

## A NECESSARY AND SUFFICIENT EIGENVECTOR CONDITION FOR A CONNECTED GRAPH TO BE BIPARTITE\*

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**Abstract.** We give a necessary and sufficient condition for a graph to be bipartite in terms of an eigenvector corresponding to the largest eigenvalue of the adjacency matrix of the graph.

**Key words.** Graph, Bipartite, Principal eigenvector, Independent set.

**AMS subject classifications.** 05C50, 15A18.

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