



8. Some wants recur again & again whereas others do not occur again & again.

↓
Non-Durable Consumer goods

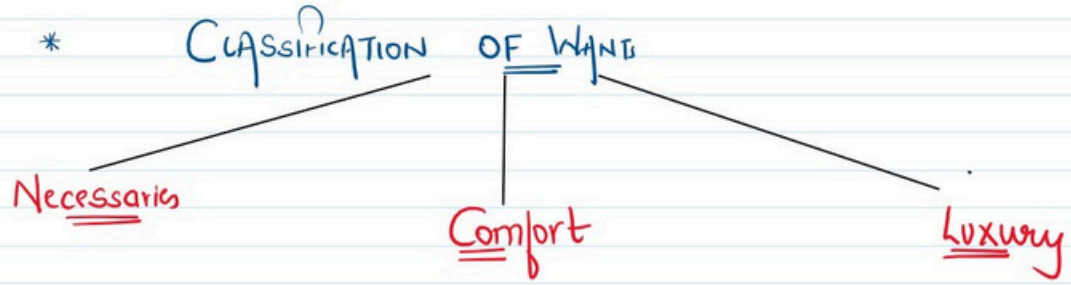
↓
Durable consumer goods

9. Wants may become habit & customs ✓

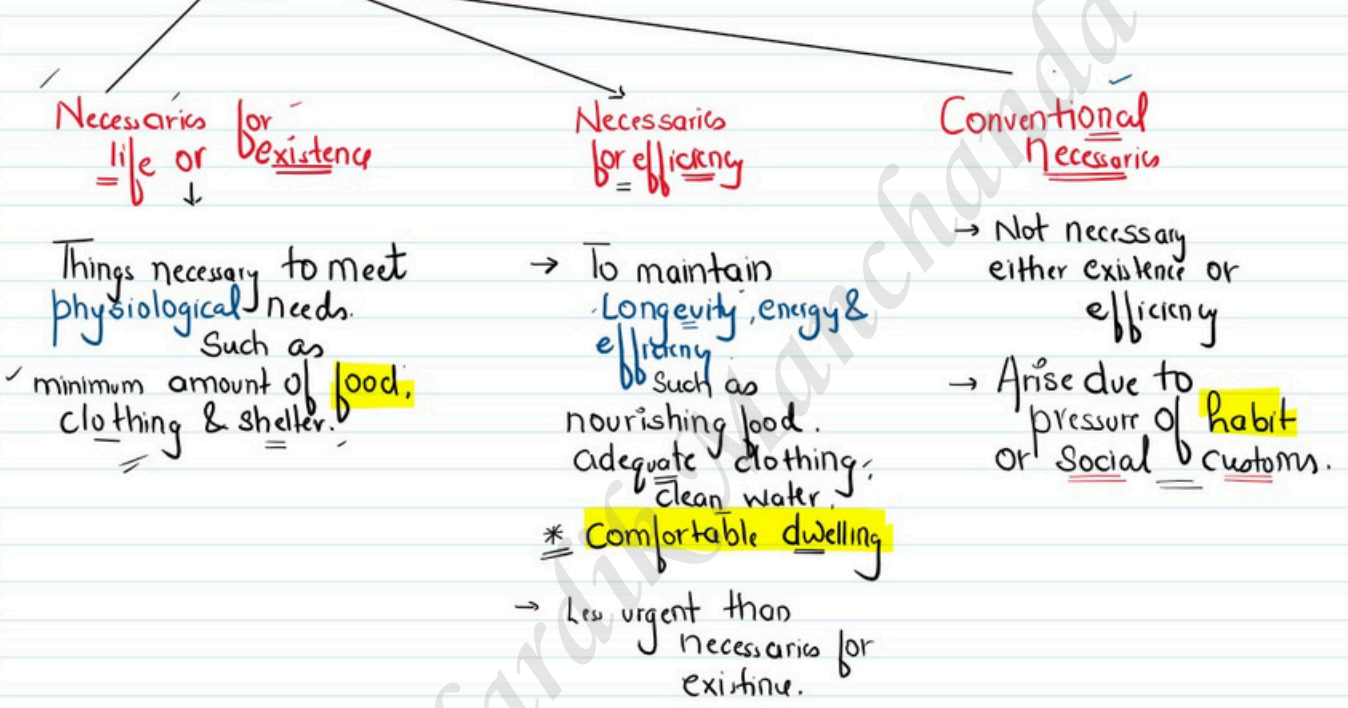
10. Wants are affected by Income, taste, fashion, advertisement, social norms & customs.

x — x

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1. Necessaries:



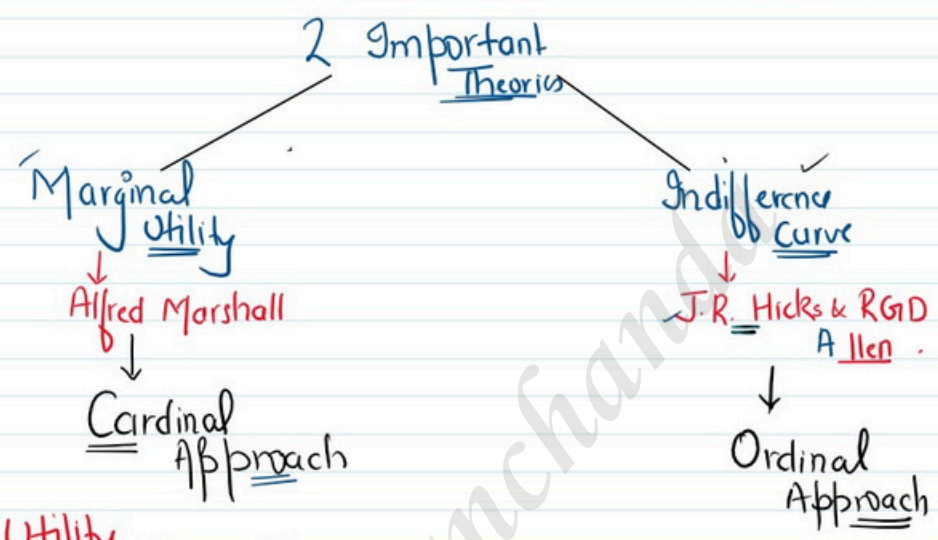
2. Comfort:

- Comfort makes life comfortable & satisfying.
- Ex. Tasty & wholesome food
 - Good house
 - Clothes that suit diff. occasion.
 - Audio-visual equipment. (Headphones)
 - ^{Human eff.} Labour saving equipments (Washing Machines)

Utility \neq Usefulness

→ Utility is ethically neutral.

* Utility hypothesis forms the basis of theory of Consumer behaviour



→ Marginal Utility Analysis.

Marginal utility:

<u>Unib</u>	<u>Utility</u> (utils)	Hypothetical measuring unit of <u>utility</u>	
1	10	18	25
2	8		
3	5		
4	2	23	
5	0	25	
6	-2		

→ MU theory treats customers as striving to maximize utility which is a quantitative measure of the consumer satisfaction.

→ Total utility. Sum of utility derived from consuming total units of a commodity.

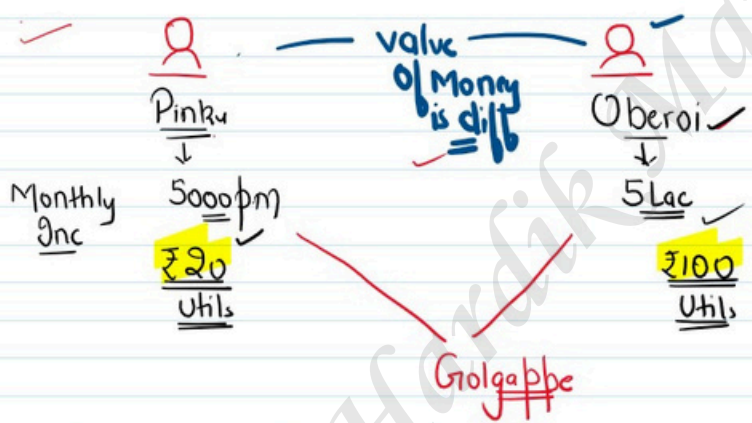
$$TU_n = MU_1 + MU_2 + MU_3 + \dots + MU_n$$

<u>Unit</u>	<u>Utils</u>
1	20
2	12
<u>3</u>	<u>10</u> ✓ - Max. Satisfied
<u>4</u>	8 ✓

→ How much money you are willing to pay

→ The amount of money which a person is ready to pay for a unit of a good is a measure of the utility he/she derives from the goods.

7) All other factors constant
 ↳ No change in income, price of product, taste & preference.



- **Marginal utility of Money:** Add. satisfaction a person derives from an extra unit of money.

8) The assumption of constancy of MU_{money}.

→ This assumption although unrealistic, has been made to facilitate measurement of utility of commodity in terms of money.

9) Independent utility: ↳ Ignore complementary & substitute goods.

* Law of Diminishing Marginal Utility

* Law of Diminishing Marginal Utility.

→ As a person consumes more ^{unit} of a particular good, additional satisfaction from each successive unit decrease.

- Based on:
- 1) Total wants of a person are unlimited
 - 2) Each want is a Satiable.

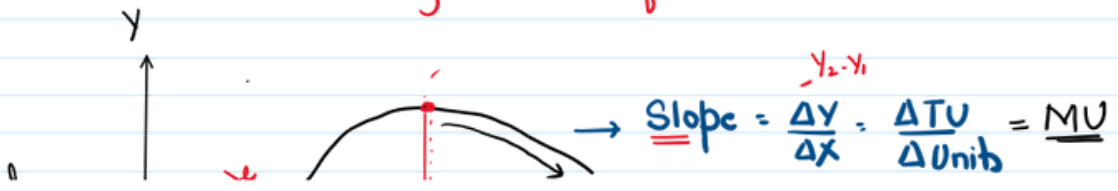
→ Since each want is satiable, more & more consumption of a good decreases the intensity of the want for that good.

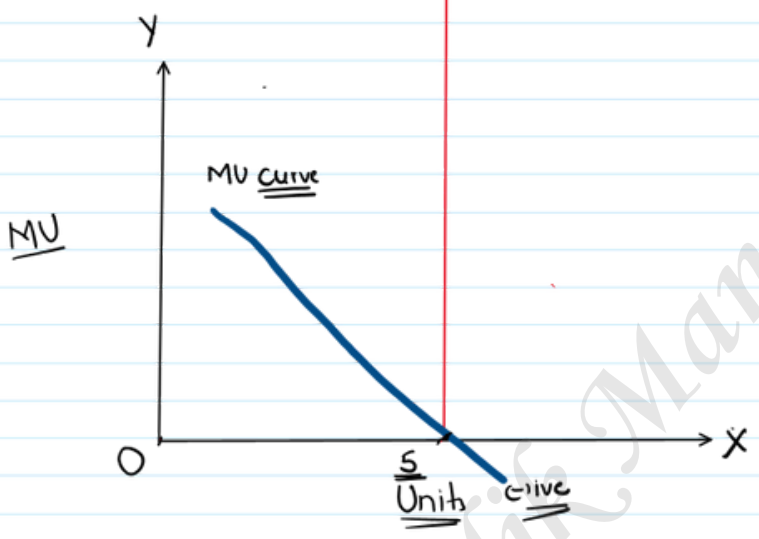
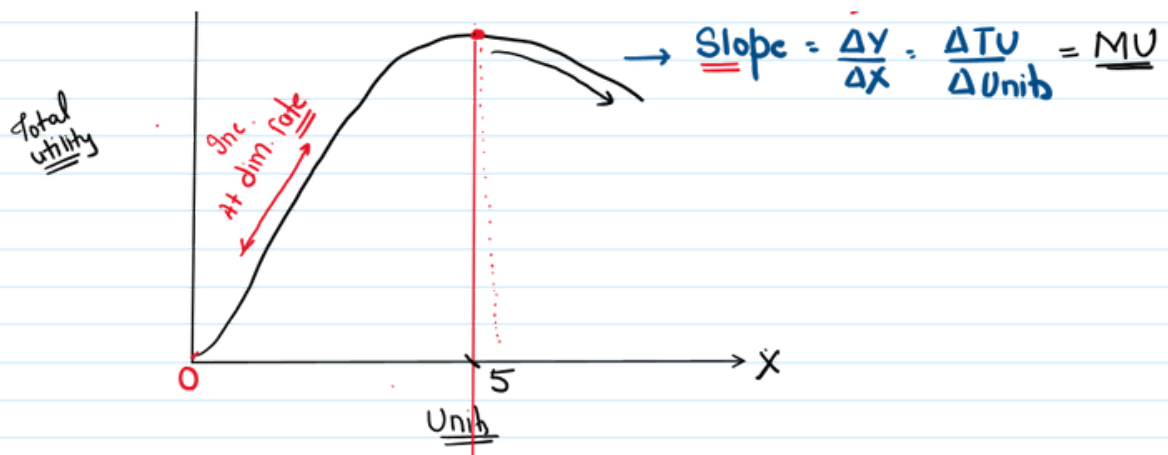
Unit of Chocolate	Marginal Utility	Total Utility
1	20	20
2	14 ✓	34 ⁺¹⁴
3 ✓	11 ✓	45 ⁺¹¹
4 ✓	5 ✓	50 ⁺⁵
5 → Satiation	0 ✓	50 ⁺⁰
6	-4	46 ⁻⁴

Increases with diminishing rate $\frac{\Delta TU = 14}{\Delta U = 1} = 14$
 $\frac{11}{1} = 11$

Conclusion:

- a) till the 4th unit, MU from add. chocolate goes on decreasing but TU goes on increasing at diminishing rate.
- b) 5th unit adds no utility & therefore TU remains at 50
 ↓
 This point is called 'Satiation' point
 ↓
 Fully Satisfied.
- c) If 6th unit is consumed, it will give negative MU or disutility or discomfort.





1. TU rises as long as MU is positive, but at the diminishing rate.
2. MU diminishes throughout
3. When $MU = 0$, TU is maximum. It is the satiation point
4. When MU is negative, TU starts to fall.
5. MU is the slope of TU. ✓
6. MU can be zero, positive or negative

x — x

→ Limitations & Exceptions of Law of DMU:

- 1) Based on Unrealistic assumptions such as:-
 - a) Cardinal measurability of Utility.
 - b) Constancy of MU of money.
 - c) Continuous Consumption
 - d) Homogenous unit
- 2) Utility is not independent. It is affected by substitute & complementary goods.
- 3) Law is not universal. Law may not apply in the following situations:
 - a) Prestigious goods - Gold, diamond, etc.
Q ↑, ↑ Utility
 - b) In case of Hobbies, rare collections, etc.
 - c) In case of Creative art, painting, music, poetry etc. as more would generate greater satisfaction.
 - d) Habits forming commodities like alcohol, online gaming,
 - e) In case of people with Miserly behaviour

x → x

Consumer Equilibrium

↳ State of max satisfaction

→ When consumer spends his/her resources on a commodity so that he/she gets maximum satisfaction.

* Single commodity ✓

Momos - ₹10/-unit

Unit

MU_{momos}

TU

Price

↳ what you actually pay
MU_{money}

↳ Amt that a consumer is willing to pay



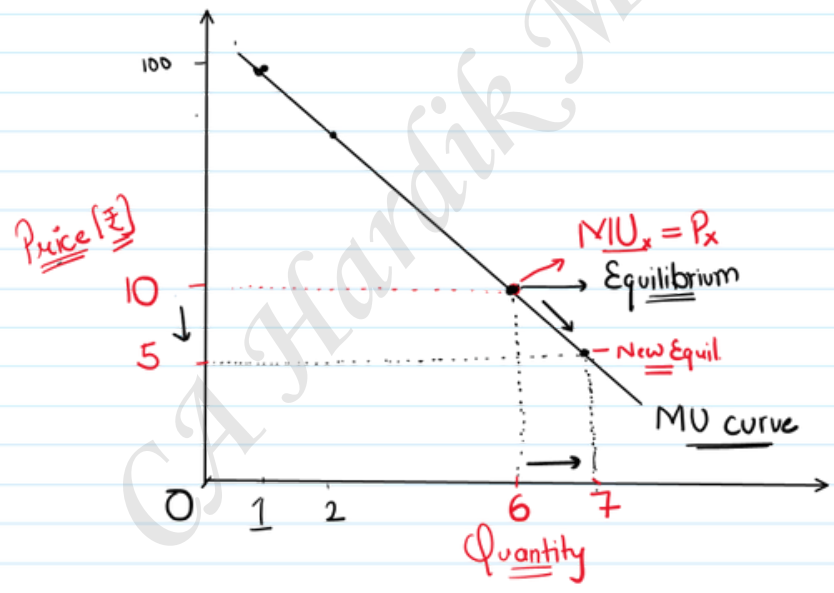
100 mos - 210 unit

Unit	MU _{mos}	TU	Price	what you actually pay MU _{money}
1	100	100	10	10
2	80	180	10	8
3	50	230	10	5
4	40	270	10	4
5	25	295	10	2.5
Consumer Equil. → 6	10	305	10	1
7	5	310	10	0.5
Satiation point ⇒ 8	0	310		0
9	-20	290		

- Consumer Equilibrium: $MU_x = P_x$ | $MU_{money} = 1$

↓ What you are willing to pay ↓ What you actually pay

→ Marginal utility of Money = $\frac{MU_{mos}}{Price_{mos}}$



- + In case of change in Price
1. Price ↓ - Consumer will consume more
 - MU from add. quantity will fall &
 - Equilibrium will be restored.
 2. Price ↑ - Consumer will consume less.



2. Price ↑ - Consumer will consume less.

* Downward sloping demand is derived from MU curve

* MORE Than One Goods

Income. ₹100

Dhokla ₹20.p.u.
Ice-cream ₹10.p.u.

Unit	<u>MU_D</u>	MU _I	MU _{money (D)}	MU _{money (I)}
1 ✓	100 ✓	40	<u>5</u>	4
✓ 2	80	30	<u>4</u> ✓	<u>3</u>
3	70	20	3.5	2
4	60	15	<u>3</u>	1.5
5	40	10	2	1

Dhokla. 1 + 1 + 1 + 1 = 4 units]

Ice-cream. 1 + 1 = 2 units]

4 units of Dhokla & 2 units of Ice-cream

→ Consumer equilibrium is explained with the Law of Equi-Marginal Utility

Equilibrium

$$MU_{m(DHOKLA)} = MU_{m(ICE-CREAM)}$$

$$\left[\frac{MU_x}{P_x} = \frac{MU_y}{P_y} \right]$$

x = x



→ Consumer Surplus - Alfred Marshall

* The extra satisfaction which consumer gets from their purchase of goods is called consumer surplus.

→ Measure of welfare that people gain from consuming goods & services.

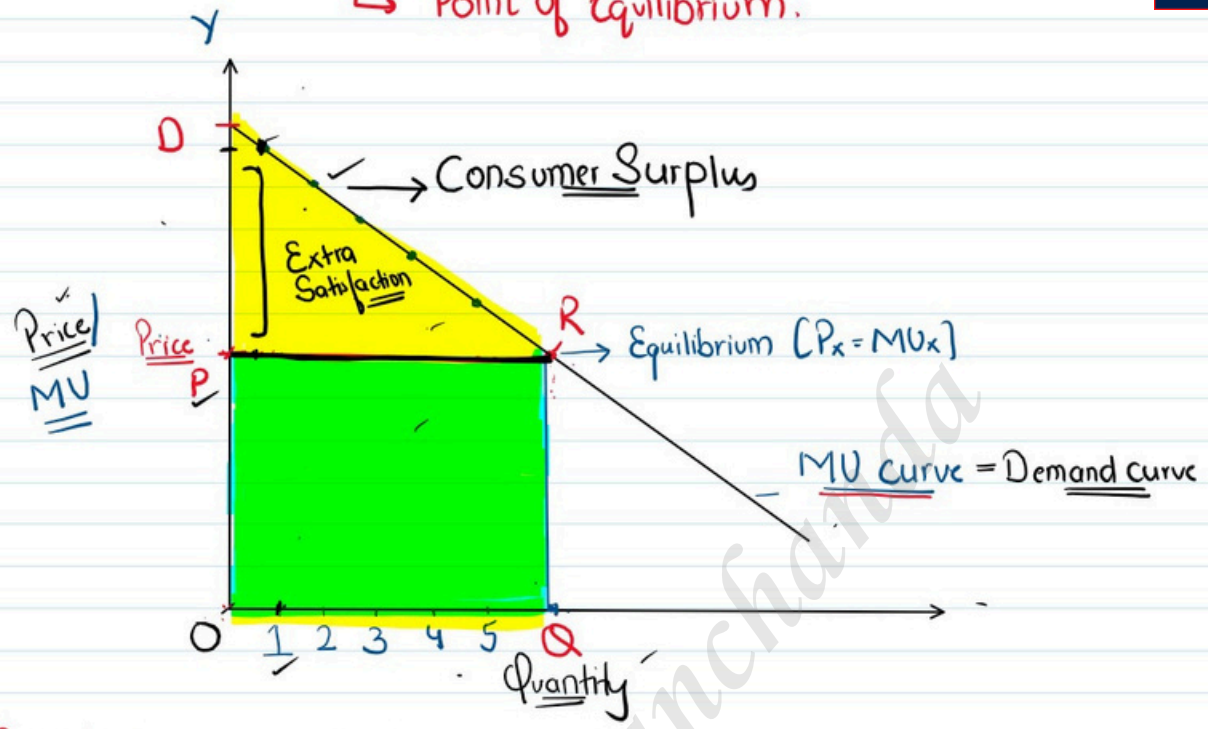
Consumer Surplus = What consumer is ready to pay \downarrow MU_x - What he/she actually pays P_x

Unit	^{→ Demand} <u>MU_x</u>	-	<u>Price_x</u>	<u>Consumer Surplus</u>
1	30		20	10
2	28		20	8
3	26		20	6
4	24		20	4
5	22		20	2
6	20		<u>20</u>	0 = <u>Consumer Equilibrium</u>

Imp points:

- The concept of consumer surplus is closely related to the demand curve of a product.
↳ We can also use it to measure consumer surplus
- This concept occupies an important place in Economic planning of Govt & decision making of business firms.
- It is assumed that Perfect competition prevails in the market
↳ Same Price
- Since the price is same for all the units of the goods, consumer get extra utility for all the units consumed except for the one at the margin.
↳ Point of equilibrium

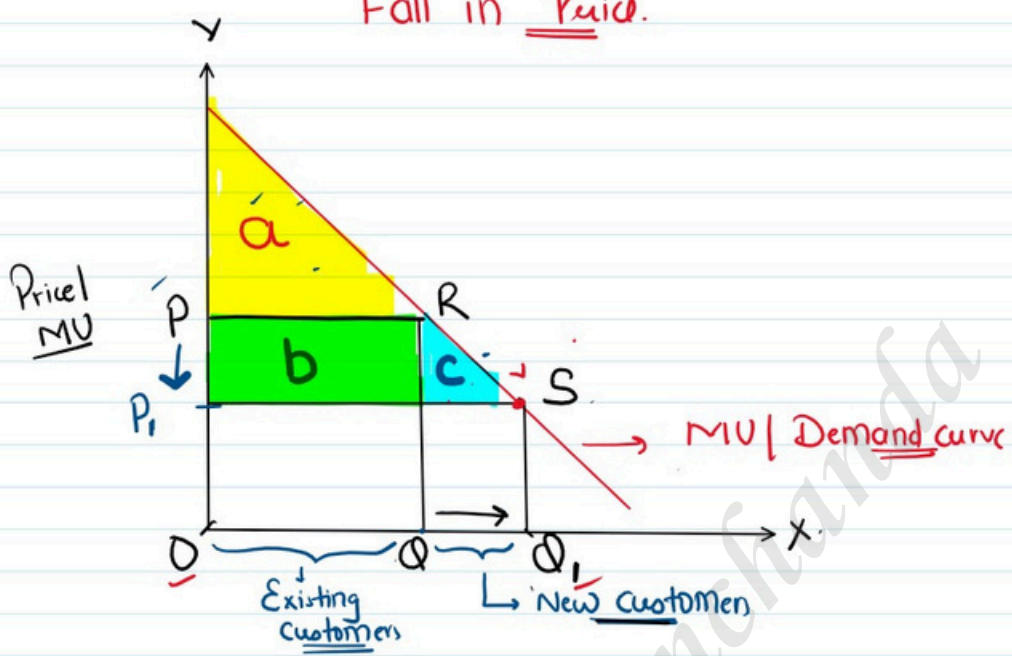
one at the margin.
 ↳ Point of Equilibrium.



Sum of MU ← Total utility = $ODRQ$ → Total amt willing to pay
 Total Amt actually paid = $OPRQ$
 Consumer Surplus = DPR
 [Total utility - Amt actually paid]

→ [Consumer Surplus: Area below the Demand curve & above the Price Line.]

* Change in Consumer Surplus due to Fall in Price.



At $P_1 \Rightarrow$ Consumer Surplus = $a + b + c$

\downarrow
Inc in Consumer Surplus

Inc. in Consumer Surplus = $b + c$

\downarrow Existing Customer \downarrow New Customers

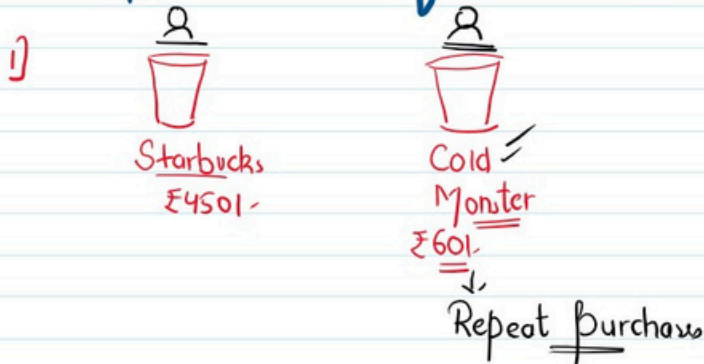
\rightarrow Fall in the price of goods \rightarrow Inc. in consumer surplus
 \rightarrow lower price generates larger consumer surplus

\rightarrow Rise in the price of goods \rightarrow Dec. in consumer surplus
 \rightarrow Higher price generates lower consumer surplus.

x = x



* Application of Consumer Surplus:



- Very Important for a firm to reflect on the amount of consumer surplus because consumers who get more surplus are more likely to repeat their purchases.
- Price Discrimination: If business can identify customers with different elasticity of demand, willing & able to pay higher price.
- Large Scale Investment decisions:
 - ↳ Involve Cost-Benefit analysis, which takes into account the extent of consumer surplus which the project may fetch.
- Knowledge of consumer surplus is important while raising the product price.
 - ↳ Many customers having low consumer surplus may no longer be willing to buy at higher prices.
- Guide to Finance Minister:
 - ↳ When they have to decide about the scale of taxes..
 - Always desirable to impose taxes on products having high consumer surplus

x — x

* Limitations of Consumer Surplus Based on MU

1. Consumer Surplus cannot be measured precisely - MU is difficult to measure.
2. In case of necessities, MU of earlier units are infinitely large. In such case, consumer surplus is always infinite.
3. Consumer Surplus is affected by availability of substitutes.
4. Very diff. to measure the utility of goods used for prestige value.
5. Consumer Surplus cannot be measured in terms of money because MU_m changes as purchases are made.
6. Assumption that utility can be measured in terms of money is unrealistic.

x = x



MCQs

11 August 2023 22:04



MCQs_11th
Aug

CA Hardik Manchanda

Multiple Choice Questions

1) Total utility is maximum when:

- a) Marginal utility is zero
- b) Marginal utility is at its highest point
- c) Marginal utility is negative
- d) None of the above

2) The successive units of stamps collected by a little boy give him greater and greater satisfaction. This is a clear case of

- a) Operation of the law of demand
- b) Consumer surplus enjoyed in hobbies and rare collections
- c) Exception to Law of Diminishing Marginal Utility.
- d) None of the above

Multiple Choice Questions

3) By **Consumer Surplus**, economist means:

- a) The area inside the budget line above the price of the commodity
- b) The area between the average revenue and marginal revenue curves
- c) The difference between the maximum amount a person is willing to pay for a goods and its market price
- d) The difference between the market price and the supply curve

4) When economist speak of the utility of a certain good, they are referring to

- a) The demand for the good
- b) The usefulness of the good in consumption
- c) The expected satisfaction derived from consuming the good
- d) The rate at which consumers are willing to exchange one good for another.

Multiple Choice Questions

5) Comforts lie between

- a) Inferior goods and necessities
- b) Luxuries and inferior goods
- c) Necessaries and luxuries
- d) None of the above

6) Marginal utility approach is also known as:

- a) Indifference curve analysis
- b) Hicks and Allen approach
- c) Marginal Utility analysis
- d) All of the above

Multiple Choice Questions

7) ____ is the addition made to the total utility by the consumption of additional unit of a commodity

- a) Marginal Utility
- b) Total Utility
- c) Average Utility
- d) Ordinal Utility

8) When Marginal Utility is negative, total utility is:

- a) Zero
- b) Diminishing
- c) Maximum
- d) Minimum

Multiple Choice Questions

9) When TU is increasing at a diminishing rate, MU must be:

- a) Increasing
- b) Decreasing - but positive
- c) Constant
- d) Negative

10) MU of a particular commodity at the point of saturation is:

- a) Zero
- b) Unity
- c) Greater than unity
- d) Less than unity

Multiple Choice Questions

11) MU curve will be below X-axis when:

- a) MU is positive
- b) MU is negative
- c) MU is zero
- d) MU is constant

12) At saturation point, the slope of Total Utility curve is:

- a) Rising
- b) Falling
- c) Zero
- d) None of the above

↓
MU

Multiple Choice Questions

13) MU of one commodity has no relation with MU of another commodity implies:

- a) Assumption of uniform equality
- b) Assumption of rational consumer
- c) Assumption of independent utilities
- d) Assumption of reasonable quantity

14) If $MU_x > P_x$, then consumer:

- a) Is at equilibrium
- b) He will buy more of X good
- c) He will buy less of X good
- d) None of the above

Multiple Choice Questions

15) Following is the utility schedule of a person:

Units	1	2	3	4	5
Mux (in Units)	50	40	30	20	10

If the commodity is sold for Rs. 10, how many units will the consumer buy to get maximum satisfaction?

Equilibrium - $MU_x = P_{0x}$

- a) 2 units
- b) 3 units
- c) 4 units
- d) 5 units

Multiple Choice Questions

16) Given $P_x = \text{Rs. } 2$ and $P_y = \text{Rs. } 1$ and Income = Rs. 12. Given below is the utility schedule:

Units	1	2	3	4	5	6	7	8
M_{ux}	16 -8	14 -7	12 -6	10 -5	8 -4	6 -3	4 -2	2 -1
M_{uy}	11	10	9	8	7	6	5	4

How many units of X and Y the consumer will buy in order to maximize utility?

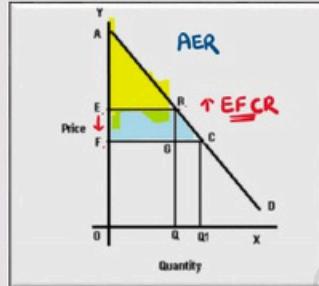
- a) 2 units of X & 6 units of Y
- b) 3 units of X & 5 units of Y
- c) 4 units of X & 4 units of Y
- d) 3 units of X & 6 units of Y

$$\frac{M_{U_{m_x}}}{P_x} = M_{U_{m_x}}$$

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Multiple Choice Questions

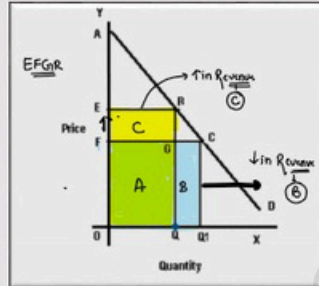
17) The effect on consumer surplus of a fall in price from E to F is:



- a) A decrease in consumer surplus by EFGR
- b) A decrease in consumer surplus by AER
- c) A decrease in consumer surplus by EFCR
- d) ~~None of the above~~

Multiple Choice Questions

18) When price rises from F to E, the increase in revenue earned by the seller is:



- a) Equivalent to area EFGR
- b) Equivalent to area EFCR
- c) Equivalent to area AER
- d) None of the above

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Multiple Choice Questions

19) As per which law, 'If marginal utility of money spent on commodity X is greater than marginal utility of money spent on commodity Y, then the consumer will withdraw some money from purchase of Product Y and will spend on purchase of X, till MU of money in two cases becomes equal'?

- a) Law of Demand
- b) Law of Supply
- c) Law of Equi-marginal utility
- d) Law of Diminishing Marginal Utility

$$\underline{\underline{MU_x}} > MU_y$$

Multiple Choice Questions

20) For a Laptop in the Market, Mr. Shyam is willing to pay 25,000, Mr. Raju is willing to pay 20,000 and Mr. BabuRao is ready to pay 15,000. If the price of the Laptop is 20,000, what is the **consumer surplus in this market** and how many units will be sold?

- a) Consumer surplus is 5000 and 2 units will be sold.
- b) Consumer surplus is 6000 and 2 units will be sold.
- c) No consumer surplus and 2 units will be sold
- d) Consumer surplus is 5000 and 3 units will be sold.

5000

↳ Sum of Individual
Consumer
Surplus

x ——— x



Indifference Curve

↳ Hicks & Allen

↓ Ordinal Approach

↓ Ordering of preferences

→ Indifference Schedule

2 goods

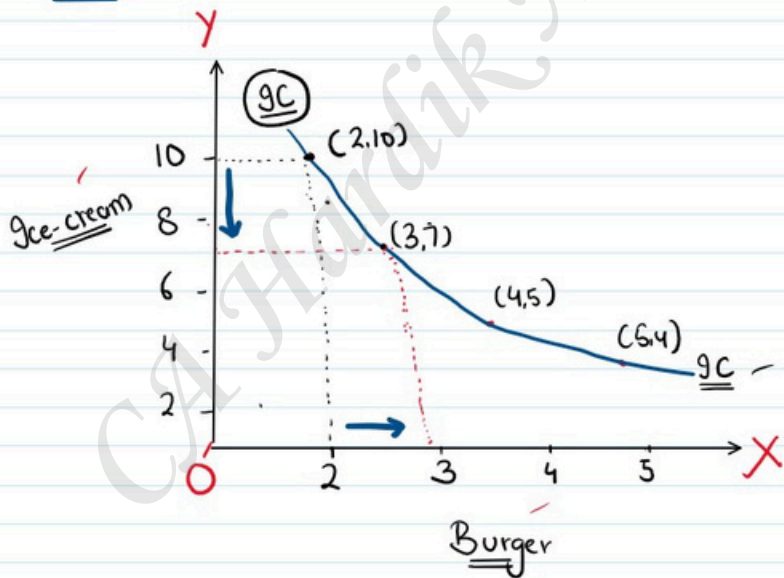
Burger Ice-cream

Combination A
B
C
D

2	10
+1	-3
3	7
+1	-2
4	5
+1	-1
5	4

- 1) Same level of Satisfaction
- 2) Gain of Satisfaction from (A-B) = 1 unit of Burger = Loss of Satisfaction from 3 unit of Ice-cream

→ Indifference Curve



- 1) Representation of consumer preferences graphically
- 2) Represent all the combination of 2 goods which give equal satisfaction.
- 3) Downward sloping - Negative slope (MRS) - Inverse relation b/w X & Y
- 4) Indiff. curve - Iso-utility OR

4) Indiff. curve - Iso-utility or Equal utility Curve

→ Assumptions:

1. Consumer knows his tastes & preferences & possesses full information about all the relevant aspects of economic environment in which he/she lives.

2. Ex- A (4, 10)
B (5, 12) - total utility ↑

Customer is rational → chooses more preferred combination.

3. Utility is ordinarily expressible.
- Customer can rank all possible combinations as first preference, second pref. but cannot quantify satisfaction in numbers.

4. Dhokla > Burger
Burger > Momos
↓
Dhokla > Momos

Rani Mukherjee > Shraddha
Shraddha > Alia
↓
Rani Mukherjee > Alia

→ Consumer choices are Transitive

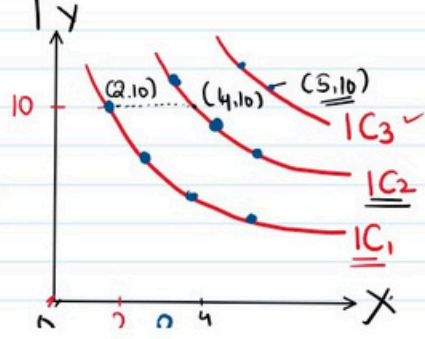
A > B
B > C
↓
A > C

5. More is better or Assumption of non-satiation
↳ MU is five

Ex- A- (3, 8)
B- (3, 10)
C- (5, 10) - Qty ↑

* Indifference Map

- Set of Indiff. Curve
- Higher Indifference Curve → more Satisfaction
- Ice-cream
- Curve lines farther from



Satisfaction \uparrow IC_1
 → Curve lying farther from the origin
 ↓
 More Satisfaction

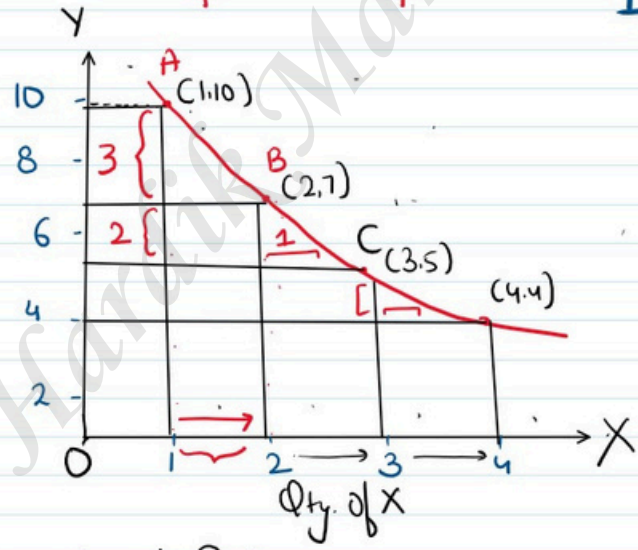
* Marginal Rate of Substitution (MRS)
 Additional Unit

Schedule:

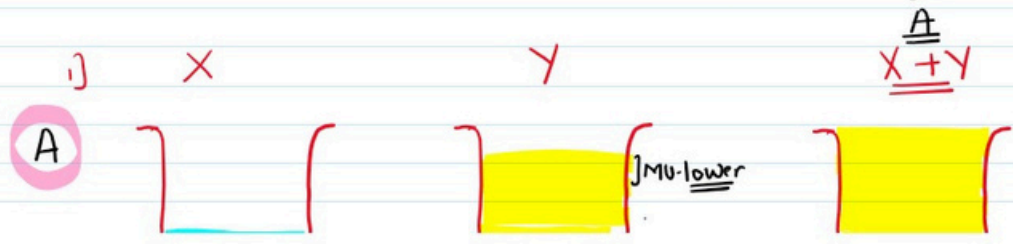
Combination	X	Y	MRS
A	1	10	
B	2	7	3
C	3	5	2
D	4	4	1

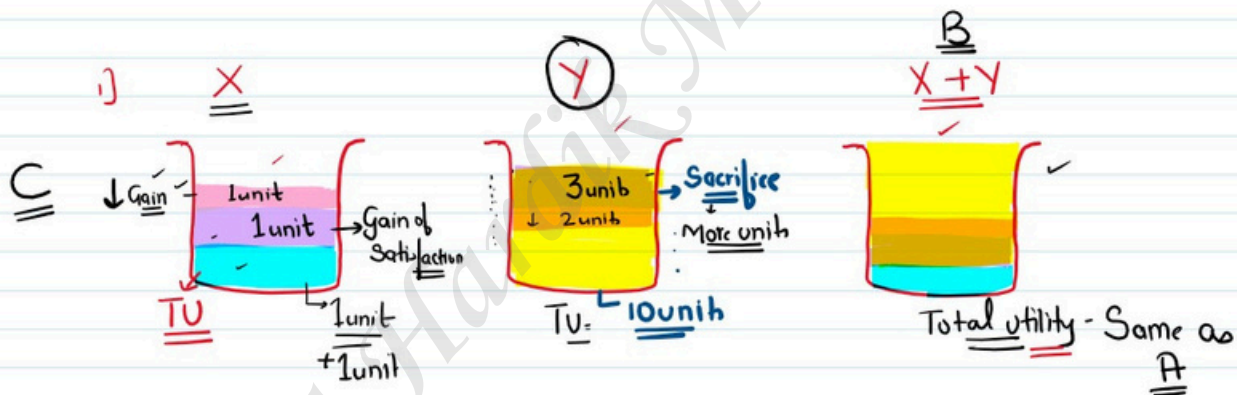
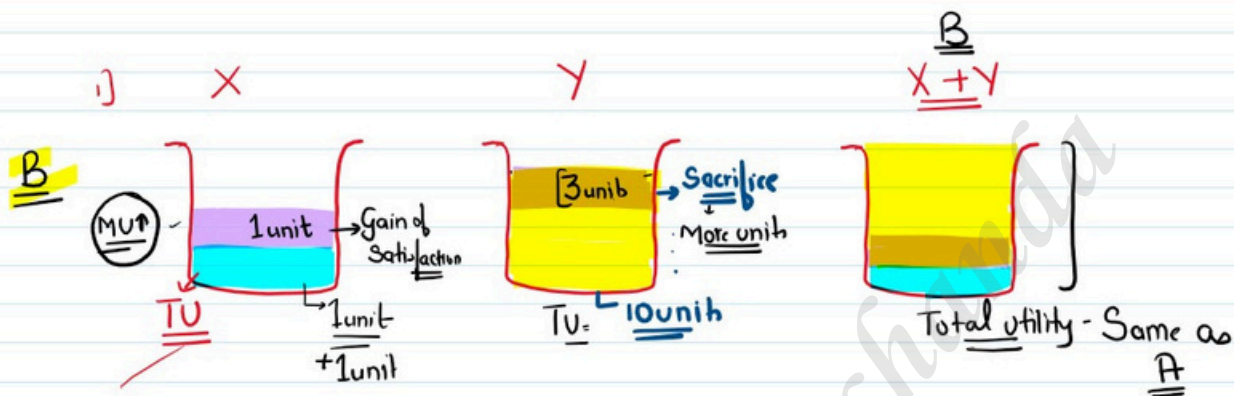
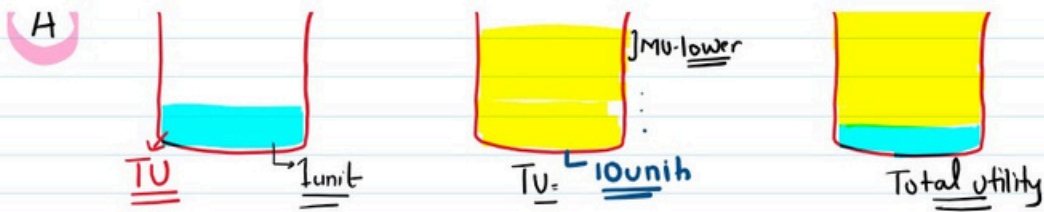
Annotations: MU high (at X=1), MU lower (at X=2), only Absolute value (pointing to MRS column), a red arrow pointing down from MRS=3 to MRS=1.

Slope = $\frac{\Delta Y}{\Delta X}$
 $B = \frac{-3}{1} = -3$
 ↓
 Rate of Substitution of Y



- MRS is the slope of IC.
- MRS is the rate at which a consumer is willing to exchange units of good Y for good X.
- MRS keeps on Decreasing, why?





Why MRS falls?

- In the beginning, at point A, consumer consumes only small quantity of X & therefore, MU of X at that point is high. But at point C, consumer is consuming large quantities of Y, & therefore MU of Y is low.
- This means that it takes a large reduction in the quantity of Y to counterbalance the increased utility he/she gets from unit of X.
- At point C, consumer consumes much larger quantity of X & much smaller quantity of Y, than point A.

→ At point C, consumer consumes much larger quantity of X & much smaller quantity of Y, than point A.

* Additional unit of X adds lesser utility & unit of Y foregone/sacrificed

So, the consumer is willing to give up less unit of Y ^{costs more utility} for another unit of X.

Conclusions: (MRS Falls)

1] The want for a particular good is satiable so that when a consumer has more of it, intensity of want for it decreases.

* 2] Most goods are imperfect substitutes.

Formula of MRS

Gain in utility of one good = Loss in utility for another good

$$\Delta Q_x \times MU_x = -\Delta Q_y \times MU_y$$

$$\frac{MU_x}{MU_y} = -\frac{\Delta Q_y}{\Delta Q_x}$$

Denotes negative relation/sacrifice

$$\Rightarrow \frac{\Delta Q_y}{\Delta Q_x} = \frac{MU_x}{MU_y}$$

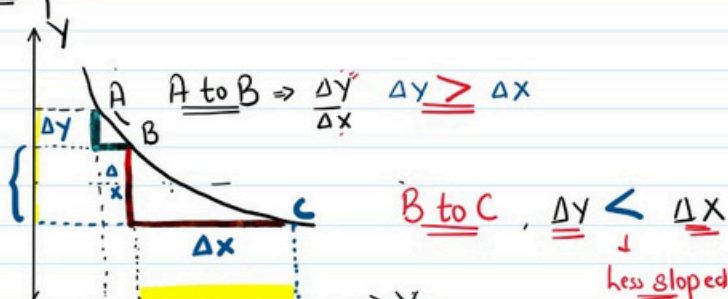
Slope of IC

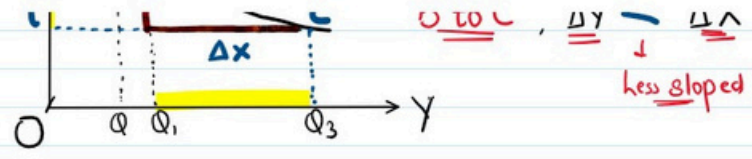
$MRS_{xy} = \frac{MU_x}{MU_y}$ → will keep on decreasing as we move downward in IC curve
 → will keep on increasing

Marginal rate of Substitution of X for Y.

Discussion on Slopes

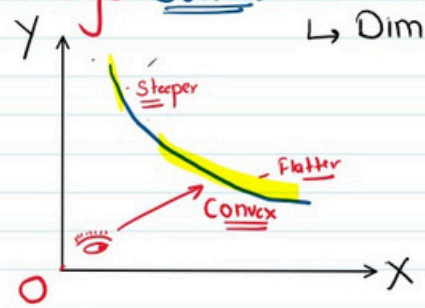
→ IC becomes flatter (less sloped) as we move downward.





*** Properties of IC curve:**

- 1. IC slope downward to the right.
↳ Negative relation b/w X & Y.
- 2. IC are always Convex to the origin.
↳ Diminishing MRS



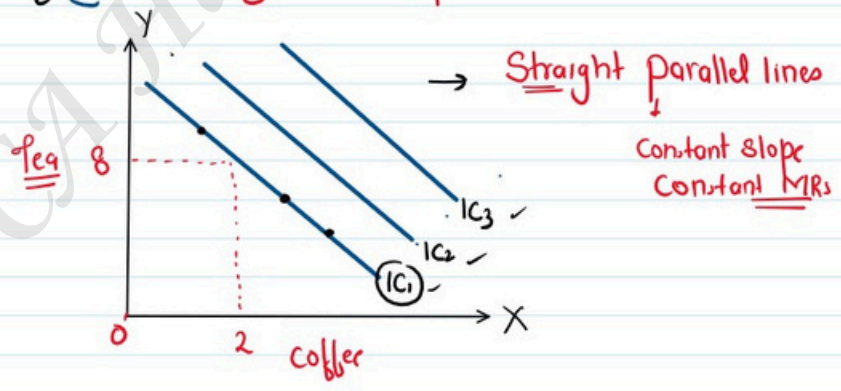
Two extreme situations:-

1. Perfect Substitutes

MRS = Constant
↓
Slope constant

Combination	Tea	Coffee
A	8	2
B	7	3
C	6	4

→ Gain of Satisfaction

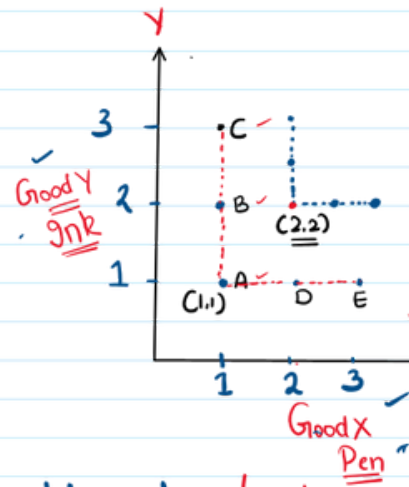


2. Perfect Complements (Pen & Ink)

↳ Goods are consumer in fixed proportions
MRS b fixed proportions

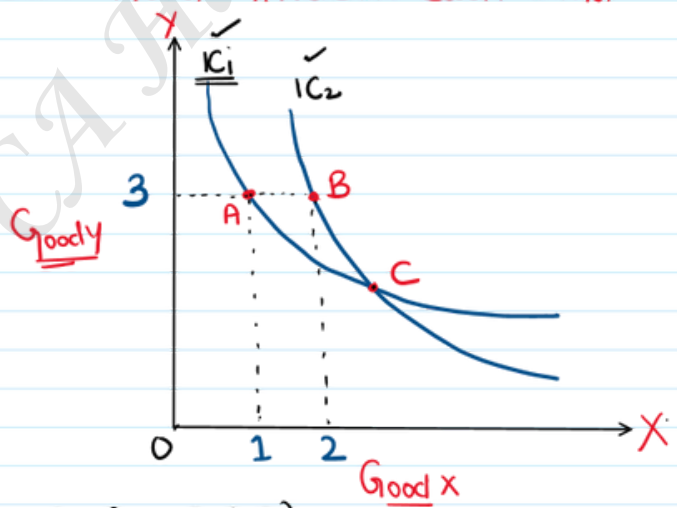
Comb.	Pen	Ink
A	1	1
	+1	-1

A	1	1	
B	+1 2	-1	X
C	<u>1</u>	<u>2</u>	
D	2	1	
<u>F</u>	<u>2</u>	<u>2</u>	- Higher level of satisfaction



- Perfect complements - L shapes
- MRS - Undefined, because individual preferences do not allow any substitution b/w goods.

3. IC can never intersect each other



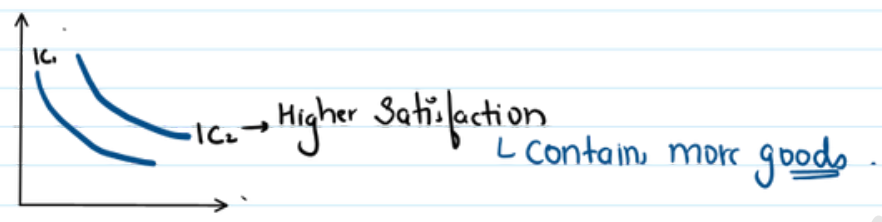
At point A - (1,3)
 B - (2,3) - More sat than point A.

Satisfaction level will be same. A = C (same IC₁ curve)
 B = C (IC₂ curve)

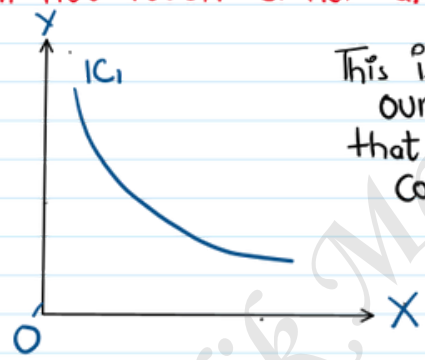
Satisfaction level will be same. $A = C$ (same IC_1 curve)
 $B = C$ (IC_2 curve)

$A \neq B$, this is not possible.

4. A higher IC represents higher level of satisfaction than lower IC curve.



5. IC will not touch either axis.



This is because of our assumption that consumer is considering combination of 2 goods.

x — x

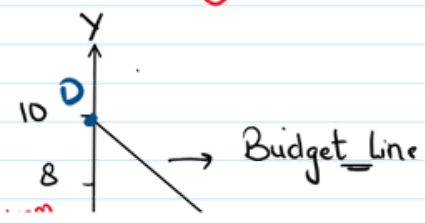
* BUDGET LINE

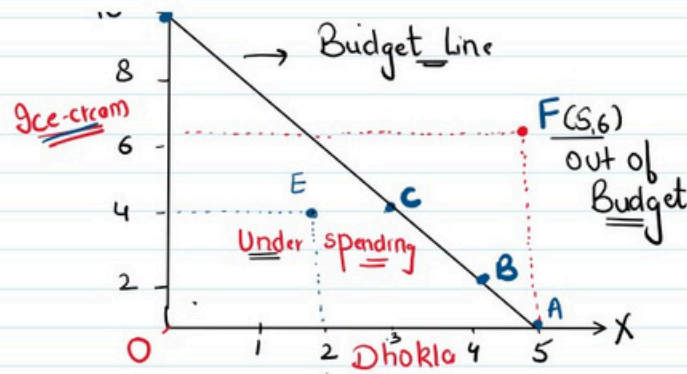
— Consumer maximize their well-being subject to constraints.

Ex- Budget: £100
 Dhokla £20
 Ice-cream £10

	Dhokla	Ice-cream	Slope
20	0		
10	2		$\frac{2}{1} = 2$
	4		$\frac{2}{1} = 2$
	0	10	$\frac{10}{5} = 2$

constant





→ total exp on goods & Services can fall short [E] of the budget constraint but may not exceed it [F]

$$\text{Equation} \Rightarrow P_x Q_x + P_y Q_y \leq \text{Budget}$$

Equation of Straight line $\Rightarrow \hat{y} = m\hat{x} + c$

\downarrow slope \downarrow Vertical intercept
 (when $x=0, y=?$)

$$\left[\text{Slope of Budget Line} = \frac{P_x}{P_y} \right]$$

Not for Exams $\rightarrow [P_x Q_x + P_y Q_y = B]$

$$Q_y = \frac{B - P_x Q_x}{P_y}$$

$$Q_y = \frac{B}{P_y} - \frac{P_x Q_x}{P_y}$$

$$\left[\underline{Q_y} = -\frac{P_x}{P_y} Q_x + \frac{B}{P_y} \right]$$

$$y = \uparrow m x + \frac{B}{P_y}$$

Assume, $x = 4$

$$y = -\frac{20}{10} \times 4 + \frac{100}{10}$$

$$= -8 + 10$$

$$= 2$$

Slope of BL = $\frac{P_x}{P_y}$ → Rate at which consumer can trade one good for another.
 exchange

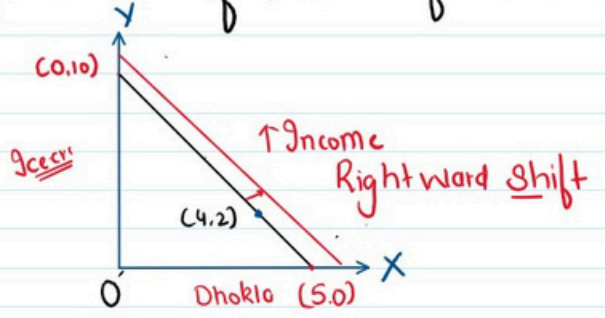
* Also called → Price Line

→ Price Line

→ BL shows all the combinations of 2 goods which consumer can buy spending his/her given income.

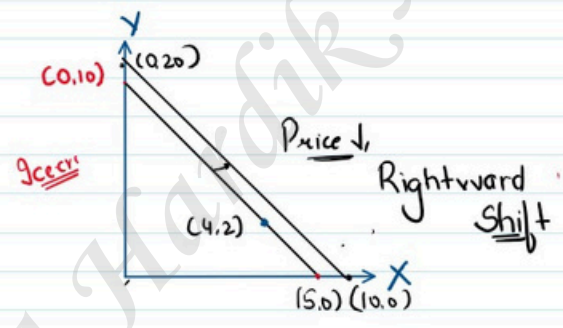
* Shift in Budget Line

1) Change in Level of Income of the consumer, with no change in Price.

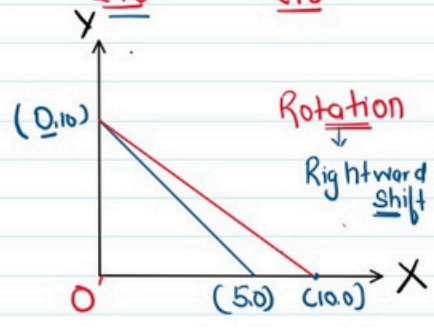


2) A change in price of one or both the products, with no change in Income.

$B = ₹100$	D	G
Price ↓ → Real Income ↑	(₹10)	(₹5)
A	10	0
B	0	20



Ex- $B = ₹100$ Dhokla ₹10 Ice-cream ₹10



3) Change in both Income & prices.

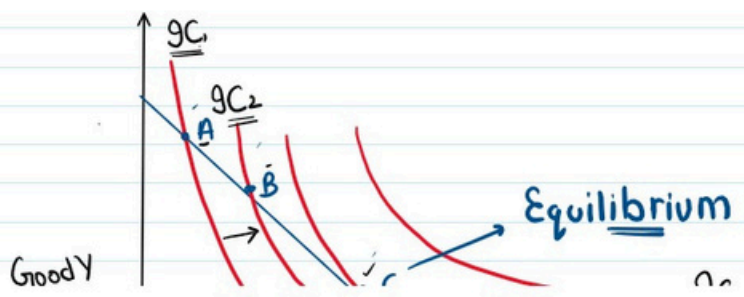
→ चारों ओर।

slope of IC - Rate at which a customer is **willing** to sacrifice good Y for good X. → चाहे तो।
 slope of BL - Rate at which a customer is **Actually able** to exchange good Y & X.

* **CONSUMER EQUILIBRIUM** → Max possible satisfaction, given the budget constraints

Assumptions:

1. Consumer has given Indiff. Map
2. He/she has fixed money which will be spent **wholly** on X & Y.
3. Prices of X & Y are given & fixed
4. All goods are homogeneous & divisible.
5. Consumer is rational.





x _____ Chapter over _____ x

CA Hardik Manchanda