Math 331: Homework 0
Due: Friday, August 22nd

1 (1.3.1) Prove that the function $l : \mathbb{R} \to [-2, 2]$ by $l(t) = 2\cos(t)$ is surjective.

2 (1.3.6) Prove that if $f : S \to T$ and $g : T \to V$ are both injections, then $g \circ f : S \to V$ is an injection.

3 (1.3.14) Prove or disprove the following statement: If $f : X \to Y$ and $A \subseteq B \subseteq X$, then $f(B - A) \subseteq f(B) - f(A)$.