NAME

sqrt, sqrtf, sqrtl − square root function

LIBRARY

Math library (*libm*, *−lm*)

SYNOPSIS

```
#include <math.h>

double sqrt(double x);
float sqrtf(float x);
long double sqrtl(long double x);
```

Feature Test Macro Requirements for glibc (see **feature_test_macros**(7)):

sqrtf(), **sqrtl**():

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

DESCRIPTION

These functions return the nonnegative square root of *x*.

RETURN VALUE

On success, these functions return the square root of *x*.

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

If *x* is +0 (−0), +0 (−0) is returned.

If *x* is positive infinity, positive infinity is returned.

If *x* is less than −0, 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* less than −0

errno is set to **EDOM**. 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
sqrt(), **sqrtf**(), **sqrtl**()	Thread safety	MT-Safe

STANDARDS

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

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

SEE ALSO

cbrt(3), **csqrt**(3), **hypot**(3)