Where have all the record stores gone?

Perfect Competition

11

CHAPTER CHECKLIST

When you have completed your study of this chapter, you will be able to

1. Explain a perfectly competitive firm's profit-maximizing choices and derive its supply curve.
2. Explain how output, price, and profit are determined in the short run.
3. Explain how output, price, and profit are determined in the long run and explain why perfect competition is efficient.

MARKET TYPES

Goods and services are bought and sold in four different types of market. They are

- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly

MARKET TYPES

Perfect Competition

Perfect competition exists when

- Many firms sell an identical product to many buyers.
- There are no restrictions on entry into (or exit from) the market.
- Established firms have no advantage over new firms.
- Sellers and buyers are well informed about prices.

MARKET TYPES

Other Market Types

Monopoly is a market for a good or service that has no close substitutes and in which there is one supplier that is protected from competition by a barrier preventing the entry of new firms.

Monopolistic competition is a market in which a large number of firms compete by making similar but slightly different products.

Oligopoly is a market in which a small number of firms compete.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Price Taker

A **price taker** is a firm that cannot influence the price of the good or service that it produces.

The firm in perfect competition is a price taker.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Revenue Concepts

In perfect competition, market demand and market supply determine price.

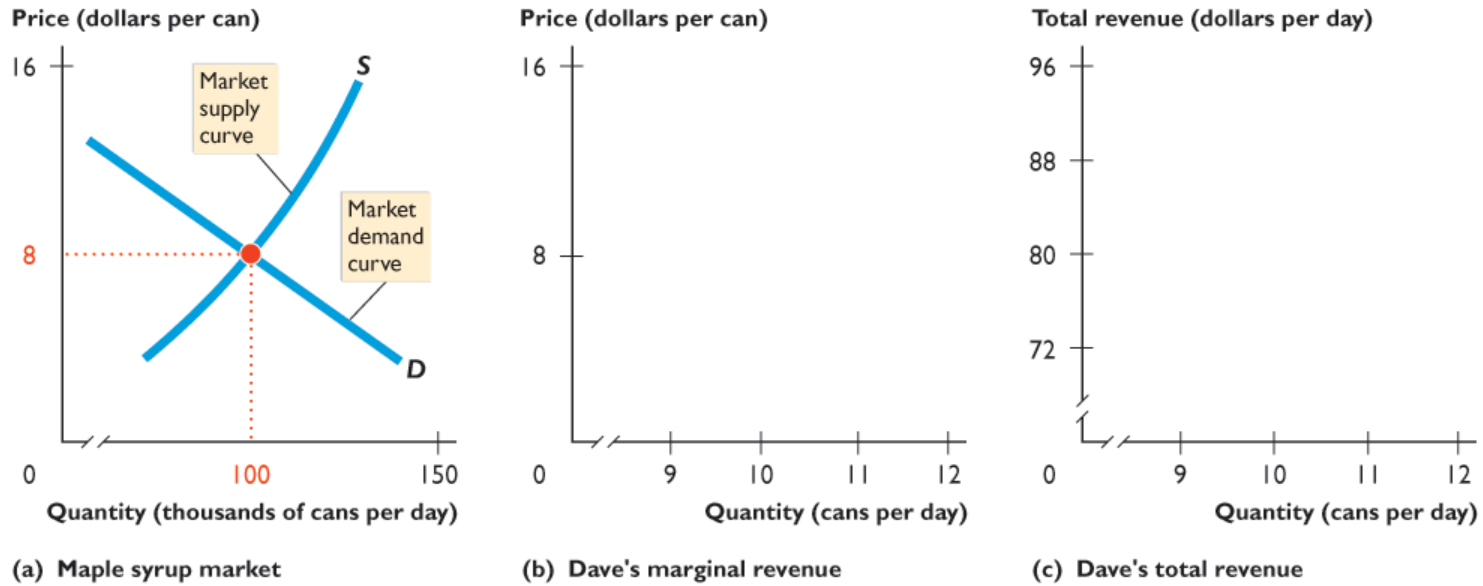
A firm's total revenue equals the market price multiplied by the quantity sold.

A firm's **marginal revenue** is the change in total revenue that results from a one-unit increase in the quantity sold.

Figure 11.1 on the next slide illustrates the revenue concepts.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

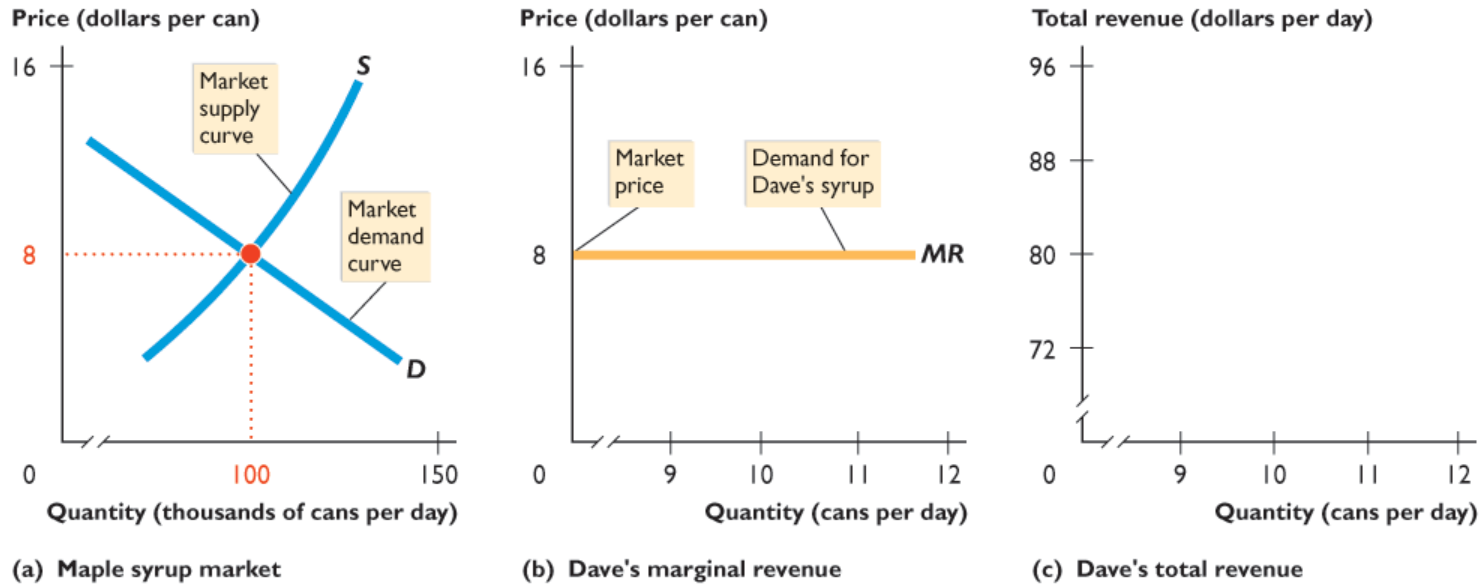
Part (a) shows the market for syrup. The market price is $8 a can.



Quantity sold (cans per day)	9	10	11
Price (dollars per can)	8	8	8
Total revenue (dollars per day)	72	80	88
Marginal revenue (dollars per can)		8	8

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

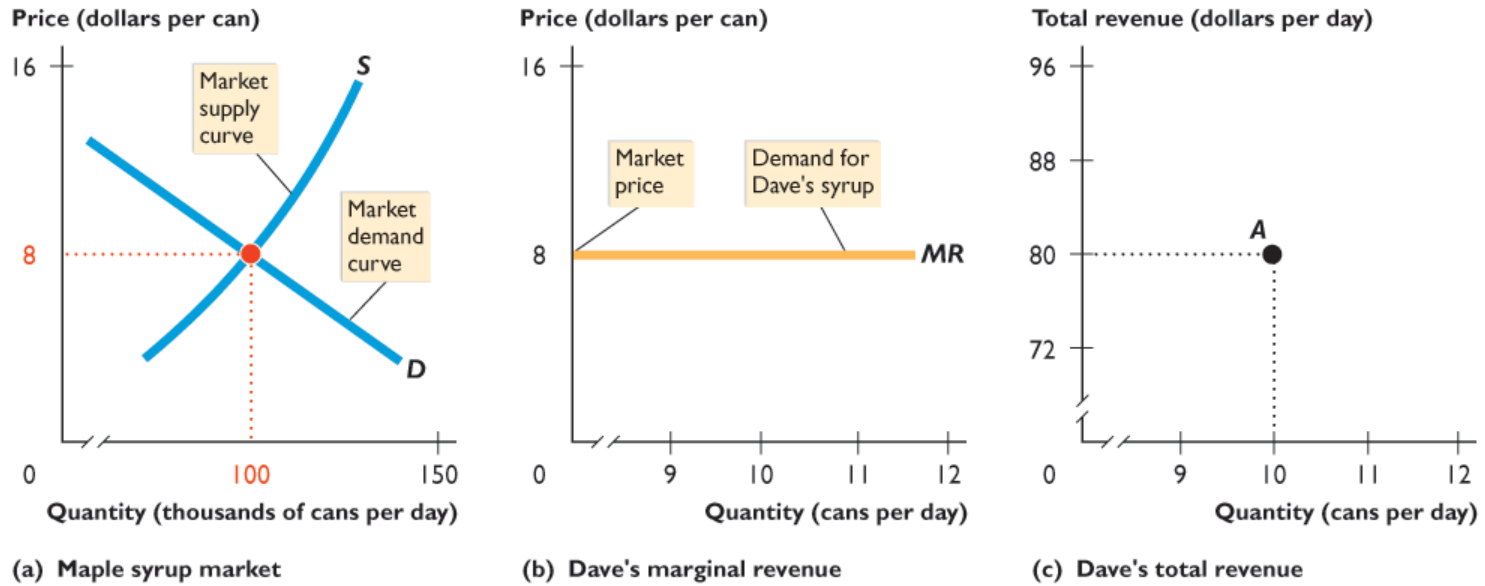
In part (b), the market price determines the demand curve for Dave's syrup, which is also his marginal revenue curve.



Quantity sold (cans per day)	9	10	11
Price (dollars per can)	8	8	8
Total revenue (dollars per day)	72	80	88
Marginal revenue (dollars per can)		8	8

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

In part (c), if Dave sells 10 cans of syrup a day, his total revenue is $80 a day at point *A*.

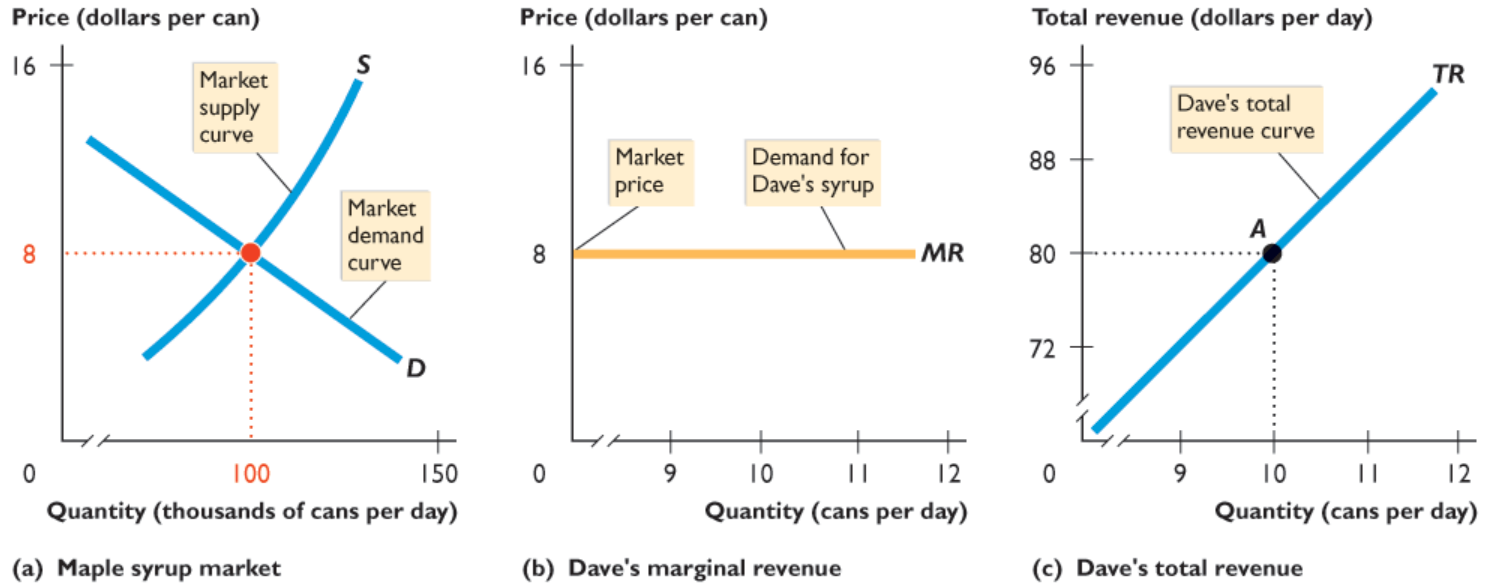


Quantity sold (cans per day)	9	10	11
Price (dollars per can)	8	8	8
Total revenue (dollars per day)	72	80	88
Marginal revenue (dollars per can)		8	8

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Dave's total revenue curve is *TR*.

The table shows the calculations of *TR* and *MR*.



Quantity sold (cans per day)	9	10	11
Price (dollars per can)	8	8	8
Total revenue (dollars per day)	72	80	88
Marginal revenue (dollars per can)		8	8

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Profit-Maximizing Output

As output increases, total revenue increases.

But total cost also increases.

Because of decreasing marginal returns, total cost eventually increases faster than total revenue.

There is one output level that maximizes economic profit, and a perfectly competitive firm chooses this output level.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

One way to find the profit-maximizing output is to use a firm's total revenue and total cost curves.

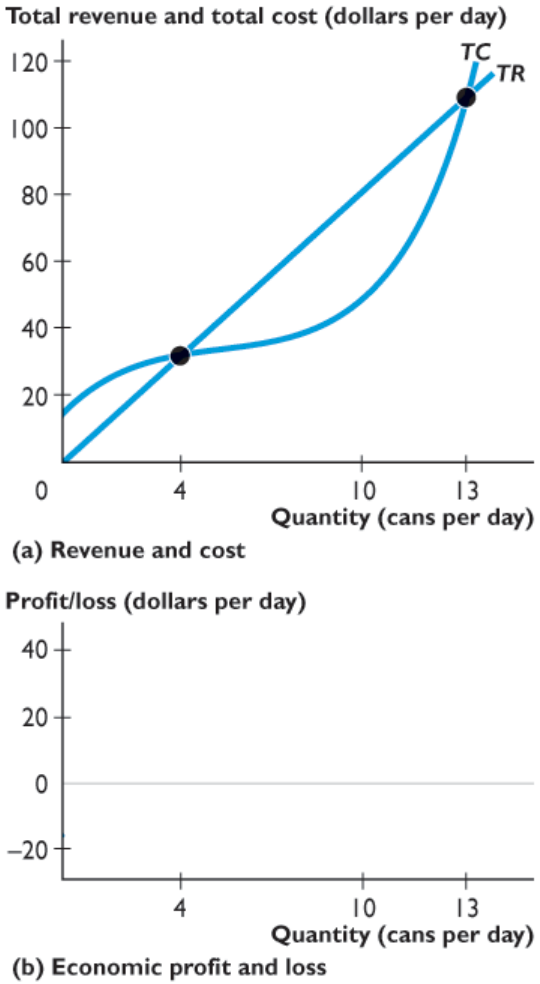
Profit is maximized at the output level at which total revenue exceeds total cost by the largest amount.

Figure 11.2 on the next slide illustrates this approach.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Total revenue increases as the quantity increases—shown by the *TR* curve.

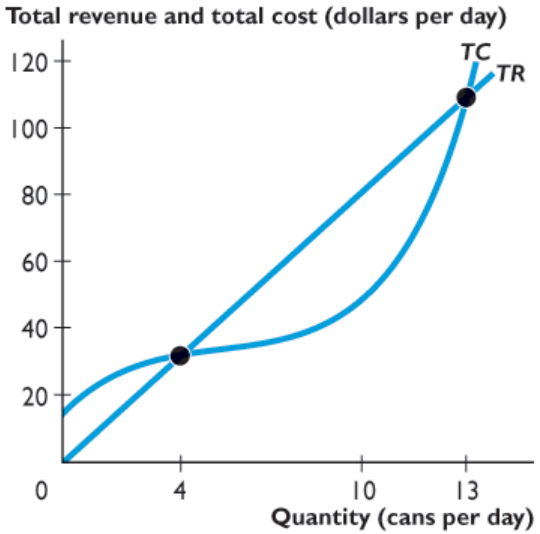
Total cost increases as the quantity increases—shown by the *TC* curve.



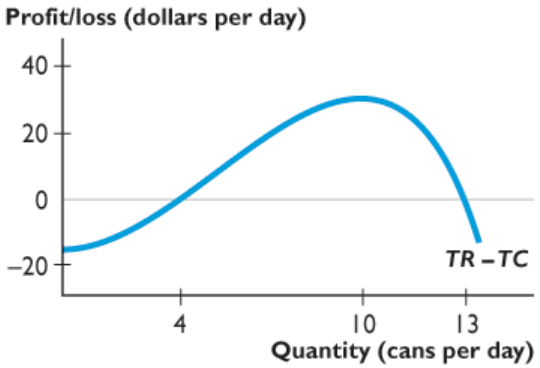
Quantity (*Q*) (cans per day)	Total revenue (*TR*)	Total cost (*TC*)	Economic profit (*TR* – *TC*)
	(dollars per day)		
0	0	15	
1	8	22	
2	16	27	
3	24	30	
4	**32**	**32**	
5	40	33	
6	48	34	
7	56	36	
8	64	40	
9	72	44	
10	**80**	**51**	
11	88	60	
12	96	76	
13	**104**	**104**	
14	112	144	

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

As the quantity increases, economic profit (*TR – TC*) increases, reaches a maximum, and then decreases.



(a) Revenue and cost



(b) Economic profit and loss

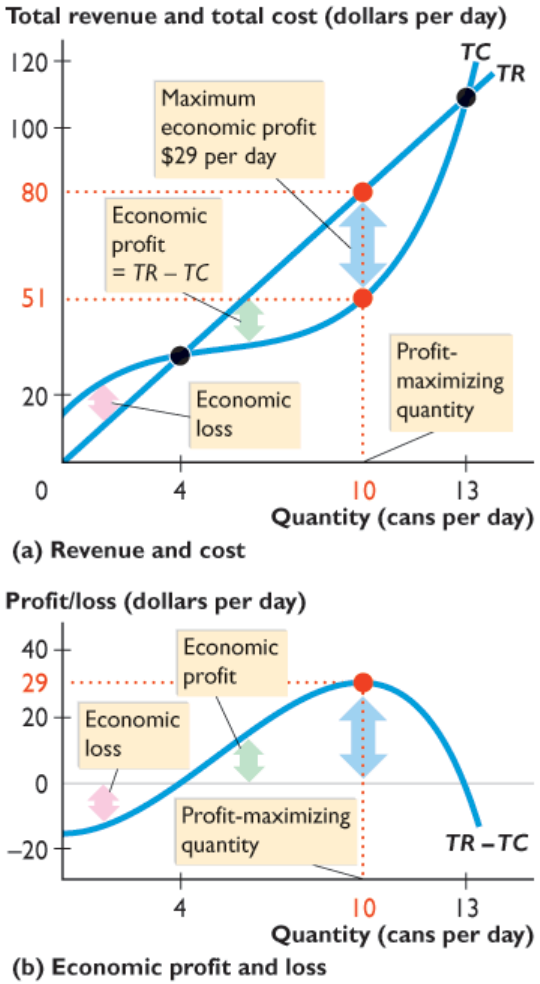
Quantity (*Q*) (cans per day)	Total revenue (*TR*)	Total cost (*TC*)	Economic profit (*TR – TC*)
	(dollars per day)		
0	0	15	–15
1	8	22	–14
2	16	27	–11
3	24	30	–6
4	**32**	**32**	**0**
5	40	33	7
6	48	34	14
7	56	36	20
8	64	40	24
9	72	44	28
10	**80**	**51**	**29**
11	88	60	28
12	96	76	20
13	**104**	**104**	**0**
14	112	144	–32

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

At low output levels, the firm incurs an economic loss.

When total revenue exceeds total cost, the firm earns an economic profit.

Profit is maximized when the gap between total revenue and total cost is the largest, at 10 cans per day.



Quantity (Q) (cans per day)	Total revenue (TR)	Total cost (TC)	Economic profit (TR – TC)
	(dollars per day)		
0	0	15	–15
1	8	22	–14
2	16	27	–11
3	24	30	–6
4	**32**	**32**	**0**
5	40	33	7
6	48	34	14
7	56	36	20
8	64	40	24
9	72	44	28
10	**80**	**51**	**29**
11	88	60	28
12	96	76	20
13	**104**	**104**	**0**
14	112	144	–32

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Marginal Analysis and the Supply Decision

Marginal analysis compares marginal revenue, *MR*, with marginal cost, *MC*.

As output increases, marginal revenue remains constant but marginal cost increases.

If marginal revenue exceeds marginal cost (if *MR* > *MC*), the extra revenue from selling one more unit exceeds the extra cost incurred to produce it.

Economic profit increases if output increases.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

If marginal revenue is less than marginal cost (if *MR* < *MC*), the extra revenue from selling one more unit is less than the extra cost incurred to produce it.

Economic profit increases if output *decreases*.

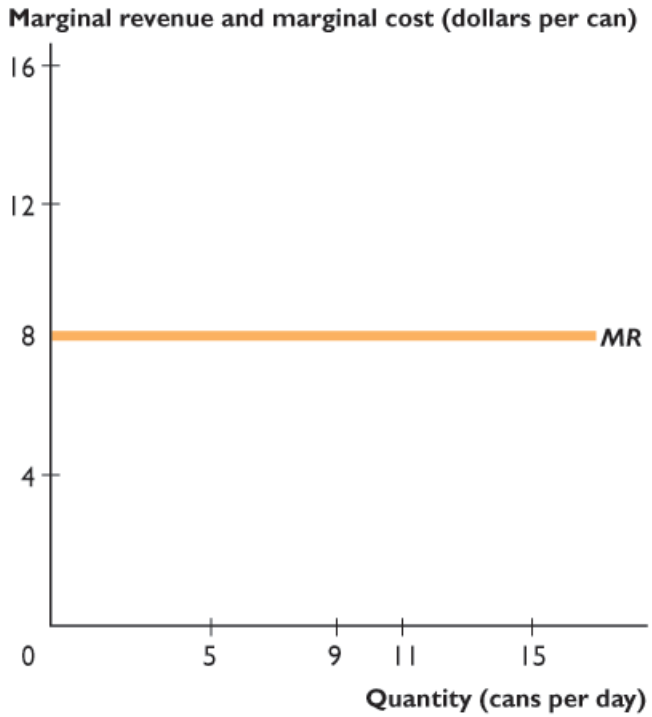
If marginal revenue equals marginal cost (if *MR* = *MC*), the extra revenue from selling one more unit is equal to the extra cost incurred to produce it.

Economic profit *decreases* if output *increases* or *decreases*, so economic profit is maximized.

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

Figure 11.3 shows the profit-maximizing output.

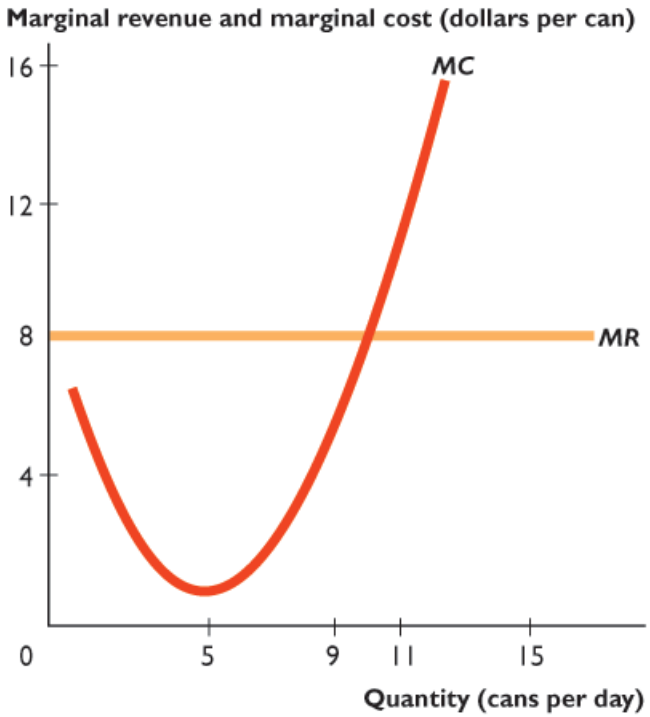
Marginal revenue is a constant $8 per can.



Quantity (*Q*) (cans per day)	Total revenue (*TR*) (dollars per day)	Marginal revenue (*MR*) (dollars per can)	Total cost (*TC*) (dollars per day)	Marginal cost (*MC*) (dollars per can)	Economic profit (*TR* – *TC*) (dollars per day)
8	64		40		24
		8			
9	72		44		28
		8			
10	80		51		29
		8			
11	88		60		28
		8			
12	96		76		20

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

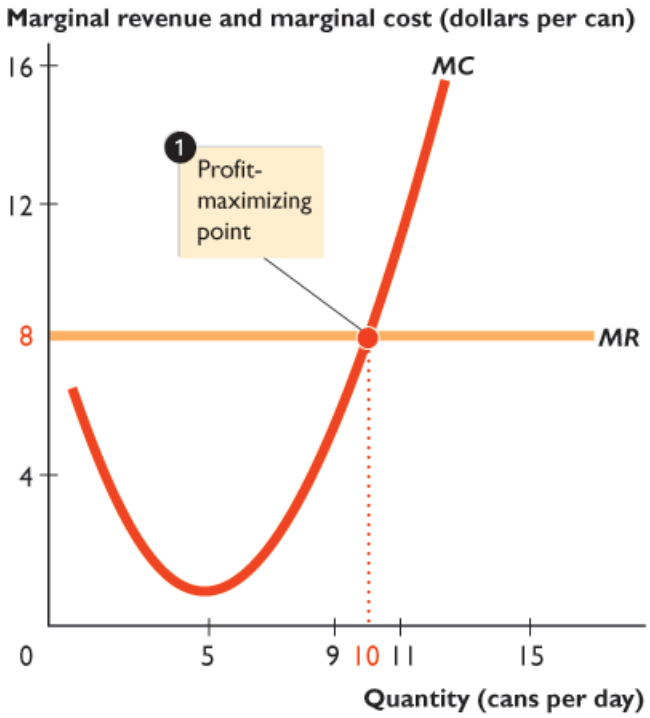
Marginal cost decreases at low outputs but then increases.



Quantity (*Q*) (cans per day)	Total revenue (*TR*) (dollars per day)	Marginal revenue (*MR*) (dollars per can)	Total cost (*TC*) (dollars per day)	Marginal cost (*MC*) (dollars per can)	Economic profit (*TR* – *TC*) (dollars per day)
8	64		40		24
		8		4	
9	72		44		28
		8		7	
10	80		51		29
		8		9	
11	88		60		28
		8		16	
12	96		76		20

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

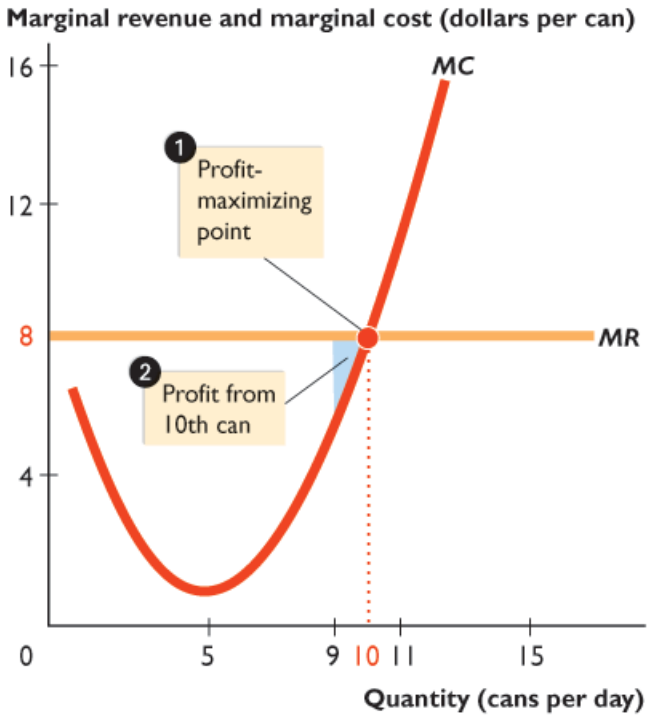
1. Profit is maximized when marginal revenue equals marginal cost at 10 cans a day.



Quantity (*Q*) (cans per day)	Total revenue (*TR*) (dollars per day)	Marginal revenue (*MR*) (dollars per can)	Total cost (*TC*) (dollars per day)	Marginal cost (*MC*) (dollars per can)	Economic profit (*TR* – *TC*) (dollars per day)
8	64		40		24
		8		4	
9	72		44		28
		8		7	
10	80		51		29
		8		9	
11	88		60		28
		8		16	
12	96		76		20

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

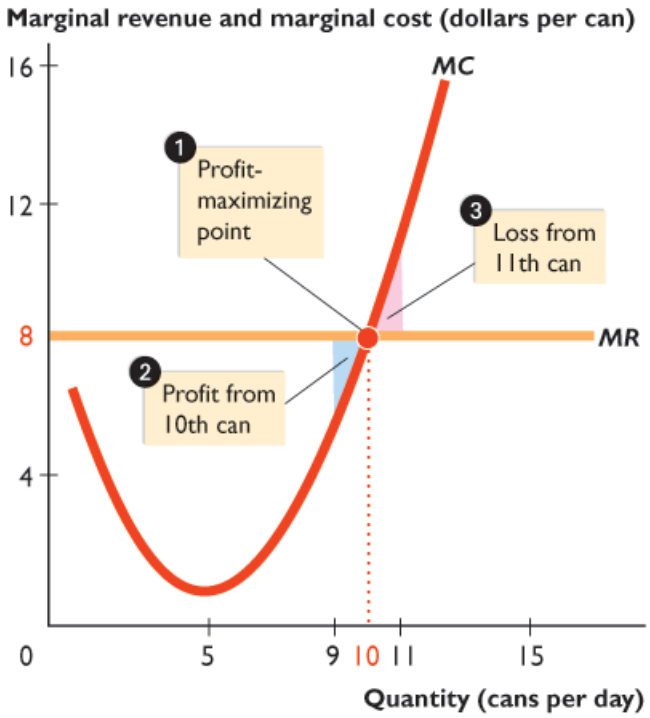
2. If output increases from 9 to 10 cans a day, marginal cost ($7) is below marginal revenue ($8), so profit increases.



Quantity (*Q*) (cans per day)	Total revenue (*TR*) (dollars per day)	Marginal revenue (*MR*) (dollars per can)	Total cost (*TC*) (dollars per day)	Marginal cost (*MC*) (dollars per can)	Economic profit (*TR* – *TC*) (dollars per day)
8	64		40		24
		8		4	
9	72		44		28
		8		7	
10	80		51		29
		8		9	
11	88		60		28
		8		16	
12	96		76		20

11.1 A FIRM'S PROFIT-MAXIMIZING CHOICES

3. If output increases from 10 to 11 cans a day, marginal cost ($9) exceeds marginal revenue ($8), so profit decreases.



Quantity (*Q*) (cans per day)	Total revenue (*TR*) (dollars per day)	Marginal revenue (*MR*) (dollars per can)	Total cost (*TC*) (dollars per day)	Marginal cost (*MC*) (dollars per can)	Economic profit (*TR* – *TC*) (dollars per day)
8	64		40		24
		8		4	
9	72		44		28
		8		7	
10	80		51		29
		8		9	
11	88		60		28
		8		16	
12	96		76		20