

**POLYNOMIAL SQUARE**

**PURPOSE**

Carry out the squaring of a polynomial with real coefficients.

**SYNTAX**

LET <v2> = POLYNOMIAL SQUARE <v1> <SUBSET/EXCEPT/FOR qualification>  
 where <v1> is the variable whose elements are the ordered real coefficients of the polynomial to be squared;  
 <v2> is the variable whose elements are the ordered real coefficients of the resultant polynomial;  
 and where the <SUBSET/EXCEPT/FOR qualification> is optional and rarely used in this context.

**EXAMPLES**

LET Y2 = POLYNOMIAL SQUARE Y1

**NOTE**

The first element of the variable is the coefficient of the constant term, the second element is the coefficient of the linear term, the third element is the coefficient of the quadratic term, the fourth element is the coefficient of the cubic term, and so on. Thus the polynomial  $4 + 11*X + 37*X^2 + 8*X^3 + 19*X^4$  can be stored in the variable Y with the following command:

LET Y = DATA 4 11 37 8 19

**DEFAULT**

None

**SYNONYMS**

The command LET A = POLYNOMIAL SQUARE Y is equivalent to LET A = POLYNOMIAL MULTIPLY Y Y.

**RELATED COMMANDS**

LET	=	Evaluates general functions.
POLYNOMIAL ADDITION	=	Carries out a polynomial addition.
POLYNOMIAL SUBTRACTION	=	Carries out a polynomial subtraction.
POLYNOMIAL MULTIPLICATION	=	Carries out a polynomial multiplication.
POLYNOMIAL DIVISION	=	Carries out a polynomial division.
POLYNOMIAL EVALUATION	=	Carries out a polynomial evaluation.
COMPLEX ROOTS	=	Computes the roots of a complex polynomial.
COMPLEX EXPONENTIATION	=	Carries out a complex exponentiation.
PLOT	=	Plots data or functions

**APPLICATIONS**

Mathematics

**IMPLEMENTATION DATE**

87/10

**PROGRAM**

```
LET Y1 = DATA 4 11 37 8 19
LET Y2 = POLYNOMIAL SQUARE Y1
SET WRITE DECIMALS 0
WRITE Y1 Y2
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