Abstract

In this paper we study graph parameters related to vertex-edge domination, where a vertex dominates the edges incident to it as well as the edges adjacent to these incident edges. First, we present new relationships relating the ve-domination to some other domination parameters, answering in the affirmative four open questions posed in the 2007 PhD thesis by Lewis. Then we provide an upper bound for the independent ve-domination number in terms of the ve-domination number for every nontrivial connected $K_{1,k}$-free graph, with $k \geq 3$, and we show that the independent ve-domination number is bounded above by the domination number for every nontrivial tree. Finally, we establish an upper bound on the ve-domination number for connected C_5-free graphs, improving a recent bound given for trees