
Zbl 111.04701
Erdős, Pál
On a problem of Sierpiński (In English)
Atti Accad. Naz. Lincei, Rend., Cl. Sci. Fis. Mat. Nat., VIII. Ser. 23, 122-124 (1962).

Let n be a positive integer. Denote by $s^{(k)}(n)$ the sum of the digits of n written in the k-ary system. Let $2 = p_1 < p_2 < \cdots$ be the sequence of consecutive primes. In a recent paper, Sierpiński proved that for every k $\limsup_{n=\infty} s^{(k)}(p_n) = \infty$, which immediately implies that for infinitely many $ns^{(k)}(p_{n+1}) > s^{(k)}(p_n)$. The question with the opposite inequality remained open.
The author settles the question in this note by proving the Theorem: For every k there are infinitely many h for which $s^{(k)}(p_n) > s^{(k)}(p_{n+1})$. The author discusses related unsolved problems.

W.E.Briggs

Classification:
11A41 Elememtary prime number theory
11A63 Radix representation