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 $n \in \mathbb{N}$, $\underbrace{X \times X \times \cdots \times X}_n$ (n times) is countable.