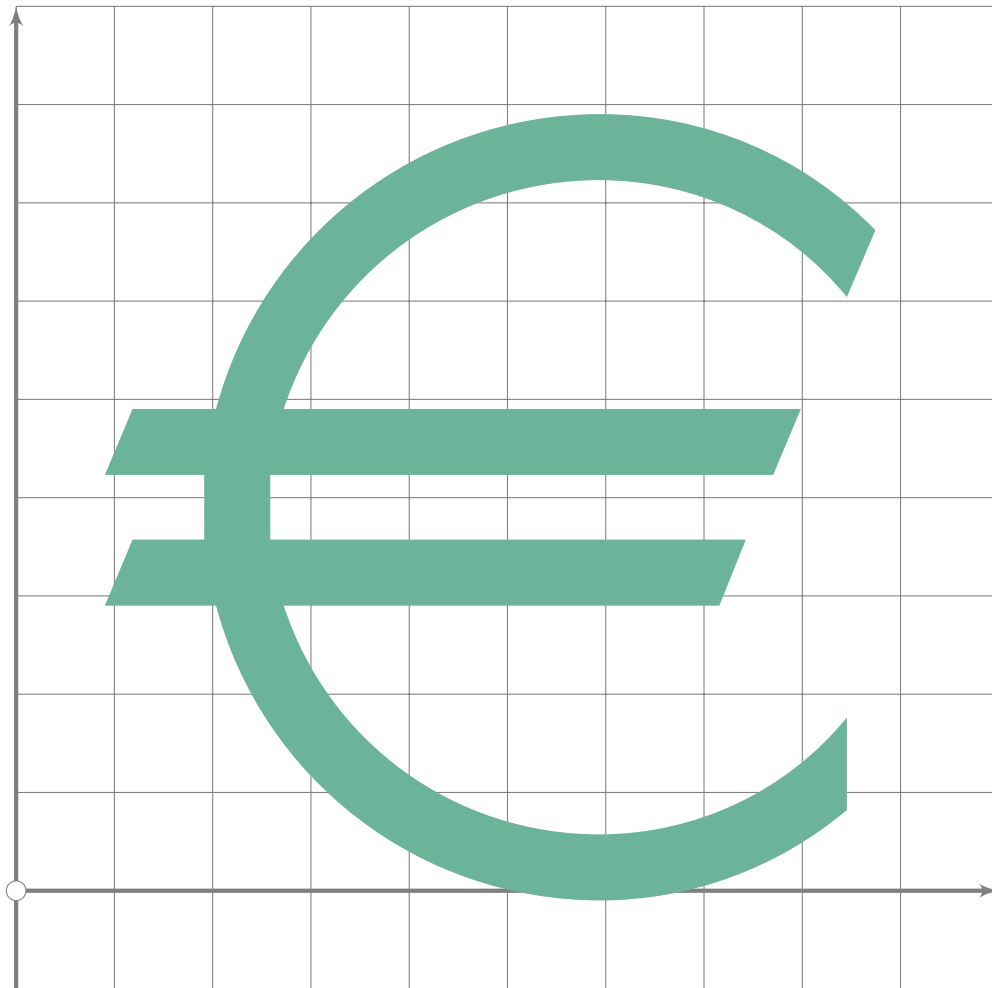
```
85
86 begintsuglyph("ichingdot3.3";9);
87 Fill tsu_curve.iching.dot(3,3) shifted (-1000,0);
88 endsuglyph;
89
90 % WARNING changing rescale setting
91 tsu_rescale_full;
92
93 

---


94
```

## Miscellaneous

```
95 % MISCELLANEOUS
```



```

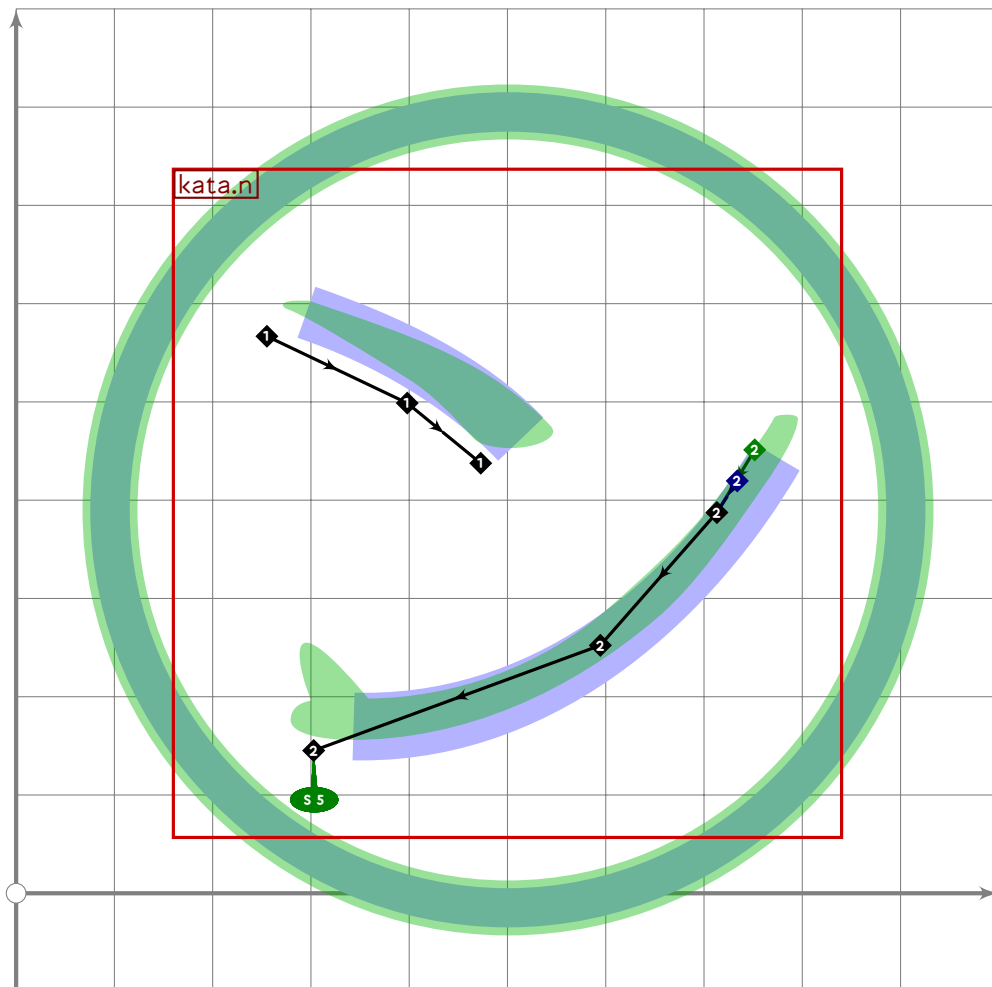
96
97 begintsuglyph("Euro.official";16);
98 z25=(fullcircle scaled 10) intersectionpoint ((0,0)-(10*dir 40));
99 z11=(0,-6);
100
101 z1=(0,6);
102 z2=(fullcircle scaled 12) intersectionpoint ((-10,1.5)-(0,1.5));
103 y3=y2;
104 z3-z4=whatever*(z25-z11);
105 z4=(-7.5,0.5);
106 z5=(fullcircle scaled 12) intersectionpoint ((-10,0.5)-(0,0.5));
107 z6=(-6,0);
108 z7=(fullcircle scaled 12) intersectionpoint ((-10,-0.5)-(0,-0.5));
109 y8=y7;
110 z8-z9=whatever*(z25-z11);
111 z9=(-7.5,-1.5);
112 z10=(fullcircle scaled 12) intersectionpoint ((-10,-1.5)-(0,-1.5));
113 z13=(fullcircle scaled 10) intersectionpoint ((0,0)-(10*dir 320));
114 z12=(fullcircle scaled 12) intersectionpoint (z13-(z13*(0,-3)));
115 z14=(0,5);
116 z15=(fullcircle scaled 10) intersectionpoint ((-10,-1.5)-(0,-1.5));

```

```

117 y16=-1.5;
118 z16=whatever[z11,z25];
119 y17=-0.5;
120 z17=whatever[z11,z25];
121 z18=(fullcircle scaled 10) intersectionpoint ((-10,-0.5)-(0,-0.5));
122 z19=(-5,0);
123 z20=(fullcircle scaled 10) intersectionpoint ((-10,0.5)-(0,0.5));
124 y21=0.5;
125 z21=whatever[z11,z25];
126 y22=1.5;
127 z22=whatever[z11,z25];
128 z23=(fullcircle scaled 10) intersectionpoint ((-10,1.5)-(0,1.5));
129 z24=(0,5);
130 z26=(fullcircle scaled 12) intersectionpoint (z11-1.5[z11,z25]);
131 path euro;
132 euro:=z1..z2-z3-z4-z5..z6..z7-z8-z9-z10..z11..z12-z13..
133   z14..z15-z16-z17-z18..z19..z20-z21-z22-z23..z24..z25-z26..cycle;
134 dangerousFill euro scaled (400/6) shifted (centre_pt*90*right);
135 endtsuglyph;
136

```



```

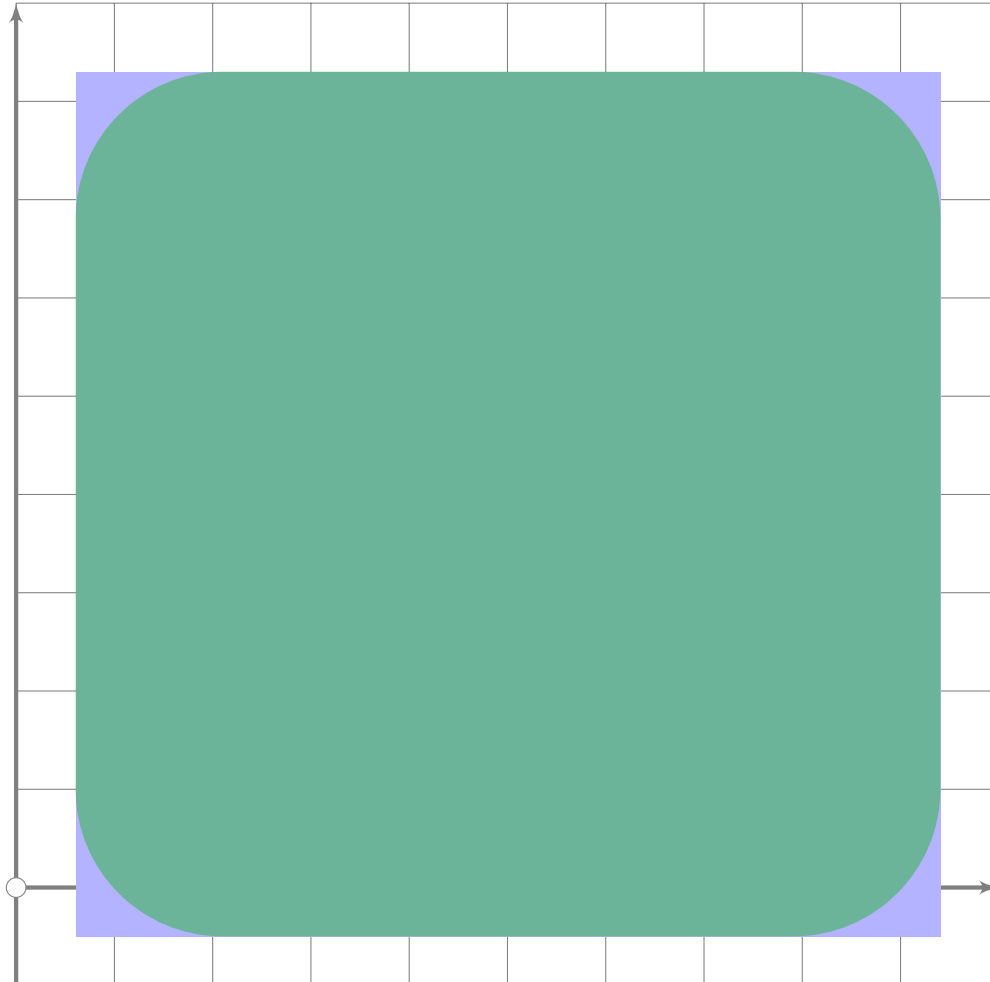
137 % circled "katakana n"

```

```

138 begintsuglyph("uF1711";17);
139 tsu_curve.circle.single;
140 tsu_xform(tsu_xf.circled)(tsu_curve.kata.n);
141 tsu_render_in_circle(tsu_xf.cbound);
142 endsuglyph;
143

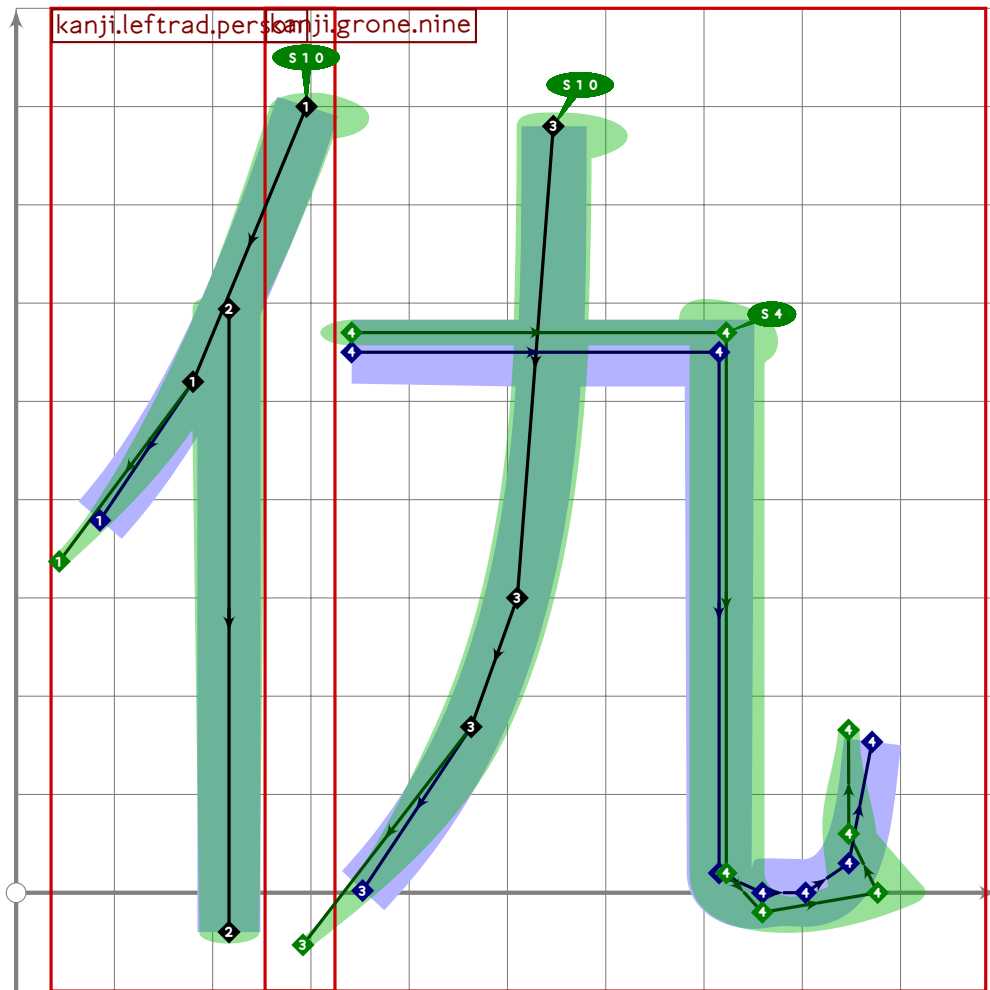
```



```

144 % background for use with enclosed alpha
145 begintsuglyph("squarebackground";18);
146 if sharp_corners:
147     dangerousFill (60,830)-(60,-50)-(940,-50)-(940,830)-cycle;
148 else:
149     path crnp;
150     crnp:=(60*1.5*tsu_punct_size,830){left}..
151         {down}(60,830-1.5*tsu_punct_size);
152     dangerousFill crnp-
153         (crnp rotatedaround (centre_pt,90))-
154         (crnp rotatedaround (centre_pt,180))-
155         (crnp rotatedaround (centre_pt,270))-cycle;
156 fi;
157 endsuglyph;
158

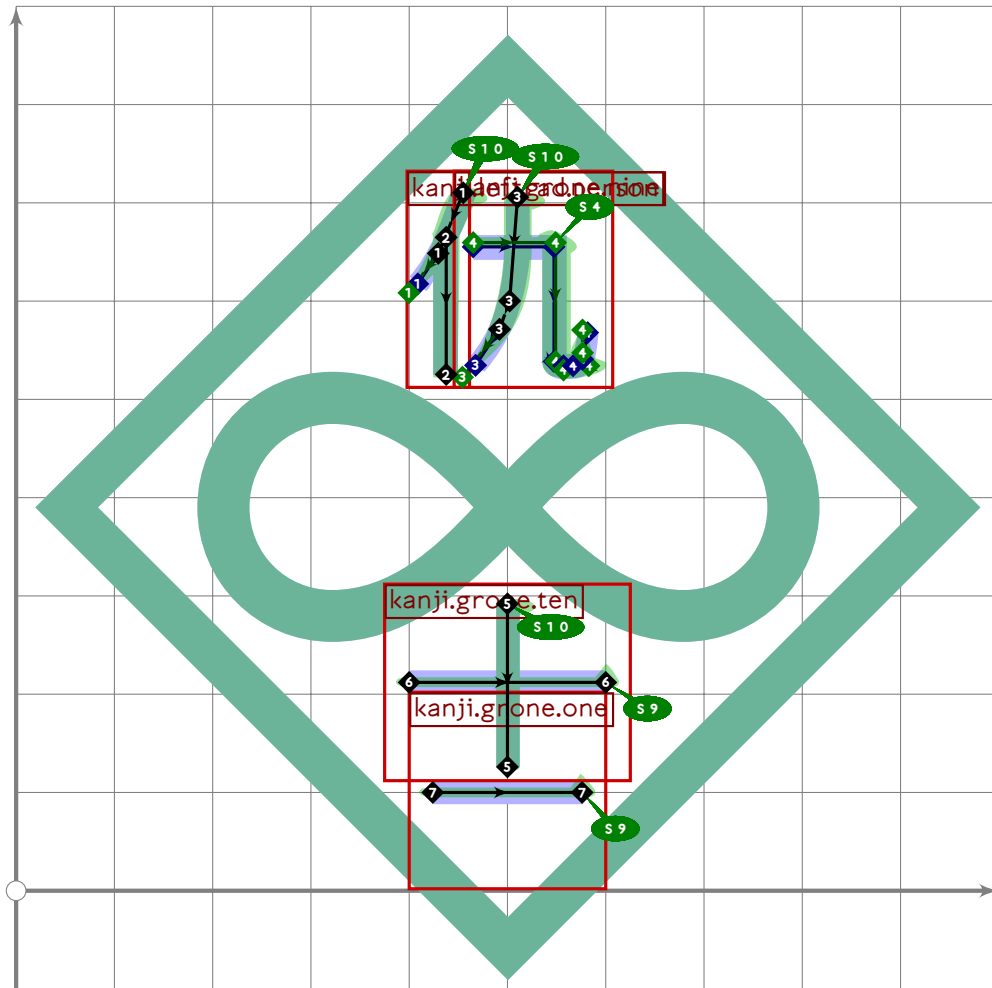
```



```

159 % Individual Eleven
160 vardef tsu_curve.kanji.reference.enemy =
161   add_proof_box("kanji.reference.enemy");
162   build_kanji.lr(300,20)
163     (tsu_curve.kanji.leftrad.person)
164     (tsu_curve.kanji.grone.nine);
165 enddef;

```



```

166 begintuglyph("individualeleven",19);
167 numeric x[],y[];
168 z3=z7=centre_pt;
169 z3-z1=z5-z3;
170 z3-z2=z4-z3;
171 z3-z8=z6-z3;
172 y1=y3;
173 y2=y6;
174 x2=x8;
175 y2-y1=x2-x1;
176 x3-x1=290;
177 x2-x1=111;
178 save default_nib;
179 path default_nib;
180 path iepa,iepb;
181 default_nib=fix_nib(53,53,0);
182 pen_stroke()(z1{up}..z2{right}..z3..z4{right}..{up}z5)(iepa);
183 dangerousFill iepa;
184 % do this in between the halves of the infinity, to work around a bug
185 dangerousFill unitsquare shifted (-0.5,-0.5) scaled 680
186 rotated 45 shifted centre_pt;

```

```

187 dangerousFill reverse unitsquare shifted (-0.5,-0.5) scaled 590
188   rotated 45 shifted centre_pt;
189 pen_stroke()(z5{up}..z6{left}..z7..z8{left}..{up}z1)(iepb);
190 dangerousFill iepb;
191 build_kanji.sscale(scaled 0.22 shifted (0,230))
192   (tsu_curve.kanji.reference.enemy);
193 build_kanji.sscale(xyscaled (0.25,0.20) shifted (0,-180))
194   (tsu_curve.kanji.grone.ten);
195 build_kanji.sscale(scaled 0.20 shifted (0,-290))
196   (tsu_curve.kanji.grone.one);
197 for i=1 upto sp-1: bo_size[i]:=35; endfor;
198   tsu_render;
199 endtsuglyph;
200
201
202

```

---

## Tomoe Ornaments

```

203 % TOMOE ORNAMENTS
204
205 vardef spiral_interpolate(expr start_cart,end_cart,ckpts,loops) =
206   begingroup
207     pair start_pol,end_pol,inter_pol;
208
209     start_pol:=(abs(start_cart),angle(start_cart));
210     end_pol:=(abs(end_cart),angle(end_cart));
211     if (ypart start_pol)-(ypart end_pol)>180:
212       start_pol:=start_pol*(0,-360);
213     fi;
214     if (ypart end_pol)-(ypart start_pol)>180:
215       end_pol:=end_pol*(0,-360);
216     fi;
217     end_pol:=end_pol*(0,360*loops);
218     for i=1 upto ckpts:
219       begingroup
220         inter_pol:=(i/(ckpts*1))[start_pol,end_pol];
221         ((dir ypart inter_pol)*xpart inter_pol)
222       endgroup
223     if i<ckpts: .. fi
224   endfor
225 endgroup
226 enddef;
227
228 vardef make_tomoe(expr k,ir,or,hr,phase,
229   tail_start,tail_advance,ckpts,do_flip) =
230   begingroup
231     path tomoe;

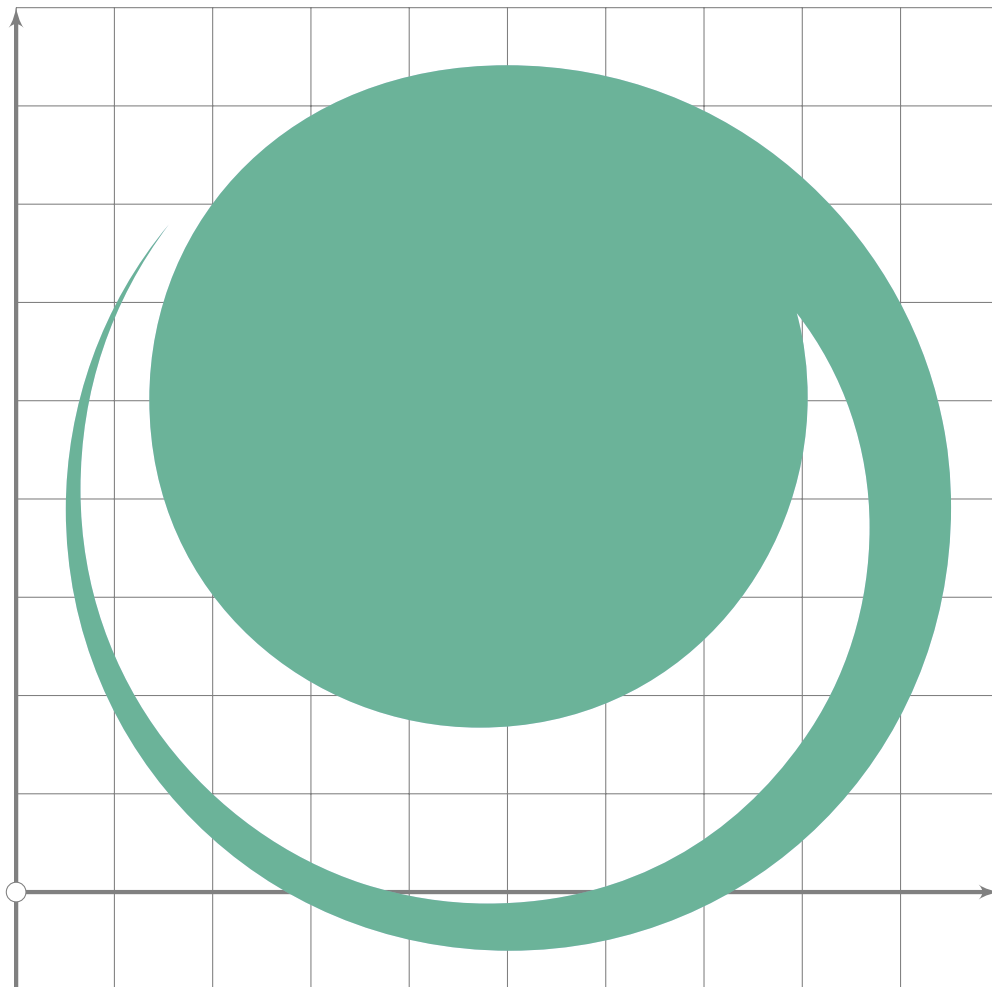
```



```

232 pair tail_tip;
233
234 loops:=if k=1: 1 else: 0 fi;
235 tail_tip:=(dir (tail_advance-360/k))*or;
236 tomoe:=(subpath (tail_start/90,3) of (right..up..left..down..cycle))
237   scaled hr shifted (ir*hr,0);
238 tomoe:=tomoe{curl 1}..
239   spiral_interpolate(point infinity of tomoe,tail_tip,ckpts,loops)..
240   {curl 1}tail_tip{curl 1}..
241   spiral_interpolate(tail_tip,point 0 of tomoe,ckpts,loops)..cycle;
242
243 if do_flip: tomoe:=tomoe xscaled -1; fi;
244
245 for i=1 upto k:
246   dangerousFill tomoe rotated (phase*i*360/k) shifted centre_pt;
247   endfor;
248 endgroup;
249 enddef;
250

```

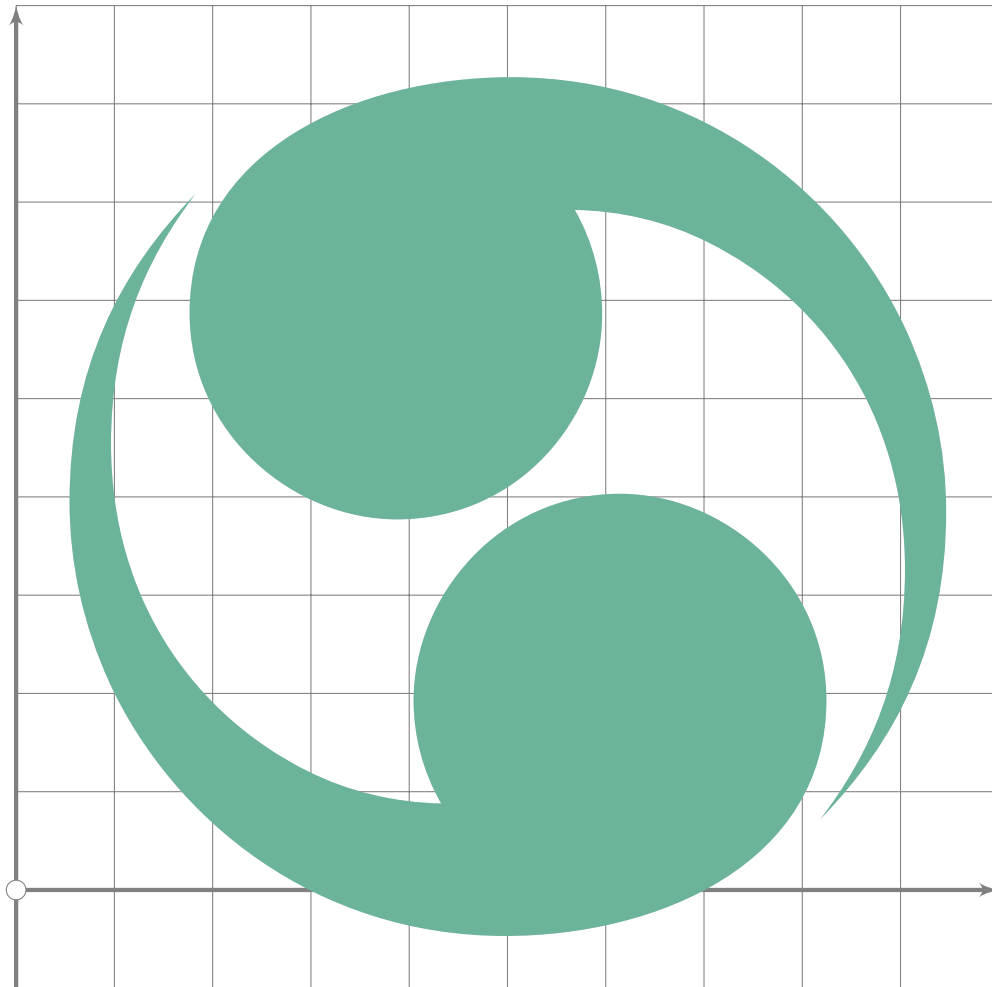


```

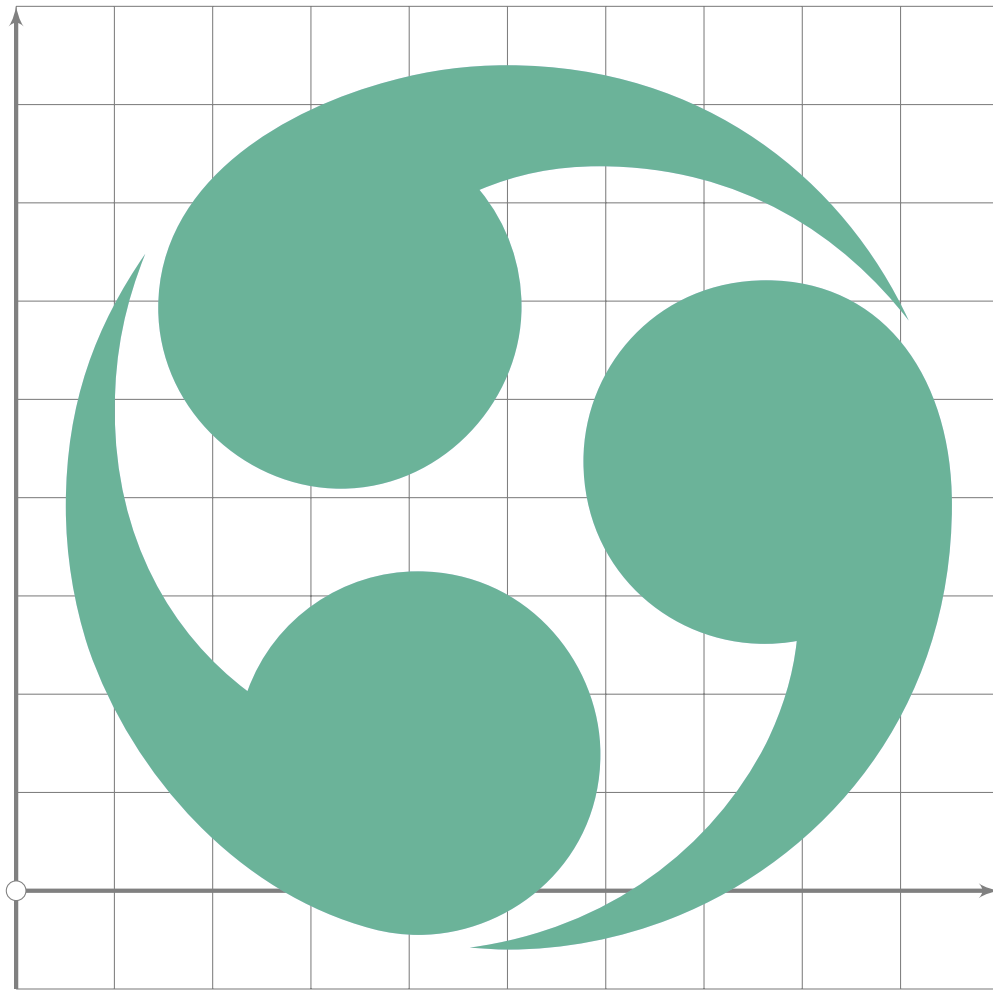
251 % hitotsudomoe ornament
252 begintsuglyph("tomoe1",49);

```

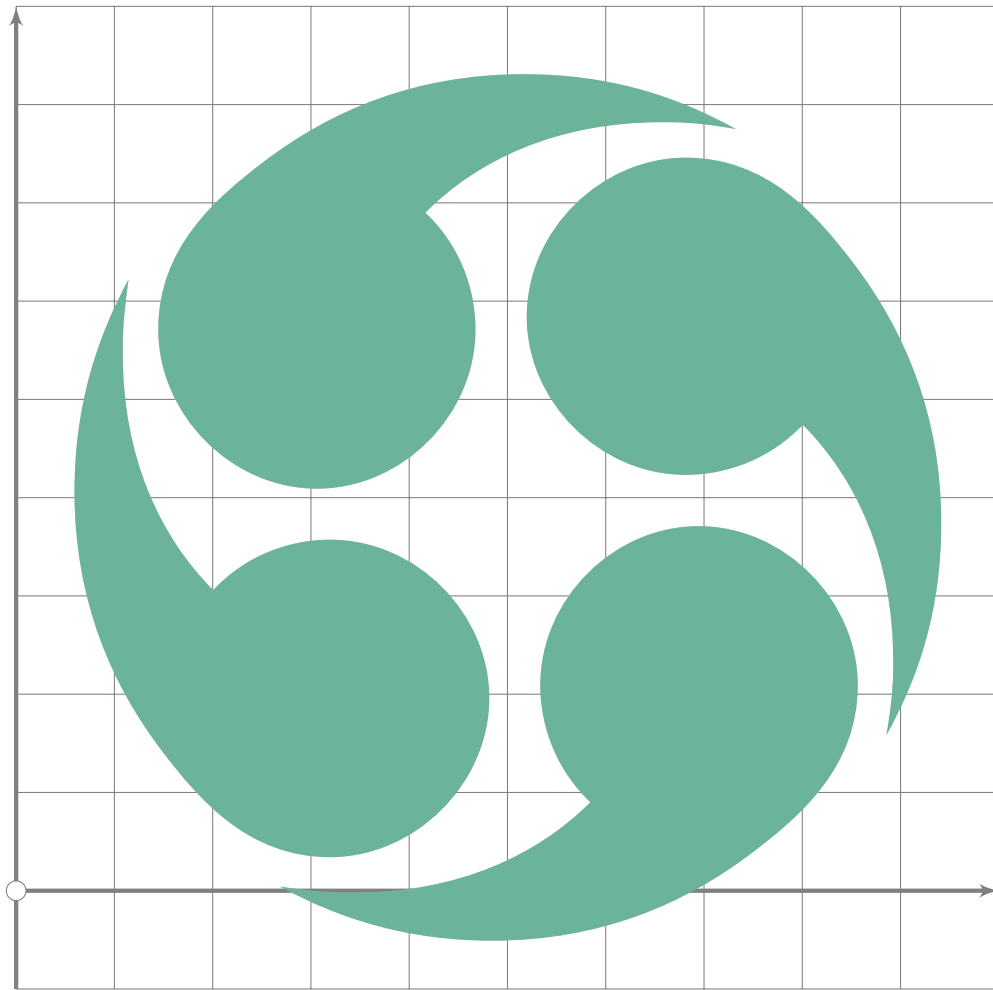
```
253 make_tomoe(1,219,450,335,105,0,35,6,false);  
254 endsuglyph;  
255
```



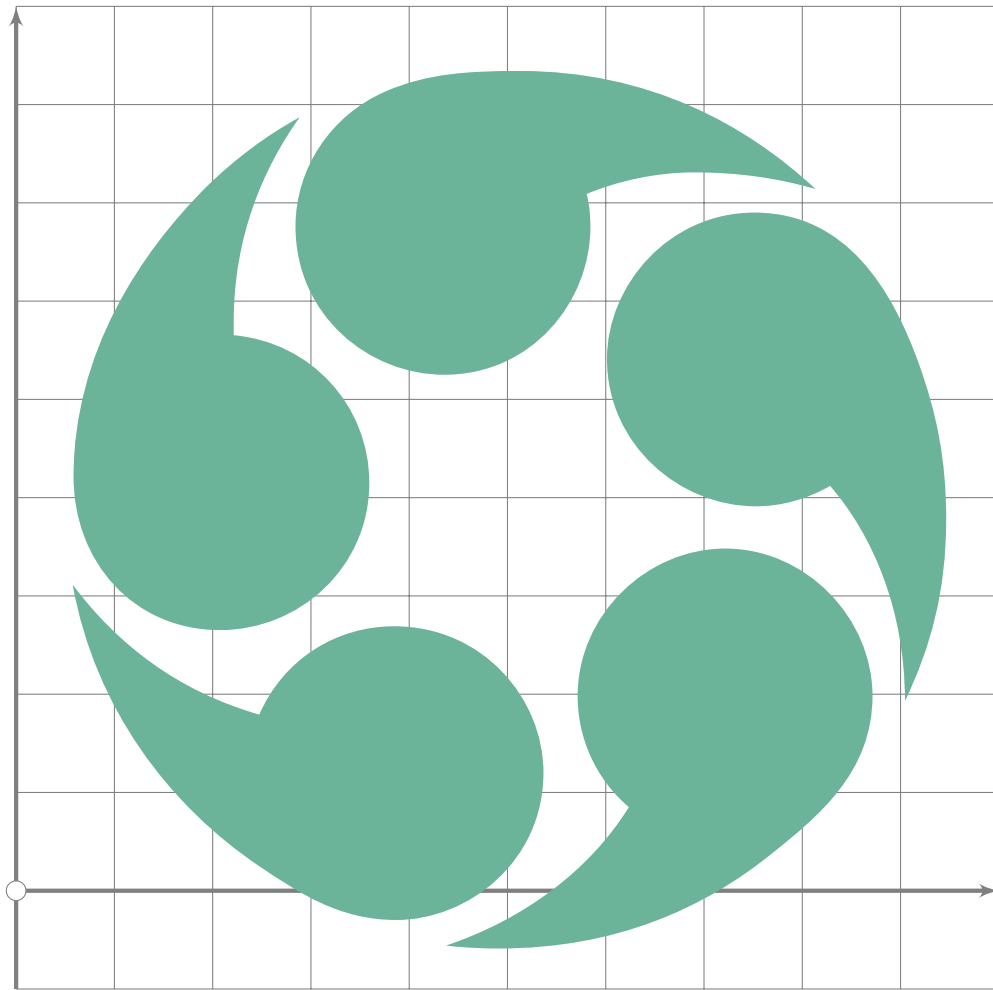
```
256 % futatsudomoe ornament  
257 beginsuglyph("tomoe2",50);  
258 make_tomoe(2,17,450,210,120,15,15,4,false);  
259 endsuglyph;  
260
```



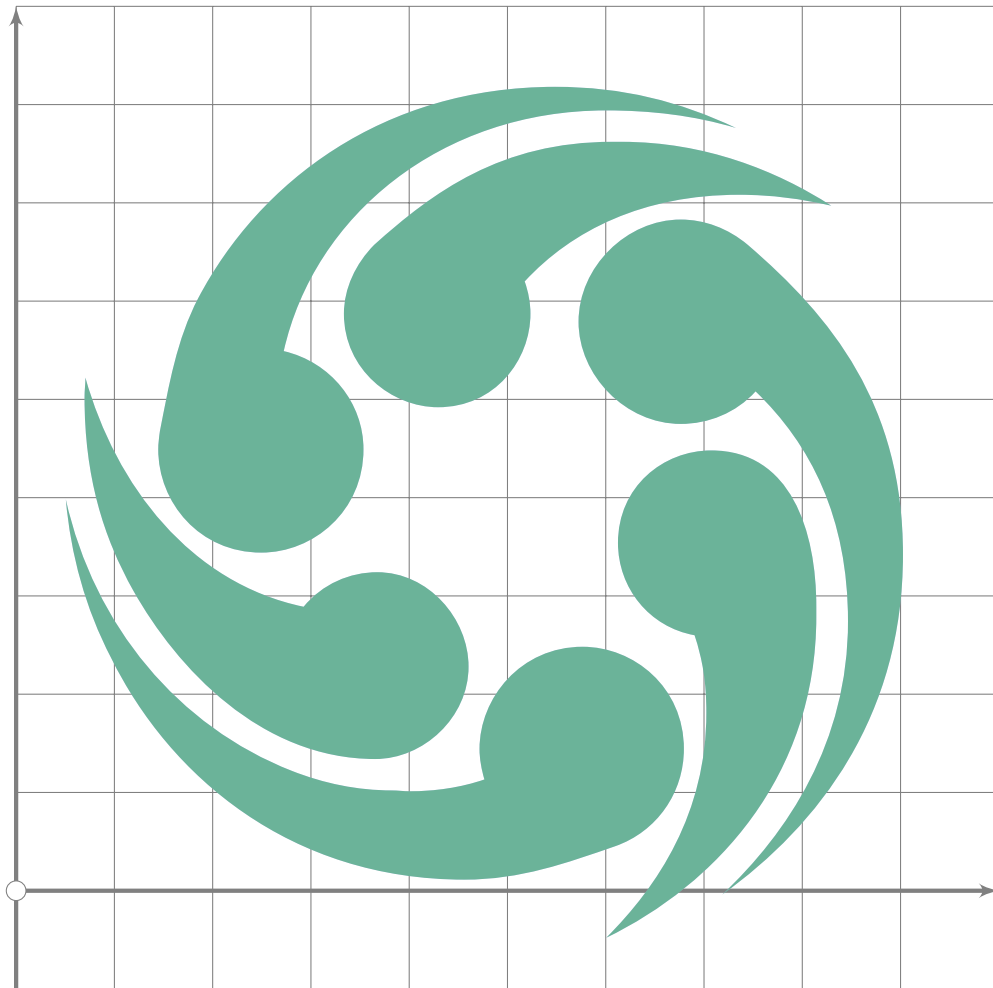
```
261 % mitsudomoe ornament  
262 begintsuglyph("tomoe3",51);  
263 make_tomoe(3,81,450,185,130,5,15,3,false);  
264 endsuglyph;  
265
```



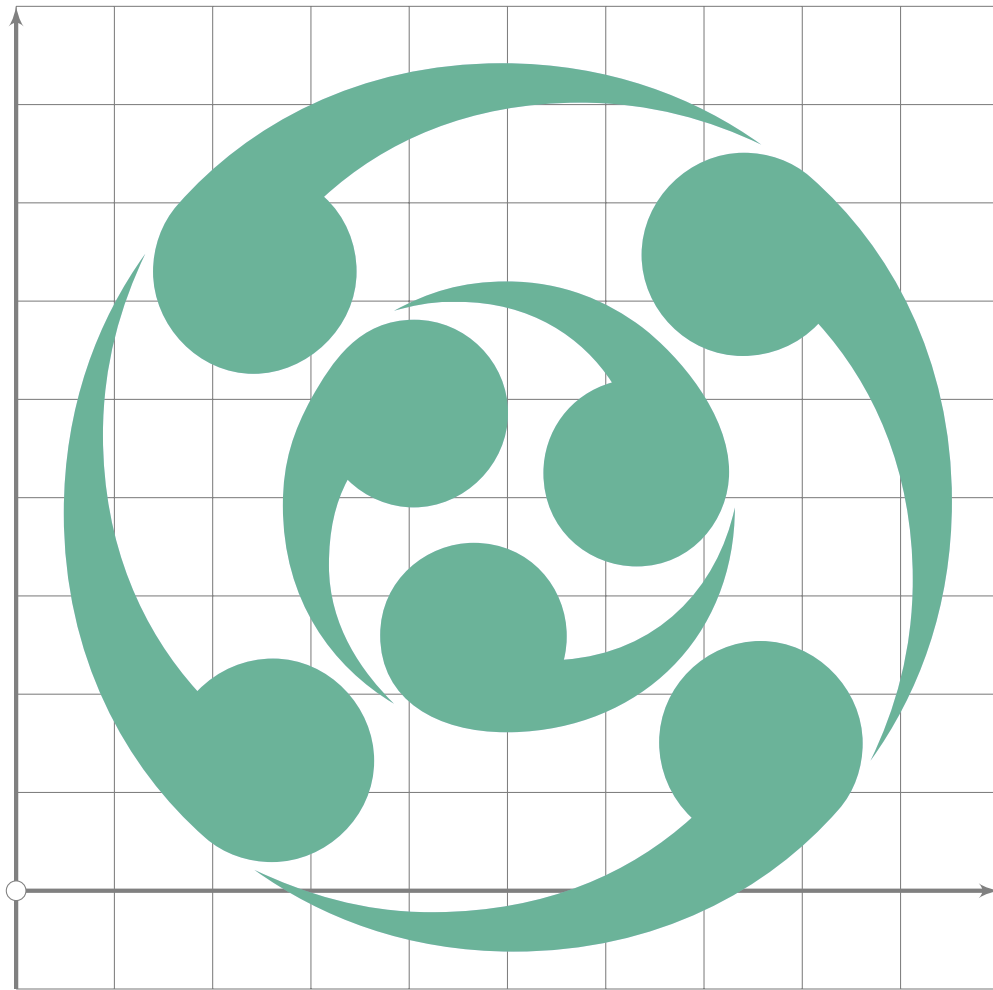
```
266 % yotsudomoe ornament
267 begintsuglyph("tomoe4",52);
268 make_tomoe(4,104,450,162,47,12,12,4,false);
269 endsuglyph;
270
```



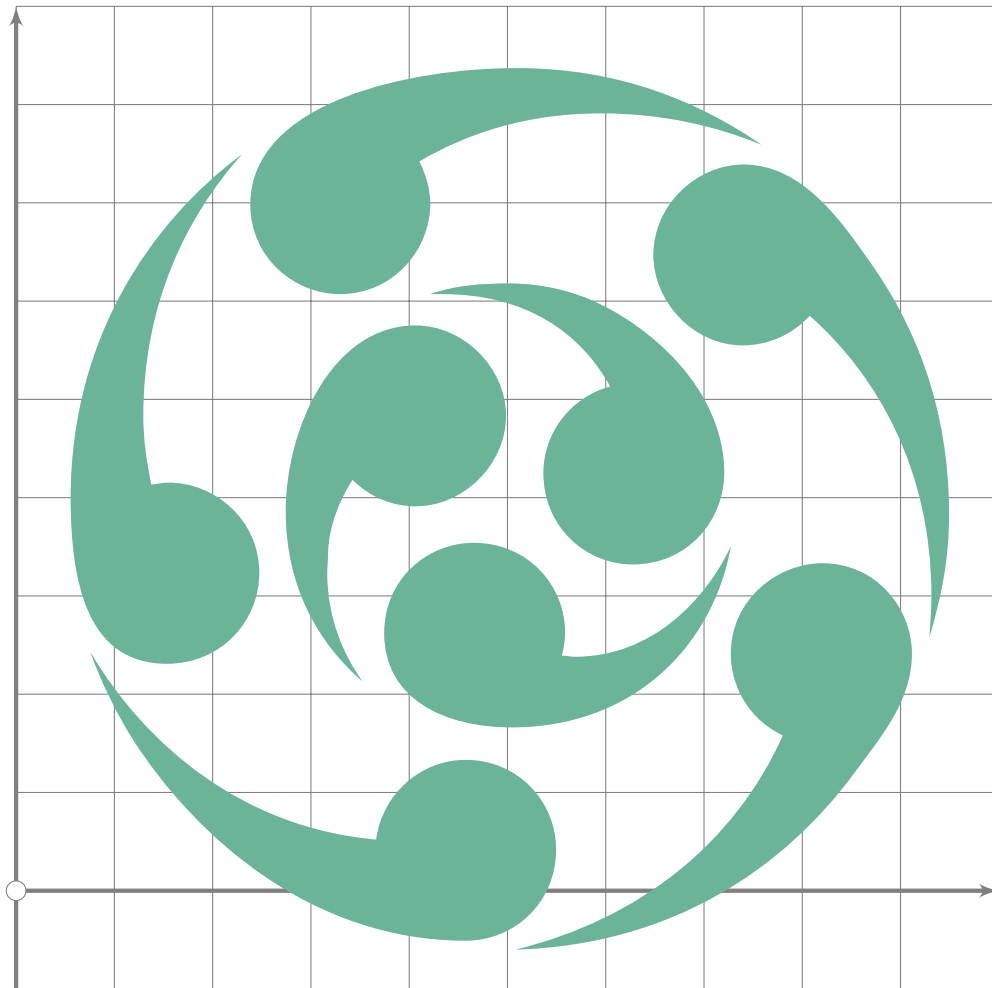
```
271 % 5-tsudomoe ornament
272 begintsuglyph("tomoe5",53);
273 make_tomoe(5,143,450,150,31,10,15,3,false);
274 endsuglyph;
275
```



```
276 % 6-tsudomoe ornament
277 begint Suglyph("tomoe6",54);
278 make_tomoe(3,154,450,104,47,2,12,4,false);
279 make_tomoe(3,115,450,95,110,22,53,4,false);
280 endsuglyph;
281
```



```
282 % 7-tsudomoe ornament
283 begintsuglyph("tomoe7",55);
284 make_tomoe(4,248,450,104,47,2,8,4,false);
285 make_tomoe(3,40,231,95,75,15,15,4,true);
286 endsuglyph;
287
```



```
288 % 8-tsudomoe ornament
289 begintsuglyph("tomoe8",56);
290 make_tomoe(5,260,450,92,47,2,8,4,false);
291 make_tomoe(3,40,231,92,75,15,25,4,true);
292 endsuglyph;
293
294 

---

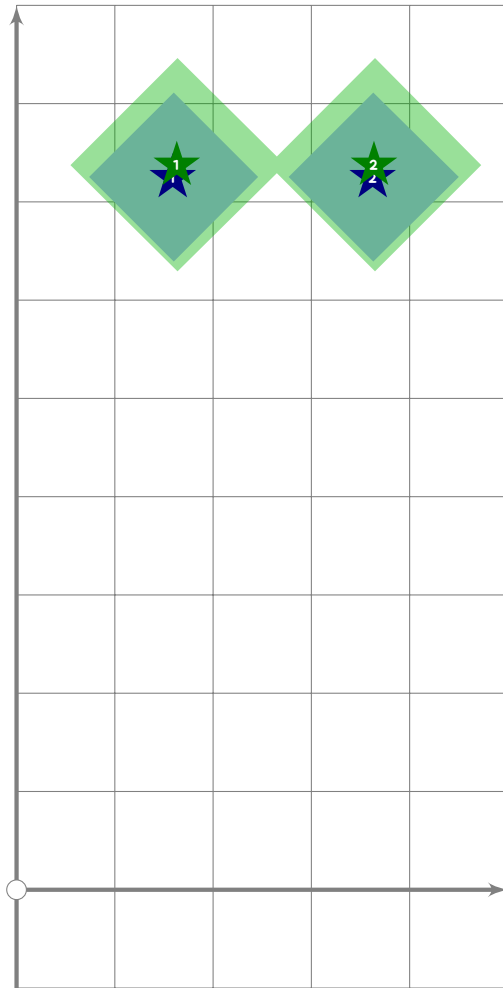

295
```

## Heavy Metal Umlaut

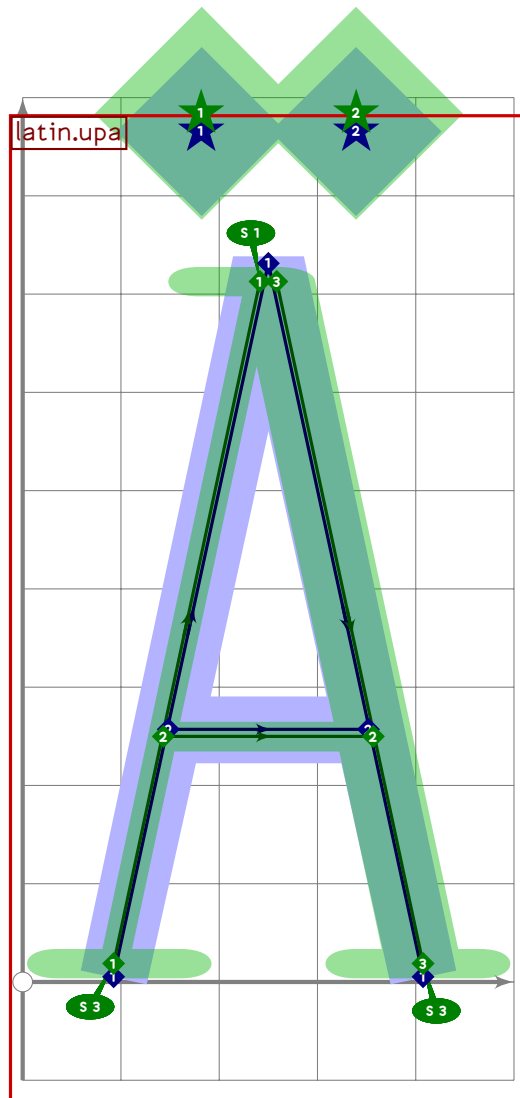
```
296 % HEAVY METAL UMLAUT
297
298 % WARNING, setting rescale
299 tsu_rescale_half;
300
```



latin.lowe



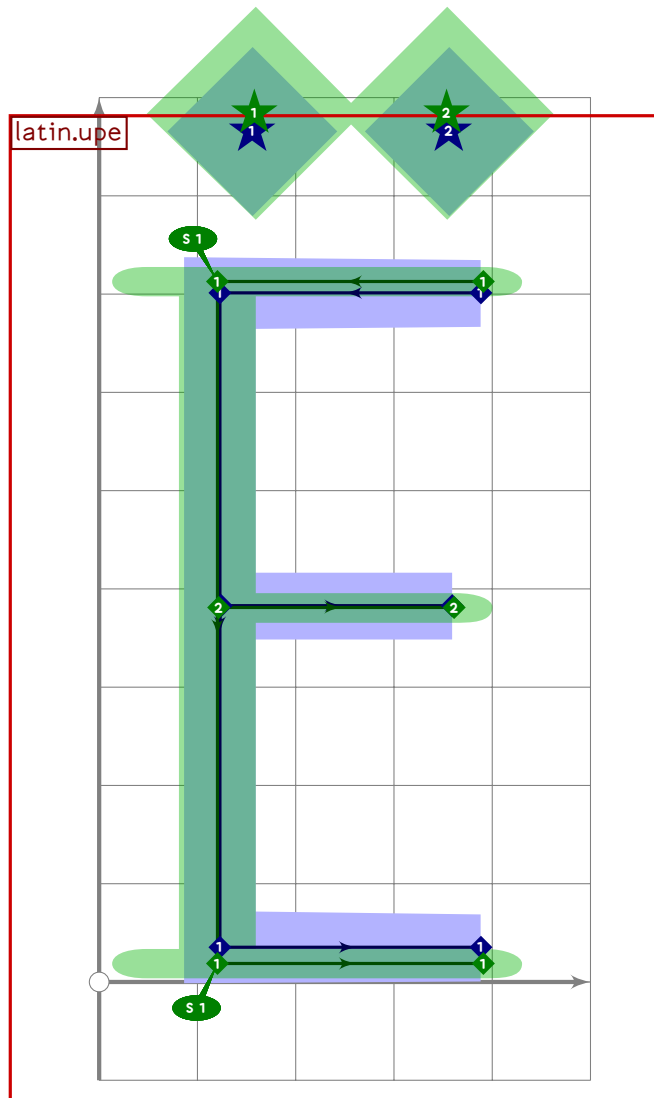
```
301 % naked heavy metal umlaut (use an invisible e to get spacing right)
302 begintsuglyph("dieresis.hmu",64);
303 tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lowe);
304 bo_size1:=0;
305 tsu_render;
306 endsuglyph;
307
```



```

308 % A with heavy metal umlaut
309 begintsuglyph("Adieresis.hmu",65);
310 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upa);
311 tsu_render;
312 endsuglyph;
313

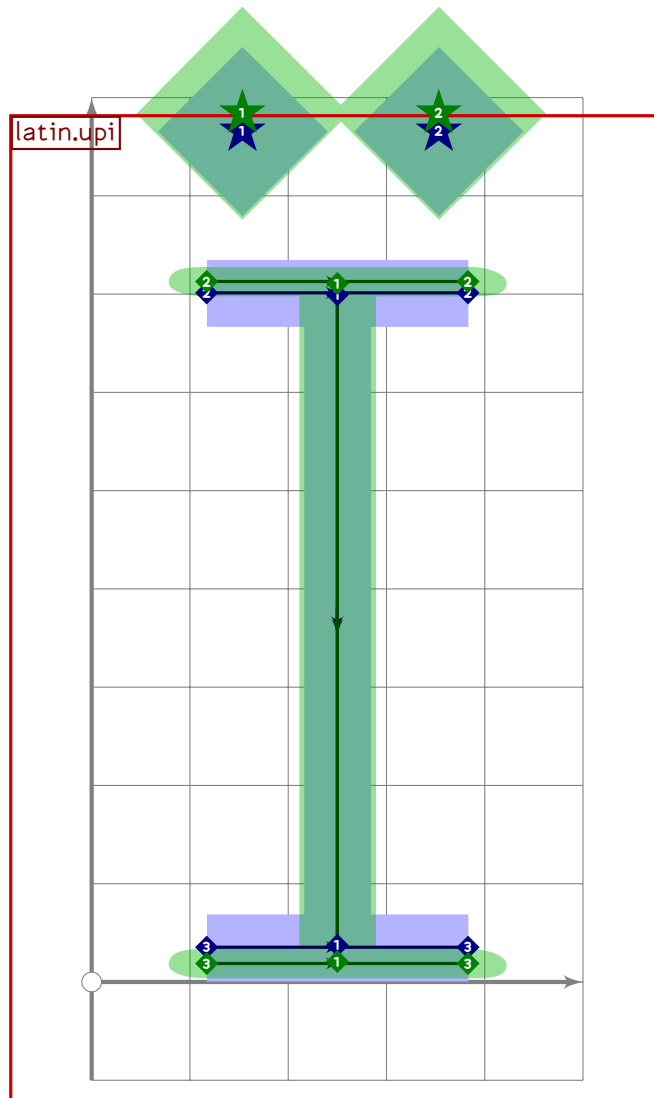
```



```

314 % E with heavy metal umlaut
315 begintsuglyph("Edieresis.hmu",66);
316 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upe);
317 tsu_render;
318 endsuglyph;
319

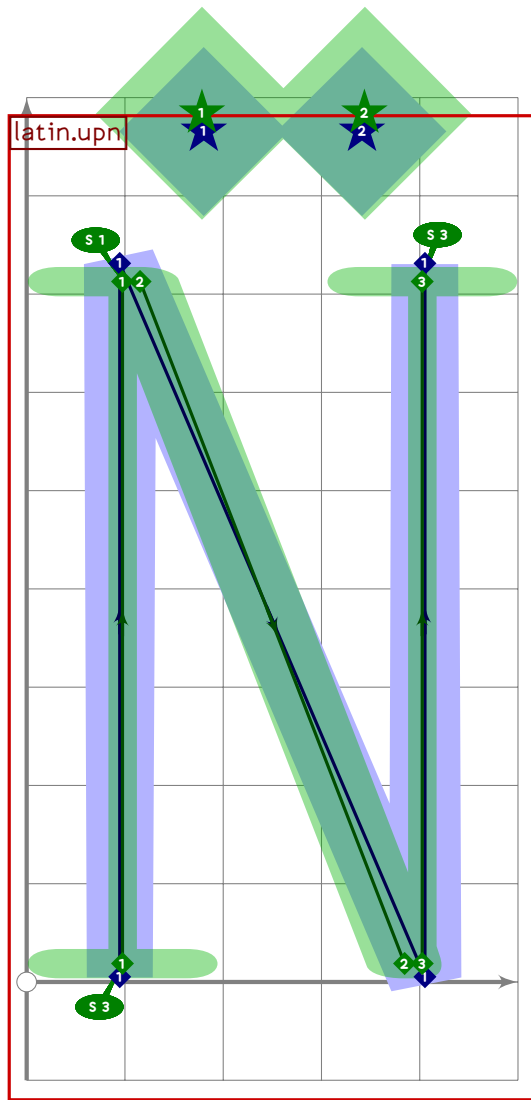
```



```

320 % I with heavy metal umlaut
321 begintsuglyph("Idieresis.hmu",67);
322 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upi);
323 lcblob1:=lcblob1 shifted (15*left);
324 lcblob2:=lcblob2 shifted (15*left);
325 tsu_render;
326 endtsuglyph;
327

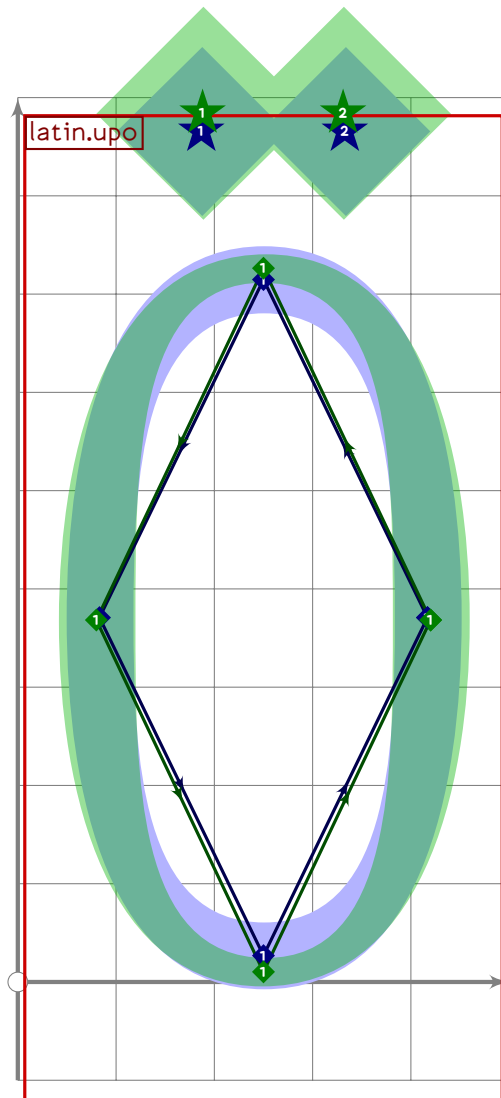
```



```

328 % N with heavy metal umlaut
329 begintsuglyph("Ndieresis.hmu",68);
330 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upn);
331 tsu_render;
332 endsuglyph;
333

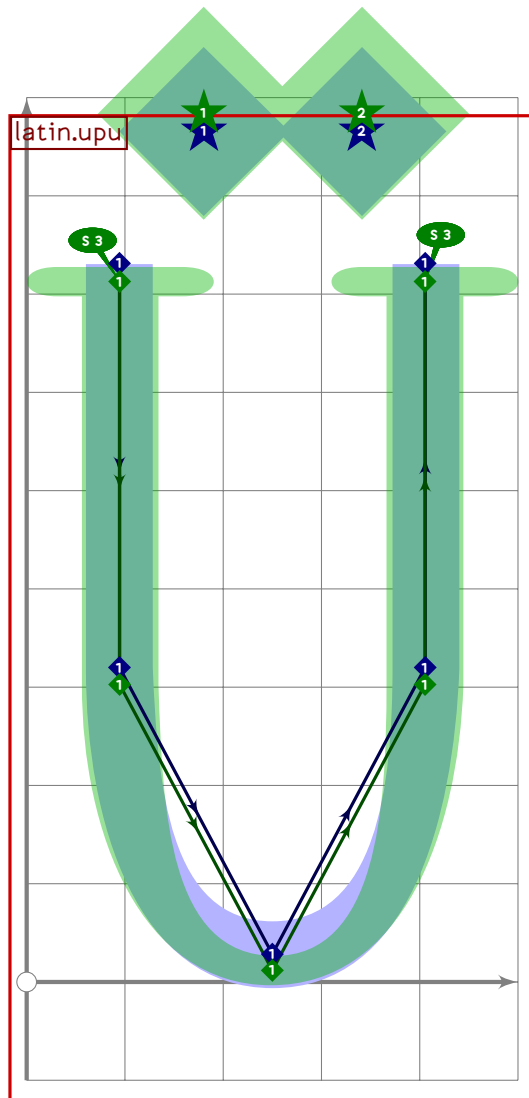
```



```

334 % O with heavy metal umlaut
335 begintsuglyph("Odieresis.hmu",69);
336 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upo);
337 tsu_render;
338 endsuglyph;
339

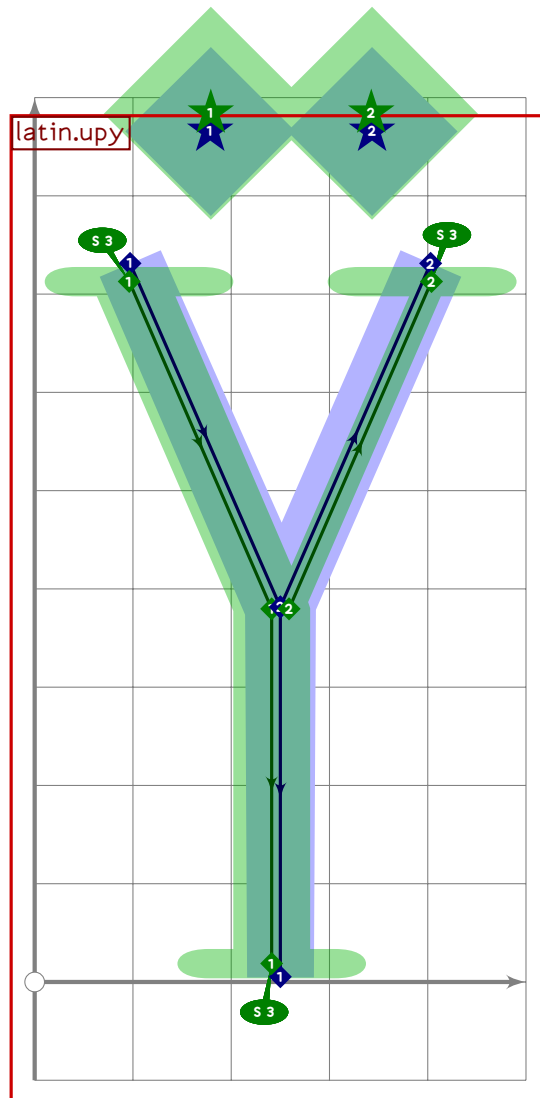
```



```

340 % U with heavy metal umlaut
341 begintsuglyph("Udieresis.hmu";70);
342 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upu);
343 tsu_render;
344 endsuglyph;
345

```



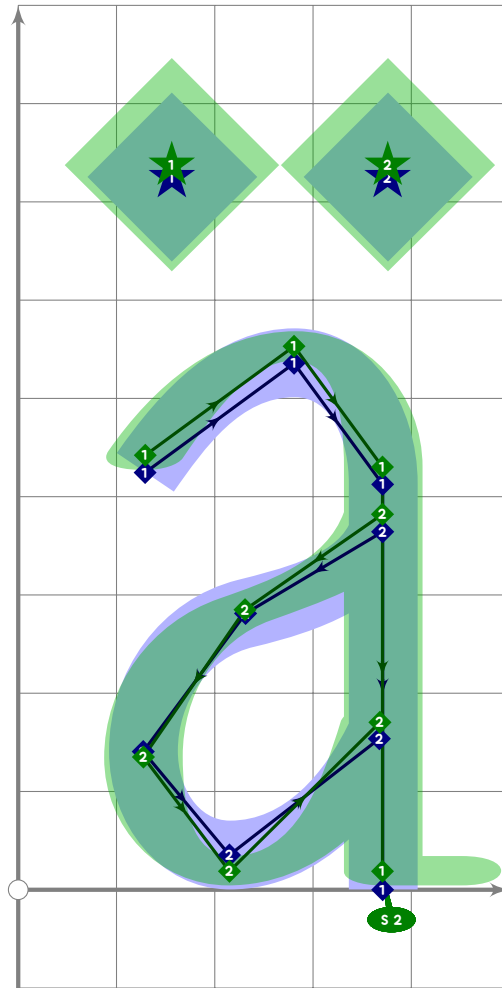
```

346 % Y with heavy metal umlaut
347 begintsuglyph("Ydieresis.hmu",71);
348 tsu_accent.capital(heavy_metal_umlaut)(tsu_curve.latin.upy);
349 tsu_render;
350 endsuglyph;
351

```

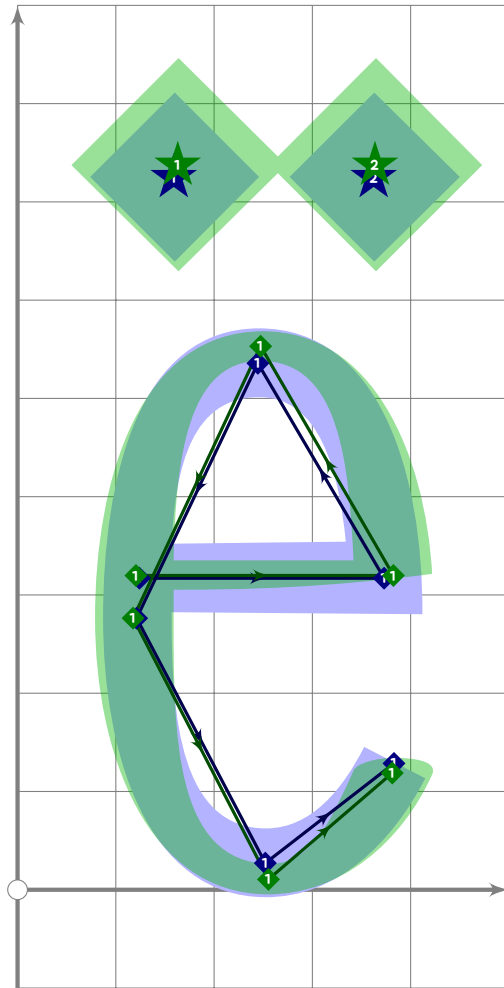


latin.low



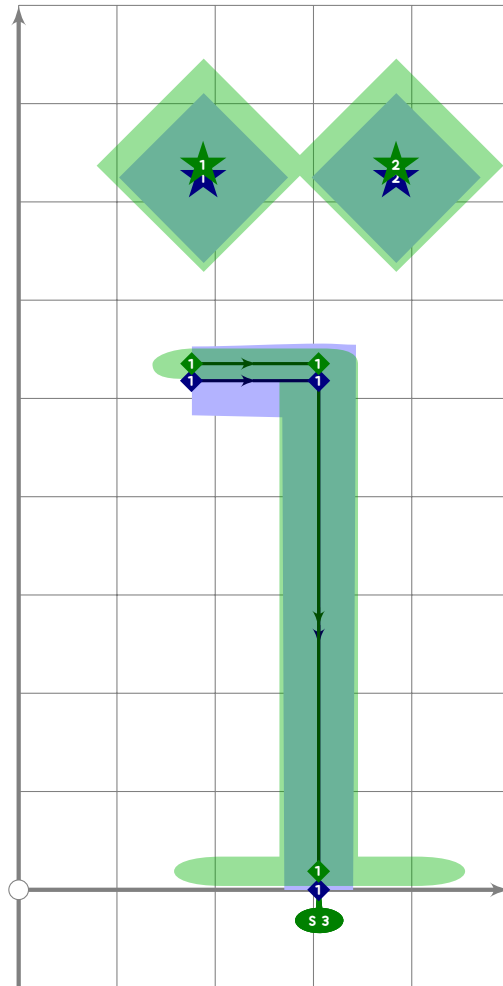
```
352 % a with heavy metal umlaut
353 begint Suglyph("adieresis.hmu",72);
354 tsu_accent.heavy_metal_umlaut(tsu_curve.latin.low);
355 tsu_render;
356 endtsuglyph;
357
```

latin.lowe



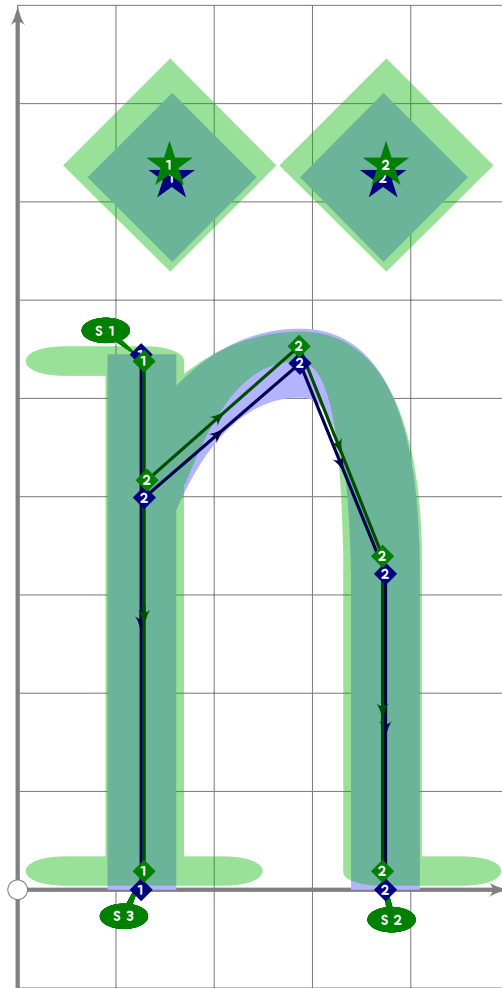
```
358 % e with heavy metal umlaut
359 begintsuglyph("edieresis.hmu",73);
360 tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lowe);
361 tsu_render;
362 endsuglyph;
363
```

latin.lowi



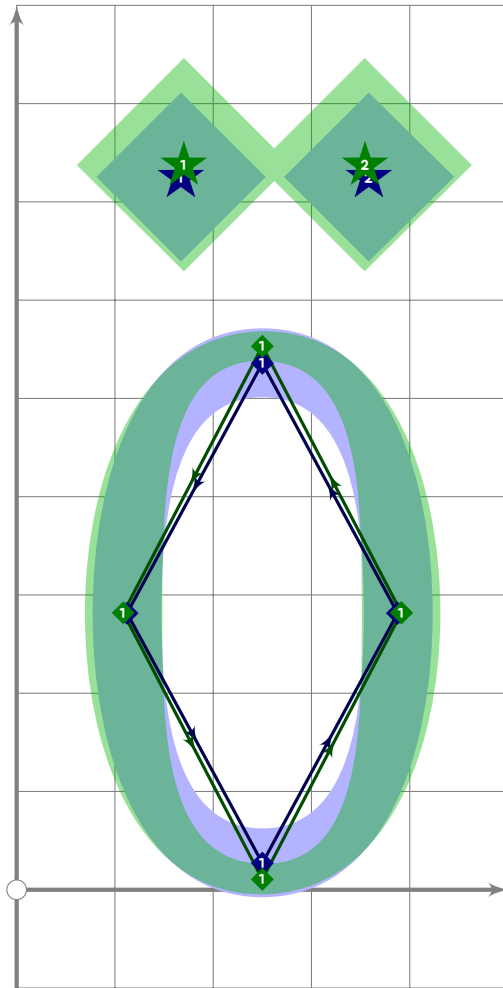
```
364 % i with heavy metal umlaut
365 begint Suglyph("idieresis.hmu",74);
366 tsu_accent.heavy_metal_umlaut(
367     tsu_curve.latin.lowi;
368     bpl:=bpl shifted (70*right);
369     path lcblob[];
370 );
371 lcblob1:=lcblob1 shifted (50*right);
372 lcblob2:=lcblob2 shifted (50*left);
373 tsu_render;
374 endtsuglyph;
375
```

latin.lown



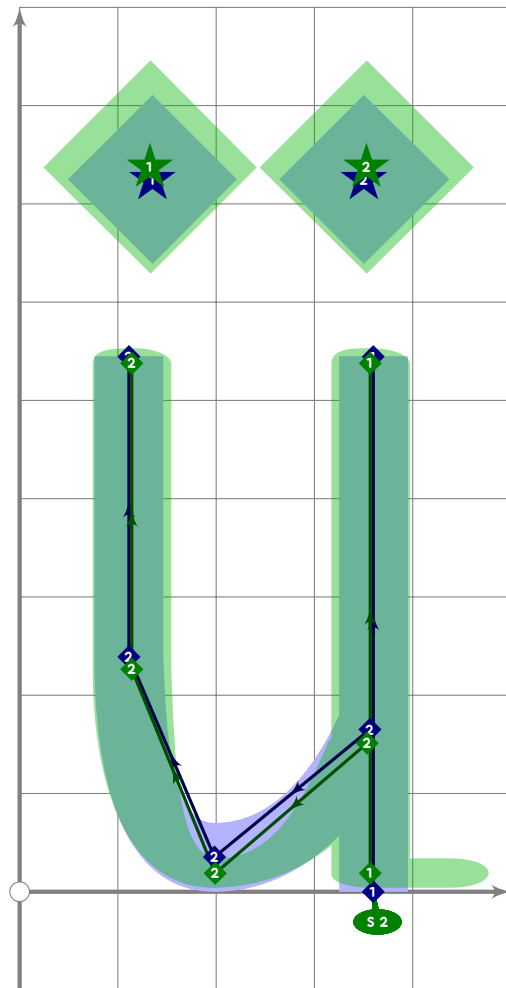
```
376 % n with heavy metal umlaut
377 beginsuglyph("ndieresis.hmu",75);
378   tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lown);
379   tsu_render;
380 endsuglyph;
381
```

latin.lowo

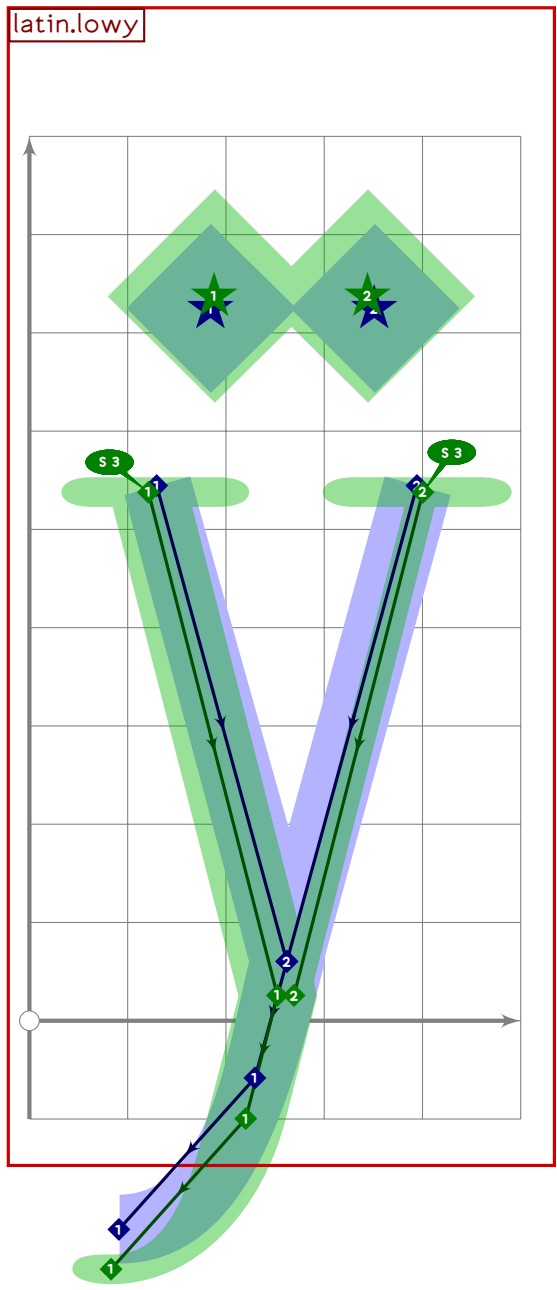


```
382 % o with heavy metal umlaut
383 begintsuglyph("odieresis.hmu",76);
384 tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lowo);
385 tsu_render;
386 endsuglyph;
387
```

latin.lowu



```
388 % u with heavy metal umlaut
389 begintsuglyph("udieresis.hmu",77);
390 tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lowu);
391 lcblob1=lcblob1 shifted (-60,0);
392 lcblob2=lcblob2 shifted (-60,0);
393 tsu_render;
394 endsuglyph;
395
```



```

396 % y with heavy metal umlaut
397 begint Suglyph("ydieresis.hmu";78);
398   tsu_accent.heavy_metal_umlaut(tsu_curve.latin.lowy);
399   tsu_render;
400 endsuglyph;
401
402 _____
403

```

## Genji-Mon

```

404 % GENJI-MON
405
406 % WARNING, setting rescale

```

```

407 tsu_rescale_full;
408
409 genji_grid:=150;
410 if unknown genji_hw:
411   genji_hw:=tsu_brush_max/1.5;
412   if genji_hw>0.85: genji_hw:=0.85; fi;
413 fi;
414 if genji_outline: genji_hw:=1-genji_hw; fi;
415
416 vardef dflt_genji_coords =
417   transform genji_coords;
418   genji_coords=identity scaled genji_grid shifted (whatever,whatever);
419   (3,3) transformed genji_coords=centre_pt;
420 enddef;
421
422 % gb(x) - start a line at the bottom in file x
423 % gf(y) - go forward, to or from rank y
424 % gs(k) - go sideways k steps
425 % ge - end a line (at top or bottom)
426 % gt - end a line (T junction)
427 % gx - end a line and start a new one (X junction)
428 % gr - turn to right
429 % gl - turn to left (only used for Yume no Ukihashi)
430 % gbk(l,r) - draw background with l/r squares removed at upper left, right
431 % gp(i,r) - build a simple "spike" in index 1, to rank r
432 % gj(s,e) - build a simple "jumper" from s to e
433
434 vardef gb(expr a) =
435   dflt_genji_coords;
436   genji_coords:=identity scaled 0.5 shifted (a,1) transformed genji_coords;
437   path genji_path;
438   genji_path:=((-genji_hw,1)-(-genji_hw,genji_hw))-
439     (genji_hw,genji_hw)-(genji_hw,1) transformed genji_coords;
440   path genji_spine;
441   genji_spine:=(0,0) transformed genji_coords;
442   genji_coords:=identity shifted (0,2) transformed genji_coords;
443 enddef;
444
445 vardef gf(expr a) =
446   gs(4-a);
447 enddef;
448
449 vardef gs(expr a) =
450   genji_path:=((-genji_hw,2*a-1) transformed genji_coords)-
451     genji_path-
452     ((genji_hw,2*a-1) transformed genji_coords);
453   genji_coords:=identity shifted (0,2*a) transformed genji_coords;
454 enddef;

```



```

455
456 vardef ge =
457   genji_path:=((genji_hw,genji_hw) transformed genji_coords)-
458     genji_path-
459     ((genji_hw,genji_hw) transformed genji_coords)-
460     cycle;
461   if genji_outline:
462     unFill reverse genji_path;
463   else:
464     Fill genji_path;
465   fi;
466   genji_spine:=genji_spine-((0,0) transformed genji_coords);
467   if make_prf_file:
468     write ("SEGMENT "&(decimal sp)&" 0 "&(decimal length genji_spine))
469     to "proof.prf";
470     for i=0 upto length genji_spine:
471       write ("POINT "&(decimal sp)&" "&(decimal i)&" "&
472         (decimal xpart point i of genji_spine)&" "&
473         (decimal ypart point i of genji_spine)) to "proof.prf";
474     endfor;
475     sp:=sp+1;
476   fi;
477 enddef;
478
479 vardef gt =
480   genji_path:=((genji_hw,genji_hw) transformed genji_coords)-
481     genji_path-
482     ((genji_hw,genji_hw) transformed genji_coords)-
483     cycle;
484   if genji_outline:
485     unFill reverse genji_path;
486   else:
487     Fill genji_path;
488   fi;
489   genji_spine:=genji_spine-((0,-1) transformed genji_coords);
490   if make_prf_file:
491     write ("SEGMENT "&(decimal sp)&" 0 "&(decimal length genji_spine))
492     to "proof.prf";
493     for i=0 upto length genji_spine:
494       write ("POINT "&(decimal sp)&" "&(decimal i)&" "&
495         (decimal xpart point i of genji_spine)&" "&
496         (decimal ypart point i of genji_spine)) to "proof.prf";
497     endfor;
498     sp:=sp+1;
499   fi;
500 enddef;
501
502 vardef gx =

```

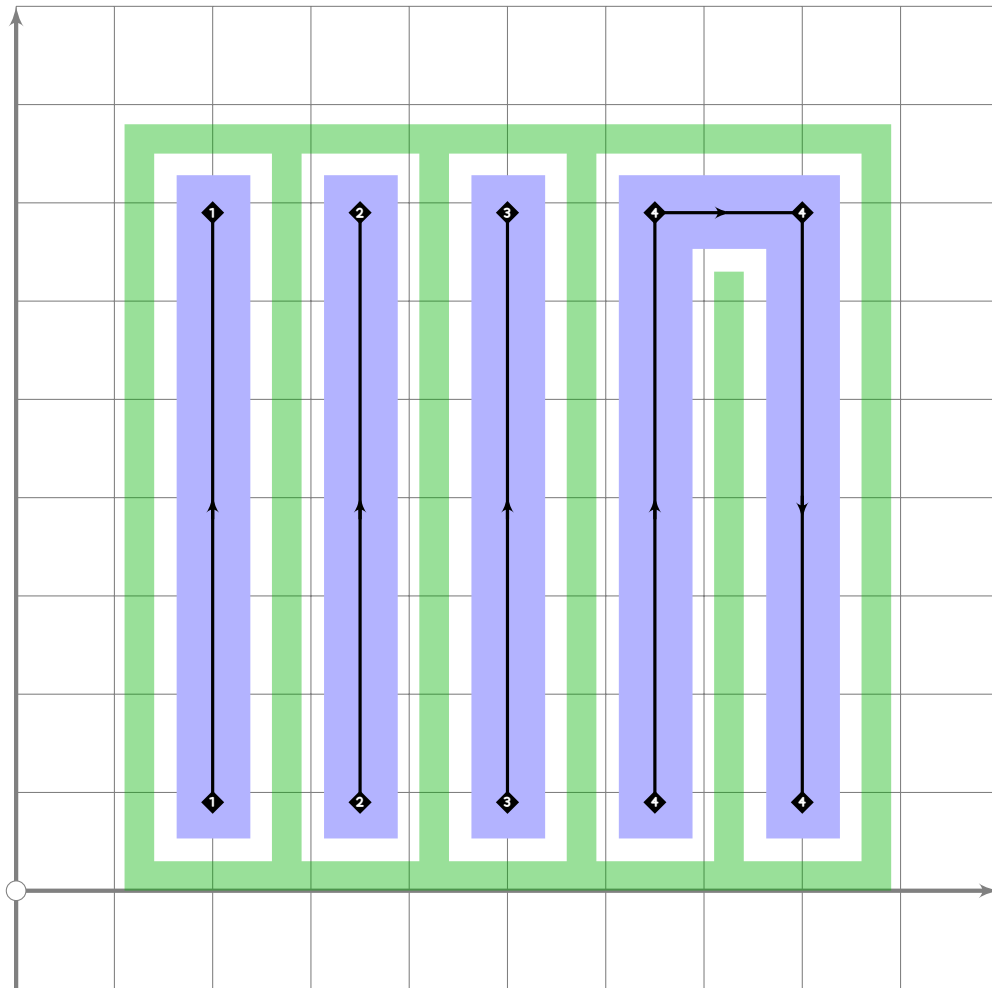
```

503 gt;
504 genji_path:=((-genji_hw,1)-(-genji_hw,genji_hw)-
505   (genji_hw,genji_hw)-(-genji_hw,1)) transformed genji_coords;
506 genji_spine:=(0,1) transformed genji_coords;
507 genji_coords:=identity shifted (0,2) transformed genji_coords;
508 enddef;
509
510 vardef gr =
511   genji_path:=((1,genji_hw) transformed genji_coords)-
512     ((-genji_hw,genji_hw) transformed genji_coords)-
513     genji_path-
514     ((genji_hw,genji_hw) transformed genji_coords)-
515     ((1,genji_hw) transformed genji_coords);
516   genji_spine:=genji_spine-((0,0) transformed genji_coords);
517   genji_coords:=identity shifted (0,2) rotated -90 transformed genji_coords;
518 enddef;
519
520 vardef gl =
521   genji_path:=((-1,genji_hw) transformed genji_coords)-
522     ((-genji_hw,genji_hw) transformed genji_coords)-
523     genji_path-
524     ((genji_hw,genji_hw) transformed genji_coords)-
525     ((-1,genji_hw) transformed genji_coords);
526   genji_spine:=genji_spine-((0,0) transformed genji_coords);
527   genji_coords:=identity shifted (0,2) rotated 90 transformed genji_coords;
528 enddef;
529
530 vardef gbk(expr lcut,rcut) =
531   if genji_outline:
532     path genji_path;
533     genji_path:=(genji_hw/2,genji_hw/2)-(6*genji_hw/2,genji_hw/2)-
534       if rcut>0:
535         (6*genji_hw/2,5*genji_hw/2)-
536         (6*genji_hw/2-rcut,5*genji_hw/2)-
537         (6*genji_hw/2-rcut,6*genji_hw/2)-
538       else:
539         (6*genji_hw/2,6*genji_hw/2)-
540       fi
541     if lcut>0:
542       (genji_hw/2*lcut,6*genji_hw/2)-
543       (genji_hw/2*lcut,5*genji_hw/2)-
544       (genji_hw/2,5*genji_hw/2)-
545     else:
546       (genji_hw/2,6*genji_hw/2)-
547     fi
548   cycle;
549   dflt_genji_coords;
550   Fill genji_path transformed genji_coords;

```



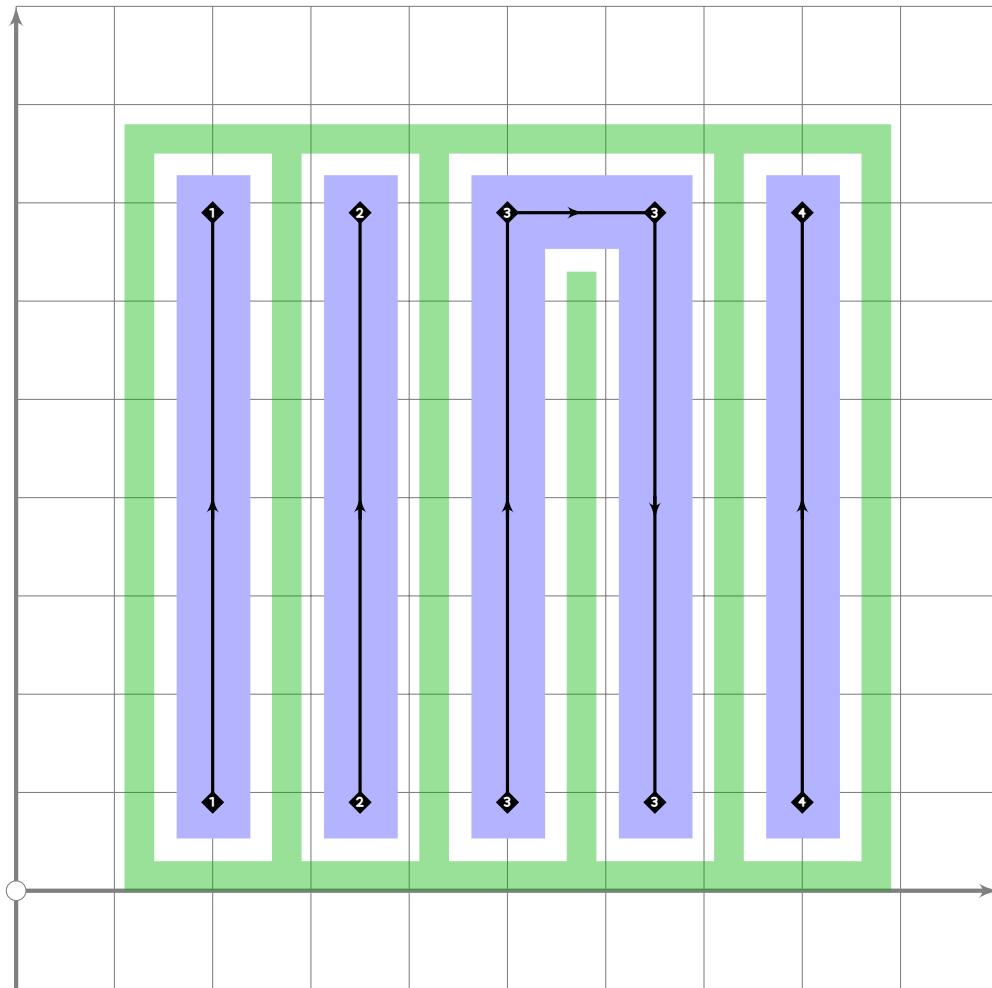




```

584 % #3 Utsusemi
585 begintsuglyph("genjimon03",195);
586 gbk(0,0);
587 gp(1,1);
588 gp(2,1);
589 gp(3,1);
590 gj(4,5);
591 endtsuglyph;
592

```



```

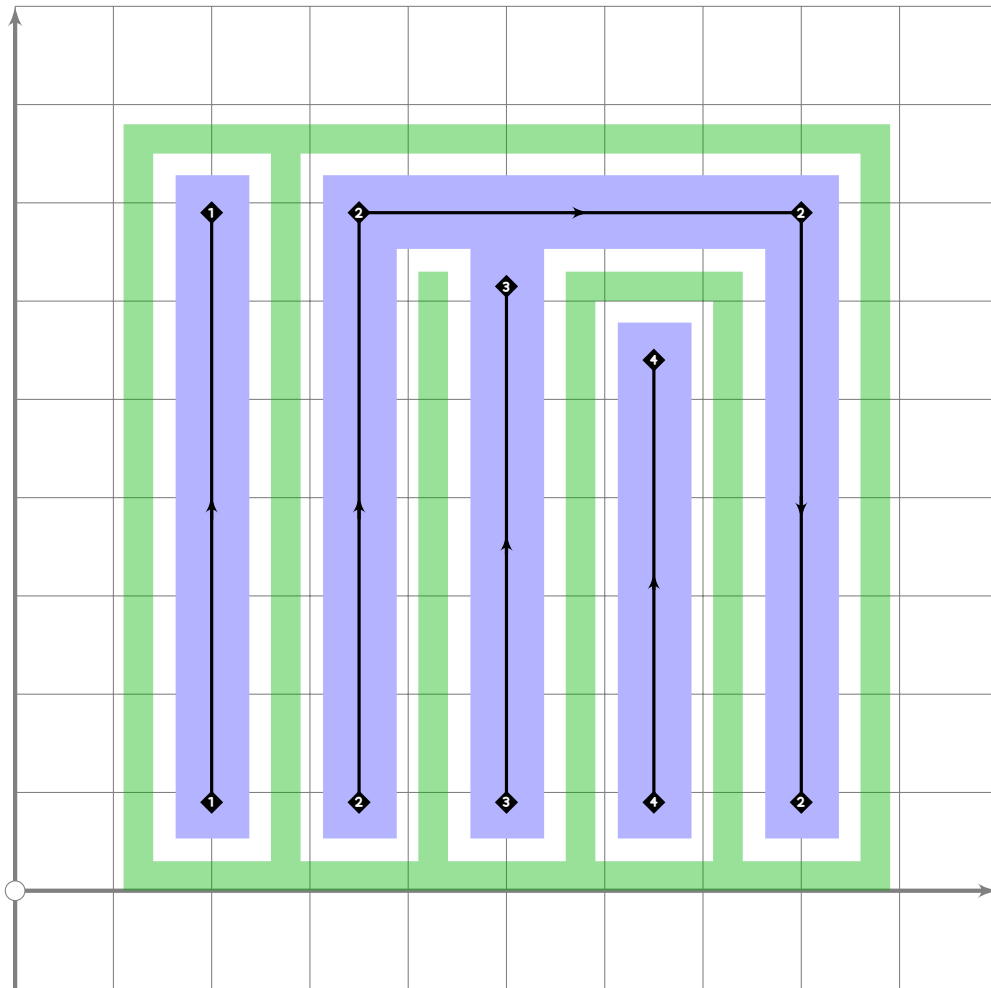
593 % #4 Yuugao
594 begintsuglyph("genjimon04",196);
595 gbk(0,0);
596 gp(1,1);
597 gp(2,1);
598 gj(3,4);
599 gp(5,1);
600 endsuglyph;
601

```



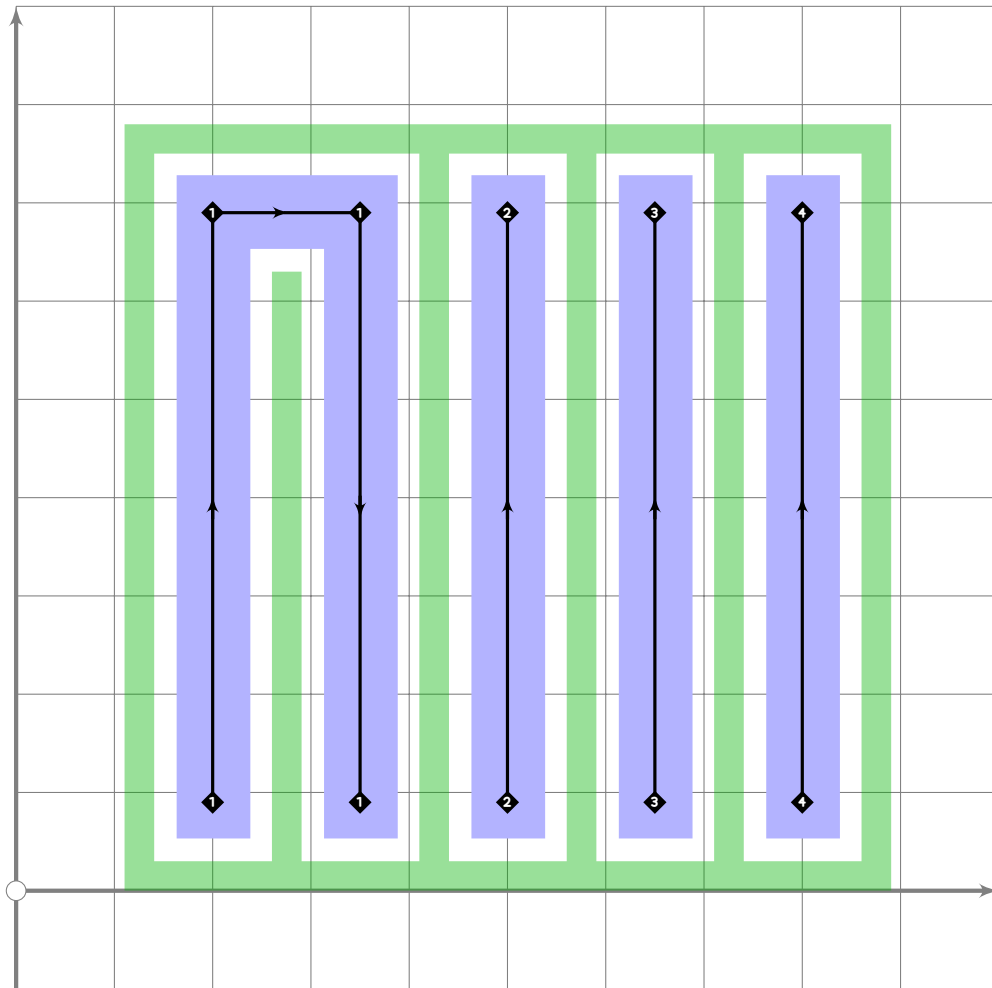






```
619 % #7 Momiji no Ga
620 beginsuglyph("genjimon07",199);
621 gbk(0,0);
622 gp(1,1);
623 gj(2,5);
624 gtt(3,1);
625 gp(4,2);
626 endsuglyph;
627
```

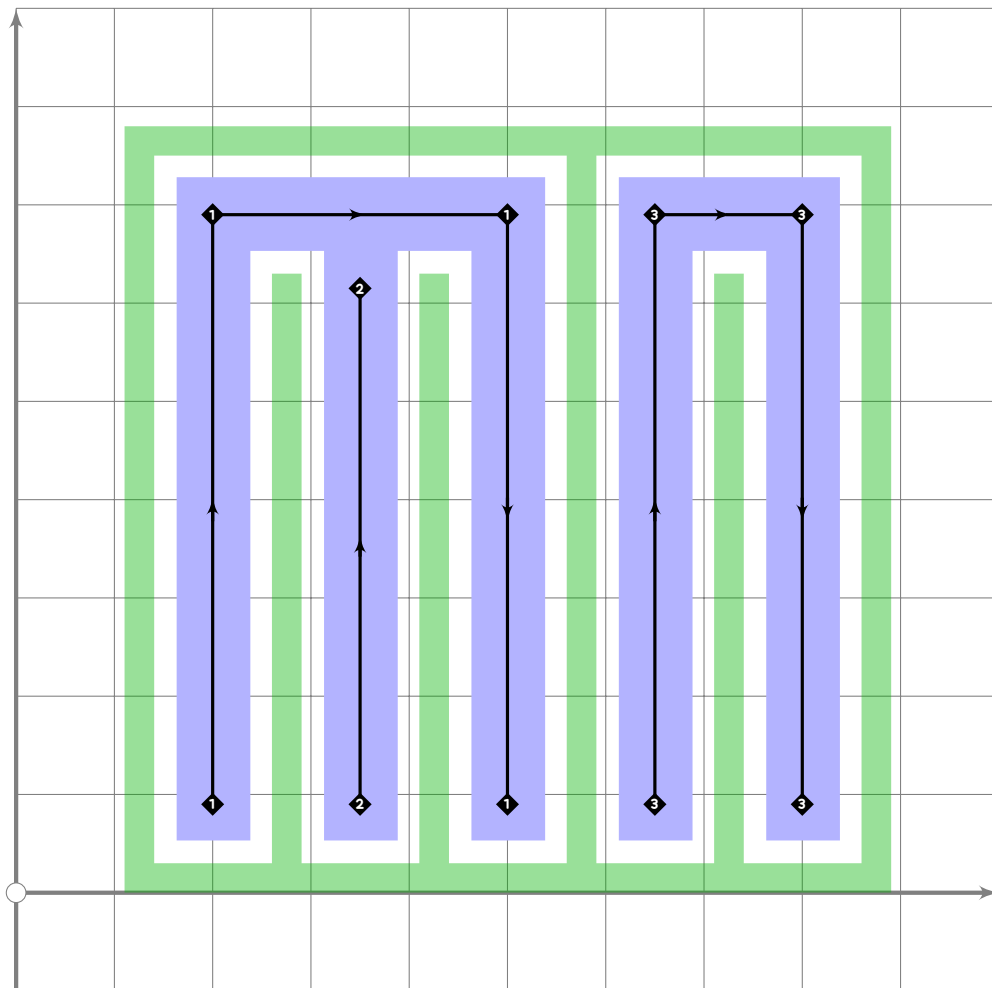




```

637 % #9 Aoi
638 begint Suglyph("genjimon09";201);
639 gbk(0,0);
640 gj(1,2);
641 gp(3,1);
642 gp(4,1);
643 gp(5,1);
644 endtsuglyph;
645

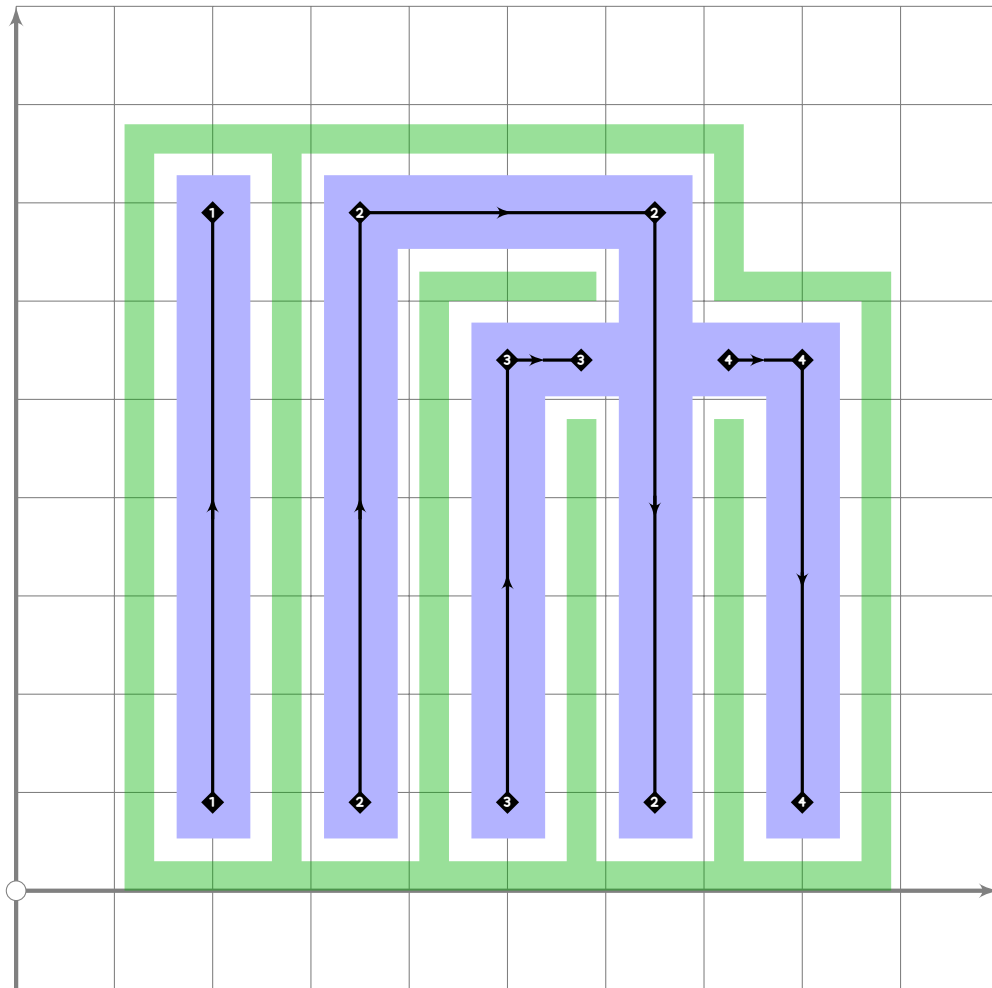
```



```

646 % #10 Sakaki
647 begintsuglyph("genjimon10";202);
648 gbk(0,0);
649 gj(1,3);
650 gtt(2,1);
651 gj(4,5);
652 endsuglyph;
653

```

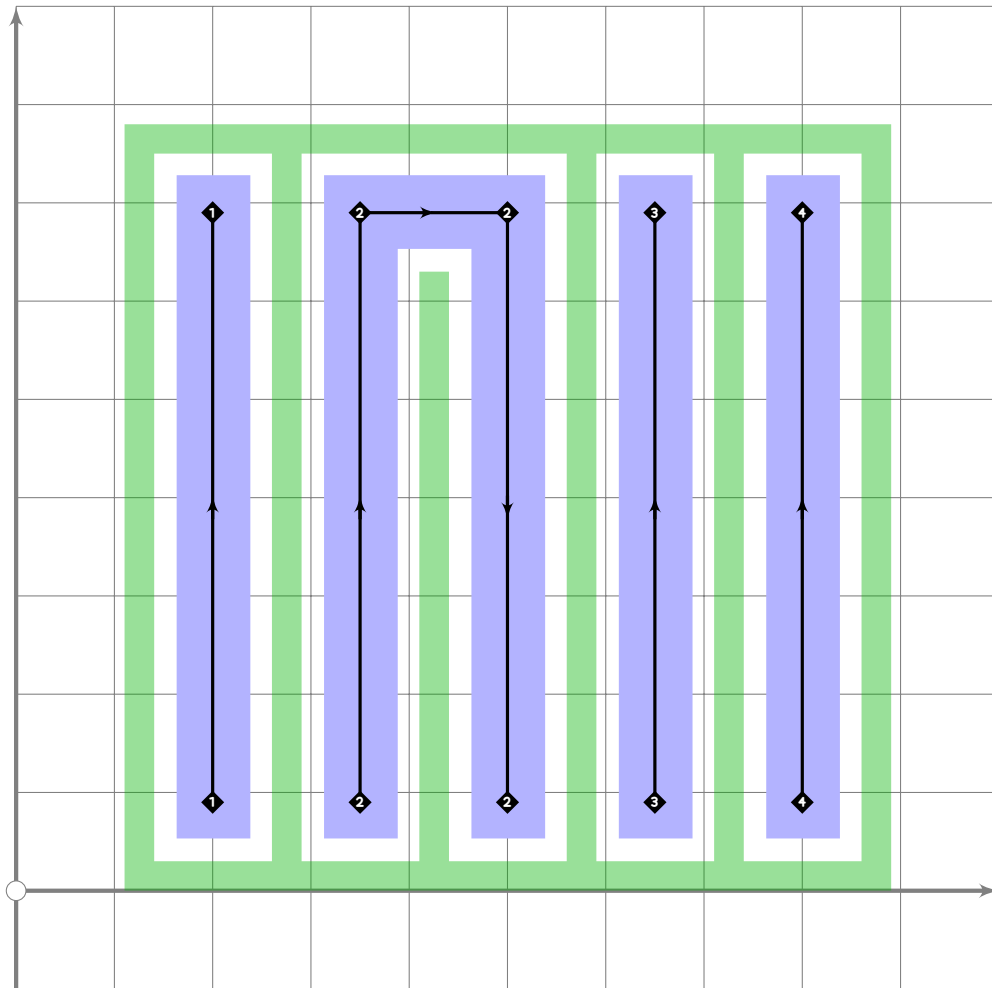


```

654 % #11 Hana Chiru Sato
655 begintsuglyph("genjimon11";203);
656 gbk(0,1);
657 gp(1,1);
658 gj(2,4);
659 gb(3);gf(2);gr;gx;gr;gf(2);ge;
660 endsuglyph;
661

```

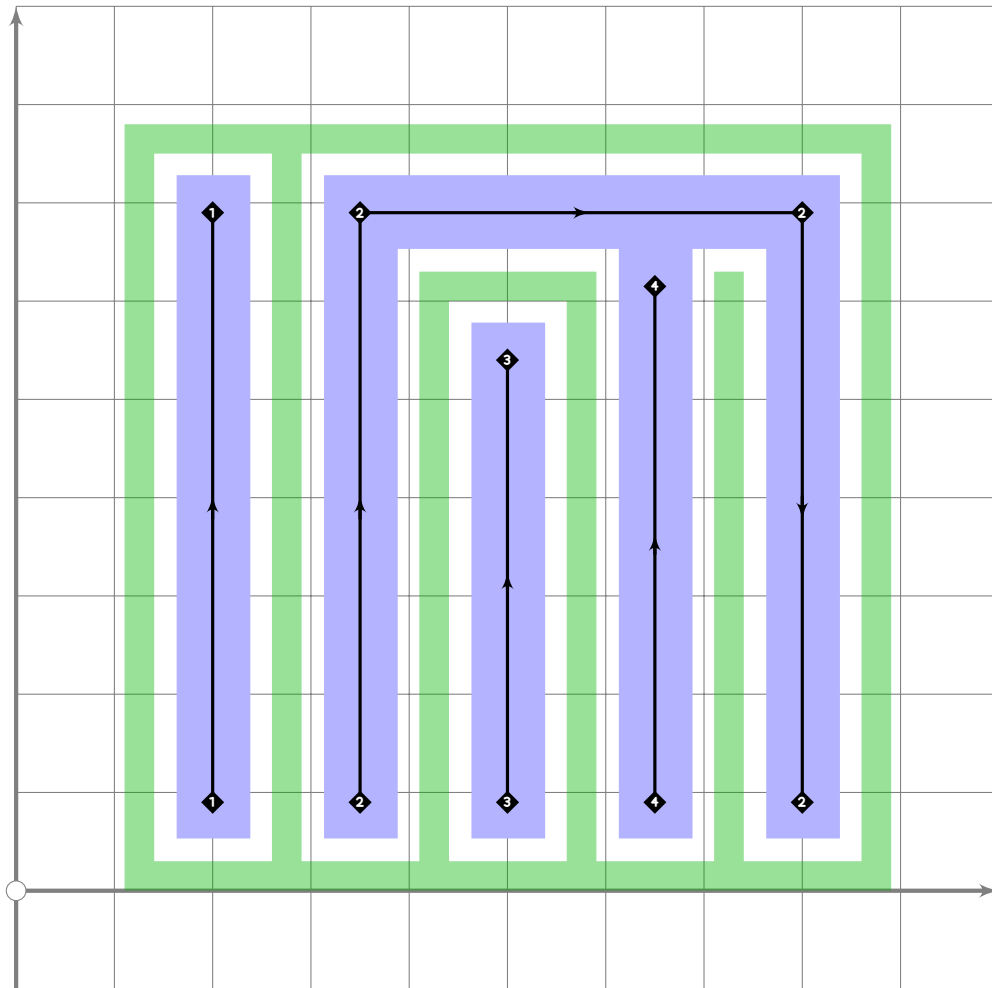




```

670 % #13 Akashi
671 begintsuglyph("genjimon13";205);
672 gbk(0,0);
673 gp(1,1);
674 gj(2,3);
675 gp(4,1);
676 gp(5,1);
677 endtsuglyph;
678

```

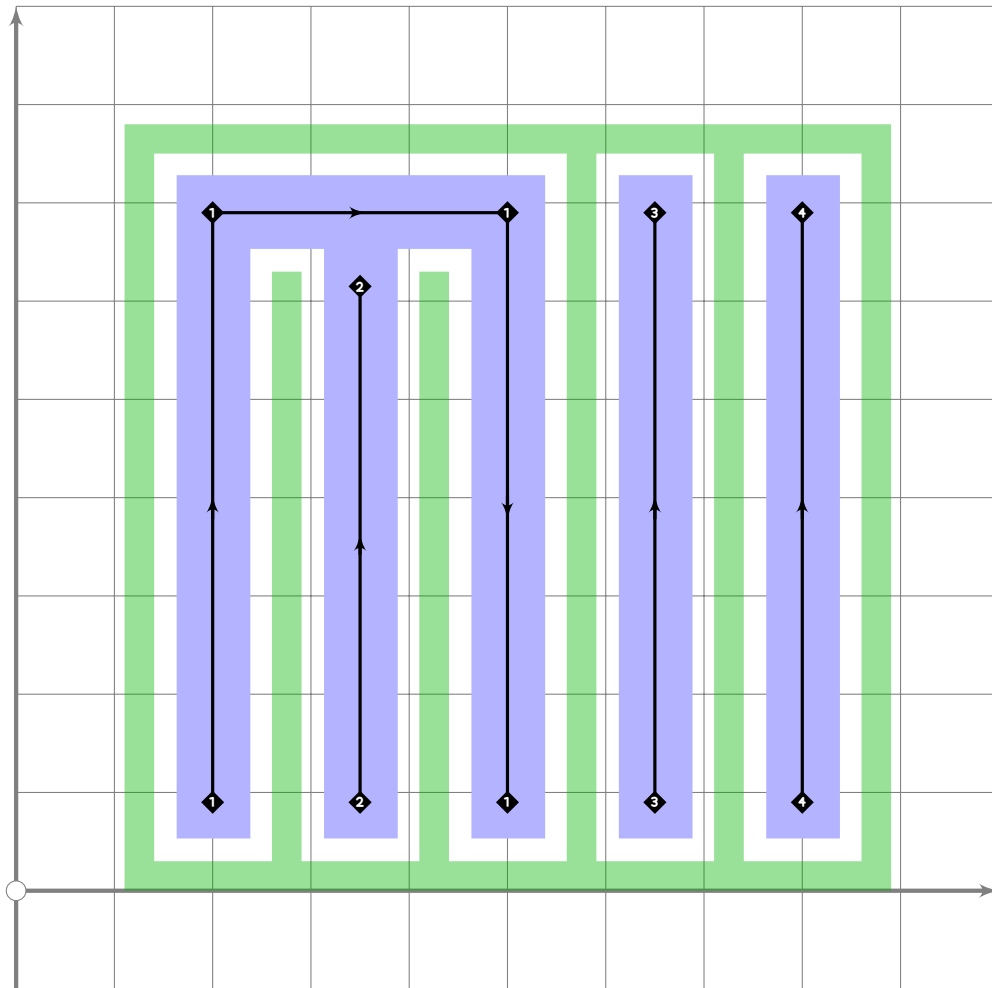


```

679 % #14 Miotsukushi
680 beginsuglyph("genjimon14";206);
681 gbk(0,0);
682 gp(1,1);
683 gj(2,5);
684 gp(3,2);
685 gtt(4,1);
686 endsuglyph;
687

```

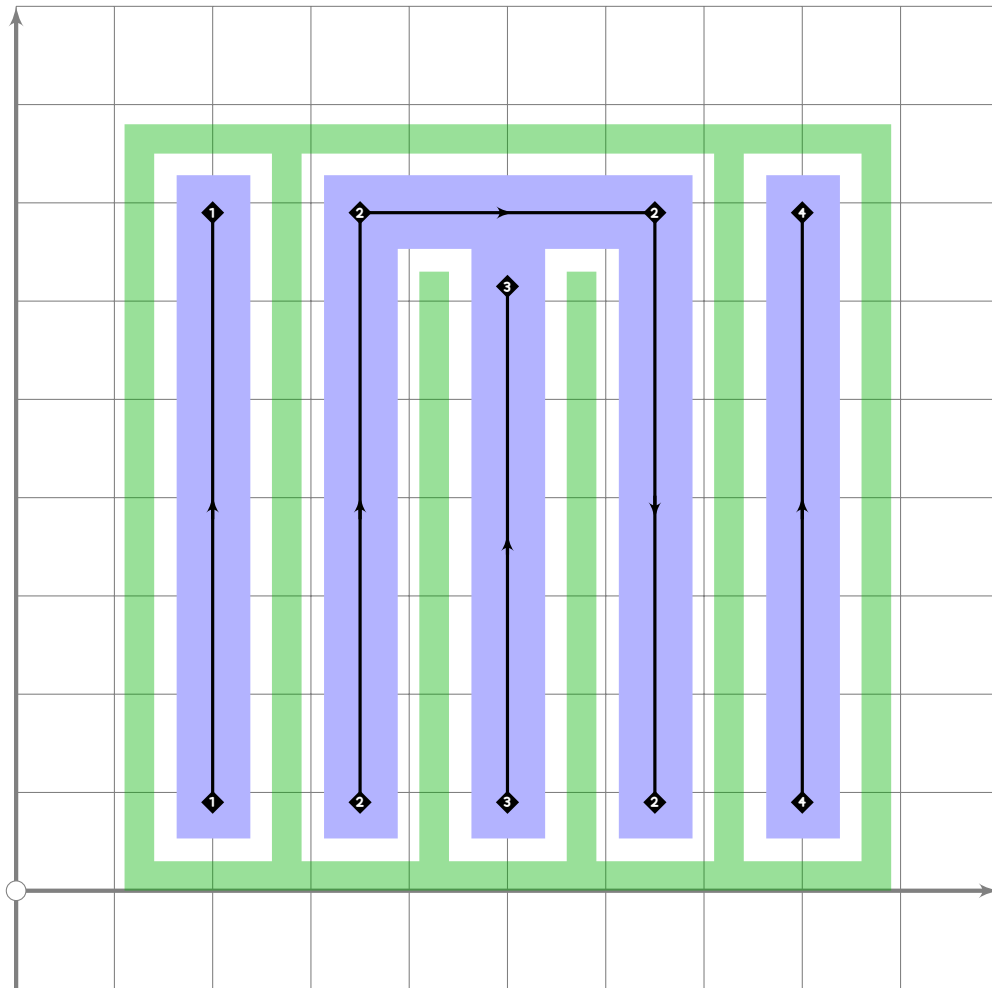




```

688 % #15 Yomogyuu
689 begintsuglyph("genjimon15";207);
690 gbk(0,0);
691 gj(1,3);
692 gtt(2,1);
693 gp(4,1);
694 gp(5,1);
695 endtsuglyph;
696

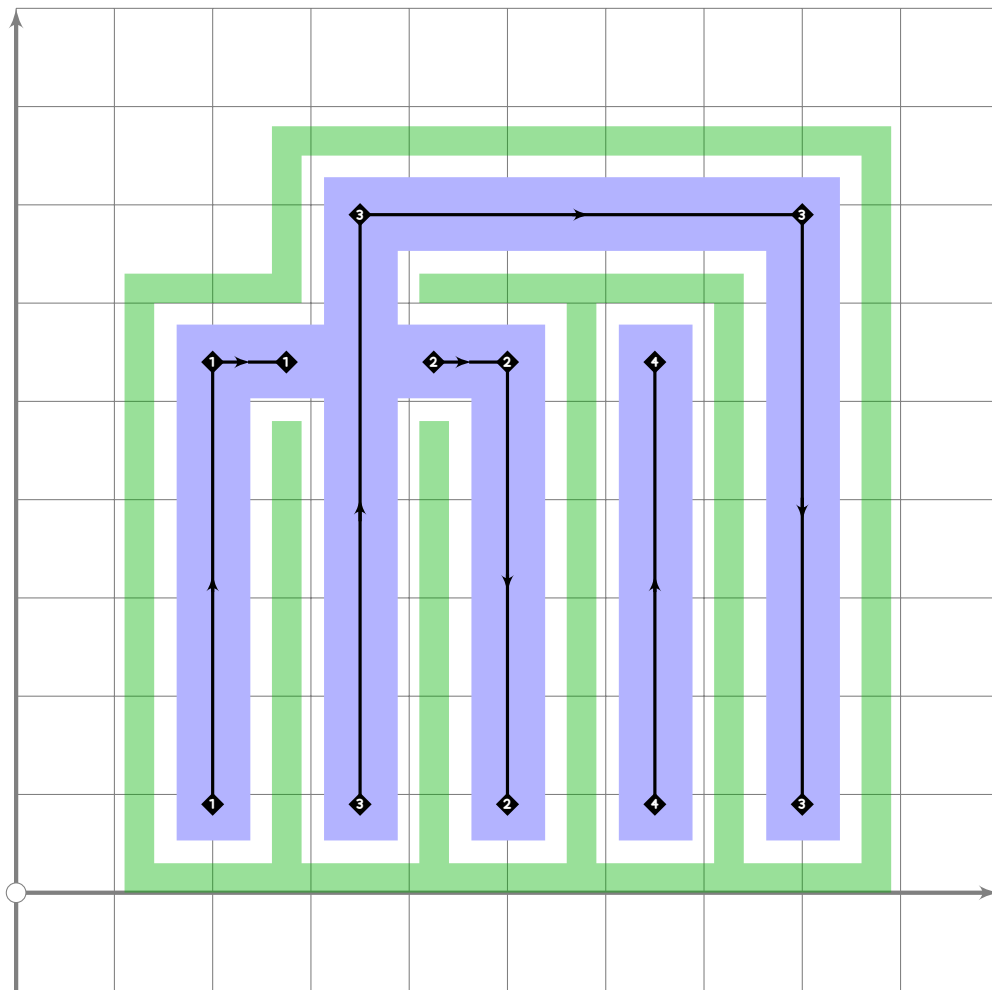
```



```

697 % #16 Sekiya
698 begintsuglyph("genjimon16";208);
699 gbk(0,0);
700 gp(1,1);
701 gj(2,4);
702 gtt(3,1);
703 gp(5,1);
704 endsuglyph;
705

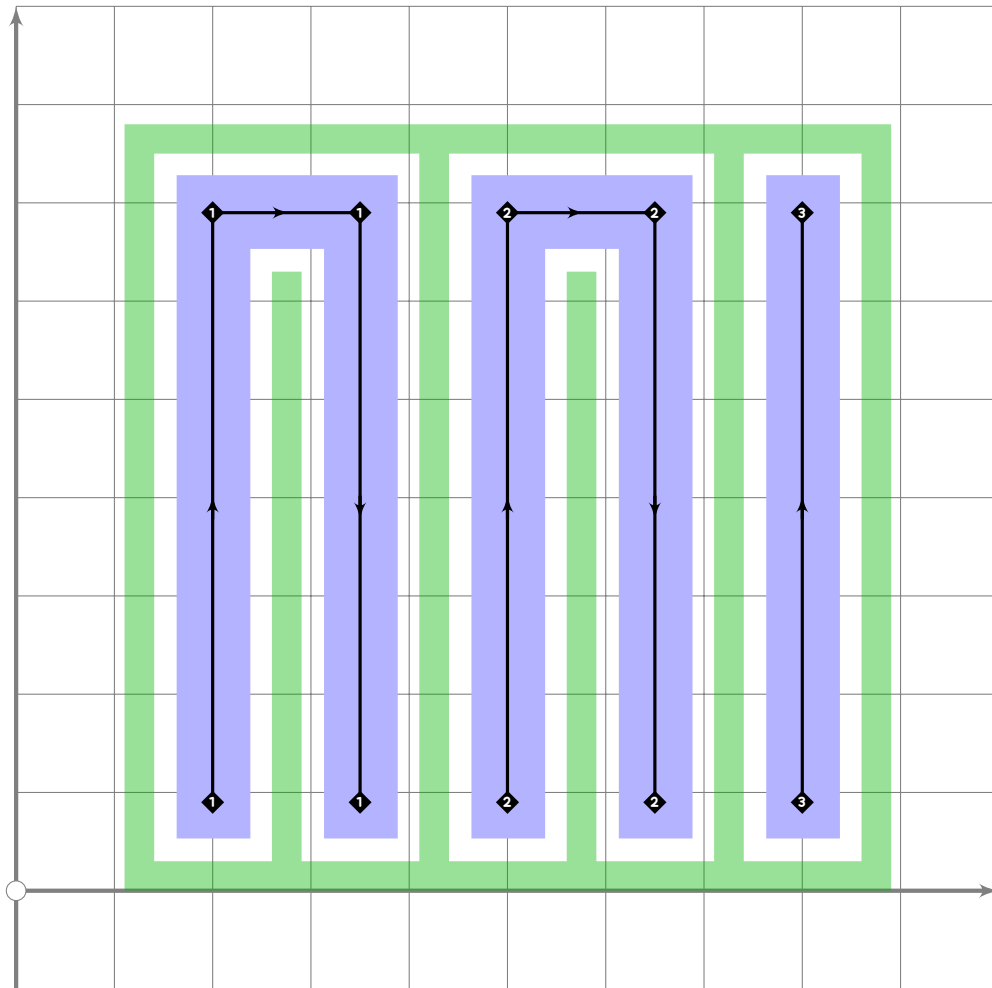
```



```

706 % #17 Eawase
707 begint Suglyph("genjimon17",209);
708   gbk(1,0);
709   gb(1);gf(2);gr;gx;gr;gf(2);ge;
710   gj(2,5);
711   gp(4,2);
712 endtsuglyph;
713

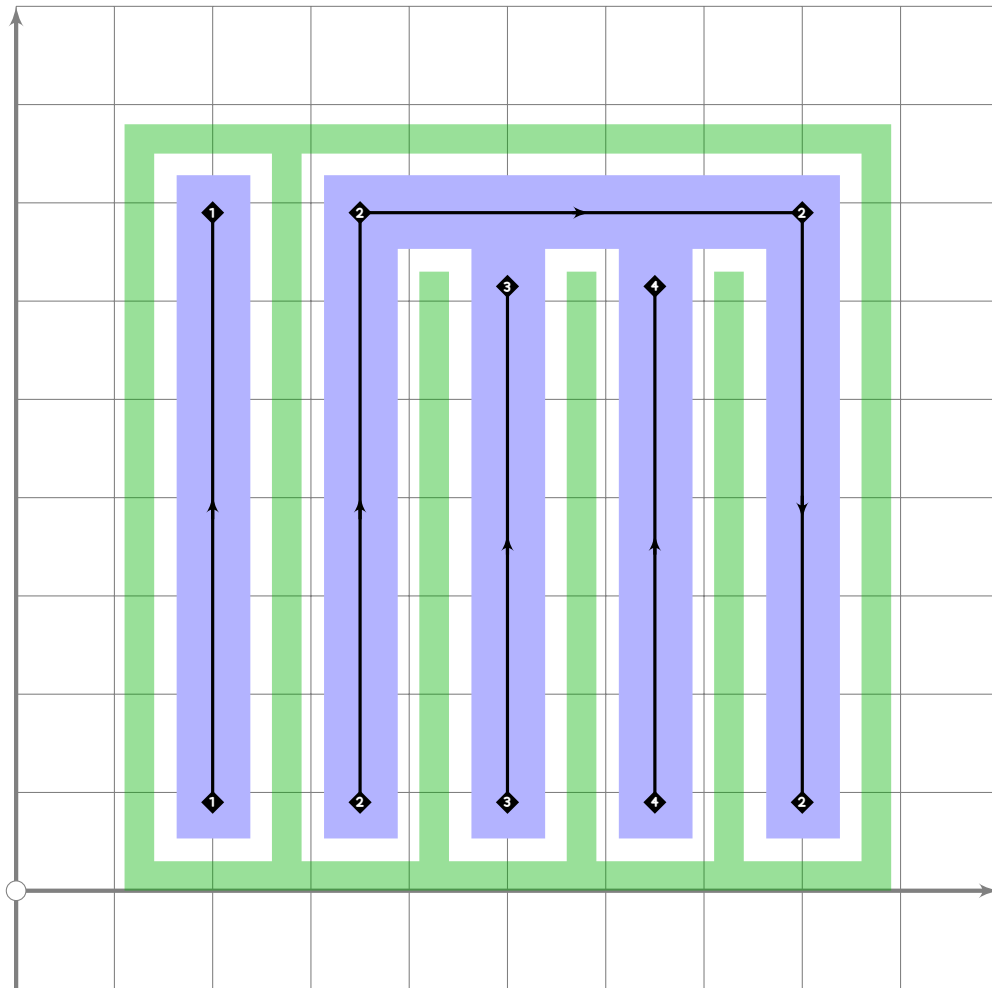
```



```

714 % #18 Matsukaze
715 begintsuglyph("genjimon18",210);
716 gbk(0,0);
717 gj(1,2);
718 gj(3,4);
719 gp(5,1);
720 endsuglyph;
721

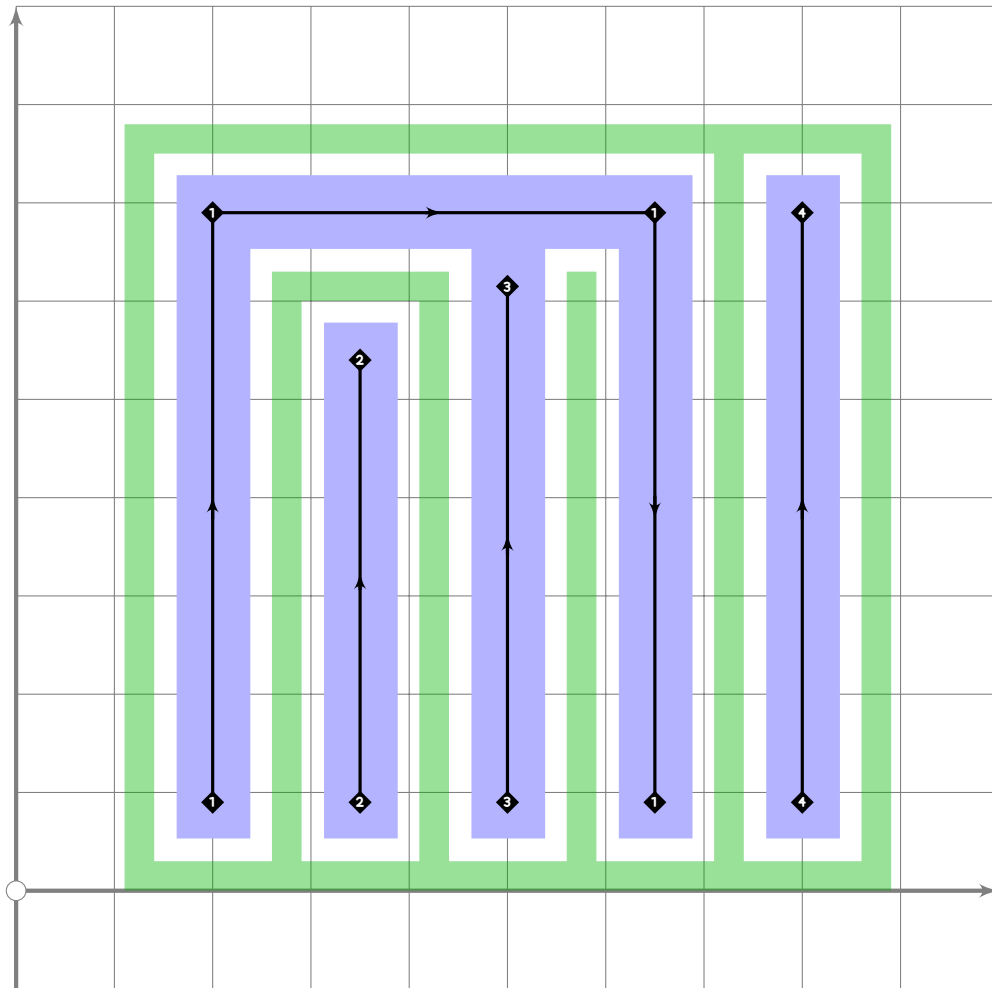
```



```

722 % #19 Usugumo
723 begintsuglyph("genjimon19",211);
724 gbk(0,0);
725 gp(1,1);
726 gj(2,5);
727 gtt(3,1);
728 gtt(4,1);
729 endsuglyph;
730

```

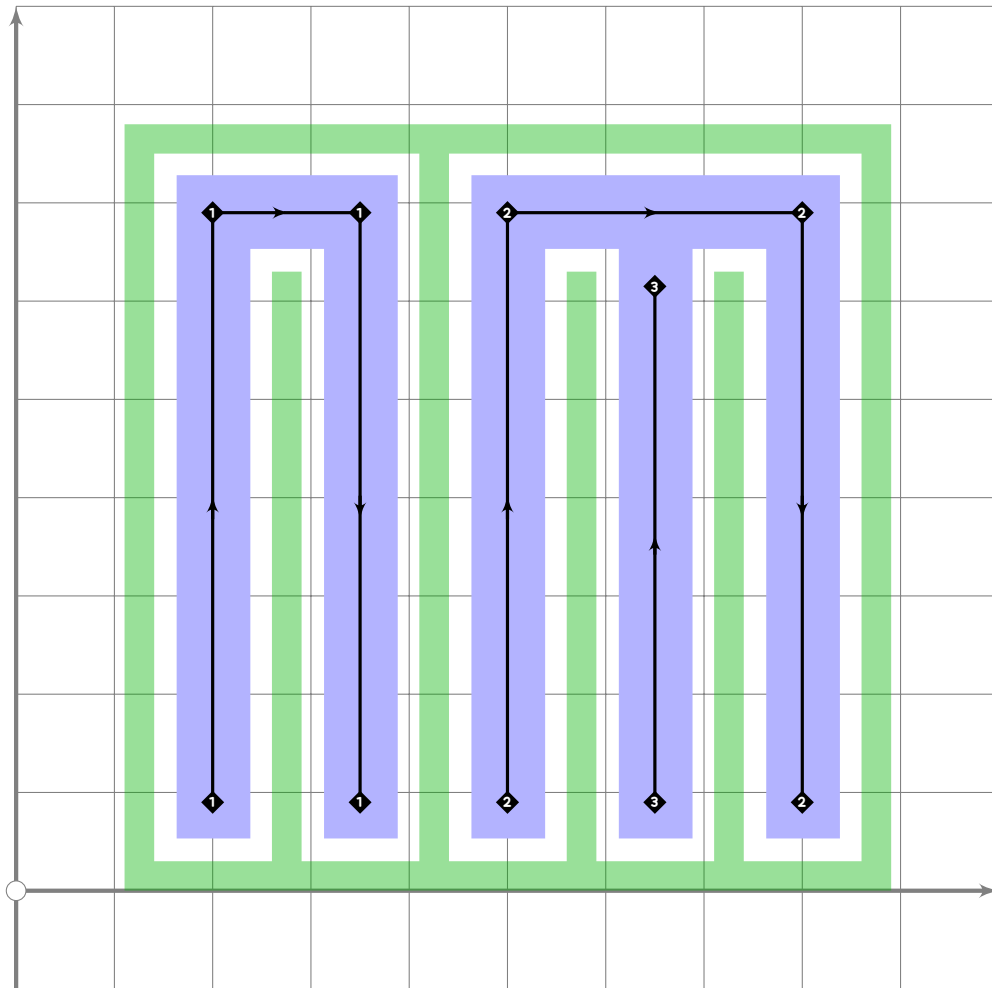


```

731 % #20 Asagao
732 begint Suglyph("genjimon20";212);
733   gbk(0,0);
734   gj(1,4);
735   gp(2,2);
736   gtt(3,1);
737   gp(5,1);
738   endtsuglyph;
739

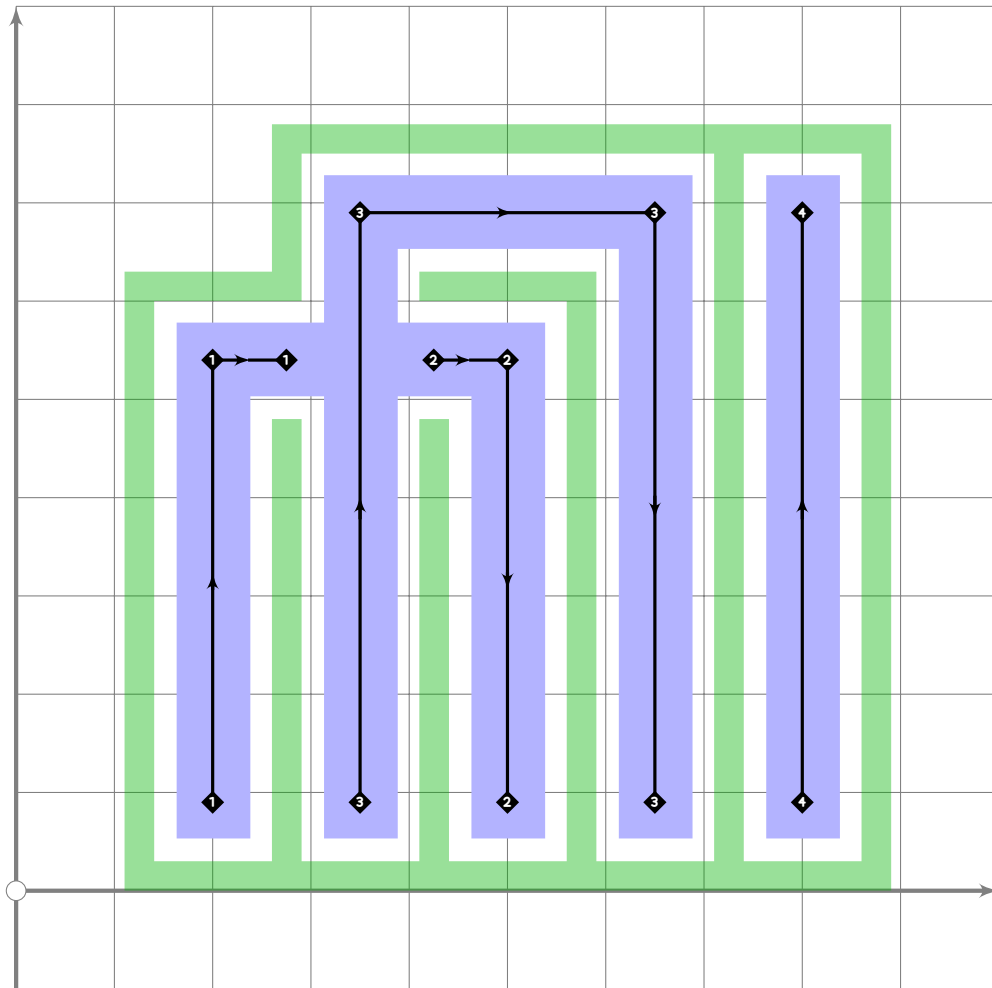
```





```
749 % #22 Tamakazura  
750 begintsuglyph("genjimon22",214);  
751 gbk(0,0);  
752 gj(1,2);  
753 gj(3,5);  
754 gtt(4,1);  
755 endsuglyph;  
756
```

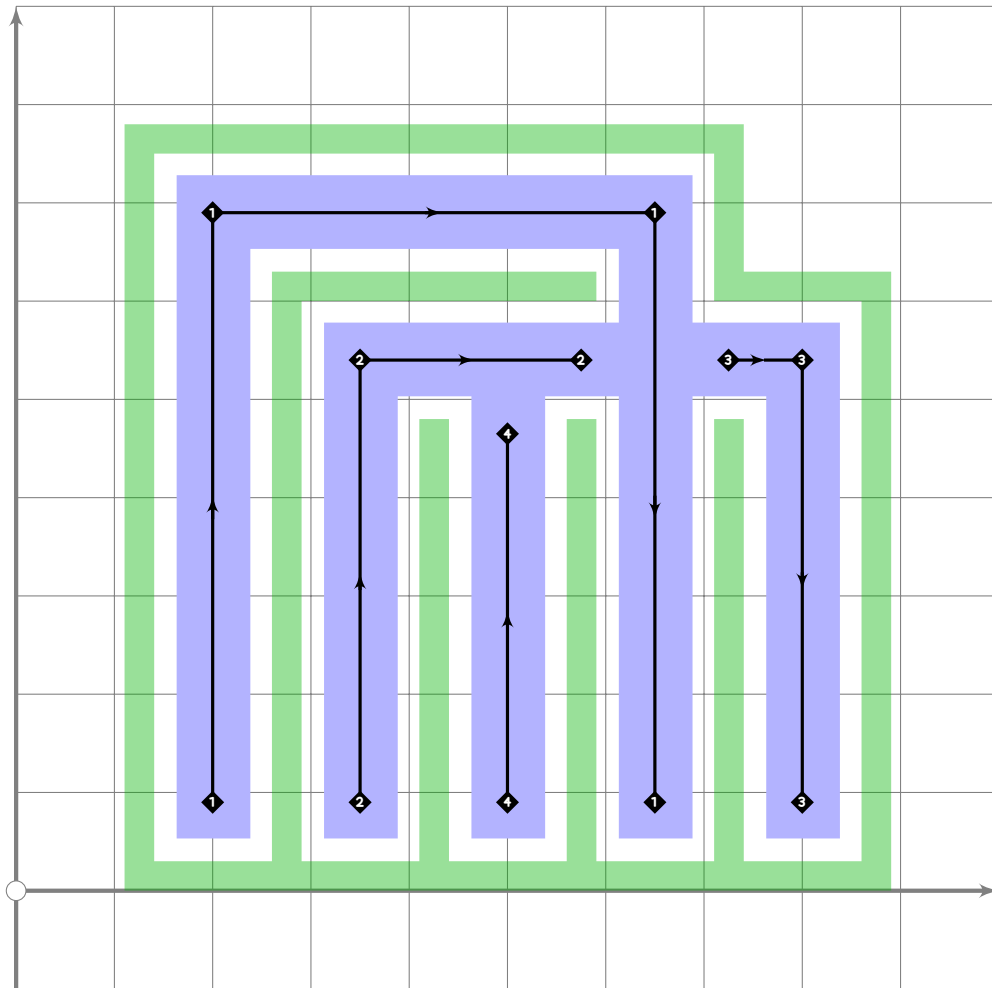




```

757 % #23 Hatsune
758 begintsuglyph("genjimon23",215);
759 gbk(1,0);
760 gb(1);gf(2);gr;gx;gr;gf(2);ge;
761 gj(2,4);
762 gp(5,1);
763 endsuglyph;
764

```

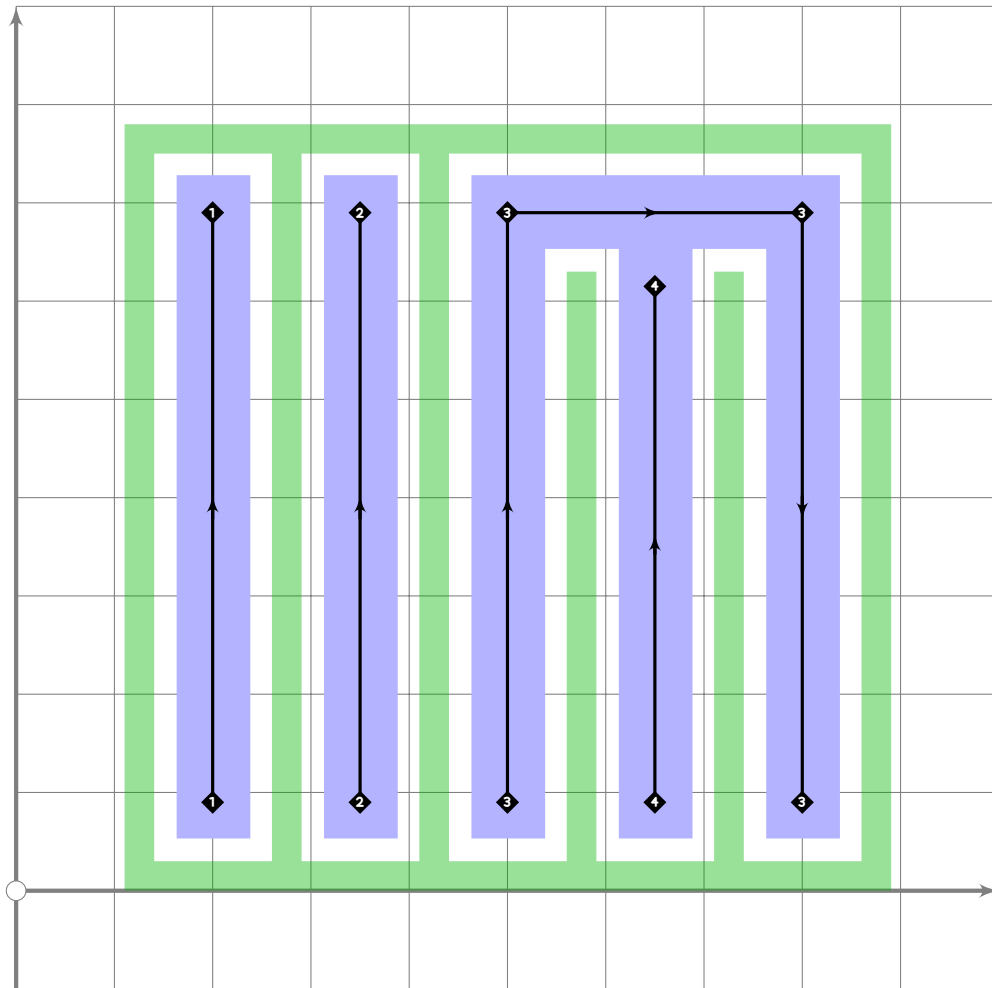


```

765 % #24 Kochou
766 beginsuglyph("genjimon24",216);
767 gbk(0,1);
768 gj(1,4);
769 gb(2);gf(2);gr;gs(1);gx;gr;gf(2);ge;
770 gtt(3,2);
771 endsuglyph;
772

```

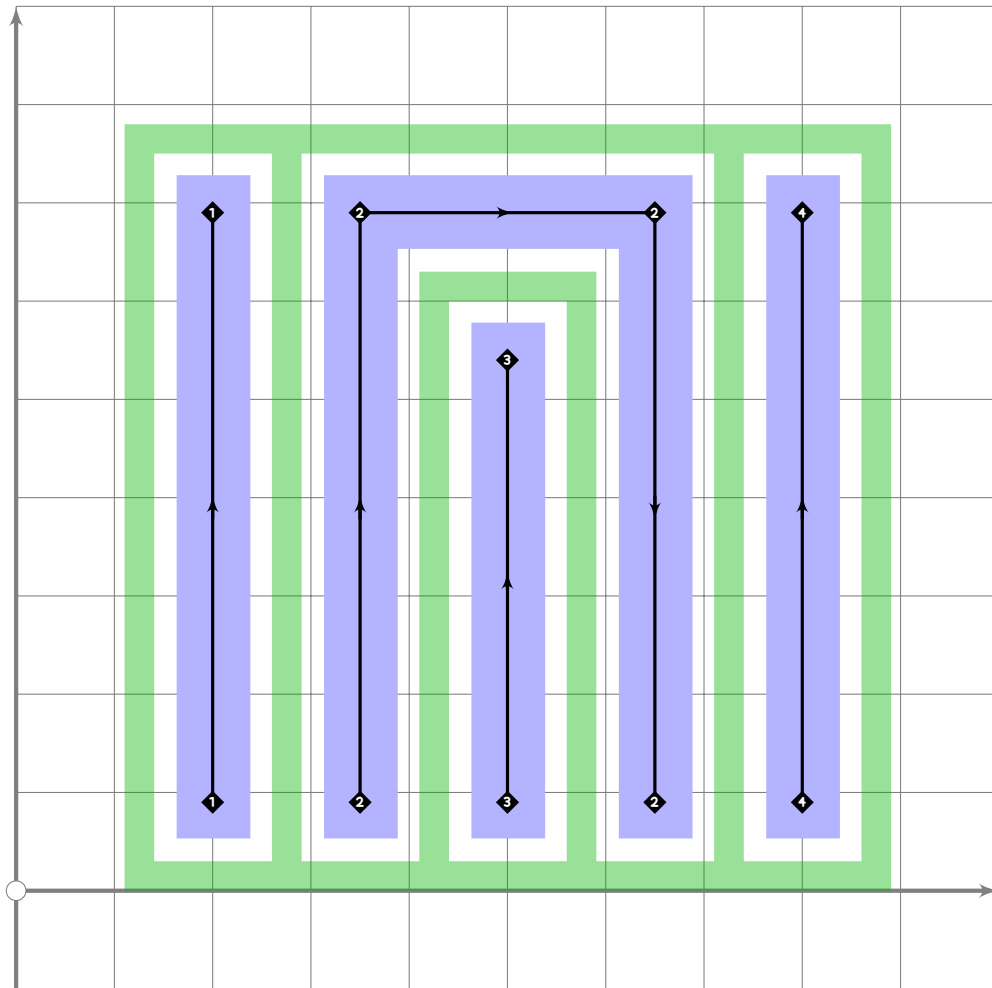




```

782 % #26 Tokonatsu
783 begintsuglyph("genjimon26",218);
784 gbk(0,0);
785 gp(1,1);
786 gp(2,1);
787 gj(3,5);
788 gtt(4,1);
789 endsuglyph;
790

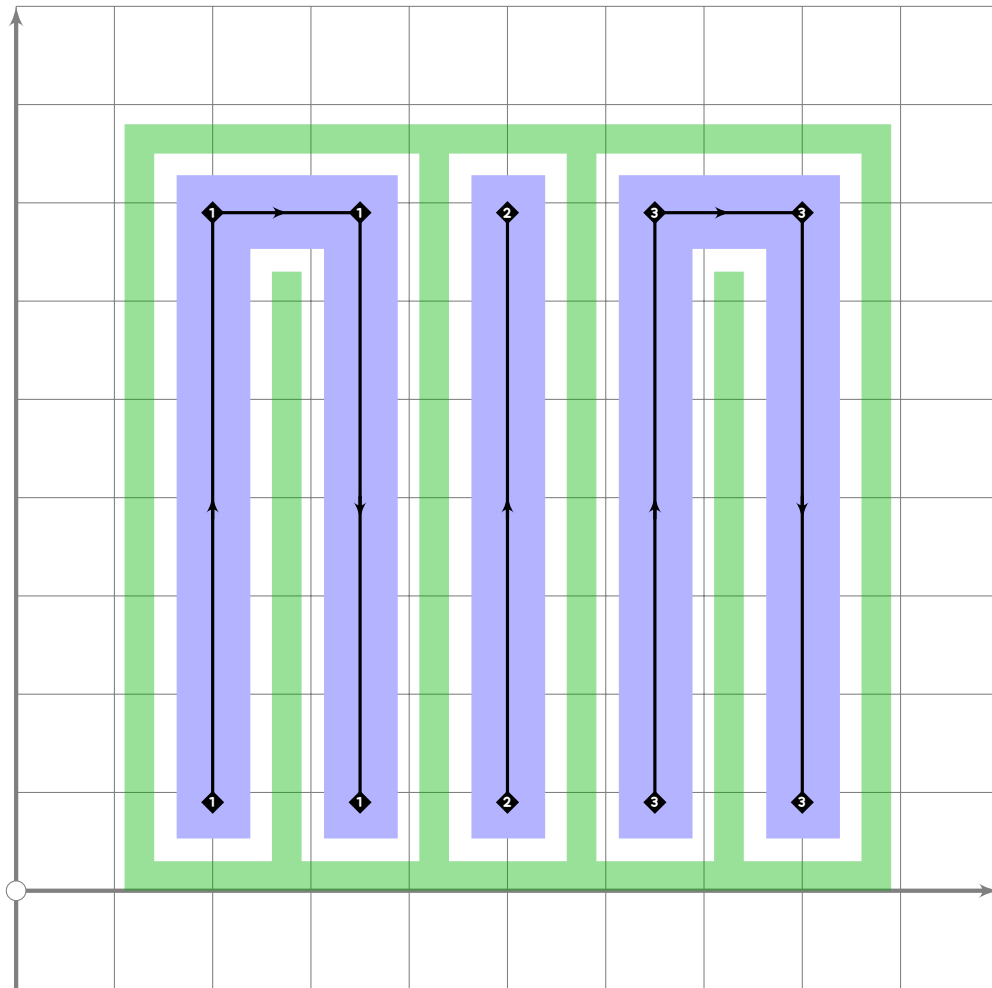
```



```

791 % #27 Kagaribi
792 begintsuglyph("genjimon27",219);
793 gbk(0,0);
794 gp(1,1);
795 gj(2,4);
796 gp(3,2);
797 gp(5,1);
798 endsuglyph;
799

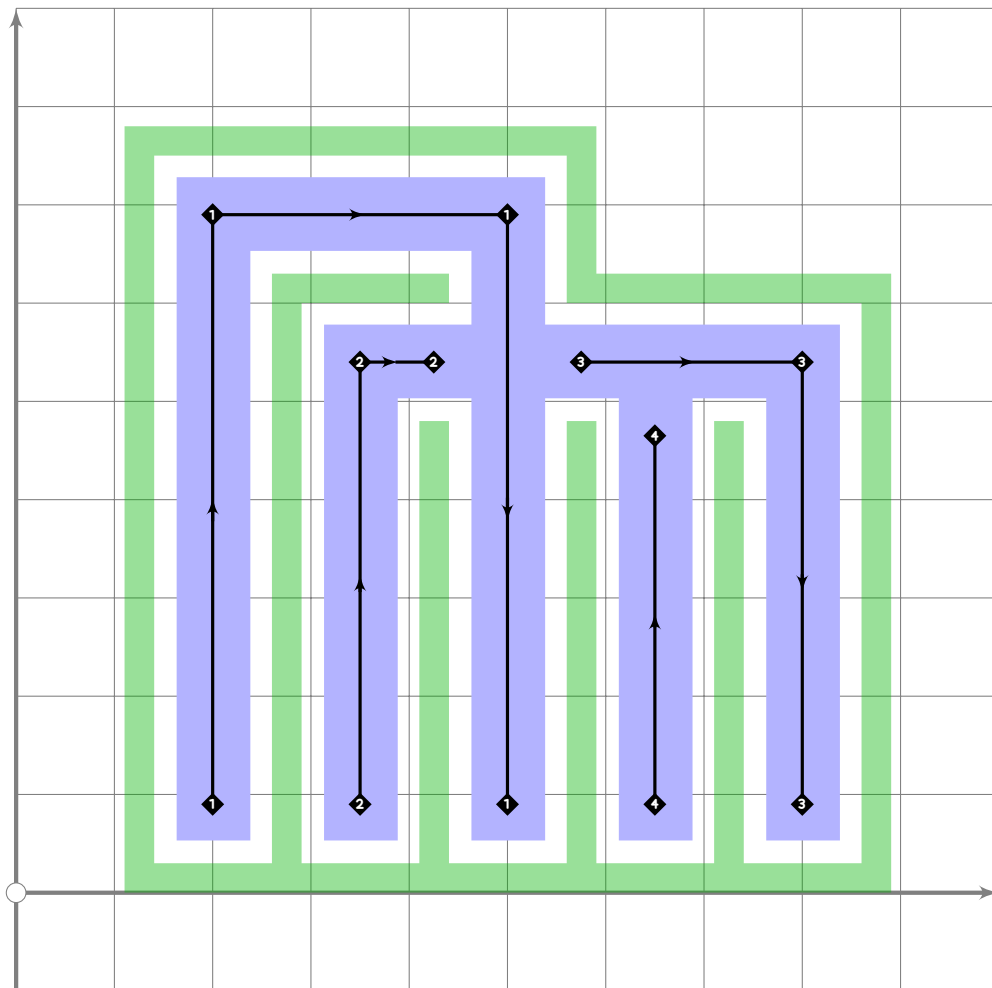
```



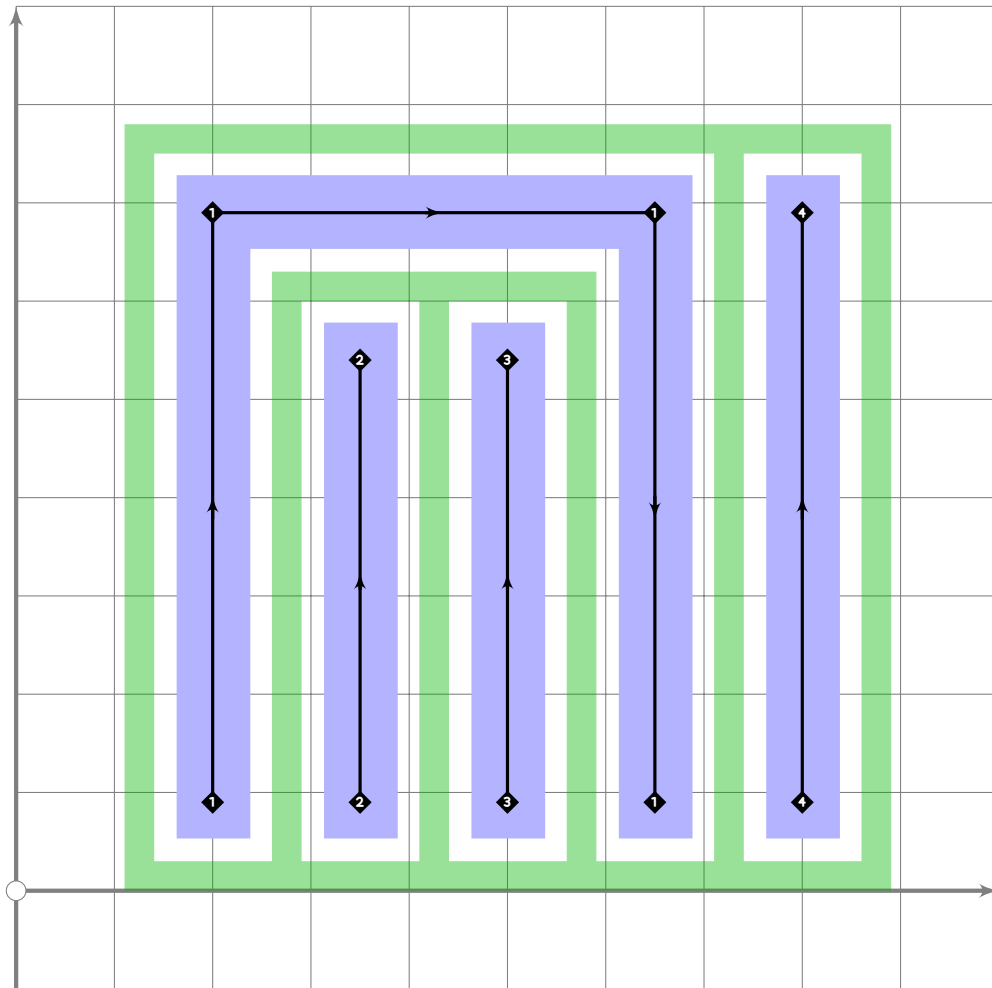
```

800 % #28 Nowaki
801 begintsuglyph("genjimon28",220);
802 gbk(0,0);
803 gj(1,2);
804 gp(3,1);
805 gj(4,5);
806 endsuglyph;
807

```



```
808 % #29 Miyuki  
809 begintsuglyph("genjimon29",221);  
810 gbk(0,2);  
811 gj(1,3);  
812 gb(2);gf(2);gr;gx;gs(1);gr;gf(2);ge;  
813 gtt(4,2);  
814 endsuglyph;  
815
```

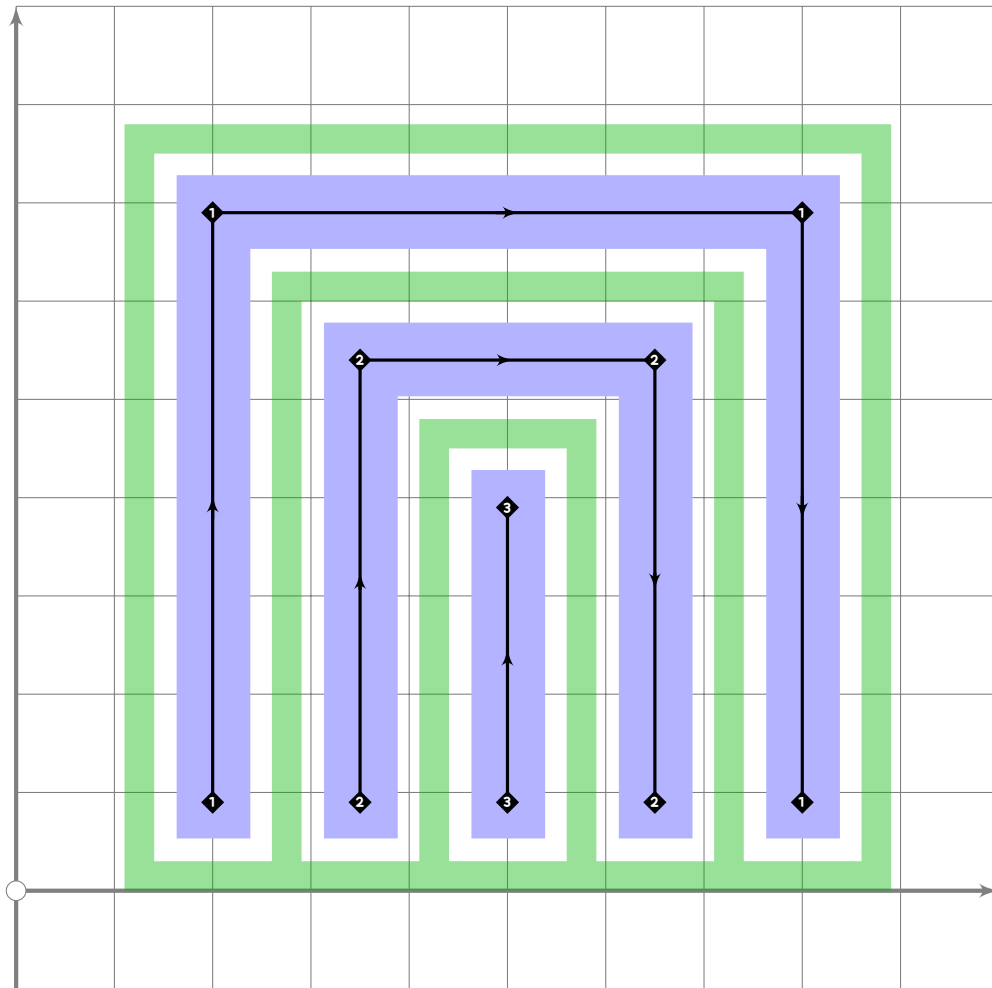


```

816 % #30 Fujibakama
817 begintsuglyph("genjimon30",222);
818 gbk(0,0);
819 gj(1,4);
820 gp(2,2);
821 gp(3,2);
822 gp(5,1);
823 endtsuglyph;
824

```



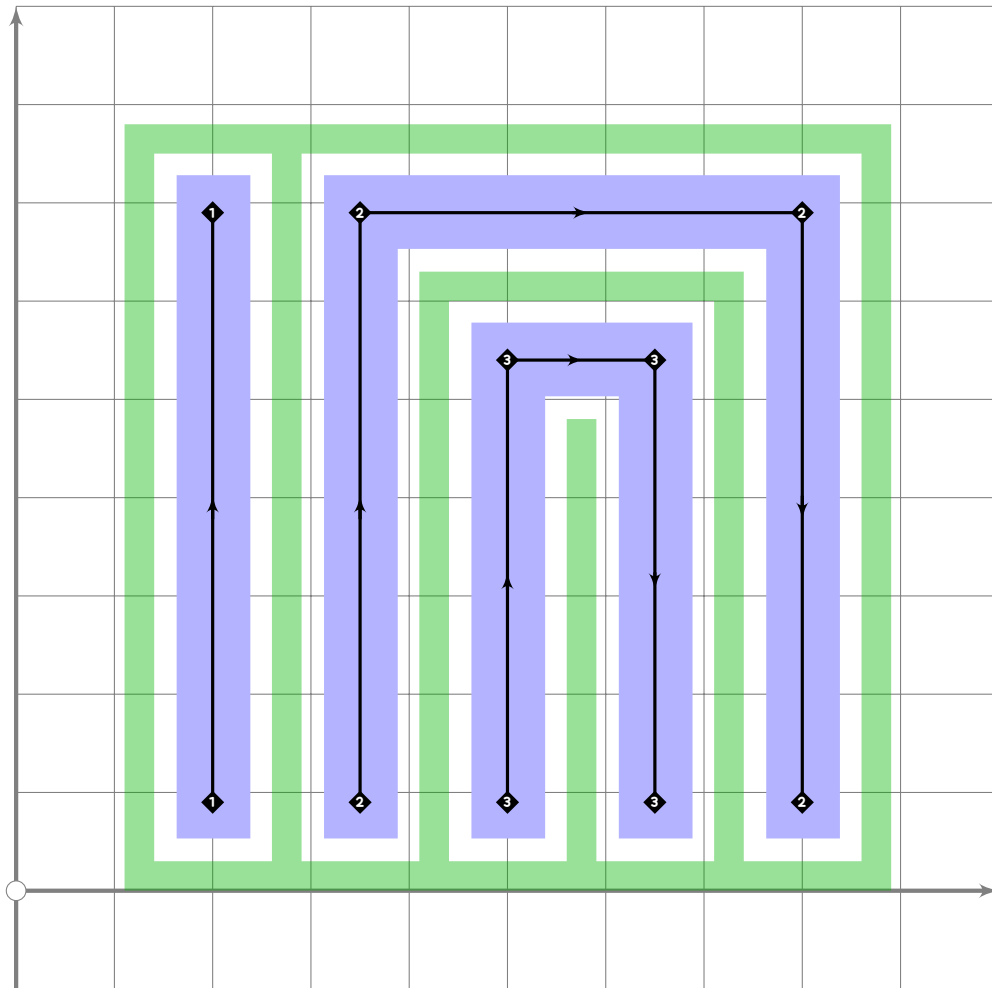


```

825 % #31 Makibashira
826 beginsuglyph("genjimon31";223);
827 gbk(0,0);
828 gj(1,5);
829 gb(2);gf(2);gr;gs(1);gr;gf(2);ge;
830 gp(3,3);
831 endsuglyph;
832

```





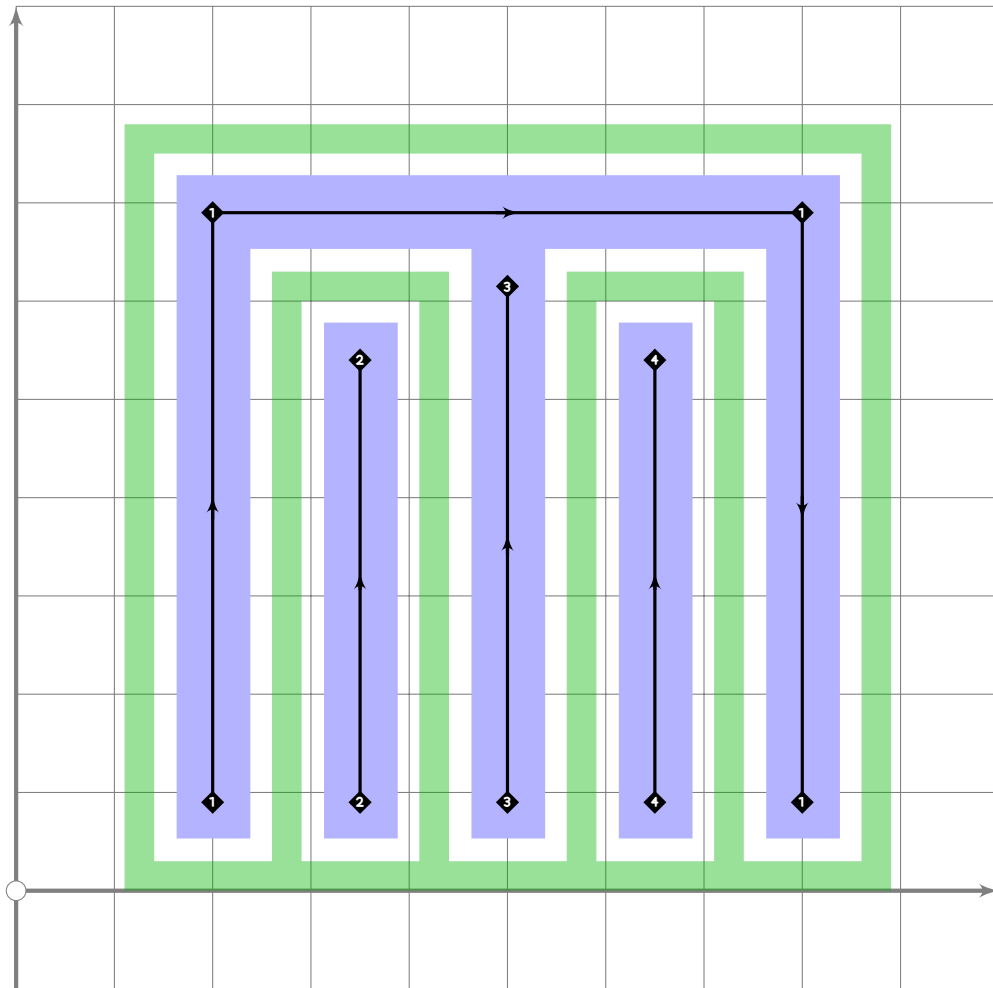
```

842 % #33 Fuji no Uraba
843 begintsuglyph("genjimon33";225);
844 gbk(0,0);
845 gp(1,1);
846 gj(2,5);
847 gb(3);gf(2);gr;gr;gf(2);ge;
848 endsuglyph;
849

```



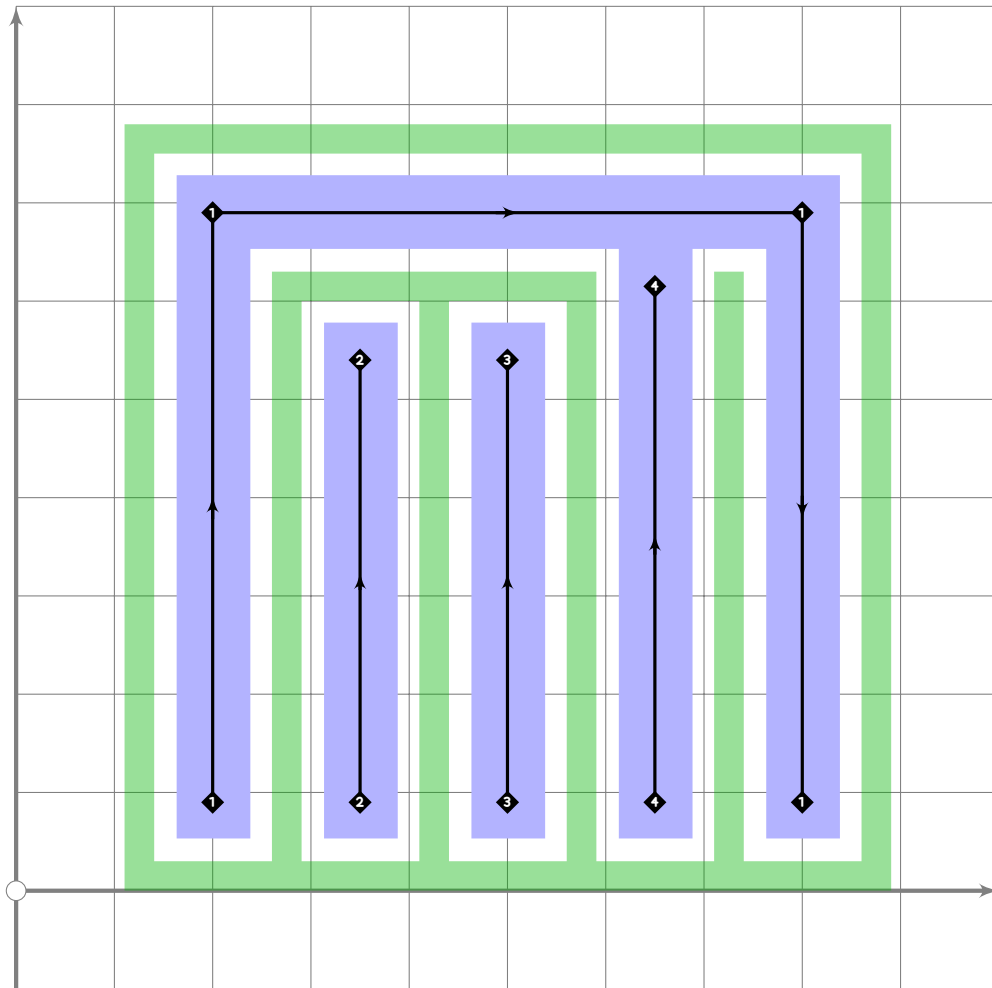




```

866 % #36 Kashiwagi
867 begint Suglyph("genjimon36";228);
868   gbk(0,0);
869   gj(1,5);
870   gp(2,2);
871   gtt(3,1);
872   gp(4,2);
873 endtsuglyph;
874

```



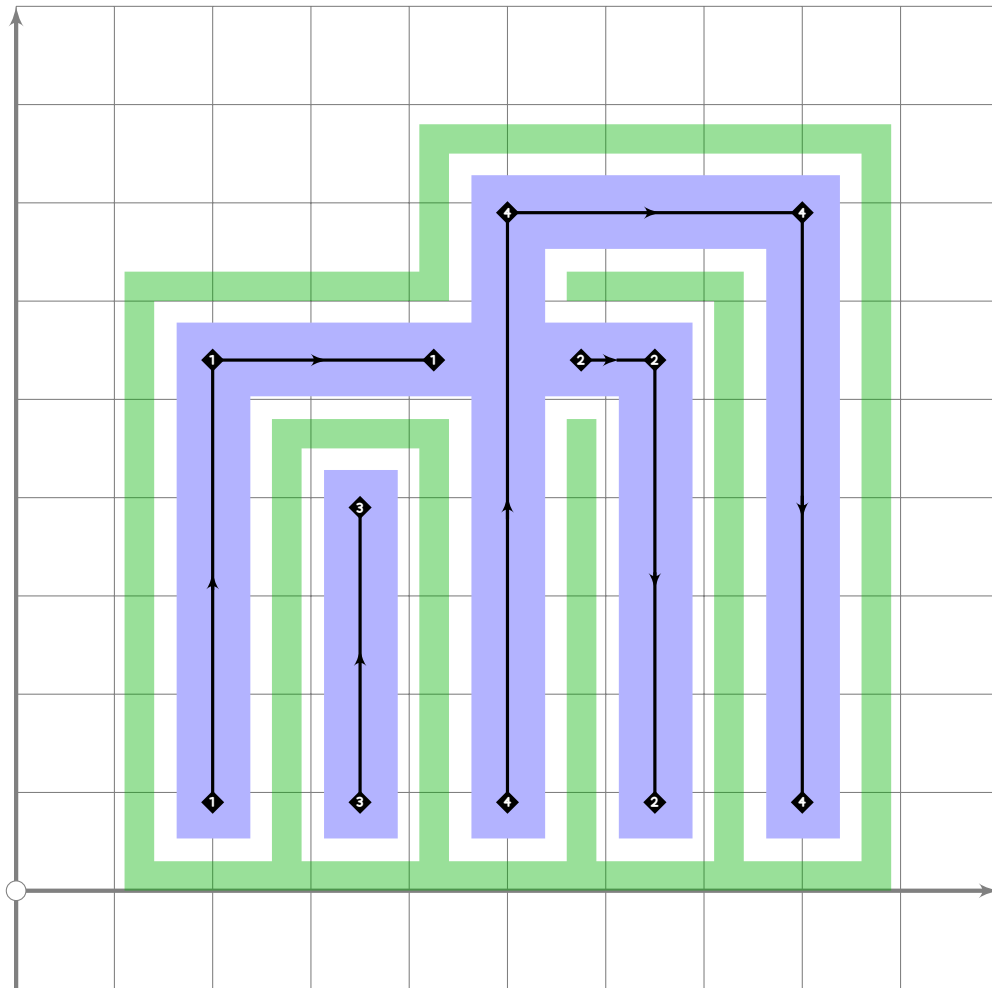
```

875 % #37 Yokobue
876 begint Suglyph("genjimon37",229);
877 gbk(0,0);
878 gj(1,5);
879 gp(2,2);
880 gp(3,2);
881 gtt(4,1);
882 endtsuglyph;
883

```





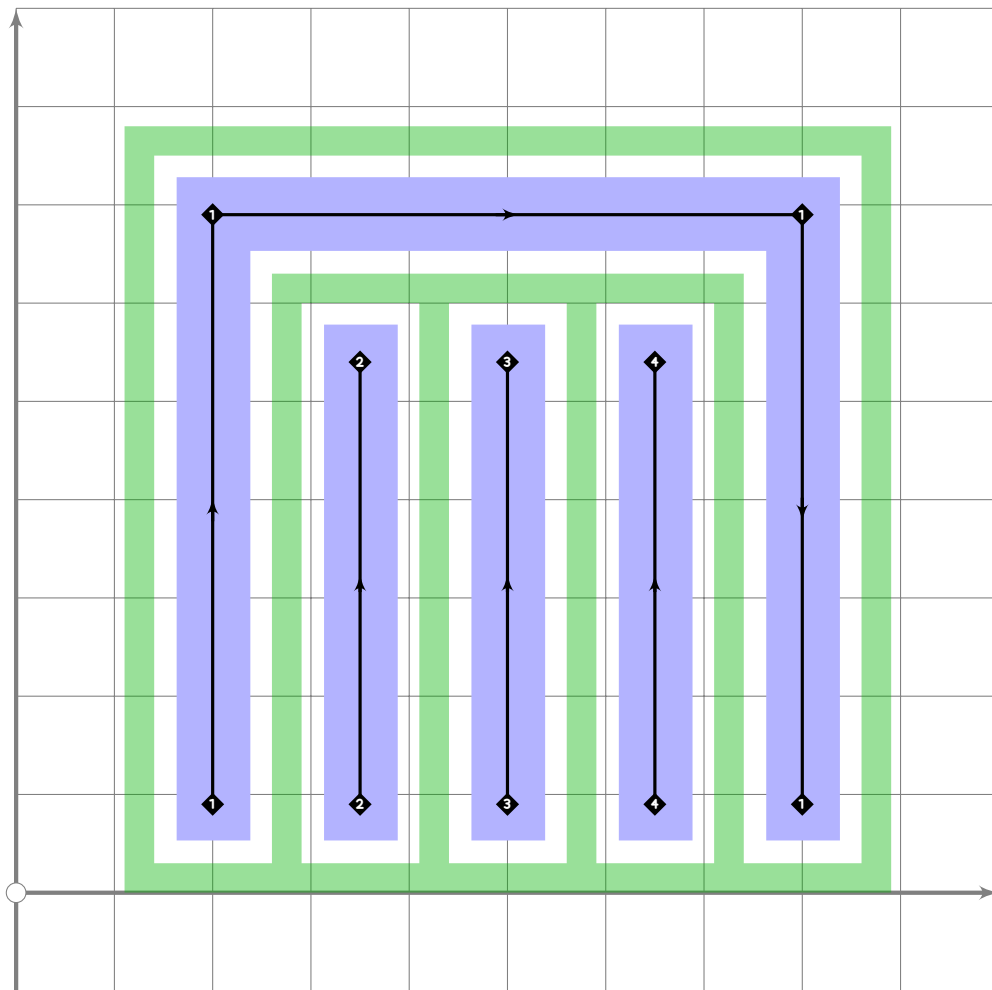


```

892 % #39 Yuugiri
893 begint Suglyph("genjimon39",231);
894 gbk(2,0);
895 gb(1);gf(2);gr;gs(1);gx;gr;gf(2);ge;
896 gp(2,3);
897 gj(3,5);
898 endtsuglyph;
899

```



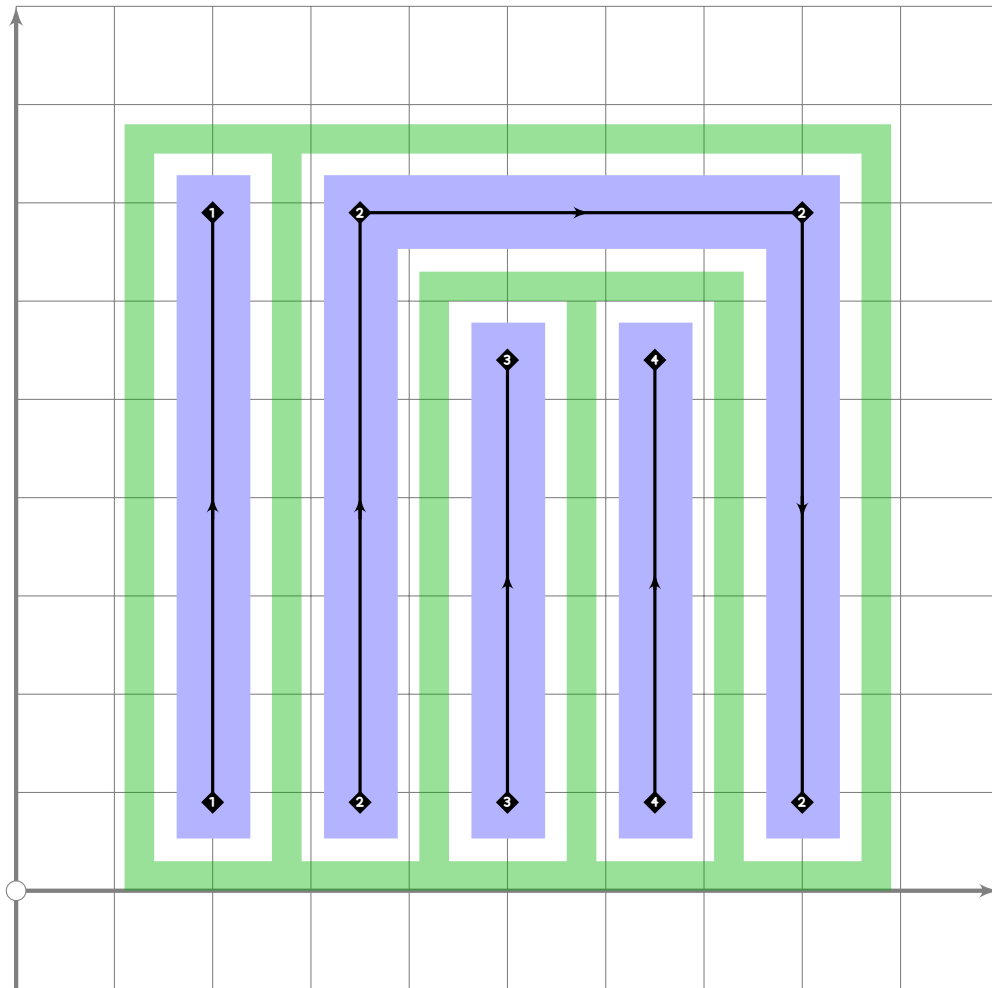


```

908 % #41 Maboroshi
909 begintsuglyph("genjimon41";233);
910 gbk(0,0);
911 gj(1,5);
912 gp(2,2);
913 gp(3,2);
914 gp(4,2);
915 endsuglyph;
916

```

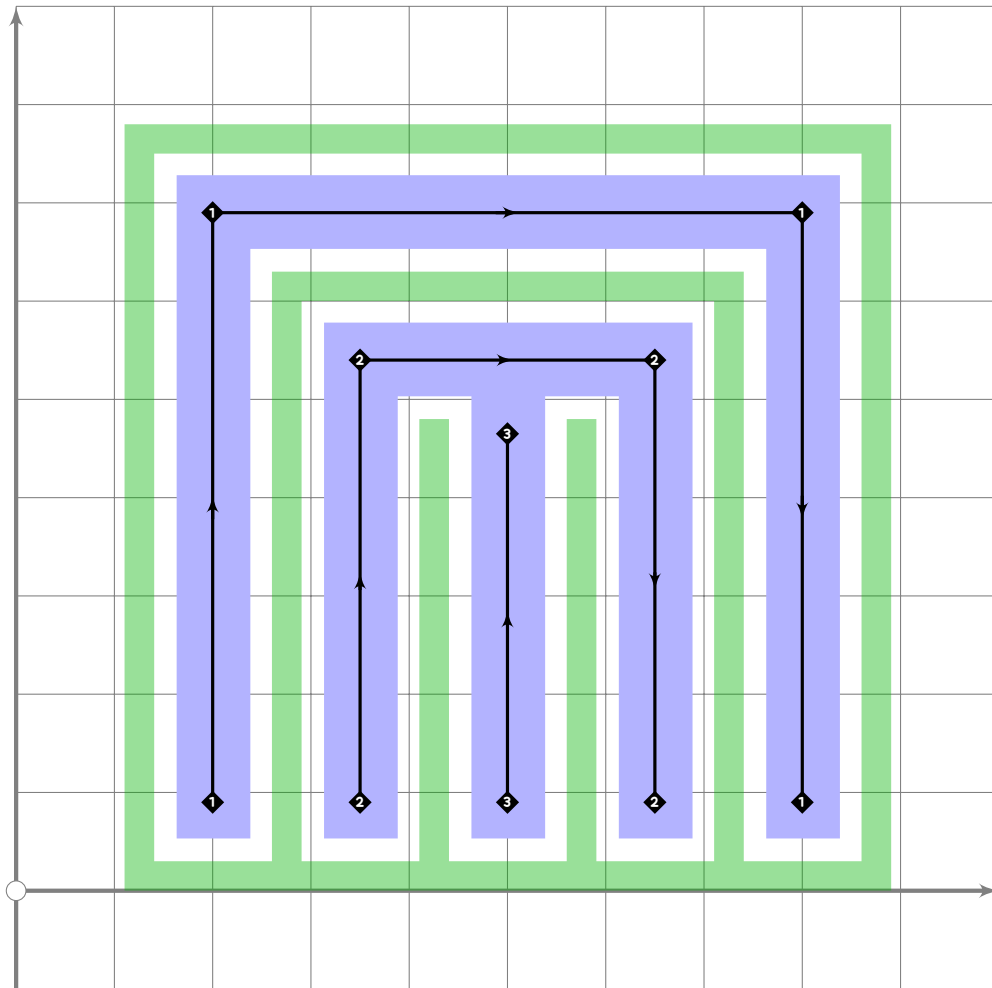




```

925 % #43 Koubai
926 begint Suglyph("genjimon43",235);
927 gbk(0,0);
928 gp(1,1);
929 gj(2,5);
930 gp(3,2);
931 gp(4,2);
932 endtsuglyph;
933

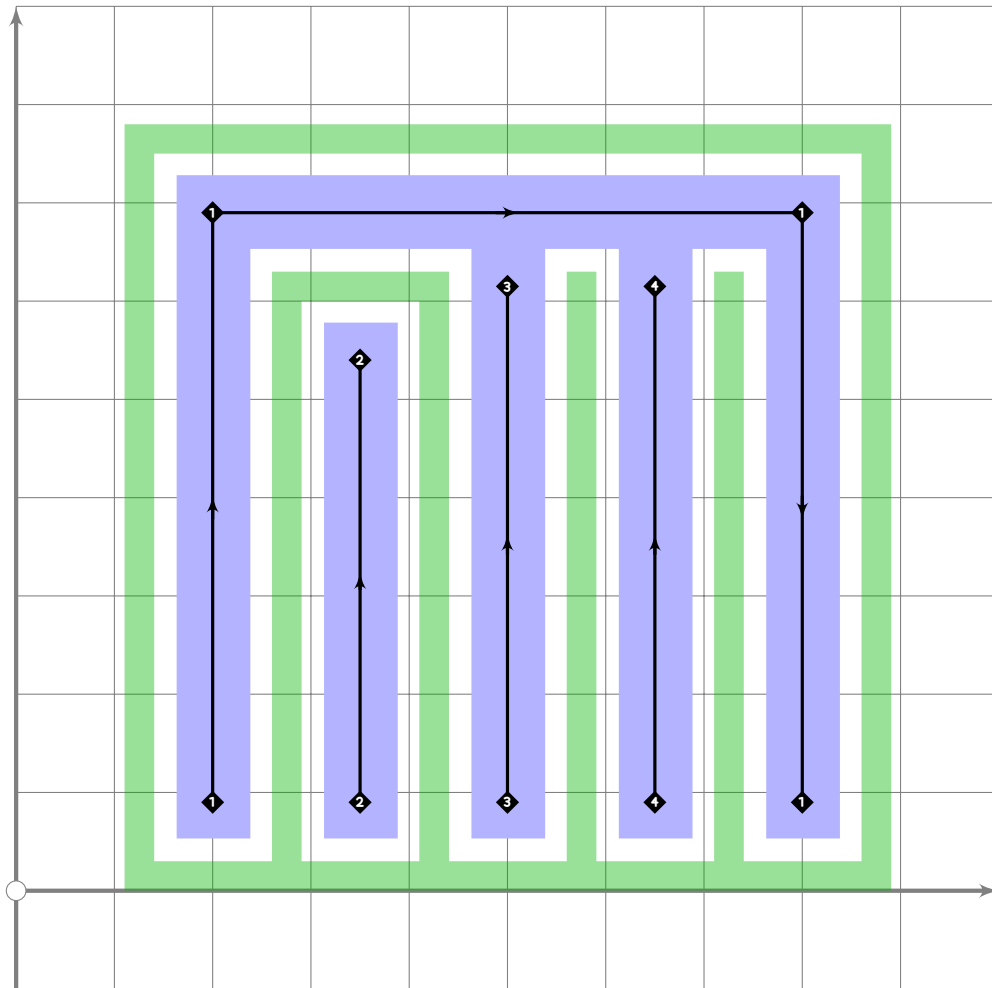
```



```

934 % #44 Takegawa
935 beginsuglyph("genjimon44",236);
936 gbk(0,0);
937 gj(1,5);
938 gb(2);gf(2);gr;gs(1);gr;gf(2);ge;
939 gtt(3,2);
940 endsuglyph;
941

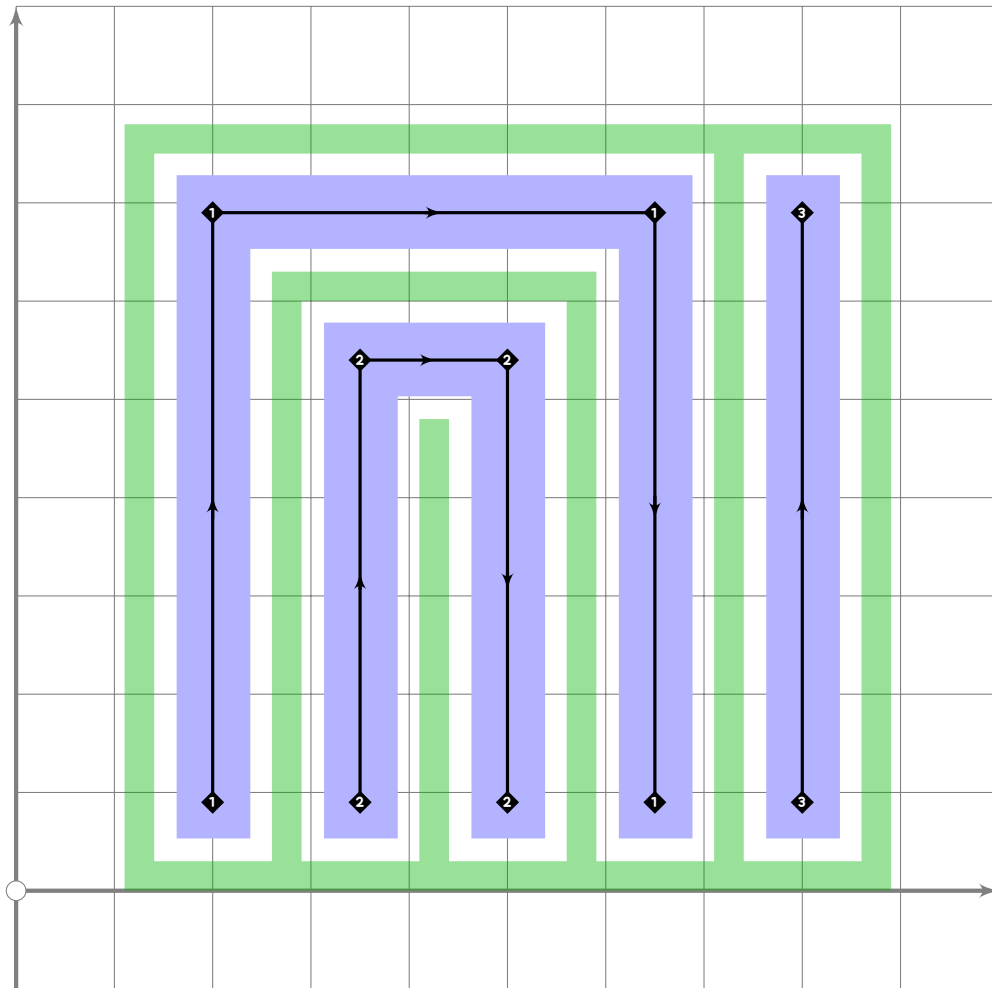
```



```

942 % #45 Hashihime
943 begint Suglyph("genjimon45",237);
944 gbk(0,0);
945 gj(1,5);
946 gp(2,2);
947 gtt(3,1);
948 gtt(4,1);
949 endtsuglyph;
950

```

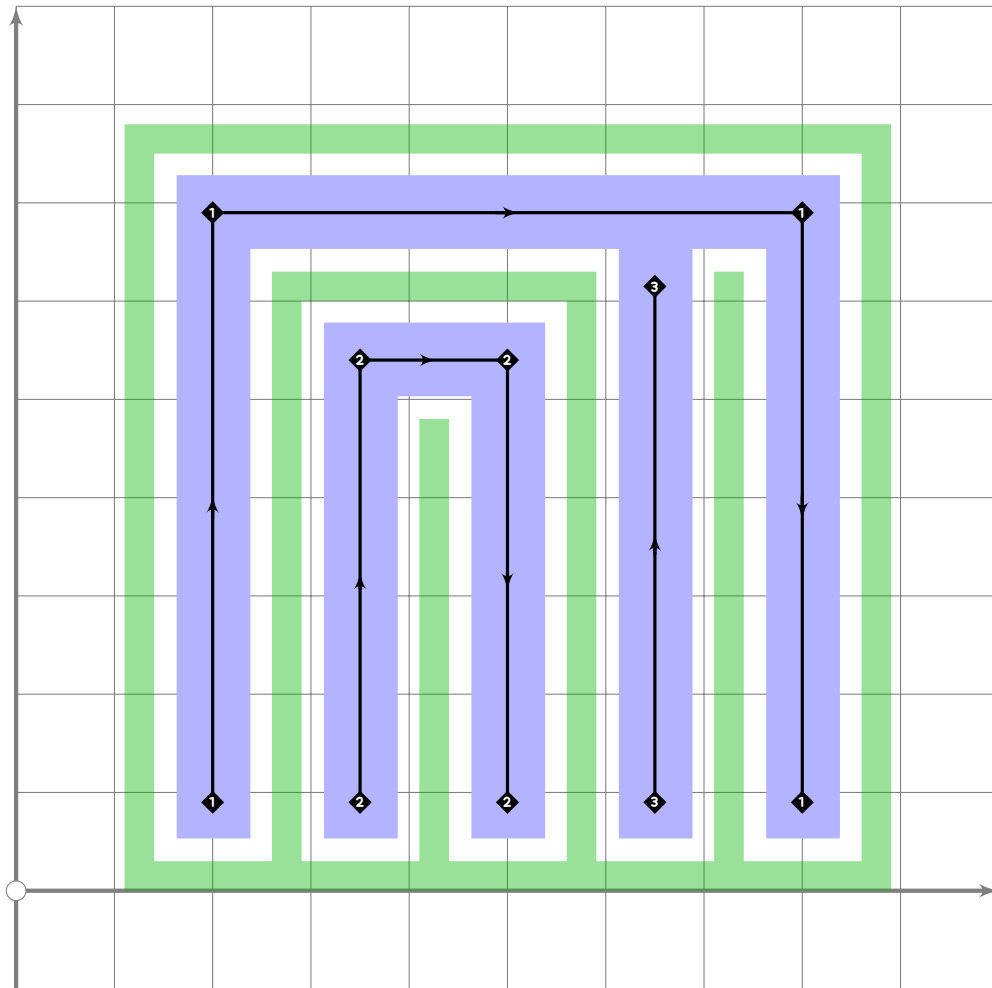


```

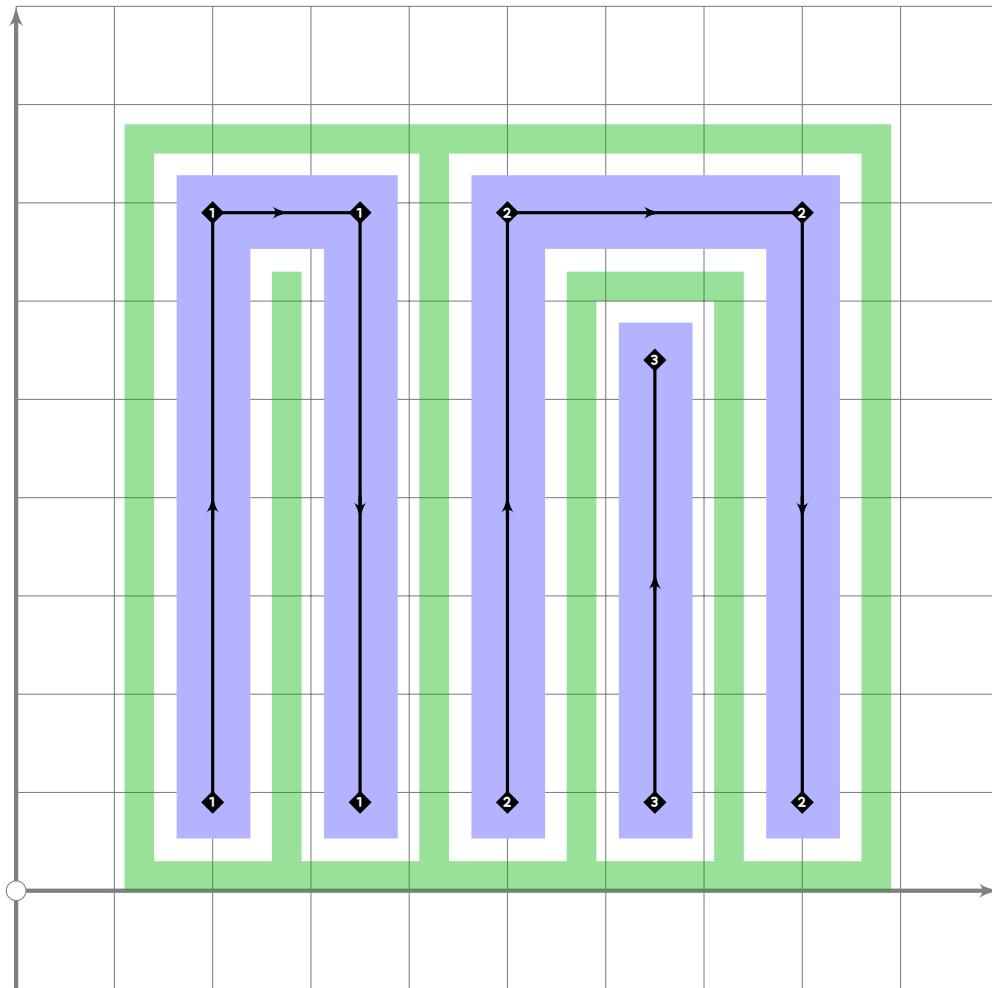
951 % #46 Shii ga Moto
952 begintsuglyph("genjimon46",238);
953 gbk(0,0);
954 gj(1,4);
955 gb(2);gf(2);gr;gr;gf(2);ge;
956 gp(5,1);
957 endsuglyph;
958

```





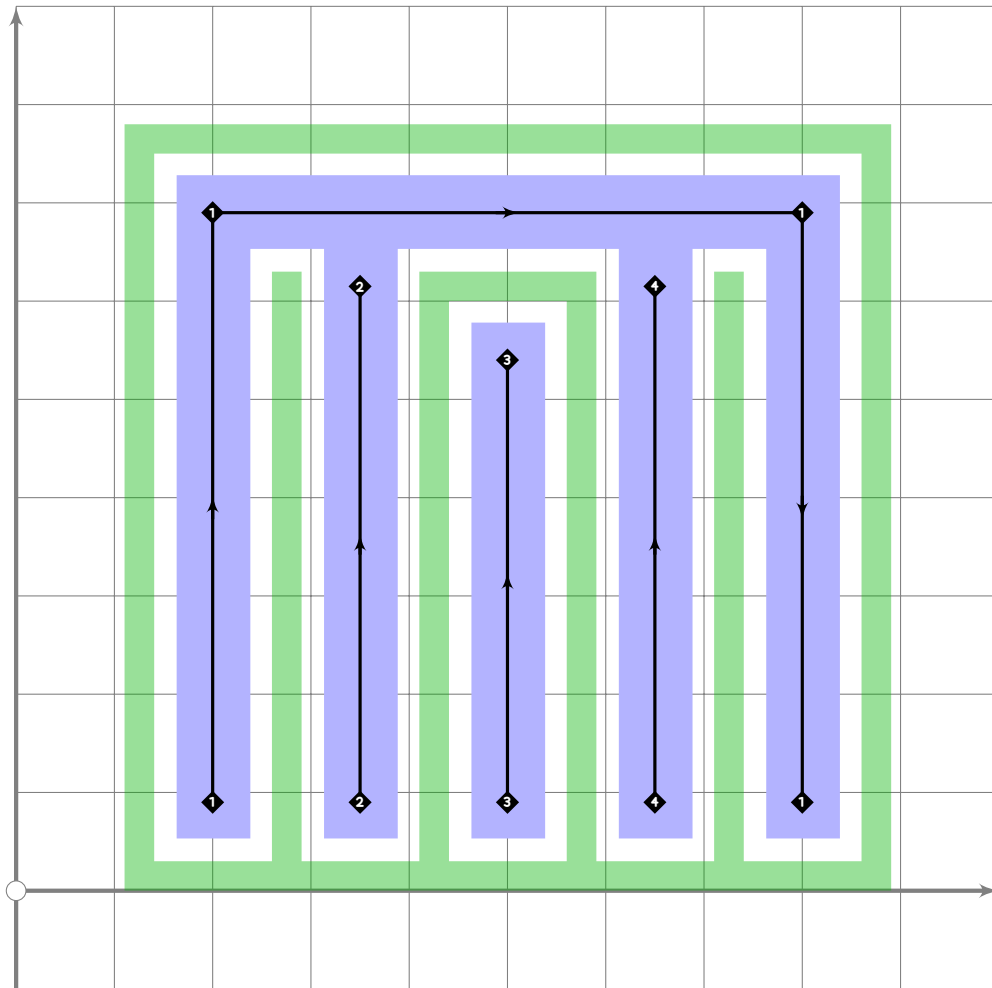
```
959 % #47 Agemaki
960 beginsuglyph("genjimon47",239);
961 gbk(0,0);
962 gj(1,5);
963 gb(2);gf(2);gr;gr;gf(2);ge;
964 gtt(4,1);
965 endsuglyph;
966
```



```

967 % #48 Sawarabi
968 begint Suglyph("genjimon48",240);
969 gbk(0,0);
970 gj(1,2);
971 gj(3,5);
972 gp(4,2);
973 endtsuglyph;
974

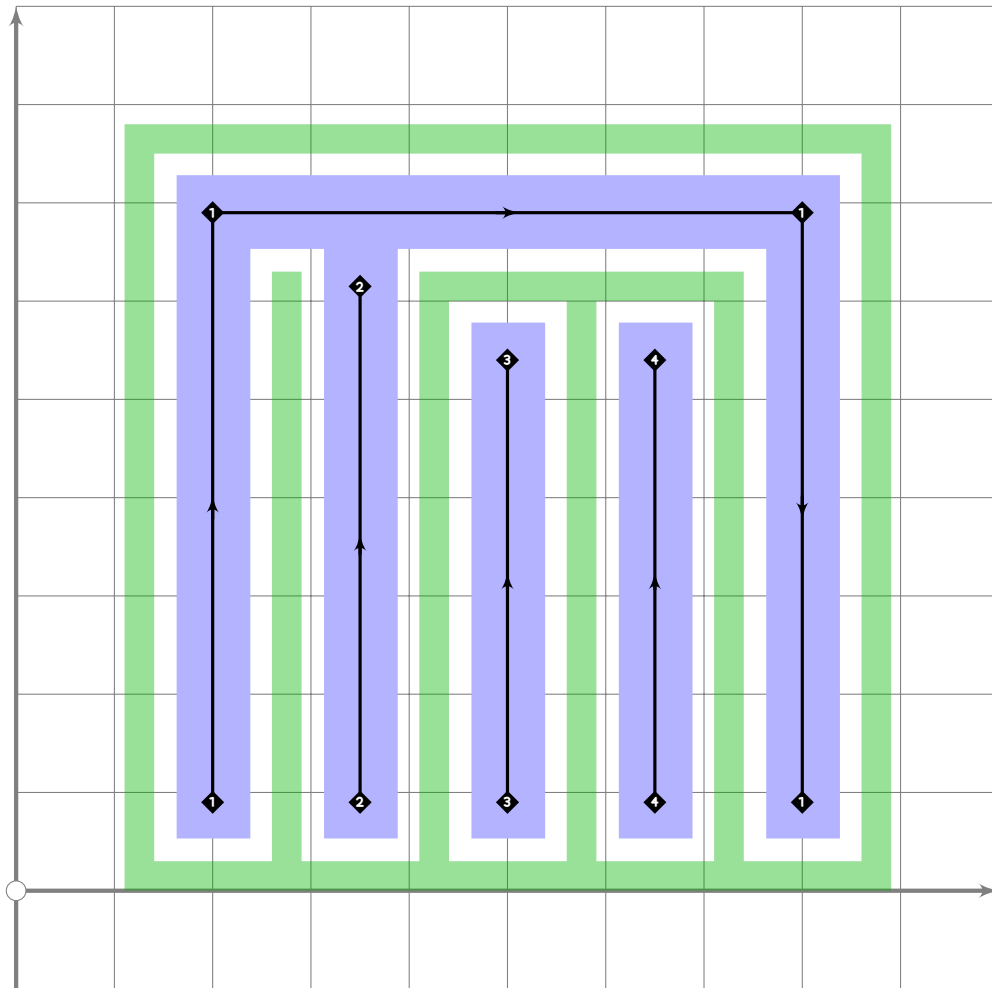
```



```

975 % #49 Yadorigi
976 begintsuglyph("genjimon49",241);
977 gbk(0,0);
978 gj(1,5);
979 gtt(2,1);
980 gp(3,2);
981 gtt(4,1);
982 endsuglyph;
983

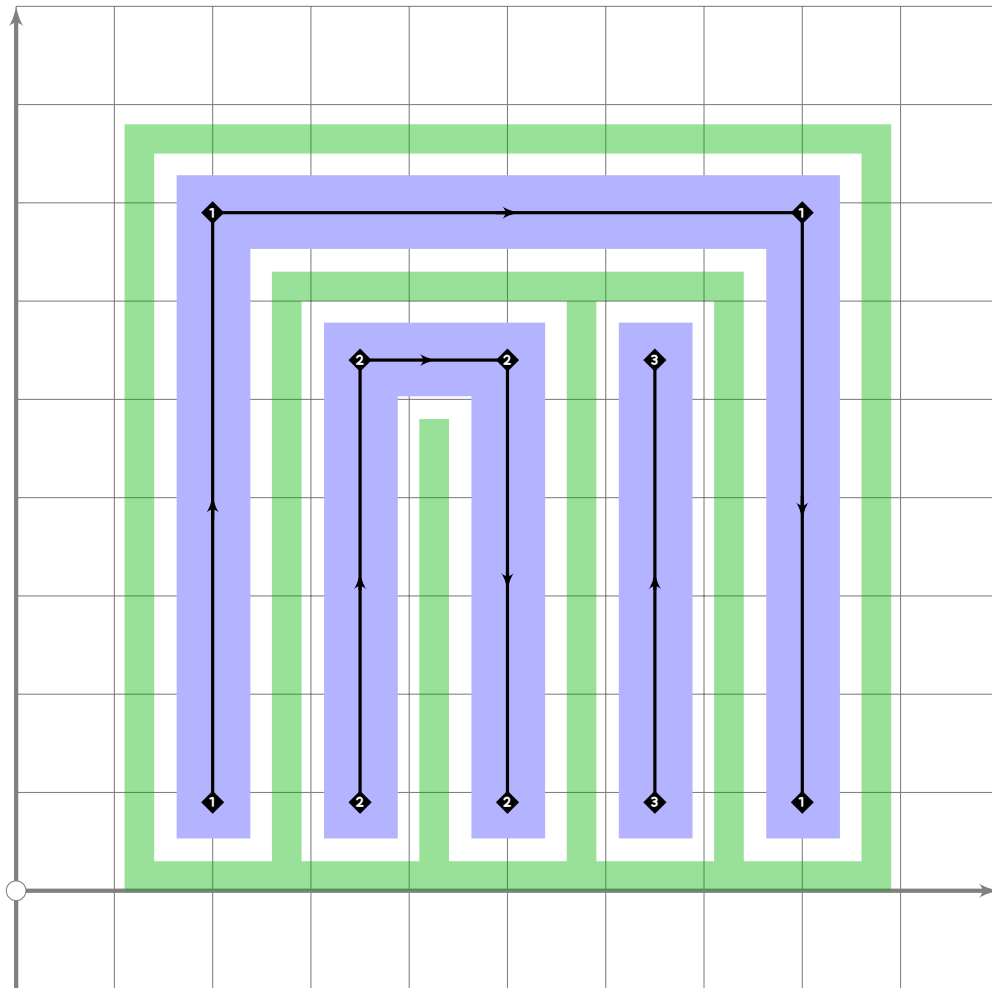
```



```

984 % #50 Azumaya
985 begint Suglyph("genjimon50",242);
986 gbk(0,0);
987 gj(1,5);
988 gtt(2,1);
989 gp(3,2);
990 gp(4,2);
991 endtsuglyph;
992

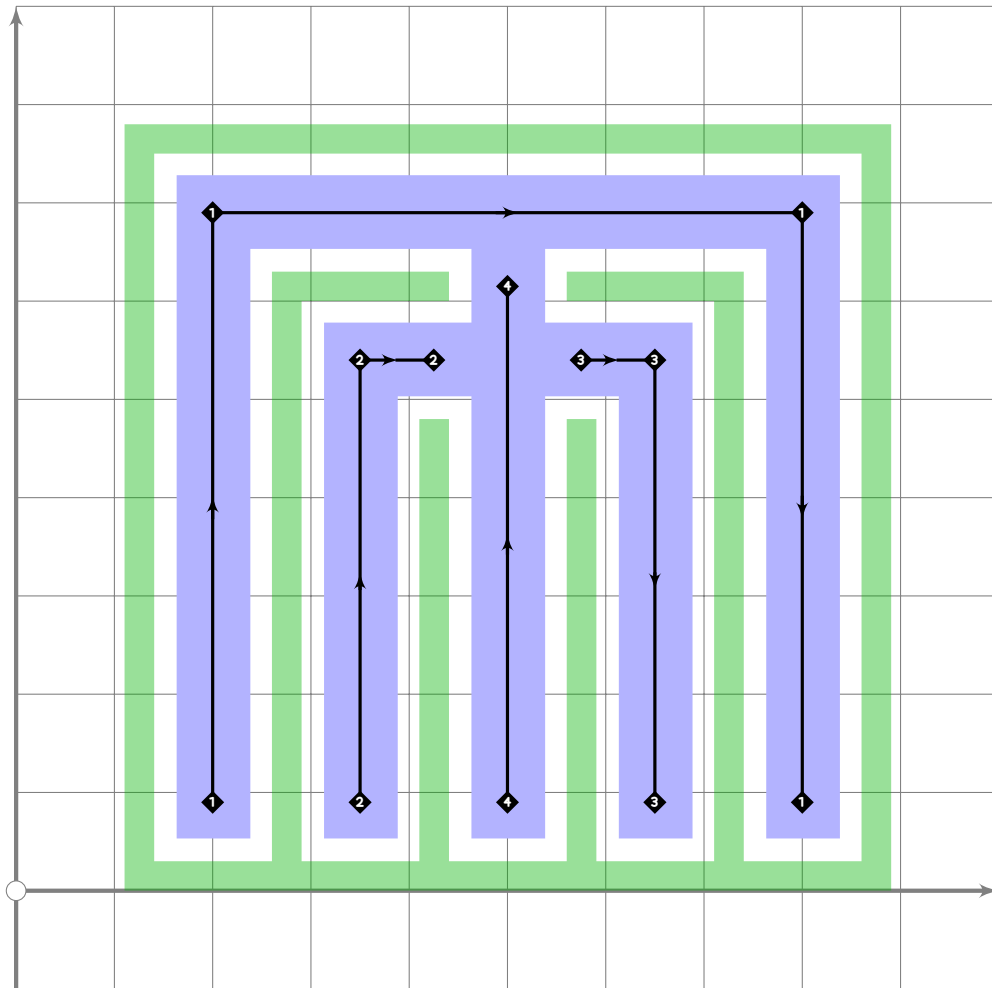
```



```

993 % #51 Ukifune
994 begintsuglyph("genjimon51";243);
995 gbk(0,0);
996 gj(1,5);
997 gb(2);gf(2);gr;gr;gf(2);ge;
998 gp(4,2);
999 endsuglyph;
1000

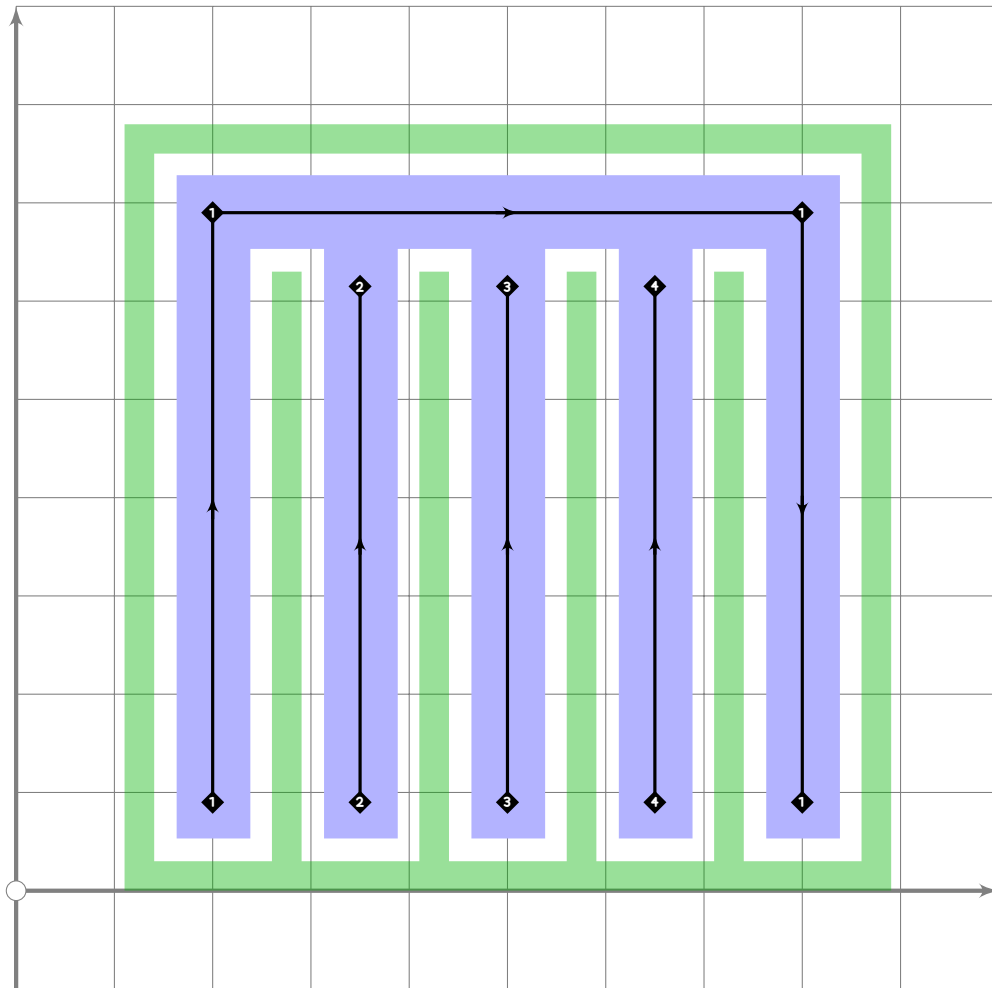
```



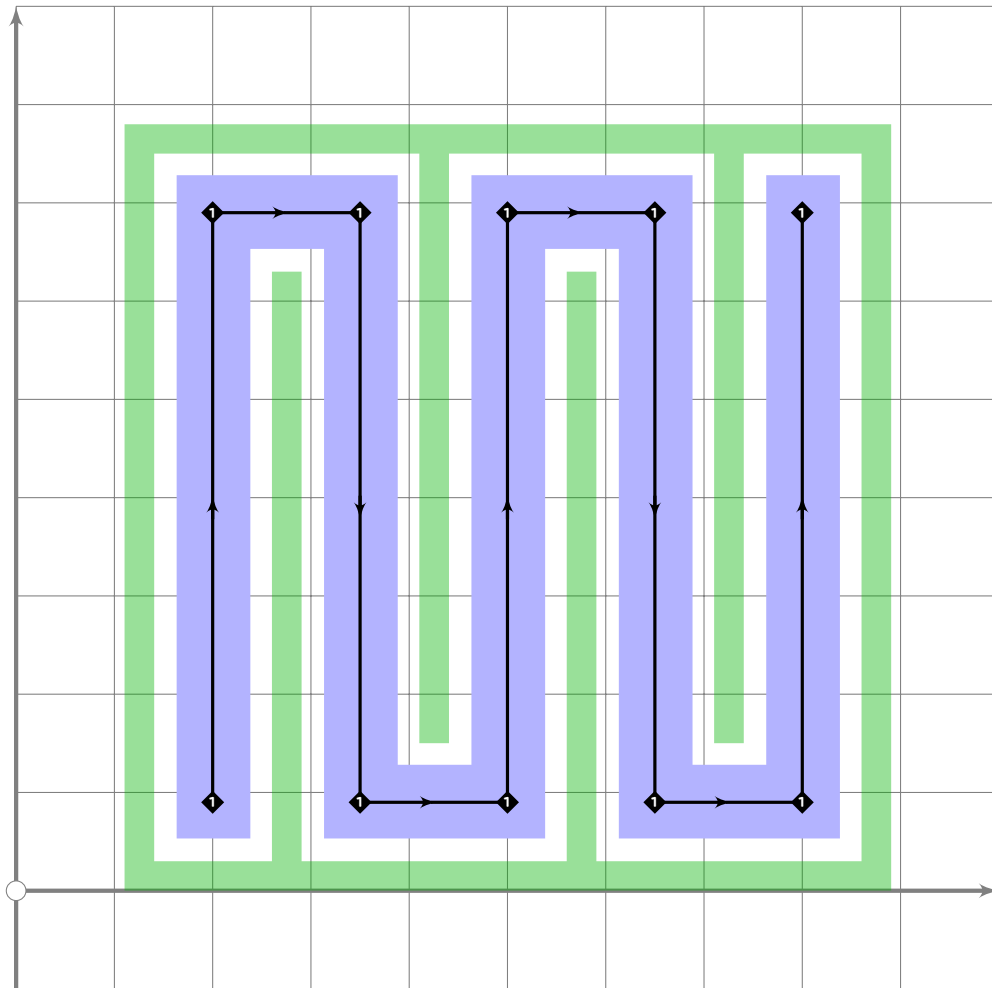
```

1001 % #52 Kagerou
1002 begintsuglyph("genjimon52",244);
1003 gbk(0,0);
1004 gj(1,5);
1005 gb(2);gf(2);gr;gx;gr;gf(2);ge;
1006 gtt(3,1);
1007 endsuglyph;
1008

```



```
1009 % #53 Tenarai
1010 begintsuglyph("genjimon53";245);
1011 gbk(0,0);
1012 gj(1,5);
1013 gtt(2,1);
1014 gtt(3,1);
1015 gtt(4,1);
1016 endtsuglyph;
1017
```



```

1018 % #54 Yumi no Ukihashi
1019 begintsuglyph("genjimon54",246);
1020 gbk(0,0);
1021 gb(1);gf(1);gr;gr;gf(1);gl;gl;gf(1);gr;gr;gf(1);gl;gl;gf(1);ge;
1022 endsuglyph;
1023
1024 _____
1025
1026 endfont;
1027
1028 _____

```



# tsuku-ff0.mp

```
1 %
2 % Unicode page FF0 (Fraction Numerators) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36 input numerals.mp;
37 input frac-intro.mp;
38
39 

---


40
```

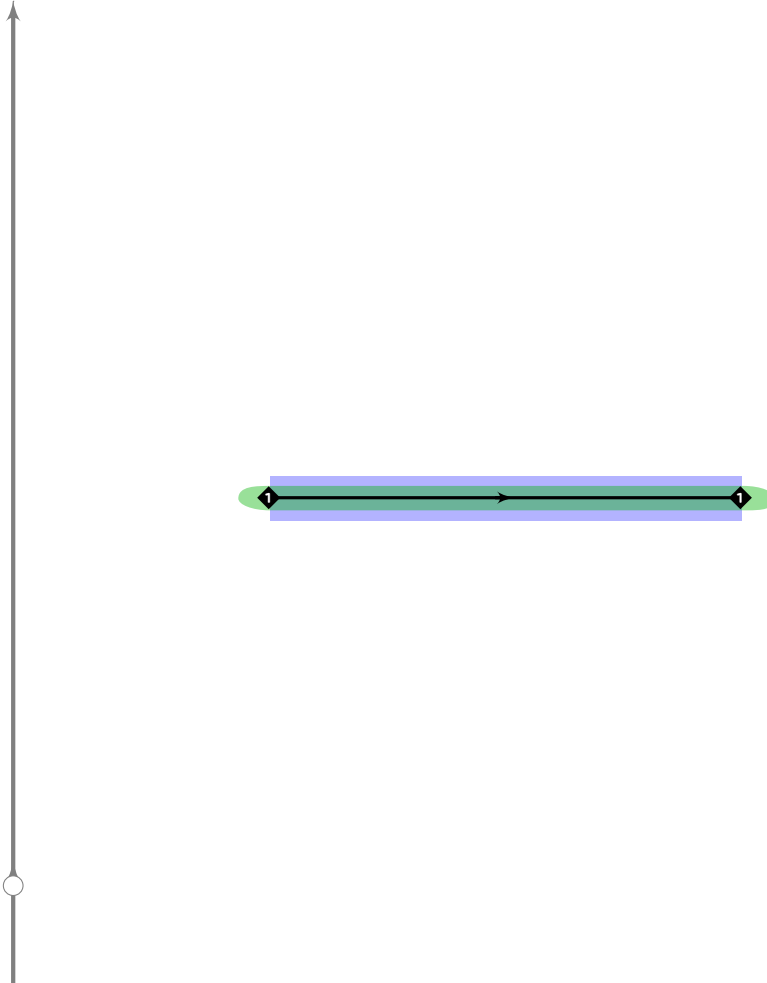
## Fraction Numerators

```
41 % FRACTION NUMERATORS
42
43 transform nxf[];
44
45 (frac.in.x1,frac.in.y1) transformed nxf1=(frac.one.x1,frac.one.y4);
46 (frac.in.x2,frac.in.y1) transformed nxf1=(frac.one.x2,frac.one.y4);
47 (frac.in.x1,frac.in.y2) transformed nxf1=(frac.one.x1,frac.one.y5);
48
49 (frac.in.x1,frac.in.y1) transformed nxf2=(frac.two.x1,frac.two.y4);
50 (frac.in.x2,frac.in.y1) transformed nxf2=(frac.two.x2,frac.two.y4);
51 (frac.in.x1,frac.in.y2) transformed nxf2=(frac.two.x1,frac.two.y5);
52 (frac.in.x1,frac.in.y1) transformed nxf3=(frac.two.x2,frac.two.y4);
53 (frac.in.x2,frac.in.y1) transformed nxf3=(frac.two.x3,frac.two.y4);
54 (frac.in.x1,frac.in.y2) transformed nxf3=(frac.two.x2,frac.two.y5);
55
56 (frac.in.x1,frac.in.y1) transformed nxf4=(frac.three.x1,frac.three.y4);
57 (frac.in.x2,frac.in.y1) transformed nxf4=(frac.three.x2,frac.three.y4);
58 (frac.in.x1,frac.in.y2) transformed nxf4=(frac.three.x1,frac.three.y5);
59 (frac.in.x1,frac.in.y1) transformed nxf5=(frac.three.x2,frac.three.y4);
60 (frac.in.x2,frac.in.y1) transformed nxf5=(frac.three.x3,frac.three.y4);
61 (frac.in.x1,frac.in.y2) transformed nxf5=(frac.three.x2,frac.three.y5);
62 (frac.in.x1,frac.in.y1) transformed nxf6=(frac.three.x3,frac.three.y4);
63 (frac.in.x2,frac.in.y1) transformed nxf6=(frac.three.x4,frac.three.y4);
64 (frac.in.x1,frac.in.y2) transformed nxf6=(frac.three.x3,frac.three.y5);
65
66 (frac.in.x1,frac.in.y1) transformed nxf7=(frac.four.x1,frac.four.y4);
67 (frac.in.x2,frac.in.y1) transformed nxf7=(frac.four.x2,frac.four.y4);
68 (frac.in.x1,frac.in.y2) transformed nxf7=(frac.four.x1,frac.four.y5);
```

```

69 (frac.in.x1,frac.in.y1) transformed nxf8=(frac.four.x2,frac.four.y4);
70 (frac.in.x2,frac.in.y1) transformed nxf8=(frac.four.x3,frac.four.y4);
71 (frac.in.x1,frac.in.y2) transformed nxf8=(frac.four.x2,frac.four.y5);
72 (frac.in.x1,frac.in.y1) transformed nxf9=(frac.four.x3,frac.four.y4);
73 (frac.in.x2,frac.in.y1) transformed nxf9=(frac.four.x4,frac.four.y4);
74 (frac.in.x1,frac.in.y2) transformed nxf9=(frac.four.x3,frac.four.y5);
75 (frac.in.x1,frac.in.y1) transformed nxf10=(frac.four.x4,frac.four.y4);
76 (frac.in.x2,frac.in.y1) transformed nxf10=(frac.four.x5,frac.four.y4);
77 (frac.in.x1,frac.in.y2) transformed nxf10=(frac.four.x4,frac.four.y5);
78
79 (frac.in.x1,frac.in.y1) transformed nxf11=(frac.half.x1,frac.half.y4);
80 (frac.in.x2,frac.in.y1) transformed nxf11=(frac.half.x2,frac.half.y4);
81 (frac.in.x1,frac.in.y2) transformed nxf11=(frac.half.x1,frac.half.y5);
82
83 tsu_rescale_native_zero;

```



```

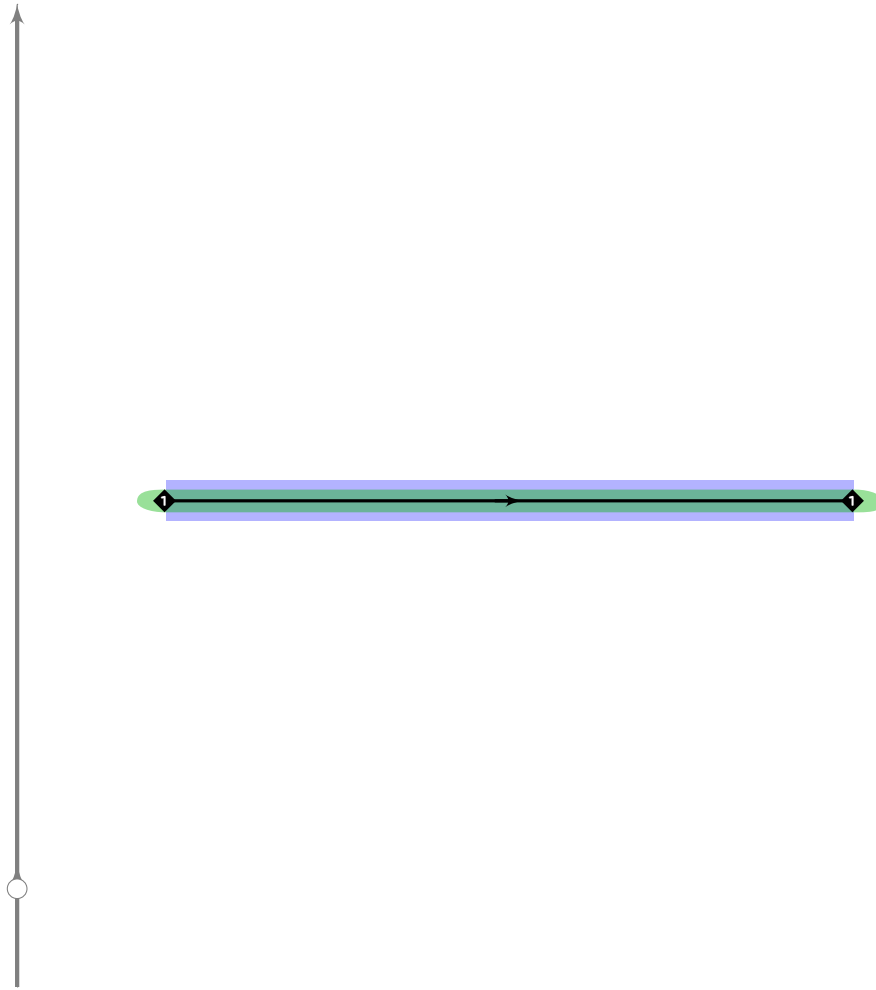
84
85 begintsuglyph("fraction.1";1);
86 bp1:=((-0.25)[(frac.one.x1,frac.one.y3),(frac.one.x2,frac.one.y3)])
87   -((1.25)[(frac.one.x1,frac.one.y3),(frac.one.x2,frac.one.y3)]);
88 bq1:=(2,2)-(2,2);
89 bo_size1:=60;

```

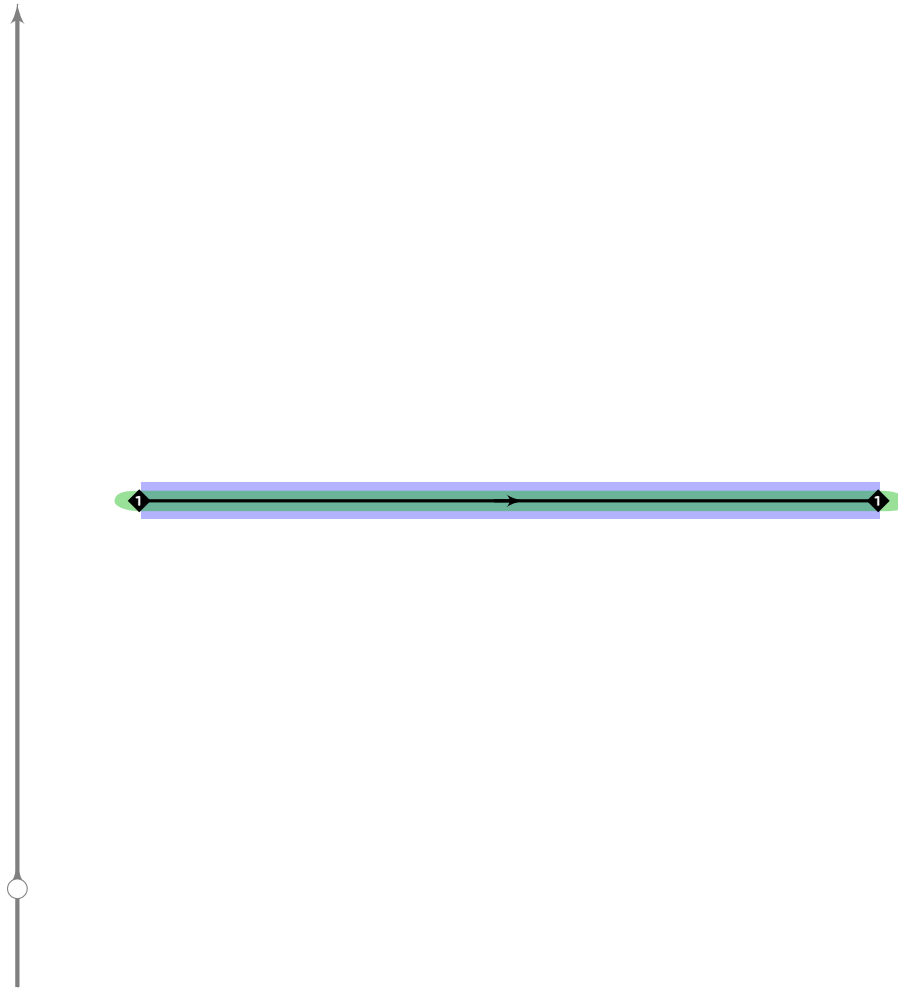
```
90 sp:=2;  
91 tsu_render;  
92 endtsuglyph;
```



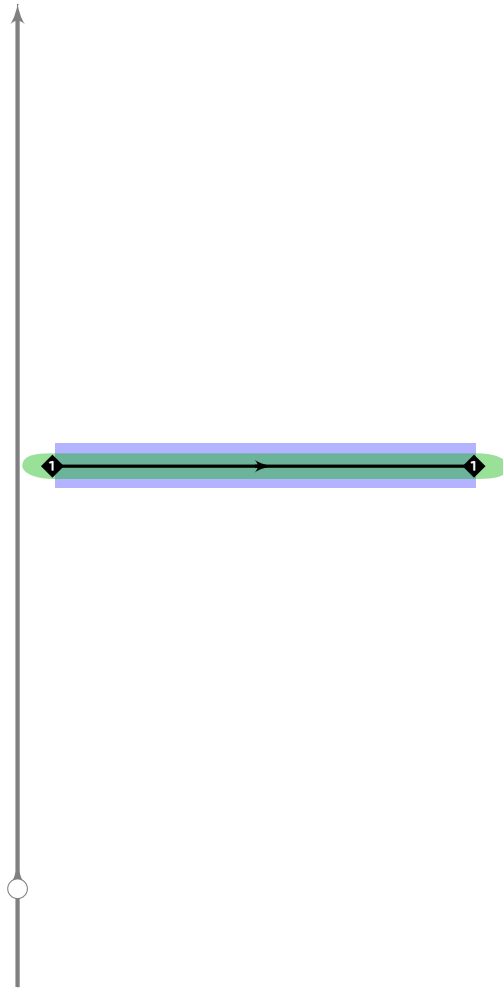
```
93  
94 begint Suglyph("fraction.2";2);  
95 bp1:=((-0.07)[(frac.two.x1,frac.two.y3),(frac.two.x3,frac.two.y3)])  
96   -(1.07)[(frac.two.x1,frac.two.y3),(frac.two.x3,frac.two.y3)];  
97 bq1:=(2,2)-(2,2);  
98 bo_size1:=60;  
99 sp:=2;  
100 tsu_render;  
101 endtsuglyph;
```



```
102  
103 begintsuglyph("fraction.3",3);  
104 bp1:=(frac.three.x1,frac.three.y3)-(frac.three.x4,frac.three.y3);  
105 bq1:=(2,2)-(2,2);  
106 bo_size1:=55;  
107 sp:=2;  
108 tsu_render;  
109 endtsuglyph;
```



```
110
111 begintsuglyph("fraction.4";4);
112 bp1=(0.03[(frac.four.x1,frac.four.y3),(frac.four.x5,frac.four.y3]])
113   -(0.97[(frac.four.x1,frac.four.y3),(frac.four.x5,frac.four.y3)]]);
114 bq1=(2,2)-(2,2);
115 bo_size1:=50;
116 sp:=2;
117 tsu_render;
118 endsuglyph;
```



```

119
120 begintsuglyph("fraction.latn",5);
121 bp1:=((-0.15)[(frac.half.x1,frac.half.y3),(frac.half.x2,frac.half.y3]])
122   - (1.15[(frac.half.x1,frac.half.y3),(frac.half.x2,frac.half.y3]]);
123 bq1:=(2,2)-(2,2);
124 bo_size1:=60;
125 sp:=2;
126 tsu_render;
127 endtsuglyph;
128
129 make_digit_set(nxf1,"0","1");
130 make_digit_set(nxf2,"0","2");
131 make_digit_set(nxf3,"0","3");
132 make_digit_set(nxf4,"0","4");
133 make_digit_set(nxf5,"0","5");
134 make_digit_set(nxf6,"0","6");
135 make_digit_set(nxf7,"0","7");
136 make_digit_set(nxf8,"0","8");
137 make_digit_set(nxf9,"0","9");
138 make_digit_set(nxf10,"0","a");
139 make_digit_set(nxf11,"0","b");

```

140

141

---

142

143 **endfont;**

144

145

---

# tsuku-ff1.mp

```
1 %
2 % Unicode page FF1 (Fraction Denominators) for Tsukurimashou
3 % Copyright (C) 2011 Matthew Skala
4 %
5-29 [Standard copyright notice]
30
31 

---


32
33 beginfont
34
35 input latin-intro.mp;
36 input numerals.mp;
37 input frac-intro.mp;
38
39 

---


40
```

## Fraction Denominators

```
41 % FRACTION DENOMINATORS
42
43 transform nxf[];
44
45 (frac.in.x1,frac.in.y1) transformed nxf1=(frac.one.x1,frac.one.y1);
46 (frac.in.x2,frac.in.y1) transformed nxf1=(frac.one.x2,frac.one.y1);
47 (frac.in.x1,frac.in.y2) transformed nxf1=(frac.one.x1,frac.one.y2);
48
49 (frac.in.x1,frac.in.y1) transformed nxf2=(frac.two.x1,frac.two.y1);
50 (frac.in.x2,frac.in.y1) transformed nxf2=(frac.two.x2,frac.two.y1);
51 (frac.in.x1,frac.in.y2) transformed nxf2=(frac.two.x1,frac.two.y2);
52 (frac.in.x1,frac.in.y1) transformed nxf3=(frac.two.x2,frac.two.y1);
53 (frac.in.x2,frac.in.y1) transformed nxf3=(frac.two.x3,frac.two.y1);
54 (frac.in.x1,frac.in.y2) transformed nxf3=(frac.two.x2,frac.two.y2);
55
56 (frac.in.x1,frac.in.y1) transformed nxf4=(frac.three.x1,frac.three.y1);
57 (frac.in.x2,frac.in.y1) transformed nxf4=(frac.three.x2,frac.three.y1);
58 (frac.in.x1,frac.in.y2) transformed nxf4=(frac.three.x1,frac.three.y2);
59 (frac.in.x1,frac.in.y1) transformed nxf5=(frac.three.x2,frac.three.y1);
60 (frac.in.x2,frac.in.y1) transformed nxf5=(frac.three.x3,frac.three.y1);
61 (frac.in.x1,frac.in.y2) transformed nxf5=(frac.three.x2,frac.three.y2);
62 (frac.in.x1,frac.in.y1) transformed nxf6=(frac.three.x3,frac.three.y1);
63 (frac.in.x2,frac.in.y1) transformed nxf6=(frac.three.x4,frac.three.y1);
64 (frac.in.x1,frac.in.y2) transformed nxf6=(frac.three.x3,frac.three.y2);
65
66 (frac.in.x1,frac.in.y1) transformed nxf7=(frac.four.x1,frac.four.y1);
67 (frac.in.x2,frac.in.y1) transformed nxf7=(frac.four.x2,frac.four.y1);
68 (frac.in.x1,frac.in.y2) transformed nxf7=(frac.four.x1,frac.four.y2);
```



```

69 (frac.in.x1,frac.in.y1) transformed nxf8=(frac.four.x2,frac.four.y1);
70 (frac.in.x2,frac.in.y1) transformed nxf8=(frac.four.x3,frac.four.y1);
71 (frac.in.x1,frac.in.y2) transformed nxf8=(frac.four.x2,frac.four.y2);
72 (frac.in.x1,frac.in.y1) transformed nxf9=(frac.four.x3,frac.four.y1);
73 (frac.in.x2,frac.in.y1) transformed nxf9=(frac.four.x4,frac.four.y1);
74 (frac.in.x1,frac.in.y2) transformed nxf9=(frac.four.x3,frac.four.y2);
75 (frac.in.x1,frac.in.y1) transformed nxf10=(frac.four.x4,frac.four.y1);
76 (frac.in.x2,frac.in.y1) transformed nxf10=(frac.four.x5,frac.four.y1);
77 (frac.in.x1,frac.in.y2) transformed nxf10=(frac.four.x4,frac.four.y2);
78
79 (frac.in.x1,frac.in.y1) transformed nxf11=(frac.half.x1,frac.half.y1);
80 (frac.in.x2,frac.in.y1) transformed nxf11=(frac.half.x2,frac.half.y1);
81 (frac.in.x1,frac.in.y2) transformed nxf11=(frac.half.x1,frac.half.y2);
82
83 tsu_rescale_full;
84 make_digit_set(nxf1,"1","1");
85
86 tsu_rescale_native_zero;
87 make_digit_set(nxf2,"1","2");
88 tsu_rescale_full;
89 make_digit_set(nxf3,"1","3");
90
91 tsu_rescale_native_zero;
92 make_digit_set(nxf4,"1","4");
93 make_digit_set(nxf5,"1","5");
94 tsu_rescale_full;
95 make_digit_set(nxf6,"1","6");
96
97 tsu_rescale_native_zero;
98 make_digit_set(nxf7,"1","7");
99 make_digit_set(nxf8,"1","8");
100 make_digit_set(nxf9,"1","9");
101 tsu_rescale_full;
102 make_digit_set(nxf10,"1","a");
103
104 tsu_rescale_native_narrow;
105 make_digit_set(nxf11,"1","b");
106
107 _____
108
109 endfont;
110
111 _____

```