

- A set S is *finite* whenever there exists a bijection from the set $[n]$ to S , for a fixed n . Further, the cardinality of S is n . Ex. $\{13, 100, -17\}$.
- A set S is *infinite* whenever there exists an injective mapping $f : S \rightarrow S$ such that $f(S)$ is a proper subset of S . Ex. set of natural numbers, set of odd positive integers.
- The proofs for the following are provided in lectures:
 - If a subset S' of S is infinite, then S is infinite.
 - Every subset of a finite set is finite.
 - If S is an infinite set then the power set of S is infinite.
 - If $f : S \rightarrow T$ is an injection and S is infinite, then T is infinite.
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