



TOTAL COLORING OF LINE GRAPH AND SQUARE GRAPH FOR CERTAIN GRAPHS

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Abstract

A total coloring of a graph is a coloring to the elements (vertices and edges) of the graph G , for which any adjacent vertices or edges and incident elements are colored differently. The total chromatic number of G is the minimum number of colors that needed in a total coloring. In this paper, we have determined the total chromatic number for $L(P_n^+)$, $L(T_n)$, $(P_n^+)^2$ and T_n^2 .

1. Introduction and Preliminaries

Let us assume all graphs are finite, simple and undirected graph G with the vertex set $V(G)$ and the edge set $E(G)$ respectively. Let $f : V(G) \cup E(G) \rightarrow C$ be a total coloring of G , where C is set of colors and satisfies the given conditions

- (a) $f(a) \neq f(b)$, $\forall a, b \in V(G)$ are any two adjacent vertices
- (b) $f(e_1) \neq f(e_2)$, $\forall e_1, e_2 \in E(G)$ are two any adjacent edges and

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