Function Notation Worksheet Answer Key PDF

Function Notation Worksheet Answer Key PDF

Disclaimer: The function notation worksheet answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Part 1: Building a Foundation

What does the notation f(x) represent in mathematics?

undefined. A) A variable

undefined. B) A function ✓

undefined. C) A constant

undefined. D) An equation

The notation f(x) represents a function.

Which of the following are types of functions?

undefined. A) Linear ✓

undefined. B) Quadratic ✓

undefined. C) Exponential ✓

undefined. D) Polynomial ✓

Linear, quadratic, exponential, and polynomial are all types of functions.

Explain what is meant by the domain of a function.

The domain of a function refers to the set of all possible input values (x-values) that the function can accept.

List two characteristics of a linear function.

1. Characteristic 1

Constant rate of change

2. Characteristic 2

Graph is a straight line

Linear functions have a constant rate of change and their graph is a straight line.

What is the range of the function f(x) = 2x + 3?

undefined. A) All real numbers ✓
undefined. B) Positive integers
undefined. C) Negative integers
undefined. D) Non-negative integers

The range of the function f(x) = 2x + 3 is all real numbers.

Part 2: Comprehension and Interpretation

If f(x) = 3x - 4, what is f(2)?

undefined. A) 2 ✓
undefined. B) 6
undefined. C) 5
undefined. D) 2

f(2) = 3(2) - 4 = 2.

Which statements are true about the function f(x) = x^2?

undefined. A) It is a quadratic function. ✓
undefined. B) Its graph is a parabola. ✓
undefined. C) It has a constant rate of change.
undefined. D) Its domain is all real numbers. ✓

The function f(x) = x^2 is a quadratic function, its graph is a parabola, and its domain is all real numbers.

Describe how you would determine the inverse of a function.

To find the inverse of a function, you switch the x and y variables and solve for y.

Part 3: Application and Analysis

Given f(x) = 2x + 1, what is the value of x if f(x) = 9?

undefined. A) 3
undefined. B) 4 ✓
undefined. C) 5
undefined. D) 6

If f(x) = 9, then 2x + 1 = 9, which gives x = 4.

For the function f(x) = x^2 - 4x + 4, which of the following are true?

undefined. A) It has a minimum value. ✓
undefined. B) It is a linear function.
undefined. C) The vertex is at (2,0). ✓
undefined. D) It opens upwards. ✓

The function has a minimum value, the vertex is at (2,0), and it opens upwards.

Apply the concept of domain to determine the domain of the function f(x) = 1/(x-3).

The domain of f(x) = 1/(x-3) is all real numbers except x = 3.

Which of the following graphs represents a function with a domain of all real numbers and a range of y ≥ 0?

undefined. A) A line
undefined. B) A parabola opening upwards ✓
undefined. C) A circle
undefined. D) A hyperbola

A parabola opening upwards represents a function with a domain of all real numbers and a range of y ≥ 0.

Part 4: Evaluation and Creation

Evaluate the statements about the function f(x) = |x|.

undefined. A) It is not differentiable at x = 0. ✓

undefined. B) It is an even function. ✓

undefined. C) Its range is all real numbers.

undefined. D) It is continuous everywhere. ✓

The function f(x) = |x| is not differentiable at x = 0, it is an even function, and it is continuous everywhere.

Create a real-world scenario where a quadratic function could be used to model the situation. Describe the scenario and the function.

A real-world scenario could involve the path of a projectile, modeled by a quadratic function.

Analyze the relationship between a function and its inverse. Provide an example to illustrate your explanation.

The inverse of a function reverses the input-output relationship, for example, if f(x) = 2x, then f^(-1)(x) = x/2.