NAME

log, log1, 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 log1p(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 \pm 0. An attempt to take the logarithm of \pm 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(), log1(), log10(), log10f(), log10f(), log2(), log2f(), log2f(), 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.