

Majestic t -Tone Colorings

Ian Hart, Western Michigan University

For integers t and k with $1 \leq t < k$, let $[k]_t$ denote the set of t -element subsets of $[k] = \{1, 2, \dots, k\}$. For a connected graph G , let $c : E(G) \rightarrow [k]_t$ be an edge coloring of G where adjacent edges may be colored the same. Then c induces a vertex coloring c' of G obtained by assigning to each vertex v of G the union of the sets of colors of the edges incident with v . The edge coloring c is a majestic t -tone k -edge coloring of G if the induced vertex coloring c' is a proper vertex coloring of G . The minimum positive integer k for which a graph G has a majestic t -tone k -edge coloring is the majestic t -tone index of G . We present recent results and open questions in this area of research. This is joint work with Ping Zhang.

Keywords: set-defined coloring, majestic coloring, t -tone coloring