sum

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

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

Details

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

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

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

Examples

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

The following is printed to the history area:

```
Print sum(data,0,Pi)          // the entire point range, and no more
  63.0201
Print sum(data)               // same as -infinity to +infinity
  63.0201
Print sum(data,Inf,-Inf)      // +infinity to -infinity
  63.0201
```

See Also

mean, **area**, **SumSeries**, **SumDimension**

SumDimension

SumDimension [*flags*] *srcWave*

The SumDimension operation sums values in *srcWave* along the specified dimension.

The SumDimension operation was added in Igor Pro 7.00.

Flags

/D=*dimension* Specifies a zero-based dimension number.

- *dimension*=0: Rows
- *dimension*=1: Columns
- *dimension*=2: Layers
- *dimension*=3: Chunks

If you omit /D the operation sums the highest dimension in the wave.

/DEST=*destWave* Specifies the output wave created by the operation. If *destWave* already exists it is overwritten by the new results.

If you omit /DEST the operation saves the data in W_SumDimension if the output wave is 1D or M_SumDimension otherwise.

/Y=type Specifies the data type of the output wave. See **WaveType** for the supported values of type.

If you omit /Y, the output wave is double precision.

Pass -1 for type to force the output wave to have the same data type as *srcWave*.

Details

The operation sums one dimension of an N dimensional wave producing an output wave with N-1 dimensions except if *srcWave* is 1D wave in which case SumDimension produces a single point 1D output wave. For example, given a 4D wave of dimensions dim0 x dim1 x dim2 x dim3 and the command: