



On the optimal drawings of Cartesian products of special 6-vertex graphs with path

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Abstract. Finding minimum necessary intersections in graph representations is useful in many areas. The most prominent areas are automated graph drawings and VLSI-layouts. The exact value of the crossing number is known only for few classes of graphs, mainly with regular structure such as various products of graphs. Among the products of graphs, the Cartesian product has received great attention in the mathematical publications. Klešč, Jendroľ and Ščerbová determined the crossing numbers of Cartesian products of paths with all graphs of order at most four and with all connected graphs on five vertices. Moreover, the crossing numbers of Cartesian products of paths with some graphs of order six are known. In the paper, we extend these results by determining crossing numbers of Cartesian products $G \square P_n$ for several other graphs G on six vertices.

Keywords: graph, drawing, crossing number

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