

Zbl 625.52008

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Some combinatorial and metric problems in geometry. (In English)

Intuitive geometry, Pap. Int. Conf., Siófok/Hung. 1985, Colloq. Math. Soc. János Bolyai 48, 167-177 (1987).

[For the entire collection see Zbl 616.00008.]

The author surveys the progress on his problems on distances determined by a finite set of points in the Euclidean plane. The problems considered here are: What is the maximum number of different distances counted from a point for an arbitrary set of points? What is this maximum if the points are in general position, i.e. no three on a line, no four on a circle? What is the minimum number of distinct distances among n points? What is this minimum, if the points are in general position? How many points can one always choose out of n points, such that no two of them is at unit distance apart? (At this point the reference to my paper is not correct, since my result is unpublished.) How many points in general position can be given, if all distances occurring are integers?

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Classification:

52A37 Other problems of combinatorial convexity

52A40 Geometric inequalities, etc. (convex geometry)

51M05 Euclidean geometries (general) and generalizations

00A07 Problem books

Keywords:

integer distances; points in general position; finite set of points in the Euclidean plane; maximum number of different distances