CSIN

PURPOSE
Compute the real or complex component of the sine of a complex number.

SYNTAX 1
LET <yr> = CSIN(<xr>,<xc>)   <SUBSET/EXCEPT/FOR qualification>
where <xr> is a number, parameter, or variable that specifies the real component of the the complex number;
    <xc> is a number, parameter, or variable that specifies the complex component of the the complex number;
    <yr> is a variable or a parameter (depending on what <xr> and <xc> are) where the real component of the computed sine value is stored;
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

This syntax computes the real component of sin of a complex number.

SYNTAX 2
LET <yc> = CSINI(<xr>,<xc>)   <SUBSET/EXCEPT/FOR qualification>
where <xr> is a number, parameter, or variable that specifies the real component of the the complex number;
    <xc> is a number, parameter, or variable that specifies the complex component of the the complex number;
    <yc> is a variable or a parameter (depending on what <xr> and <xc> are) where the complex component of the computed sine value is stored;
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

This syntax computes the complex component of sin of a complex number.

EXAMPLES
LET AR = CSIN(-2,1)
LET AC = CSIN(-2,1)
LET ZR = CSIN(XR,XC)
LET ZC = CSINI(XR,XC)

NOTE
DATAPLOT uses the Fortran intrinsic function CSIN to compute this function.

DEFAULT
None

SYNONYMS
None

RELATED COMMANDS
SIN	=	Compute the sine of a real number.
CABS	=	Compute the absolute value of a complex number.
CCOS	=	Compute the real component of the cosine of a complex number.
CCOSI	=	Compute the complex component of the cosine of a complex number.
CEXP	=	Compute the real component of the exponential of a complex number.
CEXPI	=	Compute the complex component of the exponential of a complex number.
CLOG	=	Compute the real component of the logarithm of a complex number.
CLOGI	=	Compute the complex component of the logarithm of a complex number.
CSQRT	=	Compute the real component of the square root of a complex number.
CSQRTI	=	Compute the complex component of the square root of a complex number.

APPLICATIONS
Elementary functions

IMPLEMENTATION DATE
94/10

PROGRAM

```
        X1LABEL SOLID = REAL COMPONENT
        X2LABEL DASH = COMPLEX COMPONENT
        LINE SOLID DASH
        YLIMITS -3 3
        MULTIPLOT 2 2; MULTIPLOT CORNER COORDINATES 0 0 100 100
        LET C = PI/4
        TITLE CSIN, COMPLEX COMPONENT = ^C
        PLOT CSIN(X,C) FOR X = -10 0.1 10 AND
        PLOT CSINI(X,C) FOR X = -10 0.1 10
        LET C = -PI/4
        TITLE CSIN, COMPLEX COMPONENT = ^C
        PLOT CSIN(X,C) FOR X = -10 0.1 10 AND
        PLOT CSINI(X,C) FOR X = -10 0.1 10
        LET C = PI/2
        TITLE CSIN, COMPLEX COMPONENT = ^C
        PLOT CSIN(X,C) FOR X = -10 0.1 10 AND
        PLOT CSINI(X,C) FOR X = -10 0.1 10
        LET C = -PI/2
        TITLE CSIN, COMPLEX COMPONENT = ^C
        PLOT CSIN(X,C) FOR X = -10 0.1 10 AND
        PLOT CSINI(X,C) FOR X = -10 0.1 10
        END OF MULTIPLOT
```