

**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
```