

## **Experiment 7**

### **True-False Questions**

**1. If demand is inelastic, marginal revenue exceeds average revenue.  
(Hint: Average revenue is total revenue divided by quantity).**

**Answer: False**

**2. If the marginal revenue from selling one more unit is greater than the marginal cost of producing that unit, then a monopolist can increase its profits by increasing its output.**

**Answer: True**

**3. A monopolist practicing perfect price discrimination sells fewer units than a monopolist that charges a single price.**

**Answer: False**

## Multiple Choice

4. A monopolist faces a demand function that can be described by the equation  $P=505-15Q$  where  $P$  is the price that the monopolist charges per unit of output and  $Q$  is the number of units that the monopolist can sell at that price. The monopolist's total costs are  $25Q$  and its marginal cost is 25. The following expression expresses the monopolist's profit as a function of the number of units sold:

- (a)  $505-15Q-25$
- (b)  $505-30Q$
- (c)  $480Q-15Q^2$
- (d)  $505Q-15Q^2-15$
- (e) None of the above

(Note  $Q^2$  means  $Q$ -squared.)

(Hint: Profit is Total Revenue Minus Total Cost)

Answer: C

5. The monopolist found in the previous problem has a marginal revenue curve that is described by the equation (where  $MR$  stands

for marginal revenue):

- (a)  $MR=505-15Q$
- (b)  $MR=505-25Q$
- (c)  $MR=520+25Q$
- (d)  $MR=505-30Q$
- (e)  $MR=530-40Q$

Answer: D

6. Where quantity is measured on the horizontal axis and dollars on

the vertical axis, the marginal cost curve of the monopolist of

the previous two problems is

- (a) an upward-sloping line through the origin with slope 25.
- (b) a horizontal line at a height of \$25.
- (c) a vertical line at a quantity of 21.
- (d) an upward-sloping line through the origin with slope 50.

**(e) a vertical line at quantity 16**

**Answer: B**

7. In order to maximize its profits, the monopoly of the preceding questions should sell a quantity of

- (a) 32 units
- (b) 16 units
- (c) 166.67 units
- (d) 83.33 units
- (e) 40 units

(Hint: For what quantity does marginal revenue equal marginal cost?)

Answer: B

8. Bozoworks, a software company, has exclusive rights to sell the game Space Morons. Bozoworks spent \$2500 getting the program ready to market. Its only remaining costs are the cost of distributing the copies of Space Morons to buyers. This costs \$5 per copy. If Bozoworks sells  $Q$  copies, its total costs will be  $\$2500+5Q$ . Nobody is willing to pay more than \$90 for a copy of Space Morons. If Bozoworks offers to sell Space Morons at price  $p$ , all buyers with buyer values of  $p$  or greater will buy and all buyers with buyer values below  $p$  will not buy. There are 37 demanders who have buyer values of \$90 for a copy of Space Morons. For every dollar that the price falls below \$90, Space Morons picks up one more buyer. Thus there is 1 demander with buyer value \$89, one with buyer value \$88, one with buyer value \$87, and so on. Bozoworks' marginal revenue from increasing its sales from 37 to 38 is:

- (a) \$90
- (b) \$3,330
- (c) \$45
- (d) \$52
- (e) \$180

Answer: D

9. Which of the following formulas gives the highest price at which Bozoworks can sell  $Q$  copies of Space Morons, where  $37 < Q < 127$ ?

- (a)  $P=90-2Q$
- (b)  $P=127-Q$
- (c)  $P=90-2Q$
- (d)  $P=90-Q$
- (e) None of the above

**Answer: B**

10. Fox Cable is the only television cable company in Santa Barberia. Twenty families are willing to pay \$50 per month for cable television, 40 are willing to pay \$40 per month, 40 families are willing to pay \$25 per month, and 75 families are willing to pay \$10 per month. The cost of providing cable service to a house is \$20 per month. If Fox Cable were able to practice perfect price discrimination, how much profit could it make per month?

- (a) \$1,600
- (b) \$2,000
- (c) \$1,200
- (d) \$600
- (e) \$200

Answer: A