

- 1) Assume that a firm produces output using one fixed input, capital, and one variable input, labor. The firm can sell all of the output it produces at a market price of \$3 each, can hire all of the workers it wants at a market wage rate of \$11 each, and has fixed costs of \$10. It faces the following production schedule.

<u>Number of Employees</u>	<u>Total Output</u>
0	0
1	14
2	26
3	35
4	42
5	46
6	48

- (a) In what kind of market structure does this firm sell its output? How can you tell?  
 (b) In what kind of market structure does this firm hire its employees? How can you tell?  
 (c) Using marginal revenue product analysis, how many employees should this firm hire to maximize short-run profits? How can you determine that?  
 (d) Based on your answer in part (c), how many units of output will this firm produce?  
 (e) At the level of output you identified in part (d), is the firm earning an economic profit, a normal profit, or suffering a loss? How can you tell?

0B

- 2) Assume that product X is produced in a perfectly competitive industry and that product X yields costs to individuals who are neither consumers nor producers of product X.

- (a) Using one correctly labeled graph, show the industry output and price under each of the following conditions.  
 (i) The industry ignores the externality.  
 (ii) The industry produces the socially optimum level of output.

Assume that the market is producing the level of output you identified in (i).

- (b) Identify one policy the government might use to achieve the level of output you identified in (ii).

1B

- 3) Sparkle Car Wash is a profit-maximizing firm with the following production information.

<u>Number of Workers</u>	<u>Number of Cars Washed per Day</u>
0	0
1	15
2	35
3	60
4	75
5	85
6	80

- (a) With which worker is marginal product maximized?  
 (b) Identify and define the economic principle that explains why marginal product eventually decreases.  
 (c) Explain why Sparkle would never hire the sixth worker.  
 (d) If Sparkle charges \$6 for washing a car, what is the maximum daily wage that Sparkle would be willing to pay the fourth worker?

1C

- 4) Assume that two firms are operating with identical cost schedules, but one firm is in a perfectly competitive industry, and the other is in a monopolistically competitive industry.
- (a) Using two correctly labeled graphs, show the long-run equilibrium price and output levels for each of these two firms.
  - (b) Compare the long-run equilibrium price and output levels for these two firms.
  - (c) What level of economic profit will each firm earn in the long run? Why do these results occur?
  - (d) For each of the two firms at the equilibrium quantity, indicate whether the firm's demand curve is perfectly elastic, elastic, unit elastic, inelastic or perfectly inelastic. How can you tell?

## 2BA

- 5) The labor market in the town of Bazra is perfectly competitive, and 10 percent of the labor force is employed in the clothing industry.
- (a) Assume that the clothing manufacturers close their plants in Bazra. Using a correctly labeled supply and demand graph, predict the impact that closing these plants will have on each of the following.
    - (i) The wage rate and number of workers employed in Bazra
    - (ii) The number of workers in Bazra looking for work who cannot find employment at the wage rate you identified in (i)
  - (b) After the clothing manufacturers closed their plants in Bazra, the town passes a law that establishes an effective minimum wage. What impact will this minimum wage have on each of the following?
    - (i) The wage rate and number of workers employed in Bazra
    - (ii) The number of workers in Bazra looking for work who cannot find employment
  - (c) Assume that the minimum wage remains in effect and there is an increase in the demand for goods produced in Bazra. What happens to employment in Bazra? Explain why.

## 2BC