

**Math 413 Analysis I**  
Problem Set 13

**Due Friday December 5**

Do the following exercises from Abbott's *Understanding Analysis*.

Exercise 5.3.1

Exercise 5.3.3

Exercise 5.3.5

Exercise 5.3.8

1) Let  $r \in \mathbb{R}$ . Prove that the polynomial  $x^3 - 3x + r$  does not have two roots in the interval  $[0, 1]$ .