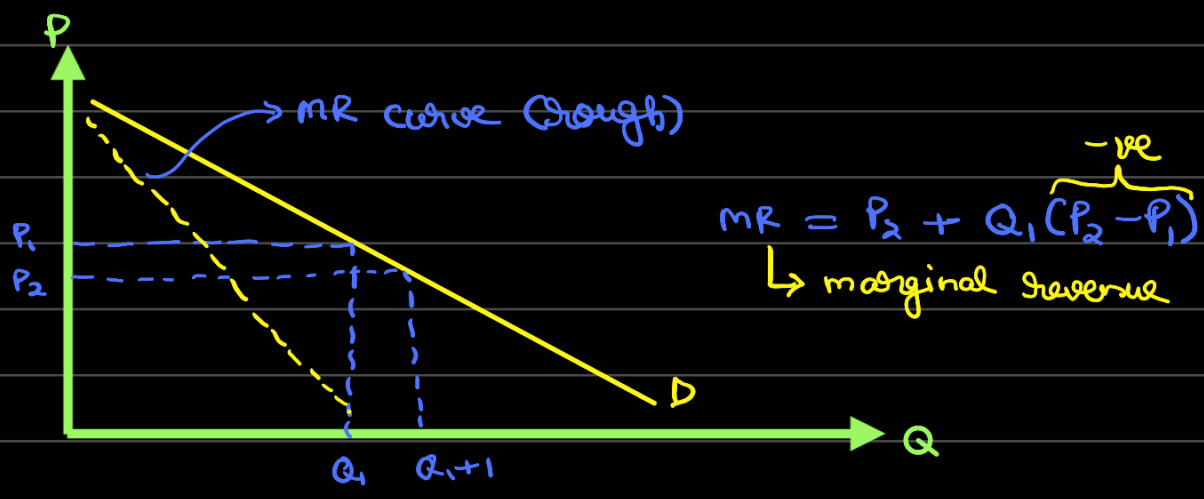
Day - 18

→ monopoly —

- One producer/seller in the market
- Large number of consumers



- monopoly is considered to be evil of the society.
- They actually don't have power to charge any price, they are constrained by the consumers' demand curve.

→ How prices are charged in monopoly?

Profit maximisation.

$$\underset{Q}{\Pi_{max}} = PQ - C(Q)$$

where the inverse demand func^n is $P(Q)$

$$\underset{Q}{\Pi_{max}} = P(Q)\,Q - C(Q)$$

☆ (From graph) $\quad Rev.(Q_1) = P_1 Q_1$

$$Rev.(Q_1+1) = P_2(Q_2+1)$$

$$\Rightarrow MR = P_2(Q_1+1) - P_1 Q_1$$

$$= P_2 + Q_1(P_2 - P_1)$$

$$\max_Q \Pi = P(Q)\,Q - C(Q)$$

$$\Rightarrow \frac{d\Pi}{dQ} = \underbrace{P(Q) + Q\frac{dP(Q)}{dQ}}_{MR} - \frac{dC(Q)}{dQ} = 0$$

(marginal cost)

$$\Rightarrow P(Q)\left[1 + \frac{Q}{P(Q)}\frac{dP(Q)}{dQ}\right] - MC = 0$$

$$\Rightarrow P(Q)\left[1 - \left(\frac{1}{-\frac{dQ}{dP}\times\frac{P}{Q}}\right)\right] = MC$$

(elasticity)

$$\Rightarrow P(Q)\left[1 - \frac{1}{\varepsilon}\right] = MC$$

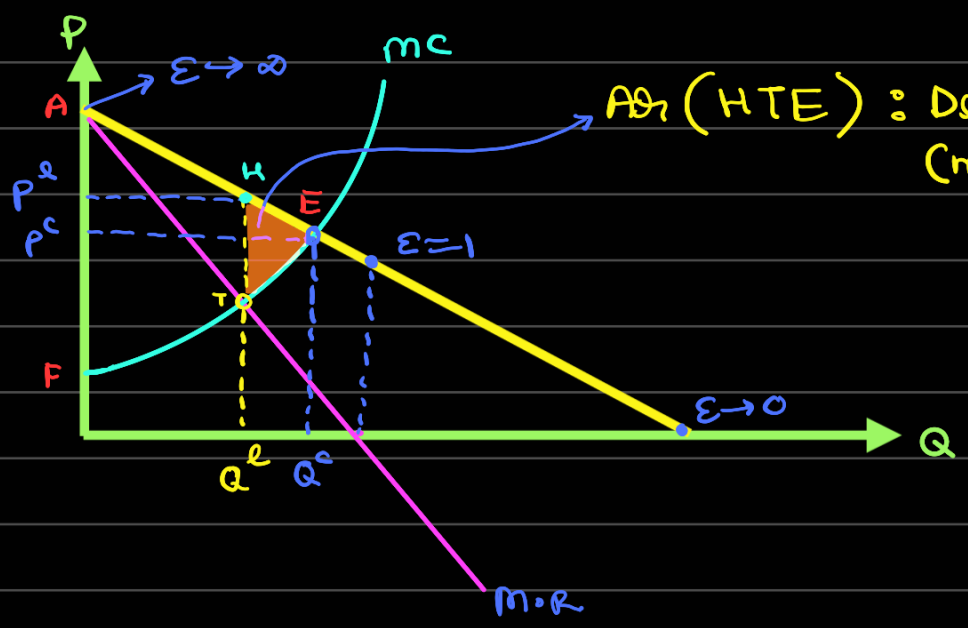
If $MC > 0 \Rightarrow P(Q)\left[1 - \frac{1}{\varepsilon}\right] > 0$

But $P(Q) > 0$ always

$$\Rightarrow 1 - \frac{1}{\varepsilon} > 0$$

$$\Rightarrow \varepsilon > 1$$

Rational profit maximising monopolist will always sell in an elastic market.



☆ No supply curve in monopoly, although driven by MC curve.

☆ Price charged under monopoly > competitive solution

☆ Under perfect competition,

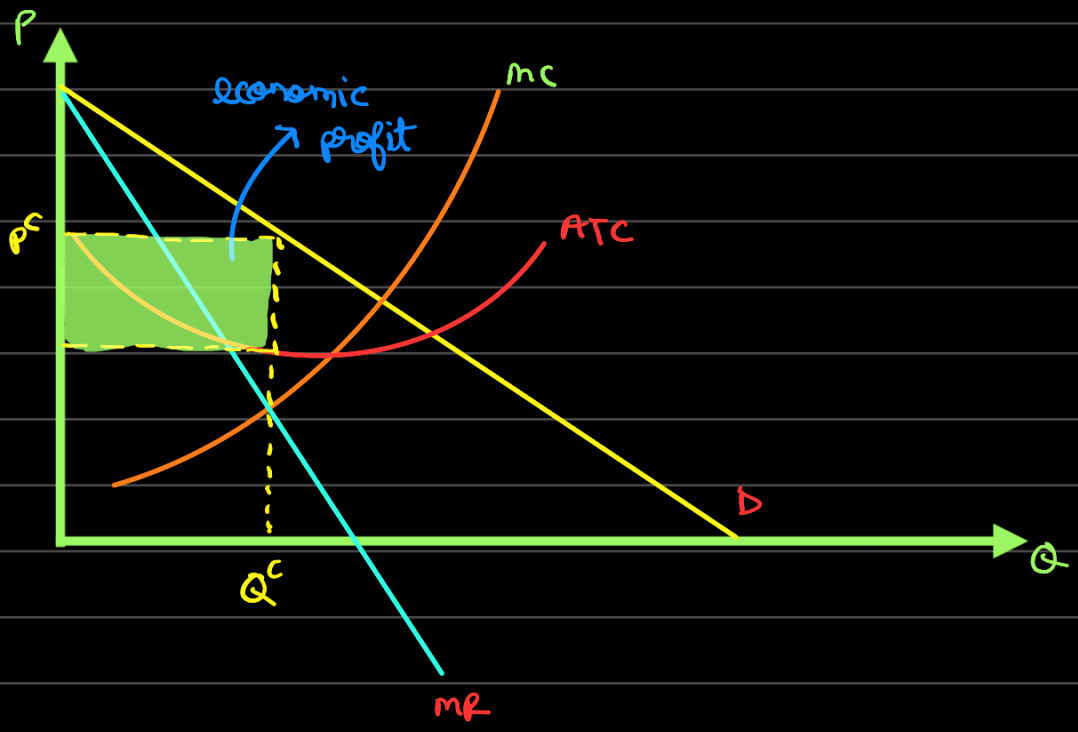
$$\text{welfare} = \underbrace{P^cEA}_{(CS)} + \underbrace{FEP^c}_{(PS)}$$

(CS) ↓ Consumer surplus

(PS) ↓ Producer Surplus

☆ Under monopoly,

$$\text{welfare} = \underbrace{P^mHA}_{(CS)} + \underbrace{FGHP^m}_{(PS)}$$



→ Is monopoly ALWAYS bad?

☆ Natural monopoly

Eg: Utility products
→ Large fixed cost
⇒ AC falling always (AC → Average cost)