

## Cross

**Cross [/DEST=destWave /FREE /T /Z] vectorA, vectorB [, vectorC]**

The Cross operation computes the cross products  $vectorA \times vectorB$  and  $vectorA \times (vectorB \times vectorC)$ . Each vector is a 1D real wave containing 3 rows. Stores the result in the wave W\_Cross in the current data folder.

### Flags

/DEST=destWave	Stores the cross product in the wave specified by <i>destWave</i> . The destination wave is overwritten if it exists. The destination wave must be different from the input waves. The operation creates a wave reference for the destination wave if called in a user-defined function. See <b>Automatic Creation of WAVE References</b> on page IV-72 for details. If you omit /DEST, the operation stores the result in the wave W_Cross in the current data folder. Requires Igor7 or later.
/FREE	When used with /DEST, the destination wave is created as a free wave. See <b>Free Waves</b> on page IV-91 for details on free waves. /FREE is allowed in user-defined functions only. Requires Igor7 or later.
/T	Stores output in a row instead of a column in W_Cross.
/Z	Generates no errors for any unsuitable inputs.

## csc

**csc(angle)**

The csc function returns the cosecant of *angle* which is in radians.

$$\csc(x) = \frac{1}{\sin(x)}.$$

In complex expressions, *angle* is complex, and  $\csc(\text{angle})$  returns a complex value.

### See Also

**sin, cos, tan, sec, cot**

## csch

**csch(x)**

The csch function returns the hyperbolic cosecant of *x*.

$$\operatorname{csch}(x) = \frac{1}{\sinh(x)} = \frac{2}{e^x - e^{-x}}.$$

In complex expressions, *x* is complex, and  $\operatorname{csch}(x)$  returns a complex value.

### See Also

**cosh, tanh, coth, sech**