CHARACTERIZATION OF SUPER-RADIAL GRAPHS

KM. Kathiresan

Center for Research and Post Graduate Studies in Mathematics
Ayya Nadar Janaki Ammal College
Sivakasi-626 124, Tamil Nadu, India

E-mail: kathir2esan@yahoo.com

G. Marimuthu

Department of Mathematics
The Madura College
Madurai-625 011, Tamil Nadu, India

E-mail: yellowmuthu@yahoo.com

AND

C. Parameswaran

Center for Research and Post Graduate Studies in Mathematics
Ayya Nadar Janaki Ammal College
Sivakasi-626 124, Tamil Nadu, India

E-mail: parames65c@yahoo.com

Abstract

In a graph $G$, the distance $d(u, v)$ between a pair of vertices $u$ and $v$ is the length of a shortest path joining them. The eccentricity $e(u)$ of a vertex $u$ is the distance to a vertex farthest from $u$. The minimum eccentricity is called the radius, $r(G)$, of the graph and the maximum eccentricity is called the diameter, $d(G)$, of the graph. The super-radial graph $R^*(G)$ based on $G$ has the vertex set as in $G$ and two vertices $u$ and $v$ are adjacent in $R^*(G)$ if the distance between them in $G$ is greater than or equal to $d(G) - r(G) + 1$ in $G$. If $G$ is disconnected, then two vertices are adjacent in $R^*(G)$ if they belong to different components. A graph $G$ is said to be a super-radial graph if it is a super-radial graph $R^*(H)$ of some graph $H$. The main objective of this paper is to solve the graph equation $R^*(H) = G$ for a given graph $G$.

Keywords: radius, diameter, super-radial graph.

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References


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