A RAMSEY-TYPE THEOREM FOR MULTIPLE DISJOINT COPIES OF INDUCED SUBGRAPHS

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Abstract

Let k and ℓ be positive integers with $\ell \leq k - 2$. It is proved that there exists a positive integer c depending on k and ℓ such that every graph of order $(2k-1-\ell/k)n+c$ contains n vertex disjoint induced subgraphs, where these subgraphs are isomorphic to each other and they are isomorphic to one of four graphs: (1) a clique of order k, (2) an independent set of order k, (3) the join of a clique of order ℓ and an independent set of order $k - \ell$, or (4) the union of an independent set of order ℓ and a clique of order $k - \ell$.

Keywords: graph decomposition, induced subgraph, graph Ramsey theory, extremal graph theory.

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