ARCTAN

PURPOSE
Compute the arctangent for a variable or parameter.

DESCRIPTION
The arctangent is the angle whose tangent is equal to the given value. The returned value is in the range $-\pi/2$ to $\pi/2$. By default, the angle is returned in radian units. To use degree values, enter the command ANGLE UNITS DEGREES (ANGLE UNITS RADIANS resets it).

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

where <y1> is a number, parameter, or variable;

    <y2> is a variable or a parameter (depending on what <y1> is) where the computed arctangent value is stored;

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

EXAMPLES
LET A = ARCTAN(-2)
LET A = ARCTAN(A1)
LET X2 = ARCTAN(X1-4)

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS
ARCCOS	=	Compute arccosine.
ARCCOSH	=	Compute hyperbolic arccosine.
ARCCOT	=	Compute arccotangent.
ARCCOTH	=	Compute hyperbolic arccotangent.
ARCCSC	=	Compute arccosecant.
ARCCSCH	=	Compute hyperbolic arccosecant.
ARCSEC	=	Compute secant.
ARCSECH	=	Compute hyperbolic arcsecant.
ARCSIN	=	Compute arcsine.
ARCSINH	=	Compute hyperbolic arcsine.
ARCTANH	=	Compute hyperbolic arctangent.

APPLICATIONS
Trigonometry

IMPLEMENTATION DATE
Pre-1987

PROGRAM
        X1LABEL TAN(Y)
        Y1LABEL ANGLE (RADIANS)
        TITLE ARCTAN(X) FOR X = -10 TO 10
        PLOT ARCTAN(X) FOR X = -10 .1 10