

ME FINAL

Najahat Ali:18K-0363Section 2D

Q1.

- a) → Land → Paper
- Labour → Machine.
- Land
- Capital

b) Sunk Cost is a cost that has already been incurred and cannot be recovered.

Opportunity Costs is the profit lost when one alternative is selected over another

Fixed costs are expenditures that don't change regardless of the level of production, at least not in short term.

c) Economies of Scale are cost advantages reaped by companies when production becomes efficient. Companies can achieve economies of scale by increasing production & lowering costs.

d) Short run: A period of time when atleast one of the factors of production is fixed. (eg. Capital). Time period is 4-6 months
 Long run: Where all factors of production of a firm are variable (eg. firm can buy bigger factors). Time period is greater than 4-6 months

Q2.

$$Q = 100 - 10P + 0.5Y$$

$$P = 7, Y = 50$$

i) Price Elasticity: $\frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$

$$= -10 \times \frac{7}{100 - 10(7) + 0.5(50)}$$

$$= -1.27 \quad (\text{inelastic})$$

ii) Income elasticity = $\frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$

$$= 0.5 \times \frac{50}{100 - 10(7) + 0.5(50)}$$

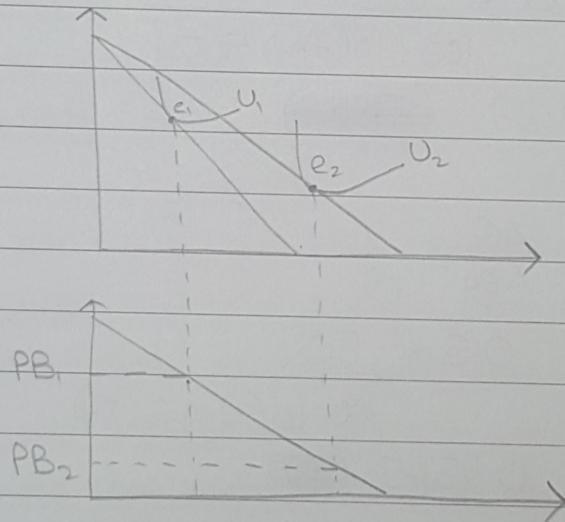
$$= 0.4545 \quad (\text{inelastic})$$

iii) $y = 70$, income elasticity = $\frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$

$$= 0.5 \times \frac{70}{100 - 10(7) + 0.5(70)}$$

$$= 0.5385$$

Q3. a) Normal goods are the ones which have increased demand as income increases. If price of normal good increases, its demand will decrease because the substitute products are now cheaper and the income remains same, the purchasing power of people decreases thus decreasing the demand of good.



b) Implicit Cost: Occurs when Company uses resources belonging to owner such as Capital or inventory. Also referred to as imputed or opportunity cost. Helps in calculating economic profit & does not require outflow of cash.

Explicit Cost: Occurs when company pays for usage of its factors of production. Also referred to as out-of-pocket costs. Helps in calculating accounting & economic costs. Requires outflow of cash from the entity.

Marginal Cost: It is the additional cost incurred in the production of one or more unit of a good or service. Marginal costs are variable costs consisting of labour & material cost, plus an estimated portion of fixed cost.

Marginal Product: It refers to the extra output gained by adding one unit of labour; all other inputs are held constant so technology and efficiency of factory stays same.

Law of Diminishing Returns: It is decrease in marginal output of a production process as the amount of single factor of production is incrementally increased, while amount of all other factors remain same.

Average Variable Cost: A firm's variable costs divided by the quantity of output produced. Variable Costs vary with the output level.

$$AVC = \frac{TVC}{Q}$$

(variable cost)
(quantity)

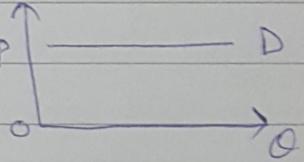
PERCENTAGE

(Q4. a) Assumptions:

- 1- Large number but small size of buyers and sellers
- 2- Homogeneous Products
- 3- Perfect Knowledge
- 4- Free entry & exit of firms
- 5- Free from checks (without govt intervention)
- 6- Perfect mobility
- 7- Lack of transport cost
- 8- Lack of usage cost
- 9- Lack of selling cost
- 10- Firms are price takers
- 11- Demand is perfectly elastic

$$P = AR = MR = D$$

where $AR = TR/Q$ & $MR = \Delta TR/\Delta Q$

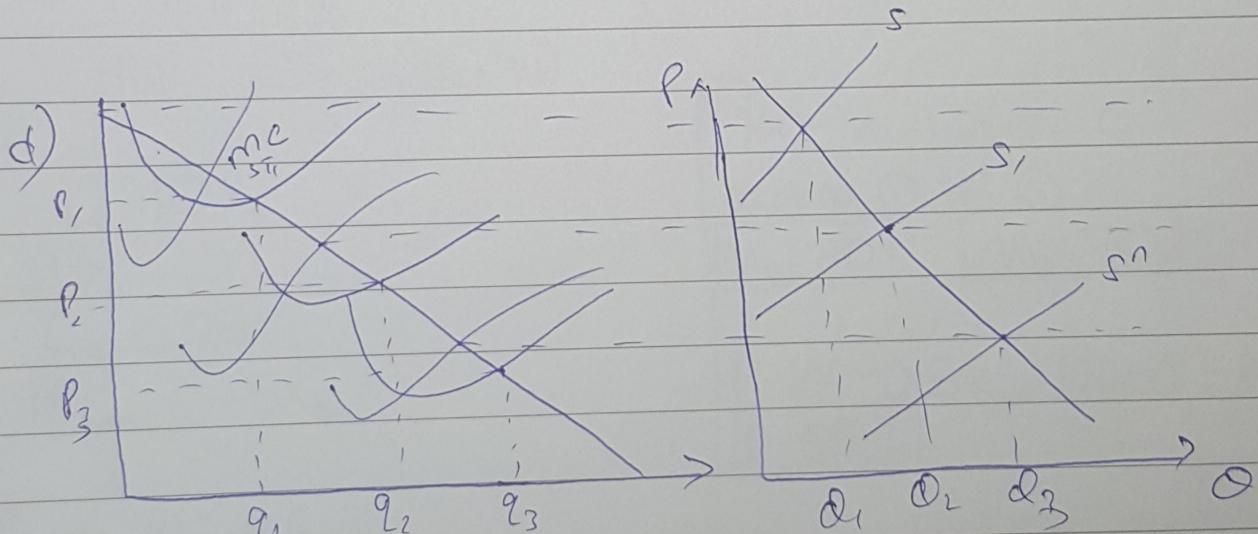


b) Applications:

- 1- Agricultural Markets
- 2- Foreign Exchange markets
- 3- Stock Exchange
- 4- Communication networks
- 5- Online Shoppings & internet related industries

c) If a firm is producing at a level where marginal revenue is greater than marginal cost, then by producing one unit more the firm can gain more revenue than it loses in cost and thus he makes marginal profit and ~~it is true up to the point that~~ $MR=MC$

If a firm ^{is} past that point then ~~it~~ marginal revenue is less than marginal cost. This means the firm is losing profit with each additional unit of output and should produce less.



Q5.

$$a) X = 200 - 2p \quad P = 100 - 0.5n$$

We need to find maximum profit when marginal revenue is equal to marginal cost.

$$C_a = 10X_a \quad C_b = 0.25X_b$$

$$Tc = C_a + C_b = 10X_a + 0.25X_b^2$$

$$TR = P_x X = (100 - 0.5n)(n)$$

$$TR = 100n - 0.5n^2$$

$$X = n_a + n_b$$

$$M.R = 100 - X$$

$$M.R = 100 - (n_a + n_b)$$

$$C_a = 10X_a$$

$$MC_a = 10$$

$$C_b = 0.25n_b$$

$$MC_b = 0.5X_b$$

Equate $MC = MR$

$$10 = 100 - (n_a + n_b) \rightarrow \text{eq } i$$

$$0.5n_b = 100 - (n_a + n_b) \rightarrow \text{eq } ii$$

①

$$100 - 10 - (n_a + n_b) = 0$$

$$n_a = 90 - n_b$$

$$\text{eq } i \\ 100 - n_a - 1.25n_b = 0$$

equating ① and ②

$$n_a = 70$$

$$n_b = 70$$

$$P = 100 - 0.5n = 100 - 0.5(n_a + n_b)$$

$$P = 55$$

$$TR = 100(70 + 20) - 0.5(70 + 20)^2$$

$$= 4950$$

$$TC = 10(20) + 0.25(20)^2$$

$$TC = 800$$

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

$$\text{Profit} = 4150 \text{ unit}$$

PER312.

$$b) x = 50 - 0.5p$$

$$x_1 = 32 - 0.4p_1$$

$$x_2 = 18 - 0.1p_2$$

$$x = x_1 + x_2$$

$$C = C_a + C_b$$

$$\boxed{x_1 = 13.12}$$

$$P_1 = 47.075$$

$$P_2 = 97$$

$$\text{Profit} = R_1 + R_2 - C$$

$$\boxed{\text{Profit} = 1276.1}$$

$$MR = MG$$

$$x_1 = 32 - 0.4p_1$$

$$P_1 = \cancel{80} - 2.5u_1$$

$$x_2 = 18 - 0.1p_2$$

$$P_2 = 180 - 10x_2$$

$$MC = 10 + 0.5u_2$$

$$MR_1 = MC \quad -\textcircled{1}$$

$$MR_2 = MC \quad -\textcircled{2}$$

$$80 - 5u_1 = 10 + 0.5u_2$$

$$180 - 20u_2 = 10 + 0.5u_1$$

$$\boxed{u_2 = 8.3}$$

REBELZ.