

Homework Assignment 1.

The only rule is no cooperation. Give rigorous proofs of five of the following statements:

1. A surjective image of a finite set is finite.
2. An injective image of an infinite set is infinite.
3. The product of finitely many finite sets is finite.
4. The product of finitely many countable sets is countable.
5. Given a countable set x , any set consisting of pairwise disjoint subsets of x is countable.
6. For every set x , either x is finite or else $|\omega| \leq |x|$.