

ON LOCAL ANTIMAGIC CHROMATIC NUMBER OF CYCLE-RELATED JOIN GRAPHS

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Abstract

An edge labeling of a connected graph $G = (V, E)$ is said to be local antimagic if it is a bijection $f : E \rightarrow \{1, \dots, |E|\}$ such that for any pair of adjacent vertices x and y , $f^+(x) \neq f^+(y)$, where the induced vertex label $f^+(x) = \sum f(e)$, with e ranging over all the edges incident to x . The local antimagic chromatic number of G , denoted by $\chi_{la}(G)$, is the minimum number of distinct induced vertex labels over all local antimagic labelings of G . In this paper, several sufficient conditions for $\chi_{la}(H) \leq \chi_{la}(G)$ are obtained, where H is obtained from G with a certain edge deleted or added. We then determined the exact value of the local antimagic chromatic number of many cycle-related join graphs.

Keywords: local antimagic labeling, local antimagic chromatic number, cycle, join graphs.

2010 Mathematics Subject Classification: 05C78, 05C15.

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doi:10.1016/j.amc.2017.10.008

Received 21 May 2018
 Revised 27 August 2018
 Accepted 27 August 2018