

**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/>.