

NAME

asinh, asinhf, asinhl – inverse hyperbolic sine function

LIBRARY

Math library (*libm*, *-lm*)

SYNOPSIS

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

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

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

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

Feature Test Macro Requirements for glibc (see **feature_test_macros(7)**):

asinh():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
|| _XOPEN_SOURCE >= 500
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
|| /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

asinhf(), asinhl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
|| /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions calculate 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

For an explanation of the terms used in this section, see **attributes(7)**.

Interface	Attribute	Value
asinh(), asinhf(), asinhl()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

C99, POSIX.1-2001.

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

SEE ALSO

acosh(3), **atanh(3)**, **casinh(3)**, **cosh(3)**, **sinh(3)**, **tanh(3)**