

NAME

asin, asinf, asinl - arc sine function

SYNOPSIS

```
#include <math.h>

double asin(double x);
float asinf(float x);
long double asinl(long double x);
```

Link with *-lm*.

Feature Test Macro Requirements for glibc (see [feature_test_macros\(7\)](#)):

```
asin(), asinl():
    _BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE ||
    _POSIX_C_SOURCE >= 200112L;
    or cc -std=c99
```

DESCRIPTION

The **asin()** function calculates the principal value of the arc sine of *x*; that is the value whose sine is *x*.

RETURN VALUE

On success, these functions return the principal value of the arc sine of *x* in radians; the return value is in the range $[-\pi/2, \pi/2]$.

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

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

If *x* is outside the range $[-1, 1]$, 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 outside the range $[-1, 1]$

errno is set to **EDOM**. An invalid floating-point exception (**FE_INVALID**) is raised.

CONFORMING TO

C99, POSIX.1-2001. The variant returning *double* also conforms to SVr4, 4.3BSD, C89.

SEE ALSO

[acos\(3\)](#), [atan\(3\)](#), [atan2\(3\)](#), [casin\(3\)](#), [cos\(3\)](#), [sin\(3\)](#), [tan\(3\)](#)

COLOPHON

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