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A note on sparing number algorithm of graphs

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Abstract

Let X denote a set of all non-negative integers and $\mathcal{P}(X)$ be its power set. A weak integer additive set-labeling (WIASL) of a graph G is an injective set-valued function $f: V(G) \to \mathcal{P}(X) - \{\emptyset\}$ where induced function $f^+: E(G) \to \mathcal{P}(X) - \{\emptyset\}$ is defined by $f^+(uv) = f(u) + f(v)$ such that either $|f^+(uv)| = |f(u)|$ or $|f^+(uv)| = |f(v)|$, where $f(u)^+ f(v)$ is the sumset of $f(u)$ and $f(v)$. The sparing number of a WIASL-graph G is the minimum required number of edges in G having singleton set-labels. In this paper, we discuss an algorithm for finding the sparing number of arbitrary graphs.

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