

## num2str

### num2str

```
num2str(num [, formatStr])
```

The num2str function returns a string representing the number *num*.

The optional *formatStr* parameter was added in Igor Pro 9.00.

If you omit *formatStr*, the precision of the output string is limited to only five decimal places. This can cause unexpected and confusing results. For this reason, we recommend that you specify a larger precision with *formatStr* or use **num2istr** or **sprintf** for more control of the format and precision of the number conversion.

#### Parameters

*num*      The value to be converted to string representation.

*formatStr*      Controls the format of the output string. See **printf** for details on format strings.

*formatStr* is optional and requires Igor Pro 9.00 or later.

If you omit *formatStr*, the format used is "%.5g". For more precision use something like "%.15g".

#### See Also

**printf**, **sprintf**, **str2num**, **char2num**, **num2char**

## NumberByKey

```
NumberByKey(keyStr, kwListStr [, keySepStr [, listSepStr [, matchCase]]])
```

The NumberByKey function returns a numeric value extracted from *kwListStr* based on the specified key contained in *keyStr*. *kwListStr* should contain keyword-value pairs such as "KEY=value1,KEY2=value2" or "Key:value1;KEY2:value2", depending on the values for *keySepStr* and *listSepStr*.

Use NumberByKey to extract a numeric value from a strings containing "key1=value1;key2=value2;" style lists such as those returned by functions like **AxisInfo** or **TraceInfo**.

If the key is not found or if any of the arguments is "" or if the conversion to a number fails then it returns NaN. *keySepStr*, *listSepStr*, and *matchCase* are optional; their defaults are ":"; ";" and 0 respectively.

#### Details

*kwListStr* is searched for an instance of the key string bound by *listSepStr* on the left and a *keySepStr* on the right. The text up to the next *listSepStr* is converted to the returned number.

*kwListStr* is treated as if it ends with a *listSepStr* even if it doesn't.

Searches for *keySepStr* and *listSepStr* are always case-sensitive. Searches for *keyStr* in *kwListStr* are usually case-insensitive. Setting the optional *matchCase* parameter to 1 makes the comparisons case sensitive.

In Igor6, only the first byte of *keySepStr* and *listSepStr* was used. In Igor7 and later, all bytes are used.

If *listSepStr* is specified, then *keySepStr* must also be specified. If *matchCase* is specified, *keySepStr* and *listSepStr* must be specified.

#### Examples

```
Print NumberByKey("AKEY", "AKEY:123;") // prints 123
Print NumberByKey("BKEY", "AKEY=123;Bkey=456;", "=") // prints 456
Print NumberByKey("KEY2", "KEY1=123,KEY2=999,", "=", ",")// prints 999
Print NumberByKey("ckey", "CKEY=123;ckey=456;", "=") // prints 123
Print NumberByKey("ckey", "CKEY=123;ckey=456;", "=", ";", 1)// prints 456
```

#### See Also

The **StringByKey**, **RemoveByKey**, **ReplaceNumberByKey**, **ReplaceStringByKey**, **ItemsInList**, **AxisInfo**, **IgorInfo**, **SetWindow**, and **TraceInfo** functions.

## numpnts

```
numpnts(waveName)
```

The numpnts function returns the total number of data points in the named wave. To find the number of elements in a dimension of a multidimensional wave, use the **DimSize** function.