# DeletePoints

**DeletePoints** [**/M=*dim***] ***startElement*, *numElements*, *waveName***
[**, *waveName***]…

The DeletePoints operation deletes *numElements* elements from the named waves starting from element *startElement*.

**Flags**

/M=*dim* *dim* specifies the dimension from which elements are to be deleted. Values are:

0: Rows.
1: Columns.
2: Layers.
3: Chunks.

If /M is omitted, DeletePoints deletes from the rows dimension.

**Details**

A wave may have any number of points, including zero. Removing all elements from any dimension removes all points from the wave, leaving a 1D wave with zero points.

Except for the case of removing all elements, DeletePoints does not change the dimensionality of a wave. Use **Redimension** for that.

**See Also**

The **Redimension** operation.

# deltax

**deltax(*waveName*)**

The deltax function returns the named wave's dx value. deltax works with 1D waves only.

**Details**

This is equal to the difference of the X value of point 1 minus the X value of point 0.

**See Also**

The **leftx** and **rightx** functions.

When working with multidimensional waves, use the **DimDelta** function.

For an explanation of waves and wave scaling, see **Changing Dimension and Data Scaling** on page II-68.

# DFREF

**DFREF *localName* [= *path or dfr*], [*localName1* [= *path or dfr*]]**

DFREF is used to define a local data folder reference variable or input parameter in a user-defined function.

The syntax of the DFREF is:

```
DFREF localName [= path or dfr ][, localName1 [= path or dfr ]]...
```

where *dfr* stands for "data folder reference". The optional assignment part is used only in the body of a function, not in a parameter declaration.

Unlike the **WAVE** reference, a DFREF in the body without the assignment part does not do any lookup. It simply creates a variable whose value is null.

**Examples**

```
Function Test(dfr)
    DFREF dfr

    Variable dfrStatus = DataFolderRefStatus(dfr)

    if (dfrStatus == 0)
        Print "Invalid data folder reference"
        return -1
    endif
```