NAME
tan, tanf, tanl − tangent function

SYNOPSIS
#include <math.h>

double tan(double *x*)**;**
float tanf(float *x*)**;**
long double tanl(long double *x*)**;**

Link with −*lm*.

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

tanf(), **tanl**():
 _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L || /* Since glibc 2.19: */ _DE-FAULT_SOURCE || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

DESCRIPTION
These functions return the tangent of *x*, where *x* is given in radians.

RETURN VALUE
On success, these functions return the tangent of *x*.

If *x* is a NaN, a NaN is returned.

If *x* is positive infinity or negative infinity, a domain error occurs, and a NaN is returned.

If the correct result would overflow, a range error occurs, and the functions return **HUGE_VAL**, **HUGE_VALF**, or **HUGE_VALL**, respectively, with the mathematically correct sign.

ERRORS
See math_error(7) for information on how to determine whether an error has occurred when calling these functions.

The following errors can occur:

Domain error: *x* is an infinity
 errno is set to **EDOM** (but see BUGS). An invalid floating-point exception (**FE_INVALID**) is raised.

Range error: result overflow
 An overflow floating-point exception (**FE_OVERFLOW**) is raised.

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

Interface	Attribute	Value
tan(), **tanf**(), **tanl**()	Thread safety	MT-Safe

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

The variant returning *double* also conforms to SVr4, 4.3BSD, C89.

BUGS
Before version 2.10, the glibc implementation did not set *errno* to **EDOM** when a domain error occurred.

SEE ALSO
acos(3), asin(3), atan(3), atan2(3), cos(3), ctan(3), sin(3)

COLOPHON
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