

Semirings all of whose Cyclic Semimodules are Injective, V-Semirings and Related Problems

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In this talk, we introduce and study CI- and V-semirings—semirings all of whose cyclic and simple, respectively, semimodules are injective, and consider the celebrated characterization of semisimple rings of B. Osofsky (and in some way of L. A. Skornjakov, too) in the context of semirings. We give a complete description of the bounded distributive lattices, Gelfand, subtractive, semisimple, and anti-bounded, semirings that are CI-semirings. We also provide descriptions of V-semirings for some classes of semirings and establish some fundamental properties of V-semirings, as well as give complete characterizations of congruence-simple subtractive and congruence-simple anti-bounded CI-semirings solving open problems for these classes of CI-semirings. If times allows, we might discuss some related problems and directions for future investigations.