NAME

atanh, **atanhf**, **atanhl** - inverse hyperbolic tangent functions

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

#include <math.h>

double
atanh(*double x*);

float
atanhf(*float x*);

long double
atanhl(*long double x*);

DESCRIPTION

The **atanh**(), **atanhf**(), and **atanhl**() functions compute the inverse hyperbolic tangent of the real argument *x*. For a discussion of error due to roundoff, see math(3).

RETURN VALUES

These functions return the inverse hyperbolic tangent of *x* if successful. If the argument has absolute value 1, a divide-by-zero exception is raised and an infinity is returned. If $|x| > 1$, an invalid exception is raised and an NaN is returned.

SEE ALSO

acosh(3), asinh(3), exp(3), fenv(3), math(3)

HISTORY

The **atanh**(), **atanhf**(), and **atanhl**() functions appeared in 4.3BSD, FreeBSD 2.0, and FreeBSD 10.0, respectively.