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Entitled

PROPERTIES OF CERTAIN CONNECTED GRAPHS RELATED TO THEIR EDGE METRIC DIMENSION

by

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Abstract

Metric dimension, resolving sets and edge metric dimension are very important invariants the resolvability of graphs that have been studied and investigated intensively in the literature design the last decades because of their immense utilization is network topology, master mind games, robot navigation and representation of chemical compounds. This thesis is concerned with the graph- theoretic properties of certain families of connected graphs related to their edge metric dimension. The main objective of this thesis is to study the comparison of metric dimension versus edge metric dimensions of the certain families of graphs. The study investigates the relationship between the metric and edges metric dimension of flower snarks graphs, hexagonal Möbius graphs, and octagonal Mobius graphs. The study showed different inequalities results based on the structure of graphs. The comparison between metric and edge metric dimensions of the graph will give a better understanding of the properties of these under investigated families of graphs.

Keywords: Metric dimension, edge metric dimension, flower snarks, hexagonal Möbius, Möbius octagonal.