MATRIX TRACE

PURPOSE
>   Compute the trace of a matrix.

DESCRIPTION
>   The trace is the sum of the diagonal entries of a matrix.

SYNTAX
>   LET <par> = MATRIX TRACE <mat>   <SUBSET/EXCEPT/FOR qualification>
>   where <mat> is a matrix for which the trace is to be computed;
>   <par> is a parameter where the resulting trace is saved;
>   and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

EXAMPLES
>   LET C = MATRIX TRACE A

NOTE
>   The matrix for which the trace is computed must have the same number of rows and columns. An error message is printed if it does not.

DEFAULT
>   None

SYNONYMS
>   None

RELATED COMMANDS

MATRIX DETERMINANT	=	Compute a matrix determinant.
MATRIX DIAGONAL	=	Extract the diagonal elements of a matrix into a variable.
DIAGONAL MATRIX	=	Create a diagonal matrix.
MATRIX DEFINITION	=	Set a matrix definition.
MATRIX INVERSE	=	Compute a matrix inverse.
MATRIX RANK	=	Compute the rank of a matrix.
MATRIX SOLUTION	=	Solve a system of linear equations.
MATRIX TRANSPOSE	=	Compute a matrix transpose.

REFERENCE
>   Any standard text on linear algebra.

APPLICATIONS
>   Linear Algebra

IMPLEMENTATION DATE
>   87/10

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 TRACE X
>   PRINT A

>   The resulting trace is 76.