

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

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