

Sequential NP_5 , IP_5 , MP_5 Graphs

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Abstract

In this paper we consider a classes: sequential NP_5 , IP_5 , MP_5 graphs. Let G be a C_5 -free graph. The graph G is called: sequential NP_5 , if any induced subgraph H has a vertex x that is not OnP_5 neither in H nor \bar{H} ; sequential IP_5 , if any induced subgraph H has a vertex x that is not $IntP_5$ neither in H nor \bar{H} ; sequential MP_5 , if any induced subgraph H has a vertex x that is not $MidP_5$ neither in H nor \bar{H} . (Let $G = (V, E)$ be a graph and let $v \in V$. We say that v is $MidP_5$ if there exist four other vertices a, b, c, d in V such that $abvcd$ induces a P_5 in G , v is $IntP_5$ if there exists a P_5 such that v is an internal vertex of this P_5 (i.e. if we denote this P_5 by $abcde$, then $v \in P_5$ and $v \neq a, e$), v is OnP_5 if v is a vertex of some P_5). After presenting the properties of these classes of graphs (any sequential NP_5 , respectively IP_5 , MP_5 graph is perfect), we present a comparison with other classes of graphs related to triangulated graphs.

Key Words: Perfect graphs, triangulated graph, weakly triangulated graph, slightly triangulated graph, quasi-triangulated graph, MP_5 , IP_5 , NP_5 graph.

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