EULER’S CONSTANT, SEQUENCES AND SOME ESTIMATES

Alina Sîntămărian

Abstract. We give a class of sequences with the argument of the logarithmic term modified and that converge quickly to a generalization of Euler’s constant denoted by \( \gamma(a) \), i.e. the limit of the sequence \( \left( \sum_{k=1}^{n} \frac{1}{a+k-1} - \ln \frac{a+n-1}{a} \right) \), where \( a \in (0, +\infty) \).

Also, we obtain estimates for \( \gamma - \left( \sum_{k=1}^{n} \frac{1}{k} - \ln \left( n + \frac{1}{2} + \frac{1}{24(n+1)^2} \right) \right) \), where \( \gamma = \gamma(1) \) is the Euler’s constant.

Full text

References


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Keywords: Sequence; Convergence; Approximation; Euler’s constant; Bernoulli number; Estimate.

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Alina Sîntâmărian
Department of Mathematics,
Technical University of Cluj-Napoca,
Str. Memorandumului nr. 28,
400114 Cluj-Napoca,
Romania.
e-mail: Alina.Sintamarian@math.utcluj.ro

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