THE MAXIMUM ORDER OF REDUCED SQUARE
(0, 1)-MATRICES WITH A GIVEN RANK∗

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Abstract. The maximum order of a square (0, 1)-matrix $A$ with a fixed rank $r$ is considered, provided $A$ has no repeated rows or columns. When $A$ is the adjacency matrix of a graph, Kotlov and Lovász [A. Kotlov and L. Lovász. The rank and size of graphs. J. Graph Theory, 23:185–189, 1996.] proved that the maximum order equals $\Theta(2^{r/2})$. In this note, it is showed that this result remains correct if $A$ is symmetric, but becomes false if symmetry is not required.

Key words. (0, 1)-Matrix, Rank, Graph.

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