Graph Classes Characterized Both by Forbidden Subgraphs and Degree Sequences

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Abstract

Given a set $\mathcal{F}$ of graphs, a graph G is $\mathcal{F}$-free if G does not contain any member of $\mathcal{F}$ as an induced subgraph. We call a collection $\mathcal{F}$ of graphs *degree-sequence-forcing* if any graph G can be determined to be $\mathcal{F}$-free given only the degree sequence of G. For example, $\mathcal{F} = \{2K_2, C_4, C_5\}$ is a degree-sequence-forcing set which characterizes the split graphs. We give various results on degree-sequence-forcing sets, including a characterization of those sets with cardinality at most 2.