

CONNECTED DOMINATION CRITICAL GRAPHS WITH CUT VERTICES

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Abstract

A graph G is said to be k - γ_c -critical if the connected domination number of G , $\gamma_c(G)$, is k and $\gamma_c(G + uv) < k$ for any pair of non-adjacent vertices u and v of G . Let G be a k - γ_c -critical graph and $\zeta(G)$ the number of cut vertices of G . It was proved, in [1, 6], that, for $3 \leq k \leq 4$, every k - γ_c -critical graph satisfies $\zeta(G) \leq k - 2$. In this paper, we generalize that every k - γ_c -critical graph satisfies $\zeta(G) \leq k - 2$ for all $k \geq 5$. We also characterize all k - γ_c -critical graphs when $\zeta(G)$ is achieving the upper bound.

Keywords: connected domination, critical.

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