Abstract

On super edge-magic total labelings for subdivision of trees

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An *edge-magic total labeling* of a graph G is a one-to-one map λ from $V(G) \cup E(G)$ onto the integers $\{1, 2, \cdots, |V(G) \cup E(G)|\}$ with the property that, there is an integer constant c such that $\lambda(x) + \lambda(x, y) + \lambda(y) = c$ for any $(x, y) \in E(G)$. If $\lambda(V(G)) = \{1, 2, \cdots, |V(G|\}$ then edge-magic total labeling is called *super edge-magic total labeling*. The subject of edge-magic total labeling of graphs has its origin in the work of Kotzig and Rosa [6, 7], on what they called magic valuations of graphs. The notion of super edge-magic total labeling was introduced by Enomoto et al. in [1] and they proposed the conjecture: Every tree admits a super edge-magic total labeling. In the effort of attacking this conjecture, many authors have considered super edge-magic total labeling for some particular classes of trees, see [3]. In this paper we formulate super edge-magic total labeling on subdivision of some families of trees namely: $K_{1,4}$ and w-tree.

References

[1] H. Enomoto, A. S. Llado, T. Nakamigawa, and G. Ringle, Super edge-magic graphs, *SUT J. Math.*, 34 (1980), 105-109.

[2] R. M. Figueroa-Centeno, R. Ichishima, and F. A. Muntaner-Batle, The place of super edge-magic labeling among other classes of labeling, *Discrete Math.,* 231 (2001), 153-168.

[3] J. A. Gallian, A dynamic survey of graph labeling, *J. Combin.*, January 2009.

[4] M. Hussain, E. T. Baskoro, and Slamin, On super edge-magic total labeling of banana trees, *Utilitas Math.,* 79 (2009), 243-251.

[5] M. Javaid, M. Hussain, K. Ali, and K. H. Dar, Super edge-magic total labeling on w-trees, *Utilitas Math.,* to appear.

[6] A. Kotzig, and A. Rosa, Magic valuations of finite graphs, *Canad. Math. Bull.*, 13 (1970), 451-461.

[7] A. Kotzig, and A. Rosa, Magic valuation of complete graphs, *Centre de Recherches Mathematiques, Universite de Montreal*, (1972), CRM-175.

[8] S. M. Lee, and Q. X. Shah, All trees with at most 17 vertices are super edge-magic, *16th MCCCC Conference, Carbondale*, University Southern Illinois, November 2002.