ON A VERTEX-SYMMETRIC GRAPH
WITH INTERSECTION ARRAY $\{205, 136, 1; 1, 68, 205\}$

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A. Makhnev and D. Paduchikh found intersection arrays of distance-regular graphs that are locally strongly regular with the second eigenvalue 3. A. Makhnev and M. Samoilenko added to this list the intersection arrays $\{196, 76, 1; 1, 19, 196\}$ and $\{205, 136, 1; 1, 68, 205\}$. However, graphs with these intersection arrays cannot be locally strongly regular. The existence of graphs with these intersection arrays is unknown. We find possible orders and fixed-point subgraphs for the elements of the automorphism group of a distance-regular graph with intersection array $\{205, 136, 1; 1, 68, 205\}$. It is proved that a vertex-transitive distance-regular graph with this intersection array is a Cayley graph.

Keywords: distance-regular graph, automorphism.

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