



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

\$ man frexpf.3

frexp(3) Library Functions Manual frexp(3)

NAME

frexp, frexpf, frexpl - convert floating-point number to fractional and integral components

LIBRARY

Math library (libm, -lm)

SYNOPSIS

```
#include <math.h>

double frexp(double x, int *e);

float frexpf(float x, int *e);

long double frexpl(long double x, int *e);
```

Feature Test Macro Requirements for glibc (see feature_test_macros(7)):

```
frexpf(), frexpl():

    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

    || /* Since glibc 2.19: */ _DEFAULT_SOURCE

    || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions are used to split the number *x* into a normalized fraction and an exponent which is stored in *e*.

RETURN VALUE

These functions return the normalized fraction. If the argument *x* is not zero, the normalized fraction is *x* times a power of two, and its absolute value is always in the range 1/2 (inclusive) to 1 (exclusive), that is, [0.5,1).

If *x* is zero, then the normalized fraction is zero and zero is stored in *e*.

If x is positive infinity (negative infinity), positive infinity (negative infinity) is returned, and the value of *e is unspecified.

```
x = strtod(argv[1], NULL);  
r = frexp(x, &e);  
printf("frexp(%g, &e) = %g: %g * %d^%d = %g\n", x, r, r, 2, e, x);  
exit(EXIT_SUCCESS);  
}
```

SEE ALSO

ldexp(3), modf(3)

Linux man-pages 6.17

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frexp(3)