CONJUGATE S_3-MAGIC GRAPHS

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Abstract: In this paper, we introduce conjugate A-magic labeling of graphs where A is a finite non-abelian group and investigate the graphs that are conjugate S_3-magic.

Keywords and Phrases: A-magic labeling, Non-abelian group, conjugate S_3-magic.

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1. Introduction

Throughout this paper, we shall consider only connected, finite, simple, and undirected graphs. Let $G = (V(G), E(G))$ be any finite graph and let A be an abelian group under addition with the identity element 0. Let $A^* = A \setminus \{0\}$. Any mapping $\ell : E(G) \to A^*$ is called an edge labeling. Observe that any edge labeling induces a mapping $\ell^+ : V(G) \to A$ as follows: $\ell^+(u) = \Sigma\{\ell(uv) : uv \in E(G)\}$. A graph G is called A-magic, if there exists $a \in A$ such that $\ell^+(u) = a$, for all $u \in V(G)$. Several authors studied about V_4-magic graphs [6, 8, 9] and Z_k-magic graphs [5]. Recently, Anusha C. and Anil Kumar V. [2, 3, 4] introduced A-magic labeling of graphs where A is non-abelian and studied graphs that are S_3-magic, D_4-magic and Q_8-magic. In this paper, we introduce a new magic labeling of graphs using a non-abelian group namely, the conjugate A-magic labeling of graphs and investigate conjugate S_3-magic labeling of some graphs. Consider the set $X = \{1, 2, 3\}$. A permutation of X is a function from X to itself that is both