

February 27, 2008

Problem 4.34

Given $f : A \rightarrow B$ and $g : B \rightarrow C$, let $h = g \circ f$. Determine which of the following statements are true. Give proofs for the true statements and counterexamples for the false ones.

1. If h is injective, then f is injective.
2. If h is injective, then g is injective.
3. If h is surjective, then f is surjective.
4. If h is surjective, then g is surjective.