Extra Homework 2

This is a problem I left as an exercise during the lecture on Friday, April 14. I am assigning it as extra homework, due Monday April 24, for 1% extra credit.

Problem. Let $S$ and $T$ be two non-empty sets. Prove that the following statements are equivalent.

- There exists an injective function $f : S \to T$;
- There exists a surjective function $g : T \to S$. 