NAME

atan, atanf, atanl − arc tangent function

LIBRARY

Math library (*libm*, *−lm*)

SYNOPSIS

```
#include <math.h>

double atan(double x);
float atanf(float x);
long double atanl(long double x);
```

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

atanf(), **atanl**():

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

DESCRIPTION

These functions calculate the principal value of the arc tangent of *x*; that is the value whose tangent is *x*.

RETURN VALUE

On success, these functions return the principal value of the arc tangent of *x* in radians; the return value is in the range [−pi/2, pi/2].

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), +pi/2 (−pi/2) is returned.

ERRORS

No errors occur.

ATTRIBUTES

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

Interface	Attribute	Value
atan(), **atanf**(), **atanl**()	Thread safety	MT-Safe

STANDARDS

C99, POSIX.1-2001, POSIX.1-2008.

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

SEE ALSO

acos(3), **asin**(3), **atan2**(3), **carg**(3), **catan**(3), **cos**(3), **sin**(3), **tan**(3)