

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\(7\)](#)):

asinf(), asinl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L || /* Since glibc 2.19: */ _DE-  
FAULT_SOURCE || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions calculate 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.

ATTRIBUTES

For an explanation of the terms used in this section, see [attributes\(7\)](#).

| Interface | Attribute | Value |
|--------------------------|---------------|---------|
| asin(), asinf(), asinl() | 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

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

COLOPHON

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