

CORR 2001-18

bounds for Mean Color Numbers of Graphs

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Abstract Let $\mu(G)$ denote the mean colour number of a graph G . Michele has discovered some counterexamples which disproved a conjecture proposed by Bartels and Welsh that if H is a subgraph of G , then $\mu(H) \leq \mu(G)$. In this paper, we show that this conjecture holds under some conditions: if either G is a chordal graph or H is a graph which can be obtained from a tree by replacing a vertex by a clique. This result gives a method to find upper bounds and lower bounds for the mean colour number of any graph.

Keywords Graph, Chromatic polynomial, Mean colour number