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Sophia DeArment, Kathrin Gillespie and Albert Schueller* (schuelaw@whitman.edu), 345 Boyer Ave, Walla Walla, WA 99362. *Two Point Centroidal Voronoi Tessellations.*

Voronoi tessellations are simple topological constructions in which, in this case, a plane figure is partitioned according to a pre-specified set of points in the figure called “centers”. The figure is partitioned into regions of points around each center that are closer to that center than any other center. It is possible to construct Voronoi tessellations in which the centers of each region are also the centroids of their regions. These are centroidal Voronoi tessellations (CVTs). Most plane figures admit more than one CVT arrangement. Indeed the collection of possible n -point (centers) CVTs of a figure has not been characterized. In hopes of getting a foothold on this challenging question, we reduce the problem to that of 2-point CVTs of plane figures with even rotational symmetry and a line of symmetry. We show that, even in this limited case, there are some unexpected CVTs, though we are able to fully characterize the possible CVTs. (Received September 14, 2017)