Abstract

Here I define a new labeling and a new graph called square difference labeling and the square difference graph. Let \( G \) be a \((p, q)\) graph. \( G \) is said to be a square difference graph if there exists a bijection \( f: V(G) \to \{0, 1, \ldots, p-1\} \) such that the induced function \( f^*: E(G) \to \mathbb{N} \) given by \( f^*(uv) = |\lfloor f(u) \rfloor^2 - \lfloor f(v) \rfloor^2| \) for every \( uv \in E(G) \) are all distinct. A graph which admits square difference labeling is called square difference graph. In this paper I discussed the square difference labeling is admitted for some graphs like cycles, complete graphs, cycle cactus, ladder, lattice grids, wheels, quadrilateral snakes, the graph \( G = K_2 + mK_1 \).

References

- V. Ajitha, S. Arumugam and K. A. Germina "On Square sum graphs" AKCE J. Graphs, Combin, 6(2006) 1- 10
- Frank Harrary, Graph theory, Narosa Publishing House- (2001).
- Gary Chartrnd, Ping Zhang, Introduction to Graph theory, McGraw- Hill International Edition
- J. Shiama" Square sum labeling for some middle and total graphs"
Square Difference Labeling for Some Graphs

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  - J. Shiama "Permutation labeling for some shadow graphs" International Journal of Computer Application (0975- 8887) Volume 40- No. 6 February 2012
  - D B West, Introduction to Graph Theory, Prentice-Hall, India, 2001

Index Terms

  Computer Science  Applied Mathematics

Keywords

  Square Difference Labeling  Square Difference Graph  Cycle Cactus