

DOMINATION, ETERNAL DOMINATION AND CLIQUE COVERING

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Abstract

Eternal and m-eternal domination are concerned with using mobile guards to protect a graph against infinite sequences of attacks at vertices. Eternal domination allows one guard to move per attack, whereas more than one guard may move per attack in the m-eternal domination model. Inequality chains consisting of the domination, eternal domination, m-eternal domination, independence, and clique covering numbers of graph are explored in this paper.

Among other results, we characterize bipartite and triangle-free graphs with domination and eternal domination numbers equal to two, trees with equal m-eternal domination and clique covering numbers, and two classes of graphs with equal domination, eternal domination and clique covering numbers.

Keywords: dominating set, eternal dominating set, independent set, clique cover.

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