
Zbl 515.10002

Erdős, Paul

Many old and on some new problems of mine in number theory. (In English)

Numerical mathematics and computing, Proc. 10th Manitoba Conf., Winnipeg/Manitoba 1980, Congr. Numerantium 30, 3-27 (1981).

[This article was published in the book announced in Zbl 504.00026.]
The author has been keeping a mathematical notebook since 1933. The present paper consists of a long list of theorems, problems, conjectures and questions gleaned from this notebook. It is divided into three parts: problems on primes, problems on consecutive integers, and a potpourri of miscellaneous problems. I will mention just a few of these problems. Let $p_1 < p_2 < \dots$ be an infinite sequence of primes such that $p_k \equiv 1 (\mod p_{k-1})$. Is it true that $p_k^{1/k} \to \infty$? Let $\prod(n,k) = (n+1)\dots(n+k)$ where $k > 2$. Is there always a prime $p \geq k$ such that $p | \prod(n,k)$? Let $f(n)$ be the smallest integer such that one can partition the integers $1, 2, 3, \dots, n-1$ into $f(n)$ classes so that n is not the sum of distinct integers of the same class. How fast does $f(n)$ tend to infinity? I am sure that Professor Erdős would be glad to hear from anyone who can shed some light on any (or all) of these questions.

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Classification:
11-02 Research monographs (number theory)
11N05 Distribution of primes
00A07 Problem books

Keywords:
problems on primes; problems on consecutive integers; miscellaneous problems