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Structure of the set of all minimal total dominating functions of some classes of graphs.

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Summary: We study some of the structural properties of the set of all minimal total dominating functions (\mathfrak{F}_T) of cycles and paths and introduce the idea of function reducible graphs and function separable graphs. It is proved that a function reducible graph is a function separable graph. We shall also see how the idea of function reducibility is used to study the structure of $\mathfrak{F}_T(G)$ for some classes of graphs.

MSC:

05C69 Vertex subsets with special properties (dominating sets, independent sets, cliques, etc.)

05C35 Extremal problems in graph theory

Keywords:

minimal total dominating functions (MTDFs); convex combination of MTDFs; basic minimal total dominating functions (BMTDFs); simplex; polytope; simplicial complex; function separable graphs; function reducible graphs

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