



Linux Ubuntu 26.04 Manual Pages on command 'fmod.3'

\$ man fmod.3

fmod(3) Library Functions Manual fmod(3)

NAME

fmod, fmodf, fmodl - floating-point remainder function

LIBRARY

Math library (libm, -lm)

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);
```

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 <= 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.

To obtain the modulus, more specifically, the Least Positive Residue, you will need to add?

just the result from `fmod()` like so:

```
z = fmod(x, y);

if (z < 0)

    z += fabs(y);
```

An alternate way to express this is with `fmod(fmod(x, y) + y, y)`, but the second `fmod()` usually costs way more than the one branch.

RETURN VALUE

On success, these functions return the value $x - n \cdot y$, 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 ?

??

STANDARDS

C11, POSIX.1-2008.

HISTORY

C99, POSIX.1-2001.

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

BUGS

Before glibc 2.10, the glibc implementation did not set `errno` to `EDOM` when a domain error occurred for an infinite x .

EXAMPLES

The call `fmod(372, 360)` returns 12.

The call `fmod(-372, 360)` returns -12.

The call `fmod(-372, -360)` also returns -12.

SEE ALSO

`remainder(3)`

Linux man-pages 6.17

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`fmod(3)`