

Total Restrained Domination Number of the Conjunction of Graphs

Xue-Gang Chen

Department of Mathematics, North China Electric Power University, China

Let $G = (V, E)$ be a graph. A total restrained dominating set is a set $S \subseteq V$ where every vertex in $V - S$ is adjacent to a vertex in S as well as to another vertex in $V - S$, and every vertex in S is adjacent to another vertex in S . The total restrained domination number of G , denoted by $\gamma_r^t(G)$, is the smallest cardinality of a total restrained dominating set of G . In this paper, we discuss the total restrained domination number with respect to the conjunction of two graphs. we prove that $\gamma_r^t(G \wedge H) \leq \gamma_r^t(G)\gamma_r^t(H)$, for graphs having no isolated vertices. Furthermore, we present some infinite families of graphs that attain this bound. we also show a family of graphs such that $\gamma_r^t(G)\gamma_r^t(H) - \gamma_r^t(G \wedge H)$ can be arbitrarily large.