

Zbl 428.05008

Erdős, Paul

Some combinatorial problems in geometry. (In English)

Geometry and differential geometry, Proc. Conf., Haifa 1979, Lect. Notes Math. 792, 46-53 (1980).

[For the entire collection see Zbl 418.00010.]

In this short survey, results and conjectures for lower and upper bounds are given for (1) $f_2(n)$: = maximum number of pairs x_i, x_j satisfying $d(x_i, x_j) = 1$ in a set $\{x_1, \dots, x_n\}$ of distinct points in the euclidean plane; (2) $H(n)$:= smallest integer such that every set of $H(n)$ points in the plane, no three on a line, contains the vertices of a convex n -gon; (3) $t_k(n)$:= largest integer such that there is a set of n points in the plane for which there are $t_k(n)$ lines containing exactly k of the points; (4) a multitude of further geometrically defined integer functions.

H. Groh

Classification:

05A20 Combinatorial inequalities

05A99 Classical combinatorial problems

05-02 Research monographs (combinatorics)

00A07 Problem books

05B25 Finite geometries (combinatorics)

52A99 General convexity

Keywords:

lower bounds; combinatorial geometry; survey; upper bounds