

MATRIX ADJOINT

PURPOSE

Compute the classical adjoint of a matrix.

DESCRIPTION

The classical adjoint of a matrix is the matrix of cofactors. That is, if B_{ij} is the determinant of matrix A with row i and column j omitted, then the cofactor of row i and column j is $(-1)^{(i+j)}B_{ij}$. Matrices for which the adjoint is computed must have the same number of rows and columns. An error message is printed if they do not.

SYNTAX

LET <mat2> = MATRIX ADJOINT <mat1> <SUBSET/EXCEPT/FOR qualification>
 where <mat1> is a matrix;
 <mat2> is a matrix where the resulting matrix adjoint is saved;
 and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

EXAMPLES

LET C = MATRIX ADJOINT A

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

MATRIX COFACTOR	=	Compute a matrix cofactor.
MATRIX DETERMINANT	=	Compute a matrix determinant.
MATRIX MINOR	=	Compute a matrix minor.

REFERENCE

Any standard text on linear algebra.

APPLICATIONS

Linear Algebra

IMPLEMENTATION DATE

93/8

PROGRAM

```

READ MATRIX X
19 21 20
15 22 18
21 24 20
END OF DATA
LET A = MATRIX ADJOINT X
PRINT A

```

The following adjoint matrix is generated:

```

          MATRIX A      --          3 ROWS
                        --          3 COLUMNS

VARIABLES--A1          A2          A3

    0.8000015E+01   0.7799998E+02  -0.1020000E+03
    0.6000000E+02  -0.4000000E+02  -0.1500002E+02
   -0.6199997E+02  -0.4199998E+02   0.1030000E+03

```