

On Cordial sets of Regular Bipartite Graphs

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For a graph $G = (V, E)$, a binary vertex labeling (coloring) $f : V(G) \rightarrow \{0, 1\}$, is said to be friendly if the number of vertices labeled 0 is almost the same as the number of vertices labeled 1. The friendly labeling $f : V(G) \rightarrow \{0, 1\}$ induces an edge labeling $f_* : E(G) \rightarrow \{0, 1\}$ defined by $f_*(xy) = |f(x) - f(y)| \forall xy \in E(G)$. Let $e_f(i) = |f_*^{-1}(i)|$ be the number of edges labeled i . The friendly index set (or cordial set) of the graph G , denoted by $C(G)$, is defined by

$$C(G) = \{|e_f(1) - e_f(0)| : f \text{ is a friendly vertex labeling of } G \}.$$

In this talk, we consider some classes of regular bipartite graphs and completely determine their friendly index sets.

Keywords: Cordial graphs; Cordial set; index function.