ERF

PURPOSE

Compute the error function.

DESCRIPTION

The error function of x is defined as:

$$\text{erf}(x) = \frac{2}{\sqrt{x}}\int_0^x e^{-t^2}dt \qquad \textbf{(EQ 6-84)}$$

This function is defined for non-negative numbers. The returned value will be between 0 and 1. The complementary error function is defined as 1.0 minus the error function.

SYNTAX

LET <y2> = ERF(<y1>) <SUBSET/EXCEPT/FOR qualification>

where <y1> is a variable or a parameter containing positive values;

<y2> is a variable or a parameter (depending on what <y1> is) where the computed error function values are stored;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

LET A = ERF(1.5)
LET X2 = ERF(X1)
LET X2 = ERF(X1-4)

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

ERFC	=	Compute the complementary error function of a number.
GAMMAI	=	Compute the incomplete gamma function of a number.

APPLICATIONS

Special functions

IMPLEMENTATION DATE

Pre-1987

PROGRAM

```
TITLE AUTOMATIC
XLIMITS 0 5
MAJOR XTIC NUMBER 6
YLIMITS 0 1
MAJOR YTIC NUMBER 6
PLOT ERF(X) FOR X = 0 0.01 5
```