# On Factorization of Monoids

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Factorizations of mathematical objects is an important topic in Mathematics. The factorization problem consists of both finding all the factorizations of a given mathematical object through its subobjects, and studying properties of a mathematical objects in terms of the two smaller sub-objects through which it is already factorized. It occurs frequently that it is possible to solve the initial problem for these subobjects, for which one has techniques that weren't available for the initial object. Therefore, the factorization problem is crucial and it is being studied and researched in many different fields of Mathematics.

Our goal was to describe the set of all possible factorizations of a given monoid. A necessary and sufficient condition for any monoid to be factorized in terms of congruences was found.