

ON THE b -DOMATIC NUMBER OF GRAPHS

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Abstract

A set of vertices S in a graph $G = (V, E)$ is a *dominating set* if every vertex not in S is adjacent to at least one vertex in S . A *domatic partition* of graph G is a partition of its vertex-set V into dominating sets. A domatic partition $\mathcal{P}$ of G is called *b-domatic* if no larger domatic partition of G can be obtained from $\mathcal{P}$ by transferring some vertices of some classes of $\mathcal{P}$ to form a new class. The minimum cardinality of a b -domatic partition of G is called the *b-domatic number* and is denoted by $bd(G)$. In this paper, we explain some properties of b -domatic partitions, and we determine the b -domatic number of some families of graphs.

Keywords: domatic partition, domatic number, b -domatic partition, b -domatic number.

2010 Mathematics Subject Classification: 05C15, 05C69, 05C70.

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doi:10.1007/978-3-642-31770-5_22

Received 1 February 2017

Revised 17 August 2017

Accepted 17 August 2017