

## LOGICAL NOT

### PURPOSE

Carry out the logical negation of a variable where true values are coded as 1 and false values are coded as 0.

### DESCRIPTION

Logical not means that the result is the opposite of the input value. For example, the logical not of the 2-element variable 1 0 is the 2-element variable 0 1. The logical sequence T F T F T T F F T F T (T = true, F = false) can be coded as a "logical" variable as follows:

```
LET Y = DATA 1 0 1 0 1 1 0 0 0 1 0 1
```

For long sequences, you can use the SERIAL READ command. The IND function can be helpful in converting a numeric variable that is not coded with 0 and 1's to one that is.

### SYNTAX

```
LET <v3> = LOGICAL NOT <v1> <SUBSET/EXCEPT/FOR qualification>
```

where <v1> is the first variable;

<v3> is the resultant variable;

and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

### EXAMPLES

```
LET Y2 = LOGICAL NOT Y1
```

### DEFAULT

None

### SYNONYMS

None

### RELATED COMMANDS

LOGICAL AND	=	Carries out a logical and.
LOGICAL OR	=	Carries out a logical or.
LOGICAL NAND	=	Carries out a logical negative and.
LOGICAL NOR	=	Carries out a logical nor.
LOGICAL XOR	=	Carries out a logical xor.
LOGICAL IFTHEN	=	Carries out a logical if-then.
LOGICAL IFF	=	Carries out a logical if-and-only-if.

### REFERENCE

"Handbook of Mathematical Tables and Functions," Edition 5, Burington, McGraw-Hill, 1973 (page 132).

### APPLICATIONS

Mathematics

### IMPLEMENTATION DATE

87/10

### PROGRAM

```
LET Y1 = DATA 1 0
LET Y2 = LOGICAL NOT Y1
SET WRITE DECIMALS 0
WRITE Y1 Y2
```