

## ON VERTEX PRIME GRAPHS

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### Abstract

A graph with  $e$  edges is called vertex prime graph if it is possible to label the edges with distinct positive integers  $1, 2, \dots, e$ , such that for each vertex of degree at least 2 the greatest common divisor of the labels on its incident edges is 1. In this paper we prove that the complete bipartite graph  $K_{m,n}$ , the graph  $P_n + k_t$ , the mirror sum graph, the complete graph  $K_n$  and generalised Petersen graph are vertex prime graphs.

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