

**NAME**

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

**LIBRARY**

Standard C library (*libc*, *-lc*)

**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
<b>div()</b> , <b>ldiv()</b> , <b>lldiv()</b> , <b>imaxdiv()</b>	Thread safety	MT-Safe

**STANDARDS**

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

**EXAMPLES**

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)**