

NAME

atan, atanf, atanl - arc tangent function

SYNOPSIS

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

```
double atan(double x);
```

```
float atanf(float x);
```

```
long double atanl( long double x);
```

Link with *-lm*.

Feature Test Macro Requirements for glibc (see [feature_test_macros\(7\)](#)):

```
atanf(), atanl():
```

```
  _BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE ||  
  _POSIX_C_SOURCE >= 200112L;
```

```
  or cc -std=c99
```

DESCRIPTION

The **atan()** function calculates 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

Multithreading (see [pthreads\(7\)](#))

The **atan()**, **atanf()**, and **atanl()** functions are thread-safe.

CONFORMING TO

C99, POSIX.1-2001. The variant returning *double* also conforms to SVr4, 4.3BSD, C89.

SEE ALSO

[acos\(3\)](#), [asin\(3\)](#), [atan2\(3\)](#), [carg\(3\)](#), [catan\(3\)](#), [cos\(3\)](#), [sin\(3\)](#), [tan\(3\)](#)

COLOPHON

This page is part of release 3.74 of the Linux *man-pages* project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <http://www.kernel.org/doc/man-pages/>.