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Grandes valeurs d'une fonction liée au produit d'entiers consecutifs.
Large values of a function related to the product of consecutive integers. (In French)

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Define $f(n)$ to be the largest integer k for which there is an m such that $n|(m+1)\dots(m+k)$ but $n \not|(m+j)$ for $1 \le j \le k$. The authors prove that $\sum_{n\le x} f(n) \sim x \log\log x$ and that $\max_{n\le x} f(n) = \frac{e^{\gamma/2}\log x}{2(\log\log x)^{1/2}} + \frac{\gamma e^{\gamma}\log x}{4\log\log x}(1+o(1))$, where γ is Euler's constant. Define n to be f-highly aboundant if for every $n' < n$, $f(n') < f(n)$. The authors make a detailed study of the prime factors of f-highly aboundant numbers. The results show similarity with the highly composite numbers of Ramanujan, but there are some differences. For example, there are large gaps in the factorization of f-highly aboundant numbers.

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11N37 Asymptotic results on arithmetic functions
11N05 Distribution of primes

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large values of functions; product of consecutive integers; prime factors of f-highly abundant numbers