

* matrix Module PREDICATION

A matrix module is a set of the library module of the standard included in the system.
Include is done before using.

? <include matrix>;

When calling, it describes after ::matrix.

::matrix <add VAR LIST1 LIST2>

LIST1 is added to LIST2, and it sets it to VAR.

::matrix <det VAR LIST>

Determinant of LIST is set to VAR.

::matrix <display LIST>

LIST is displayed.

::matrix <divscalar VAR LIST1 VAL2>

The value in which LIST1 is divided in scalar value VAL2 is set to VAR.

::matrix <eigen VARLIST VARVAL LIST>

Eigenvector of LIST is set to VARLIST, and eigenvalue is set to VARVAL.

::matrix <equal LIST1 LIST2>

It judges whether LIST1 is equal to matrix of LIST2.

::matrix <fourier VAR LIST>

Do the Fourier transform of the data of LIST, and the result is set to VAR.

::matrix <getcolumn VAR COLUMN LIST>

Column of COLUMN of LIST is taken out, and it sets it to VAR.

::matrix <getrow VAR ROW LIST>

Row of ROW of LIST is taken out, and it sets it to VAR.

::matrix <getval VAR ROW COLUMN LIST>

The value of (COLUMN, ROW) of LIST is taken out, and it sets it to VAR.

::matrix <inv VAR LIST>

The matrix inverse of LIST is set to VAR.

::matrix <invfourier VAR LIST>

The reverse Fourier transform of LIST, and the result is set to VAR.

::matrix <isdiagonal LIST>

Whether LIST is a diagonal matrix is judged.

::matrix <ismatrix LIST>

Whether LIST is matrix is judged.

::matrix <isnull LIST>

The element of LIST is all 0 is judged.

::matrix <isregular LIST>

It is judged that LIST is a regular matrix.

::matrix <issingular LIST>

It is judged that LIST is not a regular

::matrix <issquare LIST>

It is judged that LIST is a square matrix.

::matrix <issymmetric LIST>

It is judged that LIST is a symmetric matrix.

::matrix <isvector LIST>

It is judged that LIST is a vector.

::matrix <mul VAR LIST1 LIST2>

Matrix LIST1*LIST2 is set to VAR.

::matrix <mulscalar VAR VAL1 LIST2>

VAL1*LIST2 is set to VAR.

::matrix <notequal LIST1 LIST2>

It is judged that LIST1 is not equal to matrix of LIST2.

::matrix <random VAR ROW COLUMN>

The element of ROW x COLUMN sets matrix of random numbers to VAR.

::matrix <range VAR ROW1 ROW2 COLUMN1 COLUMN2 LIST>

It takes out of matrix LIST in the part of ROW1-ROW2 and COLUMN1-COLUMN2 and it sets it to VAR.

::matrix <rangecolumn VAR COLUMN1 COLUMN2 LIST>

The part of COLUMN1–COLUMN2 is taken out of matrix LIST and it sets it to VAR.

::matrix <rangerow VAR ROW1 ROW2 LIST>

The part of ROW1–ROW2 is taken out of matrix LIST and it sets it to VAR.

::matrix <RowSortAscending VAR LIST>

It sorts it in ascending order by the first element of LIST.

::matrix <set VAR ROW COLUMN LIST>

LIST is converted into matrix of ROWxCOLUMN and it sets it to VAR.

::matrix <setval VAR ROW COLUMN VAL LIST>

The value of the position of (ROW, COLUMN) of LIST is replaced with VAL, and it sets it to VAR.

::matrix <size VARROW VARCOLUMN LIST>

The size of ROW and COLUMN of LIST is set to (VARROW, VARCOLUMN).

::matrix <solve VAR LIST1 LIST2>

Simultaneous equations $LIST1 \cdot X = LIST2$ is solved.

::matrix <sub VAR LIST1 LIST2>

The difference of matrix of LIST1 and LIST2 is set to VAR.

::matrix <swapcolumn VAR COLUMN1 COLUMN2 LIST>

COLUMN1 of LIST is replaced with COLUMN2.

::matrix <swaprow VAR ROW1 ROW2 LIST>

ROW1 of LIST is replaced with ROW2.

::matrix <transposed VAR LIST>

The transposed matrix of LIST is set to VAR.

::matrix <unit VAR ROW>

The unit matrix of ROWxROW is set to VAR.

::matrix <zero VAR ROW COLUMN>

Zero matrix of ROWxCOLUMN is set to VAR.