

**NAME**

sqrt, sqrtf, sqrtl - square root function

**SYNOPSIS**

```
#include <math.h>
```

```
double sqrt(double x);
```

```
float sqrtf(float x);
```

```
long double sqrtl(long double x);
```

Link with *-lm*.

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 versions <= 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

**CONFORMING TO**

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

The variant returning *double* also conforms to SVr4, 4.3BSD, C89.

**SEE ALSO**

[cbrt\(3\)](#), [csqrt\(3\)](#), [hypot\(3\)](#)

**COLOPHON**

This page is part of release 4.10 of the Linux *man-pages* project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.