Basics of Demand

What it is required to have Demand

↓

Wish / Desire
+ purchasing power /Ability to pay)
                                     money
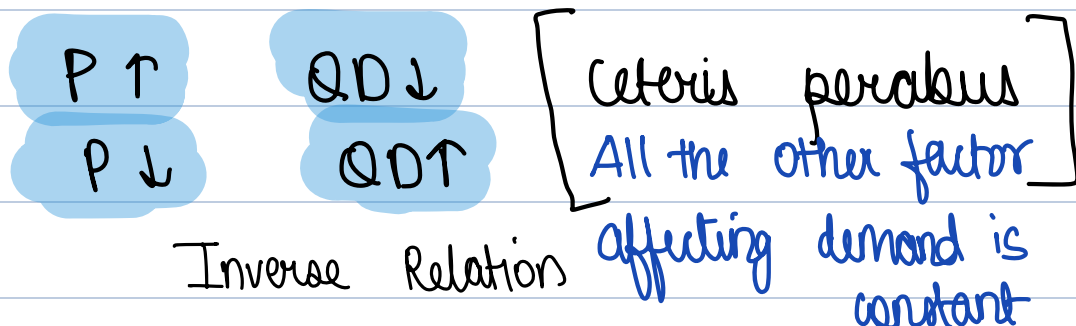
To make a Demand   Effective Demand

↓

* Wish/Desire + purchasing power
  + Willingness to spend /
  willingness to use those means

Stock Concept	Flow Concept
→ measure a thing at a point of time	→ measure a thing in period of time
Demand is a Flow Concept	

DETERMINANTS OF DEMAND

① Price of Own commodity =

$$P\uparrow \qquad QD\downarrow$$
$$P\downarrow \qquad QD\uparrow$$

Inverse Relation

$$\begin{bmatrix} \text{Ceteris perabus} \\ \text{All the other factor} \\ \text{affecting demand is} \\ \text{constant} \end{bmatrix}$$
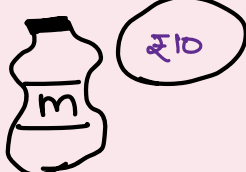
② Price of <u>Related</u> <u>goods</u> :→

> when price of one good affect demand for another is called Related goods

✦ Substitute goods	✦ Complementary goods
(Goods which are used in place of each other)	(goods which are used Together)

Substitute goods:

₹10 Fanta | ₹10 Mirinda

Fanta
$$P\uparrow \; \underline{₹20}$$
$$P\downarrow \; ₹5$$

Mirinda
$$QD\uparrow$$
$$QD\downarrow$$

Complementary goods:

₹20 (pen) | INK

$$P\uparrow \to ₹40 \qquad QD\downarrow$$
$$P\downarrow \qquad\qquad QD\uparrow$$

↓ DIRECT RELATION

↓ INVERSE RELATION

③ Disposable Income of Buyer

$$\text{Disposable Income} = \frac{\text{Total Income} - \text{Taxes}}{\text{DI}}$$

NORMAL GOODS	INFERIOR GOODS (Bajra, Ration wheat, Rice)

Y↑	Demand ↑	X↑	Demand ↓
X↓	Demand ↓	Y↓	Demand ↑
(Direct Relation)		(Inverse Relation)	

propotion of Income spend on luxury goods > propotion of Income spent on necessity goods

④ Taste and preferences.

Favourable Taste & preference = Demand ↑

Unfavourable taste & preference = Demand ↓
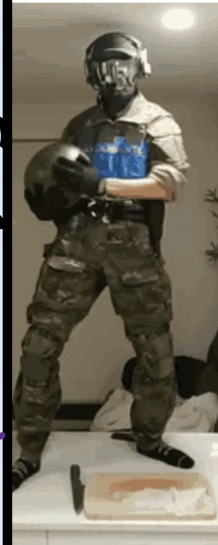
External Effects on Utility

✦ Demonstration Effect

किसी की "देखा देखी" करना

Emulate consumption Behaviour of others

Eg:→ If neighour buy ALEXA, BIKE You also Buy Same

James Dusenbery

✦ Bandwagon Effect

सामान खरीदना क्योकि वो "चलन मे है"

* Demand inc becau others are buying that commoddy
* Buy commoddy in order to be Stylish

Eg- Smart Watch, Cargo Pants.

↳ High priced goods.

✦ Snob Effect

Demand ka कम होना क्योकी "सब खरीद रहे है"

→ To be Exclusive
→ Be different

"Snob is a function of consumtions"

Eg- Salman Khan Bracelette

✦ Veblen Effect

- Consumption of Highly priced goods
- Because it shoes status
- fulfil needs for conspicuos consumption
- Snob is function of Veblen Price
- For Eg - Car/Juellery

Thrstein Veblen

(5) **Consumers Expectation** —

$₹100$ →→ ₹20

Directly

Future price ↑   Demand ↑

Fueture price ↓   Demand

Future Income ↑   Demand

Future _Income ↓   Demand

(6) Size of population

Population ↑   Demand ↑

population ↓   Demand ↓

(7) **Age Distribution of population**

OLD AGE PEOPLE = D ↑(Spectacles, walking Stick)

MORE OF CHILDREN = D ↑(Toys, Diaper)

* Young People (20-40) =

(8) Level of national Income and its Distri.

NI ↑   Demand ↑

NI ↓   Demand ↓

However Distribution of Income affect Demand

EQUAL

MORE OF CONSUMER GOODS WOULD BE DEMANDED

UNEQUAL

PROPENSITY TO CONSUME will be less, duxury goods will be Demanded

(9) Consumer Credit

| Credit Facility ↑   D↑ | Int ↑   D↓ |
| Credit Facility ↓   D↓ | Int ↓   D↑ |

(10) Govt policies and regulation:

| Tax ↑   D↓ | Subsidy ↑ - D↑ |
| Tax ↓   D↑ | Subs ↓ - D↓ |

Demand Function

Relation Between demand and its Determinants is Demand function

$$Q_x = F(P_x, P_r, Y)$$

Law of Demand

There would be always
Inverse relation Between
PRICE AND QUANTITY DEMANDED
* Keeping All other fectors constant

Prof. Alfred Marshal

Ceteris
perubiue

Demand shedule - Tabular presentation of
semand of a comodity

Market Demand shedule - Tabular presentation
of Demand of a commodity
by All Buyer in Market

— y

Demand shedule

Shedule A →

Shedule B.

P	QD
↓ 10	100 ↑
↓ B	200 ↑
7	300
5	400

Y	QD
↓ 10	100 ↓
↓ 8	70 ↓
↓ 7	60 ↓
5	50

Diagram present ↓ curve ↓ Dem curv

P

QD

firm Demand

y

D
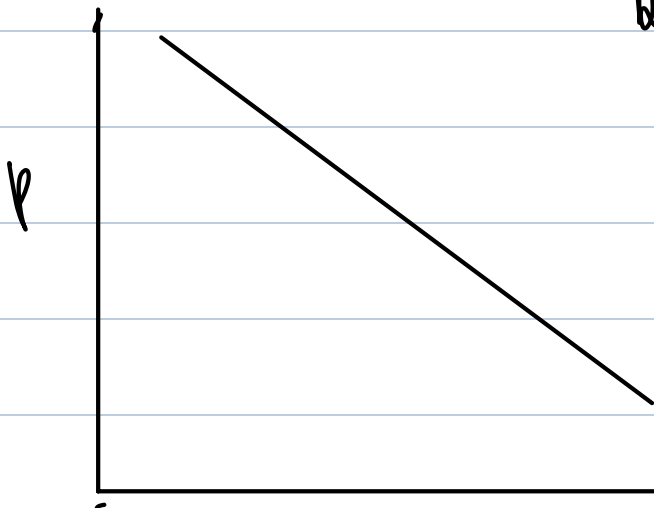
Indushy demand

Houschold demand

Price	Q.D.
1	50
2	40
3	30
4	20

Households Demand

Price of Apple in (Rs)	QD_A	QD_B	Total Market Demand
0	3	2	5
10	2	1	3
20	1	0	1
30	0	0	0

Demand Curve - graphical presentation of Demand shedule

Market Demand Curve - graphical presentation of market Demand shedule
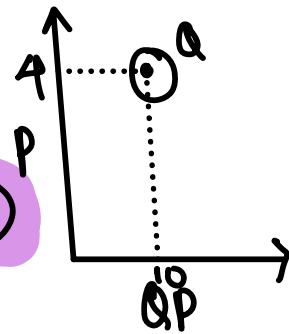
P

D

QD

(Demand Curve)

P

QD
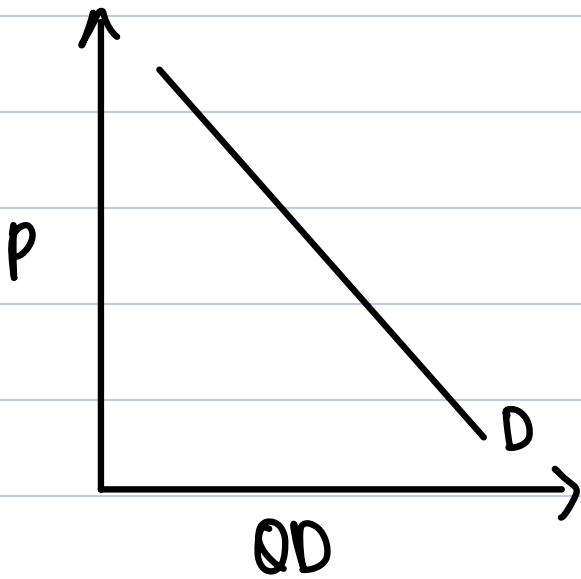
(Market Demand curve)

Steeper
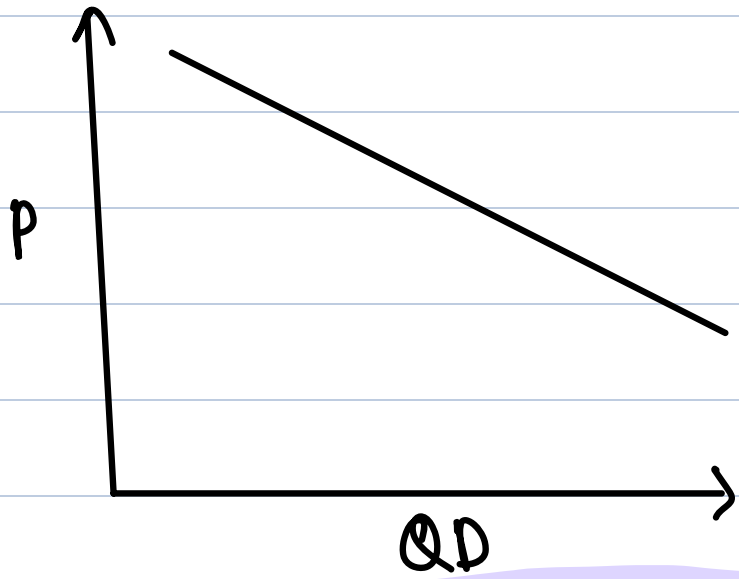
flatter

slope of Demand Curve $= \dfrac{-\Delta P}{\Delta Q}$

Step 1 ⇒ at Price 4
  Q.D is 10

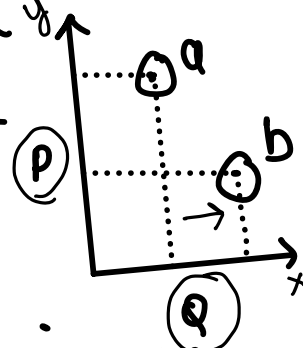(You are at Point a)

Step 2 → when price
changes from 4 to 2
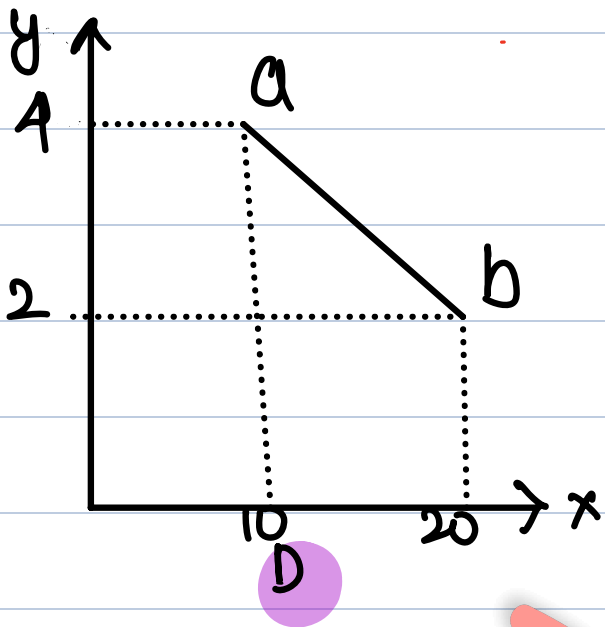Demand rises from
  10 → 20

(now you are at point b)

Step 3 → Due to change in P (ΔP)
  and change in Q (ΔQ)
there has been created a slope

☞ As price and demand is
inversely related, slope will be
downward sloping and always
negative i.e $= -\Delta P/\Delta Q$

change along vertical axis
change along Horizontal axis

$$i.e \quad -\frac{\Delta P}{\Delta Q}$$
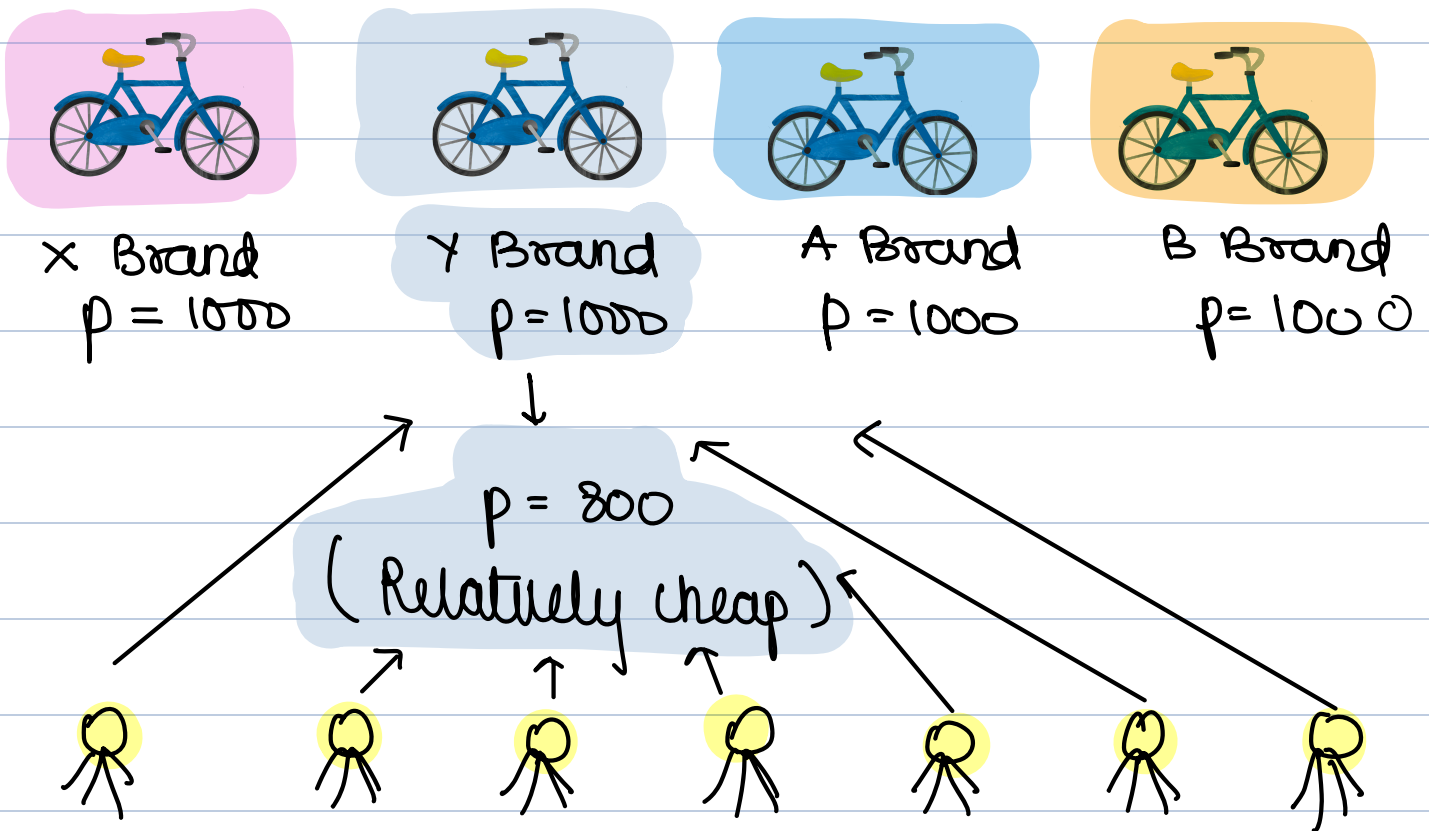
"Demand curve can be linear OR curvilinear"

Why does demand curve slope Down OR why more of goods are purchased when prices are low

↳ Inver Relation bet P & Q_x

① **Price effect of a fall in price =** change in demand due to fall in price has two component

"given by Hick's & Allen"

(a) Substitution Effect

X Brand	Y Brand	A Brand	B Brand
p = 1000	p = 1000	p = 1000	p = 1000

p = 800
(Relatively cheap)

When one in substitutes becomes relatively cheap people prefer to buy relatively cheap product over expensive one as they are substitutes hence demand increased with Dec in price

Note

Substitution effect both on Normal as well as Inferior goods.

(2) **Income effect** — Whenever there is decrease in price of commodity consumer Real Income Rises

Johnson Powder ₹100

→ **Offer 50% OFF**

(Here there is increase in real income by ₹ 50)

==Now Income effect work Different on diff type of goods==

Normal goods   Inferior goods

$Y\uparrow \quad QD\uparrow$ $Y\uparrow \quad QD\downarrow$
$Y\downarrow \quad QD\downarrow$ $Y\downarrow \quad QD\uparrow$

Note
Income effect does not apply to Inferior goods

① For Normal goods ⇒ when price fall Income rises so as Demand Rises

② For Inferior good → price falls & Income rises and demand falls

Now what happen in case of INFERIOR GOODS

substitution effect 👍	Income effect 👎
P↓ D↑	P↓ D↓
P↑ D↓	P↑ D↑

P → 10	QD → 100
P → 8	QD → 200

} 100↑

P → 10	QD → 100
P → 8	QD → 60

} 40↓

Inc in demand due to
substitution effect > Decrease in demand due
to Income effect

Conclusion → In Inferior good demand Inc due
to fall in price only when subst.
effect overucign Income effect

※ Here ↑ QD is 100 > ↓ QD which is 40

net Inc → 60

② Utility Maximising behaviour of Consum

Consumer buy goods only when utility
derving from a good is equal to prue
i.e   MU = P

→ La pinoz pizza
→ price = 100   ① MU = 120
                 ② MU = 100
↓   ③ MU = 50

now as in 3rd

purchase consumer is
not geting utility equal to price
He will not buy the product
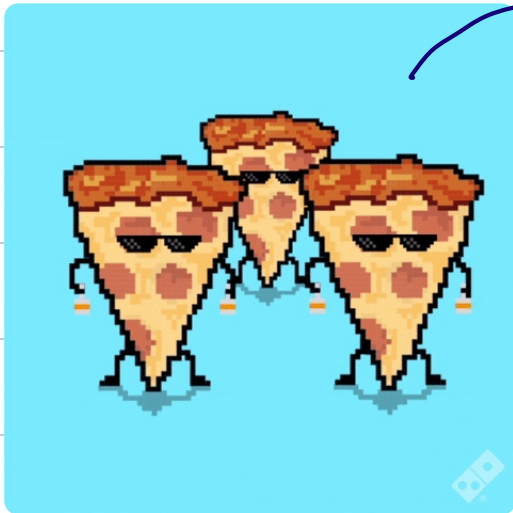
offer offer offer
50% off

Now price ₹50   MU = 50

MU = P

Now as fall in price of pizza has
match consumer utility consumer will
buy pizza

③ Arrival of New consumer :→

price = 100000

Budget = 100000

→ offer by LV → 90% off
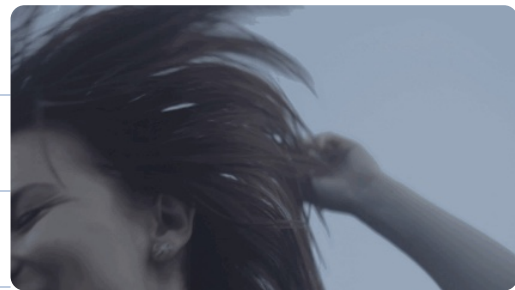
Buy ✓

↳ New consumer aded to group because of fall in price

④ Different Uses:→

Milk Rate = ₹ 60 ltr

Uses = Tea, coffee

↓ Fall in price to ₹ 40

Uses

Sweet   paneer Ice   custord curd
                         cream

* Inc in demand due to Inc uses, P↓ QD↑

Exception to Law of Demand → $P\uparrow Q_x\uparrow$ → ⟋

① **Conspicuous consumption**
- Goods of prestige value
- conspicuous consumption
- snob appeal

↓

Veblen effect

Car Bugati
House. Mansion
rich
fb.com/nohails
Bag LV
shoes ↓ Dior
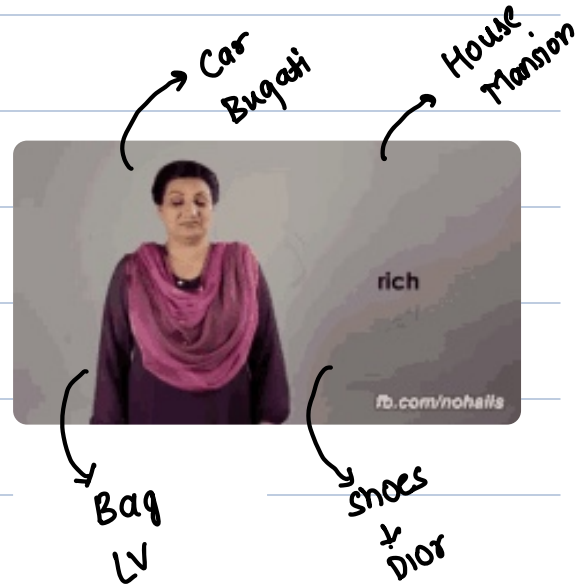
② **Giffen goods — Robert Giffen**

less priced goods = Inferior

① Bread/Wheat	② Rice	③ Vegies	④ fruits
$P\uparrow QD\uparrow$	$P\uparrow QD\downarrow$	$P\uparrow QD\downarrow$	$P\uparrow QD\downarrow$

Inferior

↓

lowest price goods/close substitute X ⎤→ Giffen good

* Giffen goods → ~~Law of Demand~~
* Inferior goods = LOD

Sub ef > Inc eff   Inc eff > sub eff

③ Conspicuous Necessity

High priced goods   Basic Needs.

I JUST NEED YOU
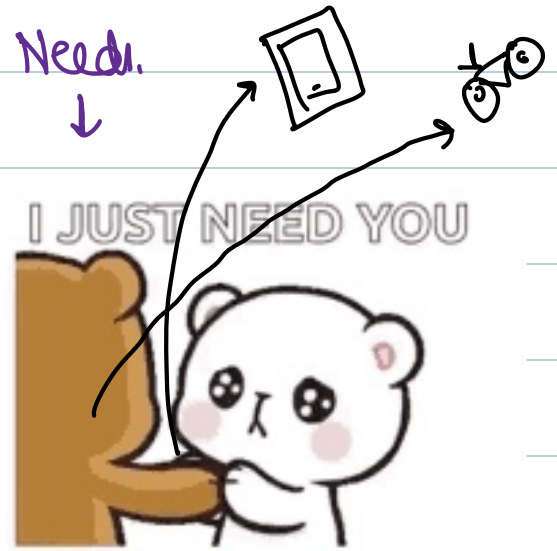
④ Future Exp about price

1 Jan → 10 Jan ——————————→ Future

₹10   ₹100   ₹ 250

Demand

already prices.↑   D↑

⑤ Incomple Information or Irrational Buyer
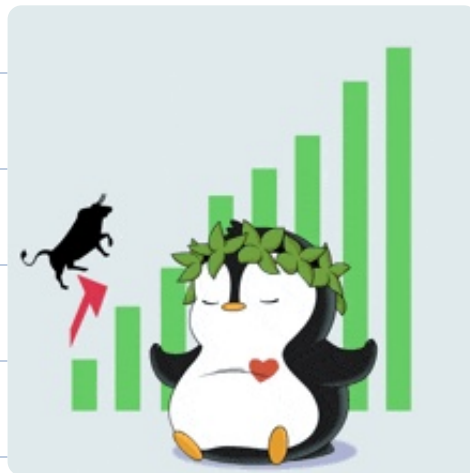
* ₹20 →
  250gm

धनिय → ₹20

→ ₹80 → ₹60

₹60

राजा मुन्ना
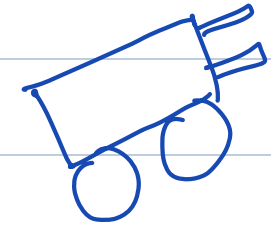
⑦ Demand for Necessities

⑧ Speculations — सट्टा — goods which are purchased to earn profit after sale

← They are demanded more when price Rises

eg- Share, Bonds, gold

* X ltd   * Y ltd

100   100
↓   ↓
80   150

Movement along Demand curve OR Change in QD	Shift in Demand curve OR Change in Demand

C

Contraction in QD

Extentension in QD
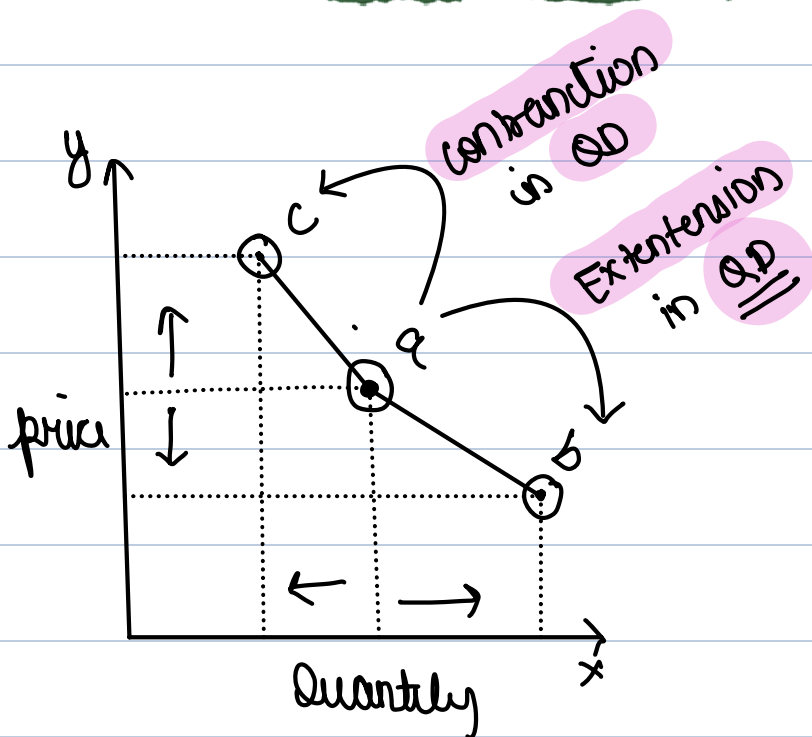
price

Quantity

* With change in price
if Demand changes

Dec in Demand

Inc in Demand

Price

D2

D

D1

Demand

price | price of Related goods | Task & pef | Y | FE | Pop | NI
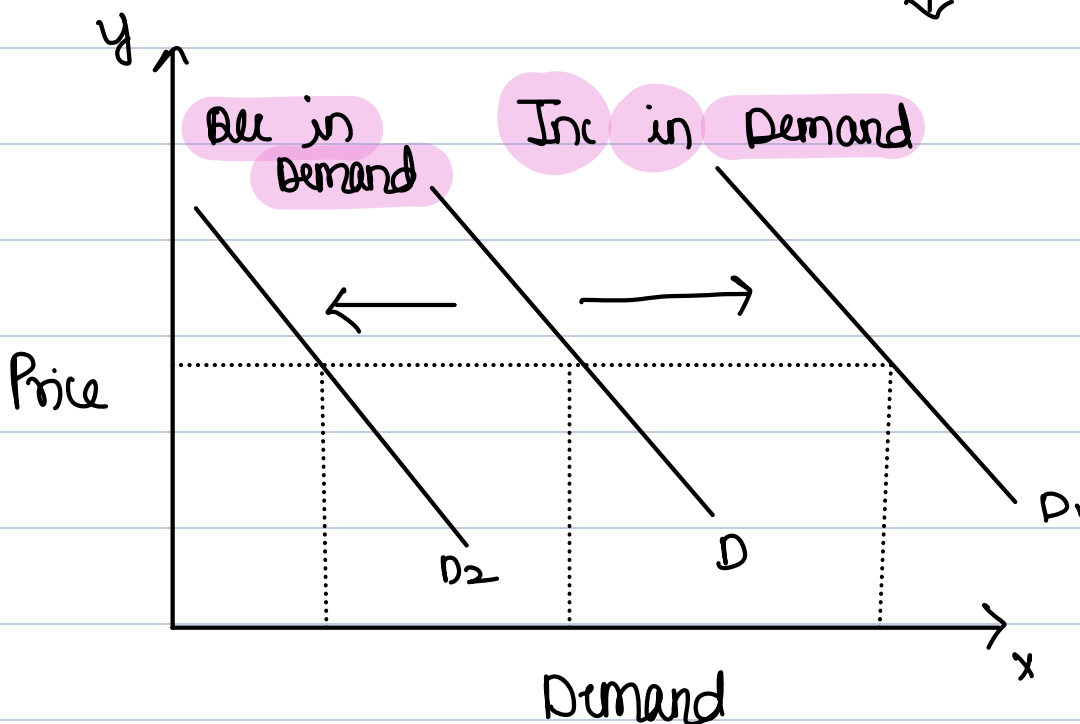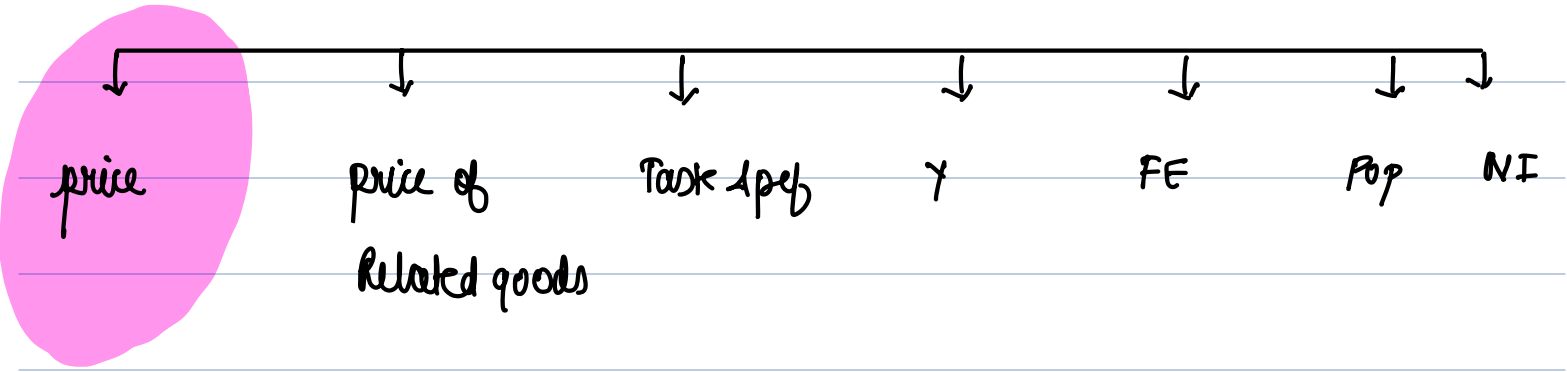
price change ↑↓ Demand change.
↓

==Movement along demand curve==

OR

==Change in Quantity demanded==

P	QD
100	20
50	60

Extension along Deman curve

100

P 50

20

QD

P	QD
50	30
150	10

contraction along
demand
curve

P

QD
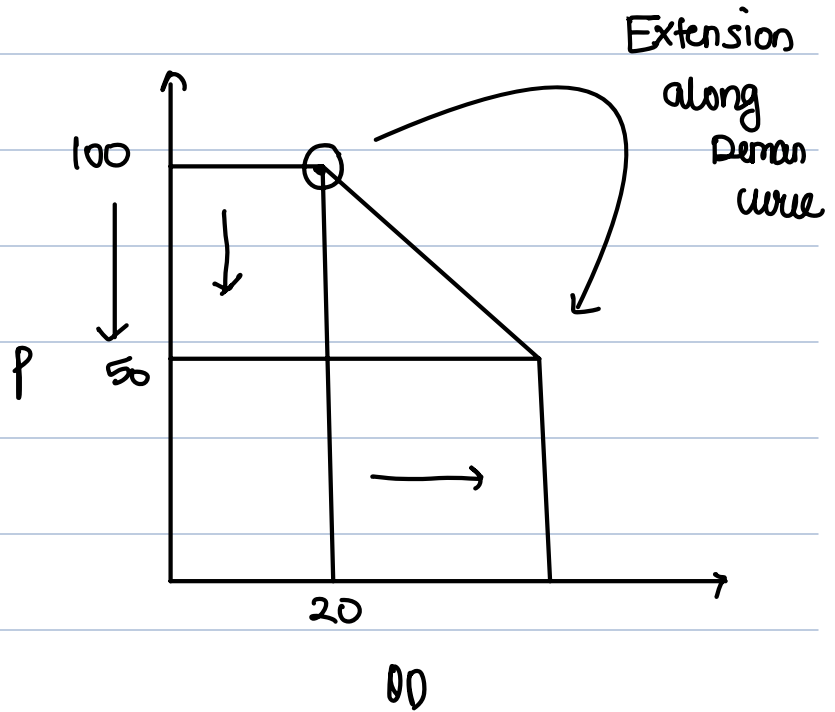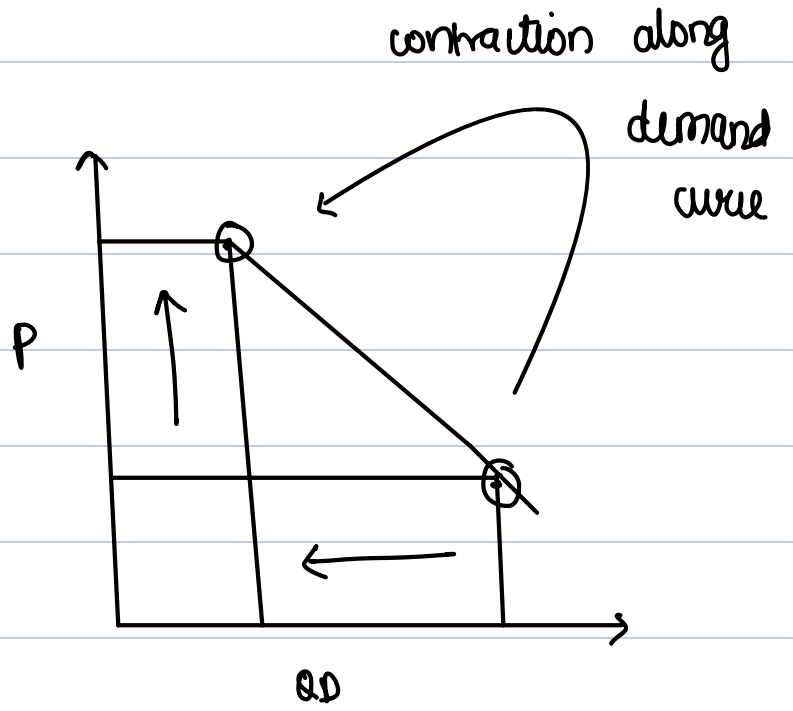
Elasticity of Demand

Reponsiveness of change in Demand due to change in any factor

price elasticity	Income elas.	Cross Elas	Advertism el.
E_p	E_y	E_r	E_a
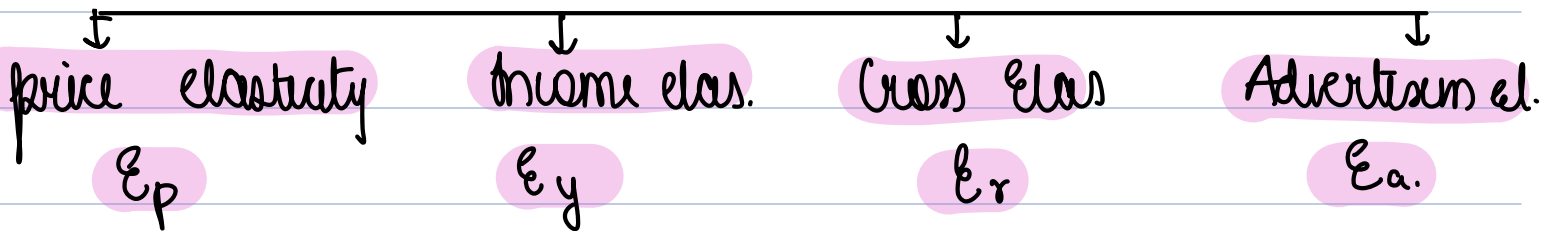
price elasticity of Demand =
% method of calculating E_p

$$\Rightarrow - \frac{\% \text{ ch in } QD}{\% \text{ ch in price}}$$

$$\Rightarrow \frac{\frac{Q_1 - Q}{Q} \times 100}{\frac{P_1 - P}{P} \times 100} \Rightarrow \frac{\frac{\Delta Q}{Q}}{\frac{\Delta P}{P}}$$
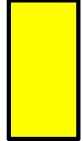
$$\Rightarrow \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

		P	QD	MINUS SIGN ???		
P↑ QD↓		100	10	$\Rightarrow \frac{20-10}{10}$	$\Rightarrow \frac{10}{10}$	$\Rightarrow \frac{100}{20}$
P↓ QD↑		80	20	$- \frac{}{80-100}$	$- \frac{}{-20}$	
				$\frac{}{100}$	$\frac{}{100}$	$\Rightarrow (+5)$

* ALWAYS −ve

* भगर option +e (सही है)

price elasticity > 1
(more elastic) ⟶ Flatter
Highly elastic

P ▢   QD ▮

$\Delta P < \Delta QD$

Eg- Fashionable
clothes.

$\Rightarrow \dfrac{50\%}{10\%}$

P

QD
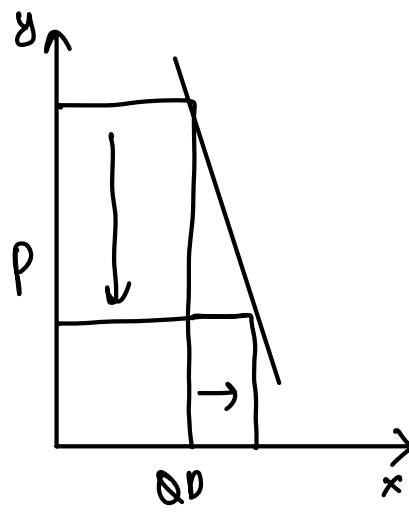
Price Elasticity < 1

less elastic   steeper

P ▢   QD ▮

$\Delta P > \Delta QD$

Eg ⇒ Necessity

y

P

QD   x

Types of elasticity

$\Delta P = \Delta Q$, full change

∞

$\Delta P = \Delta Q$

1 Unitary
1 elast

Rectangular Hyperbole

$\Delta P \Rightarrow \cancel{\Delta Q}$
O change

$\Delta P < \Delta Q$
More than 1
$E_p > 1$

Flatter

P

Highly elastic

$\Delta P > \Delta Q$
Less than unitary / Less Elastic

steeper
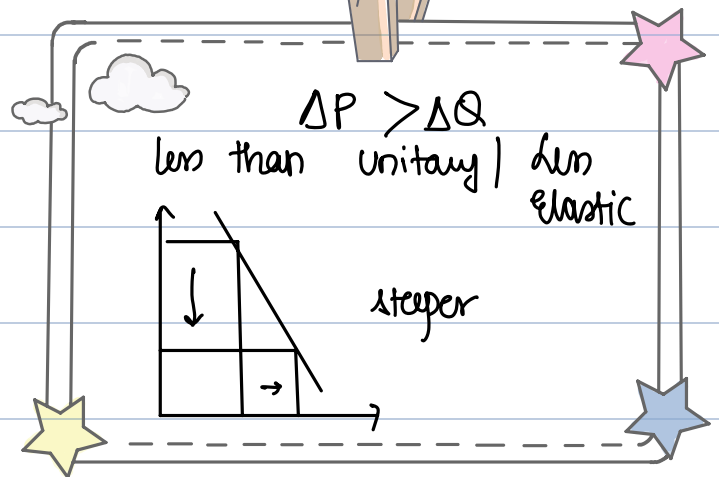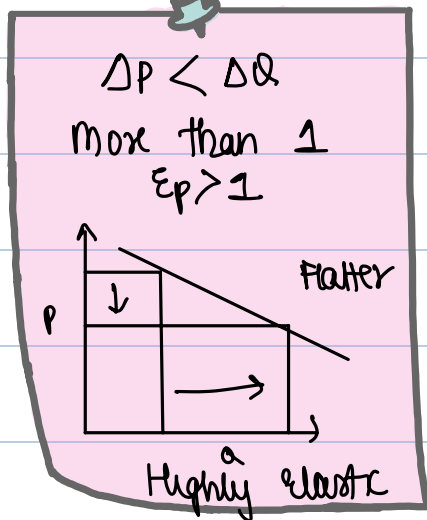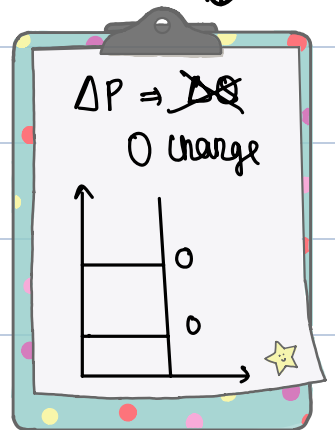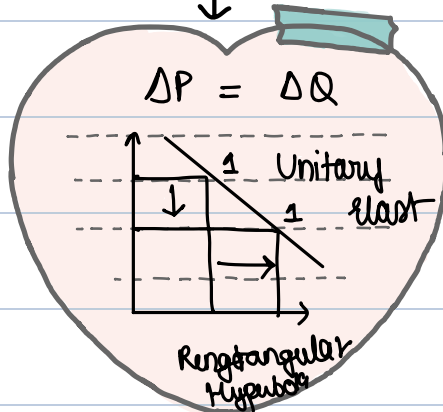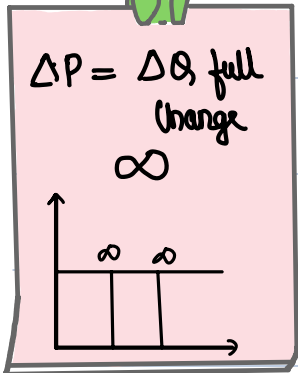
price elasticity = 1 (Unitary)

Rectangular ↑ Hyperbola

P ☐   QD ☐

$\Delta P = \Delta Q$

Eg — $\dfrac{10\%}{10\%} = 1$
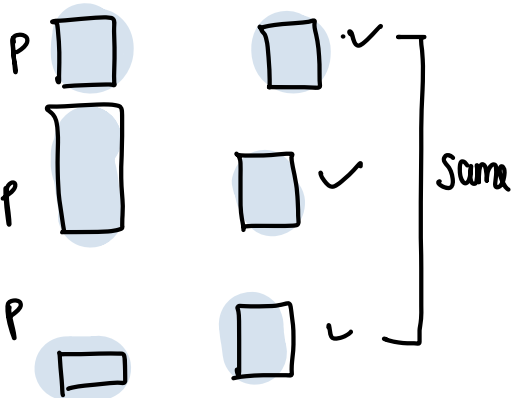
10 — Ed=1

10×100 =1000

5 — Ed=1

5×200 =1000

100   200

---
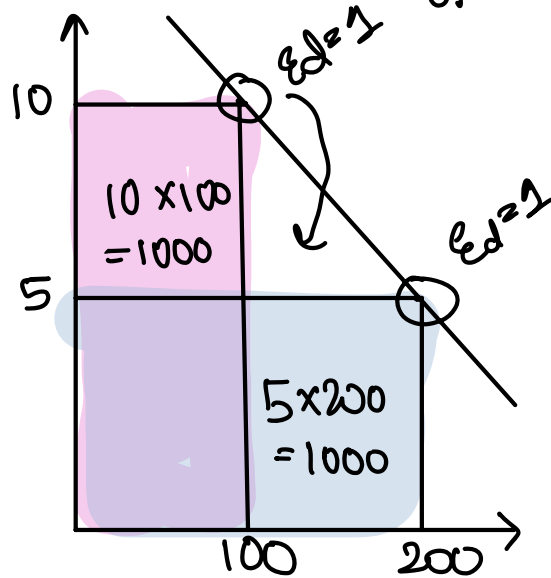
perfectly inelastic Demand = 0 Elasticity

* vertical   * Parallel to y axis
* Elasticity on each point is same i.e 0

P ☐   ☐ ✓

P ☐   ☐ ✓   ] Same

P ☐   ☐ ✓

Eg ⇒ Medicine (Sugar Patient)
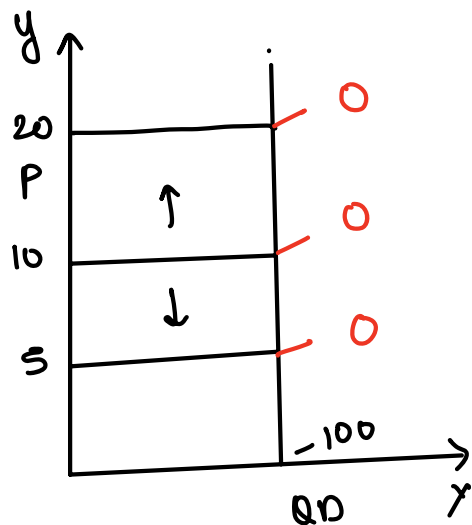
y

20 ———————— O

P

10 ———————— O   ↑

5 ———————— O   ↓

—100

QD   y

Perfectly elastic ⇒ $\underline{\infty}$

⇒ Horizontal
* Parallel to X axis
⇒ Elasticity on each point
      ↳
Same r.e ∞

P ▢   ▢ Q.D

P ▢   ▬

Eq → Perfect Subs
              goods

| Indian Oil Pet | Reliance Petrol |

Graph:
y axis, 72, ↱70, ∞ ∞ ∞
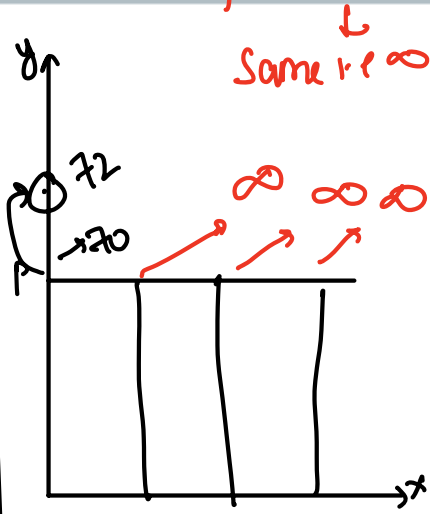
Point elasticity of Demand

(1) Demand → small/
     Infinitely small
          change.
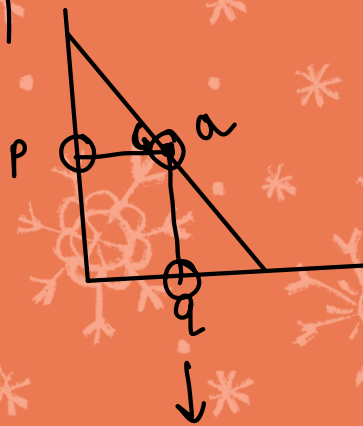
(2) $\varepsilon_p = -\dfrac{dq}{dp} \times \dfrac{P}{Q}$

P ⊖ ⊗⊗ a
        q ⊖
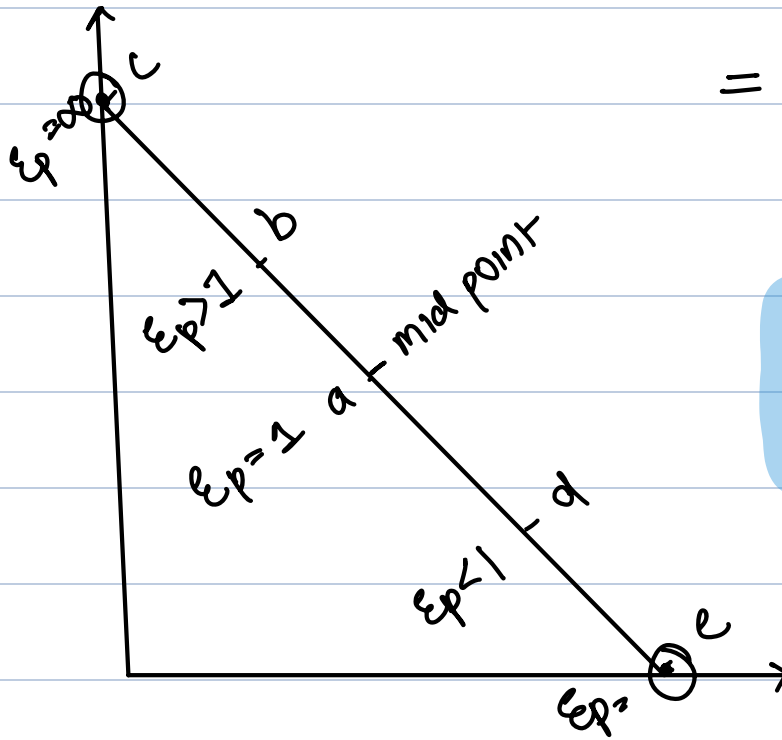   ↓
Wherein elasticity
is calculated on a
point of Demand
curve.

Geometric Method of Calculating ε_p

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

$\varepsilon_p = \infty$ c

$\varepsilon_p > 1$ b

$\varepsilon_p = 1$ a — mid point

$\varepsilon_p < 1$ d

$\varepsilon_p = 0$ e

$$e = \frac{0}{ec} \Rightarrow 0$$

$$a = \frac{ae}{ac} = 1$$
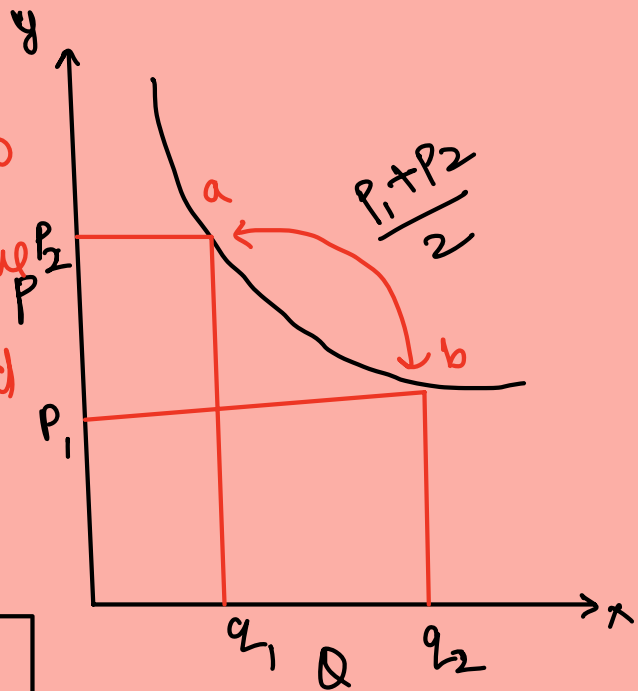
$$b = \frac{be}{bc} = \varepsilon_p > 1$$

$$c = \frac{ce}{0} = \infty$$

$$d = \frac{de}{dc} = \varepsilon_p < 1$$

ARC Elasticity of Demand

* when elasticity is calculated between two point of demand curve

* Arc elasticity is used when change is Big

Formula Box

$$\frac{Q_2 - Q_1}{Q} \times \frac{P}{P_2 - P_1}$$

→ Avg

$$\rightarrow \frac{Q_2 - Q_1}{\frac{Q_2 + Q}{2}} \times \frac{\frac{P_1 + P_2}{2}}{P_2 - P_1}$$

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

"No Segnificance of '−'"

$$\frac{Q_2 - Q_1}{\frac{Q_2 + Q_1}{2}} \times \frac{\frac{P_2 + P_1}{2}}{P_2 - P_1}$$

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

Outlay Method / Revenue Method

Expenditure

P x Q = TE

Revenue

P x Q = TR

---

① Unitary Elastic $\varepsilon_p = 1$

P	Q	TE/TR
10	150	1500
15	100	1500

[change in price , does not
change exp or Revenue]

More Elastic $\varepsilon_p > 1$

P	Q	TE/TR		P	TE
10	100	1000		↓	↑
5	300	1500		↑	↓

[Indirect Relation Bet" P & (TE)]
                                  TR

Less elastic $\varepsilon < 1$

P	Q	TE		P	TE
10	100	1000		↓	↓
5	150	750		↑	↑

[Direct Relation]

Inelastic
Perfectly elas

TR = P × Q / When a seller inc price of
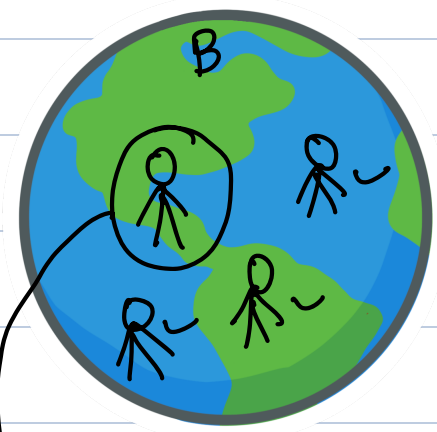commodity there are two effects of that

X Q X / Less elastic

price effect

P ↑   TR ↑
P ↓   TR ↓
P = 100   (50 ↑)
P = 150

Quantity effect —

P ↑ QD ↓ TR ↓
P ↓ QD ↑ TR ↑

Q = 20   (TR ↓)
Q ⇒ 10/15
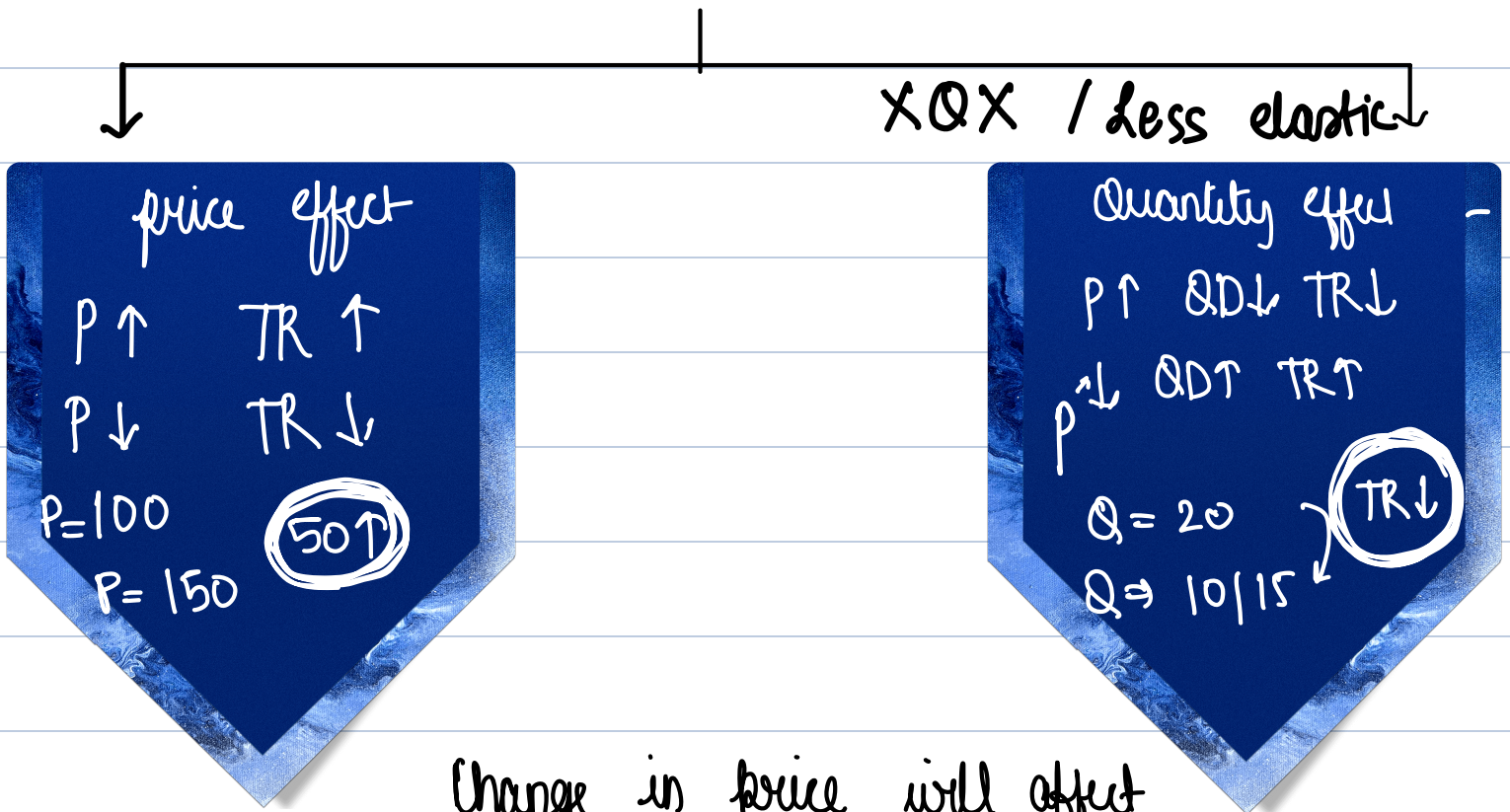
Change in price will affect
Revenue or Not?

Less elastic → Price effect > Quantity eff   P ↑ R ↑
More elastic → Quantity eff > Price effect   P ↑ R ↓

A — less Elastic

10,00,000 [→ Tuition ⇒ 10,000 yr.
          Buyer = 100
14,25,000 [Tuition fee ⇒ <u>15000</u>
          Quantity change = x? 95

B

Tuition = 10000 yr
10 lakh [Buyer = 100
Tuition fees ⇒ 15000
4.5 lakh [Quantity ⇒ 30.
          change

P ↑   TR ↑
PE >   QE

P ↑   TR ↓
PE <   QE

READING   less elastic

READING   more elastic

Factors affecting Elasticity of Demand

① Availability of substitute → more Elastic / - Less elastic
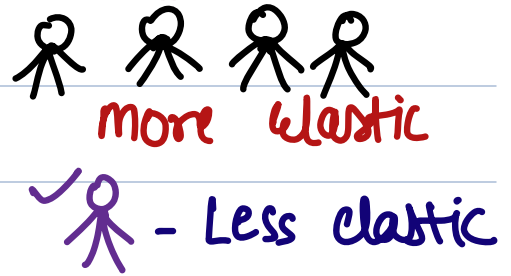
② position of a commodity in consumer Budget

Budget ₹ 10,000

₹4000 - ₹5000 → Rent, clothes, Electronical item → MORE Elastic

₹50 → ₹60 → Salt, sugar, fruits → less elastic / Inel
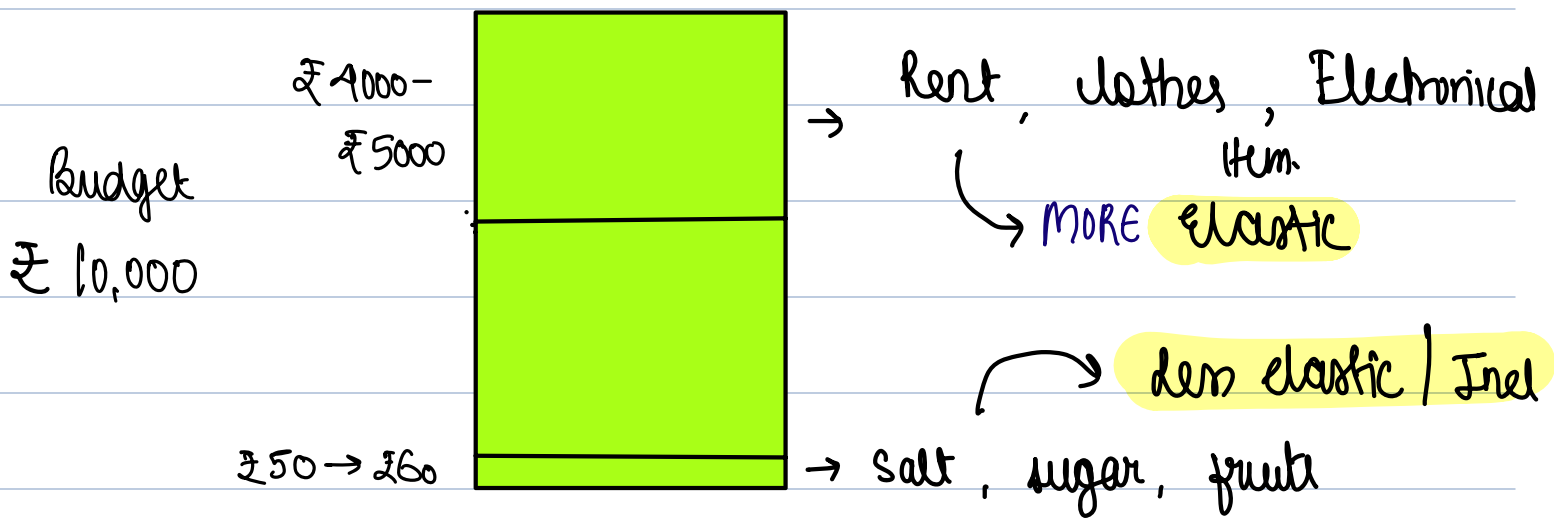
③ Nature of need that a commodity satisf

Luxury goods ↓ more elastic

Quant ← change Jyada

Necessity goods ↓ less elastic

↳ Quant change kam hoga

* postponment possible → elastic
* postponment not possible → INELASTIC (MEDICINE)

④ number of uses to which comodity can be put:

More uses	len uses
↓	↓
change in price will either inc demand too much OR Dec demand too much	change in price will not affect demand
↓	↓
MORE ELASTIC	Len elastic

Electricity

⑤ Time period :-

Longer time period	Shorter time period
↓	↓
more elastic	len elastic

(6) Consumer habits →

Habits makes goods demand inelastic

(7) Tied demand -

goods which are → tied demand → **Inelastic demand**
used together

(8) Price Range →

very high price

OR → **Inelastic**

very low price

Tied Demand   autonomous demand
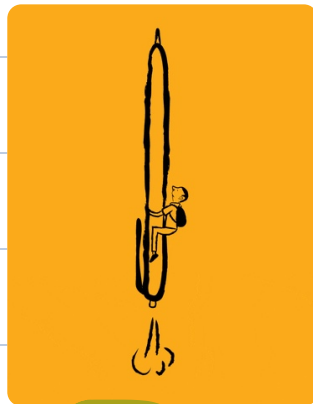
Ink   Pen

↓   ↓
Less elastic / Inelastic   elastic

(9) Minor complementary → [ ] + [ ]
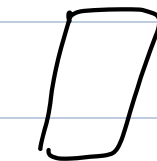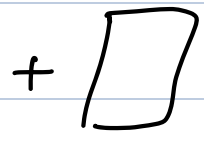
                                  mob   cover
                                                      +

                                                      less elastic

Income Elasticity

proportionate inc in demand due to proportional inc in Income

Formula

$$\Rightarrow \frac{\%\ ch\ in\ QD}{\%\ ch\ in\ Income}$$

$$\Rightarrow \frac{\Delta Q}{Q} \times \frac{Y}{\Delta y}$$

Normal good	Inferior good
↓	↓
Y ↑ QD ↑	Y↑ QD↓
Y ↓ QD ↓	Y↓ QD↑
→ Positive	Negative
Positive / Direct	Indirect / -ve

Car
$$\frac{15\%}{10\%} -$$
$$\Rightarrow 1.5$$

clother / x
$$= \frac{10\%}{10\%}$$

wheat =
$$\frac{5\%}{10\%} \leftarrow$$
$$\boxed{.5}$$

$$\Rightarrow \frac{-5\%}{10\%}$$

Luxury
goods   1.5 —
(more elastic)

NORMAL +ve.
GOODS →

Unitary   1 —
elastic

Necessity— .5 —
(less elastic) 0

Buttons = $\frac{0\%}{10\%}$
→ MEDICINES

Inelastic ↓

−1 —

INFERIOR
GOODS
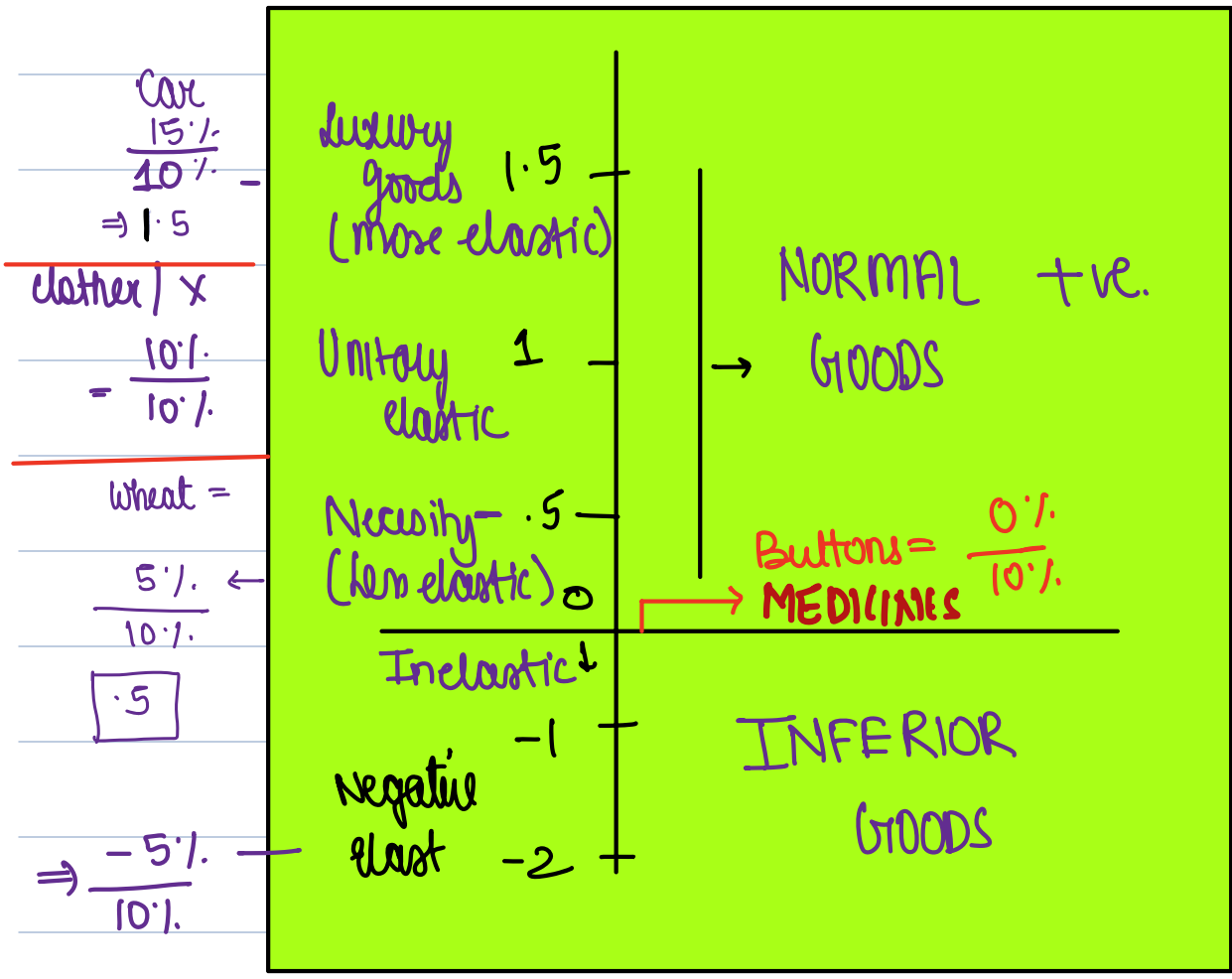
Negative
elast −2 —

Cross   elasticity

When price of one good affects demand of another

Substitute   Complementry
↓   ↓
positively   negatively

$$E_c = \frac{\%\ \text{change in dem of } y}{\%\ \text{change in price of } x}$$

Indian Reliance
oil petr ←
Petrol

more good
subs ↑
mox elastic

less elastice
↓ ←
less subst

less comp.

∞ →	Perfect substitute
-2 $\frac{30\%}{10\%}$	Substitute goods ↓
-1	
-.5 ⇒ $\frac{5\%}{10\%}$ +ve	
0 →	Not Related ↓
-1	complementary ↓
-2	'-ve'

F   m
→ $\frac{10}{20}$) $\frac{100}{200}$

⇒ $\frac{+\cancel{100}}{\cancel{100}}$

$\frac{+\cancel{10}}{\cancel{10}}$

⇒ ①
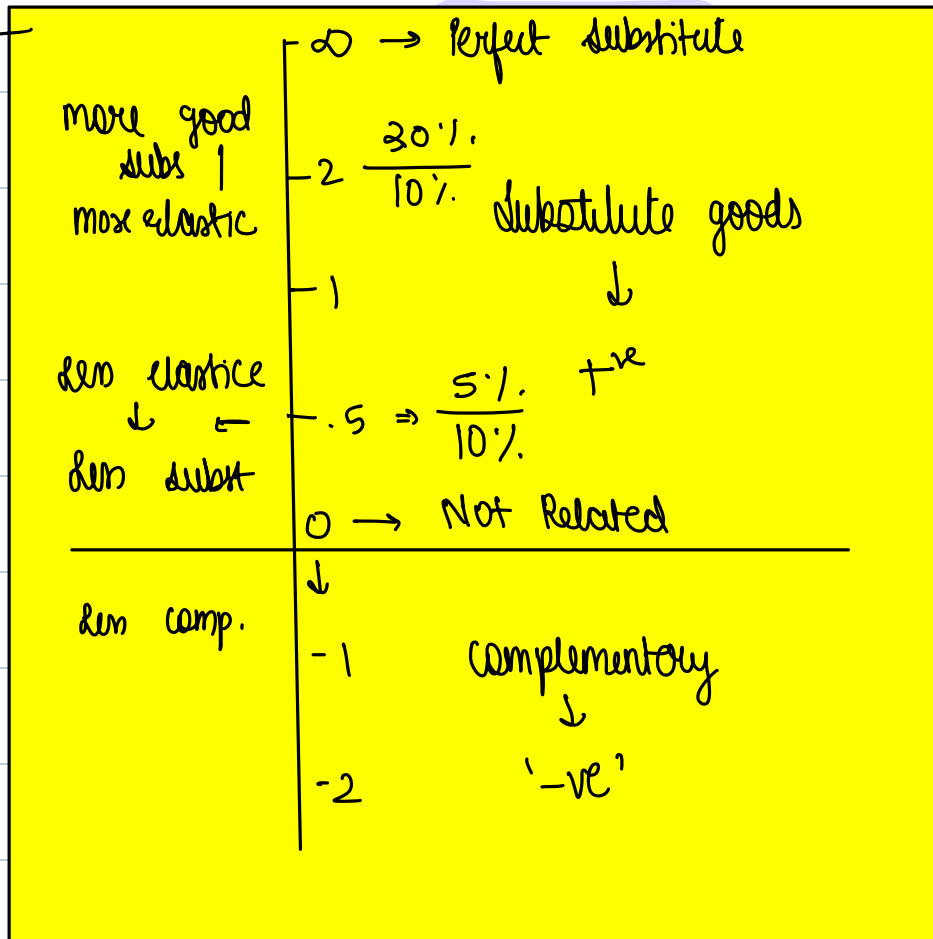
Advertisement Elasticity

$$\varepsilon_q \Rightarrow \frac{\%\ ch\ in\ QD}{\%\ ch\ in\ exp\ of\ adv}$$

$\frac{10}{20}$

⇒ less elastic

$\frac{10}{10}$

Unitary Elastic

$\frac{50\%}{20\%}$

more elastic

Consumer Behaviour (MU Approach)

WANT — With desire or motive to own or use goods and services that gives satisfaction

· Physical, psychological or social factors

UTILITY

Want satisfying power of commodity. Utility is psychological concept. Utility of a consumer is a measure of the satisfaction that consumer expects.

Classification of wants

- Necessaries
- comforts
- luxuries
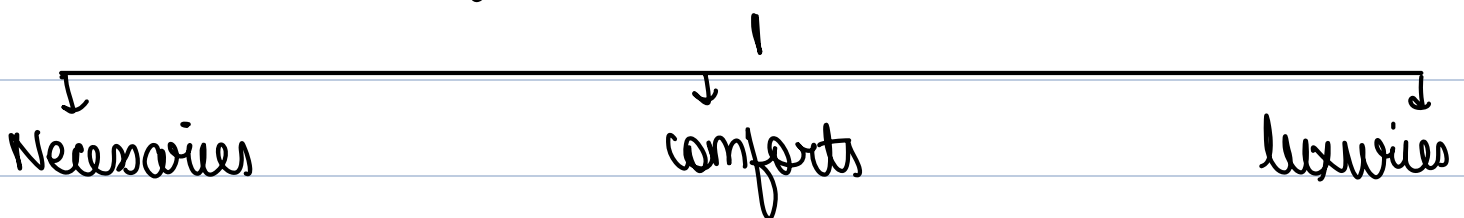
Necessaries

- Essential for living
- Sub divided into
  - Necessaries for life or existence — Food, clothing & shelter
  - Necessaries for efficiency — nourishing food, adequate clothing, clean water
  - conventional necessaries — necessaries due to habits or due to compelling social customs and conventions

Comforts

Tasty and wholesome food, good house, clothes that suits different ocasion
(Goods which make life comfortable)

Luxuries

Superfluous   Expensive

(Expensive clothing, exclusive vintage cars, classy furnit)

Two Imp theories

marginal utility Analysis → Alfred marshal

Indifference curve Analy → JR Hick & RGD Allen
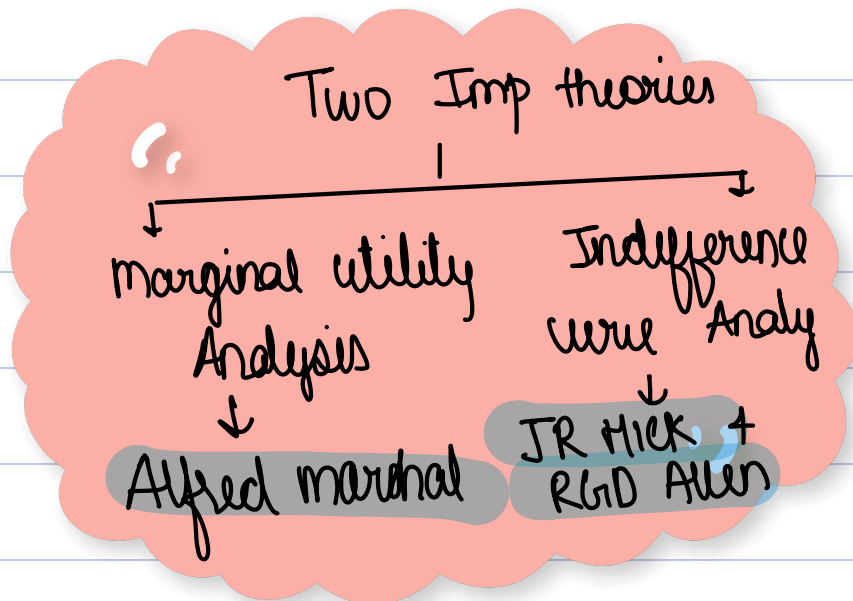
MARGINAL UTILITY ANALYSIS

Alfred Marshal

When you measure utility in numbers i.e **Utils**

TU = Sum total of utility derived from consumption of all units

$$TU = MU_1 + MU_2 + MU_3$$

	TU	MU
1	10	10
2	19	9
3	26	7
4	32	6
5	32	0
6	31	-1
7	29	-2

Aditional utility derived from consumption of adetional unit

$$MU_n = TU_n - TU_{n-1}$$

$$MU_n = \frac{\Delta TU_n}{\Delta Units}$$

Law of Diminishing MU

As a consumer increase consumption of more and more units utility derived from additional units decline

→

Every next plate of pani puri gives less satisfaction

point of Saturation

0

mu
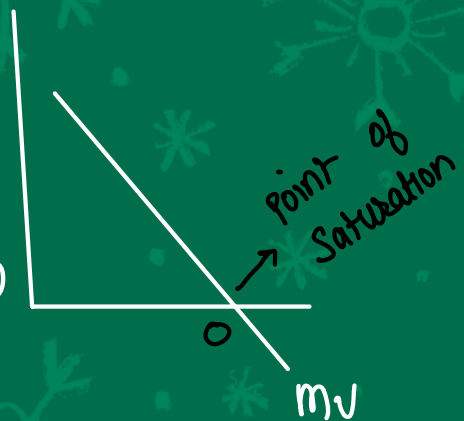
ASSUMPTION OF Law of DMU

1. Rationality - समझदार consumer
2. Cardinal measurability of Utility -
3. Money Measurement - the amount of money consumer pay helps measure utility
4. All other factory constant

(5) continous consumption
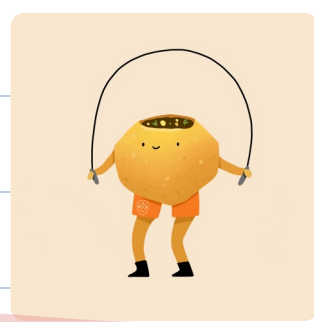
(6) consumption of Reasonable quantily / Standard unit

(7) MU of money remains constant while
consuming commodity

CONSUMER SURPLUS

Alfred Marshal

* " Excess of price which a consumer
would be willing to pay rather than to
go without a thing "

what a consumer is ready to pay

(-) what he actualy pays
_____

consumer surplus

consumer
surplus

P

MU/
D

10 → consumer is ready to pay ₹10

→ ₹ is extra surplus he is getting from Produ

P8 → But he is buying product at ₹8

→ Demand
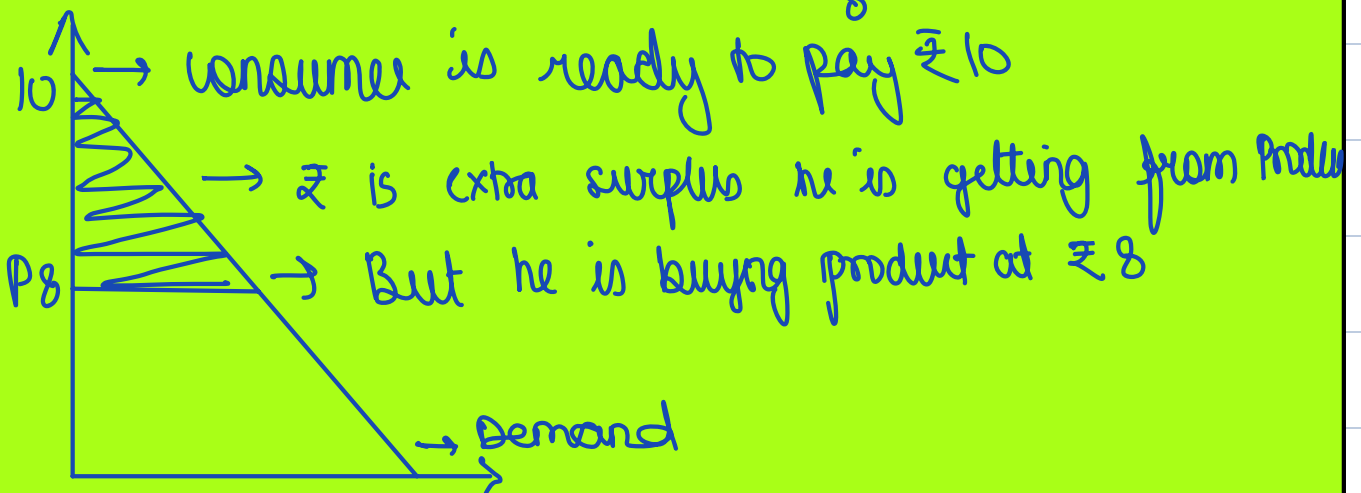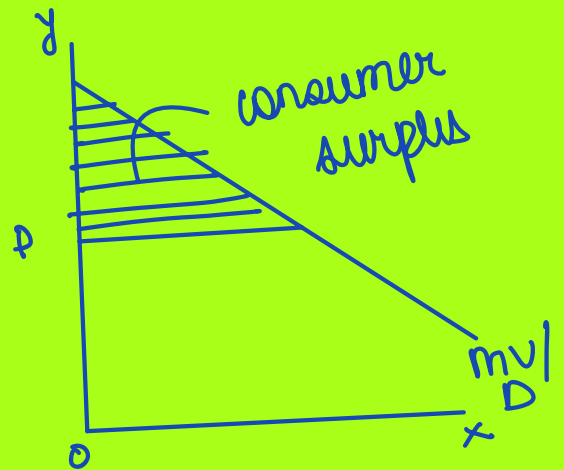
Indifference Analysis

	Apple	ORange
E	10	0
A	10	1
B	6	2
C	3	3
D	1	4

(Utility↓)

Utility↓

$MRS = \dfrac{\Delta sac}{\Delta gain}$

Utility ↑

MRS = 4/1 = 4

MRS = 3/1 = 3

MRS = 2/1 = 2

Marginal Rate of substitution

When a consumer willingly sacrifice some commodity for consumption of other unit

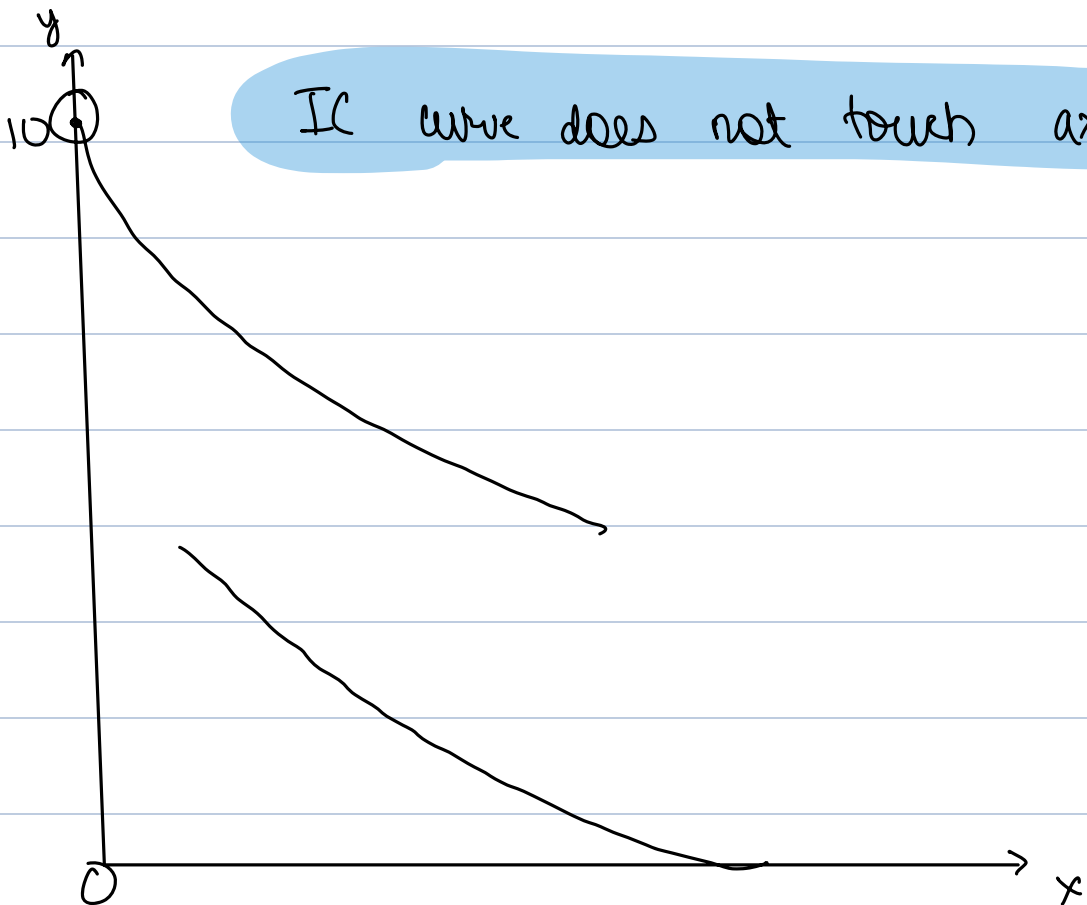$$\Rightarrow \dfrac{\Delta \text{ Sacrifie}}{\Delta \text{ gain}}$$

shape of IC
↓
convex → MRS ⟹ **fall**

IC slope or
MRS ??
↓
same

Apple

10

A

A {

B

3 {

C

2 {

D

1   2

Orange

IC MAP

A = 6,1

B = 6,2

C = 6,3

6   A   B   C

IC_3
⌄
IC_2
⌄
IC_1

App Orang
10 , 1
A

(a)

App orng
6 2

(B)

(3)

App or.
3 3
C

(C)

App or
1 9
b

(1) ↑ ↓

(2) Sau→ ↓ ↓ 2 2
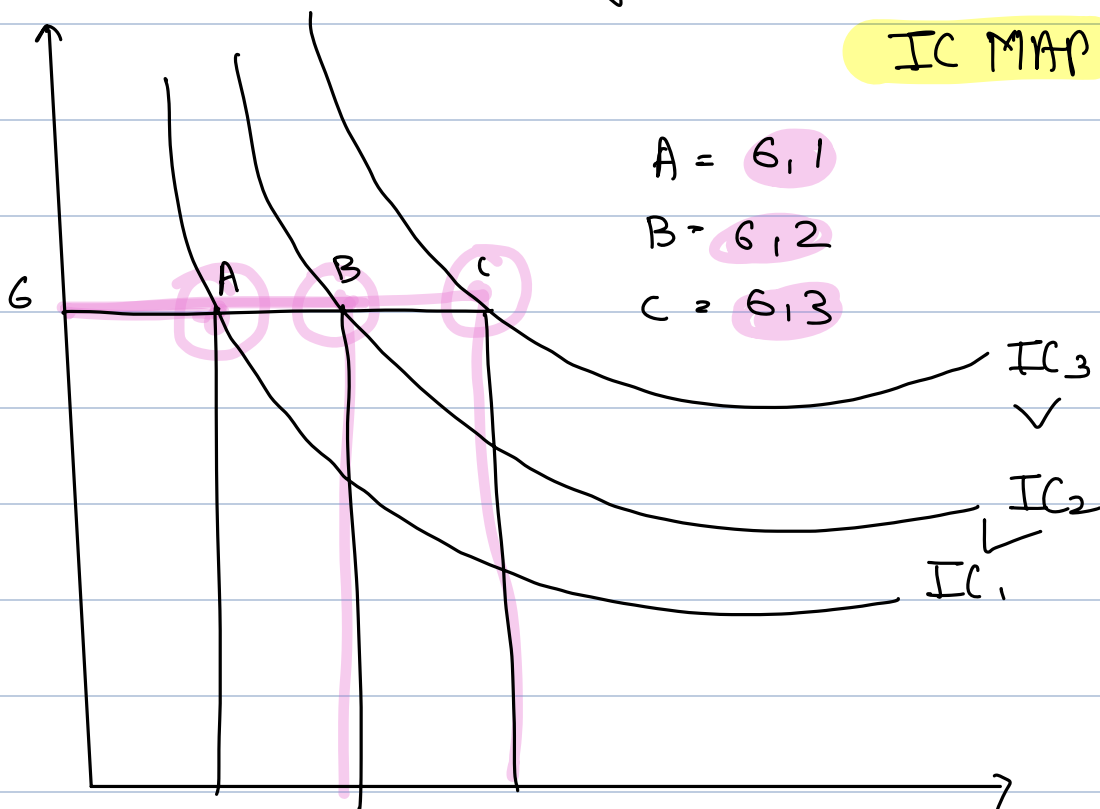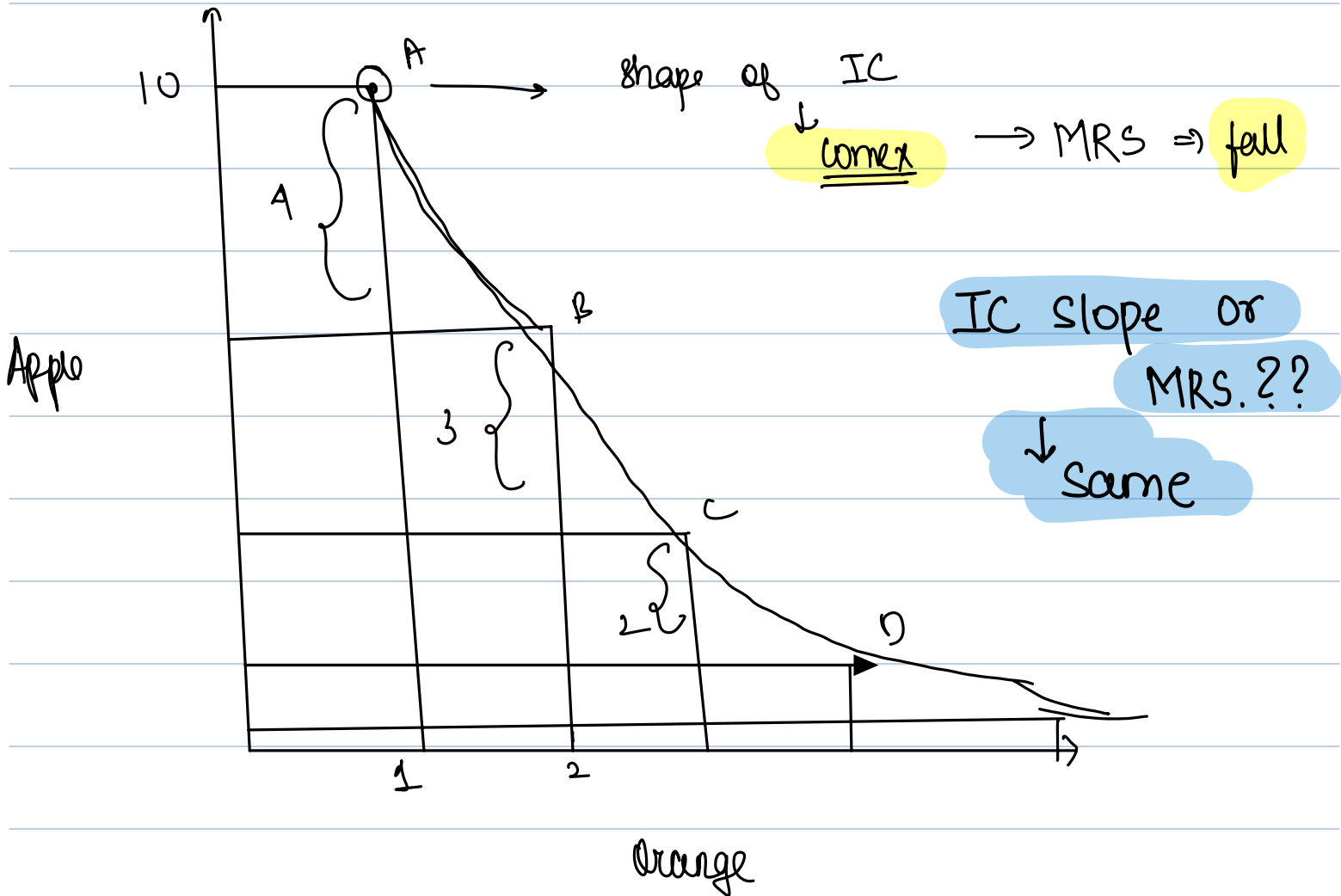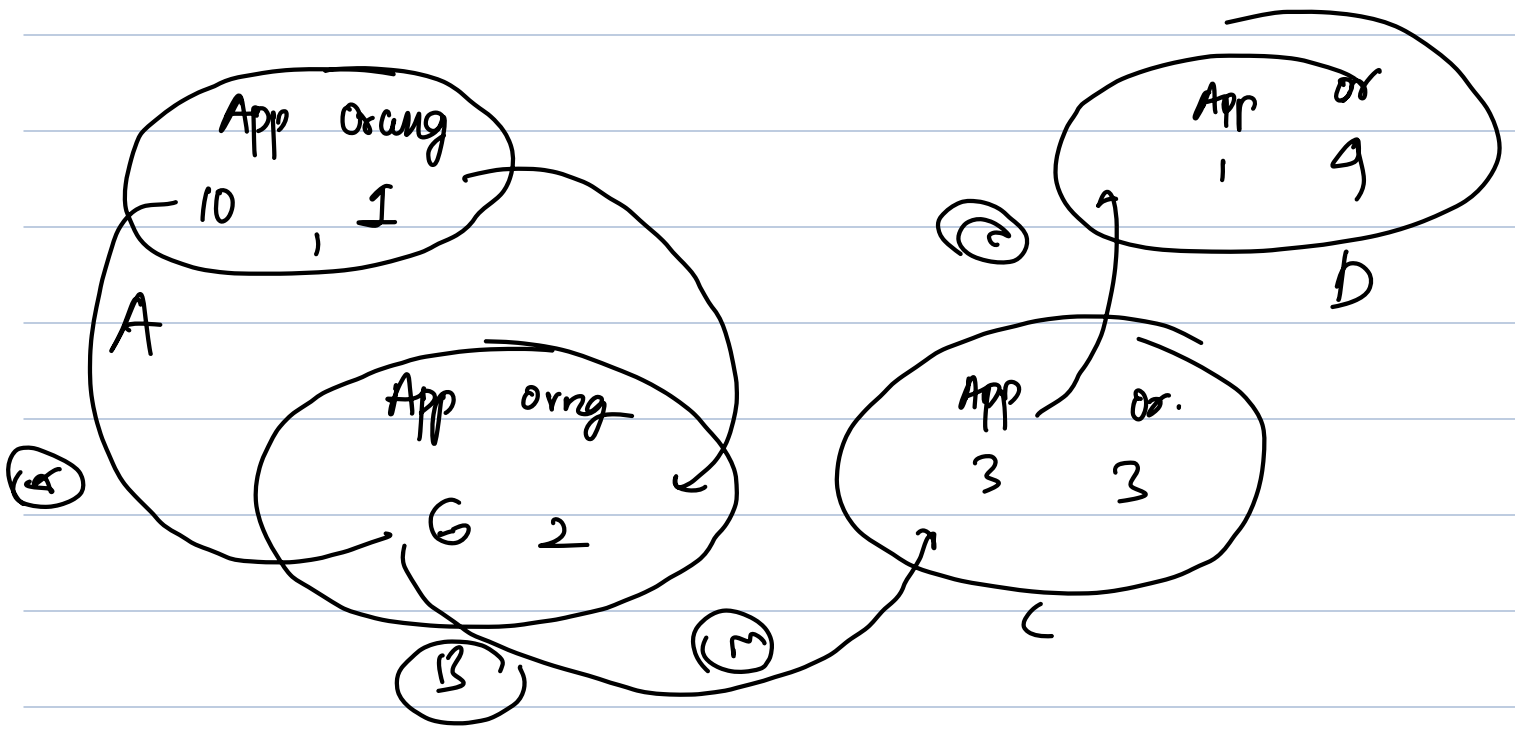
① Higher IC curve provide Higher sates-

② IC cannot cach other ✗

IC₁ = A = B⎤
IC₂ = A = C⎦   B = C

IC₂

C

A

B

IC₁
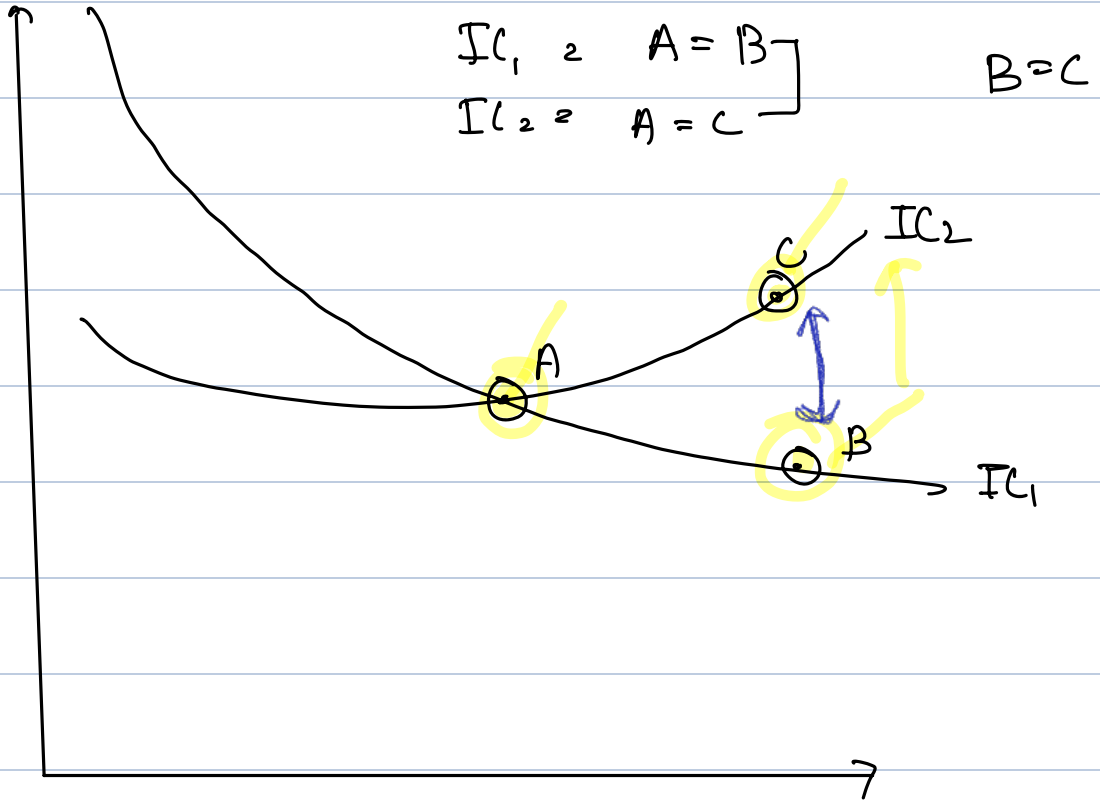
③ 10 IC curve does not touch axis

Perfect substitute

(perfect substitute ke case me chuki do goods aipasme same hai kisi ek ke consumption ko badaya to dusre ka bhi same level tu consumption kam hoga even to kisi ek unit ka consumption O bhi kea ja sakta hai

	Indian oil Petrol	Reliance Petrol
A	10 ltr	1 ltr
B	9 ltr	2 ltr
C	8 ltr	3 ltr
D	7 ltr	4 ltr
E	0	11 ltr

→ IC of perfect substitute
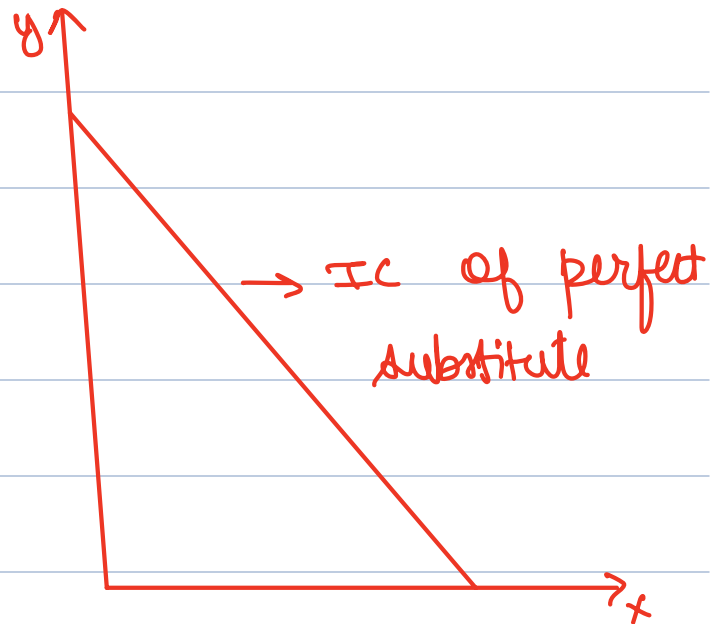
② Perfect complementary   " L shaped "

Right shoe

left shoe
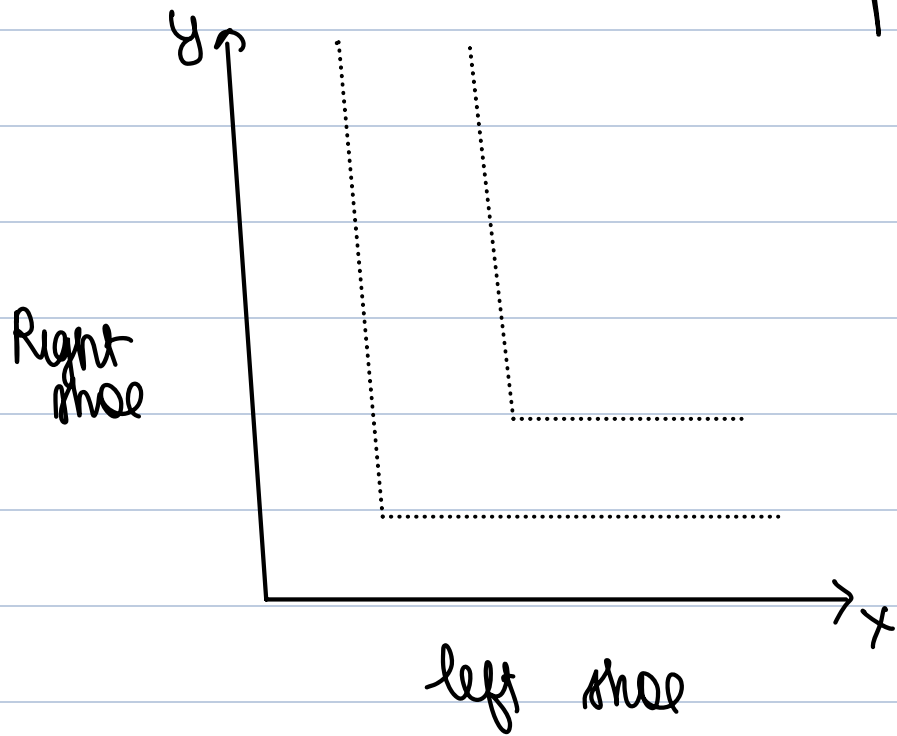
BUDGET

Attainable combination of two commodity that a buyer can buy any time

$$Y = Q_x P_x + Q_y \times P_y$$

a

b

→ Price line

⇒ 2|1

400y
₹1

Income = 60

$P_x = 2$ $P_y = 1$
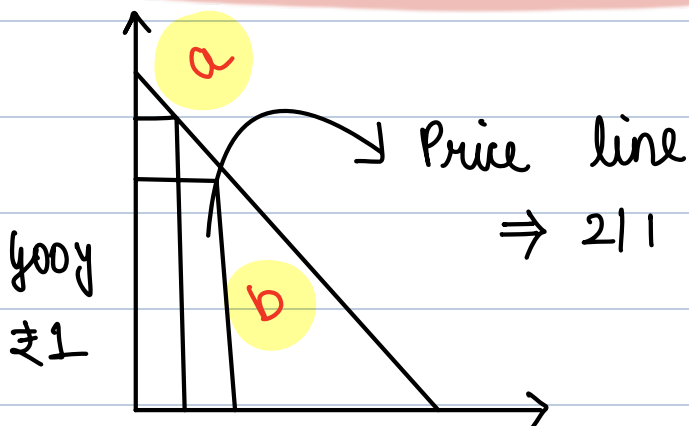
	Good x $P_x 2$	Good y $P_y = 1$
A	0	60 -
B	1	58
C	10 -	40 -
D	20	20
C	30	0

good x
=2

① Inc ↑
Shift → Rightward
② Inc ↓
Shift = Leftward

Change in price
① Inc in price of X
Rotate → Leftward|Dow
② Dec in price of X
Rotate → Righ|Upward
③ Inc in price of good y
→ Leftward
④ Dec in price of good y
→ Rightwa
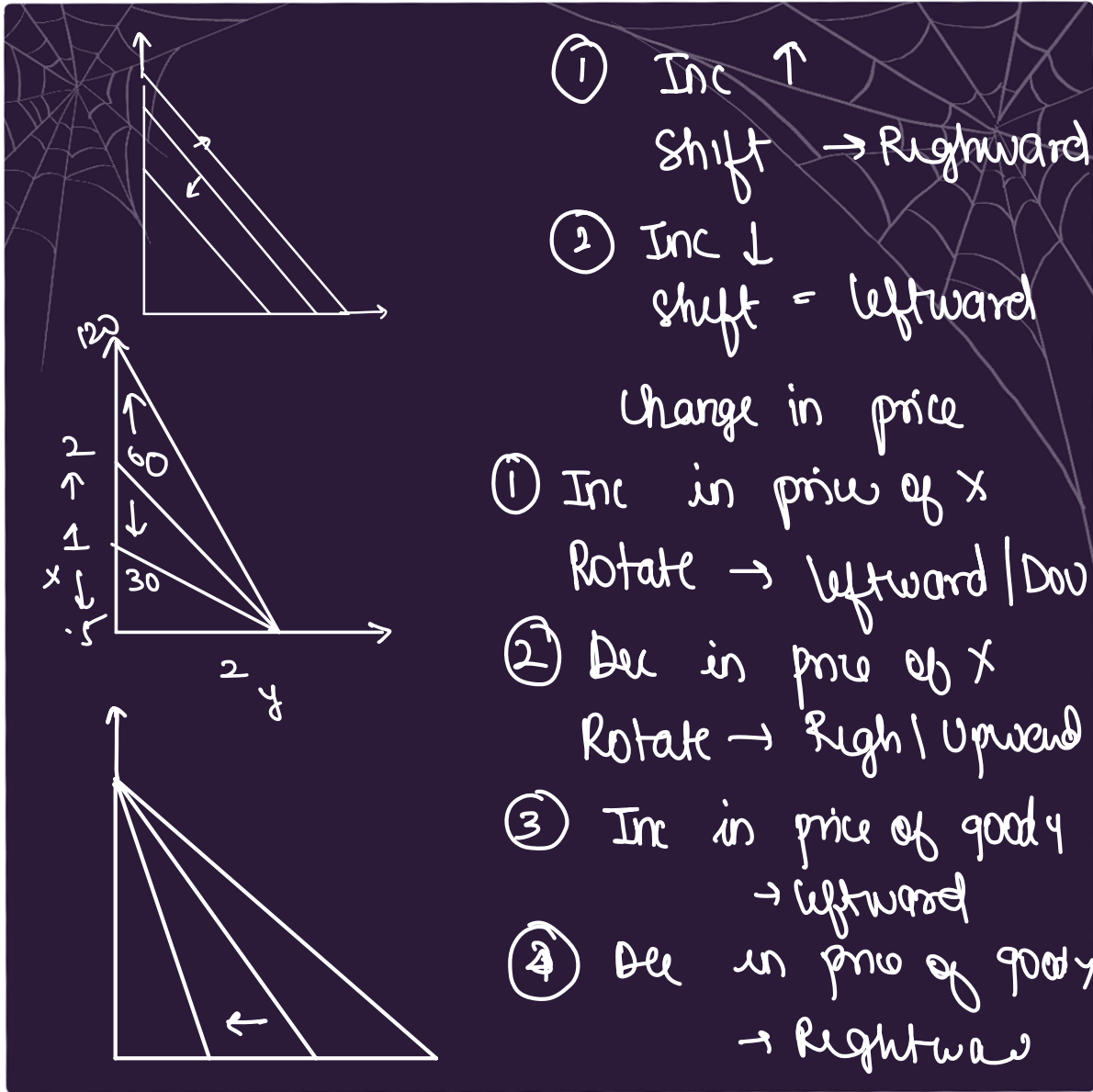
What happen if price of Both x & y falls
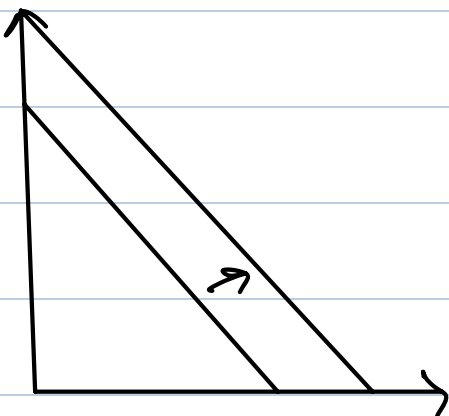
What happen if price of Both x & y Rise

Consumer Equilibrium

IC curve

a
b
c
d e

MRS =
Willingness
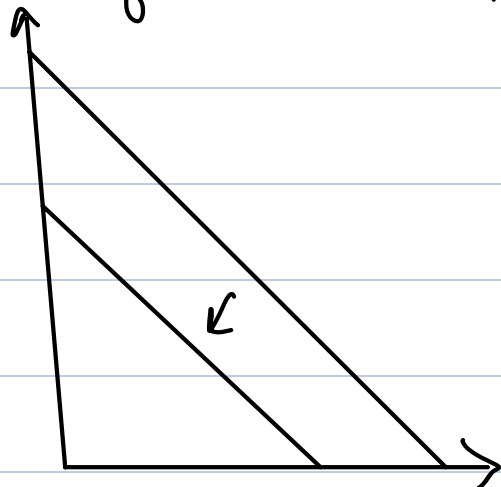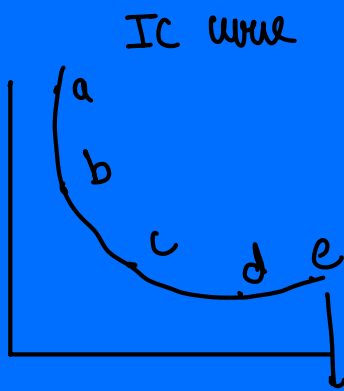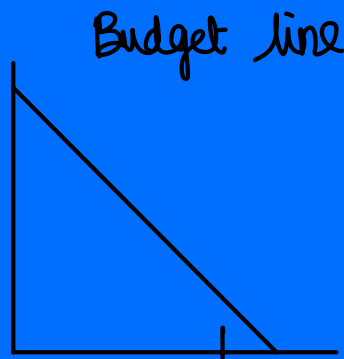
Budget line

↓
price line $\frac{P_x}{P_y}$
↳ affordability!

b
a
c
IC_1
IC_2
IC_3
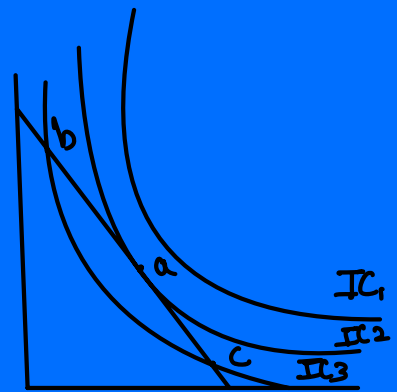
Equilibrium is a point where IC is tangent to Budget line.

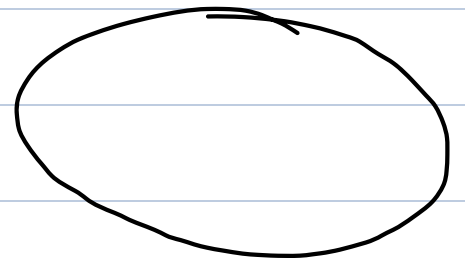$$MRS = \frac{P_x}{P_y} = \frac{MU_x}{MU_y}$$

↓

Point of Equilibrium

$a = ₹10$, 1 unit ✓
$b = ₹2$, 10 unit ✓

$a = ₹2 = 1$ unit
$b = ₹10$, 10 unit

20

15

10

consumer
surplus

e

S

produce
surplus

D
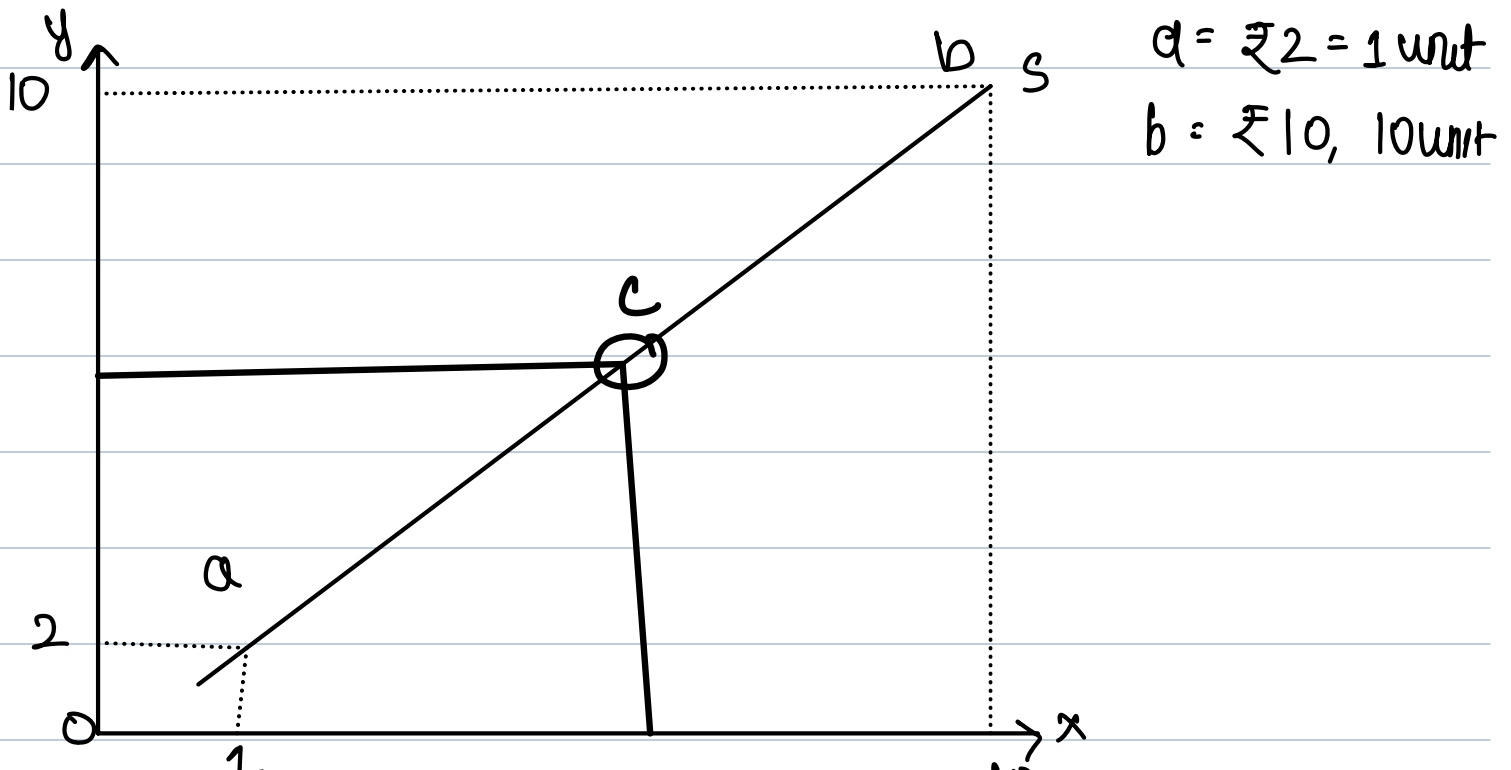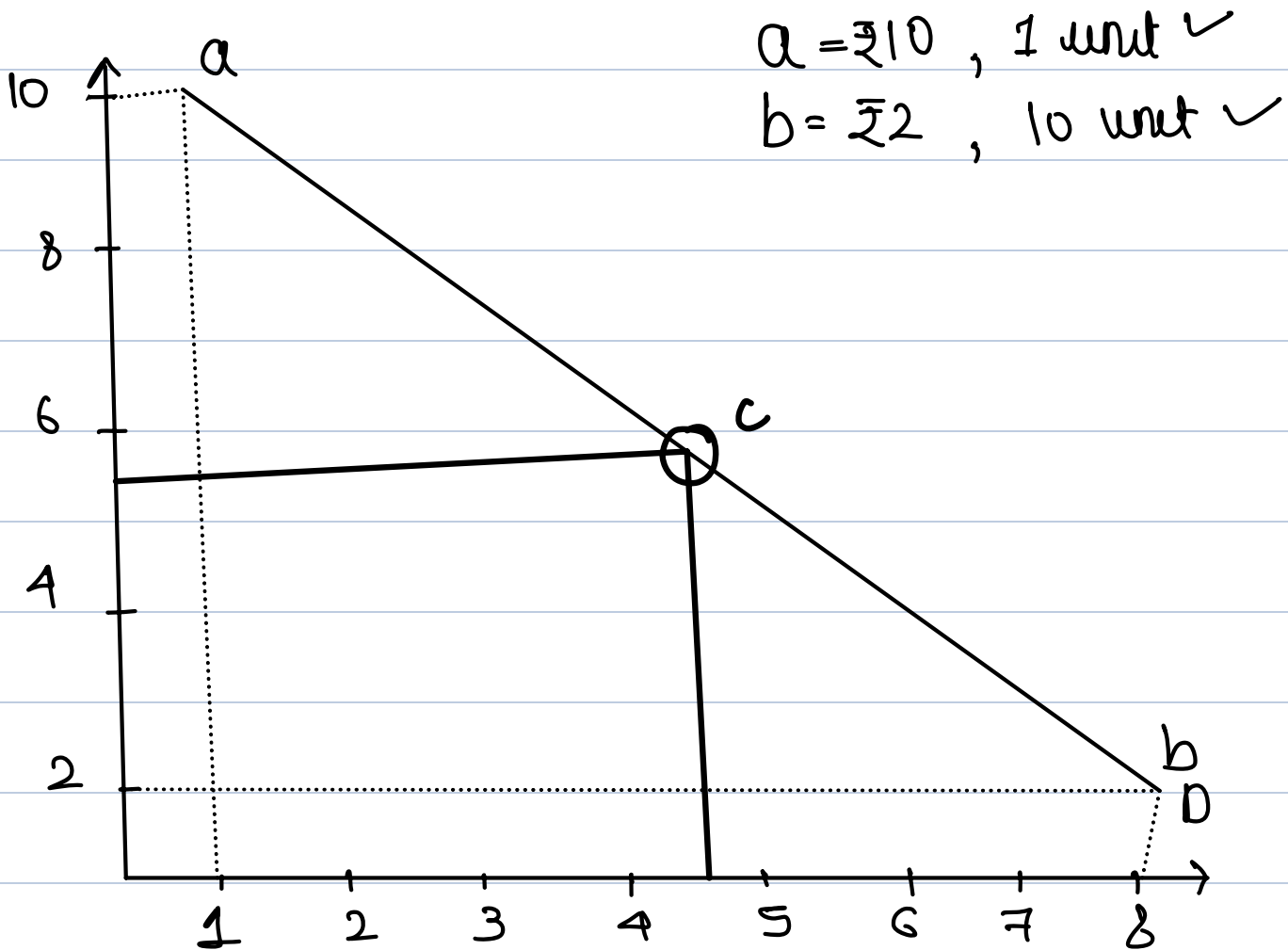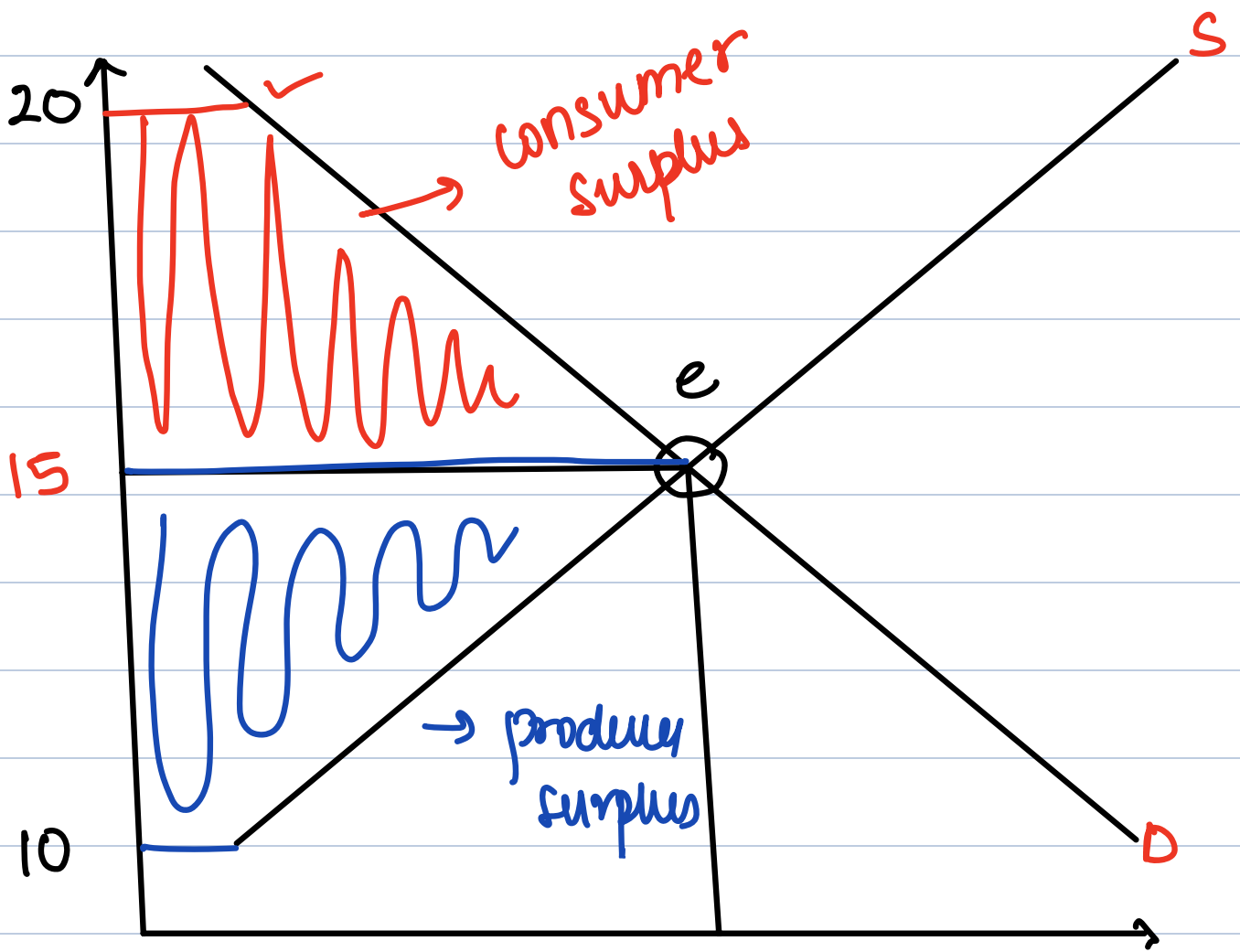
	Right shoe	Left shoe
1	1	1
2	2	1
3	3	1
4	1	2
5	1	3

left

1

1   Rig

Elasticity of Supply

More Elastic Supply

- $\varepsilon_d > 1$
- Industrial prod

(Graph: Y-axis labeled Y, P marked; X-axis labeled X; Qs marked)

- Flatter.
- Point towards Y axis

Less Elastic Supply

- Steeper
- $\varepsilon_s < 1$
- point towar X axis
- Short time period
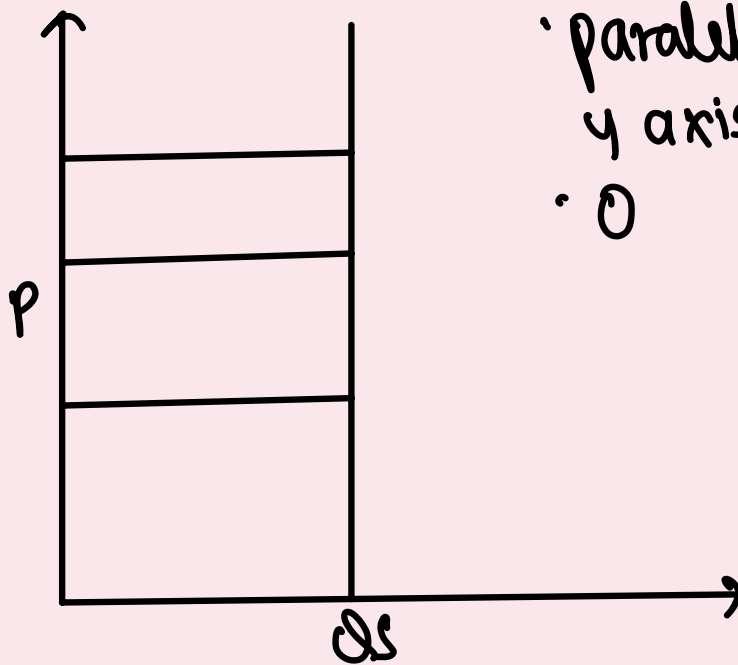- sandw

(Graph: Y-axis labeled Y; X-axis labeled X)

Unitary Elastic

- $\varepsilon_s = 1$
- shoot = origin

Inelastic Supply

- vertical
- parallel to y axis
- 0

P

Qs

✦ Perfectly elastic

- ∞
- Horizo
- Par = x axis
- Ident. Perf sub

y
P ────────────────────
                        x

QS