- 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 inifinite 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.

- A set S is finite iff S is not infinite.