Ch10. Monopoly
10.1 MONOPOLY

Average Revenue and Marginal Revenue

- **marginal revenue**  Change in revenue resulting from a one-unit increase in output.

To see the relationship among total, average, and marginal revenue, consider a firm facing the following demand curve:

\[ P = 6 - Q: \text{ From the table info, we can draw the AR & MR graphs} \]

<table>
<thead>
<tr>
<th>Price (P)</th>
<th>Quantity (Q)</th>
<th>Total Revenue (R)</th>
<th>Marginal Revenue (MR)</th>
<th>Average Revenue (AR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6</td>
<td>0</td>
<td>$0</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>5</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>8</td>
<td>-1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>-3</td>
<td>1</td>
</tr>
</tbody>
</table>
Average and marginal revenue are shown for the demand curve $P = 6 - Q$.

**MR cuts x-axis into two equal parts**
The Monopolist’s Output Decision

Profit Is Maximized When MR = MC for the firm

\[ Q^* \] is the output level at which MR = MC.

& then \( P = AR \)

At Q1, MR > MC but lower profit made; \( P \) too high for Q1.

At Q2, MR < MC; profit is lost; \( P \) too low for Q2
10.2 MONOPOLY POWER

Definition: Extend to which a firm can charge P above MC without inducing new firms into the market.

This is represented by a sloping demand curve.

The steeper the demand curve, the more the monopoly power.
10.4 THE SOCIAL COSTS OF MONOPOLY POWER

Deadweight Loss from Monopoly Power

Pc is competitive price
Pm is monopoly price

Moving from Pc to Pm consumers lose A and B

Producer gains A but lose C.

So B and C surplus go into waste
Ch11 Price discrimination
Capturing Consumer Surplus

If a monopolist can charge only one price for all customers, that price will be $P^*$ and the quantity produced will be $Q^*$.

Ideally, the firm would like to capture all consumer surplus in A, by charging higher price to consumers willing to pay (WTP) above $P^*$.

The firm would also like to sell to consumers willing to pay prices lower than $P^*$, and capture Triangle B.
First-Degree Price Discrimination

- **first-degree price discrimination**  
  Practice of charging each customer her reservation $P$, 
- **reservation price**  
  $= \text{Max } P \text{ a customer is WTP for a good}$.

**Additional Profit from Perfect First-Degree Price Discrimination**

Because the firm charges each consumer her reservation $P$, it is profitable to expand output to $Q^{**}$ at $P_c$.

**When only a single price, $P^*$, is charged**, the firm’s variable profit is the yellow area between the MR and MC curves.

With perfect price discrimination, this profit expands by the area between AR (demand) and MC (additional blue).
First-Degree Price Discrimination

**Imperfect Price Discrimination**

**In practice:**
- Firms usually don’t know the reservation price of each & every consumer, but sometimes reservation prices can be roughly identified.
- And we get *imperfect* price discrimination - could be based on: Geography, age, occupation, etc

* Study other types of discriminations, eg based on quantities