Homework 11: Continuity

*Assignments should be **stapled** and written clearly and legibly.*

1. §4.1, #4.9, 4.10, 4.12, 4.13(a), 4.14.
2. Let $f, g : X \to \mathbb{R}$ be continuous, where $\mathbb{R}$ is given the standard topology.
   (a) Prove that $\{x : f(x) \leq g(x)\}$ is closed in X.
   (b) Let $h : X \to \mathbb{R}$ be the function $h(x) = \min\{f(x), g(x)\}$. Prove that h is continuous. (Hint: use the pasting lemma.)