

NAME

acosh, **acoshf**, **acoshl** - inverse hyperbolic cosine functions

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

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

double

```
acosh(double x);
```

float

```
acoshf(float x);
```

long double

```
acoshl(long double x);
```

DESCRIPTION

The **acosh()**, **acoshf()**, and **acoshl()** functions compute the inverse hyperbolic cosine of the real argument x . For a discussion of error due to roundoff, see `math(3)`.

RETURN VALUES

These functions return the inverse hyperbolic cosine of x . If the argument is less than 1, **acosh()** raises an invalid exception and returns an NaN.

SEE ALSO

`asinh(3)`, `atanh(3)`, `exp(3)`, `fenv(3)`, `math(3)`

HISTORY

The **acosh()**, **acoshf()**, and **acoshl()** functions appeared in 4.3BSD, FreeBSD 2.0, and FreeBSD 10.0, respectively.