

Contents

0.1	Gamma function	1
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0.1 Gamma function

The gamma function expands the factorial function to the real (and complex) numbers

We want:

$$f(1) = 1$$

$$f(x + 1) = xf(x)$$

There are an infinite number of functions which fit this. The function could fluctuate between the natural numbers.

The function we use is:

$$\Gamma(z) = \int_0^\infty x^{z-1}e^{-x}dx$$