Zbl 020.00504
Erdős, Paul
On sequences of integers no one of which divides the product of two others and on some related problems. (In English)
Mitteil. Forsch.-Inst. Math. Mech. Univ. Tomsk 2, 74-82 (1938).

The author defines an A sequence of integers as a sequence such that no member divides the product of any two other members. The number of integers less than n belonging to such a sequence is less than $\pi(n)+O\left(\frac{n^{\frac{1}{2}}}{\log n}\right)^2$. The number of integers less than n and belonging to a sequence such that the product of any two members is different from any other such product is less than $\pi(n)+O(n^{\frac{1}{2}})$. The error term in the latter formula cannot be better than $O(n^{3/4}(\log n)^{-3/2})$. It follows that, if $p_1 < p_2 < \cdots p_z \leq n$ is an arbitrary sequence of primes such that $z > (c_1 n \log\log n)(\log n)^{-2}$, where c_1 is a sufficiently large constant, then the products $(p_i - 1)(p_j - 1)$ cannot all be different.

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Classification:
11B83 Special sequences of integers and polynomials