Hint Assignment 13

You might want to prove the following lemma to help you with Problem 3.3 10 you might want to prove the following lemma.

Lemma 1 *If $f : X \to Y$ and $g : Y \to Z$ are functions and $A \subseteq X$ and $C \subseteq Z$ then:*

1. $(g \circ f)(A) = g(f(A))$

2. $(g \circ f)^{-1}(C) = f^{-1}(g^{-1}(C))$

This proof is easy but need to be done because these results do not follow immediately from the definition.