

**NAME**

sin, sinf, sinl – sine function

**SYNOPSIS**

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

```
double sin(double x);
```

```
float sinf(float x);
```

```
long double sinl(long double x);
```

Link with `-lm`.

Feature Test Macro Requirements for glibc (see **feature\_test\_macros(7)**):

```
sinf(), sinl():
```

```
_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 sine of  $x$ , where  $x$  is given in radians.

**RETURN VALUE**

On success, these functions return the sine 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
<b>sin()</b> , <b>sinf()</b> , <b>sinl()</b>	Thread safety	MT-Safe

**CONFORMING TO**

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

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

**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)**, **cos(3)**, **csin(3)**, **sincos(3)**, **tan(3)**

**COLOPHON**

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