

Zbl 423.05001

**Erdős, Paul**

*Problems and results in combinatorial analysis and combinatorial number theory.* (In English)

**Proc. 9th southeast. Conf. on Combinatorics, graph theory, and computing, Boca Raton 1978, 29-40 (1978).**

[For the entire collection see Zbl 396.00003.]

There are six sections: 1. Conjecture of Faber, Lovász and myself (concerning colouring problems for set systems). 2. Some old extremal problems ("Turán-type" problems for undirected graphs). 3. some problems on probabilistic graph theory. 4. Further problems ("which arose in our work with Faudree, Rousseau and Schelp" concerning generalized Ramsey theory). 5. Erdős-Rado Conjecture on  $\Delta$ -systems (that there exists a constant  $C$  such that  $C^n$  exceeds the maximum number of  $n$ -element sets, no three having pairwise the same intersection). 6. Work with Ulam and Selfridge containing the following theorems: "Theorem 1 (with Selfridge): Let  $u = k^2 - 1$ . To every  $\varepsilon > 0$  there is a sequence of primes  $p_0 < \dots < p_u$  and an interval  $I$  of length  $(3 - \varepsilon)p_u$ , which contains exactly  $2k$  distinct multiples of the  $p$ 's." "Theorem 2 (with Ulam): Let  $|S| = n$ . There is a division of the subsets of  $S$  into two classes so that if  $a_i \subseteq S$ ,  $s \leq i \leq k$  are such that all the  $2^k - 1$  unions  $A_{i_1} \dots A_{i_r}$  are distinct and belong to the same class then  $k \leq (1 + o(1)) \frac{\log n}{\log 2}$ ."

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Classification:

05-02 Research monographs (combinatorics)

05C55 Generalized Ramsey theory

05C35 Extremal problems (graph theory)

05C65 Hypergraphs

11N05 Distribution of primes

05C15 Chromatic theory of graphs and maps

05A05 Combinatorial choice problems

05A99 Classical combinatorial problems

11B39 Special numbers, etc.

00A07 Problem books

Keywords:

delta systems; colouring problems; set systems; extremal problems; probabilistic graph theory; generalized Ramsey theory; Erdős-Rado conjecture