MATH 2200 Fall 2002
Homework 7

Below is a list of selected problems from Edwards & Penny. It is in your best interest to work all of the problems. All problems from the homework are fair game on exams! ***Please staple your work***. I will be available during office hours for help or by email. Homework is due Monday October 14, 2002 at 9:05am.

§ 3.6 Problems 5, 9, 11, 13, 20, 21, 25, 27, 29, 31, 33, 45, 47

α) Let $S^1 = \{(x,y) : x^2 + y^2 = 1\}$ (read "the set of points (x,y) such that $x^2 + y^2 = 1$) be the unit circle centered at the origin. Find, using techniques from §3.6, the closest point in S^1 to the point $(0,1)$.

β) Write a detailed description (in your own words!) of the method you use to solve problems like those in §3.6, citing theorems if you like. You may use a previously worked problem as an example, but you need to carefully explain what you are doing at each step and why. The goal of this exercise is to solidify a plan of attack for word problems. I'll go ahead and tell you now, this problem will be graded. So, ask me in advance if you have questions about this. I'll be more than happy to look at drafts and give you advice. This problem will be worth 30 points out of 50.

I will grade problems α and β (surprise surprise). Problem α is worth 10 points, problem β is worth 30, and up to 10 points will be awarded according to how many of the other problems are completed. Please write up problems α and β seperately and neatly. You may lose points if these two problems are messy.