1139-52-215 **Alexey Garber*** (alexeygarber@gmail.com). *On a Helly-type question for central symmetry.*

The classical Carathéodory theorem in dimension 2 can be stated in the following way. If any 4 points of a finite set X are in convex position, then all points of X are in convex position. In this talk we will discuss a similar Helly-type question requireing certain restrictions on the symmetry of the convex set.

Assume that X is a set of points such that every k-subset of X lies on a boundary of centrally symmetric convex polygon, is it true that X must also be in a boundary of centrally symmetric convex polygon? It is easy to see that this is false for small k, but it may be true for sufficiently large k. We show that the statement is not true even when $k = 8$, but $k = 6$ is enough if X is a continuous closed curve.

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