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 $\frac{-\pi}{2}$ to $\frac{\pi}{2}$. 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 $y2 = \text{ARCTAN}(y1)$ <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 secant.
ARCSIN = Compute arcsine.
ARCSINH = Compute hyperbolic arcsine.
ARCTAN = 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