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THE DISTANCE MAGIC INDEX OF A GRAPH

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Abstract

Let G be a graph of order n and let S be a set of positive integers with $|S| = n$. Then G is said to be S-magic if there exists a bijection $\phi : V(G) \to S$ satisfying $\sum_{x \in N(u)} \phi(x) = k$ (a constant) for every $u \in V(G)$. Let $\alpha(S) = \max\{s : s \in S\}$. Let $i(G) = \min \alpha(S)$, where the minimum is taken over all sets S for which the graph G admits an S-magic labeling. Then $i(G) - n$ is called the distance magic index of the graph G. In this paper we determine the distance magic index of trees and complete bipartite graphs.

Keywords: distance magic labeling, distance magic index, S-magic graph, S-magic labeling.

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