

## ON THE CHARACTERIZATION OF GRAPHS WITH PENDENT VERTICES AND GIVEN NULLITY\*

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**Abstract.** Let  $G$  be a graph with  $n$  vertices. The nullity of  $G$ , denoted by  $\eta(G)$ , is the multiplicity of the eigenvalue zero in its spectrum. In this paper, we characterize the graphs (resp. bipartite graphs) with pendent vertices and nullity  $\eta$ , where  $0 < \eta \leq n$ . Moreover, the minimum (resp. maximum) number of edges for all (connected) graphs with pendent vertices and nullity  $\eta$  are determined, and the extremal graphs are characterized.

**Key words.** Eigenvalue, Nullity, Pendent vertex.

**AMS subject classifications.** 05C50.

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\* Received by the editors February 28, 2009. Accepted for publication November 11, 2009.  
Handling Editor : Bryan L. Shader.

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