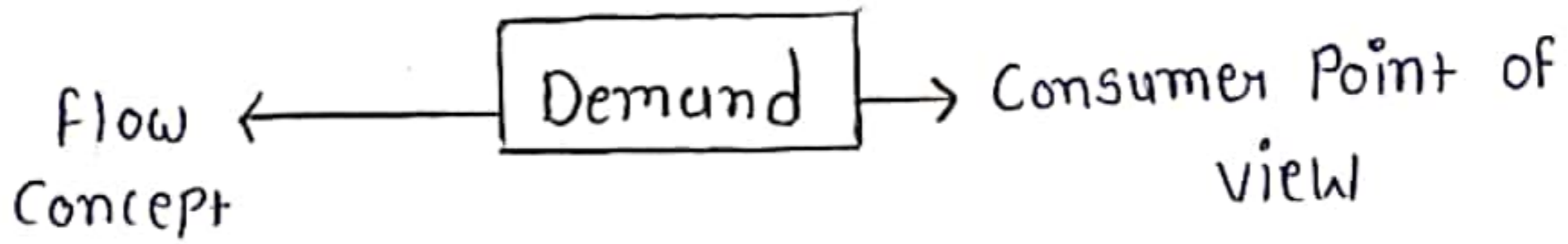
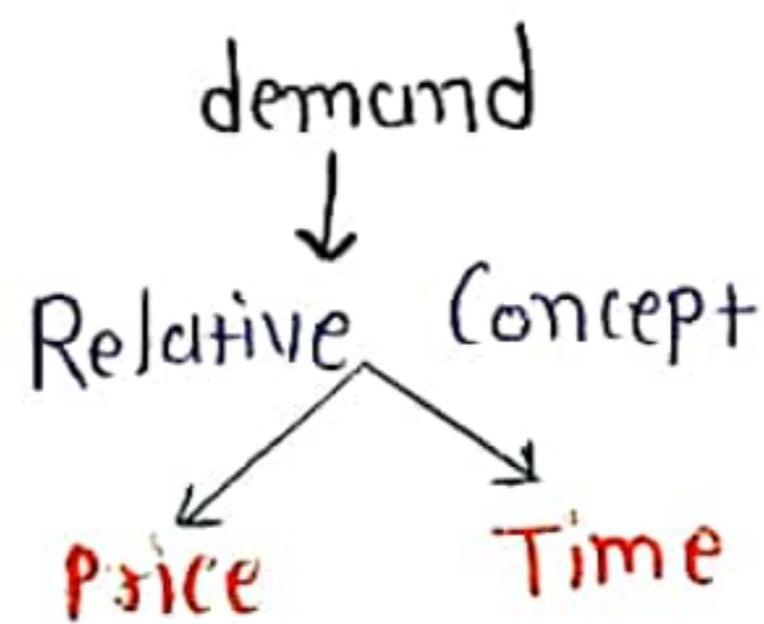


Ch. 2 Theory of Demand and Supply ①

Unit: 1 law of demand and elasticity of demand



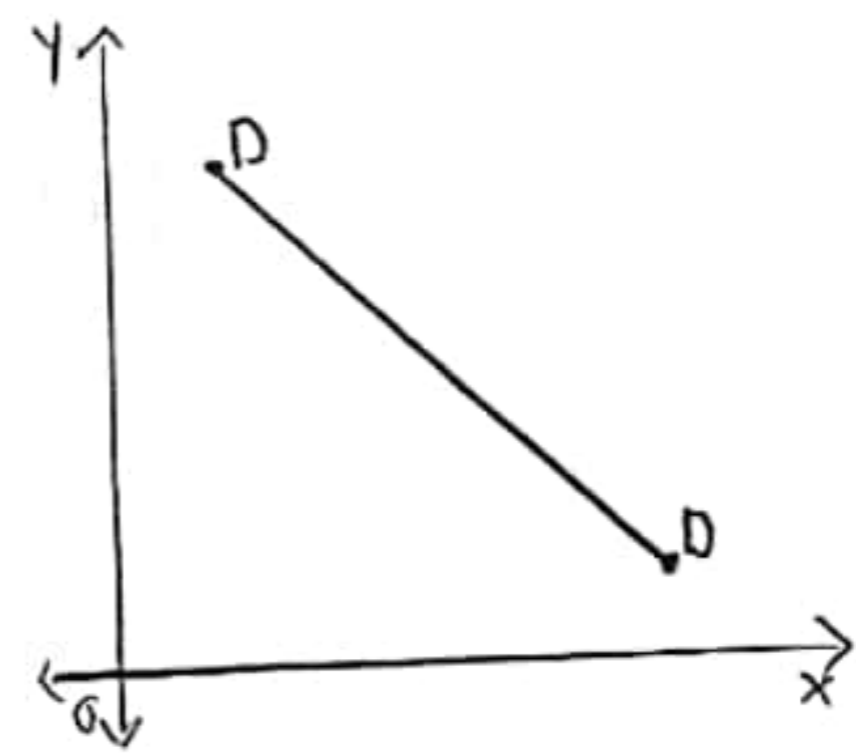
demand = desire + ability to purchase + willingness



a commodity

| Price | Qty demand |
|-------|------------|
| ↑ | ↓ |
| ↓ | ↑ |

Inverse relation



[downward slope / negative slope] curve

→ demand refers to ~~the~~ quantity of goods and services that consumers are willing and able to purchase at different price during period of time.

Factors affecting demand [determines]

(1) Price of a commodity:

↑ ↓ (Qty demand) (Inverse relation)

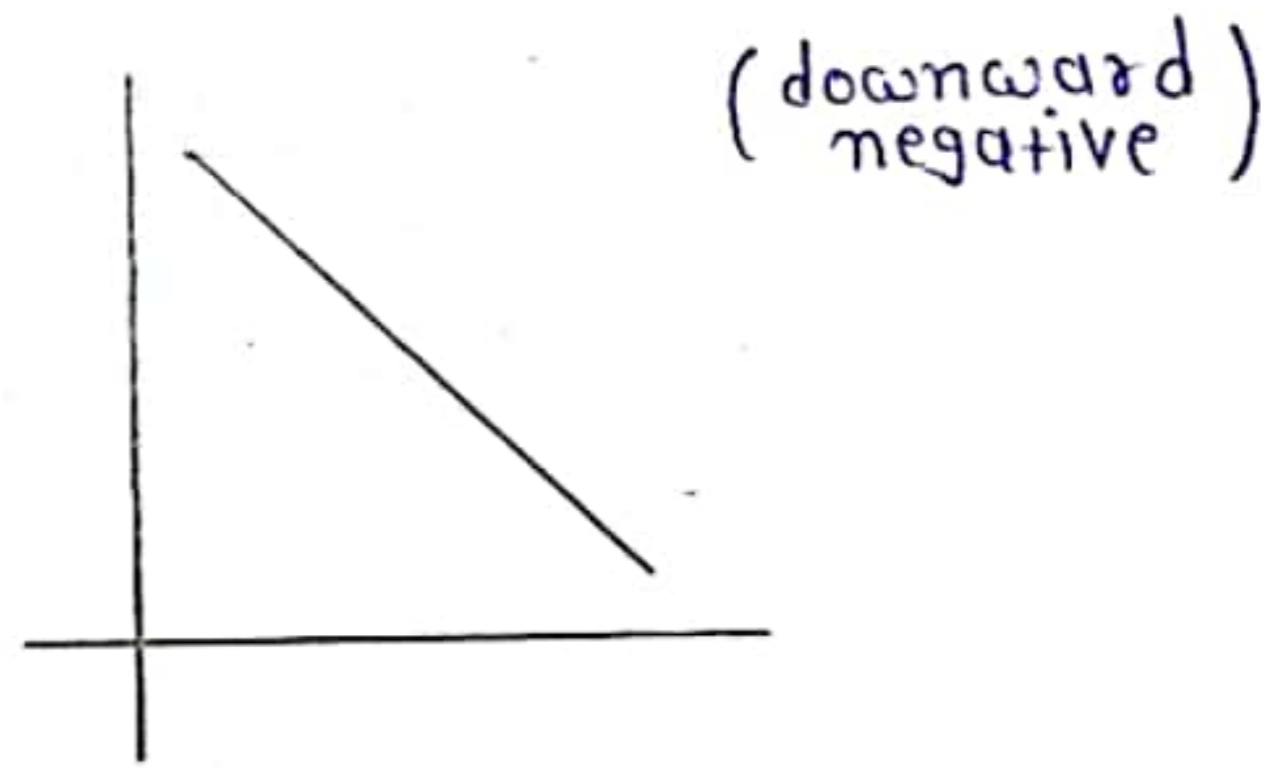
(2) Income

- normal goods / luxury goods (↑ / ↓) (direct relation)
- Inferior goods (Inverse relation) (↑ ↓ / ↓ ↑)
(low quality goods)

(3) Price of related goods

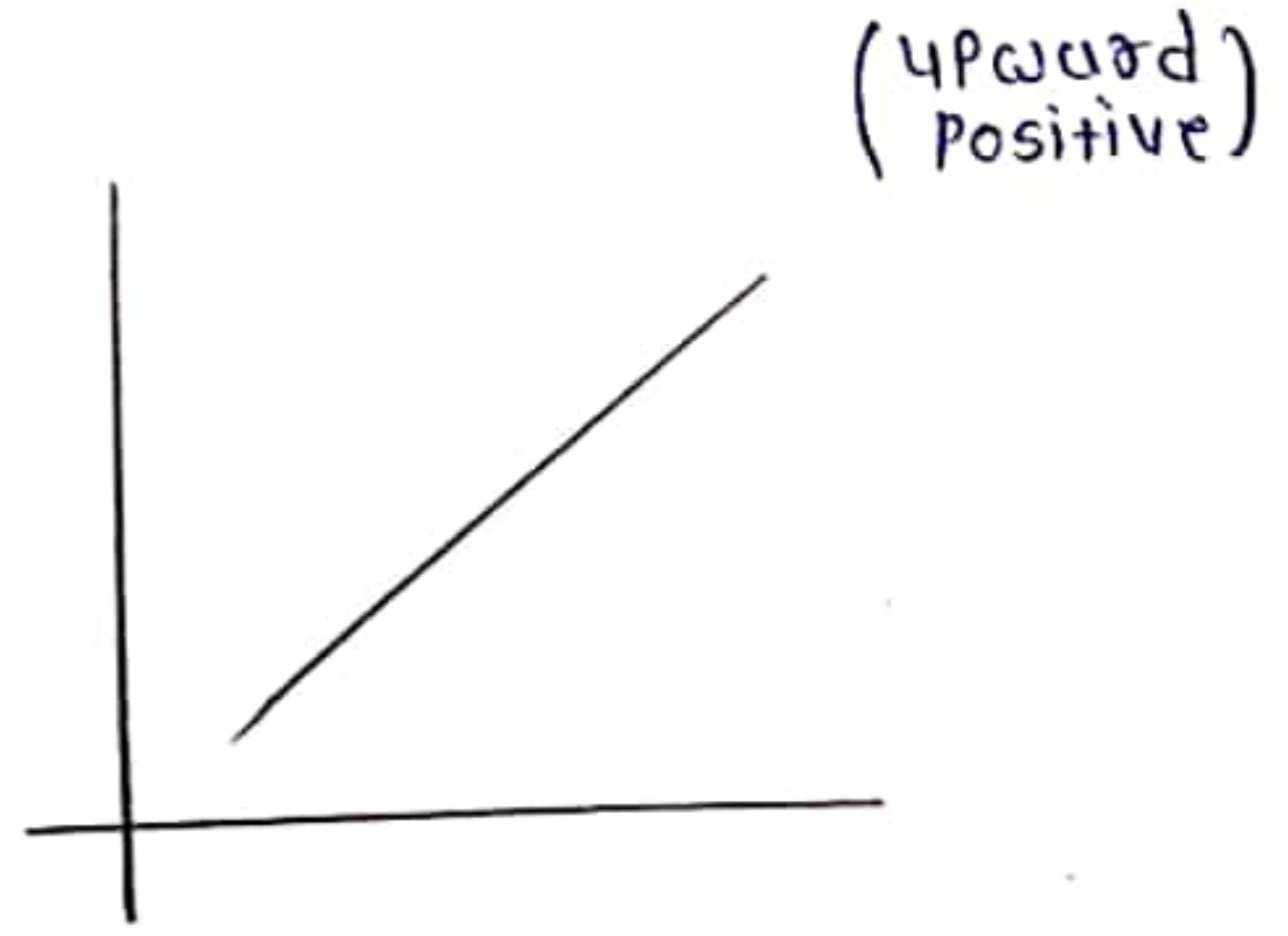
→ Complementary goods

| | |
|-----|--------|
| Car | Petrol |
| ↑ | ↓ |
| ↓ | ↑ |



→ Substitute goods

| | |
|-------|-----------|
| Pepsi | CoCa Cola |
| ↑ | ↑ |
| ↓ | ↓ |



(4) Distribution of Income

- Even distribution → higher
- Uneven distribution → lower

[5] Population

- Higher Population → higher demand
- lower Population → lower demand

[6] Advertisement

- Higher Advertisement & branding → higher
- lower Advertisement & branding → lower

[7] Taste / Fashion / Habits

- New Fashion → higher
- old Fashion → lower

[8] Future expectation about price

↳

| present demand | future price |
|----------------|--------------|
| ↑ | ↓ |
| ↓ | ↑ |

[GOLD]

[9] Tax Policy

- Higher the tax → lower the demand
- lower the tax → Higher the demand

[10] Credit Policy / Facility

Credit Policy easy → more demand

Credit Policy complex → less demand

Types of demand

[1] direct demand

- ↳ Consumer demand
- ↳ Ex: Tea, T.V., Fan, etc.

[2] Indirect demand

- ↳ Factors of production

[3] Composite demand

- ↳ Multiple use goods
- ↳ Ex: Salt, Sugar, milk, electricity.

[4] Competitive demand

- ↳ Substitute goods

[5] Joint demand / Tied demand

- ↳ Complementary goods

Demand Schedule

Individual demand

- Single consumer
- different quantity of a commodity at different price at a point of time.

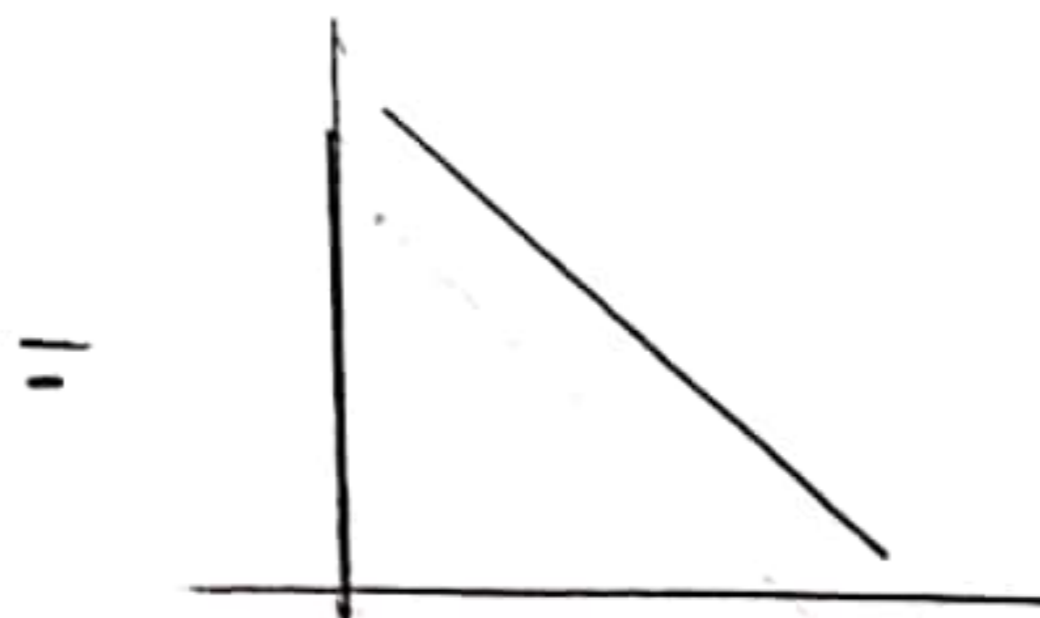
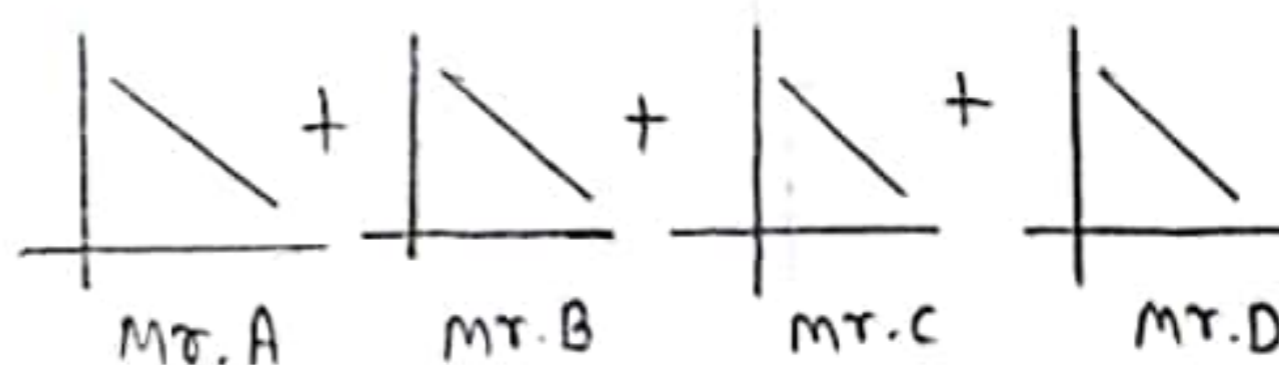
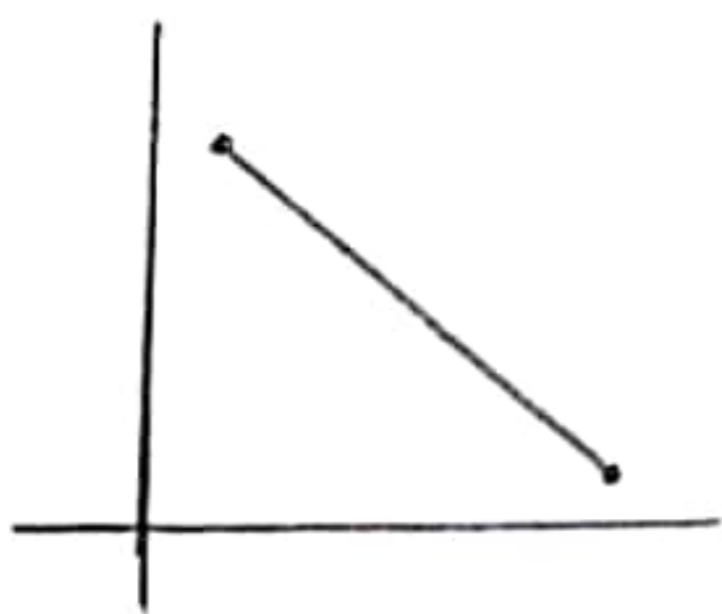
market demand

- many consumers
- different quantity of a commodity at a different price at a point of time.

→ downward curve

| Price | Qty demand |
|-------|------------|
| 1 | 70 |
| 2 | 60 |
| 3 | 50 |
| 4 | 40 |
| 5 | 30 |

| price | Mr. A | Mr. B | Mr. C | Mr. D | Total |
|-------|-------|-------|-------|-------|-------|
| 1 | 80 | 70 | 60 | 50 | 260 |
| 2 | 70 | 60 | 50 | 40 | 220 |
| 3 | 60 | 50 | 40 | 30 | 180 |
| 4 | 50 | 40 | 30 | 20 | 140 |



Note :- Horizontal summation of individual demand curve gives market demand curve.

Law of demand

Qualitative tool
between
price & qty demand

Alfred Marshall
1890 - P.O.E.

→ Statement

- other thing being ^{kept} constant → **Ceteris Paribus** (ceteris word)
- more quantity will be demanded at lower price.
- less quantity will be demanded at higher price.

⇒ Why demand curve is downward? (Parallel to law of demand)

- (1) law of DMU (demand marginal utility) ↓↑
 - (2) Number of users ↓↑
 - (3) Income effect ↓↑
 - (4) Substitute effect ↓↑
 - (5) Number of consumers ↓↑
- Income effect + Substitute effect = Price effect
- Allen + Hicks

Exceptions of law of demand (↑↑/↓↓)

(not Parallel to law of demand)

- In this law of demand won't be applicable.
- Relation is found direct so upward curve.

[1] Giffen goods / Inferior goods

↳ Every giffen goods are Inferior goods **but**
 not every Inferior goods is giffen goods.

↳ Wheat / rice / Bajra / Juar / Bread
 (only five giffen goods)

[2] Conspicuous goods / Veiled goods / Snob goods / Prestige goods. (EHSI SRI)

ex: Painting

[3] Ignorance effect

[4] Price Illusion (Macbook) Price change change saag dahi.

[5] Future Expectations about price. (Gold)

[6] Demonstration effect & Band wagen effect

↳ iPhone
 Lago Hilaalo
 gatheli.

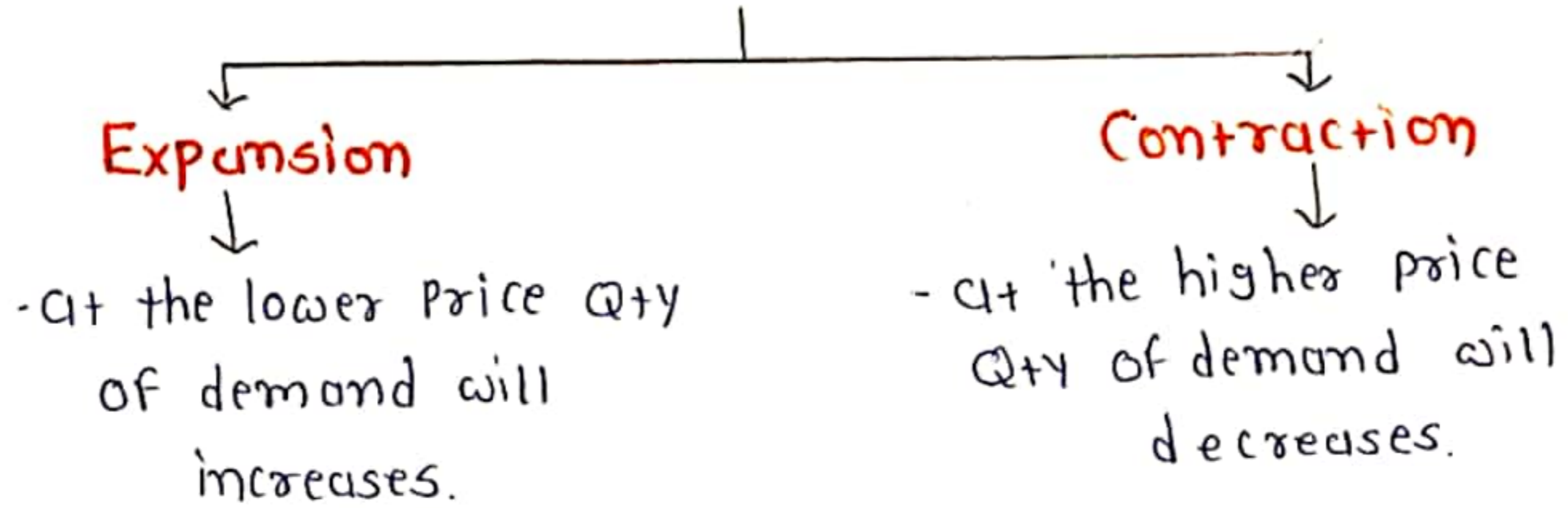
↳ D. Berry & R. Bandwagen
 Ziga

[7] Demand for necessities

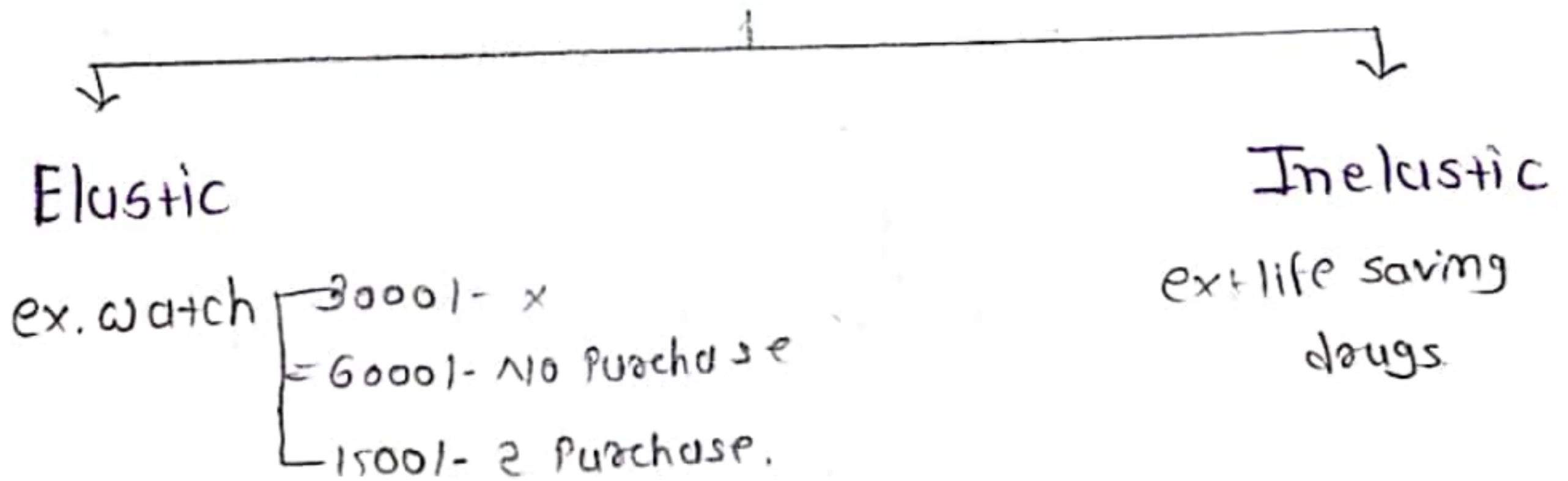
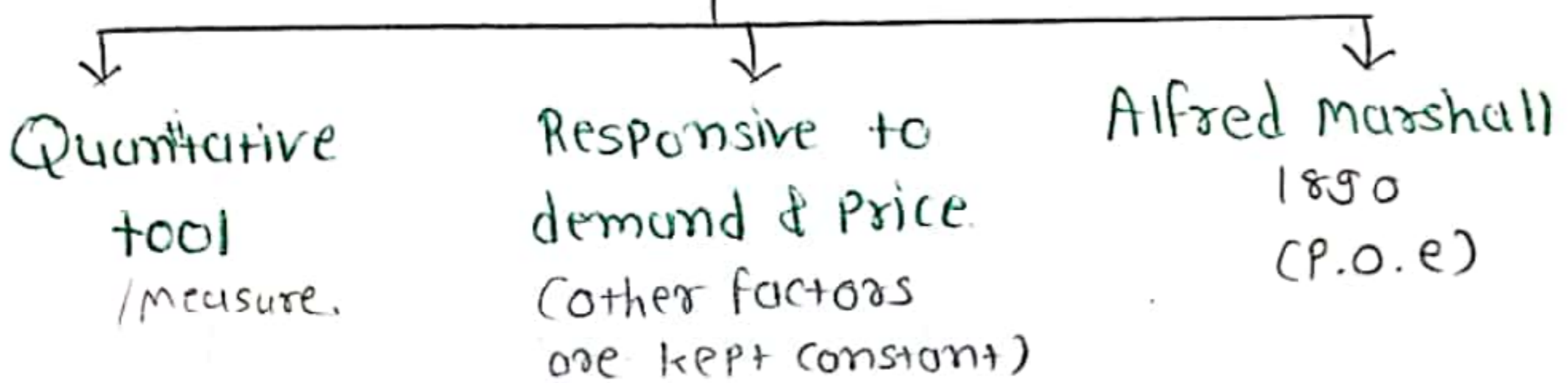
[8] Speculation effect (ex. stock market)

(Sikhaty)

Variation in demand



Elasticity of Demand



Kind of elasticity.

1) Price elasticity in demand

$$E_p = \frac{\% \text{ change in demand}}{\% \text{ change in price}}$$

$$E_p = \frac{\Delta D}{D_{\text{old}}} \times \frac{P_{\text{old}}}{\Delta P} \quad \left[\begin{array}{l} \Delta D = \text{New demand} - \text{old demand} \\ \Delta P = \text{New price} - \text{old price.} \end{array} \right]$$

2) Income elasticity of demand

$$E_y = \frac{\% \text{ change in demand}}{\% \text{ change in income}}$$

$$E_y = \frac{\Delta D}{D} \times \frac{Y}{\Delta Y}$$

3) Cross elasticity of demand
Cross

↳ This elasticity is connected with goods & services.

↳ substitute / Complementary Goods

Cocacola / Pepsi

Car, Petrol

$$E_c = \frac{\% \text{ change in demand of Product "A"}}{\% \text{ change in price of Product "B"}}$$

$$= \frac{\Delta D_A}{D_A} \times \frac{P_B}{\Delta P_B}$$

Note: Complementary goods have Negative gross elasticity.

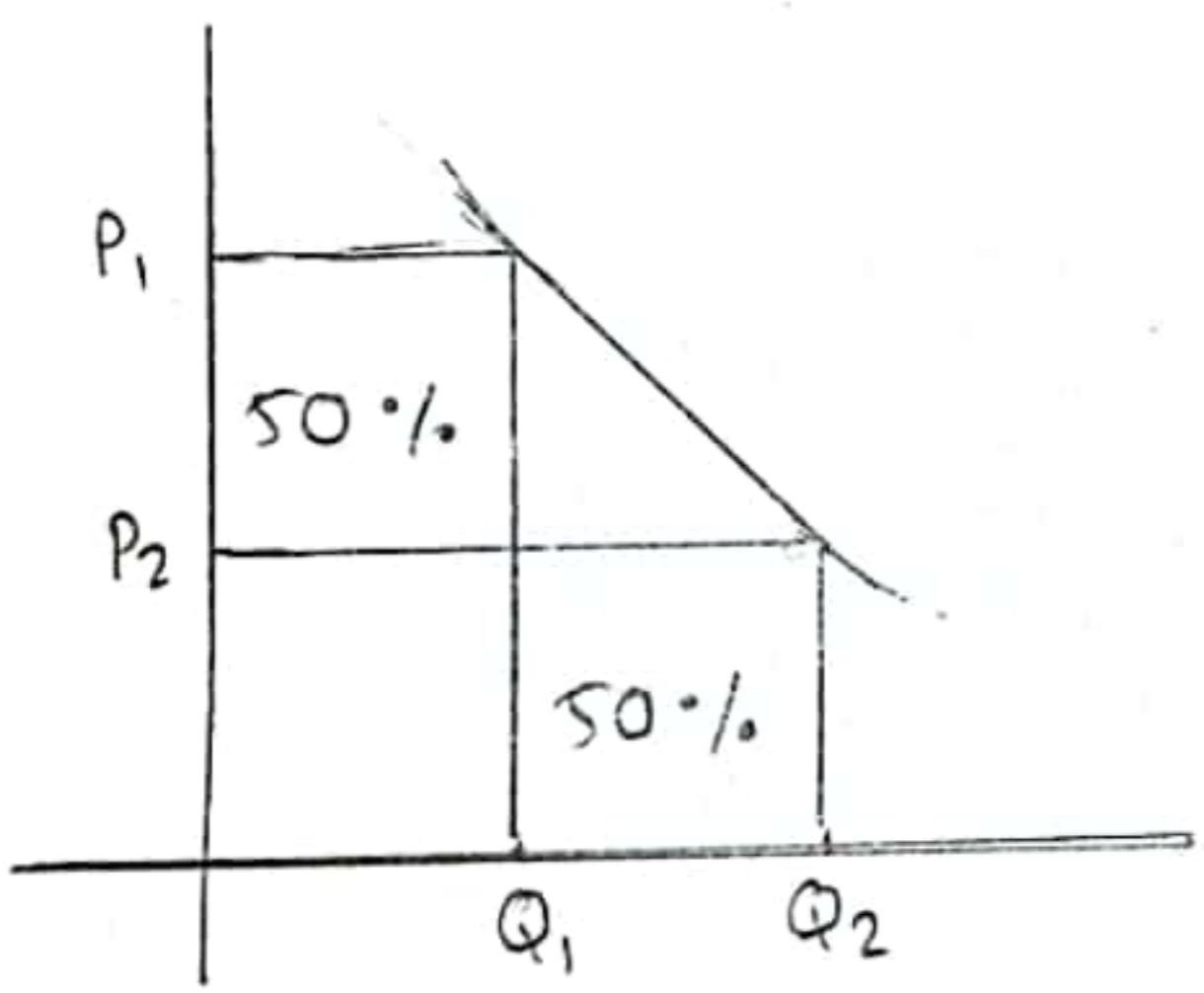
- Substitute goods have positive gross elasticity.
- Unrelated goods have zero gross elasticity.

Types of price and demand elasticity

1) Unitary elastic demand

$e = 1$

% change in Quantity demand is equal to % change in price demand.



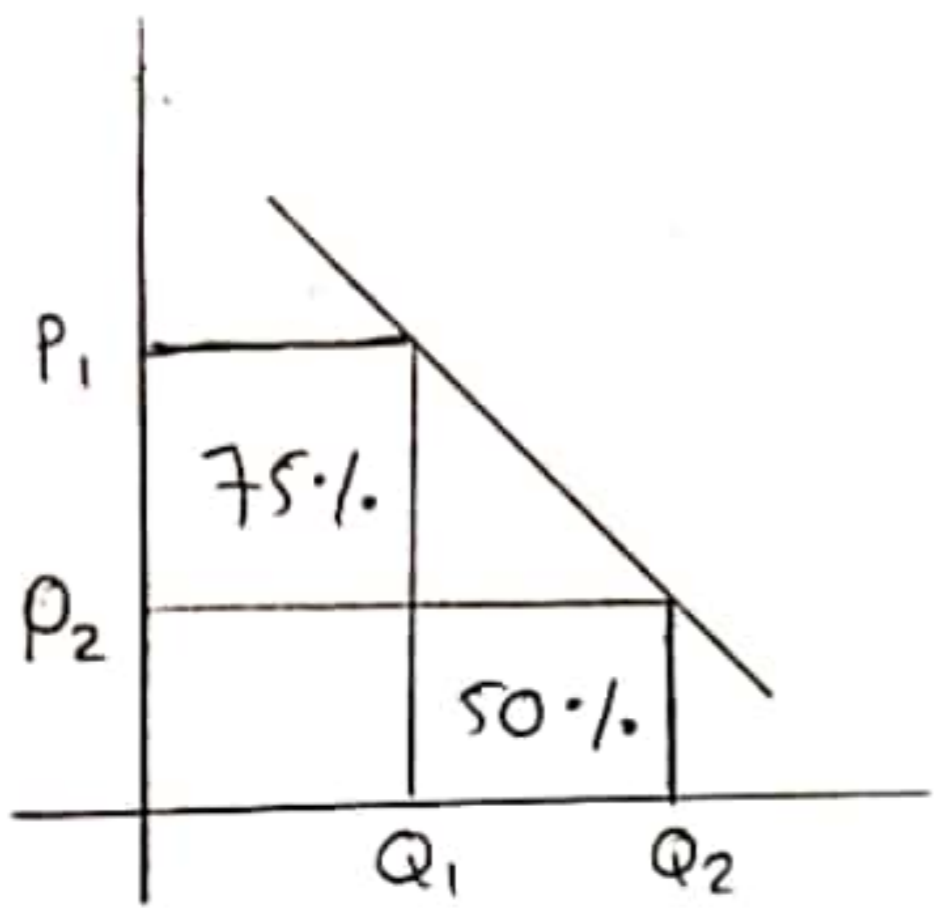
normal goods

Rectangular Hyperbola Curve.

2) Relatively elastic demand / more elastic demand / High elastic demand.

$e > 1$

% change in Quantity of demand is greater than % change in price.



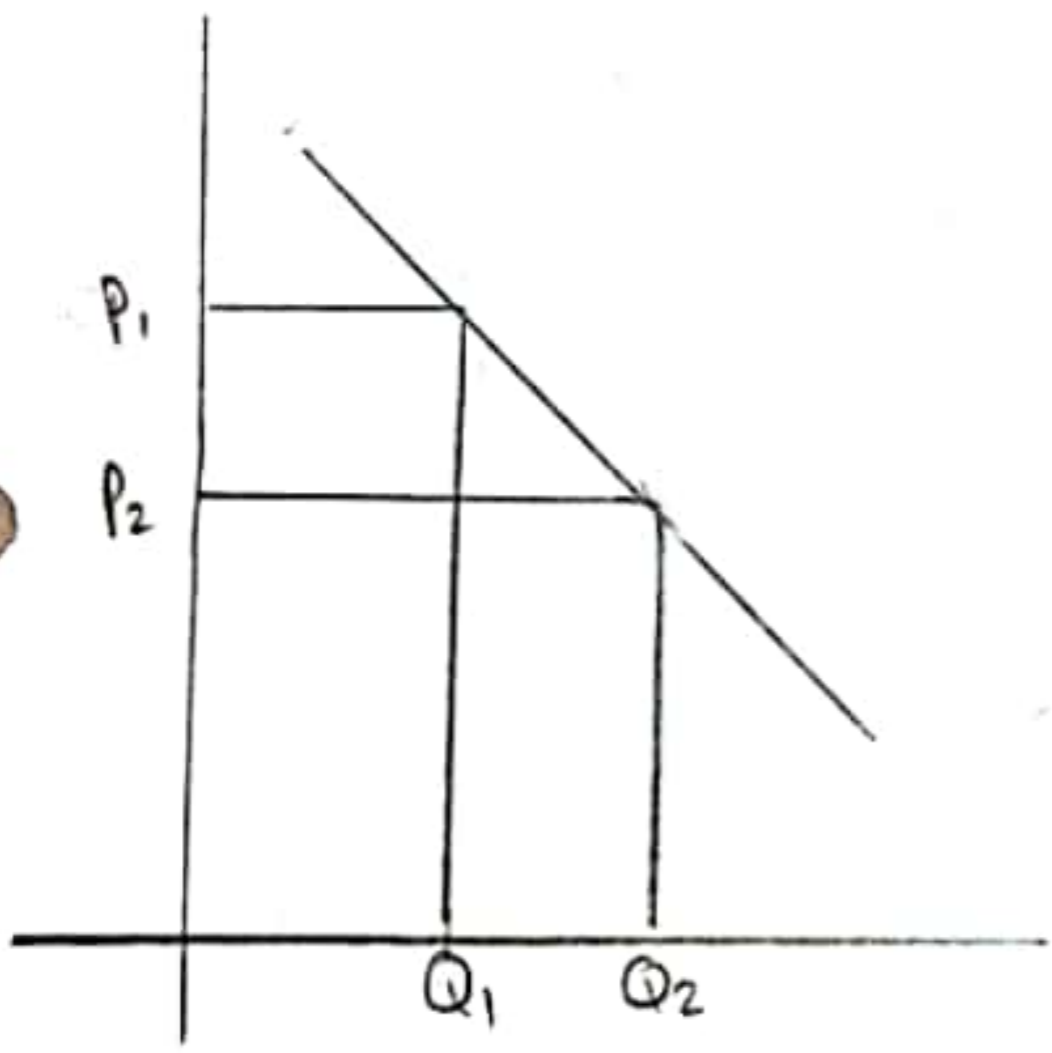
luxury goods
superior goods
branded goods.

Downward flatter curve

3 > Relatively inelastic demand / less elastic demand / low elastic demand

$e < 1$

% change in Qty of demand is less than % change in price.



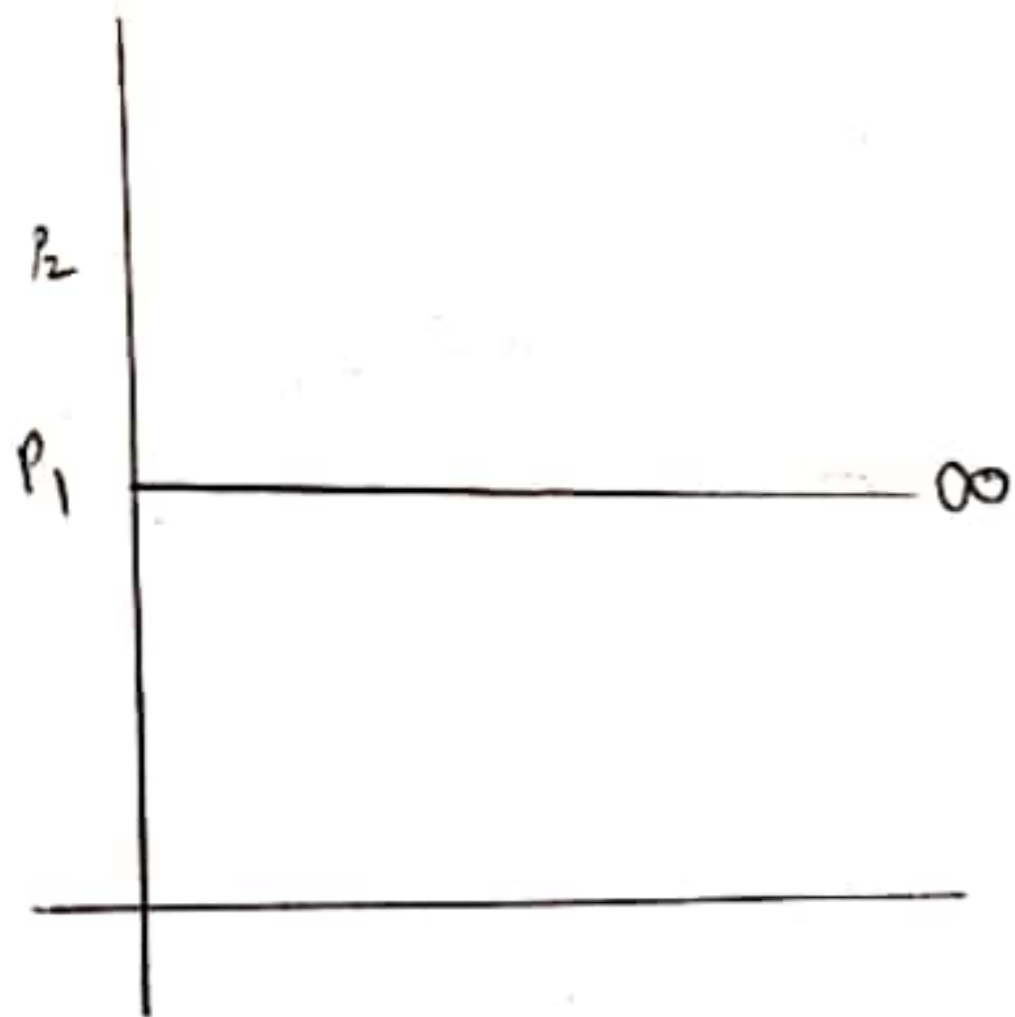
necessity goods
Perishable goods

downward sloping curve

4 > Perfectly elastic demand

$e = \infty$

slight change in price of demand will make change in Qty of demand.



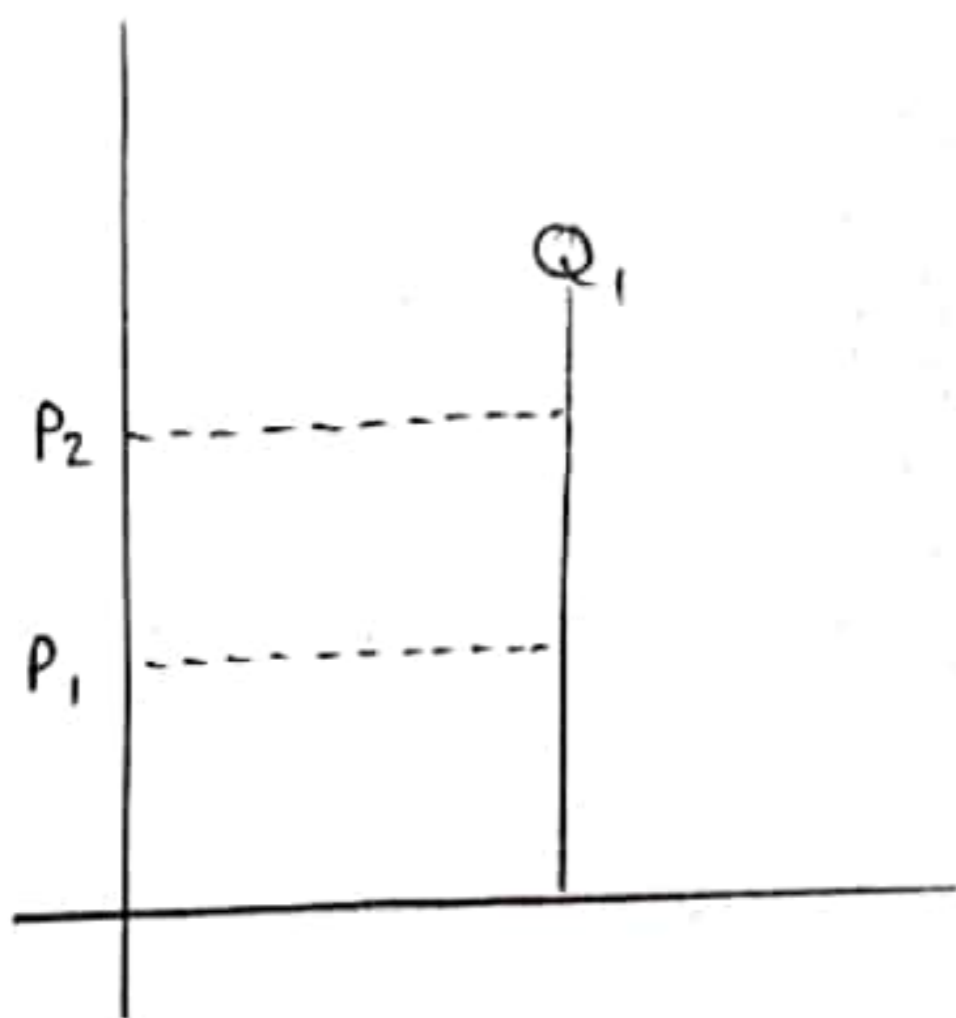
Unrealistic concept

Horizontal straight line.

57 Perfectly Inelastic in demand.

$e = 0$

slight change in qty of demand doesn't effect on price.



life saving drugs
(salt (example))

Vertical straight line.

elasticity on the basis of Income

1) $e_y = 0$

- Zero Income elasticity of demand

2) $e_y = 1$

- Unitary Income elasticity of demand

3) $e_y < 1$

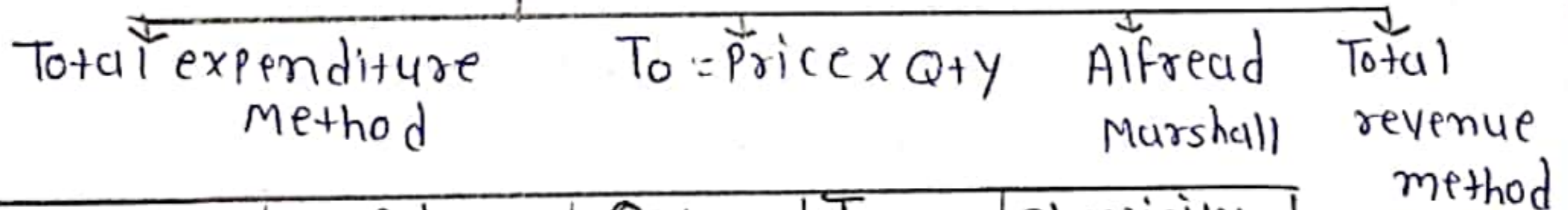
- Negative Income elasticity of demand

4) $e_y > 1$

- positive Income elasticity of demand.

Methods of elasticity of demand

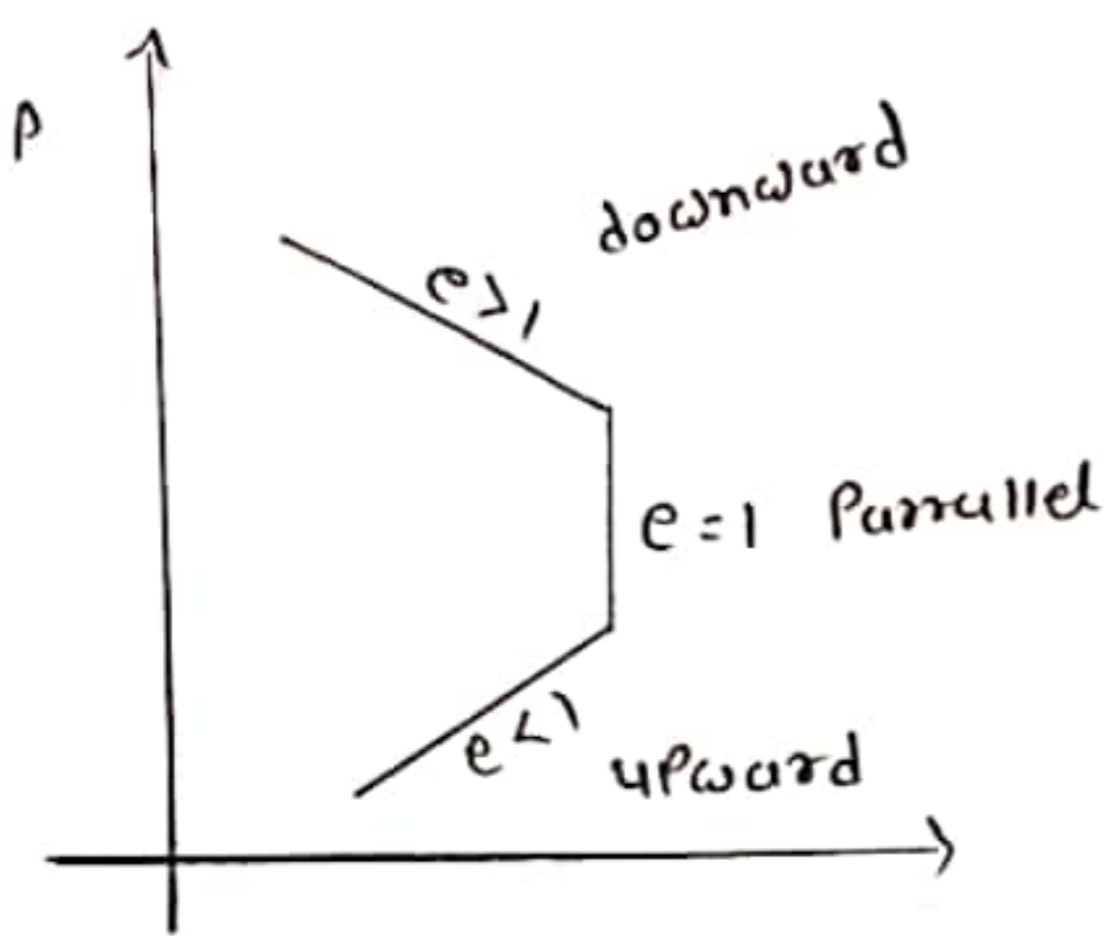
1) total outlay method (practical method)



| | Price | Qty | T_o | elasticity |
|--------|-------|-----|-------|----------------------|
| Case 1 | 10 | 12 | 120 | $e_y = 1$ |
| | 8 | 15 | 120 | unitary |
| Case 2 | 10 | 12 | 120 | $e_y > 1$ |
| | 8 | 50 | 400 | relatively elastic |
| Case 3 | 10 | 12 | 120 | $e_y < 1$ |
| | 8 | 14 | 112 | relatively Inelastic |

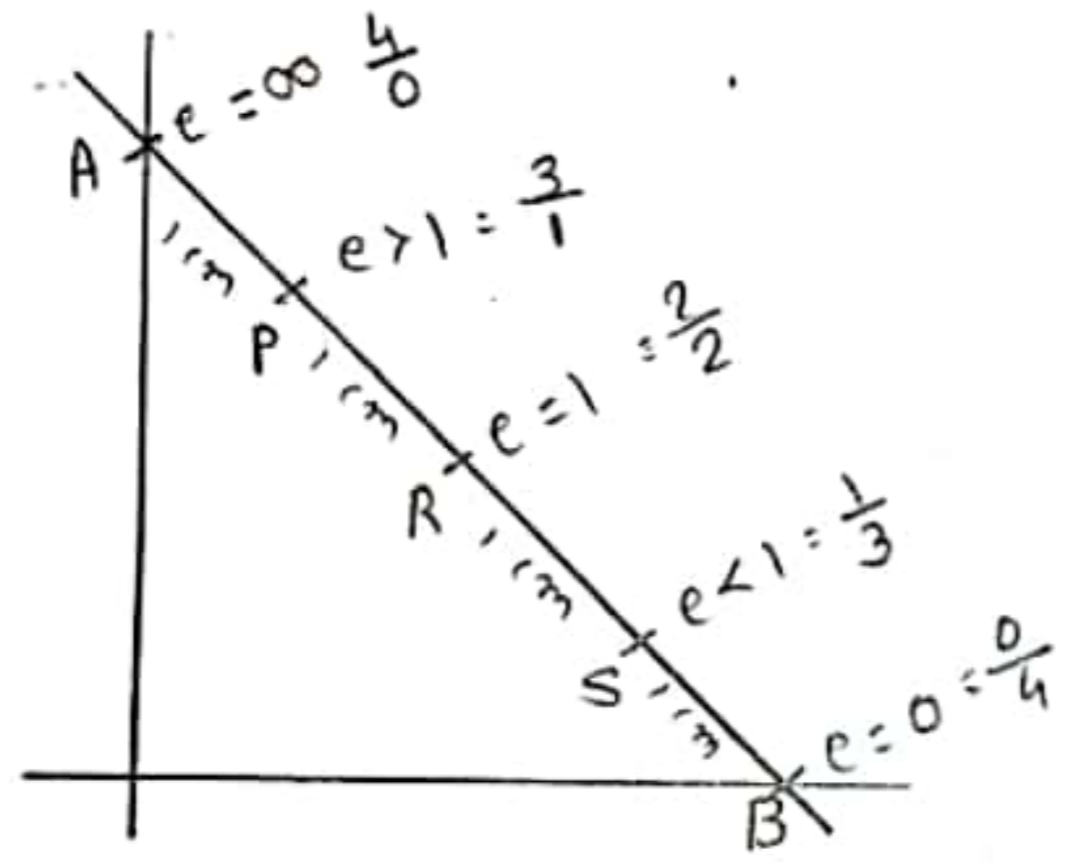
$\frac{400}{120}$

$\frac{112}{120}$



2) Point or Geometric method

→ When the change in the price is very tiny / small / less...

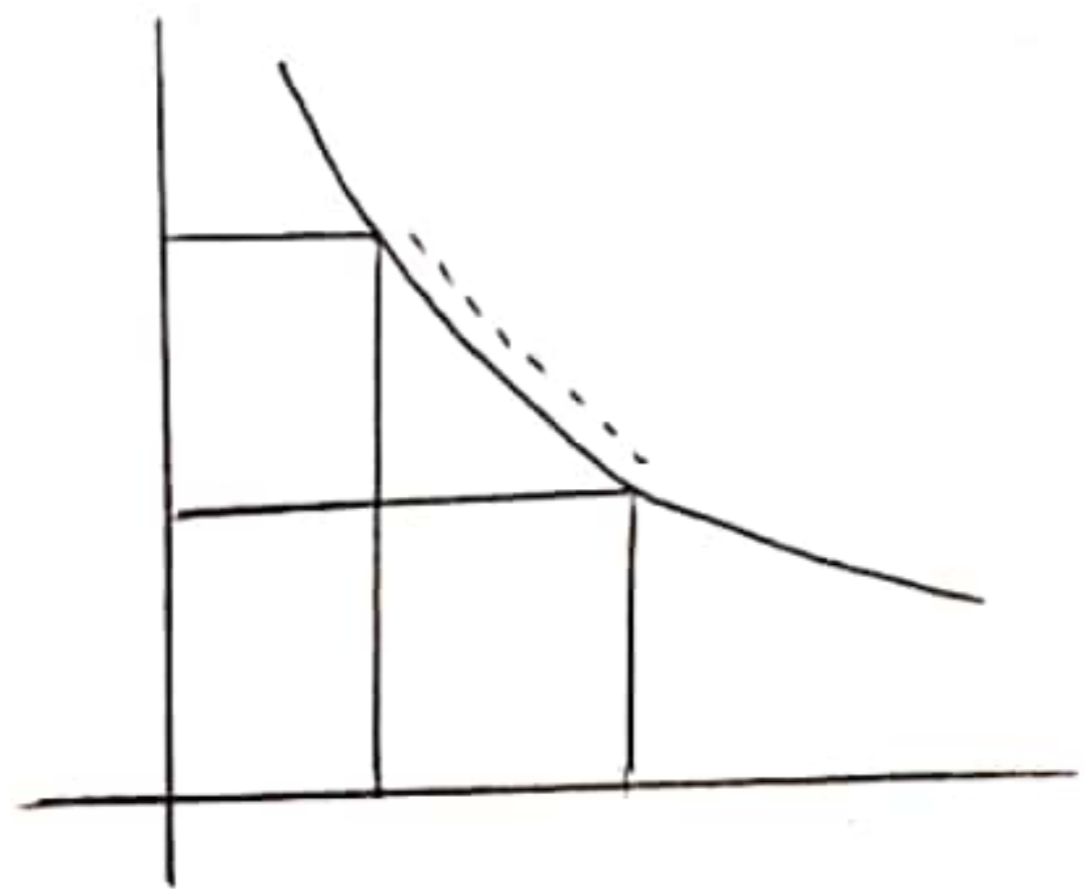


$$E_p = \frac{\text{lower segment}}{\text{upper segment}}$$

Note: In point method (or geometric method) The curve is downward slopping negative linear straight line.

- Co-efficient of point method varies from 0 to ∞.

3) Arc elasticity method. (Best method)



$$E_d = \frac{Q_1 - Q_2}{Q_1 + Q_2} \times \frac{P_1 + P_2}{P_1 - P_2}$$

- Q₁ = old Qty
- Q₂ = new Qty
- P₁ = old price
- P₂ = new price.

Note: In Arc method ignore negative sign.

- In case ans is not matching with MCQ's option than go with

Price Qty demand elasticity formula

Note: In the elasticity method the fourth method is ratio & percentage method.

- This method is same as price elasticity method.

Factors affecting elasticity.

1) Availability of substitute goods.

- ↳ Yes - elastic
- ↳ No - Inelastic

2) Position commodity in your budget.

- ↳ Small part of your budget than inelastic.
- ↳ large part of your budget than elastic.

3) Nature of commodity

- ↳ Necessary - Inelastic
- ↳ luxury - elastic

4) Number of users.

electricity - Inelastic

46 no. page
Q 33 A

5) Time period

- ↳ short time - elastic
- ↳ long time - inelastic

6) Consumer Habit

- ↳ Inelastic

7) Joint demand / Complementary goods

- ↳ Inelastic

8) Price range

- ↳ high price product - Inelastic
- ↳ middle price product - elastic
- ↳ low price product - Inelastic

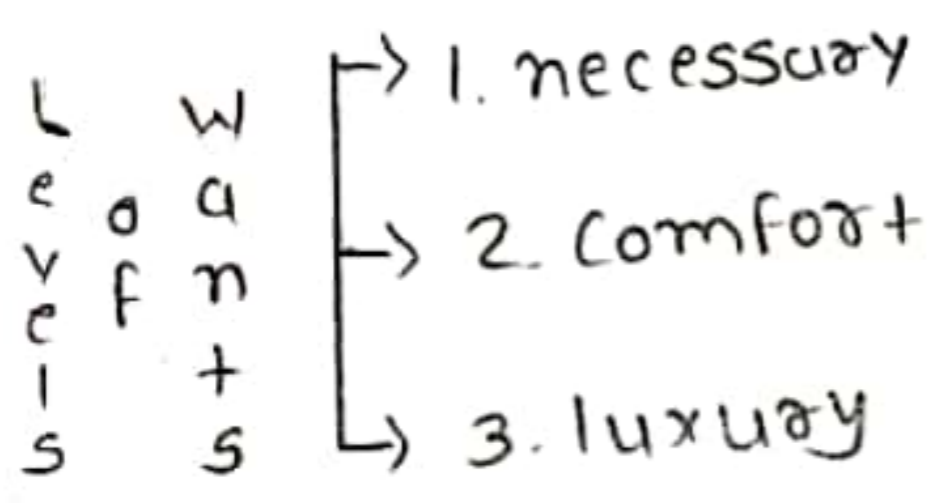
Unit 2 Consumer behaviour

Consumer behaviour

(1) Wants

→ all desires, taste, need, motive of Human beings are called as wants.

- ↳ wants are unlimited.
- ↳ wants are recurring. (change)
- ↳ wants are competitive.
- ↳ wants are complementary.



(2) Utility (उपभोग)

→ All wants to Satisfy Power of a Commodity or capacity of a Commodity to satisfy a human wants.

Features of utility.

- (i) subjective in nature. → digital pen
- (ii) utility differ from satisfaction.
- (iii) utility differ from usefulness.
- (iv) depends on intensity. - Urgent.
- (v) may not always give you pleasure.

Types of utility

[1] Time utility

ex: storage.

Umbrella

[2] Place utility

ex: transportation (transportation creates place utility)

[3] Service utility

ex: Doctor, lawyer, C.A., etc.

[4] Form utility.

- Converting raw material into finished goods is known as form utility.

ex: Wood converts into bench

[5] Knowledge utility

- more knowledge brings more utility. Smart phone

[6] Possession utility

- transfer of ownership from one person to another brings utility. cycle.

Law of diminishing Marginal utility

Mr. Grossen

1st law

Alfred

Marshall

Cardinal Approach

(utils)

ex: Mango

| Qty | T ₀ | M _u |
|-----|----------------|----------------|
| 1 | 10 | 10 |
| 2 | 18 | 8 |
| 3 | 24 | 6 |
| 4 | 28 | 4 |
| 5 | 30 | 2 |
| 6 | 30 | 0 |
| 7 | 28 | -2 |

$T_0 = \sum MU$

$MU = T_n - (T_{n-1})$

$= 28 - 24$
 $= 4$

or $MU = \frac{\Delta T_u}{\Delta Q}$

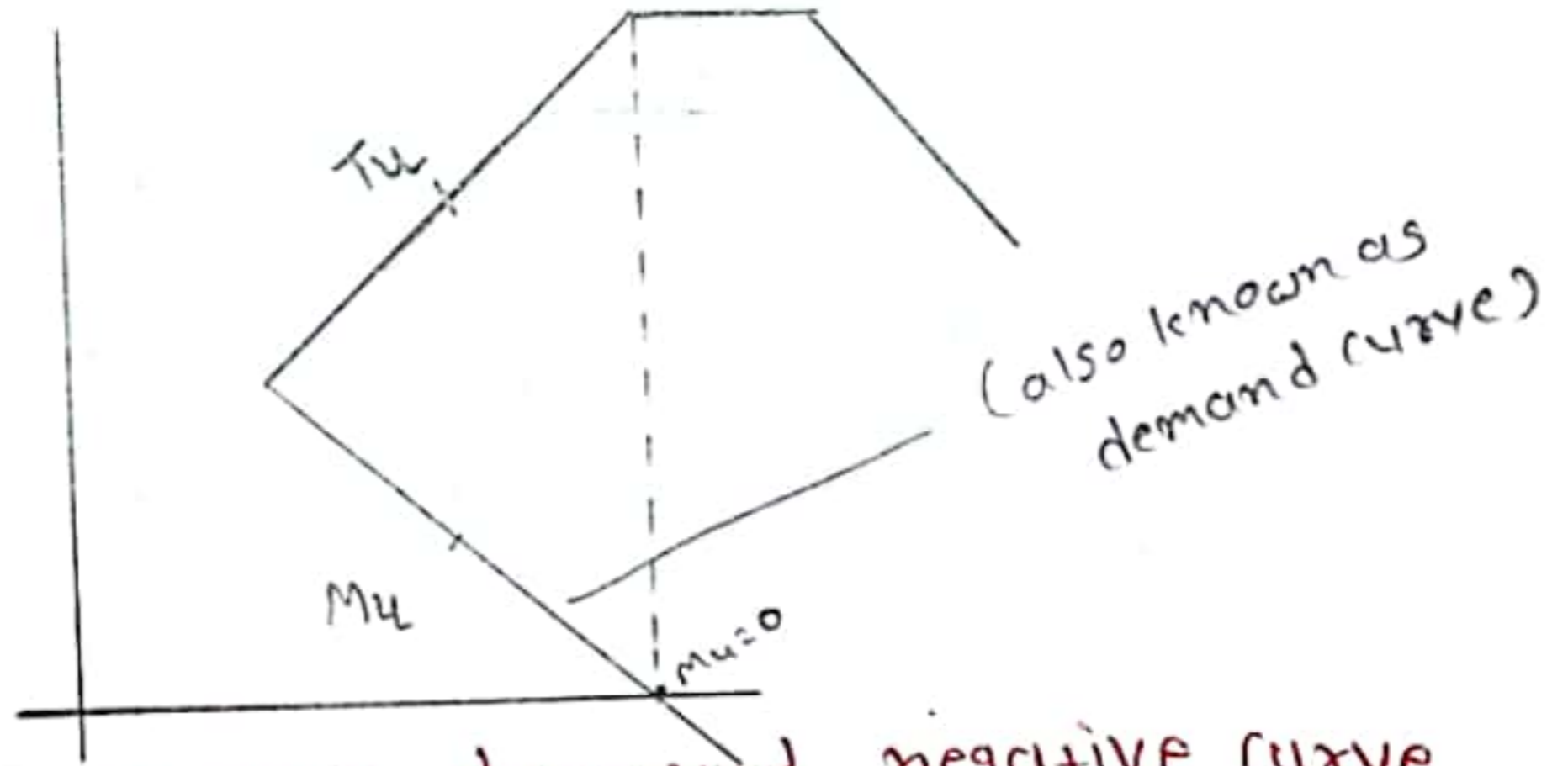
$= \frac{28-24}{4-3}$

$= \frac{4}{1}$

ASSUMPTIONS :-

- (1) Homogeneity (same size, same weight)
- (2) Single use
- (3) Rationality (normal person)
- (4) Reasonable (price)
- (5) Continuity
- (6) Marginal utility of money shall be constant.

| Qty | T ₀ | M _u |
|-----|----------------|----------------|
| 1 | 10 | 10 |
| 2 | 18 | 8 |
| 3 | 24 | 6 |
| 4 | 28 | 4 |
| 5 | 30 | 2 |
| 6 | 30 | 0 |
| 7 | 28 | -2 |



Note: Marginal utility curve is downward negative curve. Total utility curve is upward positive curve, till marginal utility becomes zero. as once marginal utility become zero Tu curve become constant, after that Tu starts falling.

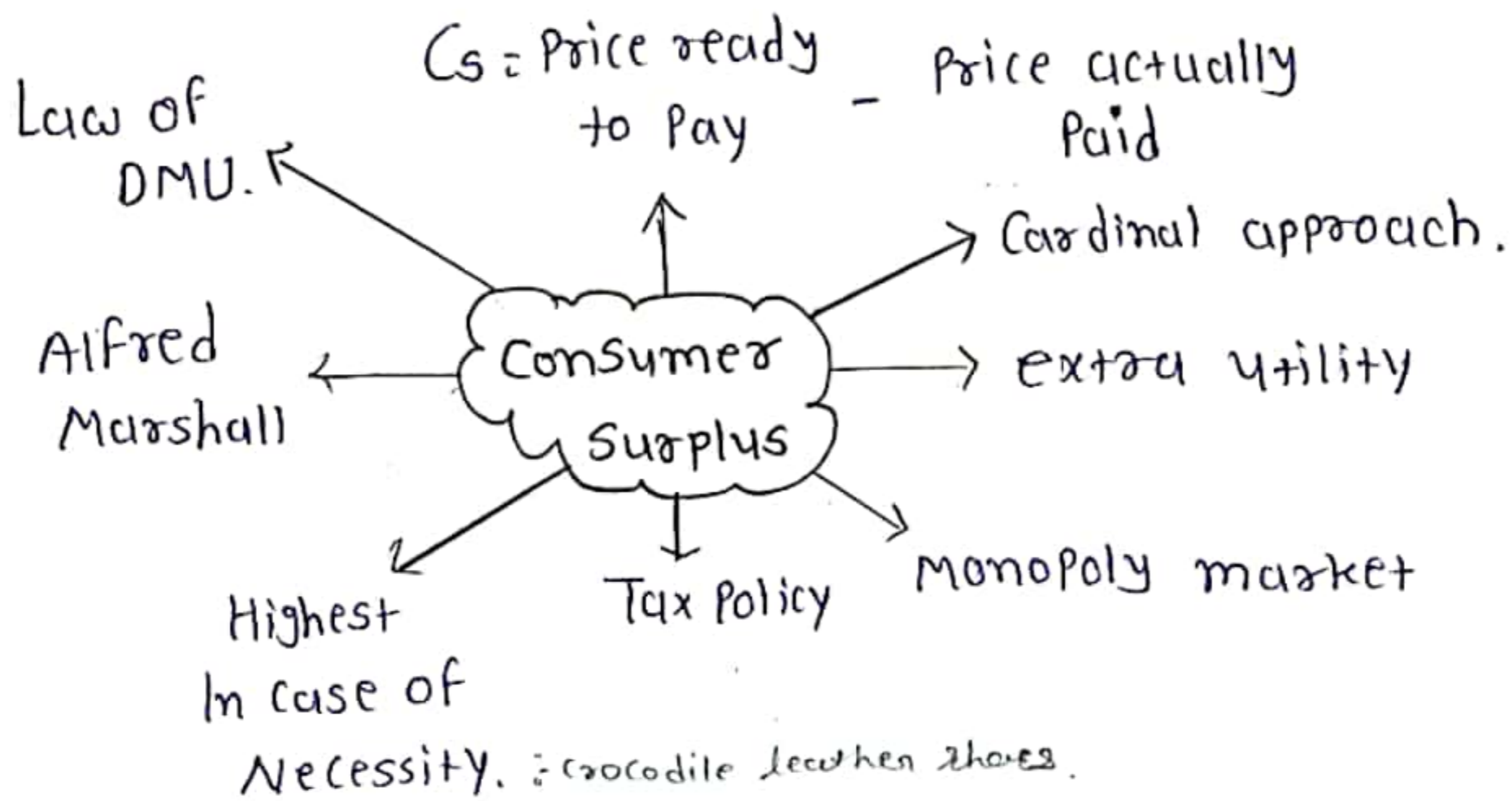
→ The Tu curve is also known as Inverted U.

One more name is domes happed curve.

Consumer Surplus (Saving)

(20)

(30)



Note :- Consumer Surplus had Cardinal approach as it is derived from law of DMU.

- According to Alfred Marshall Consumer Surplus is only available in Monopoly market.
- Behavioural goods like tobacco, etc. helps in deciding tax policy.

| No. of units | Price ready to pay (MU) | Price actually Paid (P) | Consumer Surplus |
|--------------|-------------------------|-------------------------|------------------|
| 1 | 30 | 20 | 10 |
| 2 | 28 | 20 | 8 |
| 3 | 26 | 20 | 6 |
| 4 | 24 | 20 | 4 |
| 5 | 22 | 20 | 2 |
| 6 | 20 | 20 | 0 (MU = P) |
| 7 | 18 | 20 | -2 (MU < P) |

- negative slope / downward slope

Indifference Curve Analysis

- Hicks & Allen is responsible for this concept.
- ordinal approach.
- apply normal goods (indifferent substitute)
- method to measure consumer demand.

Statement

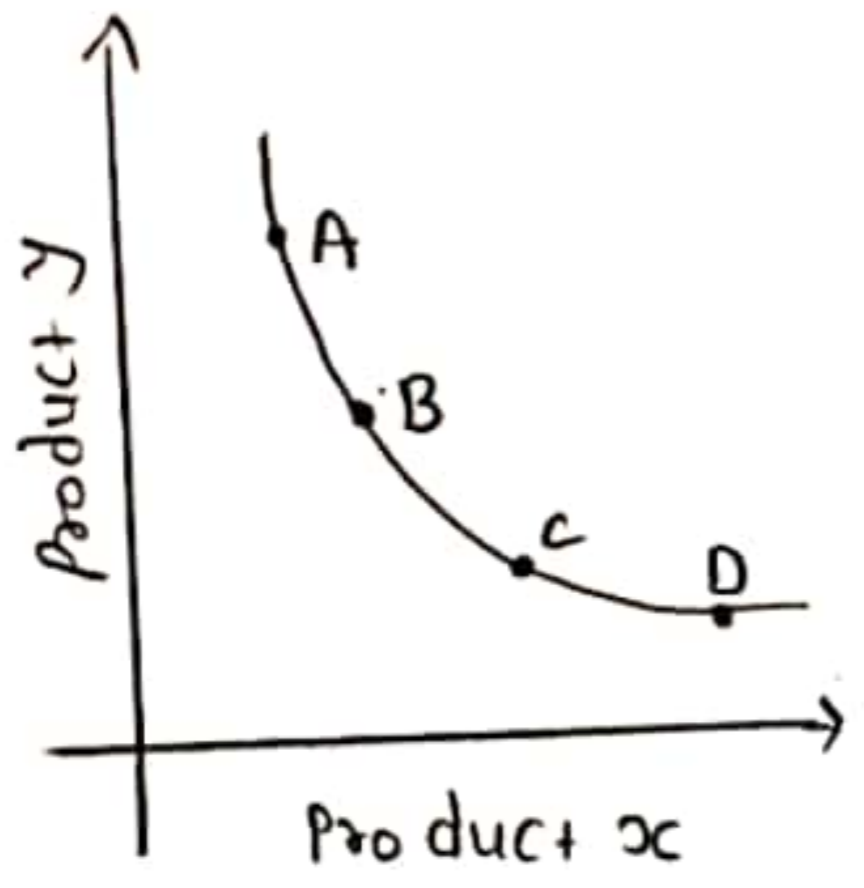
↳ Various combinations of two goods that gives same level of satisfaction.

Assumptions :-

- (1) only two goods
- (2) Rational
- (3) diminishing Marginal Rate of Substitution

| Combination | Ice-cream Product X | chocolate Product Y | MRS |
|-------------|---------------------|---------------------|-----|
| A | 1 | 12 | - |
| B | 2 | 6 | 6 |
| C | 3 | 4 | 2 |
| D | 4 | 3 | 1 ↓ |

*



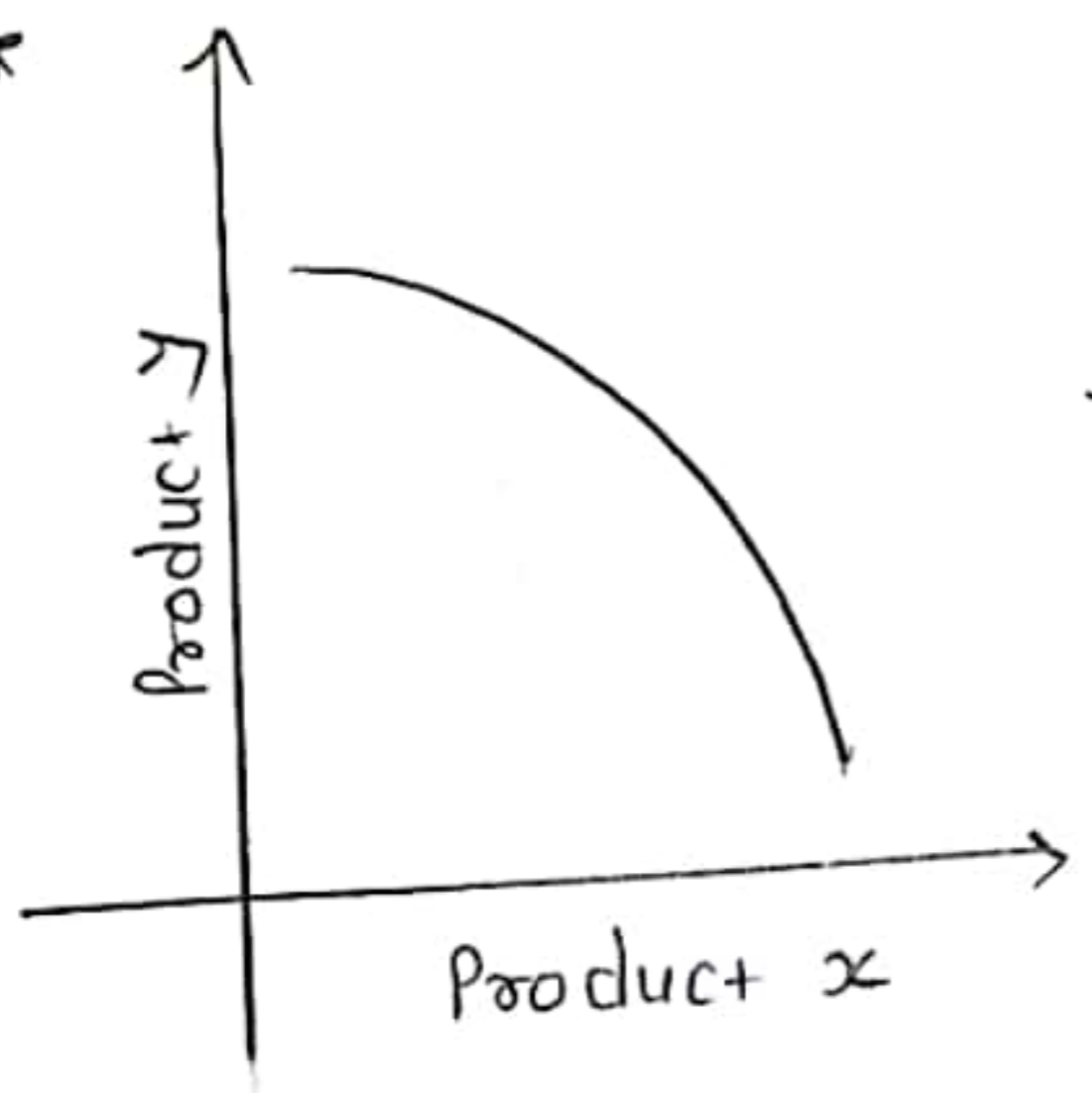
downward, negative,
- Convex curve Ic curve

Points on Convex /
Concave "Locus."

MRS decreases

Ic Curve = $\frac{M_u x}{M_u y}$

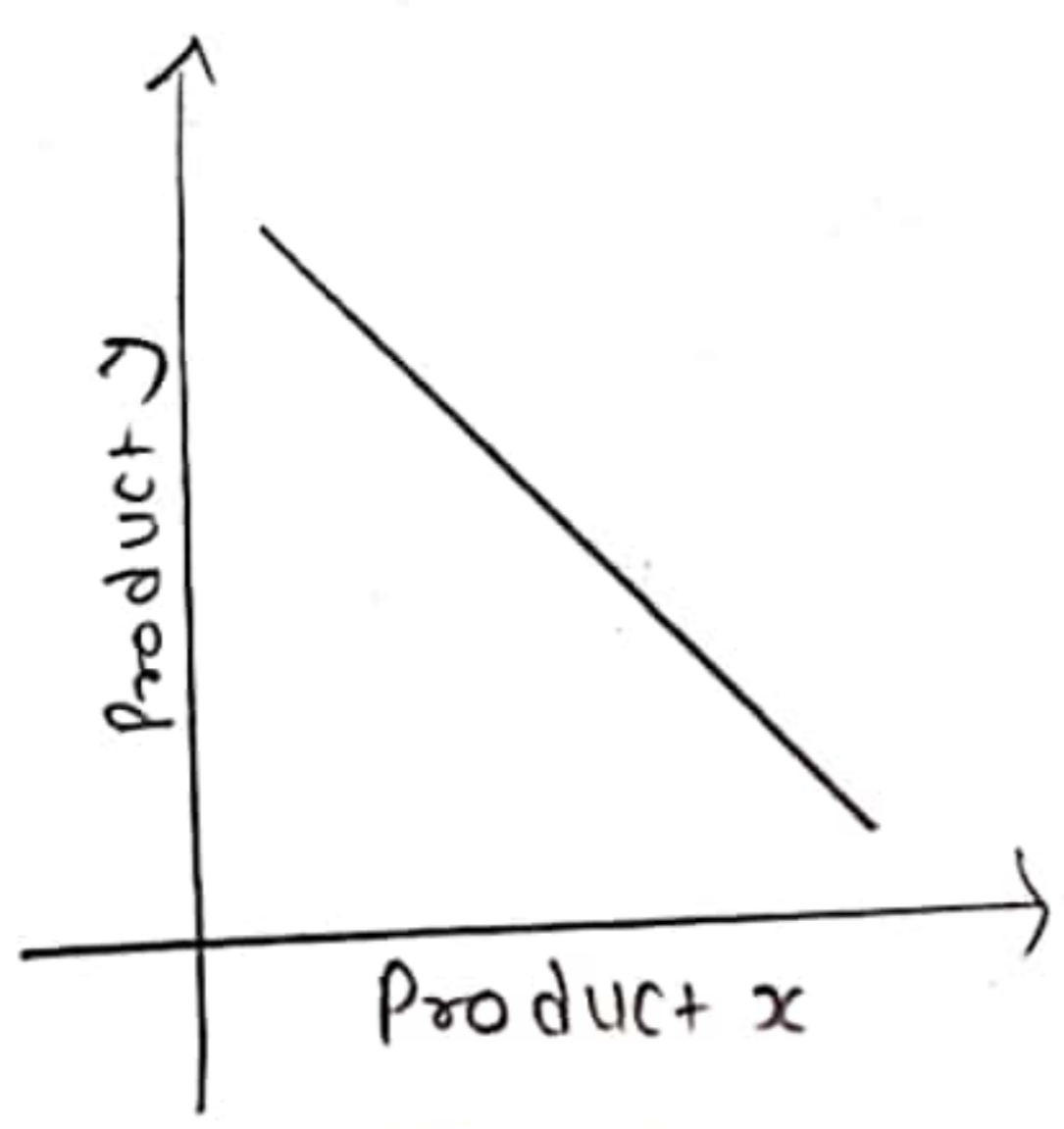
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- Concave curve

MRS increases

*

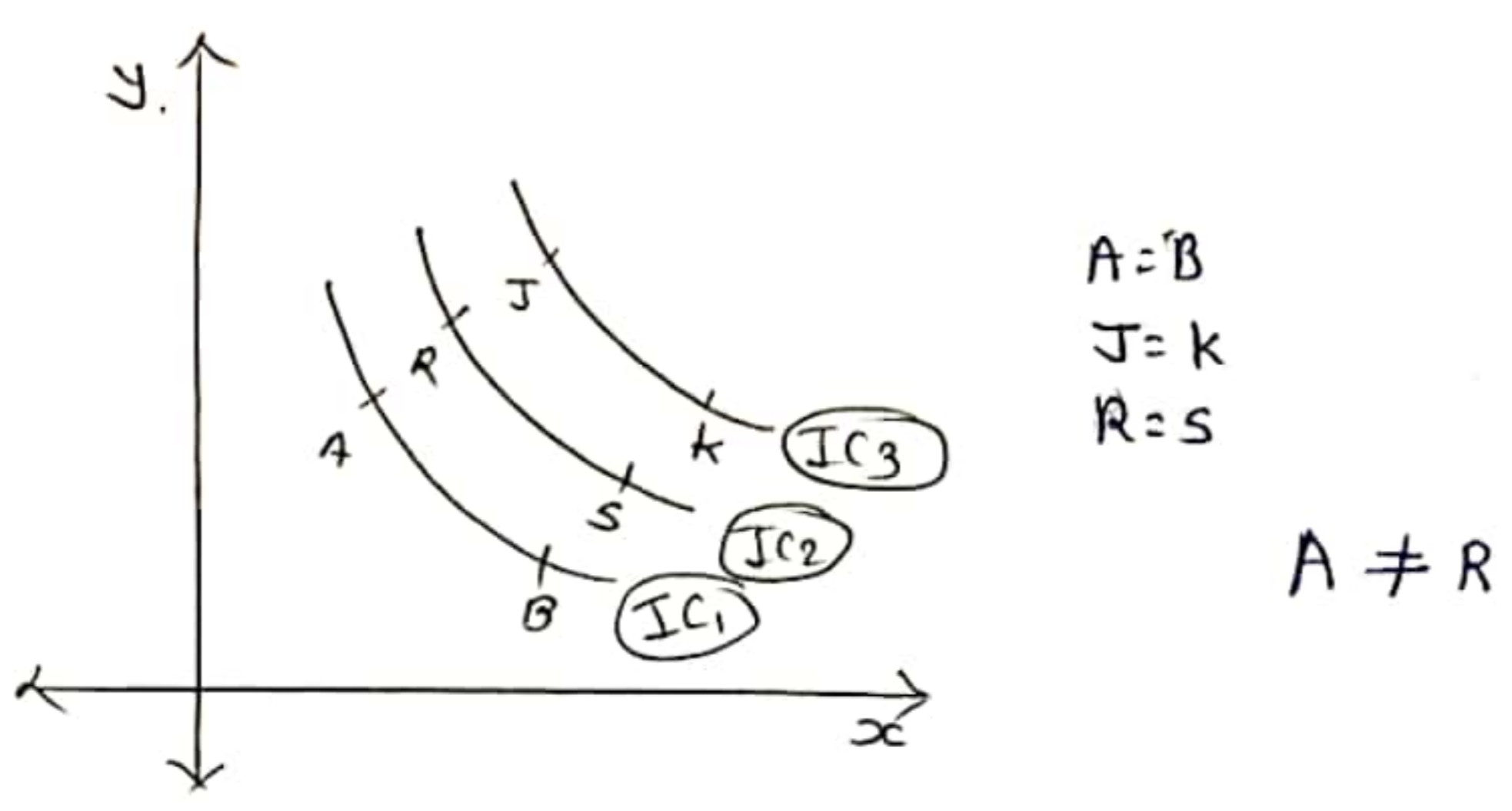


- Straight line

MRS constant

Note: Movement between 2
Points is known as
transitivity.
[transitivity trade off
substitution.]

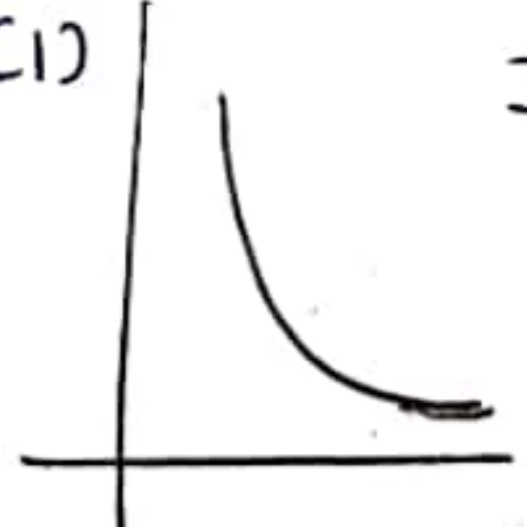
Indifference Map

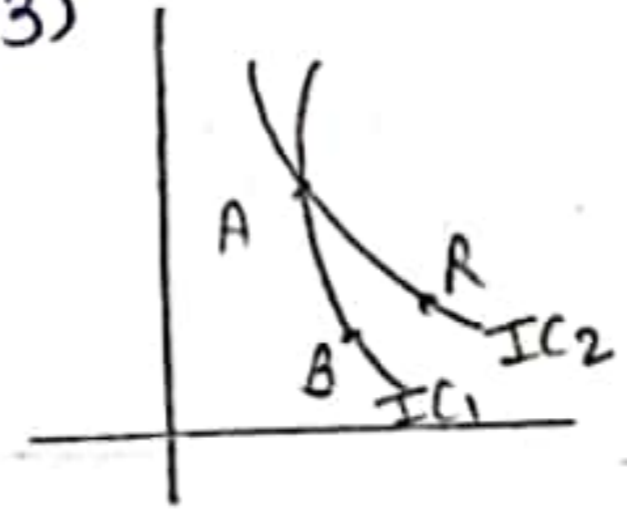


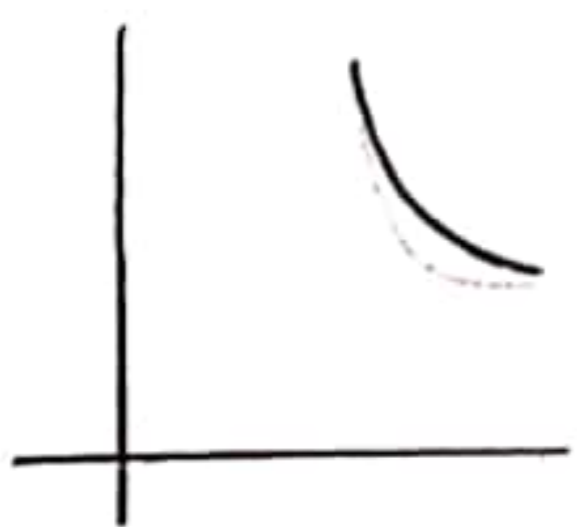
NOTE :- a set of family of indifference curve gives indifference map.

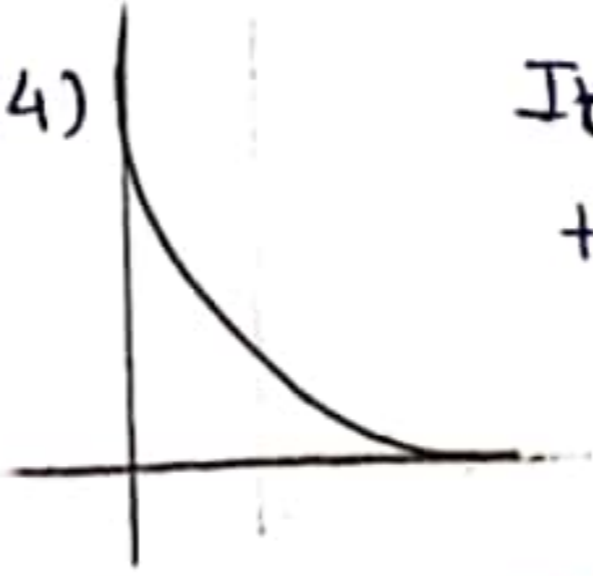
- ↳ Indifference map is drawn on the basis of taste & preference.
- ↳ far from origin means more satisfaction.
- ↳ near from origin means least satisfaction.
- ↳ Points on same curve gives same satisfaction.

Properties of IC.

(1)  It has downward / Convex / negative slope.

(3)  IC never intersect
 $A=B$
 $A=R$
 $B \neq R$

(2)  far from origin gives more satisfaction

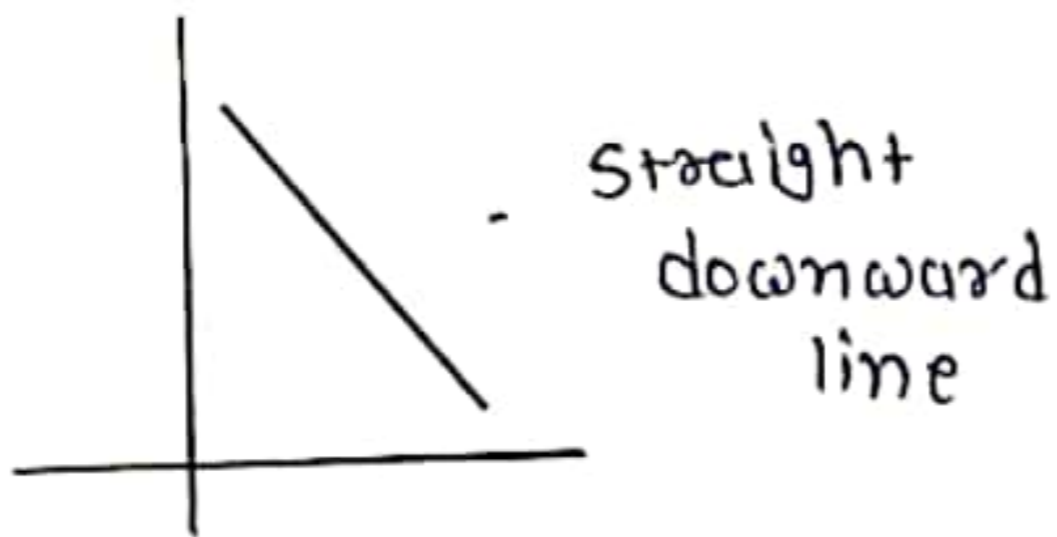
(4)  It never touches axis

(5) must have two goods.

... is able to offer at a point of time.

Exceptions : (not possible in real life)

(i) Perfect Substitution



straight downward line

(ii) Perfect Compliment goods



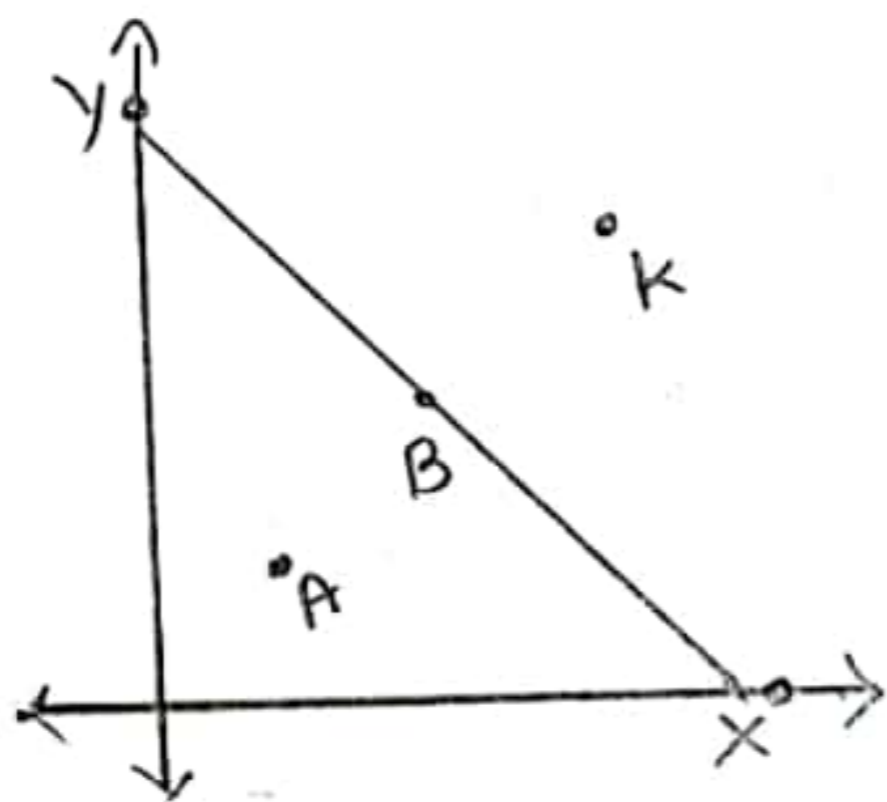
- L shape

land
only
nom

f)

Budget line (Price line)

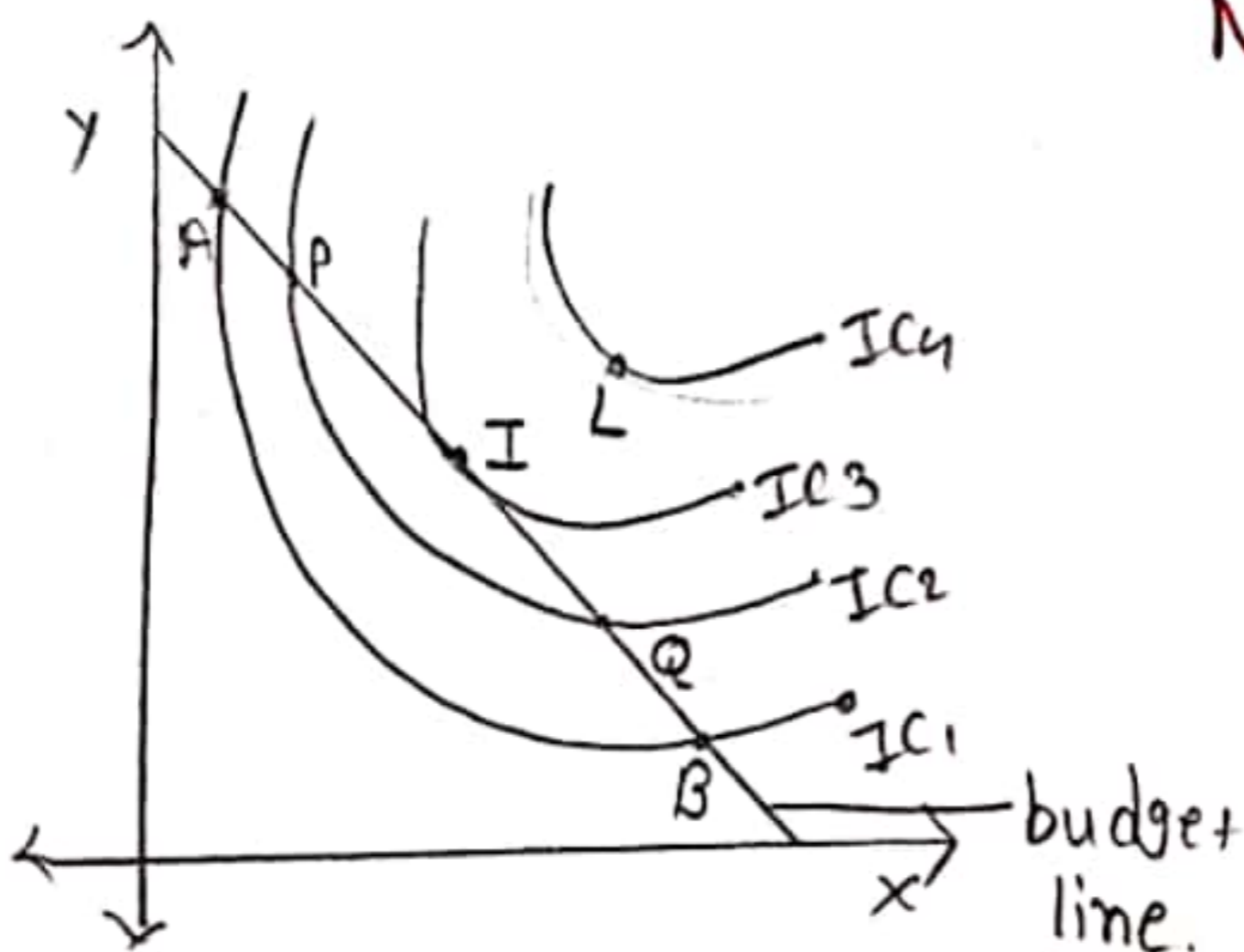
↳ Various combination of two goods that consumer can buy with it's money income.



Slope of Budget line = $\frac{P_x}{P_y}$

Note: downward sloping straight line.

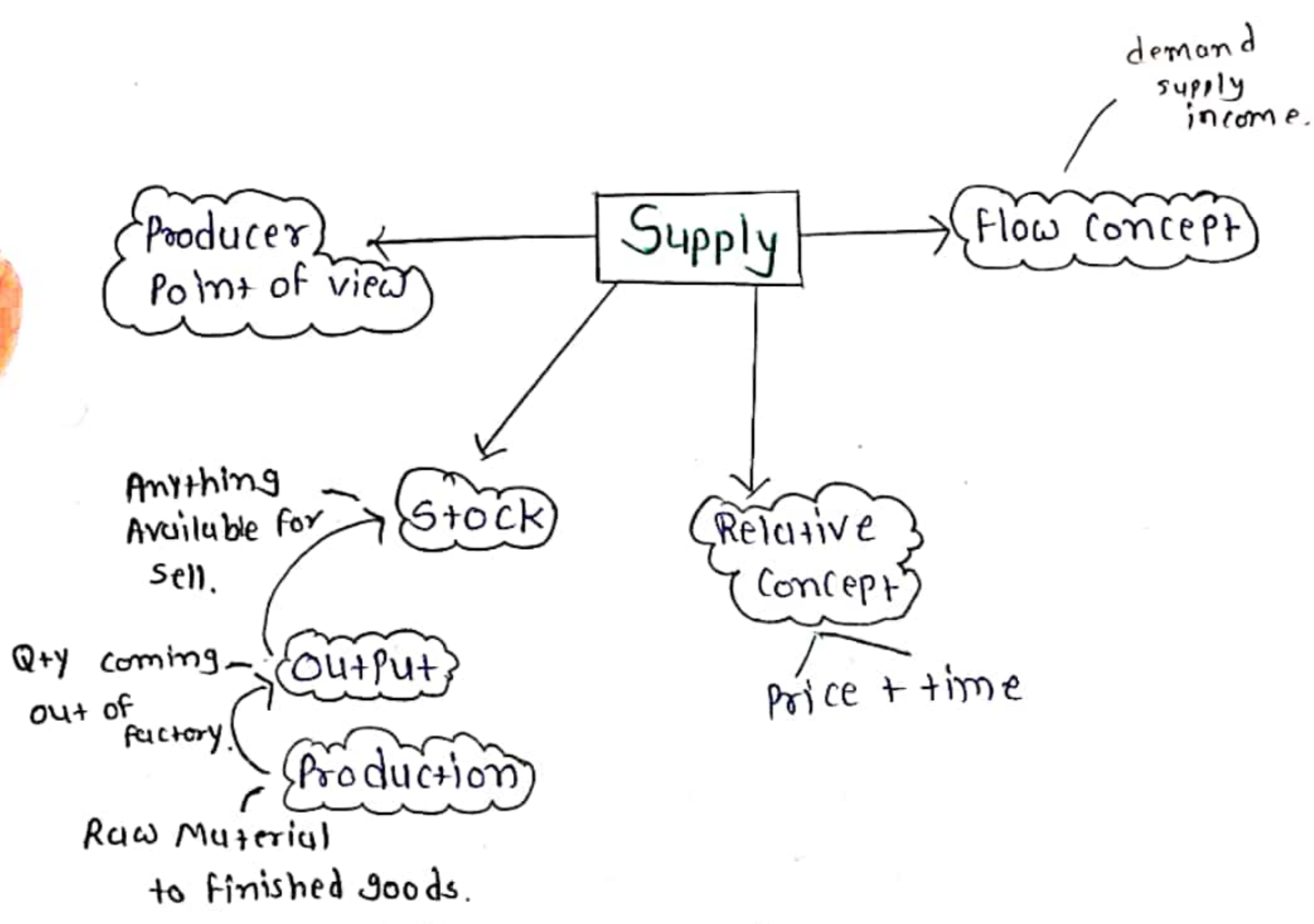
Consumer Equilibrium



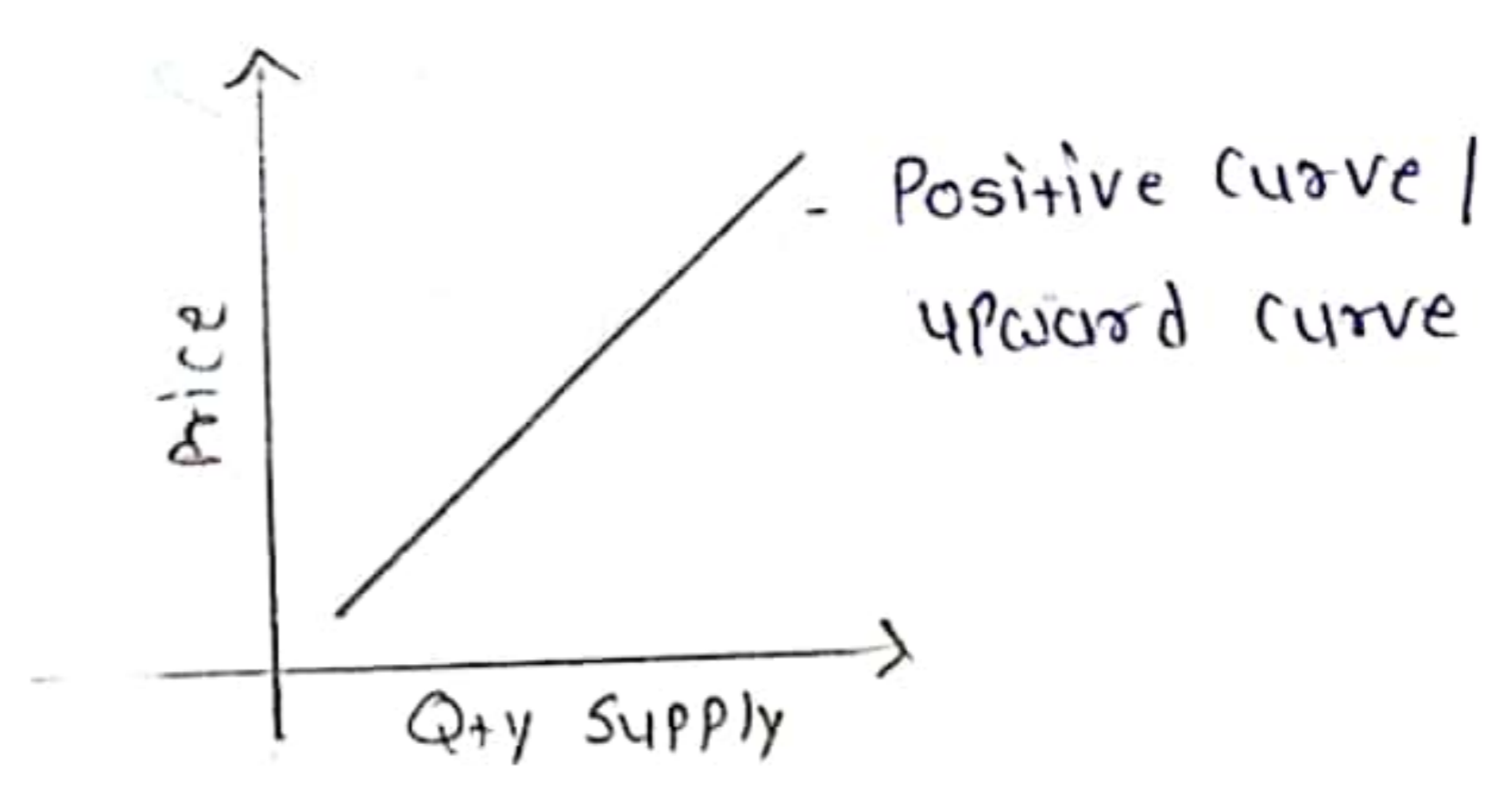
Note: Consumer is at equilibrium when budget line is equal to IC.

↳ Here, IC is Tangentile in nature.

unit 3 : Supply



| Price | Qty Supply |
|-------|------------|
| ↑ | ↑ |
| ↓ | ↓ |



NOTE :- Supply is define as a Qty of Commodity which is offered in market for a sell at a given a price at a point of time.

- ↳ Producer Plans to Sell at a given Price at point time. y
- ↳ Seller is able & willing to offer at a point of time.

Factors affecting Supply

[1] Price

- Higher the price higher Qty supply
- Lower the price lower Qty supply
- direct relation

[2] Price of related goods

| shirt | +shirt | Pen | ink |
|-------|--------|-----|-----|
| 500 | 450 | 50 | 50 |
| 550 | 500 | | |
| 550 | 600 | | |

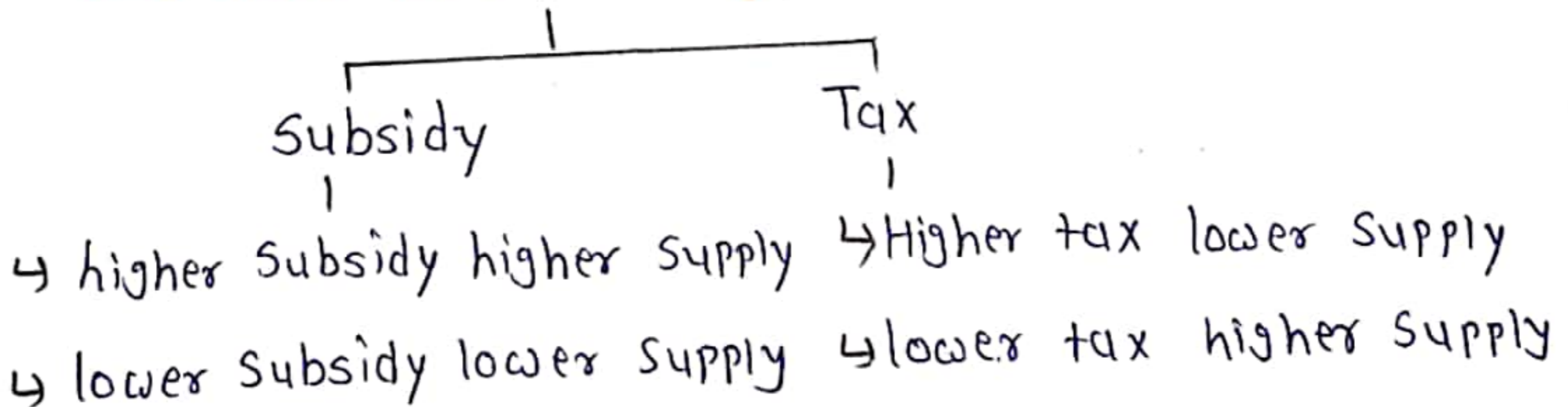
[3] Technology

new Technology higher supply
 old Technology lower supply

[4] Cost of Production

Cost of Production higher supply lower
 Cost of Production lower supply higher.

[5] Government Policy

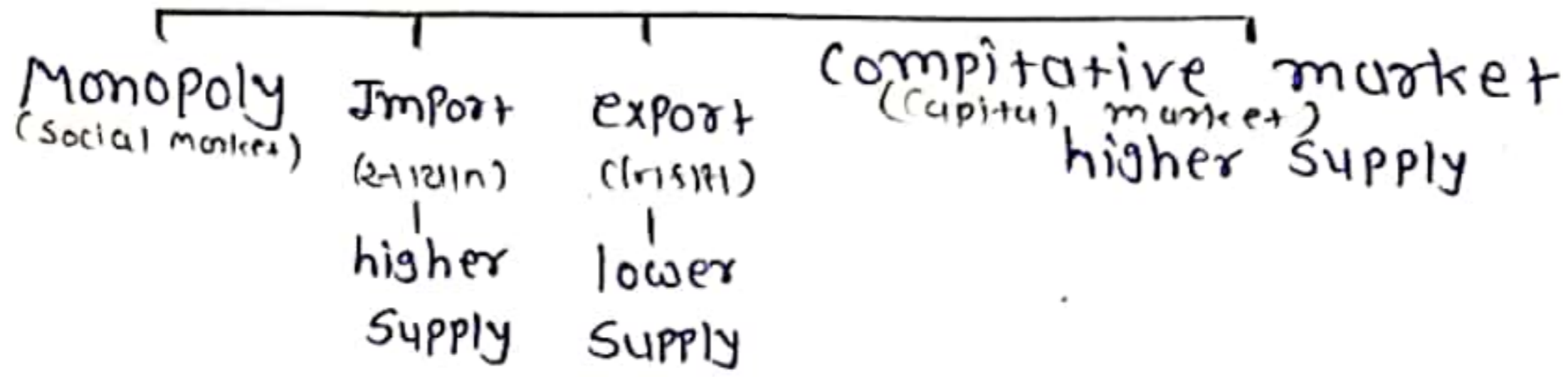


[6] Time

Short period of time lower supply
 long period of time higher supply

(stitching of old, booking of car)

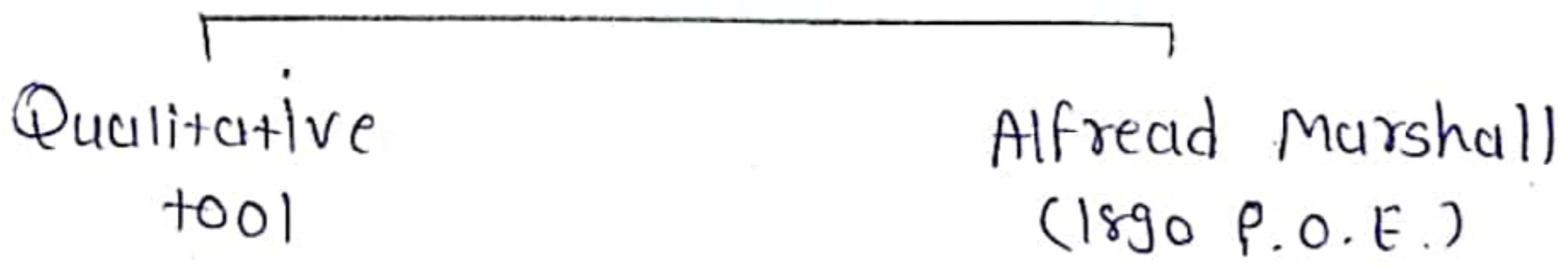
[7] Number of firms.



[8] Natural factors.

natural factors favourable higher supply
 natural factors unfavourable lower supply

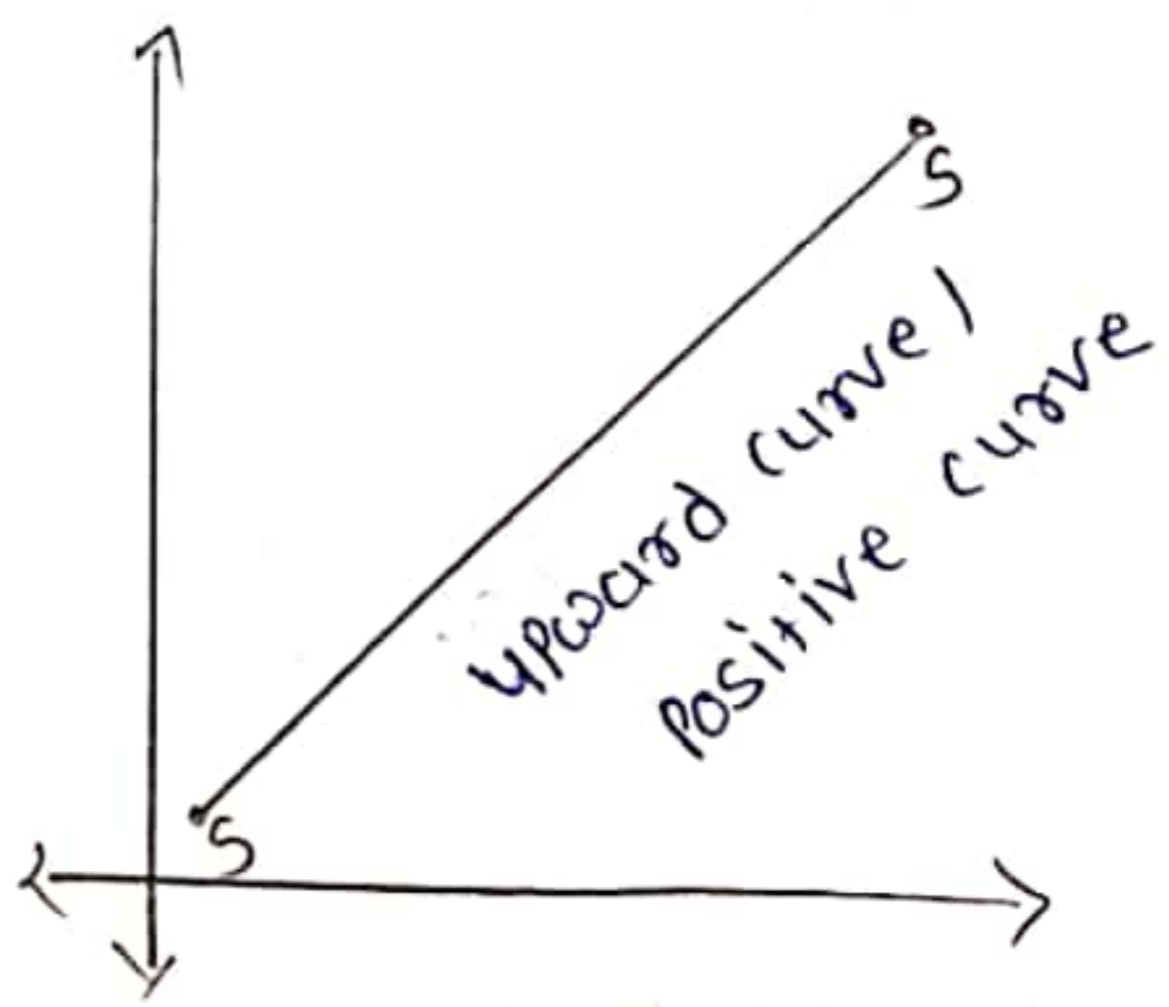
Law of Supply



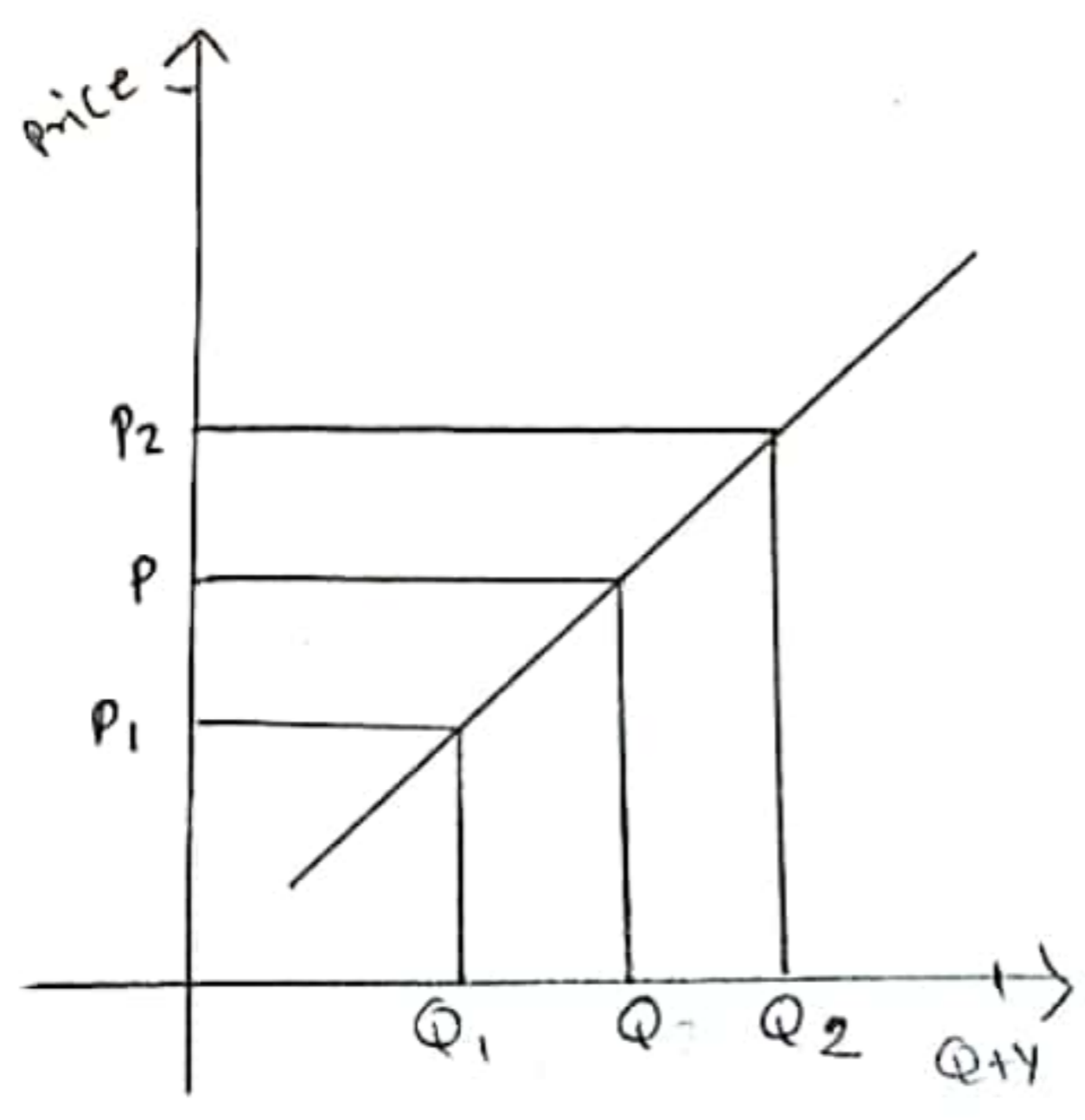
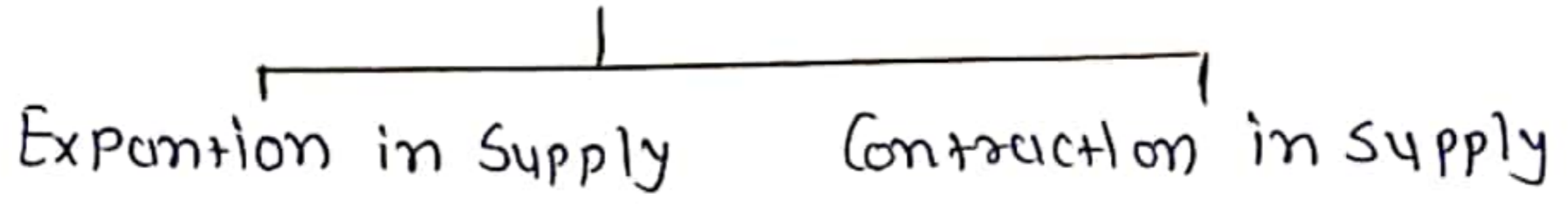
Note: Other things beings constant.

At the higher price more Qty supply
 At the lower price less Qty supply.

| Price | Qty. supply |
|-------|-------------|
| 5 | 500 |
| 4 | 400 |
| 3 | 300 |
| 2 | 200 |
| 1 | 100 |



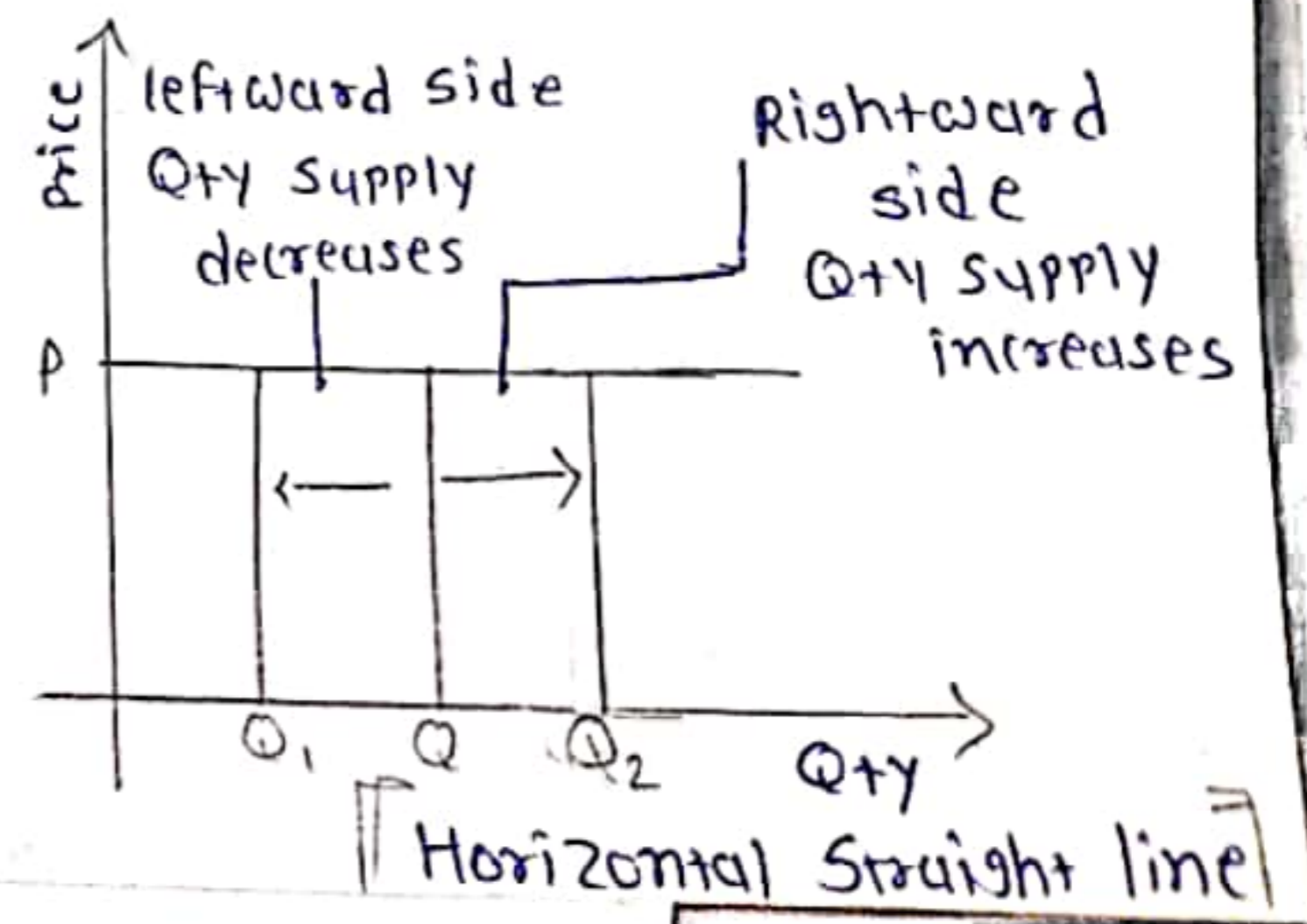
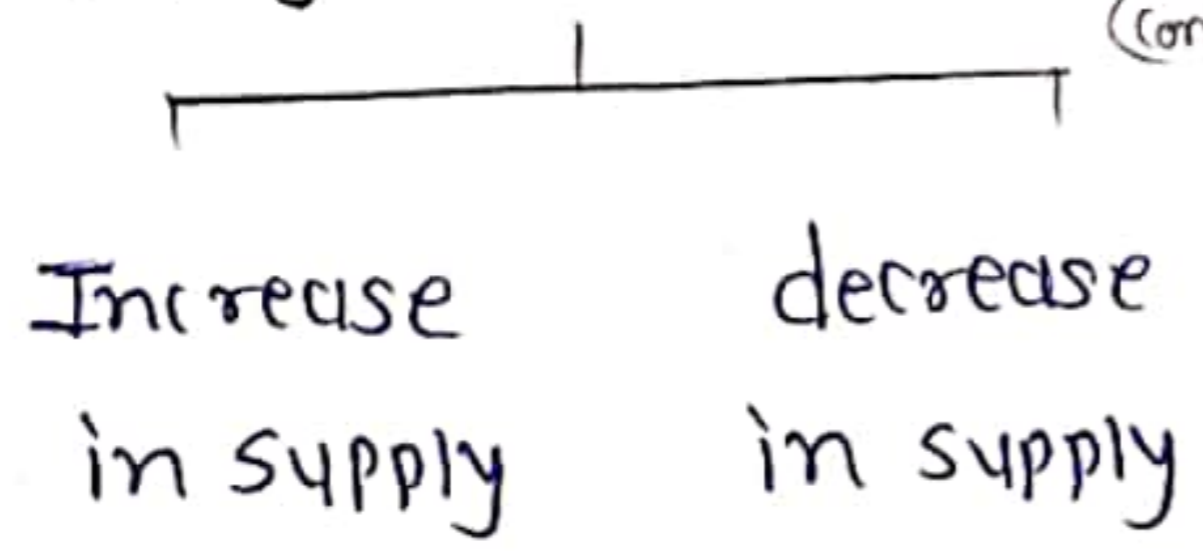
Variation in Supply



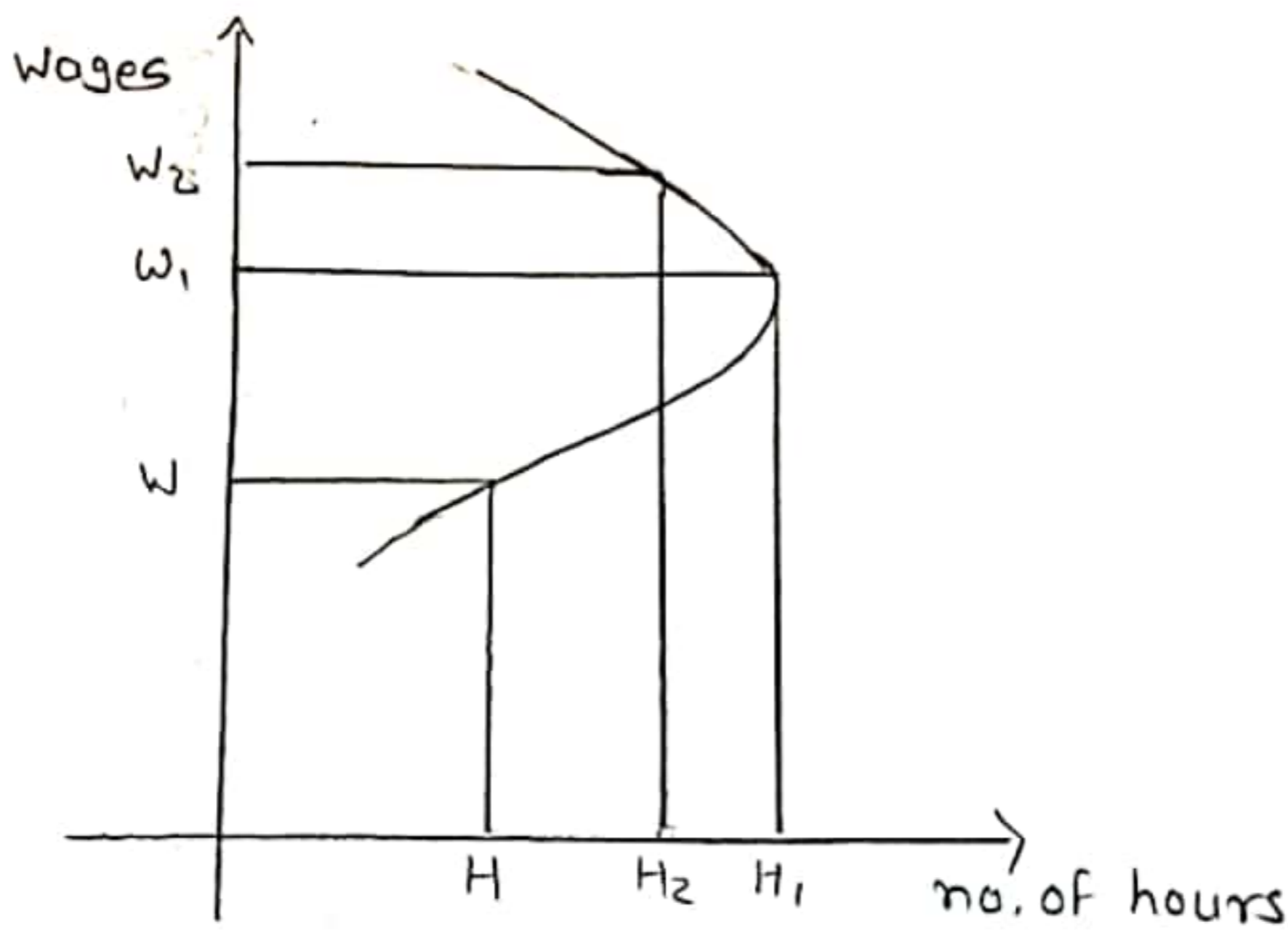
Note: When supply changes due to price only, other factors are kept constant, change in the Qty supply movement along the same supply curve.

- ↳ At higher Price expansion takes place.
- ↳ At lower Price contraction takes place.

Change in the Supply (Price kept constant)



• — Backward Slopping labour Supply.



backward slopping labour Curve

↳ This concept is exception to law of supply

↳ Backward banding labour supply curve

• — Elasticity of supply

Quantitative tool Alfred Marshall Cardinal Approach

Responsive to the Qty supply due to price

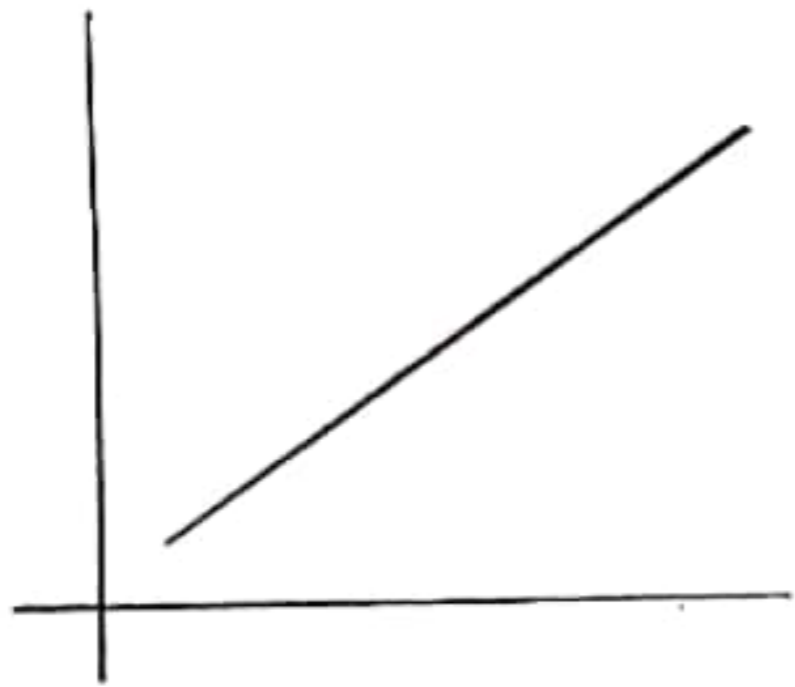
• — Price elasticity of supply

$$E_s = \frac{\% \text{ change in Qty supply}}{\% \text{ change in price}}$$

$$= \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

Types of price elasticity of supply

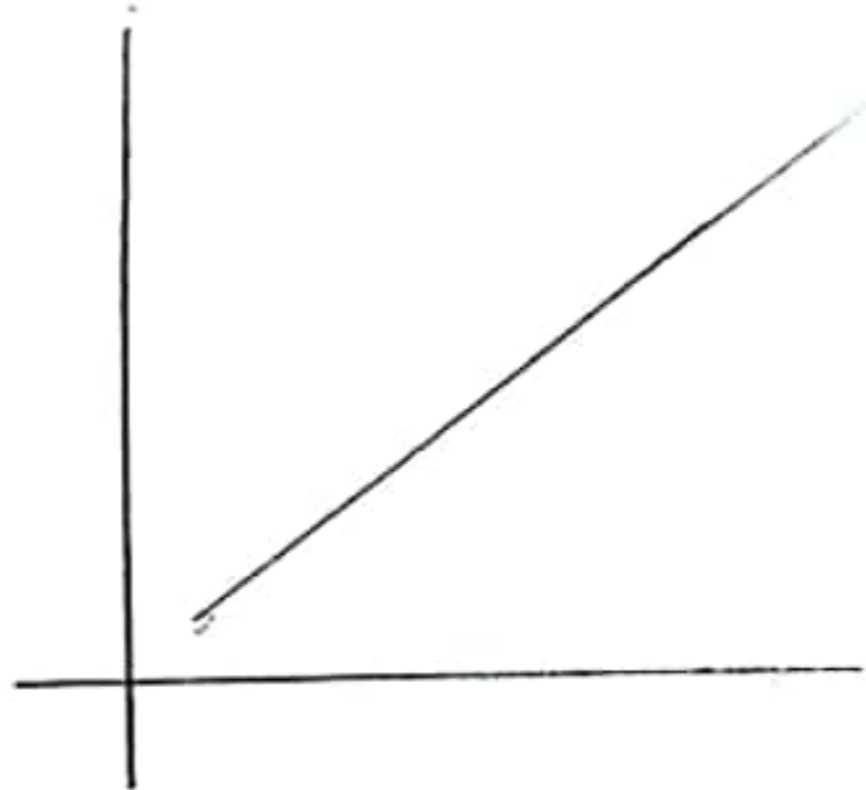
(1) unitary price elasticity of supply



$E_s = 1$

Rectangular Hyperbola curve

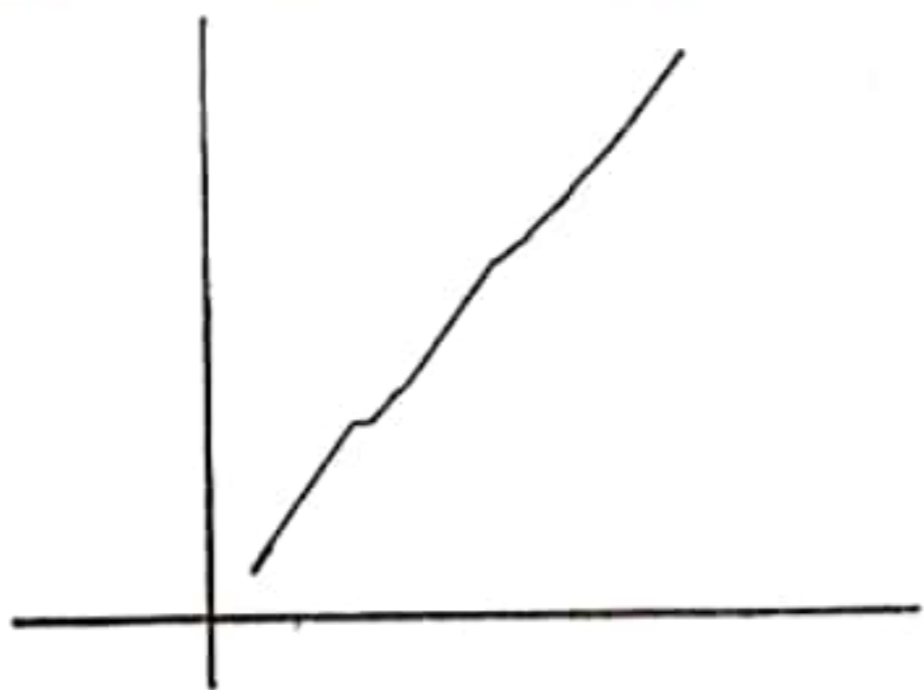
(2) Relatively elastic / more elastic



$E_s > 1$

upward flatter slopping curve

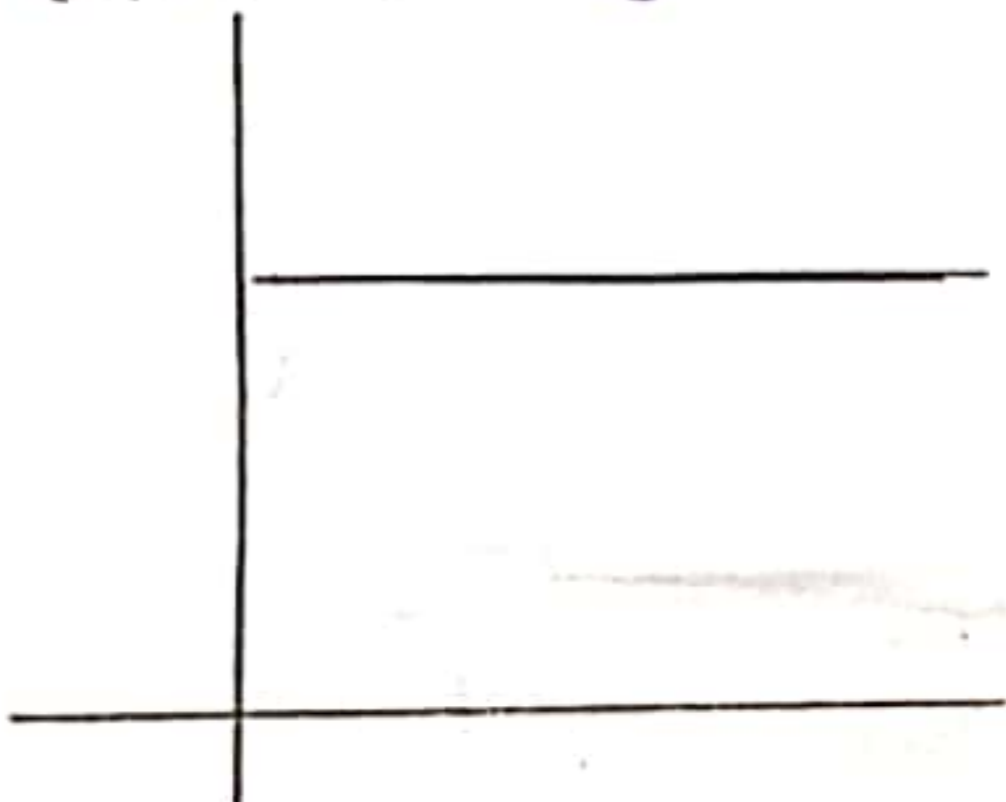
(3) Relatively inelastic curve



$E_s < 1$

upward slopping steeper curve

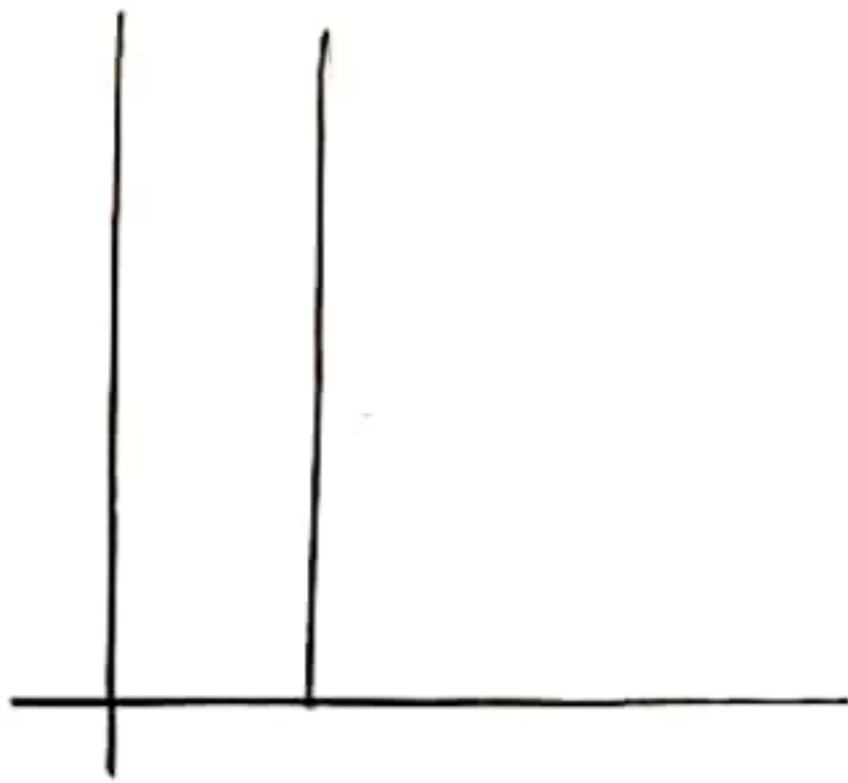
(4) Perfectly elastic



$E_s = \infty$

Horizontal straight line

(5) Perfectly Inelastic

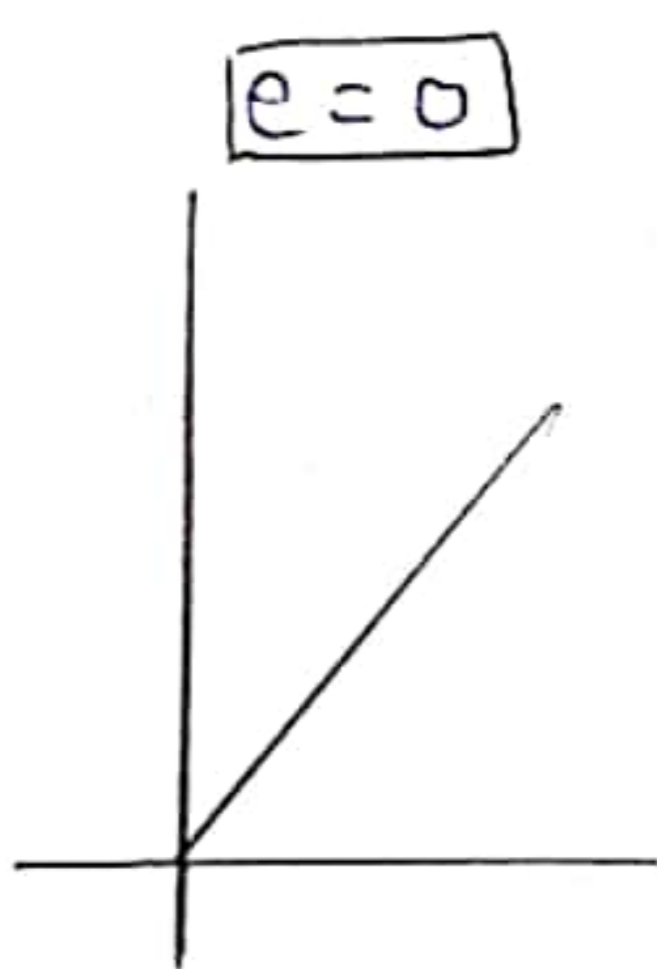


$E_s = 0$
 Horizontal vertical line

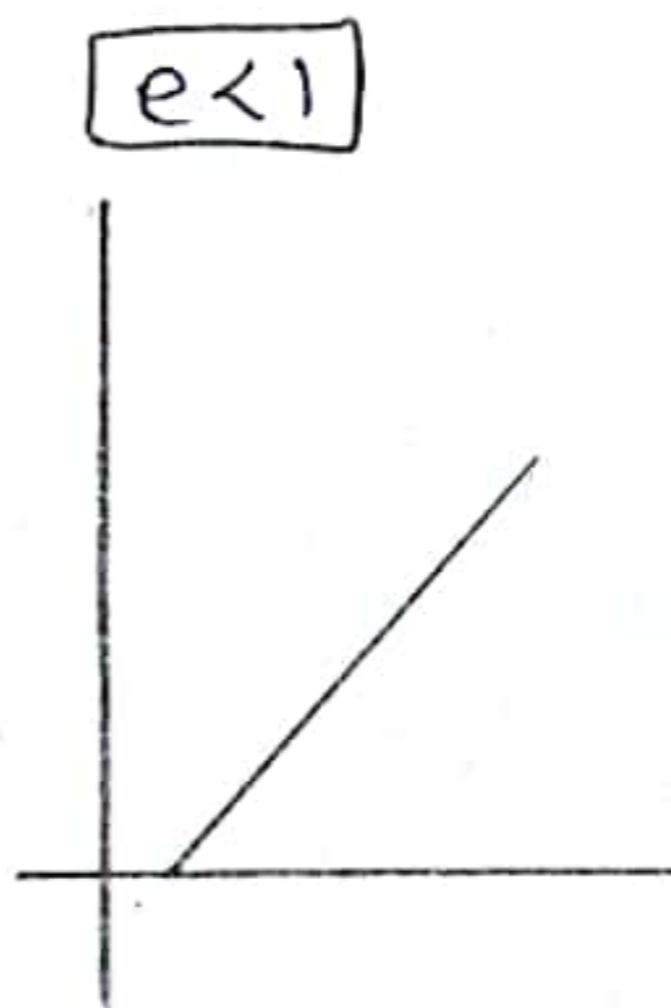
ex: land, Perishable goods,
 antique coins...
 items

• - Measurement of Supply elasticity.

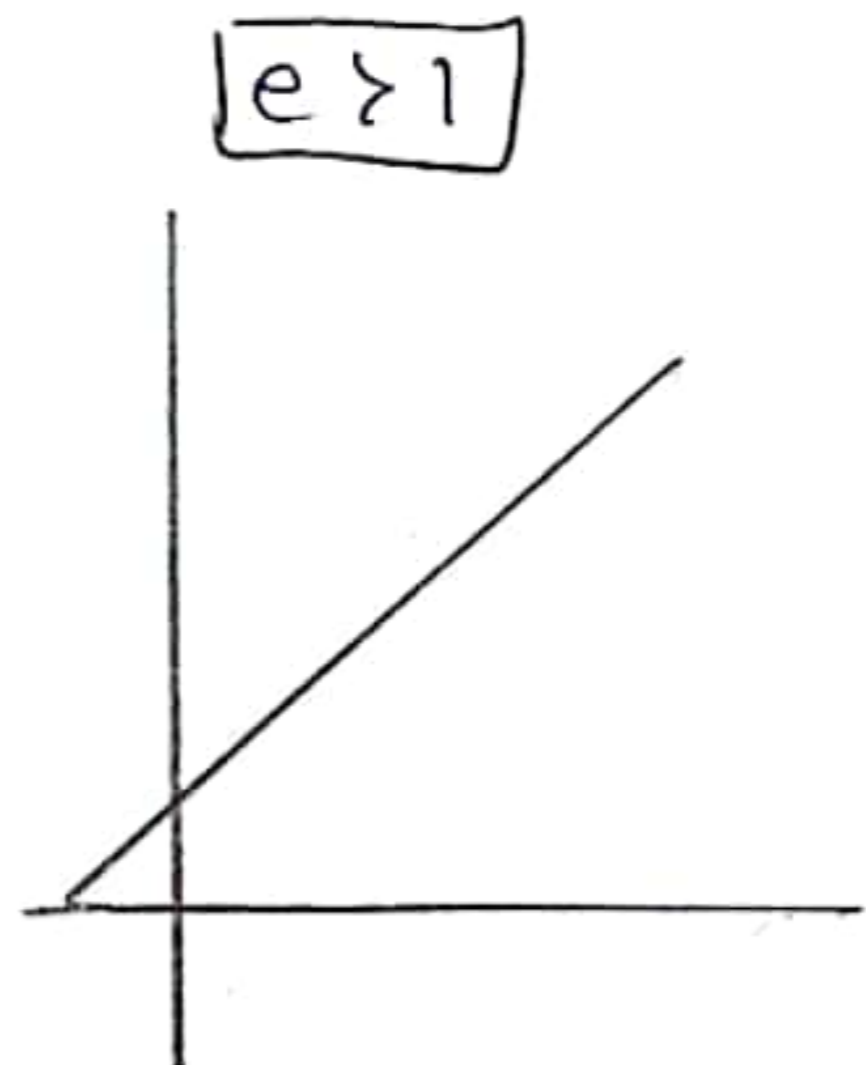
(1) Point or Geometric method



O → Intersection



X → Intersection



Y → Intersection
 X → Intersection
 on negative side

(2) Arc elasticity.