

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()**:

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
    /* Since glibc 2.19: */ _DEFAULT_SOURCE
    /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions return 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

For an explanation of the terms used in this section, see **attributes(7)**.

| Interface | Attribute | Value |
|--|---------------|---------|
| cos() , cosf() , cosl() | Thread safety | MT-Safe |

CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

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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