

Chartrand, G.; Saenpholphat, V.; Zhang, P.

The independent resolving number of a graph. (English) Zbl 1050.05043
Math. Bohem. 128, No. 4, 379-393 (2003).

Summary: For an ordered set $W = \{w_1, w_2, \dots, w_k\}$ of vertices in a connected graph G and a vertex v of G , the code of v with respect to W is the k -vector

$$c_W(v) = (d(v, w_1), d(v, w_2), \dots, d(v, w_k)).$$

The set W is an independent resolving set for G if (1) W is independent in G and (2) distinct vertices have distinct codes with respect to W . The cardinality of a minimum independent resolving set in G is the independent resolving number $\text{ir}(G)$. We study the existence of independent resolving sets in graphs, characterize all nontrivial connected graphs G of order n with $\text{ir}(G) = 1, n-1, n-2$, and present several realization results. It is shown that for every pair r, k of integers with $k \geq 2$ and $0 \leq r \leq k$, there exists a connected graph G with $\text{ir}(G) = k$ such that exactly r vertices belong to every minimum independent resolving set of G .

MSC:

05C12 Distance in graphs

05C69 Vertex subsets with special properties (dominating sets, independent sets, cliques, etc.)

Cited in **1** Review
Cited in **15** Documents

Keywords:

distance; resolving set; independent set

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