

4–Equitable Graphs

Zena Coles (Math for America), Alana Huszar* (University of Michigan), Jared Miller, Zsuzsanna Szaniszlo (Valparaiso University)

A 4–equitable labeling of a graph is an assignment of labels $\{0, 1, 2, 3\}$ to the vertices. The edge labels are the absolute difference of the labels of the vertices incident to the given edge. The labels must be distributed as evenly as possible amongst the vertices and they must also be distributed as evenly as possible amongst the edges. We study 4–equitable labelings of different trees; we show that all caterpillars, symmetric generalized n –stars (or symmetric spiders), and complete n –ary trees for all $n \in \mathbb{N}$ are 4–equitable.

Keywords: labeling, 4–equitable, n –ary trees, caterpillars