ON THE TOTAL k -DOMINATION IN GRAPHS

SERGIO BERMUDO

*Department of Economics
Quantitative Methods and Economic History
Universidad Pablo de Olavide, ES-41013 Seville, Spain
e-mail: sbernav@upo.es*

JUAN C. HERNÁNDEZ-GÓMEZ

AND

JOSÉ M. SIGARRETA

*Faculty of Mathematics
Autonomous University of Guerrero
Carlos E. Adame 5, Col. La Garita, Acapulco, Guerrero, Mexico
e-mail: jcarloshg@gmail.com
josemariasigarretaalmira@hotmail.com*

Abstract

Let $G = (V, E)$ be a graph; a set $S \subseteq V$ is a total k -dominating set if every vertex $v \in V$ has at least k neighbors in S . The total k -domination number $\gamma_{kt}(G)$ is the minimum cardinality among all total k -dominating sets. In this paper we obtain several tight bounds for the total k -domination number of a graph. In particular, we investigate the relationship between the total k -domination number of a graph and the order, the size, the girth, the minimum and maximum degree, the diameter, and other domination parameters of the graph.

Keywords: k -domination, total k -domination, k -tuple domination, k -tuple total domination.

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