

1077-06-1035

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University Drive, Fairfax, VA 22030. *The Order Dimension and Coloring of Planar Point Sets.*

We study the order dimension of the lattice of closed sets for a convex geometry by looking at colorings of two graphs. The Erdős-Szekeres Conjecture of planar point sets in general position can be stated in terms of the clique number of one of these graphs. In 1961 Erdős and Szekeres created a point set of size 2^{n-2} points and contains no vertex set of a convex n -gon. We use these graphs to show that this point set has order dimension $n - 1$ and any point set of size more than $n - 1$ has order dimension strictly larger than $n - 1$. (Received September 15, 2011)