DAWSON

PURPOSE

Compute Dawson's integral.

DESCRIPTION

Dawson's integral is defined as:

$$F(x) = e^{-x^2} \int_0^x e^{t^2} dt \qquad \textbf{(EQ Aux-82)}$$

SYNTAX

LET <y> = DAWSON(<x>) <SUBSET/EXCEPT/FOR qualification>

where <x> is a number, variable, or parameter;

<y> is a variable or a parameter (depending on what <x> is where the computed Dawson integral values are stored;

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

EXAMPLES

LET A = DAWSON(0.1)
LET A = DAWSON(-0.1)
LET Y = DAWSON(X)

NOTE

DATAPLOT uses the routine DAWS from the SLATEC Common Mathematical Library to compute this function. SLATEC is a large set of high quality, portable, public domain Fortran routines for various mathematical capabilities maintained by seven federal laboratories.

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

ERF	=	Compute the error function.
ERFC	=	Compute the complementary error function.
SININT	=	Compute the sine integral.
SININT	=	Compute the cosine integral.
EXPINTN	=	Compute the exponential integral of order N.
LOGINT	=	Compute the logarithmic integral.

REFERENCE

"Handbook of Mathematical Functions, Applied Mathematics Series, Vol. 55," Abramowitz and Stegun, National Bureau of Standards, 1964 (chapter 7).

APPLICATIONS

Special Functions

IMPLEMENTATION DATE

94/9

PROGRAM

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TITLE AUTOMATIC
PLOT DAWSON(X) FOR X = -10 0.1 10
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