

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: */ _DE-  
FAULT_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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