1108-52-590   **Casey Mann*** (`cemann@uw.edu`), University of Washington Bothell, 18115 Campus Way NE, Box 358538, Bothell, WA 98011, and **Jennifer McLoud**. *Convex pentagons that admit i-block transitive tilings.* Preliminary report.

The problem of classifying the convex pentagons that admit tilings of the plane is a long-standing unsolved problem. There are 14 known distinct kinds of pentagons that admit tilings of the plane. Five of these known types admit tile-transitive tilings (i.e. there is a single transitivity class with respect to the symmetry group of the tiling). The remaining 9 known types admit either 2-block transitive tilings or 3-block transitive tilings; these are tilings comprised of clusters of 2 or 3 pentagons such that these clusters form a tile-transitive tiling. In this talk, we present some combinatorial results concerning pentagons that admit i-block transitive tilings for $i \in \mathbb{N}$. These results form the basis for an automated approach to finding all pentagons that admit i-block transitive tilings for each $i \in \mathbb{N}$. We will present the methods of this algorithm and the results of the computer searches so far. (Received January 21, 2015)