SET CARDINALITY

PURPOSE

Compute the total number of elements in a set (with numeric elements).

DESCRIPTION

This cardinality counts repeats if repeats exist. The cardinality of the set 1 3 5 7 9 1 4 9 16 1 8 27 is 12.

SYNTAX

LET <p> = SET CARDINALITY <v> <SUBSET/EXCEPT/FOR qualification>
where <v> is the variable containing the elements of the input set;
<p> is a parameter where the computed cardinality is saved;
and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

EXAMPLES

LET N = SET CARDINALITY Y
LET N = SET CARDINALITY Y SUBSET Y1 > 10

NOTE

If the elements of a mathematical "set" are numbers (or can be translated into numbers-- always possible), then a DATAPLOT variable can be used to store the items of the mathematical set. To store the set with the 12 elements 1 3 5 7 11 1 4 9 16 1 8 27, form the variable Y with the following command:

LET Y = DATA 1 3 5 7 11 1 4 9 16 1 8 27

Larger sets can be created with the READ or SERIAL READ commands.

DEFAULT

None

SYNONYMS

SIZE (LET) for SET CARDINALITY (LET)

RELATED COMMANDS

SET UNION	=	Carries out a set union.
SET INTERSECTION	=	Carries out a set intersection.
SET COMPLEMENT	=	Carries out a set complement.
SET CARTESIAN PRODUCT	=	Carries out a set Cartesian product.

APPLICATIONS

Mathematics

IMPLEMENTATION DATE

88/7

PROGRAM

```
LET Y = DATA 1 3 5 7 11 1 4 9 16 1 8 27
LET N = SET CARDINALITY Y
SET WRITE DECIMALS 0
WRITE Y N
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