Math 275 – Fall 2012

Homework 6

Due: October 24, 2012, in your discussion section

PLEASE READ THE INSTRUCTIONS/SUGGESTIONS WRITTEN IN THE SYLLABUS!

Problems:

- *3.6, Page 138:* 4, 5, 10, 12, 16, 20 (hint: use a half-angle formula), 22, 28
- Give an $\varepsilon - \delta$ proof that $\lim_{x \to 4} \sqrt{x} = 2$. (This means that you have to show that for every $\varepsilon > 0$ you can find a $\delta > 0$ so that the appropriate inequality from the definition of the limit holds.)

BONUS PROBLEM: Is there a continuous function f for which $f(x)$ is rational if and only if $f(x+1)$ is irrational?

DISCLAIMER: It is easy to find the solutions to (some of) these questions. (E.g. the internet, your fellow classmates ...) However, do NOT consult any of these solutions when working on this assignment or you will learn nothing from it and your chance of passing the course will be greatly diminished. If it becomes apparent to the grader that your solution is copied from existing solutions, you will be assigned a grade of zero for lack of originality.