

2023



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# AP<sup>®</sup> Microeconomics

## Free-Response Questions

### Set 2

**MICROECONOMICS**

**SECTION II**

**Total Time—1 hour**

**Reading Period—10 minutes**

**Writing Period—50 minutes**

**3 Questions**

**Directions:** You are advised to spend the first 10 minutes reading all of the questions and planning your answers. You will then have 50 minutes to answer all three of the following questions. You may begin writing your responses before the reading period is over. 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. 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. If the question prompts you to “Calculate,” you must show how you arrived at your final answer. Use a pen with black or dark blue ink.

You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

1. Anderson Company is a typical firm that manufactures Good G in a constant-cost, perfectly competitive market. Anderson Company is currently earning positive economic profit.
- (a) What must be true about the relationship between accounting profit and economic profit if Anderson Company currently incurs both explicit and implicit costs in production?
- (b) Draw correctly labeled side-by-side graphs for the market and Anderson Company and show each of the following.
- (i) The market equilibrium price and quantity, labeled  $P_M$  and  $Q_M$ , respectively
  - (ii) The profit-maximizing price and quantity for Anderson Company, labeled  $P_F$  and  $Q_F$ , respectively
  - (iii) The area representing Anderson Company's positive economic profit, shaded completely
- (c) On your graphs in part (b), show what will happen to each of the following if the market for Good G adjusts to long-run equilibrium.
- (i) The market equilibrium price and quantity, labeled  $P_2$  and  $Q_2$ , respectively
  - (ii) Anderson Company's profit-maximizing price and quantity, labeled  $P^*$  and  $Q^*$ , respectively
- (d) Assume the production of Good G creates benefits for third parties.
- (i) Given this situation, will the market equilibrium quantity be greater than, less than, or equal to the allocatively efficient quantity? Explain.
  - (ii) The government takes an action that corrects the externality in the market for Good G. As a result of the government's action, does total economic surplus increase, decrease, or stay the same? Explain.

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**Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.**

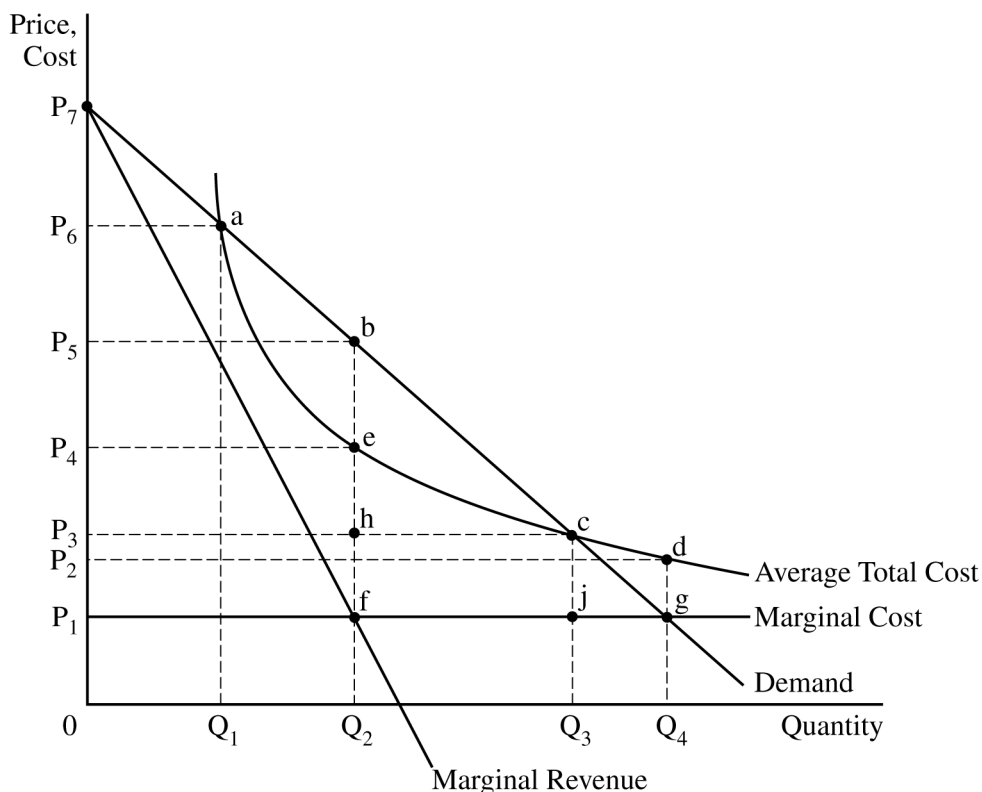
2. Keepdry produces and sells rain jackets in a perfectly competitive product market at the price of \$5 per jacket and hires all the workers it needs in a perfectly competitive labor market at the wage rate of \$15. Labor is the only variable input, and the firm's production schedule is provided in the table.

Number of Workers	Quantity of Output
0	0
1	9
2	20
3	27
4	32
5	34
6	35

- (a) Calculate the marginal revenue product of the second worker. Show your work.
- (b) Diminishing marginal returns will begin with the hiring of which worker?
- (c) Determine the profit-maximizing number of workers the firm should hire. Explain using marginal analysis.
- (d) Assuming Keepdry's fixed cost is \$40, calculate Keepdry's economic profit when hiring the profit-maximizing number of workers. Show your work.
- (e) Suppose Keepdry's fixed cost increases to \$80. Will the profit-maximizing number of workers hired in the short run increase, decrease, or stay the same? Explain.

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3. The graph shows the cost and revenue curves for an unregulated, profit-maximizing monopoly.
- Is the firm shown in this graph a natural monopoly? Explain.
  - Using the labeling from the graph, identify the area representing the deadweight loss for this profit-maximizing monopoly.
  - In order to improve resource allocation, the government sets a price that results in the firm earning zero economic profit.
    - Using the labeling from the graph, identify the price and resulting quantity the firm would produce.
    - Will this government policy eliminate the deadweight loss? Explain using labeling from the graph.
  - Instead, the government decides to set a price that results in the socially optimal quantity of output. Will the firm earn positive, negative, or zero economic profit? Explain using labeling from the graph.

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**Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.**

**STOP**

**END OF EXAM**