MATRIX REPLACE ELEMENT

PURPOSE
Replace an element of a matrix with a parameter.

DESCRIPTION
This command is typically useful in loops. The following syntax, where M is a matrix and K is a loop index, can also be used:

LET M^K(J) = A

SYNTAX
LET <mat2> = MATRIX REPLACE ELEMENT <mat1> <rowid> <colid> <par>
where <mat1> is a matrix for which the element is to be replaced;
<rowid> is a number or parameter that specifies the row of the element to be replaced;
<colid> is a number or parameter that specifies the column of the element to be replaced;
<par> is a number or parameter;
and <mat2> is a matrix where the replaced element is saved (it typically has the same name as <mat1>.

EXAMPLES
LET C = MATRIX REPLACE ELEMENT C A 3 2

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS
MATRIX ELEMENT = Extract an element from a matrix.
MATRIX ROW = Extract a row of the matrix.
MATRIX REPLACE ROW = Replace a row of the matrix.

APPLICATIONS
Linear Algebra

IMPLEMENTATION DATE
93/10

PROGRAM
. REPLACE THE DIAGONAL OF THE MATRIX WITH 1's
READ MATRIX M
14 37 32
19 42 17
12 17 10
END OF DATA
.
LET NROW = MATRIX NUMBER OF COLUMNS M
LET A = 1
.
LOOP FOR K = 1 1 NROW
    LET M = MATRIX REPLACE ELEMENT M K K A
END OF LOOP

The resulting matrix will have the values:

1 37 32
19 1 17
12 17 1