DOMINATION, ETERNAL DOMINATION
AND CLIQUE COVERING

WILLIAM F. KLOSTERMEYER

School of Computing
University of North Florida
Jacksonville, FL 32224-2669
e-mail: wkloster@unf.edu

AND

C.M. MYNHARDT

Department of Mathematics and Statistics
University of Victoria, P.O. Box 1700 STN CSC
Victoria, BC, Canada
e-mail: kieka@uvic.ca

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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