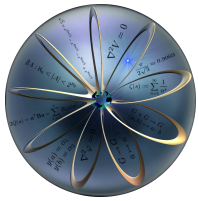

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symmetric group

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Let X be a set. Let $S(X)$ be the set of permutations of X (i.e. the set of bijective functions on X). Then the act of taking the composition of two permutations induces a group structure on $S(X)$. We call this group the *symmetric group* and it is often denoted $\mathrm{Sym}(X)$.

When X has a finite number n of elements, we often refer to the symmetric group as S_n, and describe the elements by using cycle notation.