

Monopoly

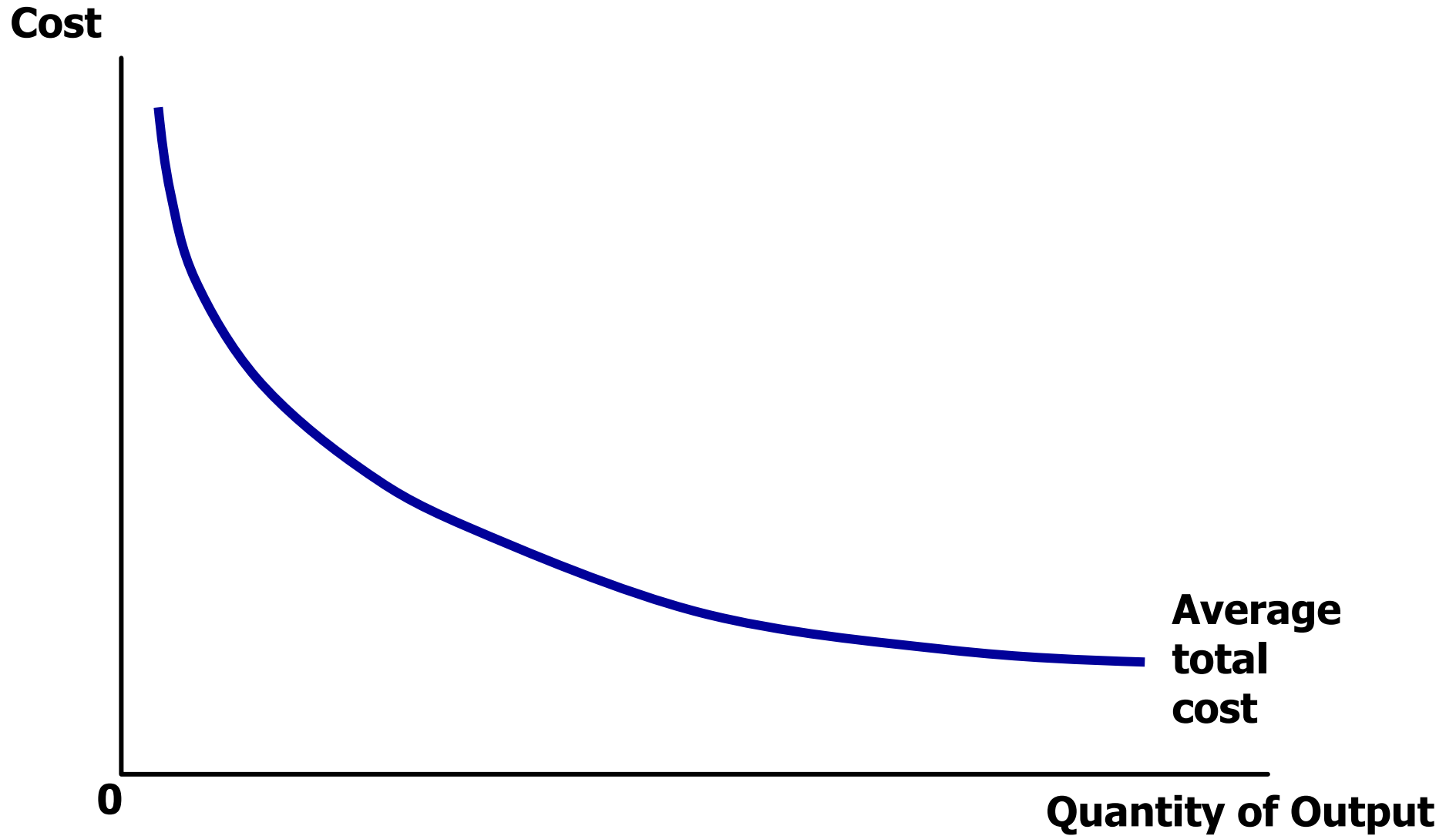
- A firm is considered a monopoly if . . .
 - ... it is the sole seller of its product.
 - ... its product does not have close substitutes.
- The fundamental cause of monopoly is barriers to entry.

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. **Patent** and **copyright laws** are two examples of how government creates a monopoly to serve the public interest.
- Costs of production make a single producer more efficient than a large number of producers. 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.

Economies of Scale as a Cause of Monopoly...



Monopoly versus Competition

Monopoly

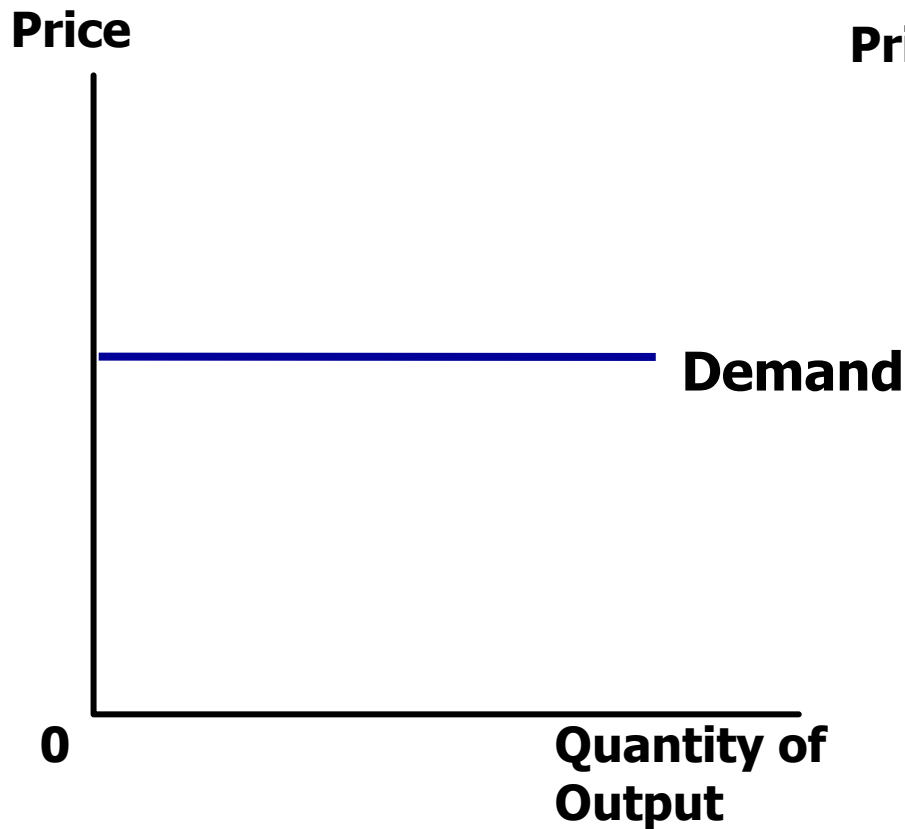
- ◆ Is the sole producer
- ◆ Faces a downward-sloping demand curve
- ◆ Reduces price to increase sales

Competitive Firm

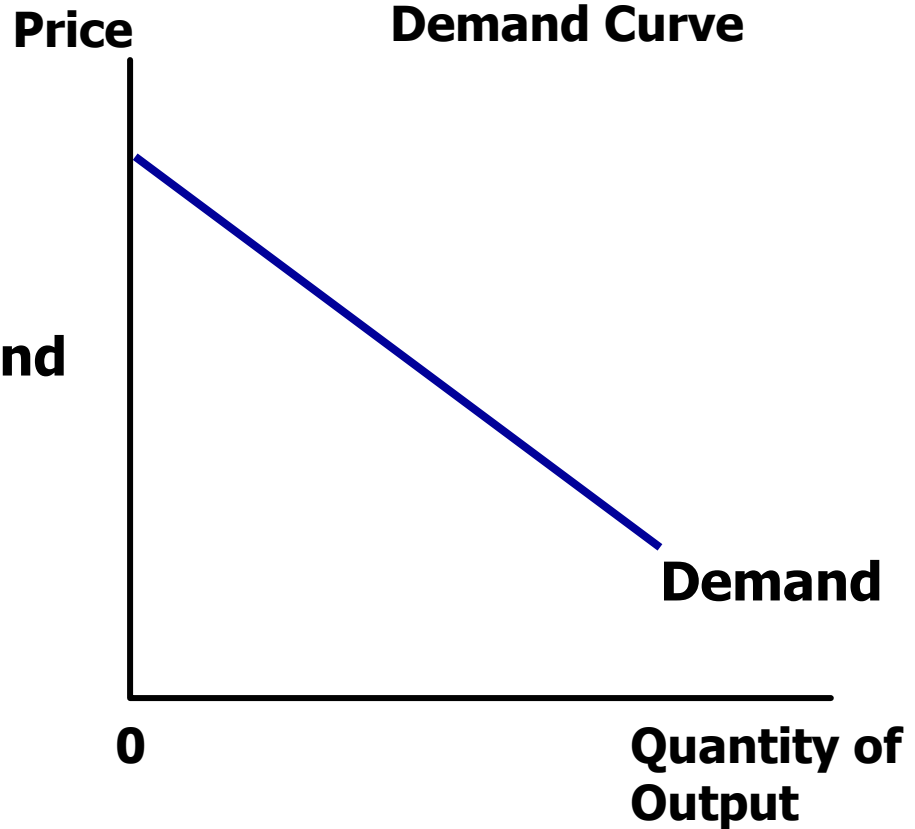
- ◆ Is one of many producers
- ◆ Faces a horizontal (flat) demand curve
- ◆ Is a price taker
- ◆ Sells as much or as little at same price

Demand Curves facing Competitive and Monopoly Firms...

(a) A Competitive Firm faces a flat Demand Curve



(b) A Monopolist's faces a negatively sloped Demand Curve



A Monopoly's Revenue

- Total Revenue

$$P \times Q = TR$$

- Average Revenue

$$TR/Q = AR = P$$

- Marginal Revenue

$$\Delta TR/\Delta Q = MR$$

A Monopoly's Total, Average, and Marginal Revenue

Quantity (Q)	Price (P)	Total Revenue (TR=P×Q)	Average Revenue (AR=TR/Q)	Marginal Revenue (MR= ΔTR / ΔQ)
0	\$11.00	\$0.00		
1	\$10.00	\$10.00	\$10.00	\$10.00
2	\$9.00	\$18.00	\$9.00	\$8.00
3	\$8.00	\$24.00	\$8.00	\$6.00
4	\$7.00	\$28.00	\$7.00	\$4.00
5	\$6.00	\$30.00	\$6.00	\$2.00
6	\$5.00	\$30.00	\$5.00	\$0.00
7	\$4.00	\$28.00	\$4.00	-\$2.00
8	\$3.00	\$24.00	\$3.00	-\$4.00

A Monopoly's Marginal Revenue

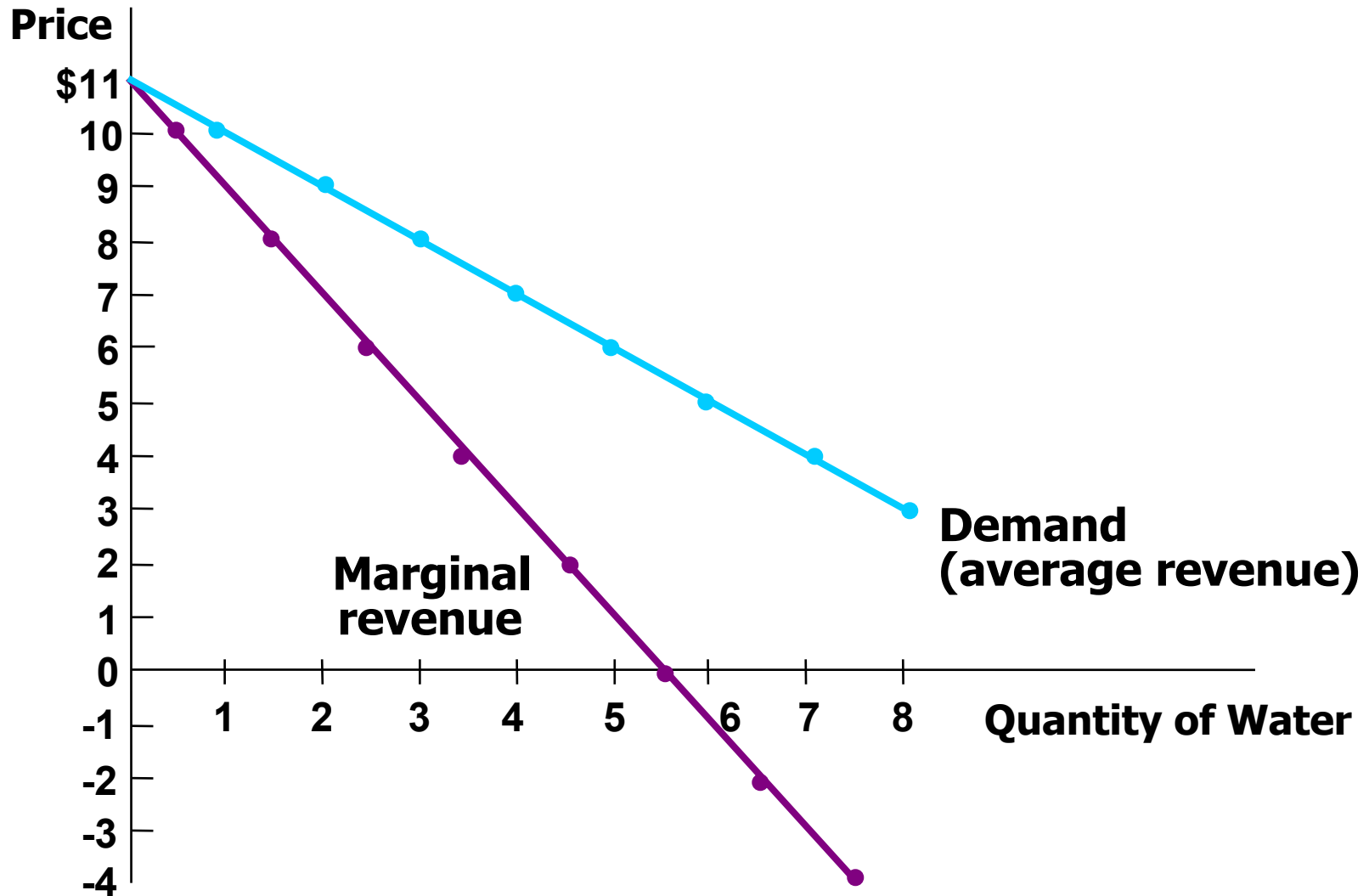
A monopolist's marginal revenue is always less than the price of its good.

- ◆ 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.

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.

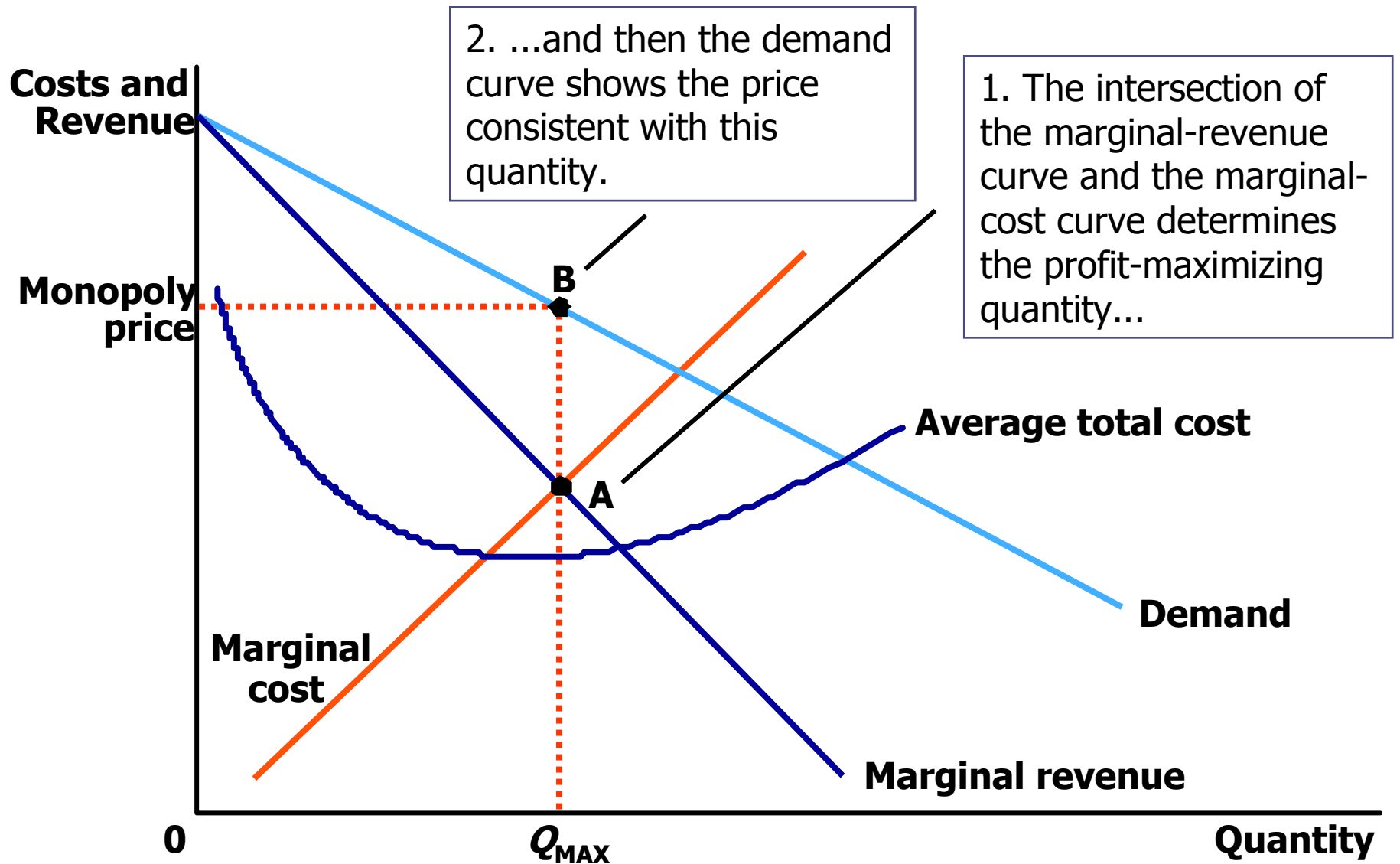
Demand and Marginal Revenue Curves facing a Monopoly...



Profit Maximization of a Monopoly

- 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.

Profit-Maximization for a Monopoly...



Comparing Monopoly and Competition

- For a **competitive** firm, price equals marginal cost.

$$P = MR = MC$$

- For a **monopoly** firm, price exceeds marginal cost.

$$P > MR = MC$$

A Monopoly's Profit

Profit equals total revenue minus total costs.

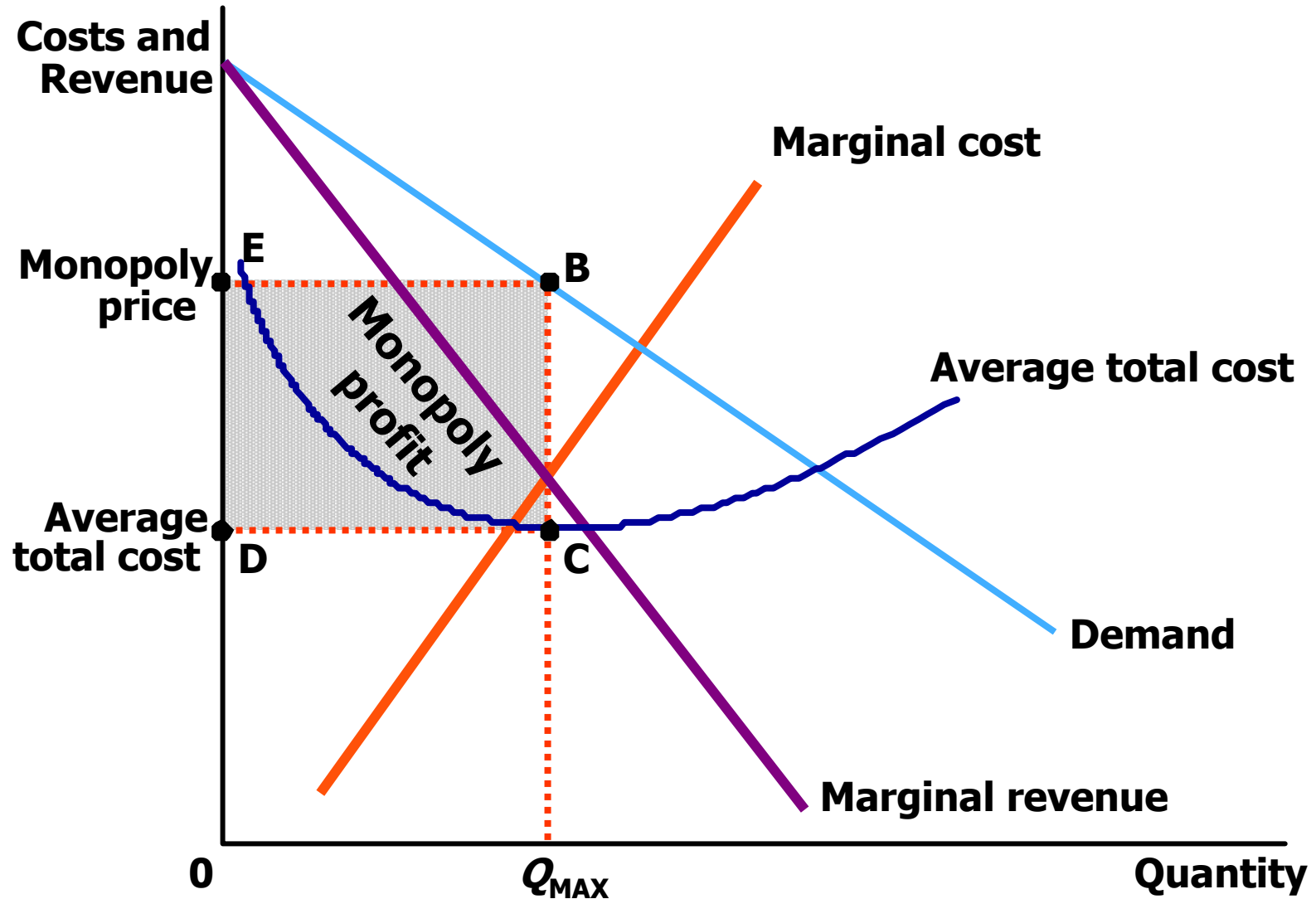
$$\text{Profit} = \text{TR} - \text{TC}$$

$$\text{Profit} = (\text{TR}/Q - \text{TC}/Q) \times Q$$

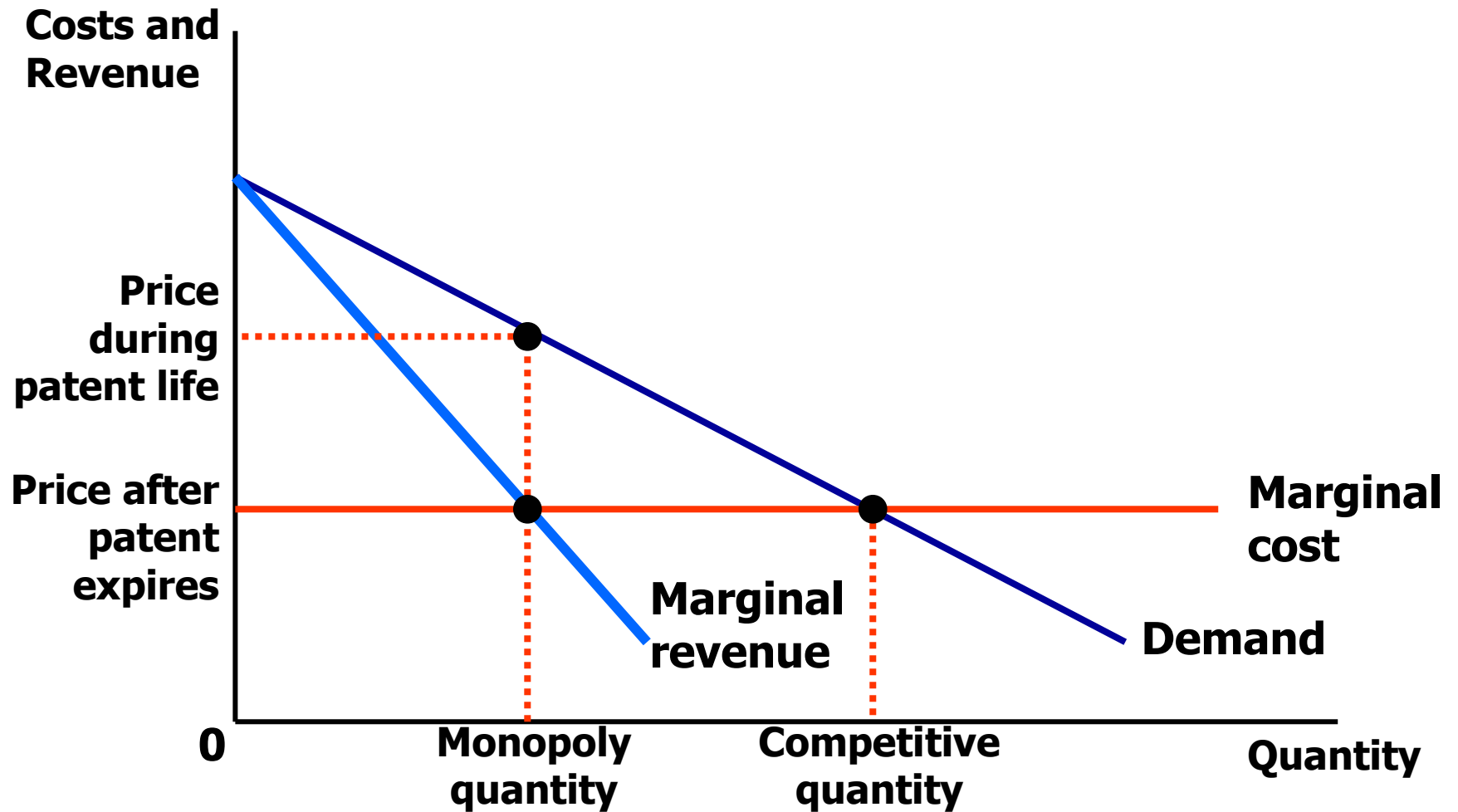
$$\text{Profit} = (P - \text{ATC}) \times Q$$

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

The Monopolist's Profit...



The Market for Drugs...



The Welfare Cost of Monopoly

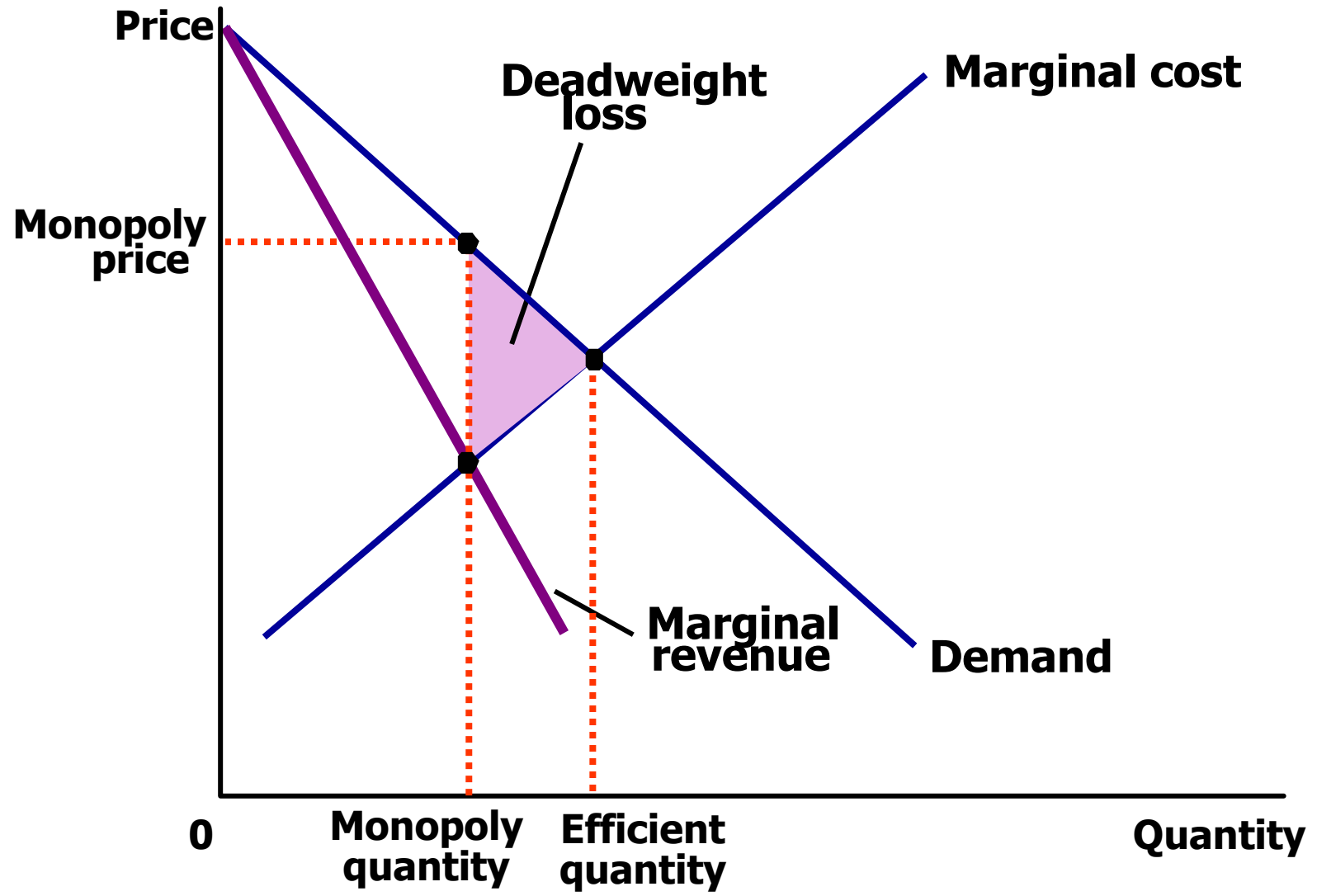
- In contrast to a competitive firm, the monopoly charges a price above the marginal cost.
- From the standpoint of consumers, this high price makes monopoly undesirable.
- However, from the standpoint of the owners of the firm, the high price makes monopoly very desirable.

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.

The Inefficiency of Monopoly...



The Deadweight Loss

- 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 collects the revenue from a tax, whereas a private firm gets the monopoly profit.
- The monopoly is often said to be inefficient because it produces less than the socially efficient quantity of output.

Price Discrimination

Price discrimination is the 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.

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 refers to the situation when the monopolist knows exactly the willingness to pay of each customer and can charge each customer a different price.

Welfare Without Price Discrimination...

