

# Mathematic 405, Fall 2014: Assignment #4

Due: **Friday, February 28th**

*Instructions:* Please ensure that your answers are legible. Also make sure that sufficient steps are shown. Page numbers refer to the course text.

**Problem #1.** p. 98 # 6

**Problem #2.** p. 98 # 8

**Problem #3.** p. 98 # 15

**Problem #4.** p. 106 # 5

**Problem #5.** p. 106 # 8

**Problem #6.** p. 125 # 1

**Problem #7.** p. 125 # 2

**Problem #8.** Let  $C$  be the Cantor set. Show that  $C$  has no interior points. (Hint: show that any number in  $[0, 1]$  can be well approximated by a rational number of the form  $i3^{-n}$  for  $0 \leq i \leq 3^n$ ).