13 MONOPOLY
Monopoly and How It Arises

A **monopoly** is a market:

- That produces **a good or service** for which “no” close substitute exists

  - If a good has a close substitute, even if it is produced by only one firm, that firm **effectively faces competition** from the producers of the substitute.

  - A monopoly sells a good that has no close substitutes.
Barriers to Entry

In which there is one supplier that is protected from competition by a barrier preventing the entry of new firms.

A constraint that protects a firm from potential competitors is called a “barrier to entry”.

Three types of barriers to entry are

- Natural=> only one firms to supplied the whole market
- Ownership=> only one firm owns a main portion of resource
- Legal=> government-granted monopoly i.e. Public franchise, govt. license and patent
Monopoly and How It Arises

Natural Barriers to Entry

Natural barriers to entry create natural monopoly.

A natural monopoly is a market in which economies of scale enable one firm to supply the entire market at the lowest possible cost.

Figure 13.1 illustrates a natural monopoly.
Ownership Barriers to Entry

An ownership barrier to entry occurs if one firm owns a significant portion of a key resource.
Legal Barriers to Entry

Legal barriers to entry create a legal monopoly.

A legal monopoly (government-granted monopoly) is a market in which competition and entry are restricted by the granting of a:

- Public franchise
- Government license
- Patent or copyright
Monopoly and How It Arises

Monopoly Price-Setting Strategies

For a monopoly firm to determine the quantity it sells, it must choose the appropriate price.

There are two types of monopoly price-setting strategies:

A single-price monopoly is a firm that must sell each unit of its output for the same price to all its customers.

Price discrimination is the practice of selling different units of a good or service for different prices. Many firms price discriminate, but not all of them are monopoly firms.
A Single-Price Monopoly’s Output and Price Decision

Price and Marginal Revenue

A monopoly is a price setter, not a price taker like a firm in perfect competition.

The reason is that the demand for the monopoly’s output is the market demand.

To sell a larger output, a monopoly must set a lower price.
Figure 13.2 illustrates the relationship between price and marginal revenue and derives the marginal revenue curve.

Suppose the monopoly sets a price of $16 and sells 2 units.
Now suppose the firm cuts the price to $14 to sell 3 units.

It loses $4 of total revenue on the 2 units it was selling at $16 each.

And it gains $14 of total revenue on the 3rd unit.

So total revenue increases by $10, which is marginal revenue.
A Single-Price Monopoly’s Output and Price Decision

The marginal revenue curve, $MR$, passes through the red dot midway between 2 and 3 units and at $10$.

For a single-price monopoly, marginal revenue is less than price at each level of output.

You can see that $MR < P$ at each quantity.
Marginal Revenue and Elasticity

A single-price monopoly’s marginal revenue is related to the elasticity of demand for its good:

If demand is elastic, a fall in price brings an increase in total revenue.
The increase in revenue from the greater quantity sold outweighs the decrease in revenue from the lower price per unit, and \( MR \) is positive.

\[(TR \rightarrow Q\uparrow) > (TR \rightarrow P\downarrow)\]

As the price falls, total revenue increases.

Elastic = \( \Delta Q > \Delta P \)
A Single-Price Monopoly’s Output and Price Decision

If demand is inelastic, a fall in price brings a decrease in total revenue.

The rise in revenue from the increase in quantity sold is outweighed by the fall in revenue from the lower price per unit, and $MR$ is negative.

**Inelastic = $\Delta Q < \Delta P$**

$$(TR \rightarrow Q \uparrow) < (TR \rightarrow P \downarrow)$$
As the price falls, total revenue decreases.
A Single-Price Monopoly’s Output and Price Decision

If demand is unit elastic, a fall in price does not change total revenue.

The rise in revenue from the greater quantity sold equals the fall in revenue from the lower price per unit, and \( MR = 0 \).

Total revenue is maximized when \( MR = 0 \).
Price and Marginal Revenue for a Monopolist

Demand and Marginal Revenue Curves

Total Revenue Curve
A Single-Price Monopoly’s Output and Price Decision

In Monopoly, Demand Is Always Elastic

A single-price monopoly *never produces* an output at which demand is inelastic.

The monopoly selects the profit-maximizing quantity in the same manner as a competitive firm, where $MR = MC$.

The monopoly sets its *price at the highest level* at which it can *sell the profit-maximizing quantity*. 
### TABLE 13.1  A Monopoly’s Output and Price Decision

<table>
<thead>
<tr>
<th>Price (P) (dollars per haircut)</th>
<th>Quantity demanded (Q) (haircuts per hour)</th>
<th>Total revenue (TR = P × Q) (dollars)</th>
<th>Marginal revenue (MR = ΔTR/ΔQ) (dollars per haircut)</th>
<th>Total cost (TC) (dollars)</th>
<th>Marginal cost (MC = ΔTC/ΔQ) (dollars per haircut)</th>
<th>Profit (TR – TC) (dollars)</th>
</tr>
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<td>0</td>
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</tbody>
</table>
A Single-Price Monopoly’s Output and Price Decision

Figure 13.4 illustrates the profit-maximizing choices of a single-price monopoly.

In part (a), the monopoly produces the quantity that maximizes (or large gap) total revenue minus total cost.
In part (b), the firm produces the output at which $MR = MC$ and sets the price at which it can sell that quantity.

The $ATC$ curve tells us the average total cost. Economic profit is the profit per unit multiplied by the quantity produced—the blue rectangle.
A Single-Price Monopoly’s Output and Price Decision

The monopoly might make an economic profit, even in the long run, because barriers to entry protect the firm from market entry by competitor firms.

But a monopoly that incurs an economic loss might shut down temporarily in the short run or exit the market in the long run.
Comparing Price and Output

Figure 13.5 compares the price and quantity in perfect competition and monopoly.

The market demand curve, $D$, in perfect competition is the demand curve that the firm in monopoly faces.
Compared to perfect competition, monopoly produces a smaller output and charges a higher price.
Efficiency Comparison

Figure 13.6(a) shows the efficiency of perfect competition.

The market demand curve is the marginal social benefit curve, \( MSB \).

The market supply curve is the marginal social cost curve, \( MSC \).

So competitive equilibrium is efficient: \( MSB = MSC \).
Figure 13.6(b) shows the inefficiency of monopoly. Because price exceeds \( MSC = MSB \) exceeds marginal social cost, …

and a deadweight loss arises.
Redistribution of Surpluses

Some of the lost consumer surplus goes to the monopoly as producer surplus.