

عنوان مقاله:

A graph associated to proper non-small subsemimodules of a semimodule

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خلاصه مقاله:

Let M be a unitary left R -semimodule where R is a commutative semiring with identity. The small intersection graph $G(M)$ of a semimodule M is an undirected simple graph with all non-small proper subsemimodules of M as vertices and two distinct vertices N and L are adjacent if and only if $N \cap L$ is not small in M . In this paper, we investigate the fundamental properties of these graphs to relate the combinatorial properties of $G(M)$ to the algebraic properties of the R -semimodule M . Determine the diameter and the girth of $G(M)$. Moreover, we study cut vertex, clique number, domination number and independence number of the graph $G(M)$. It is shown that the independence number of small graph is equal to the number of its maximal subsemimodules.

کلمات کلیدی:

subsemimodule, small intersection graph, clique number, domination number, independence number

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