

NAME

log, logf, logl, log10, log10f, log10l, log2, log2f, log2l, log1p, log1pf, log1pl - logarithm functions

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

#include <math.h>

double

log(double x);

float

logf(float x);

long double

logl(long double x);

double

log10(double x);

float

log10f(float x);

long double

log10l(long double x);

double

log2(double x);

float

log2f(float x);

long double

log2l(long double x);

double

log1p(double x);

float

log1pf(float *x*);

long double

log1pl(*long double x*);

DESCRIPTION

The **log()**, **logf()**, and **logl()** functions compute the natural logarithm of *x*.

The **log10()**, **log10f()**, and **log10l()** functions compute the logarithm base 10 of *x*, while **log2()**, **log2f()**, and **log2l()** compute the logarithm base 2 of *x*.

The **log1p()**, **log1pf()**, and **log1pl()** functions compute the natural logarithm of 1 + *x*. Computing the natural logarithm as $\log_1 p(x)$ is more accurate than computing it as $\log(1 + x)$ when *x* is close to zero.

RETURN VALUES

These functions return the requested logarithm; the logarithm of 1 is +0. An attempt to take the logarithm of +0 results in a divide-by-zero exception, and -infinity is returned. Otherwise, attempting to take the logarithm of a negative number results in an invalid exception and a return value of NaN.

SEE ALSO

`exp(3)`, `ilogb(3)`, `math(3)`, `pow(3)`

STANDARDS

The **log()**, **logf()**, **logl()**, **log10()**, **log10f()**, **log10l()**, **log2()**, **log2f()**, **log2l()**, **log1p()**, **log1pf()**, and **log1pl()** functions conform to ISO/IEC 9899:1999 ("ISO C99").

HISTORY

The **log()** function first appeared in Version 1 AT&T UNIX; **log10()** in Version 7 AT&T UNIX; **log1p()** in 4.3BSD.