Problem 1. *Let $f : A \to B$. Then:*

- *f is injective if and only if it has a right inverse.*
- *f is surjective if and only if it has a left inverse.*
- *f is bijective if and only if it has a left and right inverse.*
- *If $|A| = |B| = n \in \mathbb{Z}_{\geq 0}$ then f is injective if and only if f is surjective if and only if f is bijective.*