

NAME

tanpi, **tanpif**, **tanpil** - half-cycle tangent functions

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

#include <math.h>

double

tanpi(*double x*);

float

tanpif(*float x*);

long double

tanpil(*long double x*);

DESCRIPTION

The **tanpi**(), **tanpif**(), and **tanpil**() functions compute the tangent of $\langle pi \rangle x$ and measure angles in half-cycles.

RETURN VALUES

The **tanpi**(), **tanpif**(), and **tanpil**() functions returns **tan**($\langle pi \rangle x$). If $|x| \geq 2^{(p-1)}$ where p is the floating-point precision of x , then the returned value is $+0$ and it has no significance.

SPECIAL VALUES

tanpi($+0$) returns $+0$.

tanpi($+n$) returns $+0$ for positive integers n .

tanpi($+n/2$) returns NaN for $n > 0$ and raises an FE_INVALID exception.

tanpi($+-\langle infinity \rangle$) return an NaN and raises an FE_INVALID exception.

tanpi(NaN) return an NaN and raises an FE_INVALID exception.

SEE ALSO

cos(3), cospi(3), fenv(3), math(3), sin(3), sinpi(3), tan(3)

AUTHORS

The half-cycle trigonometric functions were written by Steven G. Kargl <*kargl@FreeBSD.org*>.

STANDARDS

These functions conform to IEEE Std 754tm-2008 , "IEEE Standard for Floating-Point Arithmetic" and to ISO/IEC TS 18661-4 , "Information technology -- Programming languages, their environments, and system software interfaces -- Floating-point extensions for C" -- Part 4: Supplementary functions.