Some results on the gamma function for negative integers.

ABSTRACT

The Gamma function Γ (s)(-r) is defined by Γ (s)(-r) = N - lim ε→0 ∫ε ∞ t -r-1, ln s t e -t dt for r, s = 0, 1, 2, . . . , where N is the neutrix having domain N′ = {ε : 0 < ε < ∞} with negligible functions finite linear sums of the functions ε λ ln s-1 ε, ln s ε : λ < 0, s = 1, 2,. .. and all functions which converge to zero in the normal sense as CMMI9.-1.epsilon1 tends to zero. In the classical sense Gamma functions is not defined for the negative integer. In this study, it is proved that for r = 1, 2,..., where φ(r) = Σ r i=1 1/i. Further results are also proved.

Keyword: Gamma function; Neutrix; Neutrix limit.