

NAME

asinh, asinhf, asinhl - inverse hyperbolic sine function

SYNOPSIS

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

```
double asinh(double x);
```

```
float asinhf(float x);
```

```
long double asinhl(long double x);
```

Link with *-lm*.

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

asinh():

```
_BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 500 ||
_XOPEN_SOURCE && _XOPEN_SOURCE_EXTENDED || _ISOC99_SOURCE ||
_POSIX_C_SOURCE >= 200112L;
or cc -std=c99
```

asinhf(), **asinhl()**:

```
_BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE ||
_POSIX_C_SOURCE >= 200112L;
or cc -std=c99
```

DESCRIPTION

The **asinh()** function calculates the inverse hyperbolic sine of *x*; that is the value whose hyperbolic sine is *x*.

RETURN VALUE

On success, these functions return the inverse hyperbolic sine 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 (negative infinity), positive infinity (negative infinity) is returned.

ERRORS

No errors occur.

ATTRIBUTES

Multithreading (see [pthreads\(7\)](#))

The **asinh()**, **asinhf()**, and **asinhl()** functions are thread-safe.

CONFORMING TO

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

SEE ALSO

[acosh\(3\)](#), [atanh\(3\)](#), [casinh\(3\)](#), [cosh\(3\)](#), [sinh\(3\)](#), [tanh\(3\)](#)

COLOPHON

This page is part of release 3.74 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 <http://www.kernel.org/doc/man-pages/>.