
Zbl 328.05018

Erdős, Paul; Purdy, George

Some extremal problems in geometry. III. (In English)

Proc. 6th southeast. Conf. Comb., Graph Theor., Comput.; Boca Raton 1975, 291-308 (1975).

[For the entire collection see Zbl 313.00004.]

In Part I, and II [both authors, J. combinat. Theory Ser. A 10, 246-252 (1971; Zbl 219.05006) and second author, Discrete Math. 7, 305-315 (1974; Zbl 283.05008)] the authors discuss the maximum number of times $f_k^a(n)$ that the same non-zero area can occur among the triangles $\Delta X_i X_j X_l$, $1 \leq i < j < \ell \leq n$, where the maximum is again taken over all choices for $X_1, \ldots, X_n$ in E_k. In this report they discuss the maximum number $f_k^i(n)$ of isosceles triangles that can occur (congruent or not), the maximum number $f_k^e(n)$ of equilateral triangles that can occur, the maximum number $f_k^c(n)$ of pairwise congruent triangles, and the maximum number $f_k^s(n)$ of pairwise similar triangles that can occur. All of these problems were posed at the end of Part I.

Classification:
05B25 Finite geometries (combinatorics)
51M99 Real and complex geometry