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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'remainder.3p' command

\$ man remainder.3p

REMAINDER(3P) POSIX Programmer's Manual REMAINDER(3P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

remainder, remainderf, remainderl ? remainder function

SYNOPSIS

```
#include <math.h>

double remainder(double x, double y);

float remainderf(float x, float y);

long double remainderl(long double x, long double y);
```

DESCRIPTION

The functionality described on this reference page is aligned with the ISO C standard. Any conflict between the requirements described here and the ISO C standard is unintentional. This volume of POSIX.1?2017 defers to the ISO C standard.

These functions shall return the floating-point remainder $r=x-ny$ when y is non-zero. The value n is the integral value nearest the exact value x/y . When $|n-x/y|=?$, the value n is chosen to be even.

The behavior of remainder() shall be independent of the rounding mode.

RETURN VALUE

Upon successful completion, these functions shall return the floating-point remainder $r=x-ny$ when y is non-zero.

On systems that do not support the IEC 60559 Floating-Point option, if y is zero, it is implementation-defined whether a domain error occurs or zero is returned.

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

If x is infinite or y is 0 and the other is non-NaN, a domain error shall occur, and a NaN shall be returned.

ERRORS

These functions shall fail if:

Domain Error

The x argument is $\pm\text{Inf}$, or the y argument is $\neq 0$ and the other argument is non-NaN.

If the integer expression $(\text{math_errhandling} \ \& \ \text{MATH_ERRNO})$ is non-zero, then `errno` shall be set to [EDOM]. If the integer expression $(\text{math_errhandling} \ \& \ \text{MATH_ERREXCEPT})$ is non-zero, then the invalid floating-point exception shall be raised.

These functions may fail if:

Domain Error

The y argument is zero.

If the integer expression $(\text{math_errhandling} \ \& \ \text{MATH_ERRNO})$ is non-zero, then `errno` shall be set to [EDOM]. If the integer expression $(\text{math_errhandling} \ \& \ \text{MATH_ERREXCEPT})$ is non-zero, then the invalid floating-point exception shall be raised.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

On error, the expressions $(\text{math_errhandling} \ \& \ \text{MATH_ERRNO})$ and $(\text{math_errhandling} \ \& \ \text{MATH_ERREXCEPT})$ are independent of each other, but at least one of them must be non-zero.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

`abs()`, `div()`, `feclearexcept()`, `fetestexcept()`, `ldiv()`

The Base Definitions volume of POSIX.1-2017, Section 4.20, Treatment of Error Conditions for Mathematical Functions, `<math.h>`

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