PARTITION DIMENSION OF WHEEL-LIKE GRAPHS
WITH ADDITIONAL PENDANT

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Abstract

Graph is set of pair \((V,E)\) where \(V\) is non empty finite set of node and \(E\) is set of edge, that is pair of node from \(V\). Suppose \(G = (V,E)\) is a connected graph. For each node \(v \in V(G)\) and \(k\)-ordered partitions \(\Pi = \{S_1,S_2,\ldots,S_k\}\) of \(V(G)\), the representation of \(v\) with respect to \(\Pi\) is a \(k\)-vector \(r(v|\Pi) = (d(v,S_1),d(v,S_2),\ldots,d(v,S_k))\). The set \(\Pi\) is called a resolving partition if the \(k\)-vector \(r(v|\Pi)\) is different for each \(v \in V(G)\). Minimum \(k\) of \(k\)-resolving partitions of \(V(G)\) is called partition dimension of \(G\) and denoted by \(pd(G)\). Wheel-like graph that will be discussed are gear graph, helm, and sunflower. In this final project, we’ll see the effect of additional pendant to partition dimension of wheel and wheel-like graph. By resolving partition concept that had been discussed before, we’ll get partition dimension of wheel-like graph and wheel-like graph if given additional pendant at certain nodes in a graph for then we analyzed. The number of node (order) of a graph is determined and limited as there is no specific formula for \(n\) vertices. From the analysis that had been done, we get result that additional pendant at all nodes in wheel and wheel-like graph, except center node, has no effect to its partition dimension.

Keywords : resolving partition, partition dimensions, wheel graph, gear graph, helm, sunflower, additional pendant.
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