## NAME

fmod, fmodf, fmodl − floating-point remainder function

## SYNOPSIS

**#include <math.h>**

**double fmod(double** *x***, double** *y***);**
**float fmodf(float** *x***, float** *y***);**
**long double fmodl(long double** *x***, long double** *y***);**

Link with −*lm*.

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

**fmodf**(), **fmodl**():
    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
        || /* Since glibc 2.19: */ _DEFAULT_SOURCE
        || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

## DESCRIPTION

These functions compute the floating-point remainder of dividing $x$ by $y$. The return value is $x - n * y$, where $n$ is the quotient of $x / y$, rounded toward zero to an integer.

## RETURN VALUE

On success, these functions return the value $x - n*y$, for some integer $n$, such that the returned value has the same sign as $x$ and a magnitude less than the magnitude of $y$.

If $x$ or $y$ is a NaN, a NaN is returned.

If $x$ is an infinity, a domain error occurs, and a NaN is returned.

If $y$ is zero, a domain error occurs, and a NaN is returned.

If $x$ is +0 (−0), and $y$ is not zero, +0 (−0) is returned.

## 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.

Domain error: $y$ is zero
        *errno* is set to **EDOM**. An invalid floating-point exception (**FE_INVALID**) is raised.

## ATTRIBUTES

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

| Interface | Attribute | Value |
|---|---|---|
| **fmod**(), **fmodf**(), **fmodl**() | 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 for an infinite $x$.

## SEE ALSO

**remainder**(3)

**COLOPHON**

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