Chapter 9 Exercises

Self-Check Questions

1. Firms in a perfectly competitive market are said to be price takers—that is, once the market determines an equilibrium price for the product, firms must accept this price. If you sell a product in a perfectly competitive market, but you are not happy with its price, would you raise the price, even by a cent?

2. Would independent trucking fit the characteristics of a perfectly competitive industry? Explain your reasoning.

3. Consider the following table. What would happen to the firm's profits if the market price increases from $4 to $6 per pack of raspberries?

Quantity	Total Cost	Fixed Cost	Variable Cost	Total Revenue	Total Profit
0	$62	$62	-	$0	–$62
10	$90	$62	$28	$60	–$30
20	$110	$62	$48	$120	$10
30	$126	$62	$64	$180	$54
40	$144	$62	$82	$240	$96
50	$166	$62	$104	$300	$134
60	$192	$62	$130	$360	$168
70	$224	$62	$162	$420	$196
80	$264	$62	$202	$480	$216
90	$324	$62	$262	$540	$216
100	$404	$62	$342	$600	$196

4. Consider the following table. Suppose the market price increases from $4 to $6. What would happen to the profit-maximizing output level?

Quantity	Total Cost	Fixed Cost	Variable Cost	Marginal Cost	Total Revenue	Marginal Revenue
0	$62	$62	-	-	$0	-
10	$90	$62	$28	$2.80	$60	$6.00
20	$110	$62	$48	$2.00	$120	$6.00
30	$126	$62	$64	$1.60	$180	$6.00
40	$144	$62	$82	$1.80	$240	$6.00
50	$166	$62	$104	$2.20	$300	$6.00
60	$192	$62	$130	$2.60	$360	$6.00
70	$224	$62	$162	$3.20	$420	$6.00
80	$264	$62	$202	$4.00	$480	$6.00
90	$324	$62	$262	$6.00	$540	$6.00
100	$404	$62	$342	$8.00	$600	$6.00

5. Explain in words why a profit-maximizing firm will not choose to produce at a quantity where marginal cost exceeds marginal revenue.

6. A firm's marginal cost curve above the average variable cost curve is equal to the firm's individual supply curve. This means that every time a firm receives a price from the market, it will be willing to supply the amount of output where the price equals marginal cost. What happens to the firm's individual supply curve if marginal costs increase?

7. If new technology in a perfectly competitive market causes a substantial reduction in costs of production, how will this affect the market?

8. A market in perfect competition is in long-run equilibrium. What happens to the market if labor unions are able to increase wages for workers?

9. Productive efficiency and allocative efficiency are two concepts met in the long run in a perfectly competitive market. These are the two reasons why we call them "perfect." How would you use these two concepts to analyze other market structures and label them "imperfect"?

10. Explain how the profit-maximizing rule of setting $\frac{\$3-\$5}{1}=-\$2$ leads a perfectly competitive market to be allocatively efficient.

Review Questions

11. A single firm in a perfectly competitive market is relatively small compared to the rest of the market. What does this mean? How small is "small"?

12. What are the four basic assumptions of perfect competition? Explain in words what they imply for a perfectly competitive firm.

13. What is a price-taker firm?

14. How does a perfectly competitive firm decide what price to charge?

15. What prevents a perfectly competitive firm from seeking higher profits by increasing the price it charges?

16. How does a perfectly competitive firm calculate total revenue?

17. Briefly explain the reason for the shape of a marginal revenue curve for a perfectly competitive firm.

18. What two rules does a perfectly competitive firm apply to determine its profit-maximizing quantity of output?

19. How does the average cost curve help to show whether a firm is making profits or losses?

20. What two lines on a cost curve diagram intersect at the zero-profit point?

21. Should a firm shut down immediately if it is making losses?

22. How does the average variable cost curve help a firm know whether it should shut down immediately?

23. What two lines on a cost curve diagram intersect at the shutdown point?

24. Why does entry occur?

25. Why does exit occur?

26. Do entry and exit occur in the short run, the long run, both, or neither?

27. What price will a perfectly competitive firm end up charging in the long run? Why?

28. Will a perfectly competitive market display productive efficiency? Why or why not?

29. Will a perfectly competitive market display allocative efficiency? Why or why not?

Critical Thinking Questions

30. Finding a life partner is a complicated process that may take many years. It is hard to think of this process as being part of a very complex market, with a demand and a supply for partners. Think about how this market works and some of its characteristics, such as search costs. Would you consider it a perfectly competitive market?

31. Can you name five examples of perfectly competitive markets? Why or why not?

32. Your company operates in a perfectly competitive market. You have been told that advertising can help you increase your sales in the short run. Would you create an aggressive advertising campaign for your product?

33. Since a perfectly competitive firm can sell as much as it wishes at the market price, why can the firm not simply increase its profits by selling an extremely high quantity?

34. Many firms in the United States file for bankruptcy every year, yet they still continue operating. Why would they do this instead of completely shutting down?

35. Why will profits for firms in a perfectly competitive industry tend to vanish in the long run?

36. Why will losses for firms in a perfectly competitive industry tend to vanish in the long run?

37. Assuming that the market for cigarettes is in perfect competition, what does allocative and productive efficiency imply in this case? What does it not imply?

38. In the argument for why perfect competition is allocatively efficient, the price that people are willing to pay represents the gains to society, and the marginal cost to the firm represents the costs to society. Can you think of some social costs or issues that are not included in the marginal cost to the firm or some social gains that are not included in what people pay for a good?

Problems

39. The AAA Aquarium Co. sells aquariums for $20 each. Fixed costs of production are $20. The total variable costs are $20 for 1 aquarium, $25 for 2 units, $35 for 3 units, $50 for 4 units, and $80 for 5 units. In the form of a table, calculate total revenue, marginal revenue, total cost, and marginal cost for each output level (1 to 5 units). What is the profit-maximizing quantity of output? On one diagram, sketch the total revenue and total cost curves. On another diagram, sketch the marginal revenue and marginal cost curves.

40. Perfectly competitive firm Doggies Paradise Inc. sells winter coats for dogs. Dog coats sell for $72 each. The fixed costs of production are $100. The total variable costs are $64 for 1 unit, $84 for 2 units, $114 for 3 units, $184 for 4 units, and $270 for 5 units. In the form of a table, calculate total revenue, marginal revenue, total cost, and marginal cost for each output level (1 to 5 units). On one diagram, sketch the total revenue and total cost curves. On another diagram, sketch the marginal revenue and marginal cost curves. What is the profit-maximizing quantity?

41. A computer company produces affordable, easy-to-use home computer systems and has fixed costs of $250. The marginal cost of producing computers is $700 for the first computer, $250 for the second, $300 for the third, $350 for the fourth, $400 for the fifth, $450 for the sixth, and $500 for the seventh.

a. Create a table that shows the company's output, total cost, marginal cost, average cost, variable cost, and average variable cost.

b. At what price is the zero-profit point? At what price is the shutdown point?

c. If the company sells the computers for $500, is it making a profit or a loss? How big is the profit or loss? Sketch a graph with *AC, MC*, and *AVC* curves to illustrate your answer and show the profit or loss.

d. If the firm sells the computers for $300, is it making a profit or a loss? How big is the profit or loss? Sketch a graph with *AC*, *MC*, and *AVC* curves to illustrate your answer and show the profit or loss.