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Chromatically Unique Bipartite Graphs With Certain 3-independent Partition Numbers III

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ABSTRACT

For integers *p, q, s* with $p \geq q \geq 2$ and $s \geq 0$, let $K_2^{-s}(p,q)$ denote the set of 2-connected bipartite graphs which can be obtained from *K(p,q)* by deleting a set of s edges. In this paper, we prove that for any graph $G \in K_2^{-s}(p,q)$ with $p \geq q \geq 3$ and $1 \leq s \leq q-1$ if the number of 3-independent partitions of G is $2^{p-1} + 2^{q-1} + s + 4$, then *G* is chromatically unique. This result extends both a theorem by Dong et al. [2]; and results in [4] and [5].

Keywords : Chromatic polynomial, Chromatically equivalence, Chromatically unique graphs.