Brief description of Gamma function

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1 Intorduction of Gamma function

The gamma function is a transcendental function, which is a kind of function that the factorial function on real numbers and expands on complex numbers.

$$\Gamma(x)$$

1. The gamma function is defined on the real number field as:

$$\Gamma(x) = \int_0^{\infty} s^{x-1} e^{-s} ds$$

   The domain of this function is x>0 and the co-domain of this function is $(0,+\infty)$.

2. Characteristic

   (a) For a positive integer n, it has the following properties:

$$\Gamma(n) = (n-1)!$$

   (b) Gamma function has recursive properties:

$$\Gamma(x+1) = x\Gamma(x)$$