
Zbl 215.33003

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On a problem of Moser (In English)

Combinat. Theory Appl., Colloquia Math. Soc. Janos Bolyai 4, 365-367 (1970).

[For the entire collection see Zbl 205.00201.]

Let $f(n)$ be the largest integer with the following property: Every family F_n of n sets contains a subfamily F'_n of $f(n)$ sets so that the union of two sets of F'_s never equals a third (these three sets are assumed to be pairwise different). *Moser* asked for the determination or estimation of $f(n)$. A result of *D.J.Kleitmann* [Proc. Am. Math. Soc. 17, 139-141 (1966; Zbl 139.01004)] shows that $f(n) < cn/\sqrt{\log n}$. *J. Riddell* who communicated this problem to us pointed out that $f(n) > \sqrt{n}$.

We prove the following theorem: $\sqrt{n} \leq f(n) \leq 2\sqrt{2n} + 4$.

Classification:

05D05 Extremal set theory

05A05 Combinatorial choice problems