Definition (Generating subsets). Let $\mathbf{S} = \langle \mathbf{S}, \mathbin{\overset{\circ}{\circ}} \rangle$ be a semigroup, and let $\mathbf{A} \subseteq \mathbf{S}$ be a subset. We say that $\mathbf{S}$ is *generated* by $\mathbf{A}$ if every element of $\mathbf{S}$ can be expressed as a finite multiplication of elements of $\mathbf{A}$.