ECO 401-001
Spring 2005
Problem Set #7

Due: Thursday, April 28

1. Assume that the retailing of cigarettes is a constant-cost perfectly competitive market, currently in long-run equilibrium at a price of $2 per pack. City council decides to impose a $.50 per pack excise tax on all cigarettes sold in Fayette County. Illustrate the effect of the tax on the market for cigarettes in Lexington. How much revenue will this tax generate? Illustrate in your diagram. Who bears the burden of this tax, cigarette buyers or sellers? Illustrate the deadweight loss from the tax in your diagram as well.

2. Suppose your uncle is athletics director at the University of Kentucky. For your birthday he gives you the monopoly rights to sell plastic wildcat hats at LadyCats basketball games. Your cost function is given by $C(Q) = 100 + Q^2$. The inverse demand function for plastic wildcat hats is given by $P(Q) = 40 - Q$. Q is the number of hats you sell at each game.
    a) What price should you charge in order to maximize profits? How many hats will you sell? What will your profits be?
    b) Illustrate the total cost, total revenue, and profit functions in the attached diagram. Explain how the MR = MC condition is illustrated in this diagram.

3. You work for a company that produces and sells ready-to-eat cereal to the general public. The marketing department has discovered that there are two types of customers, those who are very price sensitive and who scour the newspaper for discount coupons, and those who are not price sensitive and who never use coupons. Own-price elasticity of demand for the first group is 5 and for the second group is 2. The marginal cost per box of cereal is $2. Your boss approaches you and asks how to use this information to set the shelf price for cereal, as well as the size of the discount for coupon users.