

INDEPENDENCE NUMBER, CONNECTIVITY AND ALL FRACTIONAL (a, b, k) -CRITICAL GRAPHS

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Abstract

Let G be a graph and a, b and k be nonnegative integers with $1 \leq a \leq b$. A graph G is defined as *all fractional (a, b, k) -critical* if after deleting any k vertices of G , the remaining graph has all fractional $[a, b]$ -factors. In this paper, we prove that if $\kappa(G) \geq \max \left\{ \frac{(b+1)^2+2k}{2}, \frac{(b+1)^2\alpha(G)+4ak}{4a} \right\}$, then G is all fractional (a, b, k) -critical. If $k = 0$, we improve the result given in [Filomat 29 (2015) 757–761]. Moreover, we show that this result is best possible in some sense.

Keywords: independence number, connectivity, fractional $[a, b]$ -factor, fractional (a, b, k) -critical graph, all fractional (a, b, k) -critical graph.

2010 Mathematics Subject Classification: 05C70, 05C72.

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Received 5 April 2017

Revised 5 July 2017

Accepted 5 July 2017