# Homework 9

Due before 10am on Nov 3rd on gradescope.

1. (30 pts) P169, Problem 11-1. (Hint: for (b), you can use rational numbers to approximate any real number. Let $c$ be any real number with infinitely many decimal places and $c_n$ be a number of finite decimal places with same integer part and the first $n$ decimal places, then $c_n \to c$ because $|c - c_n| < 10^{-n}$. )

2. (30 pts) P169, Problem 11-3.

3. (20 pts) P169, Problem 11-4.

4. (20 pts) P182, Problem 12-2. (Explanation: by the given assumption $f([a, b]) = [f(a), f(b)]$, we know $f(a) < f(b)$.)