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

a) f is injective if and only if it has a right inverse.

b) f is surjective if and only if it has a left inverse.

c) f is bijective if and only if it has a left and right inverse.

d) 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.

Proof.

a)

b)

c)

d)

□