

Rank of Semigroup: Generating Sets and Cases Revealing Limitations of the Concept of Independence

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Abstract : We investigate a certain characterisation for rank of a semigroup by Howie and Ribeiro (1999), to ascertain the relevance of the concept of independence. There are cases where the concept of independence fails to be useful for this purpose. One would expect the basic element to be the maximal independent subset of a given semigroup. However, we construct examples for semigroups where finite basis exist and the basis is larger than the number of independent elements.

Keywords : generating sets, independent set, rank, cyclic semigroup, basis, commutative

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