ON DISTRIBUTIVE LATTICES
OF LEFT k-ARCHIMEDEAN SEMIRINGS

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Abstract. Here we introduce the notion of left k-Archimedean semirings which generalize the notion of k-Archimedean semirings [1], and characterize the semirings which are distributive lattices (chains) of left k-Archimedean semirings. A semiring S is a left k-Archimedean semiring if for all $a, b \in S$, $b \in \sqrt{Sa}$, the k-radical of Sa. A semiring S is a distributive lattice of left k-Archimedean semirings if and only if for all $a, b \in S$, $ab \in \sqrt{Sa}$ and S is a chain of left k-Archimedean semirings if and only if $\sqrt{L}$ is a completely prime k-ideal, for every left k-ideal L of S.

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Key words. k-radical, left k-Archimedean semiring, completely prime k-ideal, semiprimary k-ideal, congruence, distributive lattice congruence.

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