0.1 Lecture 4

Definition (Sequence).

Theorem. Infinite subsets of a countable set is countable.

Remark.

Corollary.

Example 0.1.1 ($\mathbb{N} \times \mathbb{N}$ is countable).

Example 0.1.2 ($\mathbb{Q}$ is countable).

Theorem. Countable union of at most countable sets is at most countable.

Corollary.

Corollary.

Theorem. Finite product of countable sets is countable.

Example 0.1.3 ($\mathbb{Q}$ is countable).

Theorem. The collection of all binary sequences is uncountable.