Math-42 Sections 01, 02, 05

Homework #8

Due: Week of 4/6

Reading

Section 2.3

Problems

Consider $f : A \to B$ and let $S, T \subseteq A$.

1. Prove: $f(S \cap T) \subseteq f(S) \cap f(T)$
2. Draw a diagram that shows why this is a subset relationship and not set equality. In other words, show why there can be elements in $f(S) \cap f(T)$ that are not in $f(S \cap T)$.
3. How can f be limited so that equality occurs. In other words, how do you eliminate the problem in your drawing?
4. Which step in your proof is not reversible?