

**NAME**

round, roundf, roundl, llround, llroundf, llroundl - round to nearest integer, away from zero

**SYNOPSIS**

```
#include <math.h>

long int round(double x);
long int roundf(float x);
long int roundl(long double x);

long long int llround(double x);
long long int llroundf(float x);
long long int llroundl(long double x);
```

Link with *-lm*.

Feature Test Macro Requirements for glibc (see [feature\\_test\\_macros\(7\)](#)):

All functions shown above:

```
_XOPEN_SOURCE >= 600 || _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L;
or cc -std=c99
```

**DESCRIPTION**

These functions round their argument to the nearest integer value, rounding away from zero, regardless of the current rounding direction (see [fenv\(3\)](#)).

Note that unlike the [round\(3\)](#) and [ceil\(3\)](#), functions, the return type of these functions differs from that of their arguments.

**RETURN VALUE**

These functions return the rounded integer value.

If *x* is a NaN or an infinity, or the rounded value is too large to be stored in a *long* (*long long* in the case of the **ll\*** functions), then a domain error occurs, and the return value is unspecified.

**ERRORS**

See [math\\_error\(7\)](#) for information on how to determine whether an error has occurred when calling these functions.

The following errors can occur:

Domain error: *x* is a NaN or infinite, or the rounded value is too large  
An invalid floating-point exception (**FE\_INVALID**) is raised.

These functions do not set *errno*.

**VERSIONS**

These functions first appeared in glibc in version 2.1.

**ATTRIBUTES**

**Multithreading** (see [pthreads\(7\)](#))

The [round\(\)](#), [roundf\(\)](#), [roundl\(\)](#), [llround\(\)](#), [llroundf\(\)](#), and [llroundl\(\)](#) functions are thread-safe.

**CONFORMING TO**

C99, POSIX.1-2001.

**SEE ALSO**

[ceil\(3\)](#), [floor\(3\)](#), [lrint\(3\)](#), [nearbyint\(3\)](#), [rint\(3\)](#), [round\(3\)](#)

**COLOPHON**

This page is part of release 3.74 of the Linux *man-pages* project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <http://www.kernel.org/doc/man-pages/>.