

**NAME**

cos, cosf, cosl - cosine function

**SYNOPSIS**

```
#include <math.h>
```

```
double cos(double x);
```

```
float cosf(float x);
```

```
long double cosl(long double x);
```

Link with *-lm*.

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

```
cosf(), cosl():
```

```
_BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE ||  
_POSIX_C_SOURCE >= 200112L;
```

```
or cc -std=c99
```

**DESCRIPTION**

The `cos()` function returns the cosine of  $x$ , where  $x$  is given in radians.

**RETURN VALUE**

On success, these functions return the cosine of  $x$ .

If  $x$  is a NaN, a NaN is returned.

If  $x$  is positive infinity or negative infinity, a domain error occurs, and a NaN is returned.

**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 an infinity

`errno` is set to **EDOM** (but see **BUGS**). An invalid floating-point exception (**FE\_INVALID**) is raised.

**ATTRIBUTES**

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

The `cos()`, `cosf()`, and `cosl()` functions are thread-safe.

**CONFORMING TO**

C99, POSIX.1-2001. The variant returning *double* also conforms to SVr4, 4.3BSD.

**BUGS**

Before version 2.10, the glibc implementation did not set `errno` to **EDOM** when a domain error occurred.

**SEE ALSO**

[acos\(3\)](#), [asin\(3\)](#), [atan\(3\)](#), [atan2\(3\)](#), [ccos\(3\)](#), [sin\(3\)](#), [sincos\(3\)](#), [tan\(3\)](#)

**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/>.