

Problem Set #3

Due Friday 3/10/06 by 6 p.m. in the Econ 101 slot in the Economics Alcove

Use a stapler! Write legibly and use full and grammatically correct sentences in your answers. Draw graphs neatly and label axes and points clearly. Each part below is weighted equally in grading, as are subparts within a part.

- A. The market price for painting a car in Cartown is \$400. The Customize-Your-Car Company has fixed costs of \$100 and the company's variable costs follow this pattern:

Output (cars painted):	2	3	4	5	6	7	8	9
Variable cost:	1200	1500	1800	2000	2250	2650	3160	3672

- 1) Calculate the company's total costs, and graph the revenue curve and the total cost curve. Do the curves have the shape you expect? Over what range of production is the company making profits?
 - 2) Calculate and graph Cartown's marginal costs, average costs, and average variable costs.
 - 3) Given the market price, at what level of output will this firm maximize profits? What profit (or loss) is it making at that level?
 - 4) If the market price falls to \$375, what will the firm do?
- B. 1) Do Problem 3 on pp. 191-192 in Chapter 9.
- 2) Do Problem 4 on p. 192 in Chapter 9.
 - 3) Do Problem 5 on p. 192 in Chapter 9.
 - 4) Do Problem 6 on p. 192 in Chapter 9.

- C. 1) The Middletown Nine is the only professional baseball team in the area. The marginal cost of admitting another fan is \$1. Fixed costs, which include player salaries, are \$100,000. Their demand schedule, where the quantity refers to season attendance, is:

Price	Quantity	Total Revenue	Marginal Revenue
\$8	100,000		
\$7	150,000		
\$6	200,000		
\$5	250,000		
\$4	300,000		
\$3	350,000		
\$2	400,000		
\$1	450,000		

- a. Compute total and marginal revenue (marginal revenue per fan) and complete the table.
 - b. Find the profit-maximizing price and quantity. What are Middletown Nine's profits?
 - c. If the team were forced to set price equal to marginal cost, what would price, quantity, and profits be? How much of a subsidy would they require to stay in operation?
 - d. How much is the deadweight loss associated with this monopoly? How much surplus is transferred from consumers to producers? Illustrate the deadweight loss and consumer surplus transfer on a diagram.
- 2) a. The players negotiate an increase in salaries which raises the team's fixed costs to \$200,000. Now what are price, quantity, and profits?
- (Note. Answer **b** and **c** below assuming this salary increase had not occurred.)
- b. The City of Middletown levies a tax of \$2 per fan to be paid to the city by Middletown Nine. Now what are price, quantity, and profits?
 - c. The City of Middletown, rather than levying a tax, decides to place a price ceiling of \$4 on the team. Now what are price, quantity, and profits?
 - d. Explain how the effects on a monopolized market of changes in fixed costs, per unit taxes, and price ceilings varies in each case from the effects of such changes on a perfectly competitive market.
- D. 1) a. Do Problem 4 on p. 316 in Chapter 15.
- b. Do Problem 5 on p. 316 in Chapter 15.
- 2) Do Problem 7 on p. 316 in Chapter 15.
- 3) a. Do Problem 1 on p. 318 in Chapter 15 Appendix.
- b. Do Problem 2 on p. 318 in Chapter 15 Appendix.
- 4) Do Problem 11 on p. 316 in Chapter 15. (note you can use ideas from Chapter 16 to help you answer this question)