Class 11th | Economics

प्रारंभ BATCH

CONSUMER EQUILIBRIUM

LECTURE - 2

4 Ice cream = Total utility = 50

20 36 46 50

1  2  3  4 

20 utils + 16 utils + 10 utils + 4 utils

TOTAL UTILITY (TU)

Total utility refers to the total satisfaction obtained from the consumption of all possible units of a commodity. It measures the total satisfaction obtained from consumption of all the units of that good.

For example, if the 1st ice-cream gives you a satisfaction of 20 utils and 2nd one gives 16 utils, then TU from 2nd ice-creams is 20+16= 36 utils. If the 3rd ice-cream generates satisfaction of 10 utils, then TU from 3 ice-creams will be 20+ 16 + 10 = 46 utils.

TU can be calculated as:

$$TU_n = U_1 + U_2 + U_3 + \ldots\ldots\ldots\ldots + U_n$$

Where:

TU_n = Total utility from n units of a given commodity

$U_1 + U_2 + U_3 + \ldots\ldots\ldots\ldots + U_n$ = Utility from the 1st, 2nd, 3rd n^{th} unit

n = Number of units consumed

Do Consider it

1. The utility derived from the first unit of a commodity is known as initial utility. For example: Utility of 20 utils from the first ice-cream is termed as the initial utility.
2. Total utility is zero at zero level of consumption.

MU

$MU = \frac{3^{rd} - 2^{nd}}{46 - 36}$

$= 10$

TU= 20 36 46 50

3rd

MU = 20 | 16 | 10 | 4

MARGINAL UTILITY (MU)

Marginal utility is the additional utility derived from the consumption of one more unit of the given commodity. It is the utility derived from the last unit of a commodity purchased. As per given example, when 3rd ice-cream is consumed, TU increases from 36 utils to 46 utils. The additional 10 utils from the 3rd ice-cream is the MU. In the words of Chapman, "Marginal utility is addition made to total utility by consuming one more unit of a commodity".

MU can be calculated as $MU_n = TU_n - TU_{n-1}$

Where: MU_n = Marginal utility from nth unit; TU = Total utility from n units; TU_{n-1} = Total utility from n - 1 units; n = Number of units of consumption

MU of 3rd ice-cream will be: $MU_3 = TU_3 - TU_2 = 46 - 36 = 10$ utils

MARGINAL UTILITY (MU)

Change = Δ

One More way to Calculate MU

MU is the change in TU when one more unit is consumed. However, when change in units consumed is more than one, then MU can also be calculated as:

$$MU = \frac{\text{Change in Total Utility}}{\text{Change in number of units}} = \frac{\Delta TU}{\Delta Q} = \frac{46-36}{3-2} = \frac{10}{1}$$

MU = 10

MARGINAL UTILITY (MU)

Total Utility is Summation of Marginal Utilities

Total utility can also be calculated as the sum of marginal utilities from all units,

i.e.

$TU_n = MU_1 + MU_2 + MU_3 + \ldots\ldots + MU_1$ or simply,

$TU = \Sigma MU$

$TU = MU_1 + MU_2 + MU_3 + MU_4 + \ldots\ldots MU_n$

$56 = 20 + 16 + 10 + 4$

MARGINAL UTILITY (MU)

The concepts of TU and MU can be better understood from the following diagram:

Ice-creams Consumed	Marginal Utility (MU)	Total Utility (TU)
1	20	20
2	16	20 + 16 = 36
3	10	20 + 16 + 10 = 46
4	4	20 + 16 + 10 + 4 = 50
5	0	20 + 16 + 10 + 4 + 0 = 50
6	-6	20 + 16 + 10 + 4 + 0 + (-6) = 44

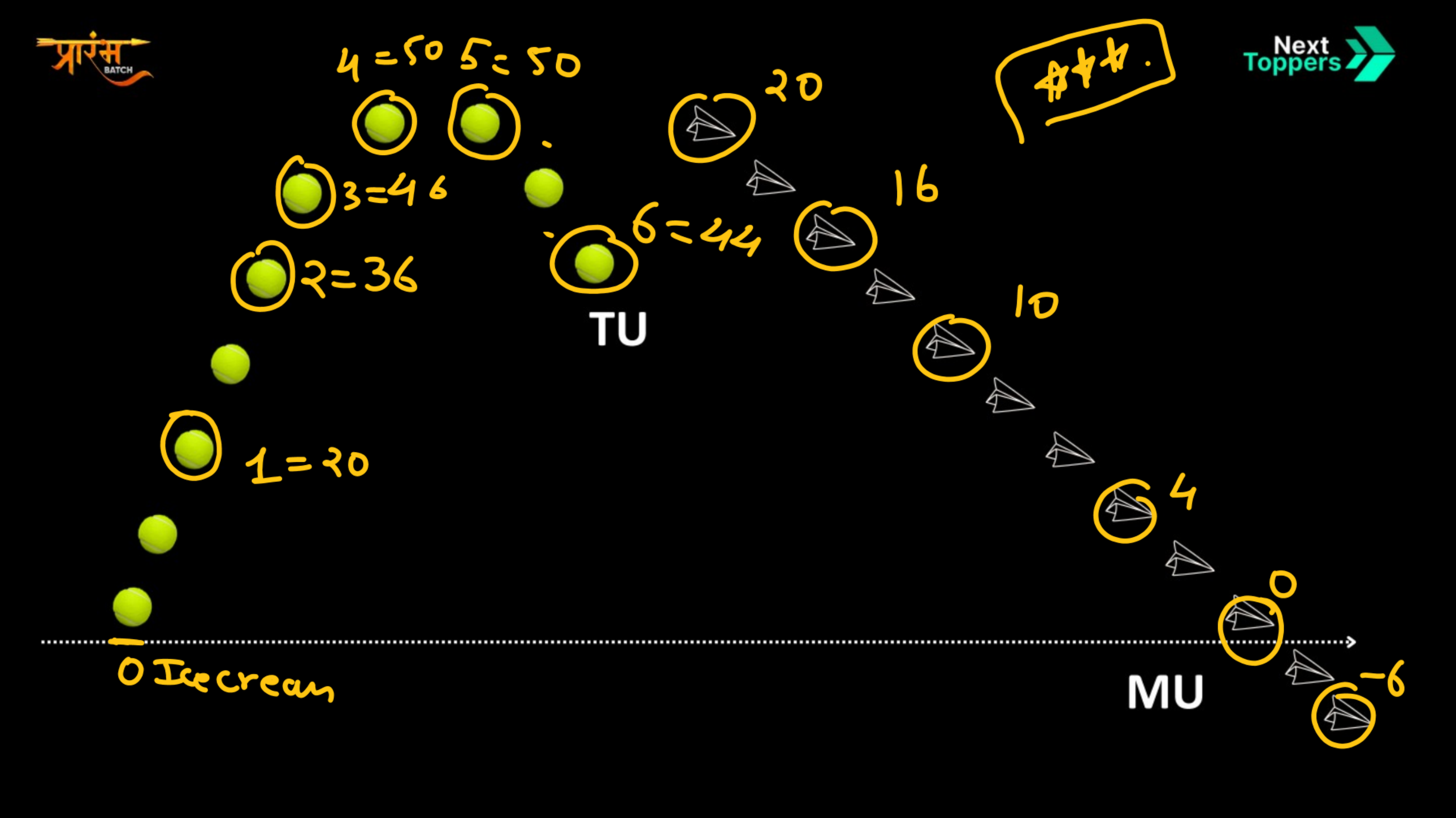
MARGINAL UTILITY (MU)

In Fig. 2.1, units of ice-cream are shown along the X-axis and TU and MU are measured along the Y-axis. MU is positive and TU is increasing till the 4^{th} ice-cream. After consuming the 5^{th} ice-cream, MU is zero and TU is maximum This point is known as the point of satiety or the stage of maximum satisfaction) After consuming the 6th ice- cream, MU is negative (known as disutility) and total utility starts diminishing.

Disutility is the opposite of utility. It refers to loss of satisfaction due to consumption of too much of a thing.

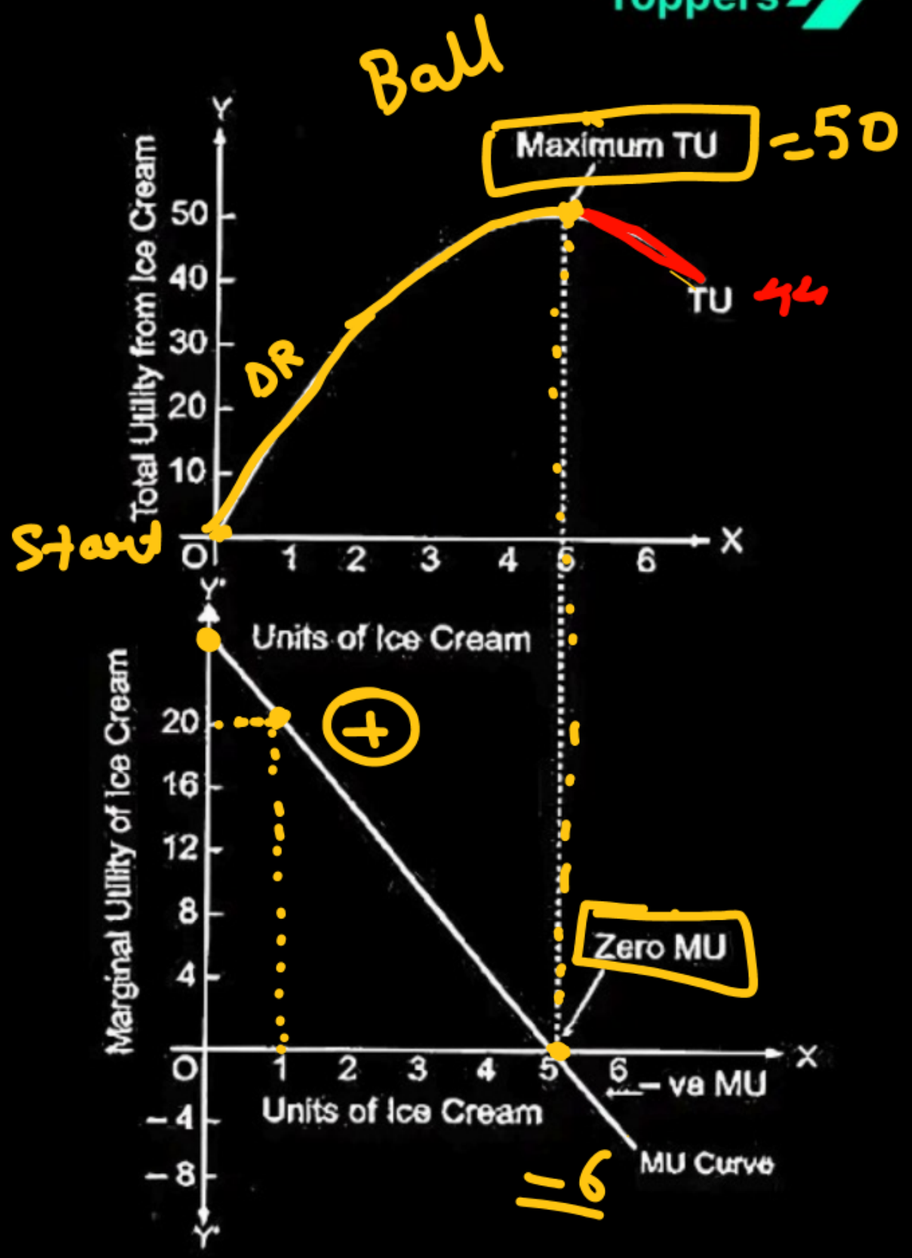
EXPLORE MORE ABOUT MARGINAL UTILITY

- **Positive Marginal Utility:** If total utility increases from consumption of additional units of a commodity, then marginal utilities of these units will be positive.
- **Zero Marginal Utility:** If the consumption of an additional unit of a commodity causes no change in the total utility, then marginal utility of the additional unit is zero. At this level of consumption, total utility is at its maximum. This point is also known as the point of satiety or the point of maximum satisfaction.
- **Negative Marginal Utility:** If the consumption of an additional unit of a commodity causes a fall in the total utility, it means that the marginal utility of that unit is negative. Negative utility is also known as disutility.


4 = 50
5 = 50
20
3 = 46
16
2 = 36
6 = 44
TU
10
1 = 20
4
0
0 Icecream
MU
-6

RELATION BETWEEN TU & MU

1. TU starts from origin / increases at diminishing rate / reaches top / starts falling.
2. MU starts from top / falling (DMU) / becomes 0 / then negative.
3. When TU is rising / MU is falling but positive.
4. When TU is at top / MU is 0.
5. When TU is falling / MU is negative.



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