Matlab的floor、ceil、round、fix函数

# 英文单词介绍

## infinity

infinity 英 [ɪnˈfɪnəti] 美 [ɪnˈfɪnɪti] n .<数>无穷大;无限的时间或空间

## minus

minus 英 [ˈmaɪnəs] 美 [ˈmaɪnəs]

prep.（表示否定）没有;缺少;（表示运算）减去;（表示数目）在零度以下

n.减号;负号;不利;不足

adj.负的;不利的;略低于某标准的

# 这四个函数都是将浮点型数据取整数

这几个函数，对于复数来说：实部和虚部是分开取约数。

**For complex X, the imaginary and real parts are rounded independently.**

## round函数：四舍五入

round rounds towards nearest decimal or integer

round(X) rounds each element of X to the nearest integer.

向最靠近的整数取值，也就是四舍五入。

**round有更多的用法，见下面介绍。**

## fix函数:向零取整数

fix **Round towards zero.**

fix(X) rounds the elements of X to the nearest integers towards zero.

## floor函数：向负无穷取整。

floor Round towards **minus infinity**.

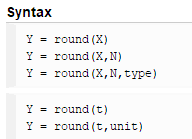
floor(X) rounds the elements of X to the nearest integers **towards minus infinity**.

## ceil函数：向正无穷取整。

ceil **Round towards plus infinity.**

ceil(X) rounds the elements of X to the nearest integers **towards infinity**.

# round函数：更通用的函数



## round(X):四舍五入取整数

round rounds towards nearest decimal or integer

round(X) rounds each element of X to the nearest integer.

## round(X,N):四舍五入保留N位小数。

round(X, N),

for **positive integers N**, rounds to N digits to the right of the decimal point. **If N is zero, X is rounded to the nearest integer**. **If N is less than zero, X is rounded to the left of the decimal point**. N must be a scalar integer.

如果N为0，则等价于round(X),取最靠近的整数；

如果N大于0，则保留小数点右边的N位；

如果N小于0，则保留小数点左边的|N|位。

## round(X,N,type)

### 科学计数法：type= **'significant'**

**round(X, N, 'significant')** rounds each element to its N most significant digits, counting from the most-significant or left side of the number. N must be a positive integer scalar.

N表示有效数字的个数。

### 普通的：type=**'decimals'**

**round(X, N, 'decimals')** is equivalent to round(X, N).

## Examples

**% Round pi to the nearest hundredth**

**>> round(pi, 2)**

**3.14**

**% Round the equatorial radius of the Earth, 6378137 meters,**

**% to the nearest kilometer.**

**round(6378137, -3)**

**6378000**

**% Round to 3 significant digits**

**format shortg;**

**round([pi, 6378137], 3, 'significant')**

**3.14 6.38e+06**

If you only need to display a rounded version of X,

consider using fprintf or num2str:

fprintf('%.3f\n', 12.3456)

12.346

fprintf('%.3e\n', 12.3456)

1.235e+01