max

max(*num1*, *num2* [, *num3*, ... *num200*])

The max function returns the greatest value of *num1*, *num2*, ... *num200*.

If any parameter is NaN, the result is NaN.

Details

In Igor7 or later, you can pass up to 200 parameters. Previously max was limited to two parameters.

See Also

min, **limit**, **WaveMin**, **WaveMax**, **WaveMinAndMax**

mean

mean(*waveName* [, *x1*, *x2*])

The mean function returns the arithmetic mean of the wave for points from x=*x1* to x=*x2*.

Details

If *x1* and *x2* are not specified, they default to -∞ and +∞, respectively.

The wave values from *x1* to *x2* are summed, and the result divided by the number of points in the range.

The X scaling of the wave is used only to locate the points nearest to x=*x1* and x=*x2*. To use point indexing, replace *x1* with `pnt2x(waveName,pointNumber1)`, and a similar expression for *x2*.

If the points nearest to *x1* or *x2* are not within the point range of 0 to numpnts(*waveName*)-1, mean limits them to the nearest of point 0 or point numpnts(*waveName*)-1.

If any values in the point range are NaN, mean returns NaN.

The function returns NaN if the input wave has zero points.

Unlike the area function, reversing the order of *x1* and *x2* does *not* change the sign of the returned value.

The mean function is not multidimensional aware. See Chapter II-6, **Multidimensional Waves**, particularly Chapter II-6, **Analysis on Multidimensional Waves** for details.

Examples

```
Make/O/N=100 data; SetScale/I x 0,Pi,data
data=sin(x)
Print mean(data,0,Pi)         // the entire point range, and no more
Print mean(data)              // same as -infinity to +infinity
Print mean(data,Inf,-Inf)     // +infinity to -infinity
```

The following is printed to the history area:

```
Print mean(data,0,Pi)         // the entire point range, and no more
  0.630201
Print mean(data)              // same as -infinity to +infinity
  0.630201
Print mean(data,Inf,-Inf)     // +infinity to -infinity
  0.630201
```

See Also

Variance, **WaveStats**, **median**, **APMath**

The figure "Comparison of area, faverage and mean functions over interval (12.75,13.32)", in the **Details** section of the **faverage** function.

median

median(waveName [, *x1*, *x2*])

The median function returns the median value of the wave for points from x=*x1* to x=*x2*.

The median function was added in Igor Pro 7.00.

Details

If you omit *x1* and *x2*, they default to -INF and +INF, respectively.