Chapter 6

MARKET STRUCTURE

Essentials of Economics in Context (Goodwin, et al.), 1st Edition

Chapter Summary

This chapter presents the traditional, idealized model of perfect competition, monopoly, monopolistic competition, and oligopoly. It begins with a brief description on market power and competition from different perspectives. Description of the characteristics of a perfectly competitive markets and production decisions under this market structure is presented next. This is followed by a discussion on the theoretical approach to the case when market power is absolute—that is, when a pure monopoly exists. Emphasis is on the difference between price and marginal revenue, a distinction that does not come up in the perfect competition case. We look at the standard case where monopolies are inefficient, as well certain cases in which a monopoly can be efficient. The chapter also presents instances where market power exists to a lesser degree. First, we look at the standard conditions for monopolistic competition, after which we look at oligopoly.

The chapter ends with a discussion of efficiency and equity considerations in real-world markets. An online appendix provides an exposition of production decisions based on detailed cost curves.

After reading and reviewing this chapter, you should be able to:

1. Describe the four different views of market power.
2. List the assumptions behind the traditional model of perfectly competitive markets.
3. Describe how a perfectly competitive firm maximizes its profits, based on analysis of total revenue and total cost curves, and based on marginal analysis.
4. Describe how the situation facing the individual firm relates to the overall market situation, in perfect competition.
5. Describe why economic profits are driven to zero under perfect competition.
6. Define a monopoly and describe how a monopolist maximizes profits.
7. Understand why a monopoly may or may not be efficient.
8. Define monopolistic competition and describe how profits are maximized in these markets.
9. Define oligopoly and discuss firm behavior under conditions of oligopoly.
10. Discuss why inefficiencies may persist in markets, even under conditions approaching perfect competition.

Key Term Review

market power
perfect competition
price taker
total revenues
profits
accounting profits
economic profits
marginal revenue
profit maximization
perfectly competitive market equilibrium
sunk cost
barriers to entry
natural monopoly
network externality
predatory pricing
local monopoly
regulated monopoly
price maker
price discrimination
nonprice competition
duopoly
collusion
tacit collusion
price fixing
price leadership
concentration ratio
path dependence

Active Review Questions

Fill in the Blank

1. The ability to affect the terms and conditions of the exchanges in which you participate is referred to as _________________.

2. The demand curve facing a perfectly competitive firm is _________________________.

3. The difference between total revenues and accounting costs is known as _______________________________________.

4. Under conditions of perfect competition, a profit-maximizing firm will choose a level of production such that marginal cost is equal to _________________.

5. At competitive equilibrium, all firms make (positive/zero/negative) _________________ economic profit.

6. In a perfectly competitive market, the entrance of new firms into the market will drive prices (up, down) _________________.

7. The economists view generally considers market power to be (good/bad) _________________ and competition to be (good/bad) ____________________.

8. A monopoly that emerges because of economies of scale is called a _________________monopoly.

9. Joe's Superstore prevents competitors from entering the market by temporarily pricing its goods below cost, thus driving new entrants out of business. This practice is known as ________________ pricing.

10. The marginal revenue curve for a monopolist is (flat/downward-sloping/upward-sloping) ________________.

11. Market power in the form of a monopoly creates benefits for the (buyer/seller) ________________ at the expense of the (buyer/seller) ________________.

12. A firm that charges different prices to different buyers depending on their ability and willingness to pay is referred to as a ________________ seller.

True or False

13. Under perfect competition, individual economic actors have no market power.

14. If a perfectly competitive firm wants to sell a larger quantity of goods, it must lower its selling price.

15. A perfectly competitive firm maximizes its profits at the point where its total cost curve intersects its total revenue curve.

16. Economic profit is equal to the difference between total revenues and economic costs.

17. The "citizen perspective" is that market power and competition can both be undesirable.

18. An example of a network externality is when the widespread adoption of a particular technology results in environmental damages.

19. A perfectly competitive firm should shut down in the short run whenever it is unable to recover its fixed costs.

20. "Monopolistic competition" includes some characteristics of perfect competition and some characteristics of monopoly.

21. In a situation of monopolistic competition, no close substitutes are available.

22. Monopolistically competitive firms have higher unit costs than would occur in a perfectly competitive market.

Short Answer

23. What are the four key assumptions of the traditional model of perfect competition?

24. Describe an example of a network externality. (The textbook describes several examples; try to think of a different one from those presented in the book.)

25. Describe one way in which monopolistically competitive firms work to protect their "miniature monopoly."

26. List three conditions of the idealized market structure of monopoly.

27. Briefly describe the pros and cons of allowing drug companies to enjoy substantial market power (e.g. through the use of patents).

28. Briefly explain how monopolistic competition differs from perfect competition.

29. Describe the main characteristics of oligopoly.

30. Explain in what ways markets for food are not as competitive as they could be.

Problems

1. Suppose that manufacturers of laptop computers are price takers operating in a perfectly competitive market. Each laptop can be sold for $2,000.

    a. Sketch the total revenue curve for laptop computers, and explain why it looks the way it does.

    b. Sketch the marginal revenue curve for laptop computers, and explain why it looks the way it does.

2. Suppose that the cost of production of laptop computers shows initially a brief span of decreasing marginal costs, followed by increasing marginal costs.

a. On the same graph as the total revenue curve you drew for Problem #1a, draw a possible total cost curve for laptop computer production. For a given quantity Q_1 (placed at any location you choose on the horizontal axis), show the corresponding profit.

b. On the same graph as the marginal revenue curve you drew for Problem #1b, draw a possible marginal cost curve for laptop computer production. Indicate the profit maximizing output level.

3. A flashlight manufacturing company has the following cost structure (some columns are intentionally left blank):

Quantity	Marginal Cost ($)			
0				
1	12			
2	8			
3	10			
4	13			
5	17			

a. Supposing that the firm is a price taker and can sell each flashlight it makes for $13, graph the Marginal Cost and Marginal Revenue curves for this flashlight manufacturer.

b. If you apply marginal analysis, what does the figure you drew in part (a) imply is the profit-maximizing output level for the firm?

c. Assume that the firm has fixed costs of $10. Calculate Total Cost, Total Revenue and Total Profit for the firm at the various production levels, using the blank columns in the table above.

d. With flashlights selling for $13, what is maximum profit the firm can make? What should it do? Explain.

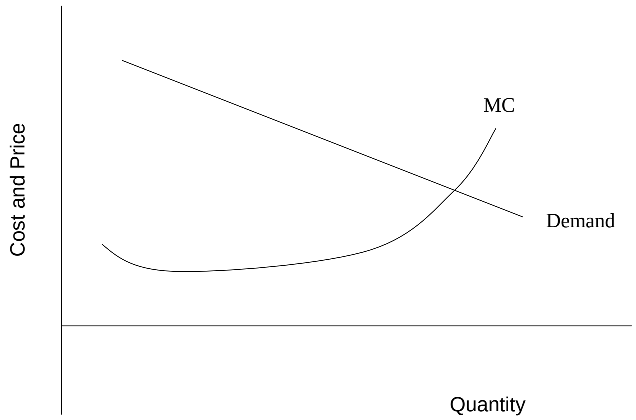
4. Suppose that a monopolistic firm produces hair dryers. The chart below shows the quantities of hair dryers that can be sold at various prices.

Quantity of Hairdryers	**Price of Hairdryers**	**Total Revenue**	**Marginal Revenue**
1	$100		
2	$90		
3	$80		
4	$70		
5	$60		
6	$50		

a. Fill in the total and marginal revenue columns in the chart shown above.

b. If marginal cost is equal to marginal revenue at MC=MR=$20, what is the profit maximizing level of production (assuming that the firm should produce at all)?

5. The following graph shows the demand curve and the marginal cost curve for a monopolistic firm producing electric cars.



a. Sketch a possible marginal revenue curve for this firm.

b. On the horizontal axis, label the profit-maximizing level of production as Q_1. On the vertical axis, label the price P_1 that the firm will charge at the profit maximizing level of production.

c. How do the monopolistic price and quantity compare to those of competitive market equilibrium?

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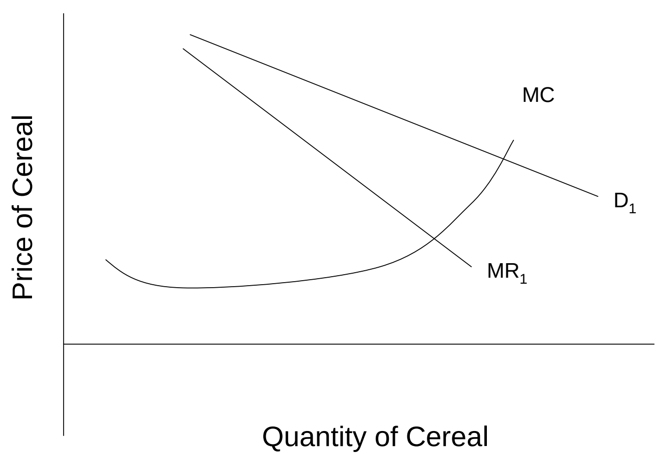
6. Ten breakfast cereal producers operate in a market characterized by monopolistic competition. The demand, marginal revenue, and marginal cost curves faced by an individual breakfast cereal producer are shown below.



Suppose that five new breakfast cereal producers enter the market. Show the new demand curve and the new marginal revenue curve that result on the graph above.

Self Test

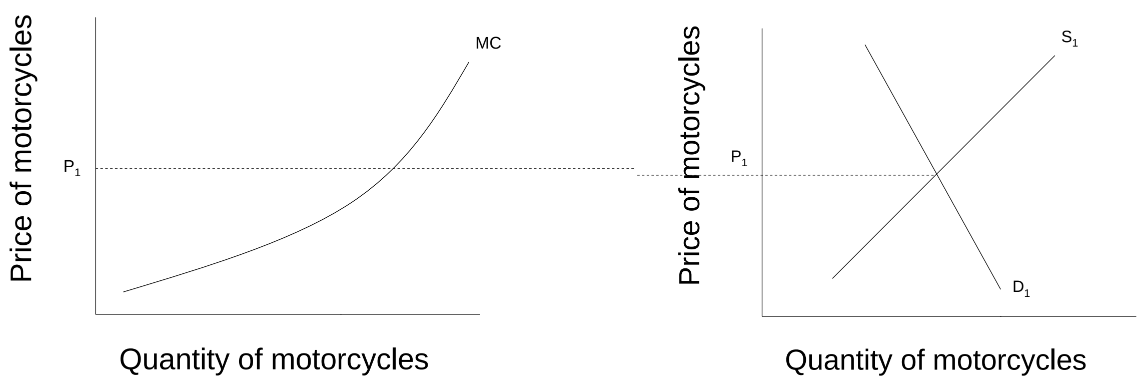
1. Which of the following is *not* a condition of the model of perfect competition?

    a. Each individual buyer can affect the market price.
    b. Within a given market, only one kind of good or service is traded.
    c. Producers can freely enter the industry.
    d. Producers can freely exit the industry.
    e. Sellers all have perfect information.

2. The individual price-taking firm faces …

    a. A perfectly inelastic demand curve.
    b. A horizontal demand curve.
    c. A perfectly elastic demand curve.
    d. A vertical demand curve.
    e. Both b and c are true.

Questions #3 and #4 refer to the following graphs:



3. Suppose that at price P_1, motorcycle manufacturers are making positive economic profits. Assuming the market in motorcycles is perfectly competitive, which of the following will occur in the long run?

    a. The supply curve will shift to the right.
    b. The demand curve will shift to the right.
    c. Price will rise.
    d. Price will remain constant.
    e. Marginal costs will increase.

4. Suppose now that motorcycle producers are making economic losses. Which of the following will happen in the long run?

    a. Competitive pressures will drive economic profits toward zero.
    b. Some firms will exit the market.
    c. The supply curve will shift to the right.
    d. Both a and b are true.
    e. Both b and c are true.

Questions 5 – 6 refer to the following scenario.

Handy Hardware Factory produces desk lamps, according to the following cost structure. They are a price taker, and can sell any number of lamps for $8 each.

Quantity of Lamps	Marginal Cost ($)	Total Cost ($)	Marginal Revenue (= Price) ($)	Total Revenue ($)	Total Profit ($)
0	--	50	--		
1	15		8		
2	5		8		
3	6		8		
4	8		8		
5	12		8		

5. What is the total cost of producing 3 lamps?

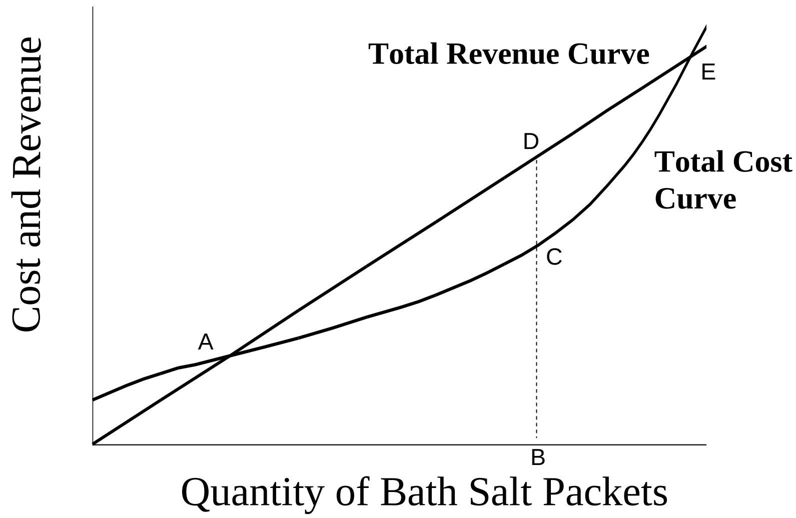
    a. $ 6
    b. $ 26
    c. $ 50
    d. $ 76
    e. None of the above.

6. What is the profit-maximizing level of output for Handy Hardware?

    a. 0 lamps
    b. 1 lamp
    c. 3 lamps
    d. 4 lamps
    e. None of the above.

Questions 7-8 refer to the following scenario.

Bertha's Bath Supplies produces packets of bath salts, which are sold for $5 each. Bertha's Bath Supplies is a price-taking firm. Total revenue and total cost curves for the firm are shown in the graph below.



7. Which of the following statements is true regarding the graph shown above?

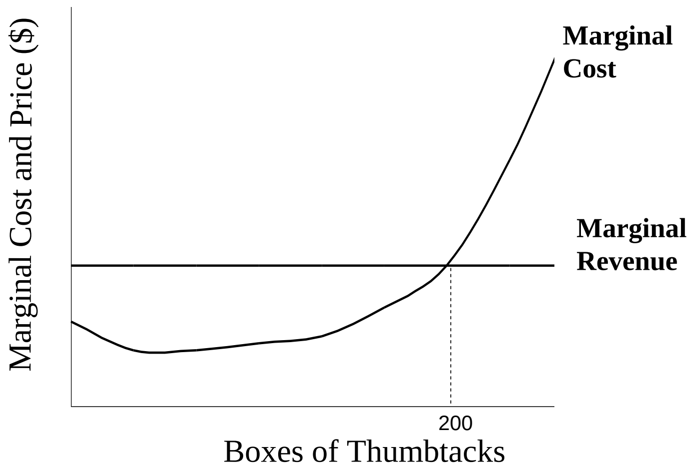
   a. Profits are maximized at point E.
   b. The distance from B to C represents profit earned.
   c. The distance from B to D represents profit earned.
   d. The distance from C to D represents profit earned.
   e. At point B, marginal revenue is designated by point D.

8. Which of the following statements about Bertha's Bath Supplies do you know to be true, based on the information provided above?c

   a. Profits are maximized when production reaches 100 packets.
   b. Profits are maximized at point E.
   c. Profits are maximized when marginal costs equal $5 per packet.
   d. Point B represents a production level yielding zero accounting profit.
   e. Point E represents a production level yielding positive economic profit.

Questions 9 and 10 refer to the scenario below.

Tillie's Tack Place manufactures thumb tacks and sells them for $2.00 per box of tacks. The graph below shows marginal cost and marginal revenue for Tillie's Tack Place.



9. When Tillie's Tack Place is producing 200 boxes of thumbtacks, which of the following statements must be true?

    a. Tillie's Tack Place is not yet making a profit.
    b. Producing more tacks would reduce total profits.
    c. Producing more tacks would increase total profits.
    d. Total costs exceed total revenues at this point.
    e. Producing one more box of tacks would mean that total accounting costs would exceed total revenues.

10. When Tillie's Tack Place is producing 200 boxes of thumbtacks, the marginal cost per box is equal to …

    a. $50
    b. $25
    c. $5
    d. $2
    e. The marginal cost cannot be determined from the information given here.

11. In the short run, a perfectly competitive firm should keep producing as long as …

    a. it is making an economic profit.
    b. it is making an accounting profit.
    c. its total revenues are greater than its fixed costs.
    d. its total revenues are greater than its variable costs.
    e. its marginal revenues are positive.

12. If negative economic profits are being made in a perfectly competitive market, what two changes are likely to occur?

    a. The market supply curve will shift to the left and each firms' production quantity will fall.
    b. The market supply curve will shift to the right and each firms' production quantity will rise.
    c. The market supply curve will shift to the left and each firms' production quantity will rise.
    d. The market supply curve will shift to the right and each firms' production quantity will fall.
    e. None of the above

13. Which of the following is a condition of monopoly?

    a. Two or more sellers.
    b. Only one buyer.
    c. A good with several close substitutes.
    d. Barriers to entry.
    e. None of the above.

14. A "natural monopoly" is

    a. An oligopoly.
    b. A monopoly characterized by diseconomies of scale.
    c. A monopoly that emerges because of economies of scale.
    d. A monopoly on a scarce natural resource.
    e. A monopoly that solves the problem of diseconomies of scale.

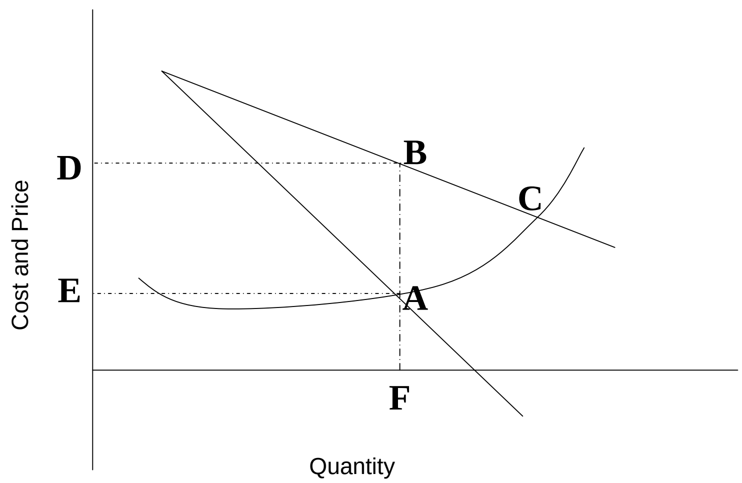
15. The demand curve for the output of a monopolistic firm is equal to

    a. The marginal revenue for the product in question.
    b. The market supply curve for the product in question.
    c. The market demand curve for the product in question.
    d. The demand curve for a firm in a perfectly competitive market.
    e. The concentration ratio of the firm.

16. Suppose a firm can sell five units of output at a price of $10 each. To sell six units of output, the firm must lower its price to $9 per unit. To sell seven units, the firm must lower its price to $8 per unit. Which of the following statements is *true*?

   a. The firm can maximize profits at all of the production levels listed above.
   b. The firm faces an upward sloping demand curve.
   c. Based on the information given above, we can conclude that seven units is the profit maximizing level of production.
   d. Based on the information given above, we can conclude that this firm faces net losses at the levels of production considered here.
   e. The firm can be described as a "price maker."

Questions #17 and #18 refer to the graph below.



The graph shown above depicts the demand, marginal revenue, and marginal cost curves faced by a monopolistic firm.

17. Point A indicates

   a. Total cost.
   b. The point where MR=MC.
   c. The price buyers are willing to pay at equilibrium.
   d. The point where MC=P.
   e. Total revenue.

18. Which of the following statements is *false*?

a. When the firm chooses a level of production F, buyers will pay a price E.
b. Point A is on the marginal cost curve.
c. Point B shows the level of demand that corresponds to the profit maximizing level of production.
d. Point C indicates the price and quantity of production that would exist in a competitive equilibrium.
e. Because the firm described by this graph is a monopoly, production is lower and price is higher than they would be at competitive equilibrium.

19. Which of the following statements is *false*?

a. In some cases, monopoly can be a preferable option for society as a whole compared with a situation of perfect competition.
b. For some services, such as passenger rail transportation, government subsidies to a monopolist may produce the most socially beneficial outcome.
c. Government regulation of an industry characterized by natural monopoly can help to reduce the inefficiencies associated with market power.
d. Optimally efficient pricing always leads to self-sustaining revenues.
e. All of the above are true.

20. Which of the following is an example of a price discriminating seller?

a. Frank sells condominiums only to buyers of a certain ethnic background.
b. Ellen charges different prices to different buyers, depending on their ethnic or religious background.
c. Amelia charges different prices to different buyers depending on their ability or willingness to pay.
d. An airline charges the same price to all travelers.
e. Both a and b are correct.

21. Which of the following statements is *true* of a monopolistically competitive firm?

a. It faces a downward sloping demand curve.
b. It earns positive economic profits in the long run.
c. It produces more than a perfectly competitive firm.
d. It charges lower prices than a perfectly competitive firm.
e. Its profits are protected by significant barriers to entry.

22. Under conditions of oligopoly, firms may collude in order to

a. To raise the prices of the goods they offer.
b. Increase competition.
c. Solve the concentration ratio problem.
d. Create a prisoner's dilemma for buyers.
e. Initiate a price war with one another.

23. Which of the following statements about oligopoly is *false*?

a. Under conditions of oligopoly, entry into the market is difficult.
b. The amount of long-run economic profit made by oligopolistic firms is variable.
c. Each firm in an oligopoly makes decisions without regard for the actions of other firms.
d. Game theory is used to analyze the behavior of firms in an oligopoly.
e. Firms in an oligopolistic market often have an incentive to collude.

24. Which one of the following statements is false? b

a. One of the reasons that markets are becoming more concentrated in the U.S. is lax enforcement of existing antitrust laws.
b. The existence of "exceptional" profits by companies is a sign that a market economy is functioning well.
c. Most lobbying organizations in the U.S. represent business interests.
d. Many retiring members of the U.S. Congress take new jobs as lobbyists.
e. Net neutrality requires that internet providers treat all online content the same.

Answers to Active Review Questions

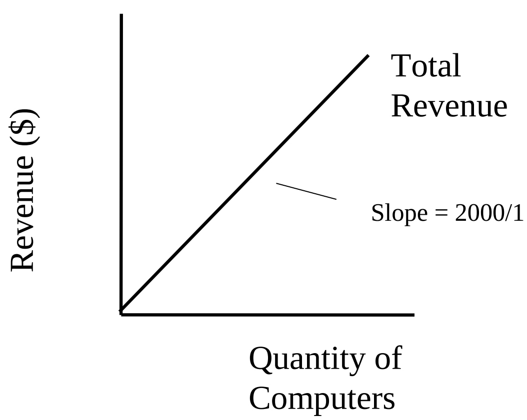
1.market power
2. perfectly elastic (or horizontal)
3. accounting profits
4. price (or marginal revenues)
5. zero
6. down
7. bad; good
8. natural
9. predatory
10. downward-sloping
11. seller; buyer
12. price discriminating
13. True
14. False
15. False
16. True
17. True
18. False
19. False
20. True
21. False
22. True
23. 1. There are numerous small sellers and buyers, so small that no individual seller or buyer can affect the market price. 2. Within any particular market, only one kind of good or service is traded, and all units are identical. 3. Producers can freely enter or exit the industry. 4. Buyers and sellers all have perfect information.
24. One example could be the difficulties you might face if you tried to maintain an old model of car that few other people were using. Over time, you would probably find it difficult to get the parts you needed, or even to find a mechanic who understood how to maintain this kind of car. Another example would be trying to get around with a horse and buggy. You would probably find that because cities are set up for traveling by cars and other automated forms of transport, you would have trouble navigating modern city streets with your horse and buggy.
25. Monopolistically competitive firms often engage in non-price competition (e.g. advertising, using attractive packaging, etc.).
26. a) There is only one seller. (b) The good being sold has no close substitutes. (c) Barriers to entry prevent other firms from starting to produce the good in question
27. Offering patents can create an incentive to develop new drugs. On the other hand, the high prices of patented drugs can mean that life-saving drugs are denied to thousands or even millions of people who need them. (It is worth noting that other options are available to motivate research and development in pharmaceuticals.)
28. In monopolistic competition, products are differentiated instead of identical. Also, more important, while there is only one seller for monopoly, there are generally many

in a monopolistically competitive market structure. We can say that each has a "mini-monopoly" for its own niche (i.e., differentiated) product.

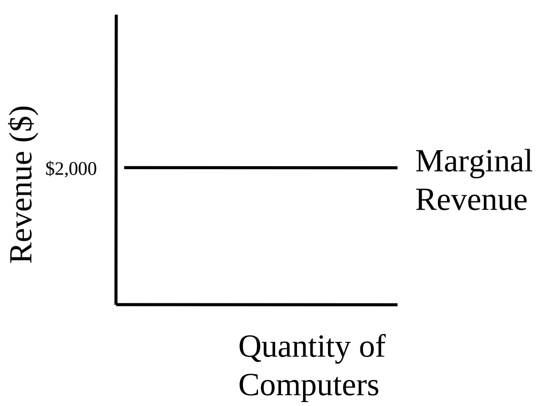
29. Oligopoly is a structure where a few sellers dominate the market, and at least some control enough of the market to be able to influence price; and entry by competitors is very difficult.
30. Markets for food are not especially competitive, given that farmers have for decades enjoyed government subsidies. The markets have grown increasingly distorted over time, as relatively few farms have grown immense in size, resulting in disproportionate subsidies accruing to them (the payments are often in relation to farm size). Many argue that such a generous policy does nothing to promote efficiency in food production—quite the contrary!

Answers to Problems

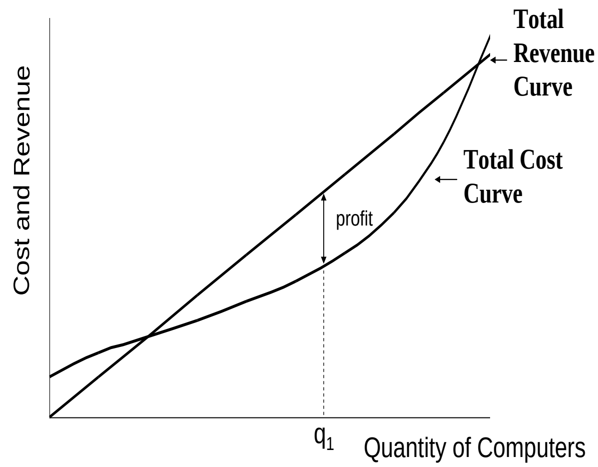
1.a. The total revenue curve for laptop computers is a straight upward-sloping line because in a perfectly competitive market, every laptop will sell for the same price. The slope of the line is +2000.



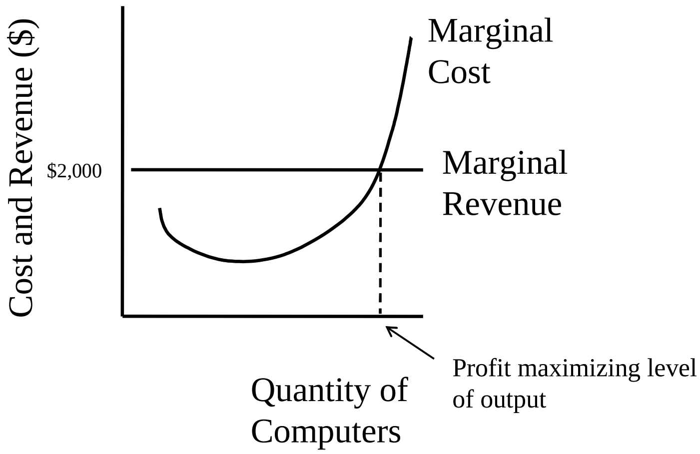
1.b. The marginal revenue curve is a straight line, horizontal at the market price ($2,000). Each additional laptop sold brings n the same amount.



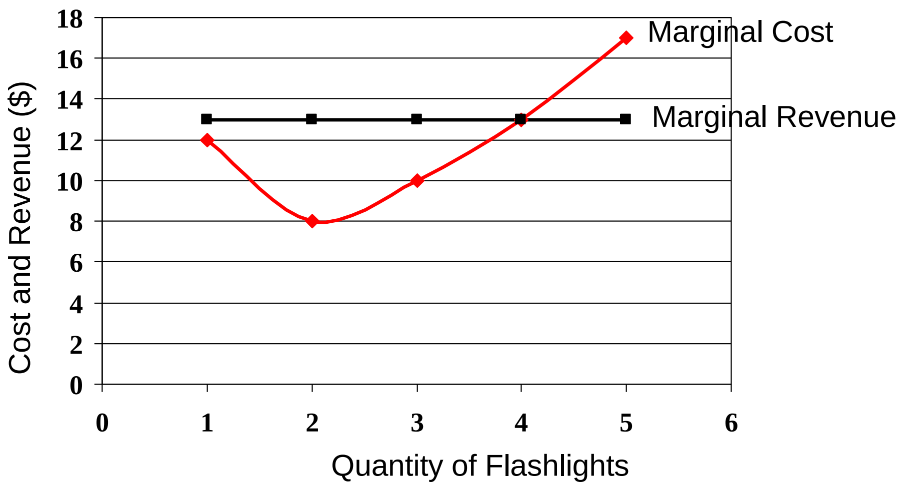
2. a.



2.b.



3. a.



3. b. 4 flashlights (where marginal cost = marginal revenue)

3. c.

Quantity	Marginal Cost ($)	Total Cost ($)	Total Revenue (Price = $13)	Total Profit
0		10	0	-10
1	12	22	13	-9
2	8	30	26	-4
3	10	40	39	-1
4	13	53	52	-1
5	17	70	65	-5

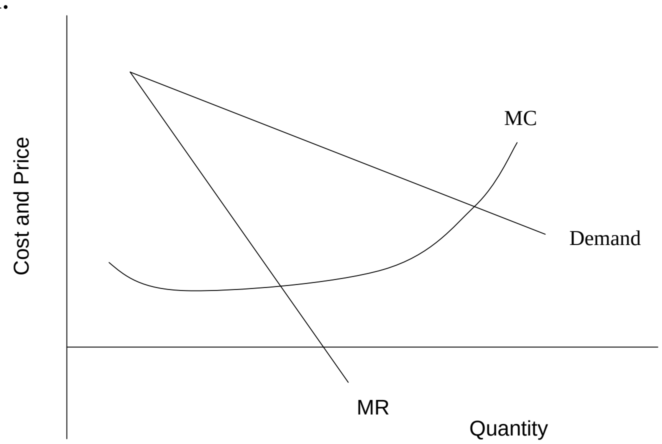
3. d. At a price of flashlights of $13, the firm's maximum profit is a *loss* of $1 (achievable at a production level of 3 or 4 lamps). The firm should continue to produce (in the short run), since losing $1 is better than losing $10, which is what it would lose if it shuts down.

4. a.

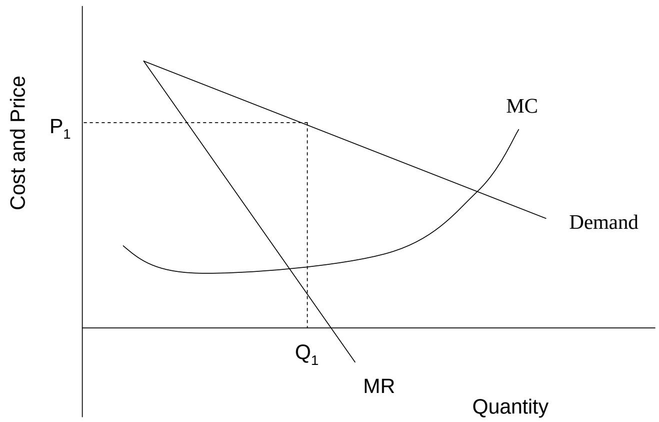
Quantity of Hairdryers	**Price of hairdryers**	**Total Revenue**	**Marginal Revenue**
1	$100	$100	$100
2	$90	$180	$80
3	$80	$240	$60
4	$70	$280	$40
5	$60	$300	$20
6	$50	$300	$0

b. 5 hairdryers

5. a.

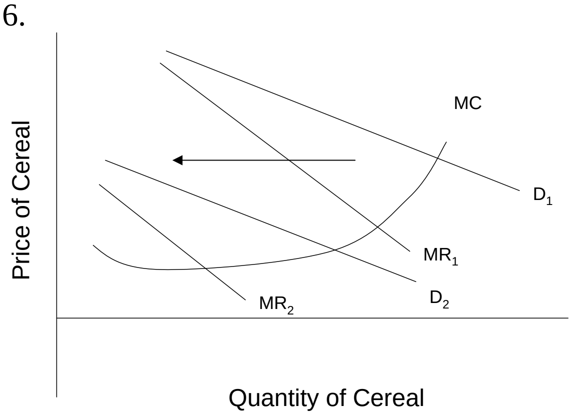


5.b.



5. c. The quantity sold by the monopolist is lower, and the price charged is higher, than in perfect competition.

6.



Answers to Self Test Questions

1. a	13. d
2. e	14. c
3. a	15. c
4. d	16. e
5. d	17. b
6. a	18. a
7. d	19. d
8. c	20. c
9. b	21. a
10. d	22. a
11. d	23. c
12. c	24. b