

# Complexity of checking identities in monoids of transformations

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We study the computational complexity of checking identities and solving equations in a fixed finite monoid. There is a six-element monoid for which these problems are coNP-complete. This monoid can be easily described as a submonoid of the monoid of partial transformations of a two-element set. In the talk we show other natural small monoids of transformations for which the problems are hard.