Elasticity of Demand

$Ep = \infty$

$Ep > 1$

$Ep = 1$

$Ep < 1$

$Ep = 0$

Total Expenditure & Elasticity of Demand

Price

$Ed > 1$

$Ed = 1$

$Ed < 1$

Total Expenditure
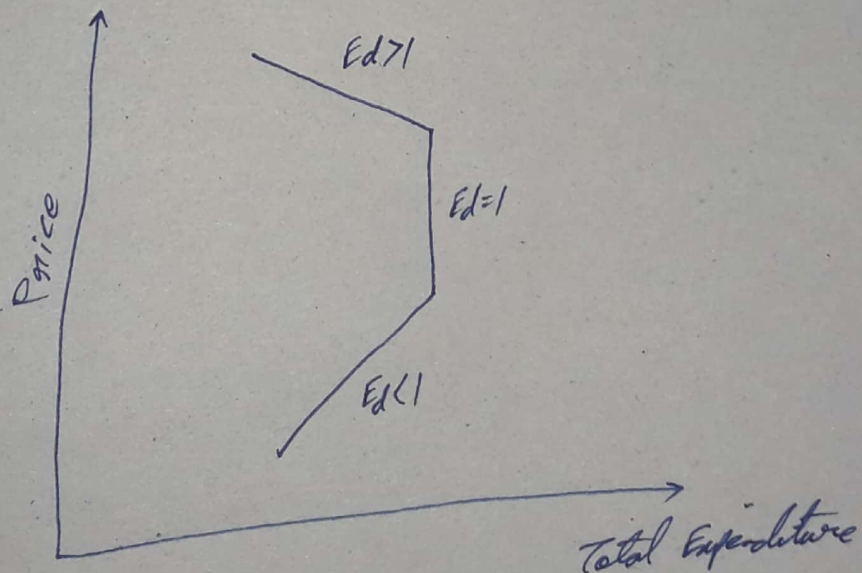
Production

Law of return to Factor (Short Run)

Phase I   Phase II   : Phase III

Max   TP

AP = MP

AP

units of variable factor

MP
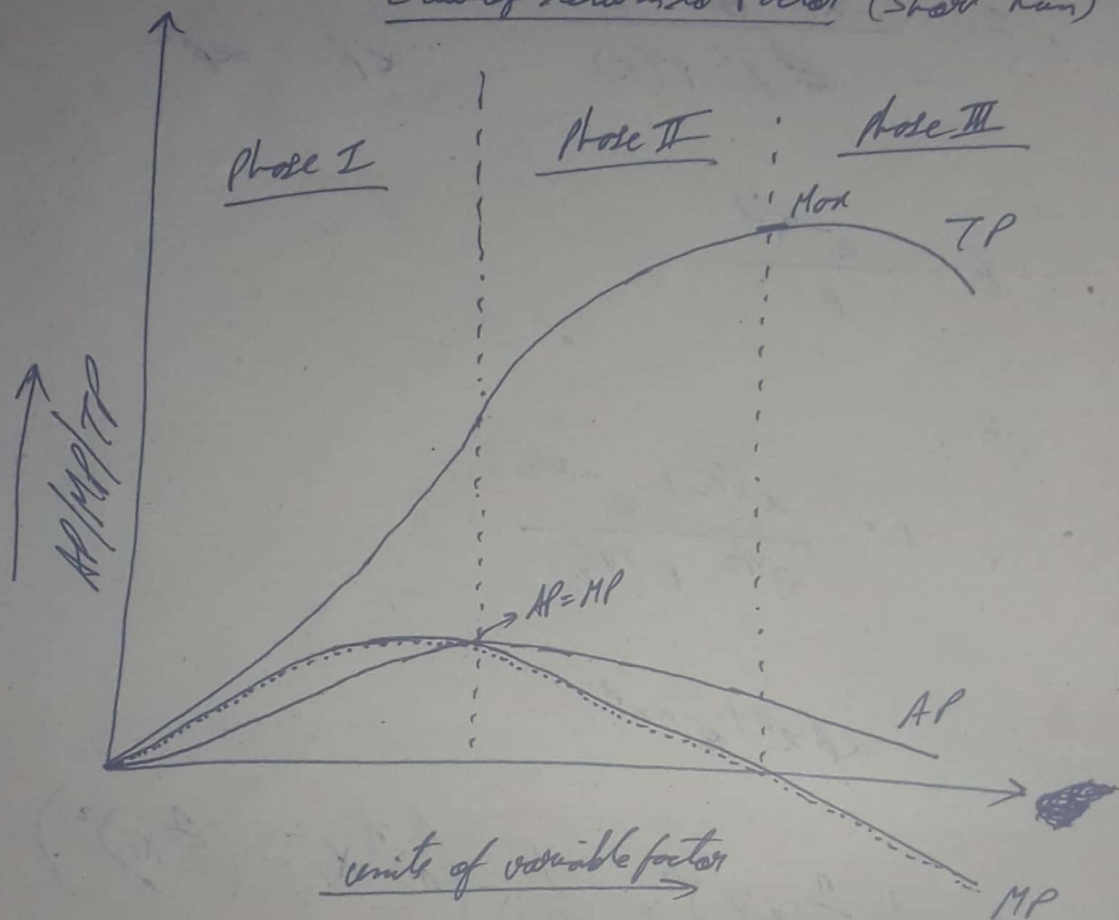
Total prod^n = $TP = AP + MP$

Avg Prod^n = $AP = TP \div$ units of var factor
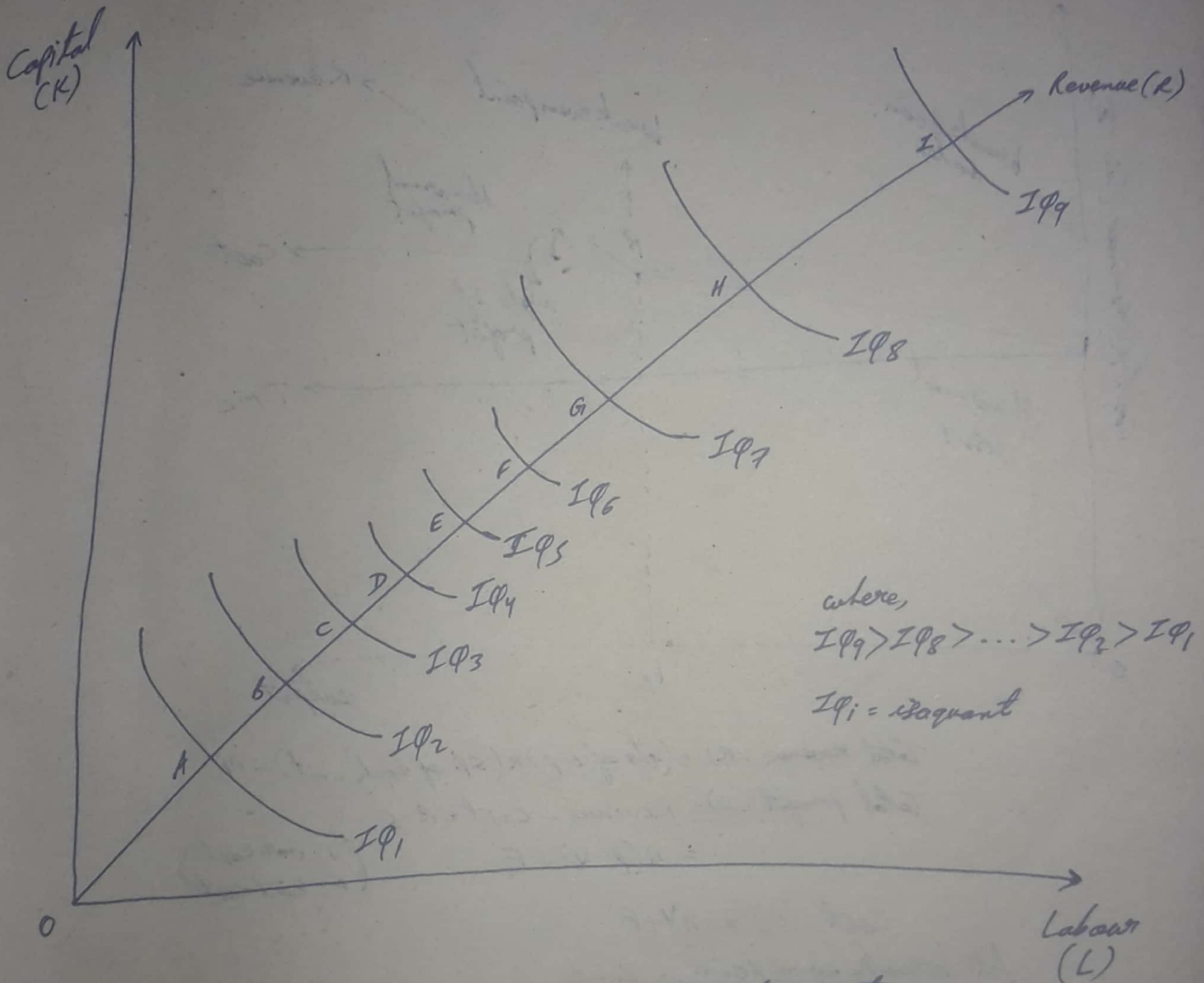
Marginal Prod^n = $MP_n = TP_n - TP_{n-1}$

phase – I : increasing return to factor
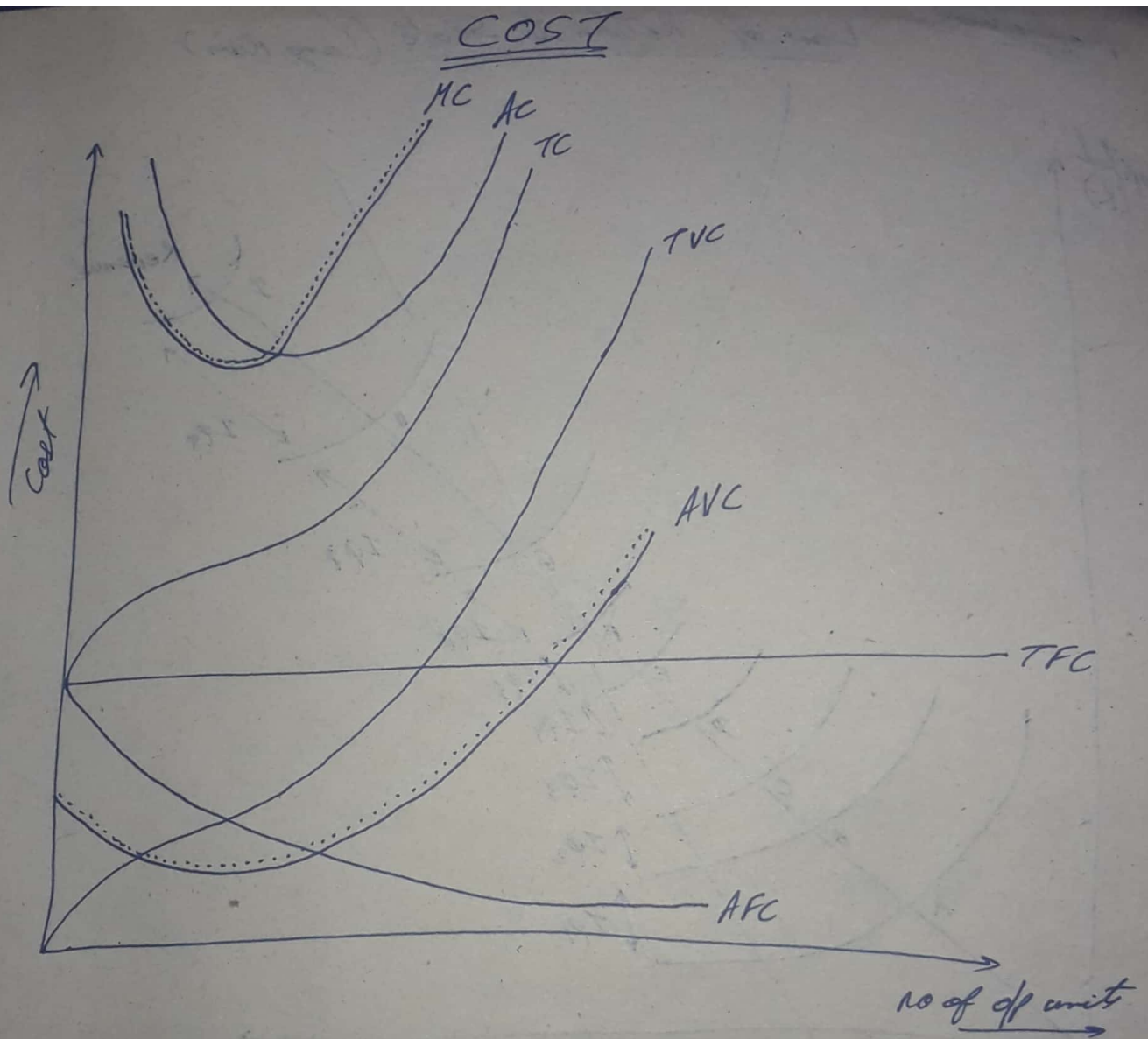
phase – II : diminishing return to factor

phase – III : negative return to factor

Law of Return to Scale (Long Run)

Production

Capital (K)

- Revenue (R)
- I
- IQ9
- H
- IQ8
- G
- IQ7
- F
- IQ6
- E
- IQ5
- D
- IQ4
- c
- IQ3
- b
- IQ2
- A
- IQ1

Labour (L)

where,
$$IQ_9 > IQ_8 > \ldots > IQ_2 > IQ_1$$
$$IQ_i = \text{isoquant}$$

increasing return   diminishing return

$$OA > AB > BC > CD = DE = EF < FG < GH < HI$$

constant return

COST

where,

Total fixed cost = TFC = TC - TVC

Total var. cost = TVC = TC - TFC

Total cost = TC = TVC + TFC

Marginal cost = $MC_n = TC_n - TC_{n-1}$

Avg Fixed cost = AFC = TFC ÷ o/p

Avg var. cost = AVC = TVC ÷ o/p

Avg cost = AC = TC ÷ o/p

Break-Even
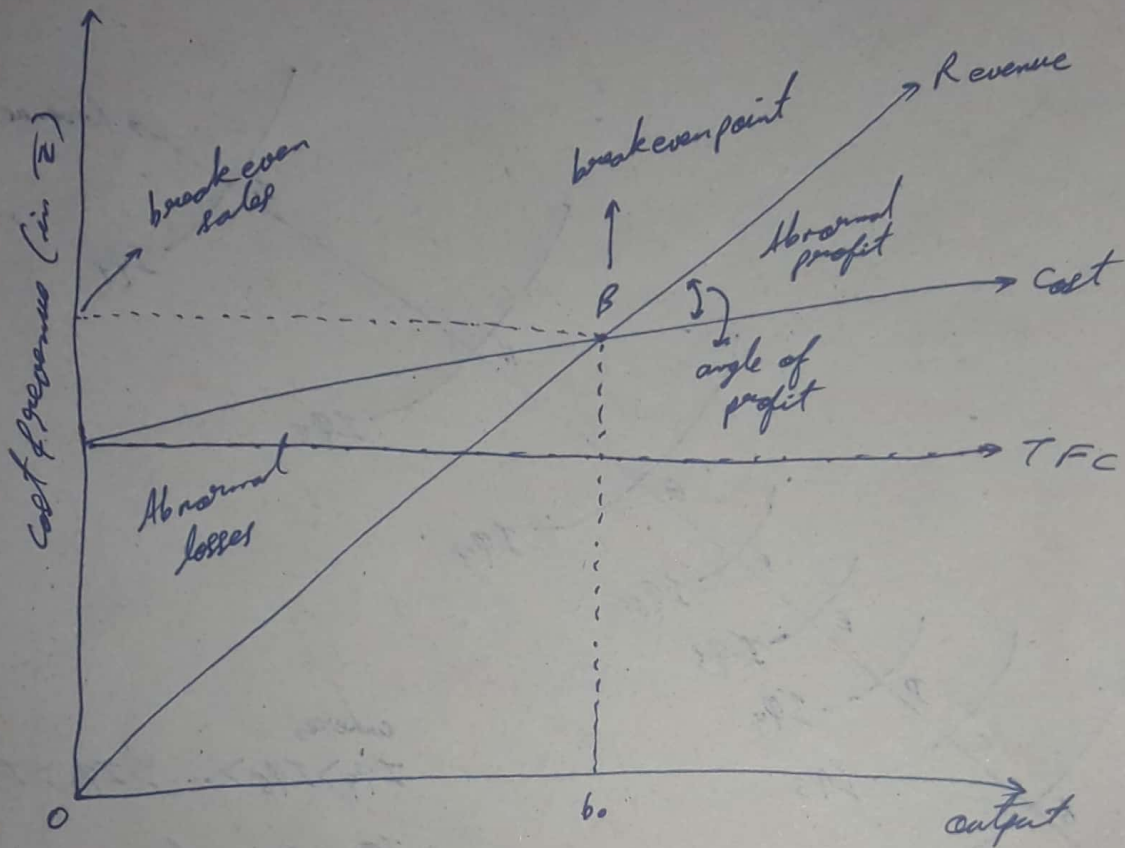
Total revenue $(R) = (\text{qty of } o/p) \times (\text{s.p. of each unit}) = np$

Total profit $(Z) = \text{Revenue} - \text{Cost} = R - C$

$$= n(p-V) - F \qquad \begin{pmatrix} V: \text{var. cost} \\ F: \text{fixed cost} \end{pmatrix}$$

Cost $(C) = nV + F$

At break even point, $Z = 0$

$$n = b_o = \frac{F}{P-V}$$

Contribution $= P - V$

break even sales $= b_o p = \frac{pF}{P-V} = \frac{F}{1 - V/p}$

margin of Safety $=$ actual sales $-$ break even sales

$$= \frac{\text{profit} \times \text{sales}}{\text{contribution}}$$

where profit $=$ contribution $-$ Fixed cost