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Monopoly



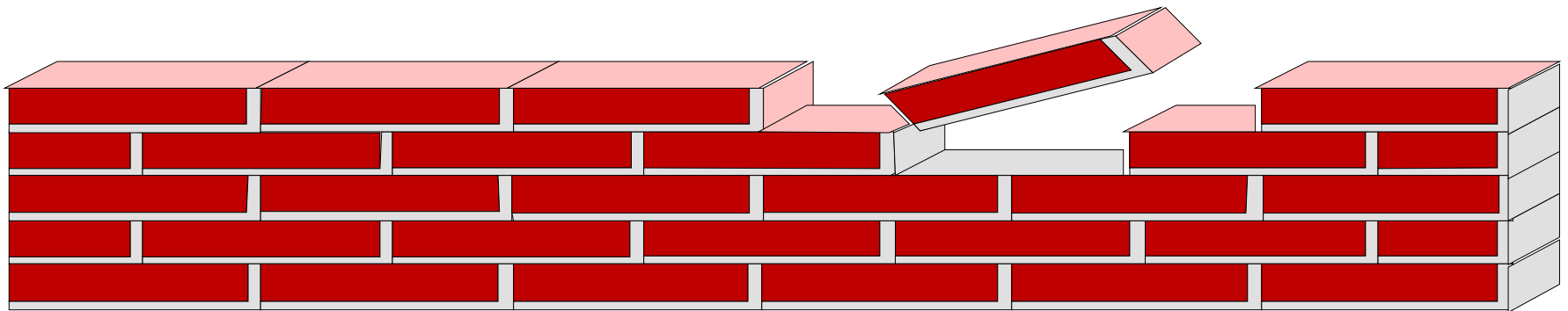
Monopoly

- While a competitive firm is a *price taker*, a monopoly firm is a *price maker*.
- A firm is considered a *monopoly* if . . .
 - it is the sole seller of its product.
 - its product does not have close substitutes.



WHY MONOPOLIES ARISE

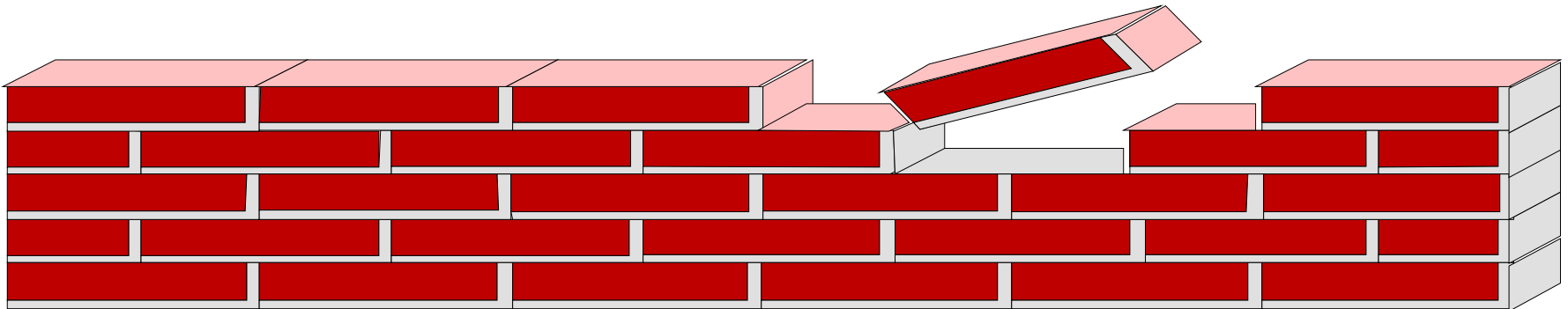
- The fundamental cause of monopoly is *barriers to entry*.





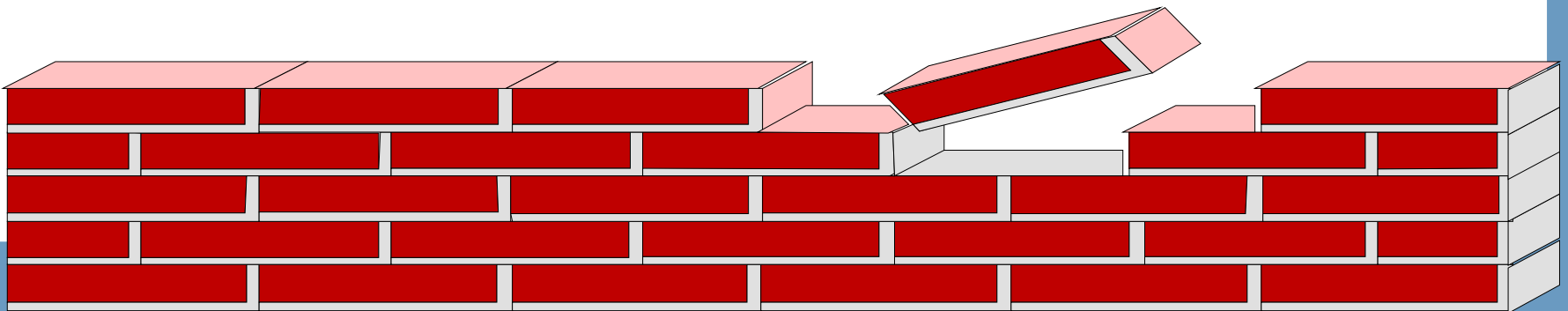
WHY MONOPOLIES ARISE

- Barriers to entry have three sources:
 - Ownership of a key resource.
 - The government gives a single firm the exclusive right to produce some good.
 - Costs of production make a single producer more efficient than a large number of producers.



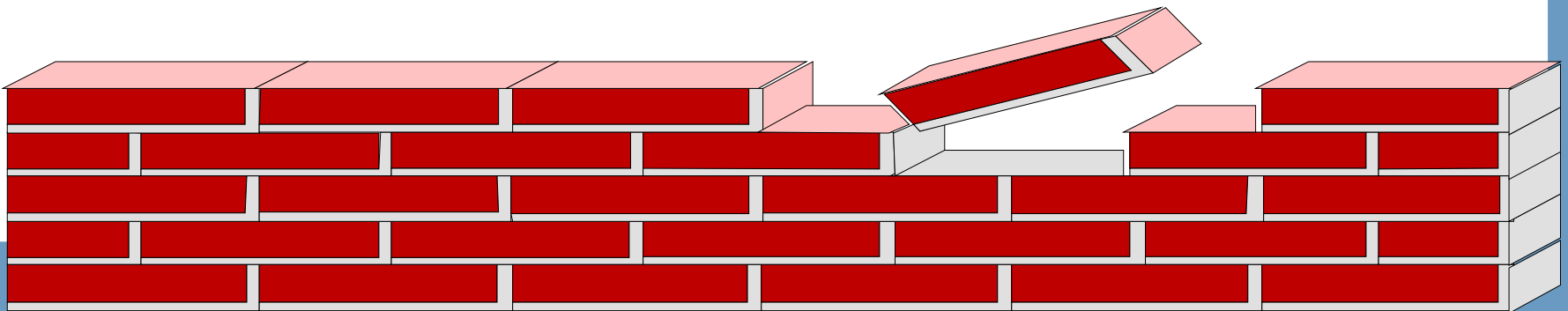
Monopoly Resources

- Although exclusive ownership of a key resource is a potential source of monopoly, in practice monopolies rarely arise for this reason.



Government-Created Monopolies

- Governments may restrict entry by giving a single firm the exclusive right to sell a particular good in certain markets.
- Patent and copyright laws are two important examples of how government creates a monopoly to serve the public interest.



Natural Monopolies

- An industry is a *natural monopoly* when a single firm can supply a good or service to an entire market at a smaller cost than could two or more firms.
- A natural monopoly arises when there are economies of scale over the relevant range of output.

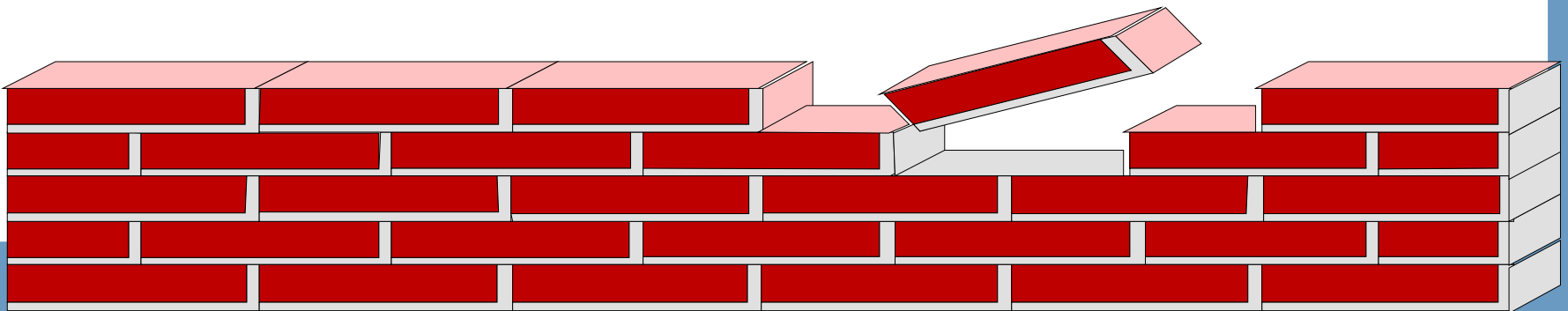
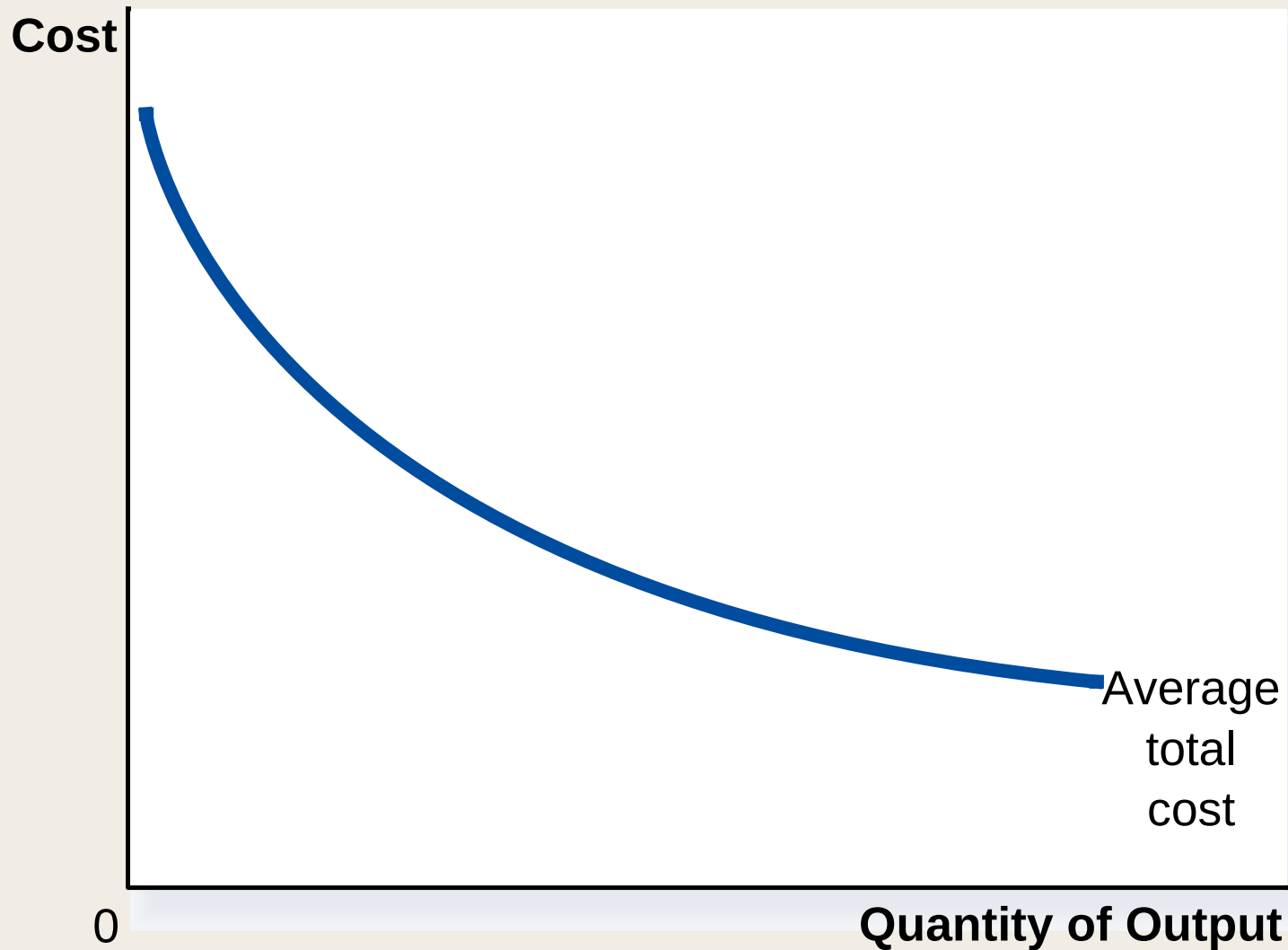


Figure 1 Economies of Scale as a Cause of Monopoly



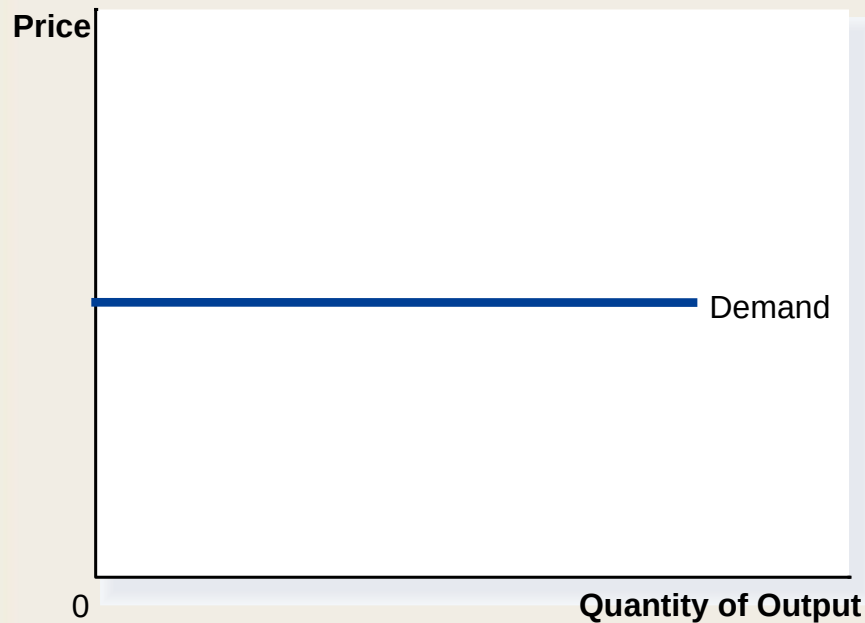


HOW MONOPOLIES MAKE PRODUCTION AND PRICING DECISIONS

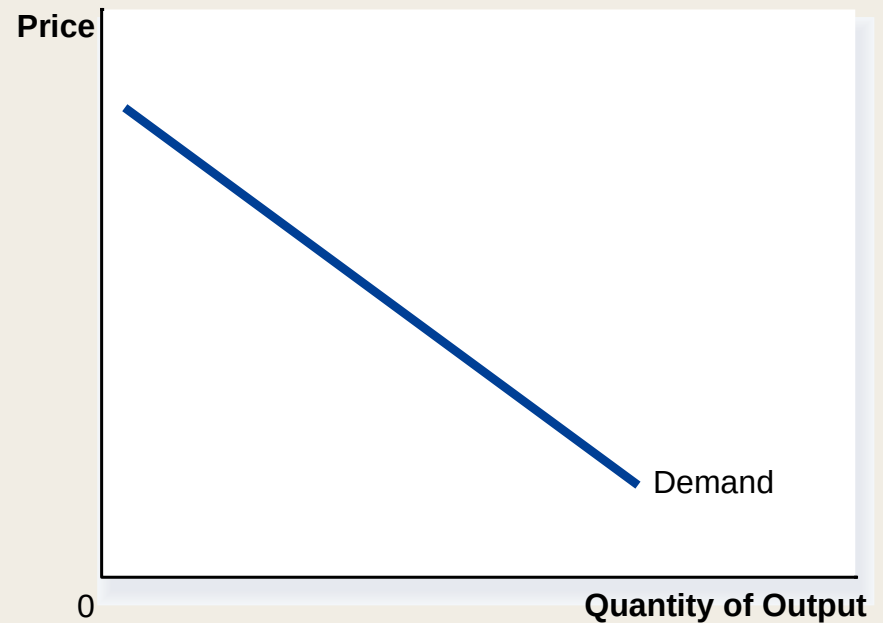
- Monopoly versus Competition
 - Monopoly
 - Is the sole producer
 - Faces a downward-sloping demand curve
 - Is a price maker
 - Reduces price to increase sales
 - Competitive Firm
 - Is one of many producers
 - Faces a horizontal demand curve
 - Is a price taker
 - Sells as much or as little at same price

Figure 2 Demand Curves for Competitive and Monopoly Firms

(a) A Competitive Firm's Demand Curve



(b) A Monopolist's Demand Curve



Since a monopoly is the sole producer in its market, it faces the market demand curve.

A Monopoly's Revenue

- Total Revenue
 - $P \times Q = TR$
- Average Revenue
 - $TR/Q = AR = P$
- Marginal Revenue
 - $\Delta TR / \Delta Q = MR$

Table 1 A Monopoly's Total, Average, and Marginal Revenue

Quantity of Water (Q)	Price (P)	Total Revenue ($TR = P \times Q$)	Average Revenue ($AR = TR / Q$)	Marginal Revenue ($MR = \Delta TR / \Delta Q$)
0 gallons	\$11	\$ 0	—	
1	10	10	\$10	\$10
2	9	18	9	8
3	8	24	8	6
4	7	28	7	4
5	6	30	6	2
6	5	30	5	0
7	4	28	4	-2
8	3	24	3	-4

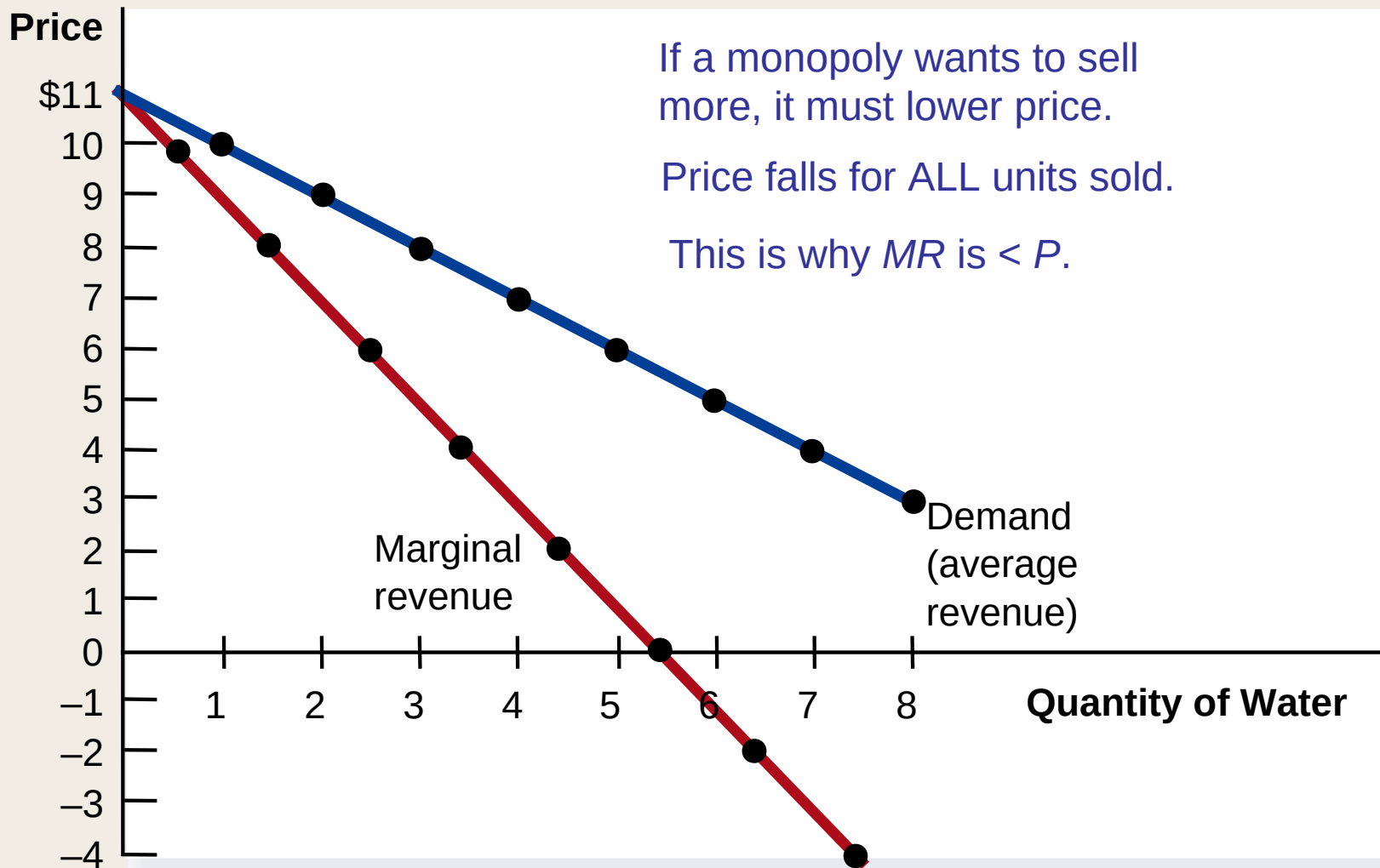
A Monopoly's Revenue

- A Monopoly's Marginal Revenue
 - A monopolist's marginal revenue is always less than the price of its good.
 - The demand curve is downward sloping.
 - When a monopoly drops the price to sell one more unit, the revenue received from previously sold units also decreases.

A Monopoly's Revenue

- A Monopoly's Marginal Revenue
 - When a monopoly increases the amount it sells, it has two effects on total revenue ($P \times Q$).
 - The output effect—more output is sold, so Q is higher.
 - The price effect—price falls, so P is lower.

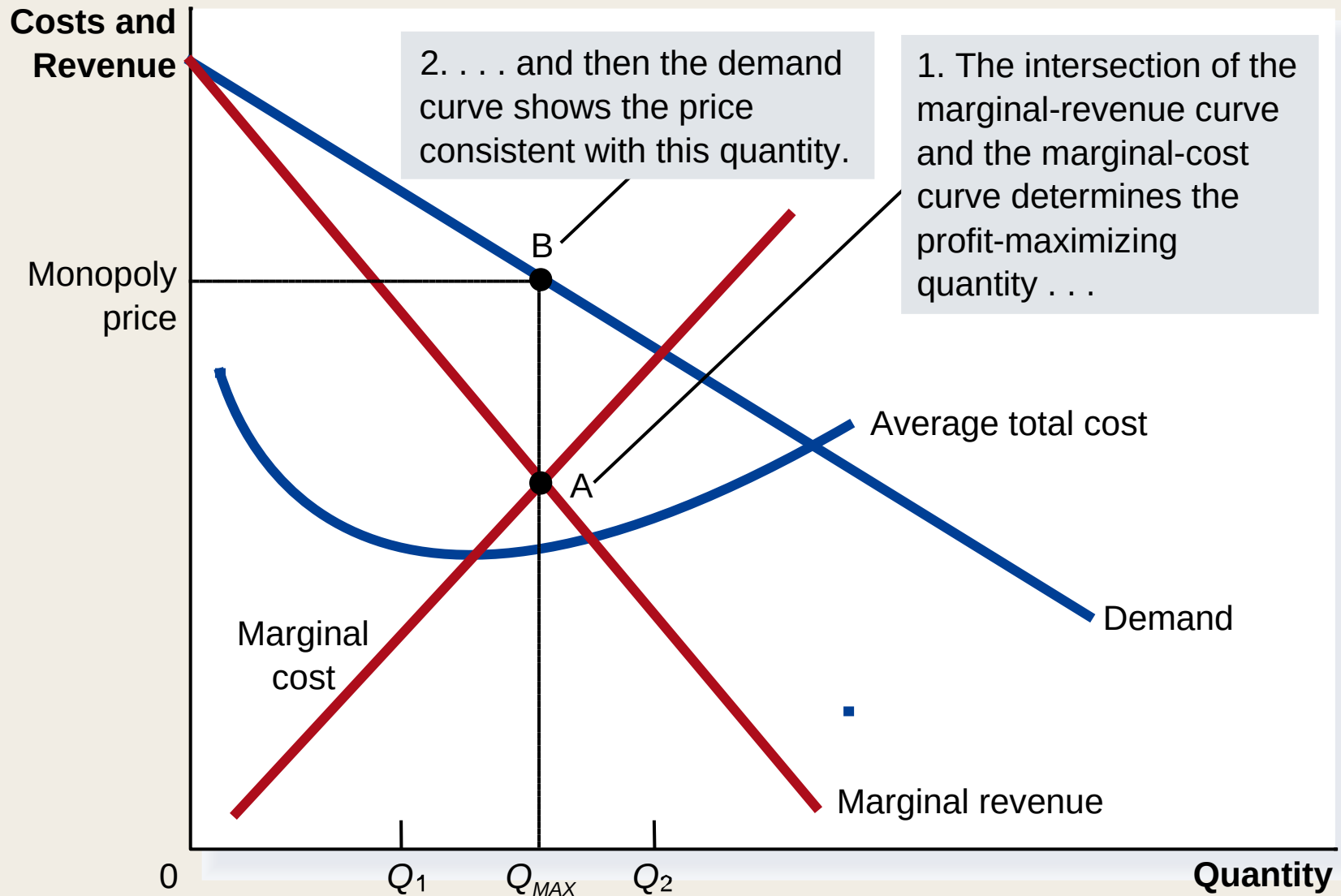
Figure 3 Demand and Marginal-Revenue Curves for a Monopoly



Profit Maximization

- A monopoly maximizes profit by producing the quantity at which marginal revenue equals marginal cost.
- It then uses the demand curve to find the price that will induce consumers to buy that quantity.

Figure 4 Profit Maximization for a Monopoly



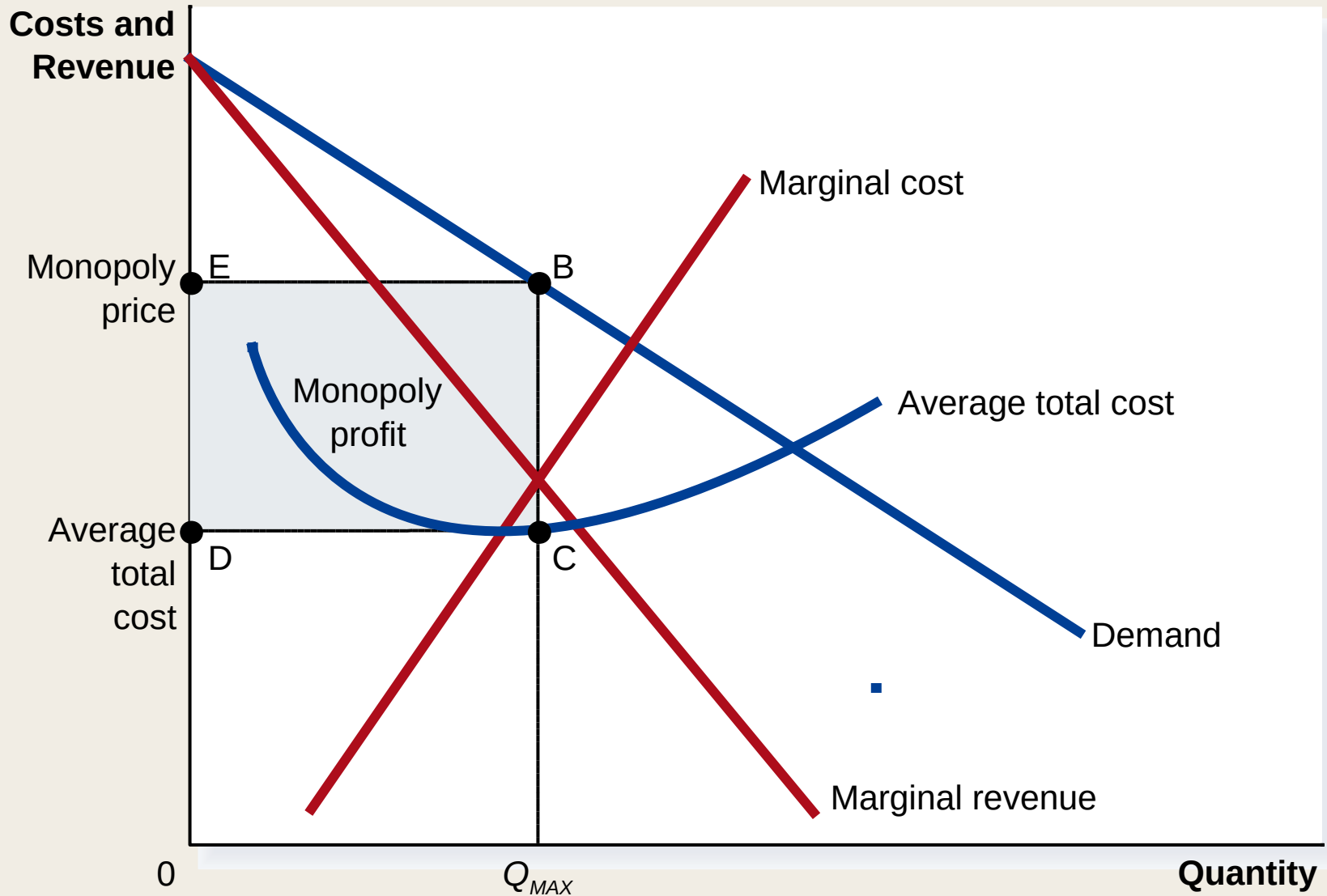
Profit Maximization

- Comparing Monopoly and Competition
 - For a competitive firm, price equals marginal cost.
 - $P = MR = MC$
 - For a monopoly firm, price exceeds marginal cost.
 - $P > MR = MC$
- Remember, all profit-maximizing firms set $MR = MC$.

A Monopoly's Profit

- Profit equals total revenue minus total costs.
 - Profit = $TR - TC$
 - Profit = $(TR/Q - TC/Q) \times Q$
 - Profit = $(P - ATC) \times Q$

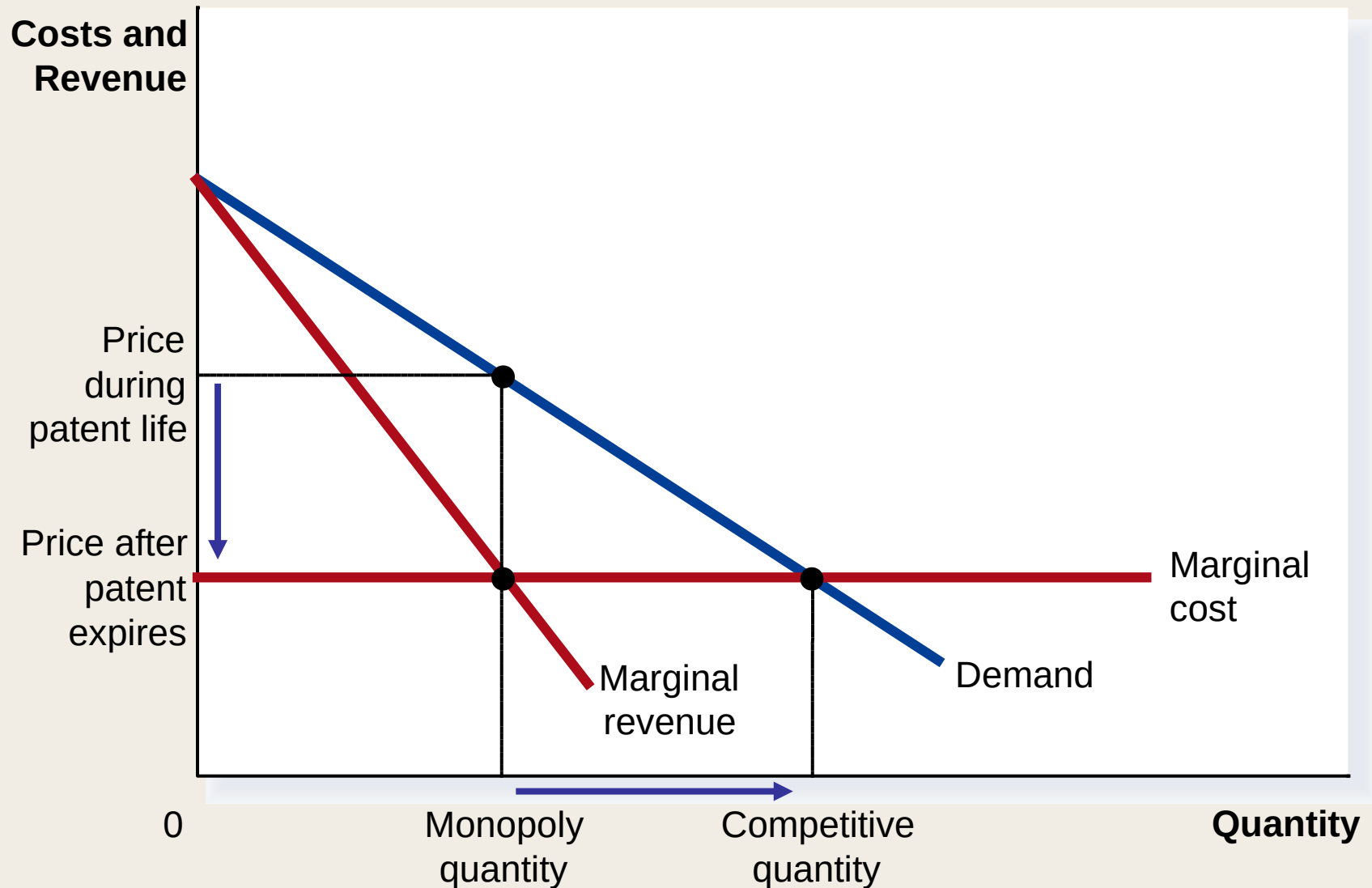
Figure 5 The Monopolist's Profit



A Monopolist's Profit

- The monopolist will receive economic profits as long as price is greater than average total cost.

Figure 6 The Market for Drugs

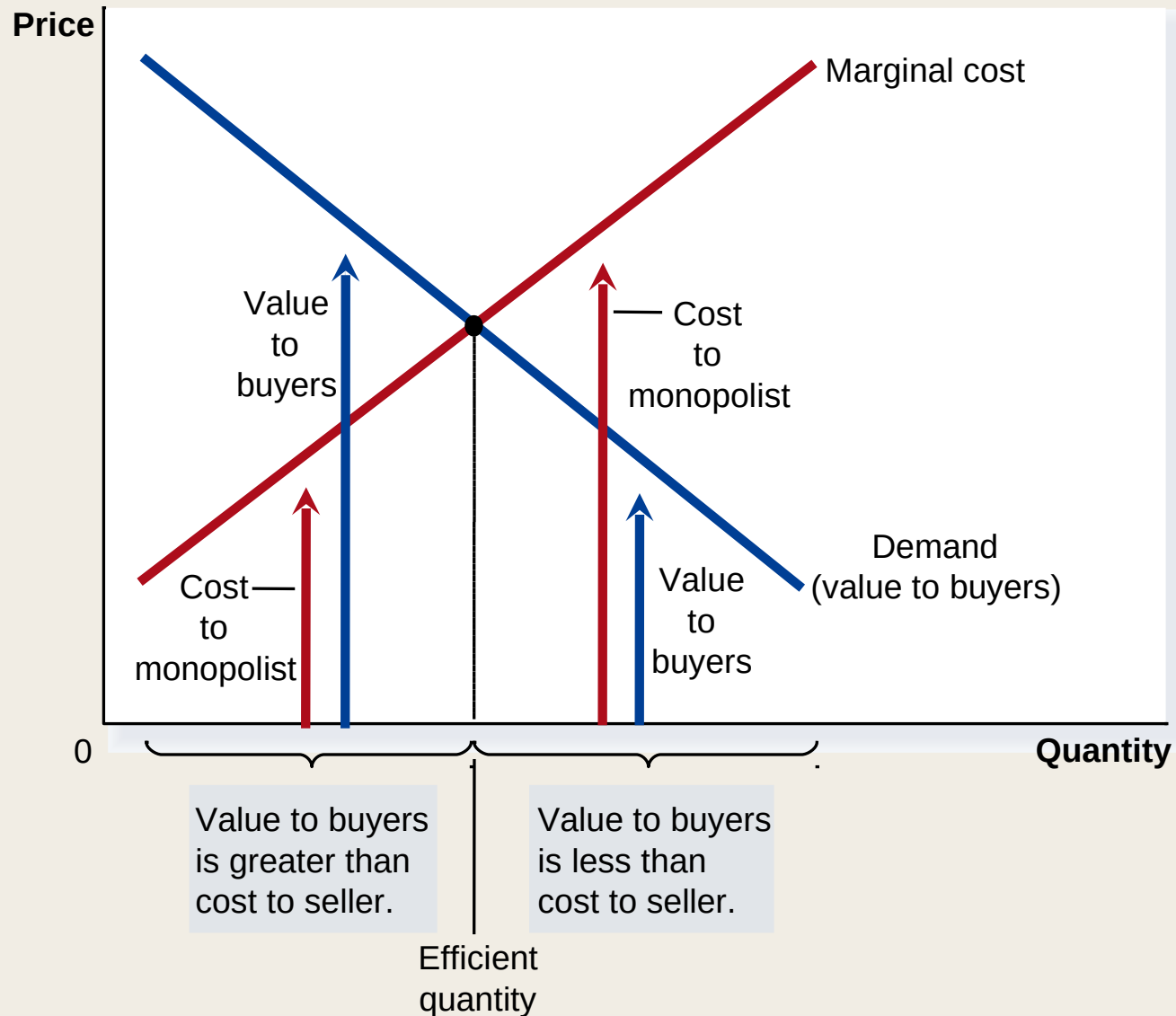




THE WELFARE COST OF MONOPOLY

- In contrast to a competitive firm, the monopoly charges a price above the marginal cost.
- From the standpoint of consumers, this high price makes monopoly undesirable.
- However, from the standpoint of the owners of the firm, the high price makes monopoly very desirable.

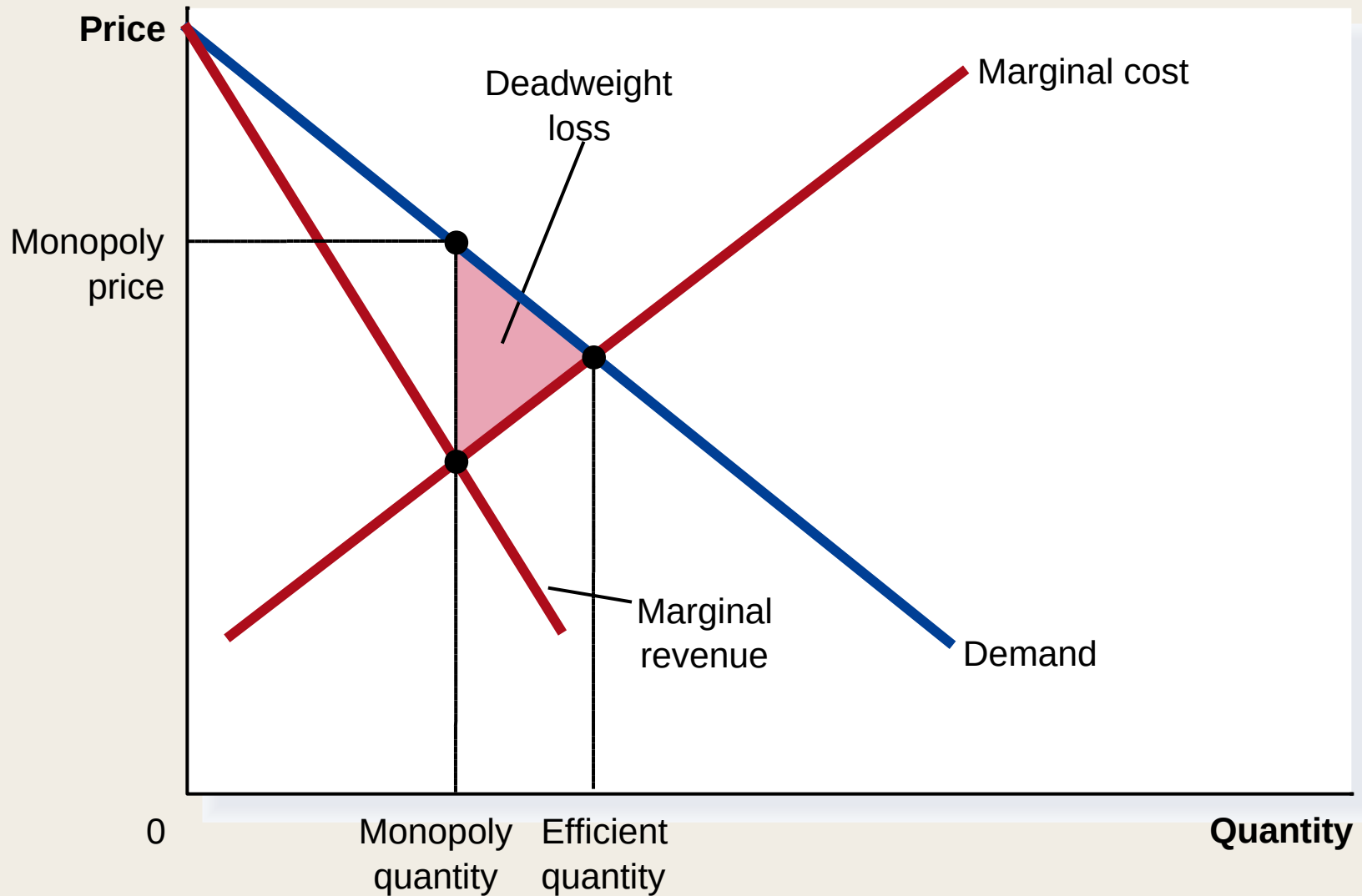
Figure 7 The Efficient Level of Output



The Deadweight Loss

- Because a monopoly sets its price above marginal cost, it places a wedge between the consumer's willingness to pay and the producer's cost.
 - This wedge causes the quantity sold to fall short of the social optimum.

Figure 8 The Inefficiency of Monopoly



The Deadweight Loss

- The Inefficiency of Monopoly
 - The monopolist produces less than the socially efficient quantity of output.

The Monopoly's Profit: A Social Cost?

- The deadweight loss caused by a monopoly is similar to the deadweight loss caused by a tax.
- The difference between the two cases is that the government gets the revenue from a tax, whereas a private firm gets the monopoly profit.



PUBLIC POLICY TOWARD MONOPOLIES

- Government responds to the problem of monopoly in one of four ways.
 - Making monopolized industries more competitive.
 - Regulating the behavior of monopolies.
 - Turning some private monopolies into public enterprises.
 - Doing nothing at all.

Increasing Competition with Antitrust Laws

- Antitrust laws are a collection of statutes aimed at curbing monopoly power.
- Antitrust laws give government various ways to promote competition.
 - They allow government to prevent mergers.
 - They allow government to break up companies.
 - They prevent companies from performing activities that make markets less competitive.

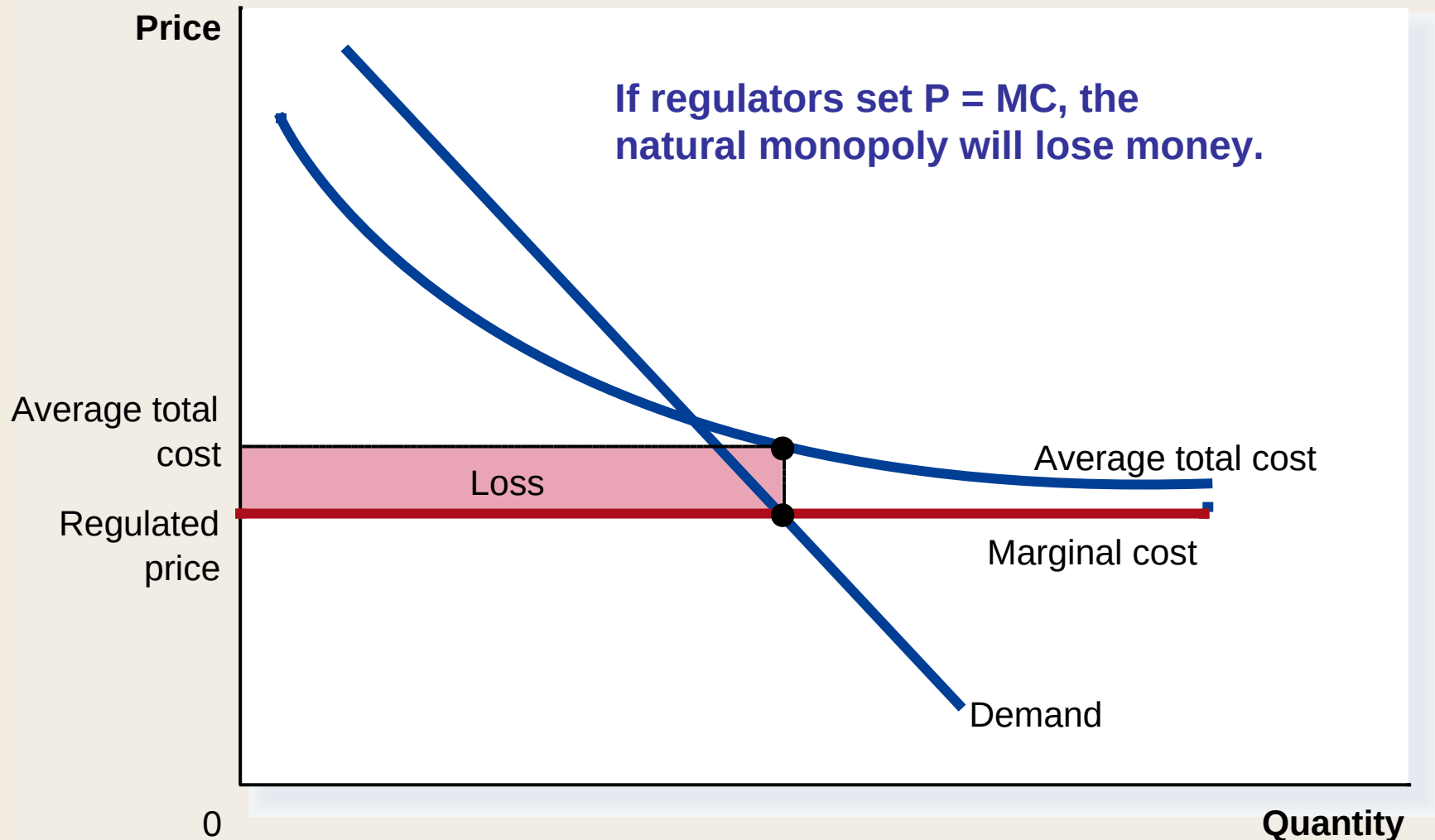
Increasing Competition with Antitrust Laws

- Two Important Antitrust Laws
 - Sherman Antitrust Act (1890)
 - Reduced the market power of the large and powerful “trusts” of that time period.
 - Clayton Antitrust Act (1914)
 - Strengthened the government’s powers and authorized private lawsuits.

Regulation

- Government may regulate the prices that the monopoly charges.
 - The allocation of resources will be efficient if price is set to equal marginal cost.

Figure 9 Marginal-Cost Pricing for a Natural Monopoly



Regulation

- In practice, regulators will allow monopolists to keep some of the benefits from lower costs in the form of higher profit, a practice that requires some departure from marginal-cost pricing.

Public Ownership

- Rather than regulating a natural monopoly that is run by a private firm, the government can run the monopoly itself (e.g. in the United States, the government runs the Postal Service).

Doing Nothing

- Government can do nothing at all if the market failure is deemed small compared to the imperfections of public policies.



PRICE DISCRIMINATION

- *Price discrimination* is the business practice of selling the same good at different prices to different customers, even though the costs for producing for the two customers are the same.

The Analytics of Price Discrimination

- Price discrimination is not possible when a good is sold in a competitive market since there are many firms all selling at the market price. In order to price discriminate, the firm must have some *market power*.
- Perfect Price Discrimination
 - Perfect price discrimination refers to the situation when the monopolist knows exactly the willingness to pay of each customer and can charge each customer a different price.

The Analytics of Price Discrimination

- Two important effects of price discrimination:
 - It can increase the monopolist's profits.
 - It can reduce deadweight loss.

Figure 10 Welfare with and without Price Discrimination

(a) Monopolist with Single Price

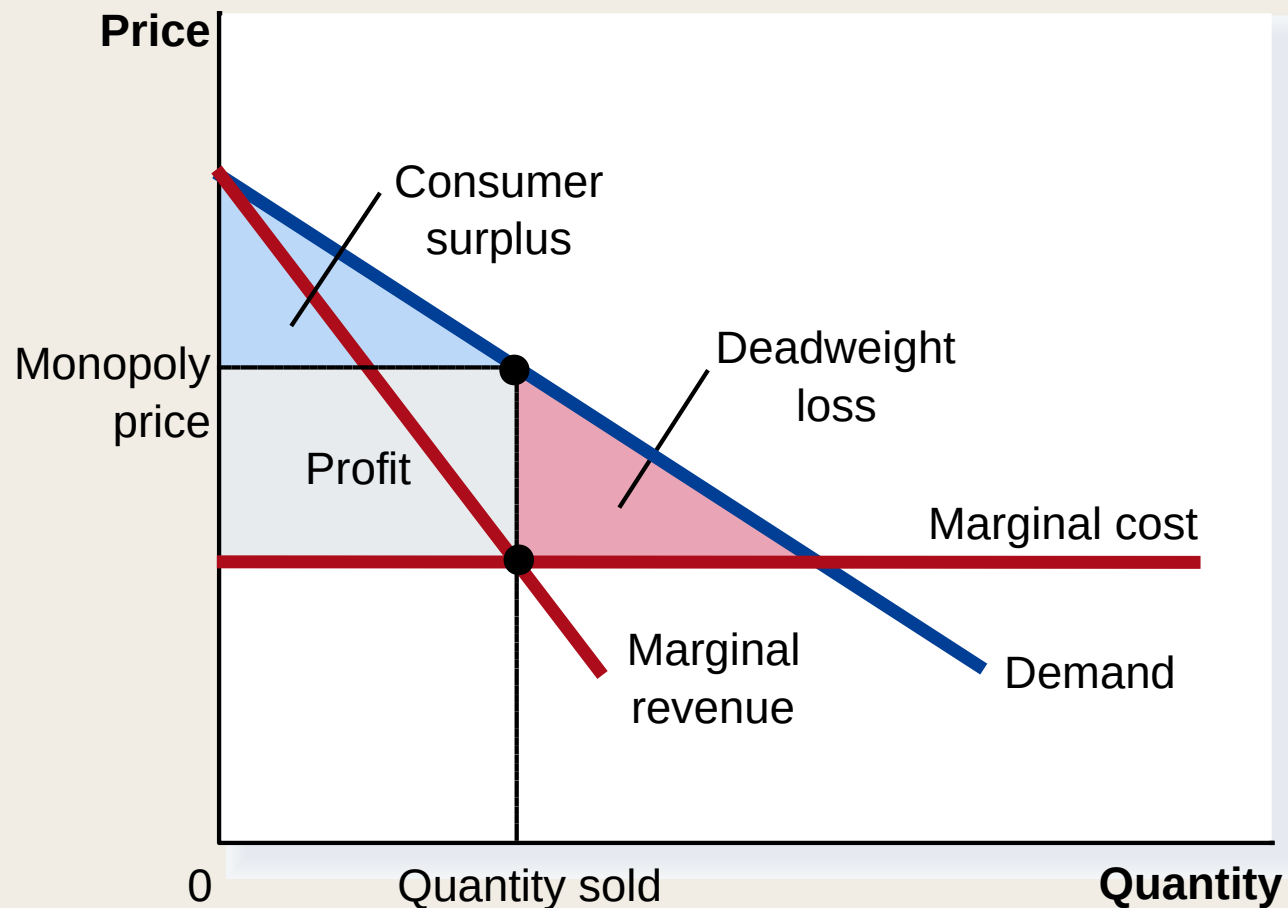
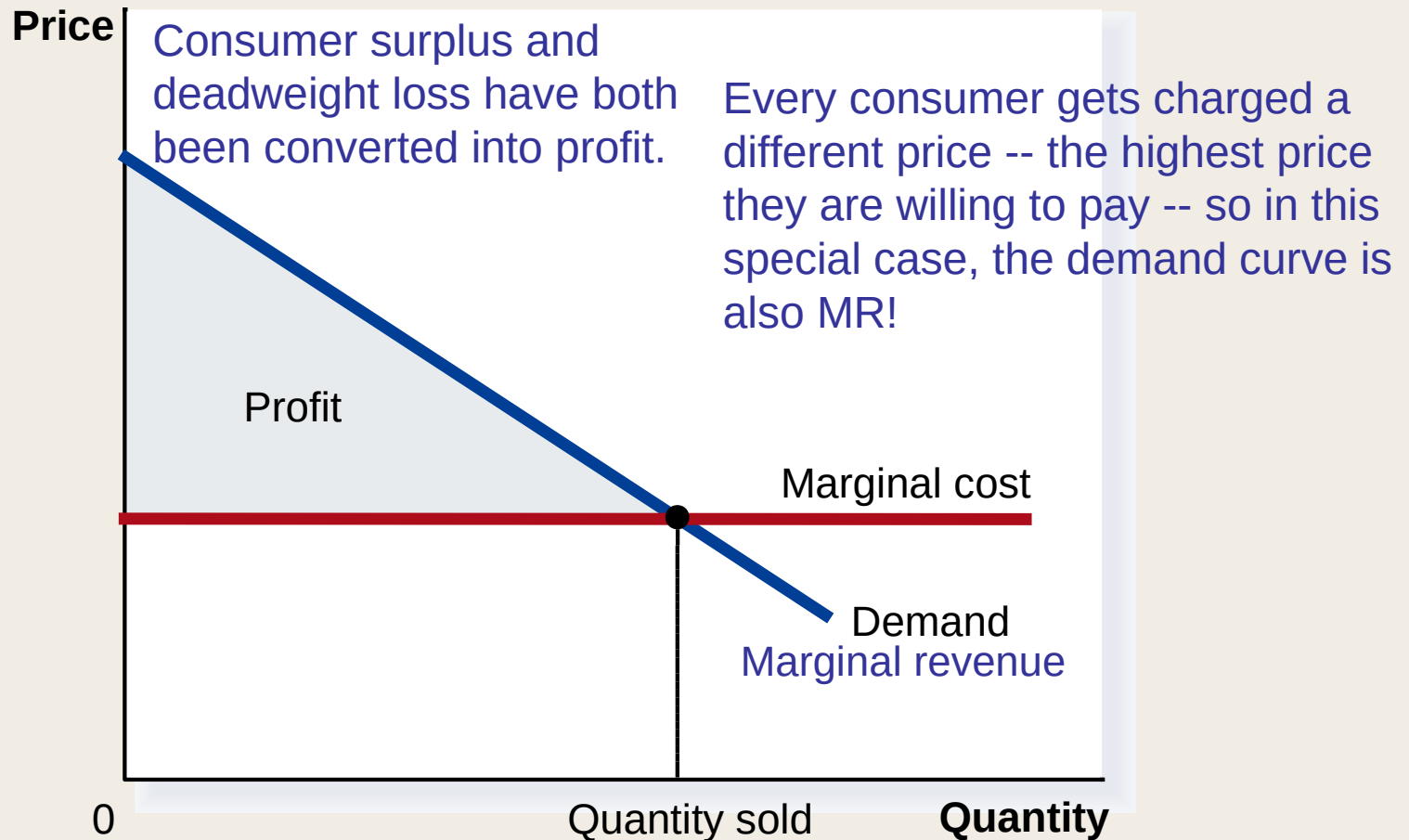


Figure 10 Welfare with and without Price Discrimination

(b) Monopolist with Perfect Price Discrimination



Examples of Price Discrimination

- Movie tickets
- Airline prices
- Discount coupons
- Financial aid
- Quantity discounts



CONCLUSION: THE PREVALENCE OF MONOPOLY

- How prevalent are the problems of monopolies?
 - Monopolies are common.
 - Most firms have some control over their prices because of differentiated products.
 - Firms with substantial monopoly power are rare.
 - Few goods are truly unique.

Table 2 Competition versus Monopoly: A Summary Comparison

	Competition	Monopoly
Similarities		
Goal of firms	Maximize profits	Maximize profits
Rule for maximizing	$MR = MC$	$MR = MC$
Can earn economic profits in the short run?	Yes	Yes
Differences		
Number of firms	Many	One
Marginal revenue	$MR = P$	$MR < P$
Price	$P = MC$	$P > MC$
Produces welfare-maximizing level of output?	Yes	No
Entry in long run?	Yes	No
Can earn economic profits in long run?	No	Yes
Price discrimination possible?	No	Yes

Summary

- A monopoly is a firm that is the sole seller in its market.
- It faces a downward-sloping demand curve for its product.
- A monopoly's marginal revenue is always below the price of its good.

Summary

- Like a competitive firm, a monopoly maximizes profit by producing the quantity at which marginal cost and marginal revenue are equal.
- Unlike a competitive firm, its price exceeds its marginal revenue, so its price exceeds marginal cost.

Summary

- A monopolist's profit-maximizing level of output is below the level that maximizes the sum of consumer and producer surplus.
- A monopoly causes deadweight losses similar to the deadweight losses caused by taxes.

Summary

- Policymakers can respond to the inefficiencies of monopoly behavior with antitrust laws, regulation of prices, or by turning the monopoly into a government-run enterprise.
- If the market failure is deemed small, policymakers may decide to do nothing at all.

Summary

- Monopolists can raise their profits by charging different prices to different buyers based on their willingness to pay.
- Price discrimination can raise economic welfare and lessen deadweight losses.