



**AP<sup>®</sup> Microeconomics  
2008 Free-Response Questions  
Form B**

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**2008 AP<sup>®</sup> MICROECONOMICS FREE-RESPONSE QUESTIONS (Form B)**

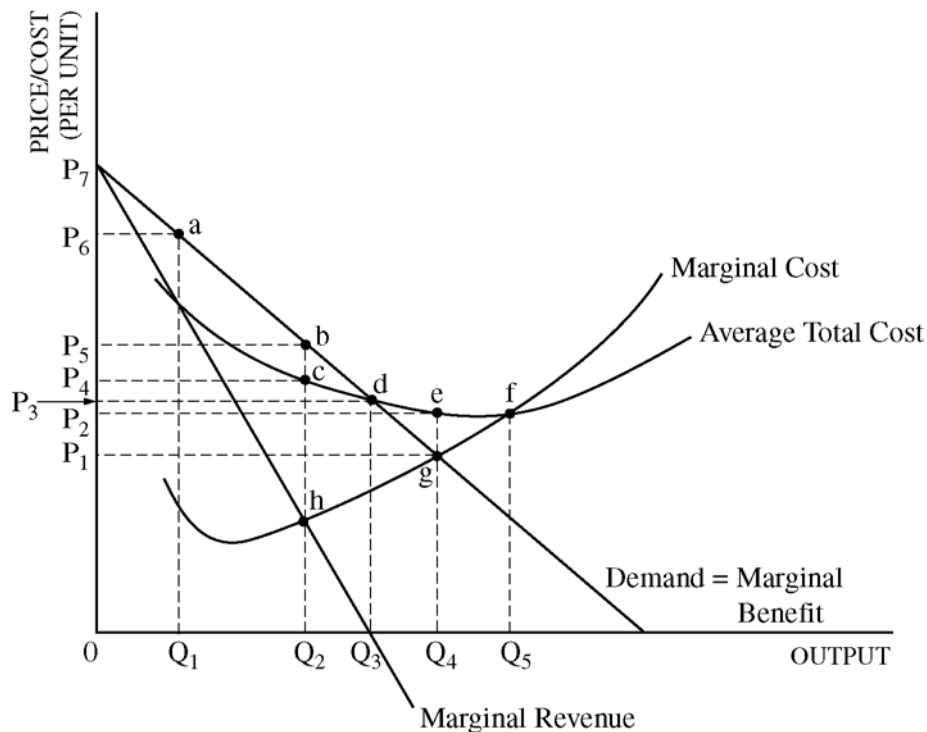
**MICROECONOMICS**

**Section II**

**Planning time—10 minutes**

**Writing time—50 minutes**

**Directions:** You have 50 minutes to answer all three of the following questions. 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. 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. Use a pen with black or dark blue ink.



1. The graph above shows the demand and cost curves of a firm that does not price discriminate.
  - (a) Suppose the firm produces at the profit-maximizing output. Using the labeling on the graph, identify each of the following.
    - (i) Level of output. Explain.
    - (ii) Price
  - (b) Suppose the firm produces at the revenue-maximizing output. Using the labeling on the graph, identify each of the following.
    - (i) Level of output. Explain.
    - (ii) Price

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- (c) Suppose the government regulates the firm's price to produce the allocatively efficient level of output. Using the labeling on the graph, identify each of the following.
- (i) The price the government would require the firm to set
  - (ii) The allocatively efficient level of output
- (d) Suppose the firm produces at the allocatively efficient level of output.
- (i) Would it be earning a profit or incurring a loss? Explain.
  - (ii) Using the labeling on the graph, identify the area of the profit or loss at the allocatively efficient level of output.
- (e) Using the labeling on the graph, identify the consumer surplus at the allocatively efficient level of output.
- (f) Suppose the regulators establish a price that allows the firm to just cover all its opportunity costs. Using the labeling on the graph, identify the price the regulators would set to achieve this objective.
2. Vaccinations for contagious diseases benefit the consumers as well as others in the community. Assume that vaccines are produced in a competitive market.
- (a) Draw a correctly labeled graph of supply and demand, and
- (i) label the market price " $P_m$ ", and label the market output " $Q_m$ ".
  - (ii) label the socially efficient level of output " $Q_s$ ".
  - (iii) shade the area of the deadweight loss.
- (b) Is marginal social cost greater than, less than, or equal to marginal social benefit at the market output?
- (c) How will a tax on producers of the vaccines affect the deadweight loss that you identified in part (a) (iii)? Explain.

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3. GW Company produces and sells hats in a perfectly competitive market at a price of \$2 per hat. Assume that labor is the only variable input and the wage rate is \$15 per unit of labor per day. The table below shows GW's short-run production function for hats.

Number of workers per day	0	1	2	3	4	5	6
Output of hats per day	0	10	26	36	44	49	52

- (a) After which worker do diminishing marginal returns begin?
- (b) Calculate the marginal physical product of the fifth worker.
- (c) Calculate the marginal revenue product of the third worker.
- (d) How many workers will GW hire to maximize profit?
- (e) If GW Company has fixed costs equal to \$20, what will be the company's short-run economic profits from hiring two workers?
- (f) If the price of hats increases, what will happen to the number of workers hired in the short run? Explain.

**STOP**

**END OF EXAM**