
Zbl 383.05002

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Combinatorial properties of systems of sets. (In English)

J. Comb. Theory, Ser. A 24, 308-313 (1978).

A family of sets is called a strong (weak) $\triangle$ system if the (cardinality of the) intersection of any two of its members is the same. The paper contains remarks, considerations, conjectures and results on the following functions: $f(n,r)$ = smallest integer for which any family of $f(n,r)$ sets of size n contains a subfamily of r sets which forms a strong $\triangle$ system; $g(n,r)$ is defined similary for weak $\triangle$ systems; $F(n,r)$ = largest integer so that there is a family of subsets of an n-set which does not contain a strong $\triangle$ system of r elements; $G(n,r)$ has the similar meaning for weak $\triangle$ systems; $F(n,r,k)$ and $G(n,r,k)$ are defined similarly with the sole distrinction that only k-subsets are considered. The existence is proved of families of subsets of an n-set not containing weak $\triangle$ systems and having at least $n^{\log n/4 \log\log n}$ members.

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Classification:
05A05 Combinatorial choice problems
04A20 Combinatorial set theory