Title : Isomorphism conditions for Cayley regularity graph of semigroups.

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ABSTRACT

The Cayley regularity graph CR(S) of a semigroup S is a digraph whose vertex set is the semigroup S, and whose directed edge set consists of all ordered pairs (x, y) $\in S \times S$ such that y is a regular part of x, that is, x = xyx. For each element s in the semigroup S, we define Reg(s) = {t $\in S$: s = sts}. In this independent study, we aim to find the necessary and sufficient conditions on semigroups for their Cayley regularity graphs to be isomorphic.

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