Math 2326 - Introduction to Abstract Mathematics
Assignment 29 - Due Wednesday, April 9

Problem 96: Define $f : \mathbb{N} \times \mathbb{N} \to \mathbb{N}$ by $f(1, n) = 2n-1$ and $f(m+1, n) = 2^m(2n-1)$. Show that f is a bijection.

Problem 97: Show that if $A \times A$ is countable, then A is countable.

Problem 98: Let X be a countable set. Show that for every $n \in \mathbb{N}$, $\overbrace{X \times X \times \cdots \times X}^{n \text{ times}}$ (n times) is countable.