Some new sequences that converge to a generalization of Euler's constant

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ABSTRACT.

The purpose of this paper is to study the properties of some sequences that converge quickly to a generalization of Euler's constant, i.e. the limit of the sequence

$$\left(\frac{1}{a} + \frac{1}{a+1} + \cdots + \frac{1}{a+n-1} - \ln \frac{a+n-1}{a} \right)_{n \in \mathbb{N}},$$

where $a \in (0, +\infty)$.

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