

What is Marginal Utility?

Worksheet

Marginal utility is the change in total utility from consuming one additional unit: $MU = \frac{\Delta TU}{\Delta Q}$. It usually falls as consumption rises - the law of diminishing marginal utility.

$$MU = \frac{\Delta TU}{\Delta Q}$$

Questions

1. If total utility rises from 50 to 65 utils when quantity goes from 4 to 5 units, what is the marginal utility of the 5th unit?
A) 15 utils
B) 65 utils
C) 50 utils
D) 3.25 utils
2. What does the law of diminishing marginal utility state?
A) MU increases with each unit
B) MU eventually decreases as consumption increases
C) MU is always constant
D) MU equals price
3. Total utility is maximized when...
A) MU is at its highest
B) $MU = 0$
C) MU is negative
D) Price = 0
4. Which is a real-world example of diminishing marginal utility?
A) The 10th slice of pizza is as satisfying as the 1st
B) Each additional slice of pizza feels less satisfying than the last
C) Marginal utility rises with quantity
D) Total utility falls as MU rises
5. A consumer's total utility from water rises from 20 to 35 utils when going from 1 to 2 glasses. Find the marginal utility of the 2nd glass.
6. Total utility from candy is 42 utils at 3 pieces and 40 utils at 4 pieces. Find the marginal utility of the 4th piece.
7. A shopper's total utility from shirts rises from 80 to 92 utils when buying a 5th shirt. Find the marginal utility.
8. Define: What is marginal utility?
9. Define: What is the law of diminishing marginal utility?
10. Define: Formula for marginal utility?

Answer Key

1. A) 15 utils - $TU = 6550 = 15$, $Q = 1$, so $MU = 15/1 = 15$ utils.
2. B) MU eventually decreases as consumption increases - Each extra unit typically adds less satisfaction than the last.
3. B) $MU = 0$ - Once MU turns negative, extra consumption reduces TU, so the peak is where $MU = 0$.
4. B) Each additional slice of pizza feels less satisfying than the last - This is the classic diminishing marginal utility pattern.
5. $TU = 35$ 20 = 15 utils $Q = 2$ 1 = 1 glass $MU = TU/Q = 15/1 = 15$ utils
6. $TU = 40$ 42 = 2 utils $Q = 4$ 3 = 1 piece $MU = TU/Q = 2$ utils (negative marginal utility)
7. $TU = 92$ 80 = 12 utils $Q = 1$ shirt $MU = TU/Q = 12$ utils
8. The extra satisfaction gained from consuming one more unit of a good or service.
9. As consumption of a good increases, each additional unit yields less extra satisfaction than the one before.
10. $MU = TU/Q$ - change in total utility divided by change in quantity.

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