NAME

gamma, gammaf, gammal − (logarithm of the) gamma function

SYNOPSIS

#include <math.h>

double gamma(double x**);**
float gammaf(float x**);**
long double gammal(long double x**);**

Link with −*lm*.

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

gamma():
 _XOPEN_SOURCE || /* Since glibc 2.19: */ _DEFAULT_SOURCE || /* Glibc versions <= 2.19: */
 _BSD_SOURCE || _SVID_SOURCE
gammaf(), **gammal**():
 _XOPEN_SOURCE >= 600 || (_XOPEN_SOURCE && _ISOC99_SOURCE) || /* Since glibc 2.19:
 / _DEFAULT_SOURCE || / Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

DESCRIPTION

These functions are deprecated: instead, use either the tgamma(3) or the lgamma(3) functions, as appropriate.

For the definition of the Gamma function, see tgamma(3).

*BSD version

The libm in 4.4BSD and some versions of FreeBSD had a **gamma**() function that computes the Gamma function, as one would expect.

glibc version

Glibc has a **gamma**() function that is equivalent to lgamma(3) and computes the natural logarithm of the Gamma function.

RETURN VALUE

See lgamma(3).

ERRORS

See lgamma(3).

ATTRIBUTES

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

Interface	Attribute	Value
gamma(), **gammaf**(), **gammal**()	Thread safety	MT-Unsafe race:signgam

CONFORMING TO

Because of historical variations in behavior across systems, this function is not specified in any recent standard. It was documented in SVID 2.

NOTES

History

4.2BSD had a **gamma**() that computed ln(|Gamma(|x|)|), leaving the sign of Gamma(|x|) in the external integer *signgam*. In 4.3BSD the name was changed to lgamma(3), and the man page promises

"At some time in the future the name gamma will be rehabilitated and used for the Gamma function"

This did indeed happen in 4.4BSD, where **gamma**() computes the Gamma function (with no effect on *signgam*). However, this came too late, and we now have tgamma(3), the "true gamma" function.

SEE ALSO

lgamma(3), signgam(3), tgamma(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/.