

Arkhipov, G. I.; Chubarikov, V. N.

On the greatest prime factor of a sequence of the form $[n^c]$. (Russian) Zbl 1028.11059
Math. Montisnigri 8, 17-31 (1997).

Let c be a fixed real number satisfying $4/3 < c < 2$, and for each real number $x \geq 2$, let $y(x)$ be the greatest prime factor of the product $\prod [n^c]$, taken over the set of positive integers $n \leq x$. The authors show that $y(x) > x^{(27-13c)/28}$. The proof relies essentially on Vinogradov's method of trigonometric sums. It is known that if $c = 2$, then $y(x)$ satisfies the stronger inequality $y(x) \geq x^{11/10}$ [see *C. Hooley*, Acta Math. 117, 281-299 (1967; Zbl 0146.05704)].

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MSC:

11N56 Rate of growth of arithmetic functions
11L07 Estimates on exponential sums

Keywords:

greatest prime factor; Vinogradov's method of trigonometric sums