**MICROECONOMICS**
Section II
Planning time—10 minutes
Writing time—50 minutes

Directions: You have 10 minutes to read all of the questions in this booklet, to sketch graphs, to make notes, and to plan your answers. You will then have 50 minutes to answer all three of the following questions. <u>It is suggested that you spend approximately half your time on the first question and divide the remaining time equally between the next two questions</u>. In answering the questions, you should emphasize the line of reasoning that generated your results; it is not enough to list the results of your analysis. Include correctly labeled diagrams, if useful or required, in explaining your answers. A correctly labeled diagram must have all axes and curves clearly labeled and must show directional changes. <u>Use a pen with black or dark blue ink</u>.

1. The graph below illustrates the demand, marginal revenue (MR), marginal cost (MC), and average total cost (ATC) curves for a profit-maximizing monopolist.
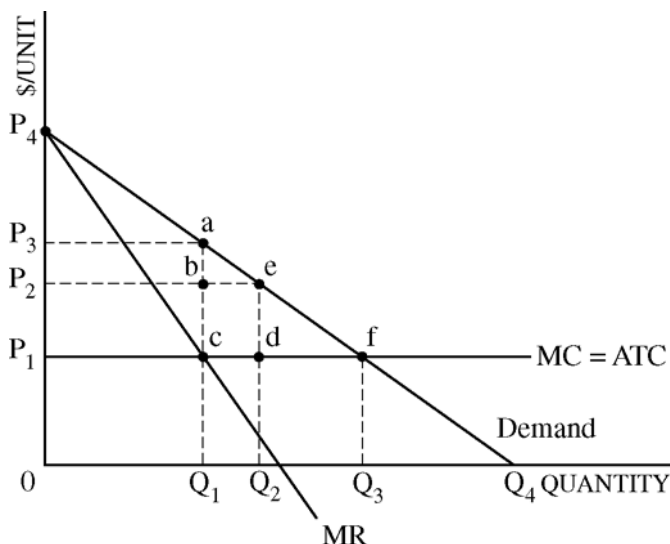
(a) Assume that the profit-maximizing monopolist is unregulated. Using the labeling in the graph, identify each of the following.

   (i) The monopolist's quantity of output

   (ii) The monopolist's price

   (iii) The profit earned by the monopolist

   (iv) The deadweight loss

(b) Now assume that the monopolist can perfectly price discriminate. Using the labeling of the graph, identify each of the following.

   (i) The quantity produced

   (ii) The total revenue received by the monopolist

(c) Instead, assume the monopolist charges a single price and is regulated to produce the socially efficient quantity. Using the labeling of the graph, identify each of the following.

   (i) The socially efficient quantity

   (ii) The consumer surplus at the socially efficient quantity

(d) Is the monopolist facing the regulation in part (c) earning a positive economic profit, earning zero economic profit, or incurring a loss? Explain.

(e) Is point f in the elastic, inelastic, or unit elastic portion of the demand curve? Explain.

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2. There are two pizza restaurants in College Town, PieCrust and LaPizza. Each company must decide whether to advertise or to not advertise. In the payoff matrix below, the first entry in each cell indicates PieCrust's daily profit, and the second entry indicates LaPizza's daily profit. Both firms have complete information.

LaPizza

		Advertise	Not Advertise
	Advertise	$250, $200	$450, $300
PieCrust			
	Not Advertise	$180, $500	$390, $400

(a) What strategy should PieCrust choose if LaPizza chooses to advertise? Explain using the dollar values in the payoff matrix.

(b) What is the dominant strategy, if any, for LaPizza? Explain using the dollar values in the payoff matrix.

(c) In the Nash equilibrium, determine each of the following.

   (i) PieCrust's daily profit

   (ii) LaPizza's daily profit

(d) Suppose that advertising costs increase by $60 per day. Redraw the payoff matrix to reflect the effect of the higher advertising costs.

GO ON TO THE NEXT PAGE.

Question 1

10 points (4 + 2 + 2 + 1 + 1)
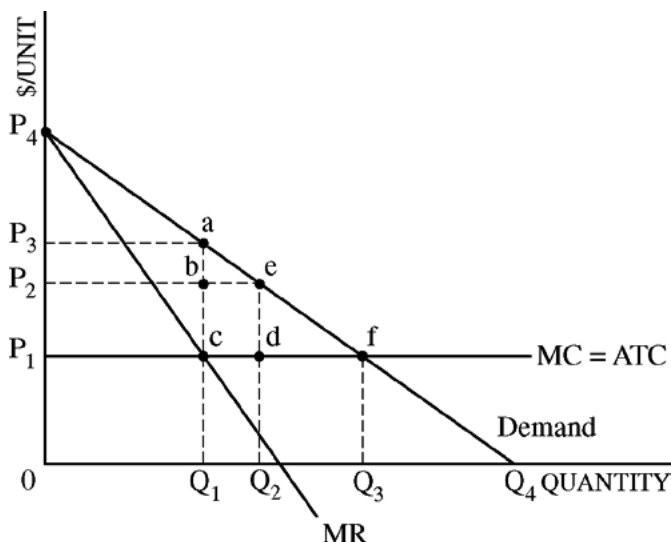
(a) 4 points:
  - One point is earned for identifying the quantity, Q_1.
  - One point is earned for identifying the price, P_3.
  - One point is earned for identifying the area that represents the profit earned, P_1P_3ac.
  - One point is earned for identifying the area that represents the deadweight loss, acf.

(b) 2 points:
  - One point is earned for identifying the quantity produced, Q_3.
  - One point is earned for identifying the area that represents the total revenue received, P_4fQ_30.

(c) 2 points:
  - One point is earned for identifying the socially efficient quantity, Q_3.
  - One point is earned for identifying the area that represents the consumer surplus, P_1P_4f.

(d) 1 point:
  - One point is earned for stating that the monopolist is earning zero economic profit because the price equals ATC.

(e) 1 point:
  - One point is earned for stating that point f is in the inelastic portion of the demand curve because MR is negative.