VECTOR ADDITION

PURPOSE

Carry out the addition of 2 vectors in R^d with real elements.

SYNTAX

LET <v3> = VECTOR ADDITION <v1> <v2> <SUBSET/EXCEPT/FOR/qualification>
where <v1> is the variable containing the (real) elements of the first vector;
<v2> is the variable containing the (real) elements of the second vector;
<v3> is the variable containing the (real) elements of the resultant vector;
and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

EXAMPLES

LET Y3 = VECTOR ADDITION Y1 Y2

NOTE 1

The vector (x1, x2, ... ,xn) represents the line sgment from the origin (0,0,...,0) to the point (x1, x2, ..., xn). That is, each element of the vector represents the corresponding value on the corresponding axis. Vectors are sometimes represented in terms of the unit coordinate vectors. For example, for the 3d case the vector x=(x1,x2,x3) can be written as $a=x_1i + x_2j + x_3k$ where

i = (1,0,0) j = (0,1,0) l = (0,0,1)

NOTE 2

Storagewise, a DATAPLOT "variable" and a mathematical "vector" are identical. The ordering of elements within a DATAPLOT variable is identical to the ordering of elements within a mathematical vector. Thus to store the vector with elements 4 11 37 8 19 in the variable Y, enter the following command (the READ and SERIAL READ commands can be used to store longer vectors):

LET Y = DATA 4 11 37 8 19

DEFAULT

None

SYNONYMS

The command LET Y = VECTOR ADDITION Y1 Y2 is equivalent to the command LET Y = Y1 + Y2.

RELATED COMMANDS

VECTOR SUBTRACTION	=	Carries out a vector subtraction.
VECTOR DOT PRODUCT	=	Computes a vector dot product.
VECTOR LENGTH	=	Computes the vector length.
VECTOR DISTANCE	=	Computes the vector distance.
VECTOR ANGLE	=	Computes the vector angle.

APPLICATIONS

Mathematics

IMPLEMENTATION DATE

87/10

PROGRAM

```
LET Y1 = DATA 4 2 3 1 6
LET Y2 = DATA 1 2 4 6 3
LET Y3 = VECTOR ADDITION Y1 Y2
SET WRITE DECIMALS 0
WRITE Y1 Y2 Y3
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