

236013

ECONOMICS

**GENCOM-COE-
Module-2-class-4**

LAW OF DEMAND & SUPPLY 2

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☒ ELASTICITY OF DEMAND

- OWN PRICE ELASTICITY OF DD
- INCOME ELASTICITY OF DD
- CROSS PRICE ELASTICITY OF DD

☒ THE INDIFFERENCE CURVE

$P \downarrow$ (1%)
 $Q \uparrow$?
 Law of Demand

$> 1\%$
 $< 1\%$
 $\geq 1\%$

□ ELASTICITY OF DEMAND-

The degree of responsiveness of quantity demanded to the change in its determinants is called elasticity of demand.

There are three main types of elasticities of demand :

1. Price elasticity of demand (ep)
2. Income elasticity of demand (ey)
3. Cross price elasticity of demand (ec)

$$Q_x^d = f(P_x, P_y, M, T \dots)$$

demand determinants

$$Q_x^d = f(P_x) \quad ; \quad P_y, M, T \dots = \text{constant}$$

$$Q_x^d = f(M) \quad ; \quad P_x, P_y, T = \sim$$

$$Q_x^d = f(P_y) \quad ; \quad P_x, M, T = \sim$$

Price elasticity of demand :

It refers to the percentage change in the quantity demanded for a commodity as a result of a certain percentage change in its own price.

It can be measured by—

Keeping all other things constant

e_p

$$e_p = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in own price}}$$

The absolute value of price elasticity of demand ranges from zero to infinity.

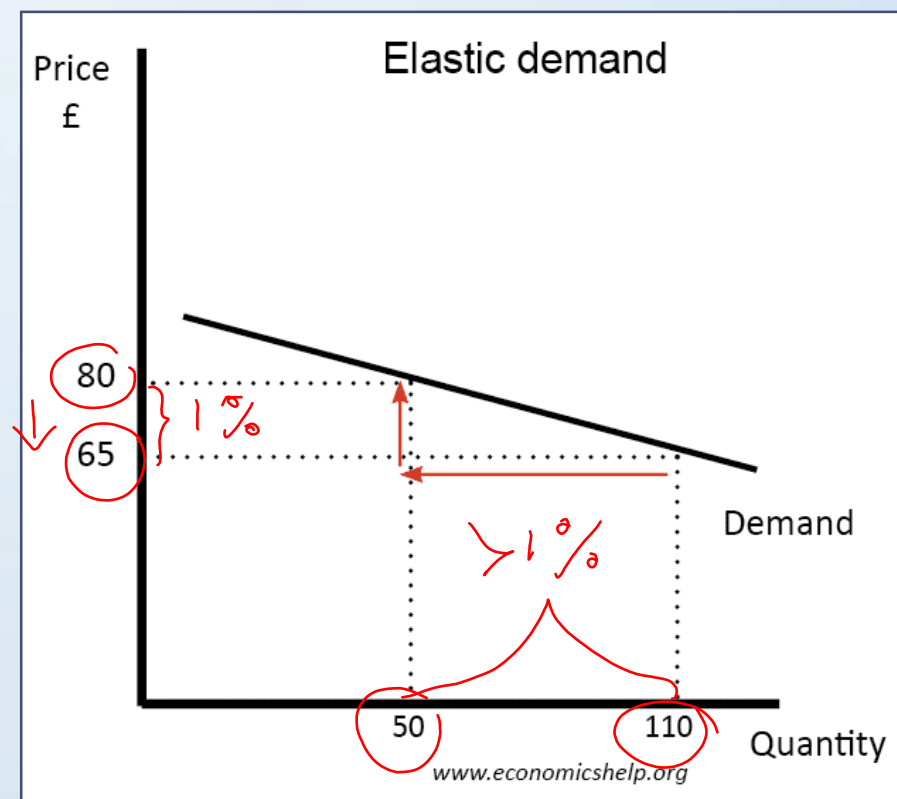
Types of Price Elasticity of demand

p → 1% change
Q → > 1% change

Elastic demand ($1 < |ep| < \infty$) :

When a given percentage change in the price brings about more than percentage change in quantity demanded.

Example : Luxuries. Demand Curve is **Flatter**



Types of Price Elasticity of demand

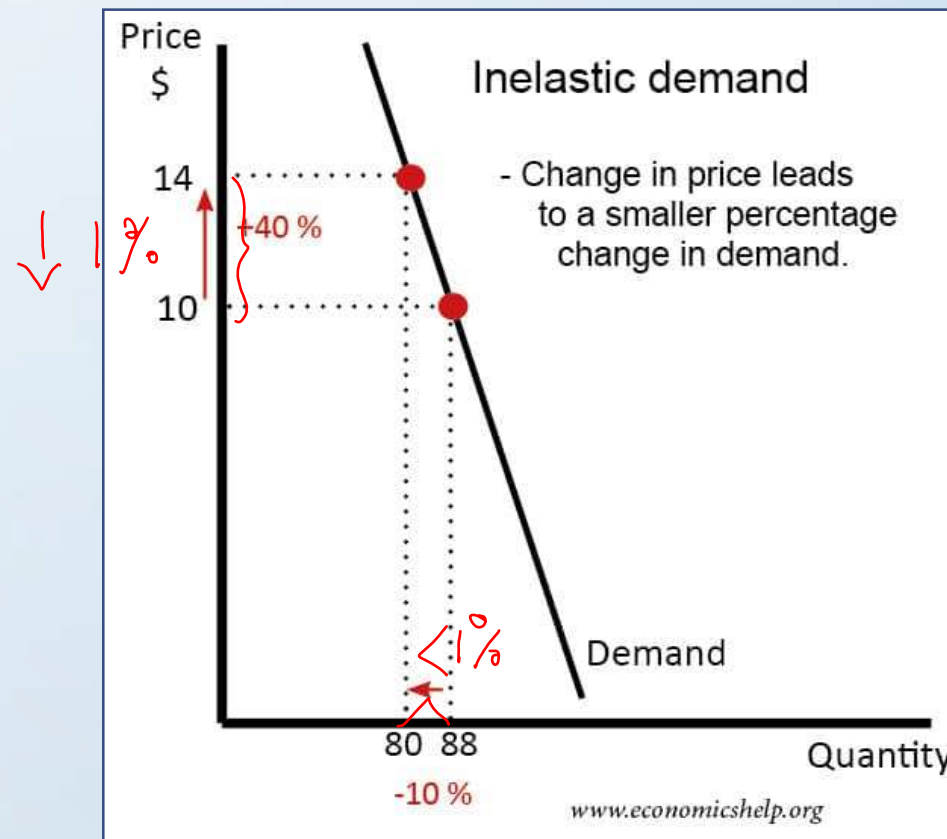
*P \Rightarrow 1% change
Q \Rightarrow < 1% h*

Inelastic demand ($0 < |ep| < 1$) :

When the percentage change in quantity demanded for a commodity is less than the percentage change in its price. Demand curve is **steeper**.

Examples : Necessities like food, fuel etc.

agricultural product



Types of Price Elasticity of demand

$P \Rightarrow 1\% \text{ change}$
 $Q \Rightarrow 1\% \text{ change}$

Unitary elastic demand
 $(|ep| = 1)$:

When a given percentage change in the price, brings about equal percentage change in quantity demanded.

Demand curve is rectangular hyperbola.

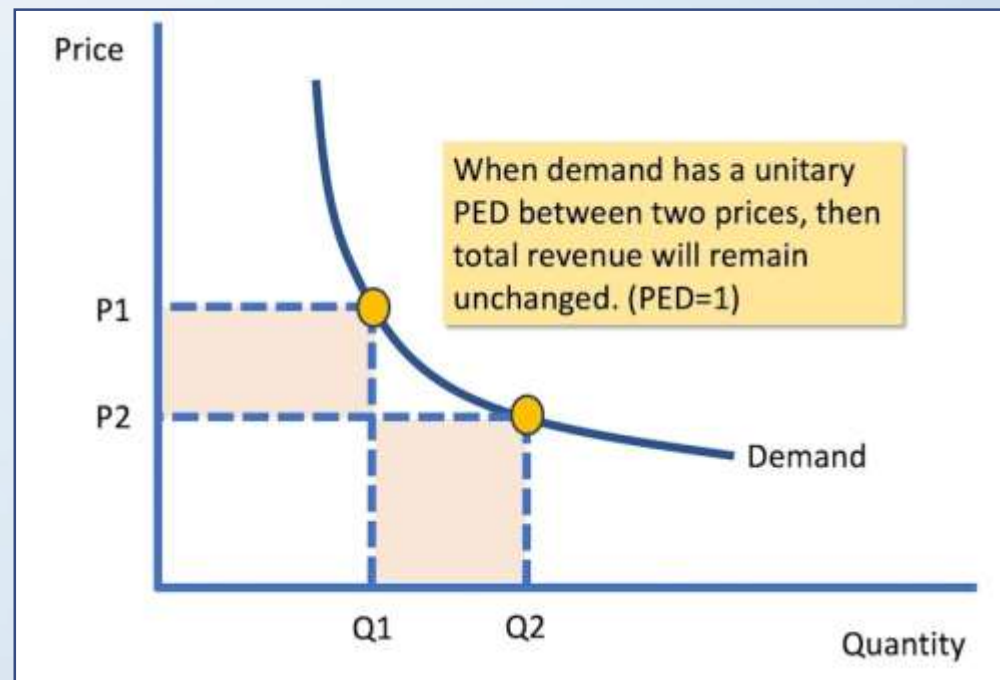
$$P = 10/-; Q = 1$$

$$E = P \times Q = 10/-$$

$$P' = 5/-, Q' = 2$$

$$E' = P' \times Q' = 10$$

$$XY = C$$



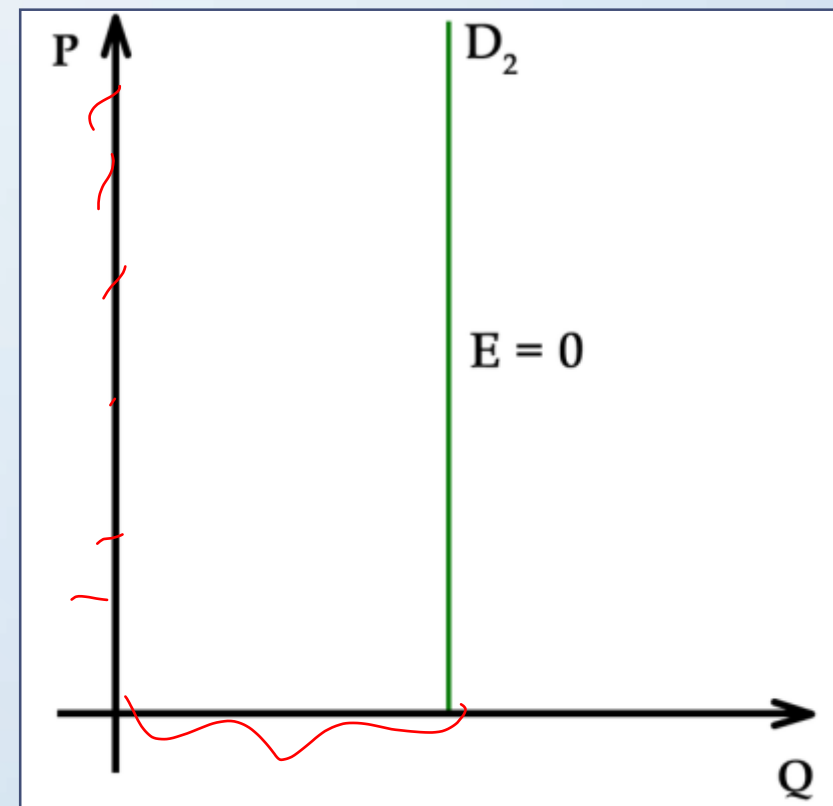
Types of Price Elasticity of demand

$P \Rightarrow 1\% \text{ change}$
 $Q = 0\% \text{ h}$

Perfectly inelastic Demand ($|ep| = 0$) :

When quantity demanded does not change for a given change in the price.

Examples : Essential life saving drugs, salt etc. Demand curve is vertical



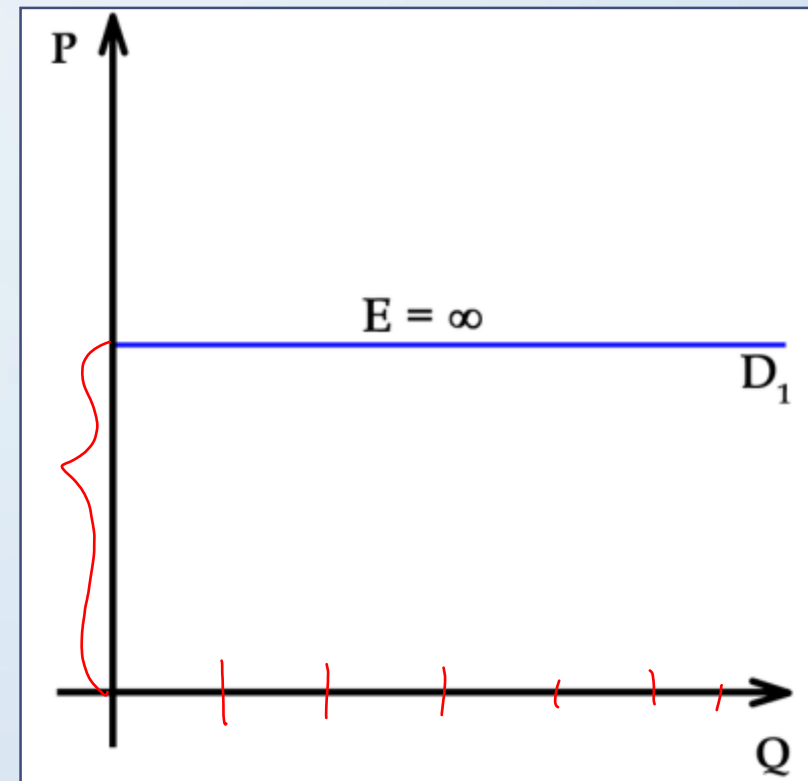
Types of Price Elasticity of demand

Perfectly elastic demand ($e_p = \infty$)

When a given percentage change in price brings about infinite change in quantity demanded.

Demand curve is horizontal

Ex: Homogeneous products



Income Elasticity of Demand :

↳ Nature of the product defined

Income elasticity of demand (e_y) is the responsiveness of demand to the change in consumer's income.

$$e_y = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

$$Q_x = f(M)$$

$$P_x, P_y, T = \text{constant}$$

$$e_y > 0 \Rightarrow \text{Normal good}$$

$$e_y < 0 \Rightarrow \text{Inferior goods}$$

- $e_y > 0 \rightarrow$ Normal goods
- $e_y > 1 \rightarrow$ Luxury goods
- $0 < e_y < 1 \rightarrow$ Necessary goods
- $e_y < 0 \rightarrow$ Inferior goods (less is purchased as income increases)

Necessary

Luxury

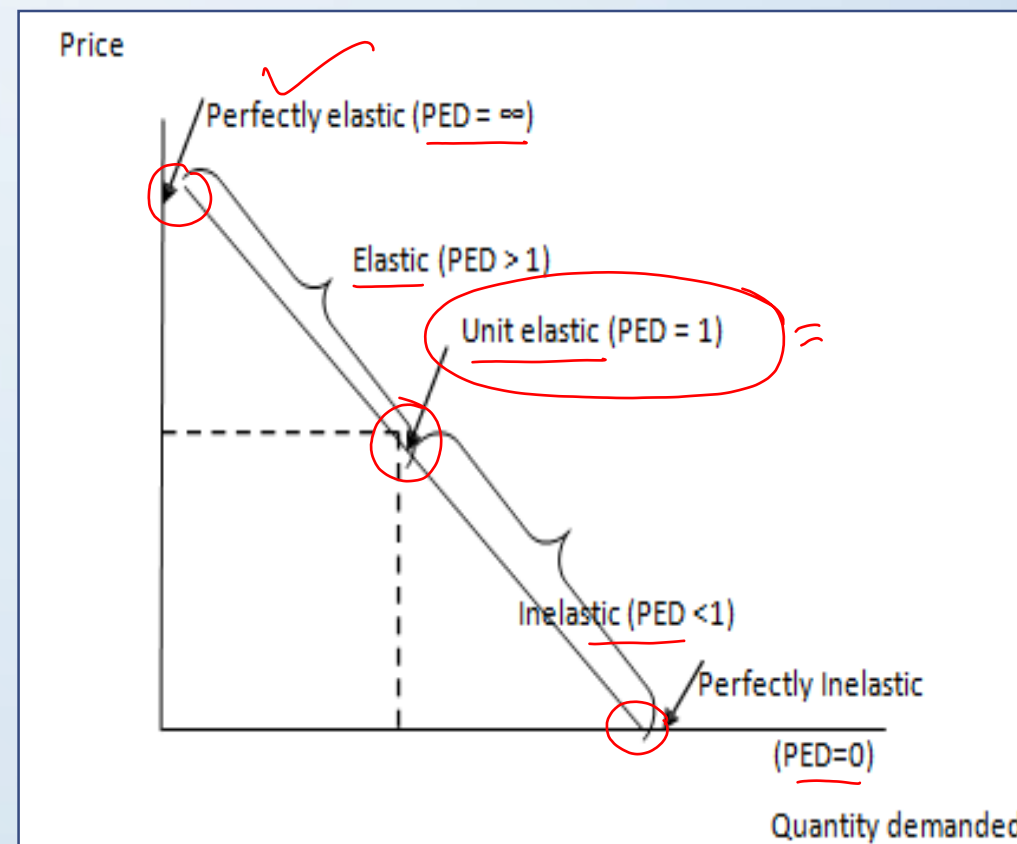
$$0 < e_y < 1$$

$$e_y > 1$$

Price elasticity on a downward sloping linear demand curve

Point price elasticity theory

- ✓ At the mid point, $|ep| = 1$.
- ✓ At the uppermost point, $|ep|$ is undefined.
- ✓ At the lowermost point, $|ep| = 0$.
- ✓ At any point on the upper segment, $|ep| > 1$.
- ✓ At any point on the lower segment, $|ep| < 1$.

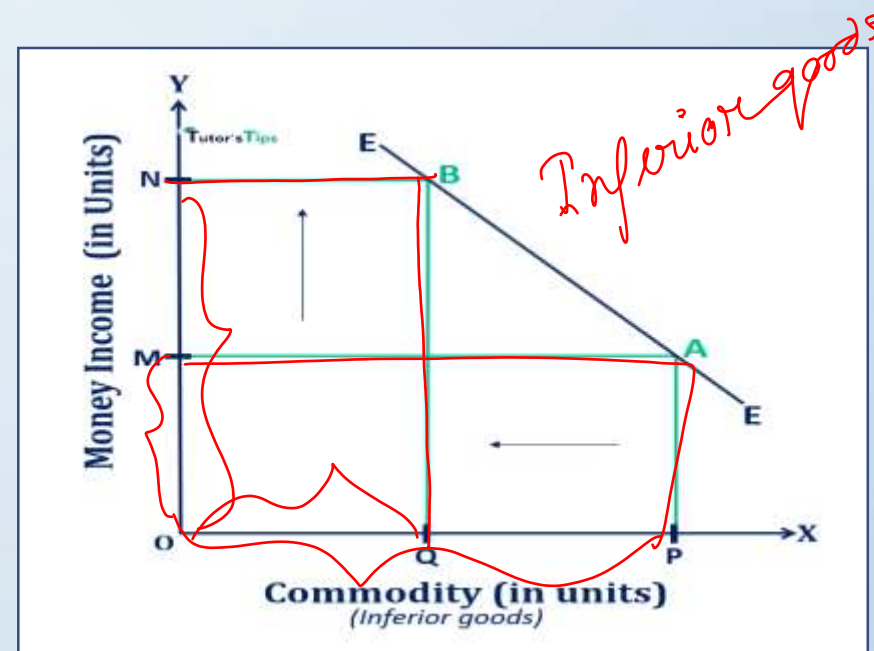
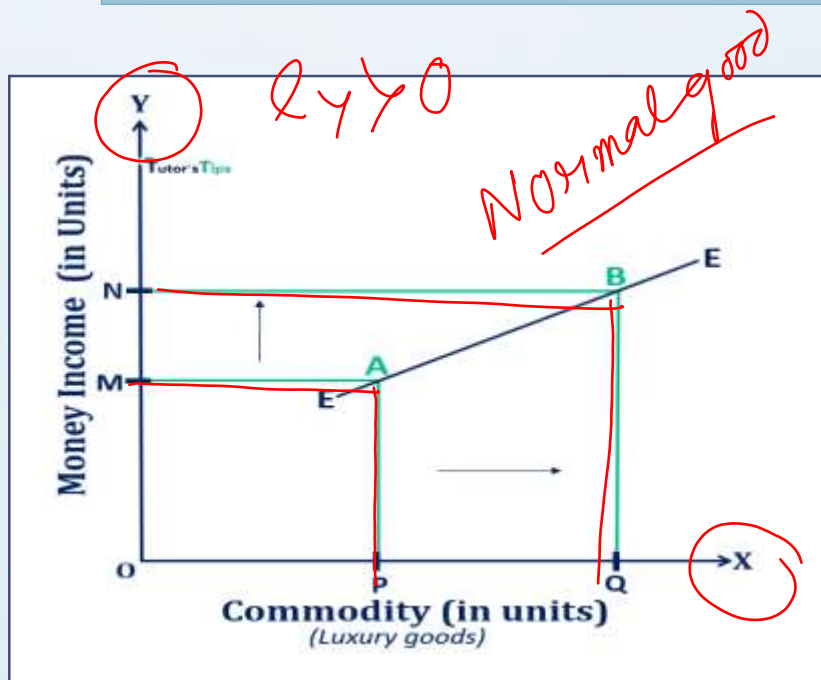


The Engel Curve:

Engel curve shows the relationship between income and demand.

Engel curve is same as the income demand curve.

Engel curve is upward sloping for normal goods and downward sloping for inferior goods.C



Cross price elasticity of demand (ec) :

It measures the responsiveness of the demand for a good towards the change in the price of related goods.

$$ec = \frac{\text{Percentage change in quantity demanded for X - commodity}}{\text{Percentage change in price of Y - commodity}}$$

Complementary goods (bread & butter, pen & ink etc.) have **negative** cross price elasticities.

✓ **Substitute goods** (Coffee & Tea) have **positive** cross price elasticities. In case of non related goods cross price elasticity is **zero**.

$$Q_x^d = f(P_y)$$

$$P_x, M, T = \text{constant}$$

$$P_T \downarrow \rightarrow Q_c^d \downarrow$$

(-). (-)
(+)

$$C_p \downarrow \rightarrow Q_p^d \uparrow$$

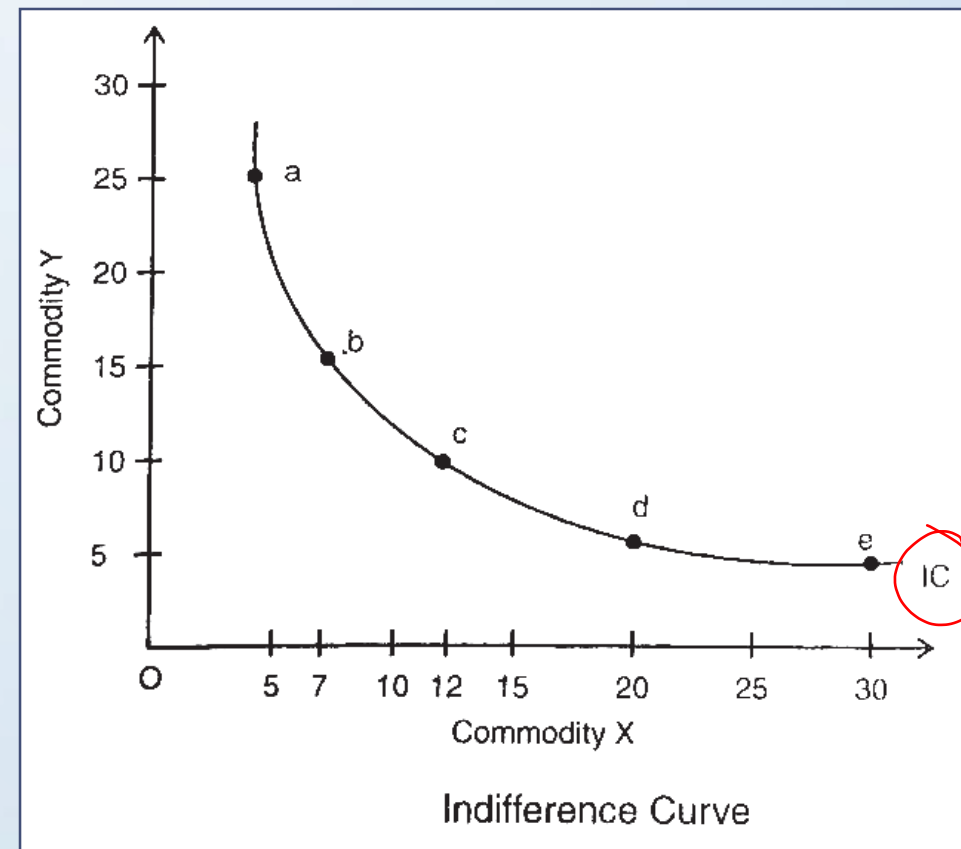
(-). (+)
(-)

The Indifference Curve

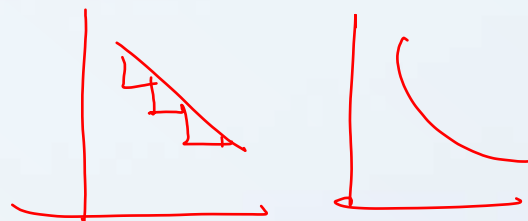
An indifference curve can be defined as the locus of points each representing a different combination of two goods yielding the same utility or level of satisfaction.

Indifference curves are also called iso-utility curves and equal utility curves.

Combination	Commodity X + Commodity Y		Utility
a	= 5	+ 25	= U
b	= 7 (+)	+ 15 (-)	= U
c	= 12	+ 10	= U
d	= 20	+ 6	= U
e	= 30	+ 4	= U

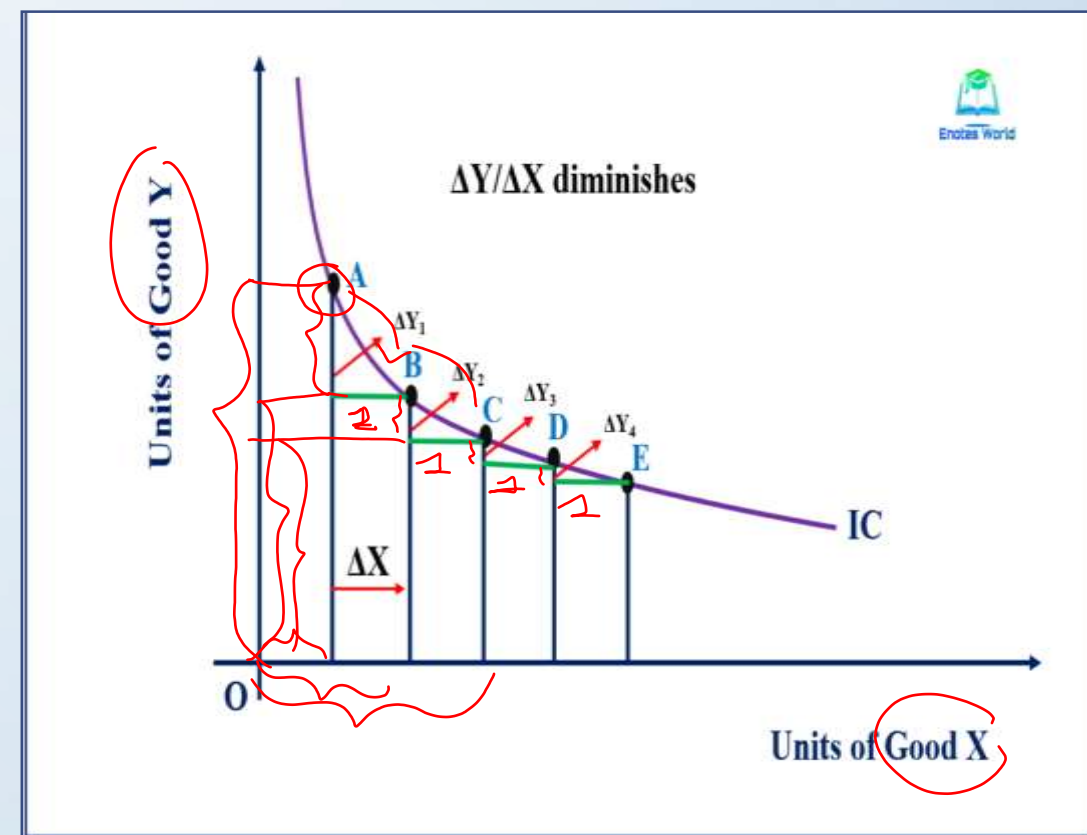


Properties of Indifference Curves



Indifference curves have the following four basic properties :

1. Indifference curves have a negative slope
2. Indifference curves are convex to the origin

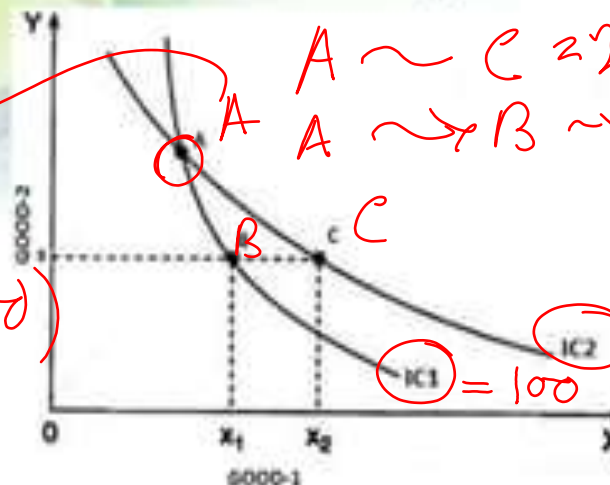


Properties of Indifference Curves

3. Indifference curves do not intersect

4.) INDIFFERENCE CURVE CAN NEVER INTERSECT EACH OTHER:-

No two IC will intersect each other because higher and lower level are cannot be equal to each other.



➤ Point A and B (on IC1) offer the same level of satisfaction.
 ➤ Point A and C (on IC2) offer the same level of satisfaction.
 ➤ If $A \sim B$, and $A \sim C$, it implies that $B \sim C$. This is wrong as C is offering more of GOOD-1

Properties of Indifference Curves

4. An upper indifference curve implies a higher level of satisfaction than the lower ones.



1. A want becomes a demand only when it is backed by the—

(SSC Combined Graduate Level Tier-I Exam. 16.05.2010)

- a) Ability to purchase b) Necessity to buy c) Desire to buy d) Utility of the product

2. Equilibrium price is the price when—

(SSC (10+2) Level DEO & LCD Exam. 04.12.2011)

- a) supply is greater than demand b) supply is less than demand
c) demand is very high d) supply is equal to demand

3. Elasticity of demand measures the responsiveness of the quantity demanded of a good to a—

(SSC (10+2) Level DEO & LCD Exam. 04.12.2011)

- a) change in the price of the goods b) change in the price of substitutes
c) change in the price of the complements d) change in the price of joint products

4. Which one of the following is having elastic demand? *(SSC (10+2) Level DEO & LCD Exam. 11.12.2011)*

- a) Electricity b) Medicines c) Rice d) Match boxes

5. Elasticity (e) expressed by the formula $1 > e > 0$ is—

(SSC Multi-Tasking Staff Exam. 24.03.2013, 1st Sitting)

a) Perfectly elastic b) Relatively elastic c) Perfectly inelastic d) Relatively inelastic

6. In the case of an inferior good, the income elasticity of demand is—

(SSC Graduate Level Tier-I Exam. 21.04.2013)

a) Zero b) Negative c) Infinite d) Positive

7. The demand for necessities is—

(SSC Graduate Level Tier-I Exam. 19.05.2013)

a) elastic b) perfectly inelastic c) inelastic d) perfectly elastic

8. If a good has negative income elasticity and positive price elasticity of demand, it is a/an—

(SSC Graduate Level Tier-I Exam. 19.05.2013)

a) giffen good b) normal good c) superior good d) inferior good



THANK YOU