NAME

cos, cosf, cosl − cosine function

LIBRARY

Math library (*libm*, *−lm*)

SYNOPSIS

```
#include <math.h>

double cos(double x);
float cosf(float x);
long double cosl(long double x);
```

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 <= 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

STANDARDS

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

The variant returning *double* also conforms to SVr4, 4.3BSD.

BUGS

Before glibc 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)