Supply Chain Engineering   **Prof. Gupta**
IE 7200   **Spring 2017-Monday**

Homework No. 7
(Due: April 3, 2017)

Problem 1. FootWear, a shoe manufacturer, has identified two customer segments; one that prefers customized designer shoes and is willing to pay a higher price and another that is willing to take standard shoes but are more price sensitive. Assume that the cost of manufacturing either shoes is $500. Demand from the customized segment has a demand relationship of $d_1 = 50000 - 25p_1$ and demand from the price-sensitive segment is $d_2 = 80000 - 50p_2$. What price should Footwear charge each segment if its goal is to maximize profits? What is the total profit? If TwoWheels were to charge a single price over both segments, what should it be? How much increase in profits does differential pricing provide?

Problem 2. Consider the shoe manufacturer, FootWear, in problem 1. Now assume that a designer shoe pair costs $700 to manufacture, whereas a standard shoe pair costs $500 to manufacture, with all the other data as in problem 1. What price should FootWear charge each segment if its goal is to maximize profits? What is the total profit? If FootWear were to charge a single price over both segments, what should it be? How much increase in profits does differential pricing provide?