MATRIX ADJJOINT

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
```