



## ***Red Hat Enterprise Linux Release 9.2 Manual Pages on 'expf.3' command***

### ***\$ man expf.3***

EXP(3)                      Linux Programmer's Manual                      EXP(3)

#### NAME

exp, expf, expl - base-e exponential function

#### SYNOPSIS

```
#include <math.h>
```

```
double exp(double x);
```

```
float expf(float x);
```

```
long double expl(long double x);
```

Link with -lm.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

expf(), expl():

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

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

```
|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

#### DESCRIPTION

These functions return the value of e (the base of natural logarithms)

raised to the power of x.

#### RETURN VALUE

On success, these functions return the exponential value of x.

If x is a NaN, a NaN is returned.

If x is positive infinity, positive infinity is returned.

If x is negative infinity, +0 is returned.

If the result underflows, a range error occurs, and zero is returned.

If the result overflows, a range error occurs, and the functions return +HUGE\_VAL, +HUGE\_VALF, or +HUGE\_VALL, respectively.

## 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:

Range error, overflow

`errno` is set to `ERANGE`. An overflow floating-point exception (`FE_OVERFLOW`) is raised.

Range error, underflow

`errno` is set to `ERANGE`. An underflow floating-point exception (`FE_UNDERFLOW`) is raised.

## ATTRIBUTES

For an explanation of the terms used in this section, see `attributes(7)`.

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?Interface ? Attribute ? Value ?

??

?`exp()`, `expf()`, `expl()` ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

The variant returning double also conforms to SVr4, 4.3BSD, C89.

## SEE ALSO

`cbrt(3)`, `cexp(3)`, `exp10(3)`, `exp2(3)`, `expm1(3)`, `sqrt(3)`

## COLOPHON

This page is part of release 5.10 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/>.