Domination in transformation graph G^{-+-}

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Abstract

Let $G = (V, E)$ be a simple undirected graph of order n and size m. The transformation graph of G is a simple graph with vertex set $V(G) \cup E(G)$ in which adjacency is defined as follows: (a) two elements in $V(G)$ are adjacent if and only if they are non-adjacent in G (b) two elements in $E(G)$ are adjacent if and only if they are adjacent in G and (c) one element in $V(G)$ and one element in $E(G)$ are adjacent if and only if they are non-incident in G. It is denoted by G^{-+-}. In this paper, we investigate the domination number of transformation graph. We prove that $\gamma(G^{-+-}) \leq 3$ and characterise the graphs for which this number is 1, 2 or 3.

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