Wu, Bing-Ling; Yan, Xiao-Hui
On the denominators of harmonic numbers. IV. (English) [Zbl 07468767]

Summary: Let $\mathcal{L}$ be the set of all positive integers $n$ such that the denominator of $1 + 1/2 + \cdots + 1/n$ is less than the least common multiple of $1, 2, \ldots, n$. In this paper, under a certain assumption on linear
independence, we prove that the set $\mathcal{L}$ has the upper asymptotic density 1. The assumption follows from
Schanuel's conjecture.

For Part II, see J. Number Theory 200, 397–406 (2019; Zbl 1445.11017).

MSC:
11B75 Other combinatorial number theory
11B05 Density, gaps, topology
11B83 Special sequences and polynomials

Keywords:
harmonic numbers; least common multiples; upper asymptotic density

Full Text: DOI

References:
[4] Lang, Serge, Introduction to transcendental numbers (1966), Addison-Wesley Publishing Group

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