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# Achromatic Numbers of Cartesian Products of Some Graphs and a Path of Order 2\*

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**Abstract.** One of famous problems in the study of graph theory is graph coloring problems which mathematicians and graph theorists have studied widely for a long time. For example: finding Ramsey numbers, finding chromatic numbers and achromatic numbers of some graphs, etc. Achromatic number of a graph is the largest number of colors that can be assigned to each vertex of the graph such that adjacent vertices are assigned different colors and any two different colors are assigned to some pair of adjacent vertices. In this paper, we discuss on the achromatic numbers of Cartesian products of some graphs and a path of order 2, including Book graphs and Prism graphs.

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