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ON DISTRIBUTIVE LATTICES
OF LEFT k -ARCHIMEDEAN SEMIRINGS

TAPAS KUMAR MONDAL and ANJAN KUMAR BHUNIYA

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 .

MSC 2010. 16Y60.

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

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