# What Is N(x)=-1-x+4 When X=-2,0,5

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Understanding the behavior of mathematical functions is fundamental in various fields, from basic algebra to advanced calculus. One such function, $N(x) = -1 - x + 4$, might seem straightforward, but analyzing its values at specific points like $x = -2$, 0, and 5 reveals important insights into its structure and behavior. In this article, we'll explore what N(x) equals at these points, how to evaluate the function systematically, and what these evaluations tell us about the function's properties.

## Deciphering the Function N(x) = -1 - x + 4

Before plugging in specific values for x, it's helpful to understand the general form of the function.

### Simplification of N(x)

The function N(x) is expressed as:

$N(x) = -1 - x + 4$

To simplify, combine like terms:

$-1 + 4 = 3$

Thus:

$N(x) = 3 - x$

This simplified form makes it easier to evaluate the function at different points.

### Understanding the Function's Nature

$N(x) = 3 - x$ is a linear function with:

- A slope of -1, indicating it decreases by 1 for each unit increase in x.
- A y-intercept at 3, which is the value of $N(x)$ when $x = 0$.

This straightforward linear relationship allows for quick computation and easy interpretation of the function's behavior.

## Evaluating N(x) at Specific Values

Let's now evaluate $N(x)$ at the points $x = -2$, 0, and 5.

### When X = -2

Substitute $x = -2$ into the simplified function:

$N(-2) = 3 - (-2) = 3 + 2 = 5$

Result: When $x = -2$, $N(x) = 5$

### When X = 0

Substitute $x = 0$:

$N(0) = 3 - 0 = 3$

Result: When x = 0, N(x) = 3

### When X = 5

Substitute x = 5:

N(5) = 3 - 5 = -2

Result: When x = 5, N(x) = -2

## Understanding the Results and Their Significance

The computed values offer a glimpse into the function's behavior across different points.

### Tabulating the Results

Here's a quick summary:

| x-value | N(x) | Interpretation |
|---------|--------|---------------------------------------------|
| -2 | 5 | At x = -2, function value is 5 |
| 0 | 3 | At x = 0, function value is 3 |
| 5 | -2 | At x = 5, function value is -2 |

This table illustrates the linear decrease of N(x) as x increases, consistent with the negative slope.

### Graphical Interpretation

Plotting these points helps visualize the function:

- The point (-2, 5)
- The point (0, 3)
- The point (5, -2)

Connecting these points yields a straight line sloping downward from left to right, confirming the negative slope of -1.

## Deeper Insights into N(x) = 3 - x

Beyond specific evaluations, understanding the broader implications of the function enhances comprehension.

### Linearity and Its Implications

Being linear, N(x) has:

- A constant rate of change (-1)
- A predictable pattern: for every increase of 1 in x, N(x) decreases by 1

### Applications of Such Functions

Linear functions like N(x) are foundational in:

- Economics (e.g., cost functions)
- Physics (e.g., constant velocity models)
- Computer science (e.g., algorithms with linear complexity)

Understanding how to evaluate and interpret these functions at specific points is crucial in these applications.

# Additional Concepts Related to N(x)

While the current function is simple, exploring related concepts enriches understanding.

## Finding the X-Intercept

The x-intercept occurs when $N(x) = 0$:

$$0 = 3 - x$$

$$x = 3$$

Interpretation: The function crosses the x-axis at $x = 3$.

## Finding the Y-Intercept

This is the value at $x = 0$, which we've already identified as $N(0) = 3$.

## Slope and Its Effect

The slope of -1 indicates the function descends one unit vertically for each unit moved horizontally to the right.

# Summary and Final Thoughts

Evaluating $N(x) = -1 - x + 4$ at specific points reveals the function's linear nature and how it behaves across different x-values. At $x = -2$, $N(x)$ equals 5; at $x = 0$, it equals 3; and at $x = 5$, it drops to -2. These evaluations exemplify the consistent rate of change dictated by the slope and help visualize the graph of the function.

Understanding such functions is fundamental in mathematics, providing the basis for more complex analyses and real-world applications. Whether in academic pursuits or practical scenarios, mastering the evaluation and interpretation of linear functions like N(x) is a valuable skill.

## Frequently Asked Questions

### What is the value of N(x) when x = -2 in the function N(x) = -1 - x + 4?

When x = -2, N(x) = -1 - (-2) + 4 = -1 + 2 + 4 = 5.

### How do you evaluate N(x) = -1 - x + 4 at x = 0?

At x = 0, N(0) = -1 - 0 + 4 = -1 + 4 = 3.

### What is the value of N(x) when x = 5 in the given function?

For x = 5, N(5) = -1 - 5 + 4 = -1 - 5 + 4 = -2.

### How does the value of N(x) change as x increases from -2 to 5?

Since N(x) = -1 - x + 4 simplifies to N(x) = 3 - x, increasing x decreases N(x). When x = -2, N(x) = 5; at x = 0, N(x) = 3; at x = 5, N(x) = -2.

### What is the general formula for N(x) and how do the specific values fit into it?

The formula is N(x) = -1 - x + 4, which simplifies to N(x) = 3 - x. Substituting x = -2, 0, and 5 gives N(x) = 5, 3, and -2 respectively.

## Additional Resources

Understanding the Function N(x) = -1 - x + 4 at Specific Values of x

When exploring the realm of algebraic functions, one of the most fundamental yet powerful tools is the ability to evaluate functions at particular points. In this article, we will take an in-depth look at the function N(x) = -1 - x + 4 and analyze its behavior at specific values of x: -2, 0, and 5. Whether you're a student brushing up on algebra, an educator seeking clear explanations, or a math enthusiast eager to deepen your understanding, this comprehensive review will clarify the concept, calculation methods, and implications of evaluating this function.

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# Deciphering the Function N(x) = -1 - x + 4

## Breaking Down the Expression

The function N(x) is expressed as:

$$ N(x) = -1 - x + 4 $$

At first glance, this looks like a simple linear function. To better understand it, let's analyze its structure:

- Constants: The numbers -1 and +4 are constants, which combine into a single constant term.
- Variable: The term -x involves the variable x, indicating the function's linear relationship with x.

By simplifying the expression, we can see that:

$$N(x) = (-1 + 4) - x = 3 - x$$

This simplification reveals that N(x) is a linear function with a slope of -1 and a y-intercept of 3. Recognizing this form is crucial because it helps predict the function's behavior without extensive calculations.

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## Evaluating N(x) at Specific Values of x

Now that we've simplified the function to $N(x) = 3 - x$, let's evaluate it at the given x-values: -2, 0, and 5.

### 1. When x = -2

Step-by-step calculation:

- Substitute $x = -2$ into N(x):

$$N(-2) = 3 - (-2) = 3 + 2 = 5$$

Result:

$$N(-2) = 5$$

Interpretation:

At $x = -2$, N(x) equals 5. This indicates that when the input is -2, the output of the function is 5. Visually, this point can be plotted at (-2, 5) on the coordinate plane.

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## 2. When x = 0

Step-by-step calculation:

- Substitute x = 0 into N(x):

$$ N(0) = 3 - 0 = 3 $$

Result:

$$ N(0) = 3 $$

Interpretation:

This point, (0, 3), indicates that the function crosses the y-axis at 3, aligning with the y-intercept identified earlier.

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## 3. When x = 5

Step-by-step calculation:

- Substitute x = 5 into N(x):

$$ N(5) = 3 - 5 = -2 $$

Result:

$$N(5) = -2$$

Interpretation:

At x = 5, the function outputs -2, a value below the x-axis, showing the linear decline of N(x) as x increases.

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## Graphical Representation and Behavior of N(x) = 3 - x

Understanding the specific points is helpful, but visualizing the function provides a clearer picture of its behavior.

### Plotting Key Points:

| x-value | N(x) | Coordinates |
|---|---|---|
| -2 | 5 | (-2, 5) |
| 0 | 3 | (0, 3) |
| 5 | -2 | (5, -2) |

These points help sketch the linear graph, which is characterized by a straight line descending from left to right because of its negative slope.

### Characteristics of the Graph:

- Slope (m): -1, indicating a decrease of 1 unit in $N(x)$ for each increase of 1 unit in x.
- Y-intercept: 3, where the line crosses the y-axis.
- X-intercept: The point where $N(x) = 0$:

$$0 = 3 - x \Rightarrow x = 3$$

This means the line crosses the x-axis at (3, 0).

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## Implications and Applications

Understanding this function's behavior at specific points is more than an academic exercise; it has practical applications across different fields.

### 1. Real-world Modeling

Linear functions like $N(x) = 3 - x$ can model various real-world phenomena:

- Economics: Predicting profit decreasing with increased costs.
- Physics: Describing objects with constant negative velocity.
- Business: Analyzing diminishing returns over time.

Knowing the output at specific inputs allows professionals to make informed decisions.

## 2. Mathematical Foundations

Evaluating functions at specific points is foundational in calculus, physics, engineering, and data analysis. It helps:

- Find critical points.
- Understand the rate of change.
- Analyze the function’s domain and range.

## 3. Educational Significance

For students, mastering how to evaluate functions at particular x-values fosters:

- Better comprehension of linear functions.
- Skills in substitution and algebraic simplification.
- Preparation for more advanced topics like derivatives and integrals.

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# Summary and Final Thoughts

The function $N(x) = -1 - x + 4$, when simplified, is $N(x) = 3 - x$. Evaluating this at specific points yields:

- $x = -2$: $N(x) = 5$
- $x = 0$: $N(x) = 3$
- $x = 5$: $N(x) = -2$

These evaluations not only confirm the linear nature of the function but also provide insights into its slope, intercepts, and overall behavior. Recognizing the simplicity of the form allows for quick predictions and better understanding of linear relationships.

In conclusion, whether for academic purposes, practical modeling, or just expanding your mathematical toolkit, understanding how to evaluate functions at specific points is an essential skill. The clear structure of $N(x) = 3 - x$ makes it an ideal example to demonstrate these concepts, illustrating how algebraic manipulations and substitutions come together to reveal the behavior of linear functions across different contexts.

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