

Perfect Competition : (Most competitive market)

- Features :
- ① Infinitely many buyers and infinitely many sellers.
 - ② Sellers are price takers. They do not make prices. They take prices as given.
 \therefore Prices in a perfect competition market are fixed
 $P = \bar{P}$.
 - ③ Goods are identical in nature. That is they are homogeneous. There are perfect substitutes available in the market.
 - ④ There is free entry and free exit.

Reason: In short-run in a perfect competitive market, there is super normal profit $\Rightarrow (TR > TC \Rightarrow \pi > 0)$ \Rightarrow due to this firms enter market freely. With new firms \Rightarrow supply increases
 \therefore supply > demand \Rightarrow Excess Supply. (Demand must \uparrow)
 Due to excess supply \Rightarrow prices will start to decrease to bring back market equilibrium.

ie $D = S$ ✓

\therefore D will \uparrow with \downarrow in price.

Such that TR will fall and TC will increase $\pi < 0$
 $TR = TC$

and when $TR = TC \Rightarrow \pi = 0$ (Normal profit).

To avoid any further loss \Rightarrow firms will exit the market freely.

\therefore In Long-run, in a PC mkt there is normal profit ($\pi = 0$).

∴ What is a pure market? ⇒ Properties ① + ② + ③ + ④ together

⑤ Buyers & sellers have perfect knowledge about each other.

⑥ No transportation cost.

⑦ No government intervention.

⑧ No factor mobility.

What is perfect competition?
All properties from ① to ⑧

defines a perfectly competitive market.

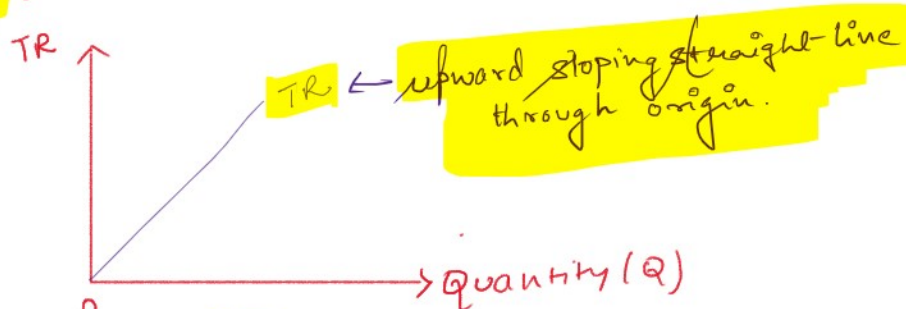
Revenue Curves under Perfect Competition:

① Total Revenue, $TR = P \times Q$ (product of price and quantity)

In perfect competition price is fixed at \bar{P}

∴ $TR = \bar{P} \times Q$ ⇒ Total Revenue varies only with quantity (Q) at a constant rate \bar{P} .

∴ TR curve under perfect competitive mkt is a straight line passing through origin and it looks like as follows:

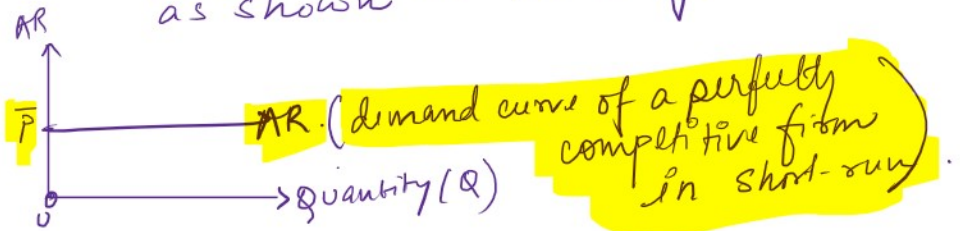


② Average Revenue, $AR = \frac{TR}{Q} = \frac{\bar{P} \times Q}{Q} = \bar{P}$

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∴ AR is fixed at \bar{P} (ie only in a perfectly competitive market)
 ↳ AR is the demand curve.

Since AR is fixed at \bar{P} ∴ demand curve is a horizontal line as shown in the diagram.



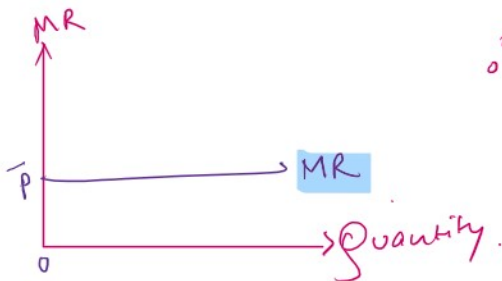
③ Marginal Revenue, $MR = \frac{\text{change in TR}}{\text{change in quantity}}$

ie, $MR = \frac{\Delta TR}{\Delta Q} = \frac{TR_1 - TR_0}{Q_1 - Q_0}$

Now here in perfect competitive market $\Rightarrow TR = \bar{P} \times Q$
 change in TR $\Rightarrow \Delta TR = \bar{P} \Delta Q$

$\Rightarrow \frac{\Delta TR}{\Delta Q} = \bar{P}$

$\Rightarrow MR = \bar{P}$



∴ MR in a perfectly competitive market is fixed at \bar{P} and

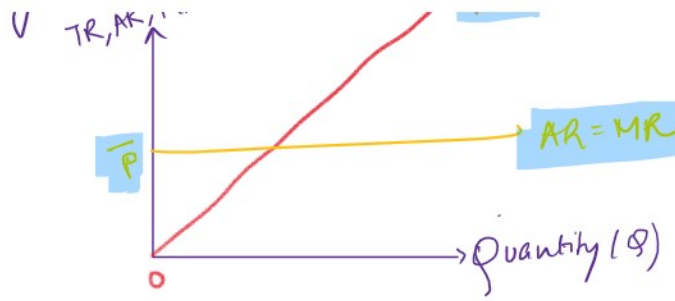
$AR = MR = \bar{P}$ } This result only occurs in a perfectly competitive market!

Let us draw all three curves (TR, AR, MR) in perfectly competitive market, in one diagram:



points to remember

① $MR = \text{slope of } TR = \bar{P}$



- ① $MR = \text{slope of } TR = P$
- ② $AR = MR = P$
- ③ $\text{slope of } AR = \text{slope of } MR = 0$

Cost curves under perfect competition:

① $TC = \text{total cost} = \text{total var cost (TVC)} + \text{total fixed cost (TFC)}$

$AC = \text{Average cost} = \frac{TC}{Q} = \frac{TVC}{Q} + \frac{TFC}{Q}$

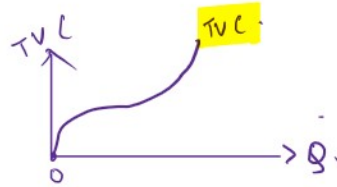
④ $AC = AVC + AFC$

Avg cost = Avg variable cost + Average fixed cost.

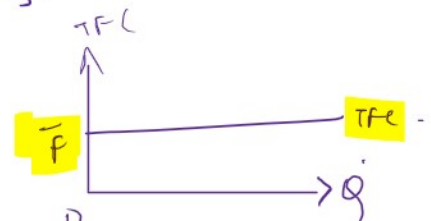
marginal cost, $MC = \frac{ATC}{\Delta Q}$

Let us recall the shapes of 7 cost curves in short-run.

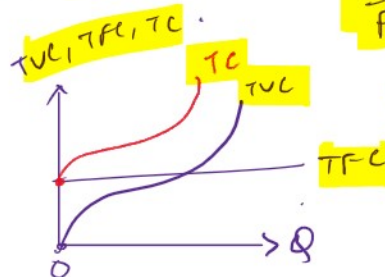
① Total var cost (TVC)

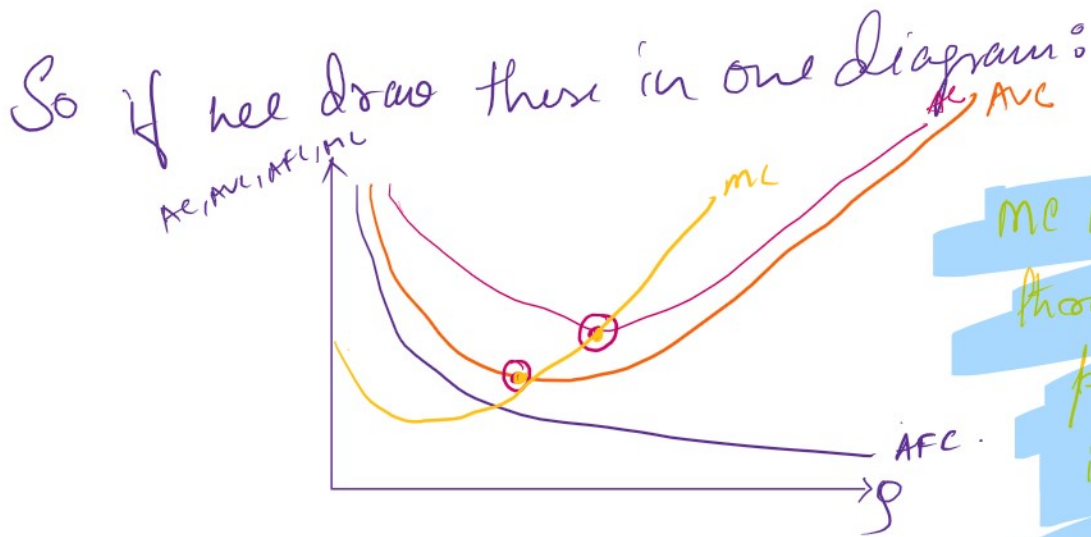
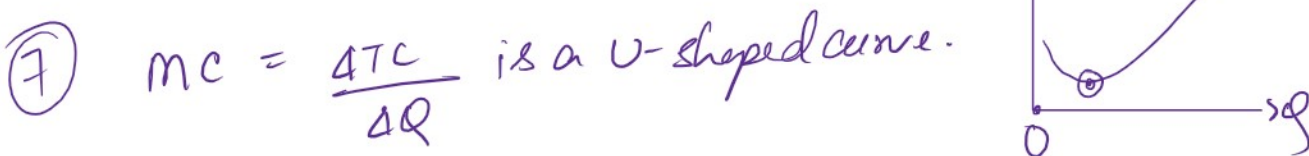
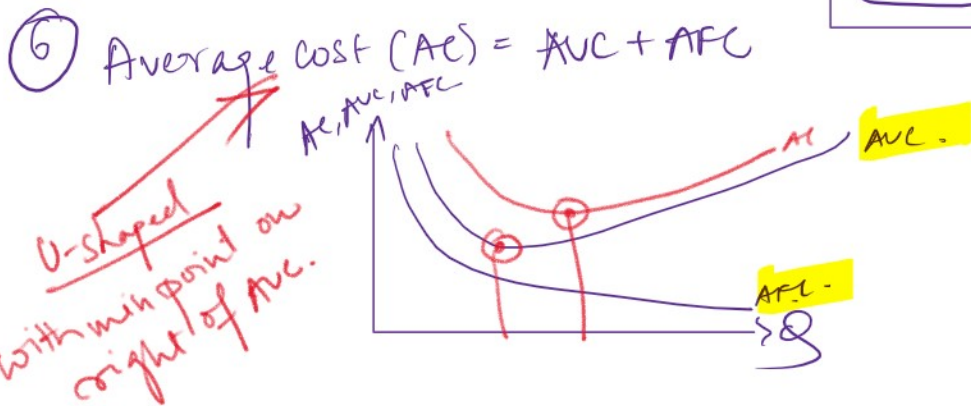
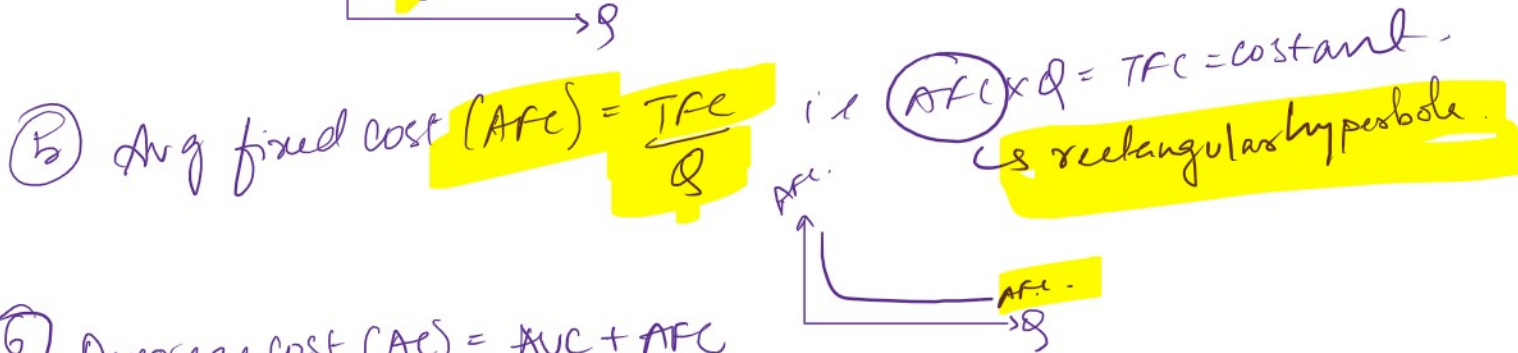
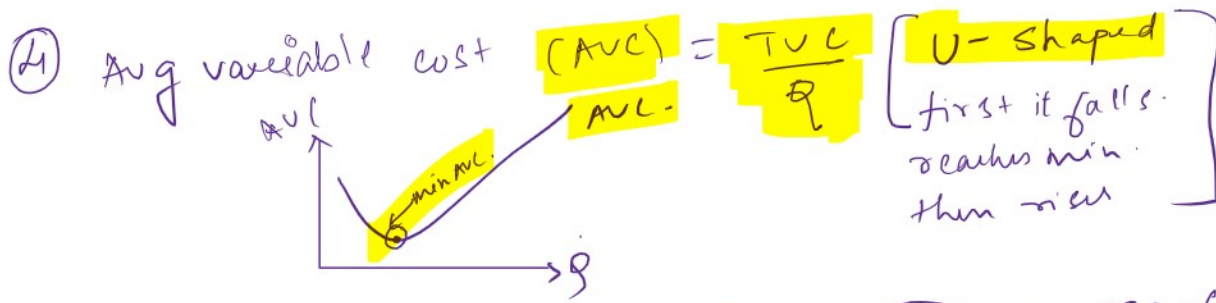


② Total fixed cost (TFC) ⇒ horizontal.



③ Total cost (TC) = TVC + TFC.





MC always passes through the minimum point of AVC and AC i.e. $MC = AC$ at its min point

Profit Maximisation under a perfectly competitive Market.

Profit Maximisation in Competitive Market!

Short-run equilibrium condition of a perfectly competitive market.

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

$$\frac{\Delta \pi}{\Delta Q} = \frac{\Delta TR}{\Delta Q} - \frac{\Delta TC}{\Delta Q}$$

$$\frac{\Delta \pi}{\Delta Q} = MR - MC$$

For profit maximisation $\frac{\Delta \pi}{\Delta Q} = 0$

$$\Rightarrow MR - MC = 0$$
$$\Rightarrow MR = MC$$

$$P = AR = MR = MC$$

in perfect competition
since $MR = AR = P$

∴ The profit maximising condition for a firm is $P = AR = MR = MC$

also called the short-run equilibrium condition under a PC market.

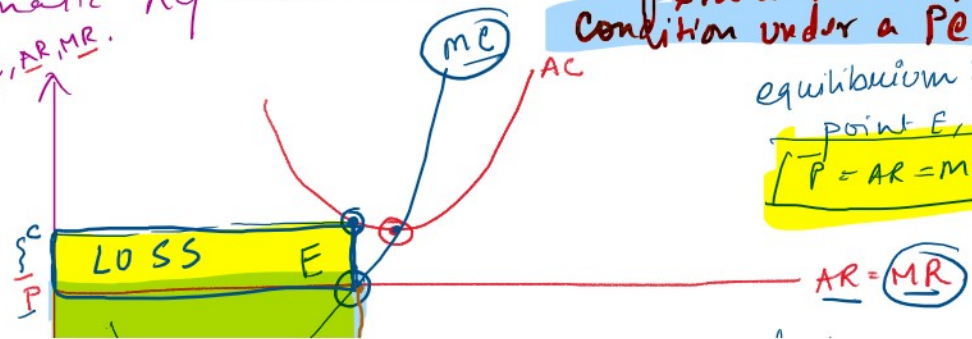
equilibrium is at point E, where $P = AR = MR = MC$

Diagrammatic Representation:

Case 1
Loss

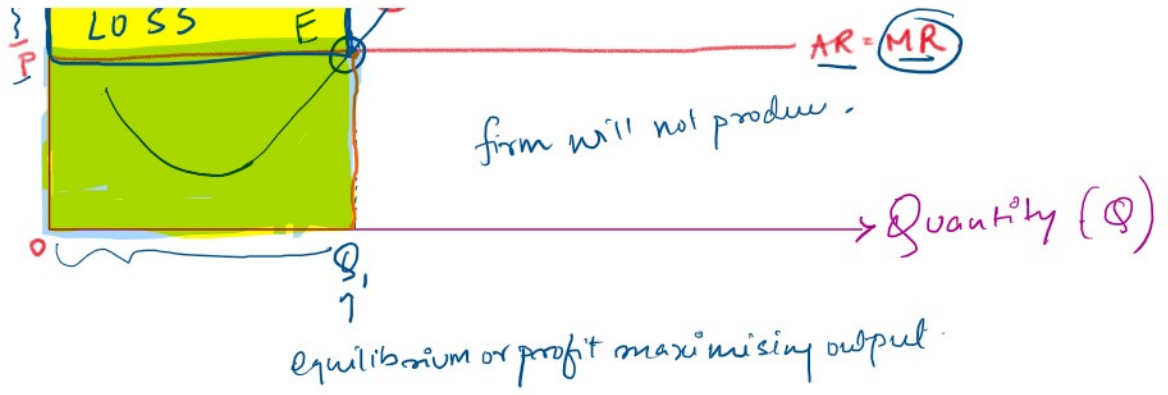
AC, MC, AR, MR

$P = AR = P$
 $MR = MC$



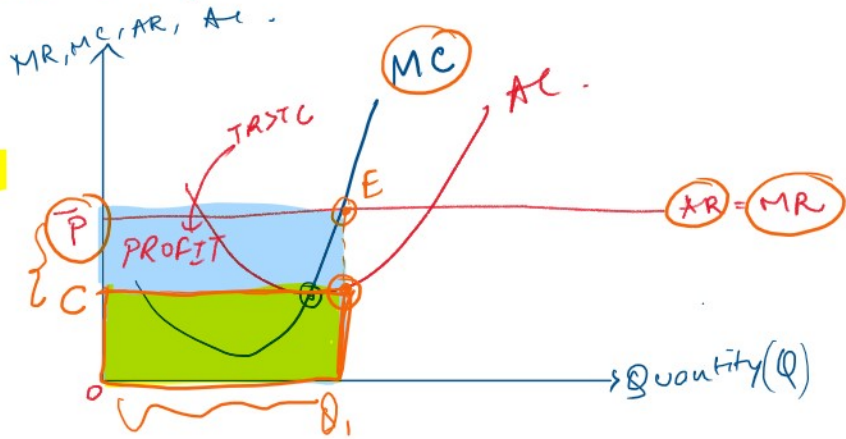
$AR = MR$

$MR = MC$



Case 2 ∴ Supernormal profit in perf comp market.
 $(TR > TC \Rightarrow \pi > 0)$

equil
 At E \Rightarrow where
 $P = MR = AR = MC$



Case 3 ∴ Normal Profit $(TR = TC)$
 $\pi = 0$

