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Abstract

The present study is devoted to the investigation of the asymptotic behavior of the function $f(x) = \sum_{n \leq x} \frac{1}{n}$ as $x \rightarrow \infty$. It is well known that $f(x) = \ln x + \gamma + o(1)$, where γ is the Euler-Mascheroni constant. In this paper, we study the distribution of the values of $f(x)$ in the interval $(\ln x + \gamma - \frac{1}{2}, \ln x + \gamma + \frac{1}{2})$. It is shown that the number of integers $n \leq x$ for which $f(n)$ lies in this interval is asymptotically equivalent to $\frac{x}{2}$.

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MSC: 11A05, 11N05, 11N10, 11N15, 11N20, 11N25, 11N30, 11N35, 11N40, 11N45, 11N50, 11N55, 11N60, 11N65, 11N70, 11N75, 11N80, 11N85, 11N90, 11N95, 11P05, 11P07, 11P20, 11P25, 11P30, 11P32, 11P34, 11P37, 11P40, 11P42, 11P43, 11P45, 11P55, 11P56, 11P57, 11P58, 11P59, 11P60, 11P62, 11P64, 11P65, 11P67, 11P68, 11P70, 11P72, 11P73, 11P74, 11P75, 11P76, 11P77, 11P78, 11P79, 11P80, 11P82, 11P84, 11P85, 11P86, 11P87, 11P88, 11P89, 11P90, 11P92, 11P94, 11P95, 11P96, 11P97, 11P98, 11P99.

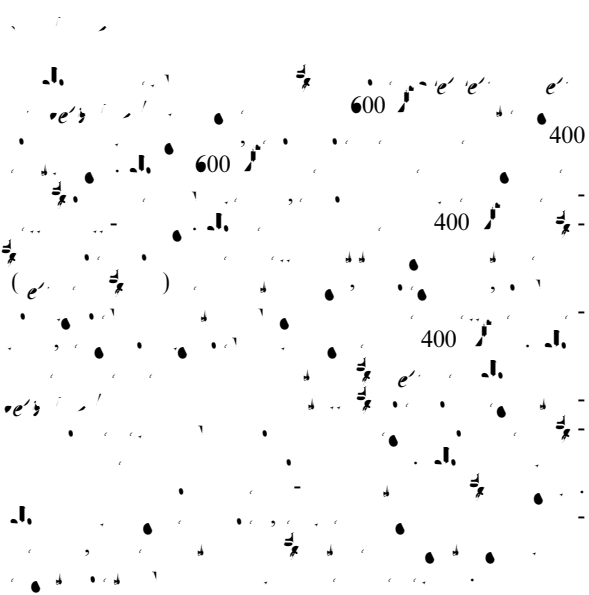
In the present paper, we study the asymptotic behavior of the function $f(x) = \sum_{n \leq x} \frac{1}{n}$ as $x \rightarrow \infty$. It is well known that $f(x) = \ln x + \gamma + o(1)$, where γ is the Euler-Mascheroni constant. In this paper, we study the distribution of the values of $f(x)$ in the interval $(\ln x + \gamma - \frac{1}{2}, \ln x + \gamma + \frac{1}{2})$. It is shown that the number of integers $n \leq x$ for which $f(n)$ lies in this interval is asymptotically equivalent to $\frac{x}{2}$.

In the present paper, we study the asymptotic behavior of the function $f(x) = \sum_{n \leq x} \frac{1}{n}$ as $x \rightarrow \infty$. It is well known that $f(x) = \ln x + \gamma + o(1)$, where γ is the Euler-Mascheroni constant. In this paper, we study the distribution of the values of $f(x)$ in the interval $(\ln x + \gamma - \frac{1}{2}, \ln x + \gamma + \frac{1}{2})$. It is shown that the number of integers $n \leq x$ for which $f(n)$ lies in this interval is asymptotically equivalent to $\frac{x}{2}$.

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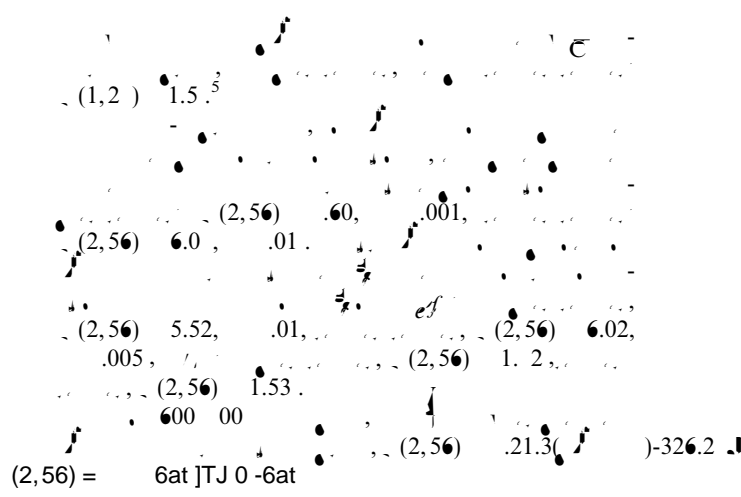
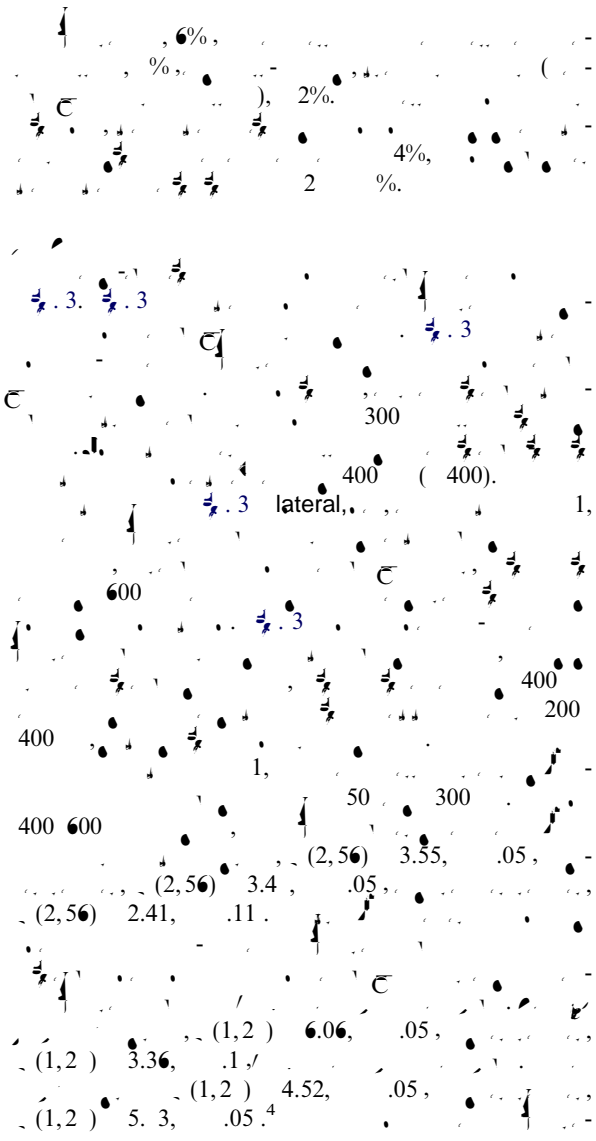
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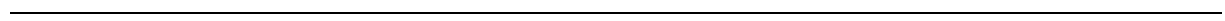
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