ECO 401-001
Spring 2005
Problem Set #6

Due: Tuesday, April 12, 2005.

1. Which of the following fits the definition of a perfectly competitive market? In each case explain why or why not.
    a. personal computers.
    b. lettuce.
    c. cable TV.
    d. retail clothing stores.

2. Pamela recently paid $400 for a business license that permits her to sell ice cream bars at a popular beach resort for the next 30 days. She discovers that there are many other ice cream vendors, and that the market is perfectly competitive. The market price of ice cream bars is $2 and Pamela is currently able to sell 50 per day. At that output rate, her average variable cost is $1.80 per ice cream bar. With the exception of the fixed license fee, all of Pamela's costs are variable. If you were in Pamela's place, what would you do?

3. Your total cost schedule is as follows:

Q	0	1	2	3	4	5	6	7	8	9	10
TC	100	190	270	340	400	470	550	640	750	880	1030

    a) Suppose that you are a price taker and the market price of your product is $70. What output will maximize profit and what will profit be?
    b) Suppose market price is $90. Graph the AFC, AVC, ATC, and MC curves. What output will maximize profit? Illustrate.
    c) Suppose market price is $110. Graph the TFC, TVC, TC, and TR curves. What output will maximize profit? Illustrate.

4. When you go back home to western Kentucky for the holidays, your cousins have a number of questions for you. They know that you are studying economics, and they want to ask some questions about their family business, raising hogs. The industry is currently in long-run equilibrium, with hogs selling for $.50 per pound at the slaughterhouse. Your cousins use the same technology to produce hogs that everyone else uses—small family-owned farms, outdoor pens, mud, and slop. There are no locational advantages, and farmers from Mississippi to Minnesota can produce hogs at the same level of cost.
    a) Illustrate the initial long-run equilibrium, with separate diagrams for a typical firm and for the hog market.
    b) One of your cousins shows you an article in the current issue of *Progressive Farmer* magazine. Some hog producers are experimenting with new production methods that use mass production techniques. These new "factory farms" are much bigger and can produce hogs at 20% lower cost than existing family-owned farms. Your cousin wants to know, what does the future hold for the hog industry? Provide her with an analysis, telling her what will happen to the price of hogs, market output, output of a typical firm, and profits. Use diagrams to illustrate your answer.