HOMEWORK 7

Due on Monday, November 14th, in class.

Exercise 1. Solve exercises 17.2, 17.10, 17.11, 17.12, 17.13, and 17.14 from the textbook.

Exercise 2. Solve exercises 18.4, 18.5a), 18.8, 18.9, and 18.12 from the textbook.

Exercise 3. Let $a, b \in \mathbb{R}$ with $a < b$ and let $f : [a, b] \to [a, b]$ be continuous. Show that there exists $x_0 \in [a, b]$ such that $f(x_0) = x_0$.

Exercise 4. Let $a, b \in \mathbb{R}$ with $a < b$ and let $f, g : [a, b] \to [a, b]$ be two continuous functions such that $f \circ g = g \circ f$. Show that there exists $x_0 \in [a, b]$ such that $f(x_0) = g(x_0)$.