

NAME

`div`, `ldiv`, `lldiv`, `imaxdiv` – compute quotient and remainder of an integer division

SYNOPSIS

```
#include <stdlib.h>
```

```
div_t div(int numerator, int denominator);
```

```
ldiv_t ldiv(long numerator, long denominator);
```

```
lldiv_t lldiv(long long numerator, long long denominator);
```

```
#include <inttypes.h>
```

```
imaxdiv_t imaxdiv(intmax_t numerator, intmax_t denominator);
```

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

```
lldiv():
```

```
    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

DESCRIPTION

The `div()` function computes the value $numerator/denominator$ and returns the quotient and remainder in a structure named `div_t` that contains two integer members (in unspecified order) named `quot` and `rem`. The quotient is rounded toward zero. The result satisfies $quot * denominator + rem = numerator$.

The `ldiv()`, `lldiv()`, and `imaxdiv()` functions do the same, dividing numbers of the indicated type and returning the result in a structure of the indicated name, in all cases with fields `quot` and `rem` of the same type as the function arguments.

RETURN VALUE

The `div_t` (etc.) structure.

ATTRIBUTES

For an explanation of the terms used in this section, see [attributes\(7\)](#).

Interface	Attribute	Value
<code>div()</code> , <code>ldiv()</code> , <code>lldiv()</code> , <code>imaxdiv()</code>	Thread safety	MT-Safe

CONFORMING TO

POSIX.1-2001, POSIX.1-2008, C89, C99, SVr4, 4.3BSD. The functions `lldiv()` and `imaxdiv()` were added in C99.

EXAMPLE

After

```
div_t q = div(-5, 3);
```

the values `q.quot` and `q.rem` are `-1` and `-2`, respectively.

SEE ALSO

[abs\(3\)](#), [remainder\(3\)](#)

COLOPHON

This page is part of release 4.16 of the Linux *man-pages* project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at <https://www.kernel.org/doc/man-pages/>.