ECO 601-001
Fall 2004
Problem Set #10

Due: Wednesday, December 8.

1. RE the Lexington Herald-Leader article on the proposed tariff on imported shrimp. Shrimp is a perfectly competitive industry. Using our model of perfectly competitive markets, evaluate the short and long-run effects of a tariff on imported shrimp that raises the cost of foreign shrimp to the level of domestically produced shrimp.

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. Nicholson, 13.8.

4. Your sister owns the only coal mine in an isolated region in eastern Kentucky. As such, she faces a labor supply curve given by $L = 50w$, where L indicates the number of coal miners she employs and w indicates the hourly wage rate she pays her workers. She sells her coal in a competitive output market for $10 per ton. Each worker produces two tons of coal per hour (which works out to be 16 tons per day, an output that Tennessee Ernie Ford made famous in a well-known song). How many workers should your sister employ and what wage rate should she pay in order to maximize profits? Compare this to the number of workers hired and the wage rate if your sister were a price taker in the labor market.

5. Nicholson, 16.5. (Don't turn this one for grading.)