

Induced Colorings of Graphs

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For a positive integer k and a connected graph G , let $c: V(G) \rightarrow Z_k$ be a vertex coloring where adjacent vertices may be assigned the same color. Then c induces two other vertex colorings $c': V(G) \rightarrow Z_k$ where $c'(v)$ is either the sum (modulo k) of the original colors for vertex v and those vertices adjacent to v or simply the sum (modulo k) of the colors of the vertices adjacent to v . The colorings c' are called modular colorings of G if adjacent vertices are assigned different colors by c' . In this paper, we focus on finding the minimum value for k that produces modular colorings for various classes of graphs.

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