equals "D", the diagonal elements (elements whose row equals column) will be set to the value of realexpression, and all of the other elements will be set to zero.

MATCALC.APP

Appending MATCALC.APP to a program makes available the command MATCALC@, whose format is

MATCALC@ stringexpression;matrixname;matrixname;matrixname

Note that a semicolon rather than a comma precedes matrixname and that the three matrices must be real. If stringexpression equals "+", the third matrix is set equal to the sum of the first two matrices. If stringexpression equals "-", the third matrix is set equal to the first matrix minus the second matrix. For both options all three matrices must have the same number of rows and the same number of columns, or you will get the 'ARGUMENT ERR' message. If stringexpression equals "*", the third matrix is set equal to the product of the first and second matrix. Note that for the last option the number of rows of the first and third matrices must be equal, the number of columns of the second and third must be equal, and the number of columns of the first equal to the number of rows of the second; otherwise the message 'ARGUMENT ERR' will be given.

MAT.APP

Appending MAT.APP to a program makes available the commands MAT@ and DET@. The format for MAT@ is

MAT@ stringexpression;matrixname;matrixname

Note that a semicolon rather than a comma precedes each matrixname and that the matrices must be real. If stringexpression equals "=", the elements of the second matrix are set equal to the elements of the first matrix. The number of rows of the two matrices must be equal as well as the number of columns; otherwise the message 'ARGUMENT ERR' will be given.

If stringexpression equals "T", the second matrix is set equal to the transpose of the first matrix. The number of rows of the first matrix must equal the number of columns of the second and the number of columns of the first must equal the number of rows of the second; otherwise the message 'ARGUMENT ERR' will be given.

If stringexpression equals "INV", the second matrix is set equal to the inverse of the first matrix. The number of rows and columns of the first matrix and the number of rows and columns of the second must all be equal or you will get the 'ARGUMENT ERR' message. Note that if you try to take the inverse of matrix and it has no inverse you will get the 'ARITH.ERR' message.

The format for DET@ is

DET@ stringname;matrixname

Note that a semicolon rather than a comma precedes matrixname and that the matrix must be real. The number of rows must equal the number of columns. The determinant of the matrix is calculated, and the string specified by