**MATRIX SUBMATRIX**

**PURPOSE**
Create a new matrix with row i and column j of the original matrix removed.

**SYNTAX**
```
LET <mat2> = MATRIX SUBMATRIX <mat1> <rowid> <colid> <SUBSET/EXCEPT/FOR qualification>
```
where `<mat1>` is the original matrix;
 `<mat2>` is a matrix where the desired submatrix is saved;
 `<rowid>` is the row of the original matrix to remove;
 `<colid>` is the column of the original matrix to remove;
and where the `<SUBSET/EXCEPT/FOR qualification>` is optional and rarely used in this context.

Values for `<rowid>` (or `<colid>`) outside the range 1 to the number of rows (or columns) result in no row (or column) being deleted. Thus to delete a column only, specify the `<rowid>` to be 0. Likewise, to delete a row only, specify the `<colid>` to be 0.

**EXAMPLES**
```
LET C = MATRIX SUBMATRIX A 2 3
```

**DEFAULT**
None

**SYNONYMS**
None

**RELATED COMMANDS**
- MATRIX ADJOINT = Compute the adjoint matrix of a matrix.
- MATRIX DEFINITION = Set a matrix definition.
- MATRIX MINOR = Compute a matrix minor.

**APPLICATIONS**
Linear Algebra

**IMPLEMENTATION DATE**
87/10 (versions prior to 95/2 are restricted to square matrices)

**PROGRAM**
```
READ MATRIX X
16 16 19 21 20
14 17 15 22 18
24 23 21 24 20
18 17 16 15 20
18 11 9 18 7
END OF DATA
LET A = MATRIX SUBMATRIX X 2 3
PRINT A
```

The following output is generated.
```
MATRX A -- 4 ROWS
 -- 4 COLUMNS
VARIABLES--A1 A2 A3 A4
0.1600000E+02 0.1600000E+02 0.2100000E+02 0.2000000E+02
0.2400000E+02 0.2300000E+02 0.2400000E+02 0.2000000E+02
0.1800000E+02 0.1700000E+02 0.1500000E+02 0.2000000E+02
0.1800000E+02 0.1100000E+02 0.1800000E+02 0.7000000E+01
```