

A Construction for Δ -critical Graphs

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Abstract

Let G be a graph with maximum degree Δ . G is called Δ -critical if G is of class 2 but $G - e$ is of class 1 for any edge e in G . We established the following result: If G^* is obtained from a connected Δ -regular class 1 graph G , where $\Delta \geq |G|/2$, by splitting any vertex of G into two vertices of degree less than Δ in G^* , then G^* is Δ -critical. This partially answers a conjecture of Hilton and Zhao.