Discussiones Mathematicae
Graph Theory 41 (2021) 647–664
doi:10.7151/dmgt.2225

FAIR TOTAL DOMINATION NUMBER IN CACTUS GRAPHS

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Abstract

For $k \geq 1$, a k-fair total dominating set (or just kFTD-set) in a graph G is a total dominating set S such that $|N(v) \cap S| = k$ for every vertex $v \in V \backslash S$. The k-fair total domination number of G, denoted by $ftd_k(G)$, is the minimum cardinality of a kFTD-set. A fair total dominating set, abbreviated FTD-set, is a kFTD-set for some integer $k \geq 1$. The fair total domination number of a nonempty graph G, denoted by $ftd(G)$, of G is the minimum cardinality of an FTD-set in G. In this paper, we present upper bounds for the 1-fair total domination number of cactus graphs, and characterize cactus graphs achieving equality for the upper bounds.

Keywords: fair total domination, cactus graph.

2010 Mathematics Subject Classification: 05C69.

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Received 29 August 2018
Revised 3 April 2019
Accepted 3 April 2019