(a domain error occurs). `cbrt`, on the other hand, is defined for both positive and negative arguments. When its argument is negative, `cbrt` returns a negative result.

hypot

When applied to arguments `x` and `y`, the `hypot` function returns $\sqrt{x^2 + y^2}$. In other words, this function computes the hypotenuse of a right triangle with legs `x` and `y`.

Error and Gamma Functions

```
double erf(double x);
float erff(float x);
long double erfl(long double x);

double erfc(double x);
float erfcf(float x);
long double erfcl(long double x);

double lgamma(double x);
float lgammaf(float x);
long double lgammal(long double x);

double tgamma(double x);
float tgammaf(float x);
long double tgammal(long double x);
```

erf
erfc

The `erf` function computes the ***error function*** erf (also known as the ***Gaussian error function***), which is used in probability, statistics and partial differential equations. The mathematical definition of erf is

$$\mathrm{erf}(x) = \frac{2}{\sqrt{\pi}} \int_0^x e^{-t^2} dt$$

`erfc` computes the ***complementary error function***, erfc(*x*) = 1 – erf(*x*).

lgamma
tgamma

Q&A

The ***gamma function*** Γ is an extension of the factorial function that can be applied to real numbers as well as to integers. When applied to an integer *n*, Γ(*n*) = (*n*–1)!; the definition of Γ for nonintegers is more complicated. The `tgamma` function computes Γ. The `lgamma` function computes ln(|Γ(*x*)|), the natural logarithm of the absolute value of the gamma function. `lgamma` can sometimes be more useful than the gamma function itself, because Γ grows so quickly that using it in calculations may cause overflow.

Nearest Integer Functions

```
float ceilf(float x);                          see ceil
long double ceill(long double x);              see ceil

float floorf(float x);                         see floor
long double floorl(long double x);             see floor
```