GRAPH CLASSES GENERATED BY MYCIELSKIANS

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Abstract

In this paper we use the classical notion of weak Mycielskian $M'(G)$ of a graph G and the following sequence: $M'_0(G) = G$, $M'_1(G) = M'(G)$, and $M'_n(G) = M'(M'_{n-1}(G))$, to show that if G is a complete graph of order p , then the above sequence is a generator of the class of p -colorable graphs. Similarly, using Mycielskian $M(G)$ we show that analogously defined sequence is a generator of the class consisting of graphs for which the chromatic number of the subgraph induced by all vertices that belong to at least one triangle is at most p . We also address the problem of characterizing the latter class in terms of forbidden graphs.

Keywords: Mycielski graphs, graph coloring, chromatic number.

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