

ROOT ACCURACY

PURPOSE

Specify the root accuracy for the ROOTS command.

DESCRIPTION

When DATAPLOT finds roots, it computes

$$\Delta x / x$$

where Δx is the difference between two iterations in the root finding algorithm and x is the current value of the root. If this value is less than the root accuracy, then convergence is assumed.

SYNTAX

ROOT ACCURACY <val>

where <val> is a number or parameter that specifies the root accuracy.

EXAMPLES

```
ROOT ACCURACY 0.001
ROOT ACCURACY 0.00001
```

DEFAULT

0.000001

SYNONYMS

None

RELATED COMMANDS

ROOTS	=	Find the real roots of an equation.
COMPLEX ROOTS	=	Find the complex roots of a polynomial.

APPLICATIONS

Roots of an equation

IMPLEMENTATION DATE

This command was activated 94/2 (earlier versions ignored this command and used a hard-coded value of 0.000001).

PROGRAM

```
LET FUNCTION F = 2*X**3 + X**2 -4*X + 2
ROOT ACCURACY 0.0001
LET R = ROOTS F WRT X FOR X = -10 TO 10
```