

## Consumer Equilibrium:

The consumer equilibrium is achieved when:

$$MU_X/P_X = MU_Y/P_Y$$

$$Q_X * P_X + Q_Y * P_Y = Y$$

When:

$MU_X$ : marginal utility for (x) good.

$MU_Y$ : marginal utility for (y) good.

$P_X$ : (x) price

$P_Y$ : (y) price

$Q_X$ : (x) quantity

$Q_Y$ : (y) quantity

$Y$ : income

Example:

When  $p_x = 5000$  and  $p_y = 10000$  and  $y = 45000$  ID find consumer equilibrium?

x				y			
Q	TU	MU	MU/PX	Q	TU	MU	MU/PY
1	40			1	50		
2	75			2	90		
3	105			3	120		
4	130			4	140		
5	150			5	155		
6	165			6	165		
7	175			7	170		
8	180			8	170		

x				y			
Q	TU	MU	MU/PX	Q	TU	MU	MU/PY

1	40	40		1	50	50	
2	75	35		2	90	40	
3	105	30		3	120	30	
4	130	25		4	140	20	
5	150	20		5	155	15	
6	165	15		6	165	10	
7	175	10		7	170	5	
8	180	5		8	170	0	

x				y			
Q	TU	MU	MU/PX	Q	TU	MU	MU/PY
1	40	40	8	1	50	50	5
2	75	35	7	2	90	40	4
3	105	30	6	3	120	30	3
4	130	25	5	4	140	20	2
5	150	20	4	5	155	15	1.5
6	165	15	3	6	165	10	1
7	175	10	5	7	170	5	0.5
8	180	5	1	8	170	0	0

x				y			
Q	TU	MU	MU/PX	Q	TU	MU	MU/PY
1	40	40	8	1	50	50	5
2	75	35	7	2	90	40	4
3	105	30	6	3	120	30	3
4	130	25	5	4	140	20	2
5	150	20	4	5	155	15	1.5
6	165	15	3	6	165	10	1
7	175	10	5	7	170	5	0.5
8	180	5	1	8	170	0	0

$$MU_X/P_X=MU_Y/P_Y$$

$$Q_X*P_X+Q_Y*P_Y=Y$$

Questions:

1. Give the consumer surplus definition?
2. What is The consumer surplus uses?
3. Draw graphic explain consumer surplus?
4. Writ the equation of Estimates the change in consumer surplus?
5. When  $p_x = 3$  and  $p_y = 5$  and  $y = 32$  ID find consumer equilibrium as table below?

Q	1	2	3	4	5
TUX	12	22	29	32	32
TUY	20	35	45	50	50

6. Translate the following paragraph:-

#### Consumer Industries

Consumer industries companies are manufacture goods that affect nearly every part of our daily lives—everything from clothing and shoes to home uses and cell phones. These products are routed through sell channels to reach the end consumer. Consumer industries consists of several different business parts, including consumer packaged goods; consumer electronics and durables; soft goods; and telecommunications service suppliers. Each business part within consumer industries is faced with similar yet distinct business challenges. There are similarities in the consumers that purchase these products, and these parts require a similar set of strategies to address them such as product innovation, fashion, and pricing strategies, as well as product and service packages. Differences arise from the way in which the completing of these strategies ties to the channel, competition, execution, and completion.

6-1. Definition: It is an economic process that uses resources to create a commodity that is suitable for use by consumers.

This process can include manufacturing, storing, shipping, and packaging.

Because it is a flow concept, production is measured as a “rate of output per period of time”.

6-2. Factors of production: Factors of production are the resources used in the production of goods and services in economics. There are four factors of production:

- Land or natural resources, the payment for land is rent.
- Labor – human effort used in production, the payment for labor is a wage.
- Capital the payment for capital is called interest.
- entrepreneurs the payment for entrepreneurs called profit.

### 6-3. Production Function

There are several ways of specifying the production function.

In a general mathematical form, a production function can be expressed as:

$$Q = f(X_1, X_2, X_3, \dots, X_n)$$

where:

Q = quantity of output

$X_1, X_2, X_3, \dots, X_n$  = factor inputs (such as capital, labour, land or raw materials).

One formulation is as a linear function:

$$Q = a + bX_1 + cX_2 + dX_3, \dots$$

where a, b, c, and d are parameters that are determined empirically.

Another is as a Cobb-Douglas production function (multiplicative):

$$Q = aX_1^b X_2^c$$

6-4. The production function as a graph

Any of these equations can be designed on a graph. A typical production function is shown in the following diagram.