

**NAME**

**tanh**, **tanhf**, **tanhf** - hyperbolic tangent functions

**LIBRARY**

Math Library (libm, -lm)

**SYNOPSIS**

**#include** <math.h>

*double*

**tanh**(*double x*);

*float*

**tanhf**(*float x*);

*long double*

**tanhf**(*long double x*);

**DESCRIPTION**

The **tanh**(), **tanhf**(), and **tanhf**() functions compute the hyperbolic tangent of  $x$ . For a discussion of error due to roundoff, see math(3).

**RETURN VALUES**

The **tanh**(), **tanhf**(), and the **tanhf**() functions return the hyperbolic tangent value.

**SEE ALSO**

acos(3), asin(3), atan(3), atan2(3), cos(3), cosh(3), ctanh(3), math(3), sin(3), sinh(3), tan(3)

**STANDARDS**

The **tanh**() function conforms to ISO/IEC 9899:1990 ("ISO C90").

**HISTORY**

The **tanh**() function first appeared in Version 7 AT&T UNIX.