

Proof By theorem 10, the non-planarity of a graph is invariant concerning the bipartite double cover, now the Petersen graph is non-planar, hence the Fig. 10(b) is non-planar. On the other hand, Fig. 10(b) is isomorphic to Fig. 9, hence the Fig. 9 is non-planar., hence the Desargues graph is non-planar.

CONCLUSION

Using the properties of sub-graph deduce the properties of graph G is a feasible method. This paper discussed some of the invariant properties of the Cartesian product graph operation and the Tensor product graph operation. The main conclusions include: the non-planarity and Hamiltonicity of graph are hereditary concerning the Cartesian product, the non-planarity of the graph is invariant concerning the tensor product, under the bipartite double cover, the bipartite graph is still a bipartite graph, and the regularity of a graph is invariant concerning the bipartite double cover. The method mentioned above to recognize the properties of the graph has good reference value. The invariant properties under the lexicographic product graph operation will be our focus of future research.

ACKNOWLEDGMENT

This work was supported by Hubei Provincial Department of Education Science and Technology Research plan Key Project Fund (Project Number: D20121406).

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