

NAME

drem, dremf, dreml, remainder, remainderf, remainderl - floating-point remainder function

SYNOPSIS

```
#include <math.h>

/* The C99 versions */
double remainder(double x, double y);
float remainderf(float x, float y);
long double remainderl(long double x, long double y);

/* Obsolete synonyms */
double drem(double x, double y);
float dremf(float x, float y);
long double dreml(long double x, long double y);
```

Link with *-lm*.

Feature Test Macro Requirements for glibc (see [feature_test_macros\(7\)](#)):

```
remainder():
    _SVID_SOURCE || _BSD_SOURCE || _XOPEN_SOURCE >= 500 ||
    _XOPEN_SOURCE && _XOPEN_SOURCE_EXTENDED || _ISOC99_SOURCE ||
    _POSIX_C_SOURCE >= 200112L;
    or cc -std=c99

remainderf(), remainderl():
    _BSD_SOURCE || _SVID_SOURCE || _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE ||
    _POSIX_C_SOURCE >= 200112L;
    or cc -std=c99

drem(), dremf(), dreml():
    _SVID_SOURCE || _BSD_SOURCE
```

DESCRIPTION

The **remainder()** function computes the remainder of dividing x by y . The return value is $x - n * y$, where n is the value x / y , rounded to the nearest integer. If the absolute value of $x - n * y$ is 0.5, n is chosen to be even.

These functions are unaffected by the current rounding mode (see [fenv\(3\)](#)).

The **drem()** function does precisely the same thing.

RETURN VALUE

On success, these functions return the floating-point remainder, $x - n * y$. If the return value is 0, it has the sign of x .

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

If x is an infinity, and y is not a NaN, a domain error occurs, and a NaN is returned.

If y is zero, and x is not a NaN, a domain error occurs, and a NaN 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 and y is not a NaN

An invalid floating-point exception (**FE_INVALID**) is raised.

These functions do not set *errno* for this case.

Domain error: *y* is zero

errno is set to **EDOM**. An invalid floating-point exception (**FE_INVALID**) is raised.

CONFORMING TO

The functions **remainder()**, **remainderf()**, and **remainderl()** are specified in C99 and POSIX.1-2001.

The function **drem()** is from 4.3BSD. The *float* and *long double* variants **dremf()** and **dreml()** exist on some systems, such as Tru64 and glibc2. Avoid the use of these functions in favor of **remainder()** etc.

BUGS

The call

```
remainder(nan(), 0);
```

returns a NaN, as expected, but wrongly causes a domain error; it should yield a silent NaN.

EXAMPLE

The call `remainder(29.0, 3.0)` returns -1.

SEE ALSO

[div\(3\)](#), [fmod\(3\)](#), [remquo\(3\)](#)

COLOPHON

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