

CHARACTERIZATION OF SUPER-RADIAL GRAPHS

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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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