

ON NEIGHBOURHOOD GRAPHS

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Abstract

In Real analysis, the neighbourhood of a point $a \in R$ is defined as the set of all real numbers whose distance from a is less than or equal to r , for some $r > 0$. Different versions of graph analogue of this concept were studied by various authors. In this paper, first we define the neighbourhood graph of a given connected graph G (simply nbd graph) denoted as $N(G)$ and is obtained from a set of neighbours of all the vertices of G . Then, we try to construct nbd graphs of different classes of graphs and study various properties of nbd graphs. Further we give a sufficient condition for the nbd graph $N(G)$ of a graph G to be complete and finally we obtain a necessary and sufficient condition for $N(G)$ to be connected.

Key Words : *Open neighbourhood, Closed neighbourhood, Self neighbourhood graph.*

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