

## Algebra 1 Worksheets Answer Key PDF

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### Part 1: Foundational Knowledge

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What is the value of the expression  $(3x + 5)$  when  $(x = 2)$ ?

undefined. A) 11 ✓

undefined. B) 10

undefined. C) 9

undefined. D) 8

The value of the expression is 11.

Which of the following are like terms? (Select all that apply)

undefined. A)  $4x$  ✓

undefined. B)  $5y$

undefined. C)  $7x$  ✓

undefined. D)  $3x^2$

The like terms are  $4x$  and  $7x$ .

Explain the order of operations and why it is important in evaluating expressions.

The order of operations is crucial to ensure consistent results when evaluating expressions.

Identify the coefficient and constant term in the expression  $(7x + 4)$ .

1. What is the coefficient?

7

2. What is the constant term?

4

The coefficient is 7 and the constant term is 4.

## Part 2: comprehension

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Which equation represents a line with a slope of 3 and a y-intercept of -2?

undefined. A)  $y = 3x - 2$  ✓

undefined. B)  $y = -2x + 3$

undefined. C)  $y = 2x - 3$

undefined. D)  $y = -3x + 2$

The correct equation is  $y = 3x - 2$ .

Which of the following are solutions to the inequality  $(x + 3 > 5)$ ? (Select all that apply)

undefined. A)  $x = 1$

undefined. B)  $x = 2$

undefined. C)  $x = 3$  ✓

undefined. D)  $x = 4$  ✓

The solutions are  $x = 3$  and  $x = 4$ .

Describe how the graph of the function  $(y = 2x + 1)$  would change if the equation is modified to  $(y = 2x - 3)$ .

The graph would shift downwards by 4 units.

## Part 3: Application

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If the function  $(f(x) = 2x^2 - 3x + 5)$ , what is  $(f(2))$ ?

undefined. A) 7 ✓

undefined. B) 9

undefined. C) 11

undefined. D) 13

The value of  $f(2)$  is 7.

Which of the following expressions can be factored as  $(x + 2)(x - 3)$ ? (Select all that apply)

undefined. A)  $x^2 - x - 6$  ✓

undefined. B)  $x^2 - x + 6$

undefined. C)  $x^2 + x - 6$

undefined. D)  $x^2 - 5x + 6$

The correct expression is  $x^2 - x - 6$ .

Solve the system of equations using the substitution method:  $y = 2x + 3$  and  $3x + y = 12$ .

The solution is  $x = 3$  and  $y = 9$ .

## Part 4: Analysis

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Which of the following graphs represents the solution to the inequality  $y < 2x + 1$ ?

undefined. A) A line with shading above

undefined. B) A line with shading below

undefined. C) A dashed line with shading above

undefined. D) A dashed line with shading below ✓

The correct graph has a dashed line with shading below.

Analyze the expression  $(x^2 - 4x + 4)$ . Which of the following statements are true? (Select all that apply)

undefined. A) It can be factored as  $(x - 2)^2$  ✓

undefined. B) It has a double root at  $x = 2$  ✓

undefined. C) It represents a parabola opening upwards ✓

undefined. D) It has roots at  $x = -2$  and  $x = 2$

The true statements are it can be factored as  $(x - 2)^2$  and it has a double root at  $x = 2$ .

Compare and contrast the graphs of  $(y = x^2)$  and  $(y = -x^2)$ . Discuss their similarities and differences.

Both are parabolas, but one opens upwards and the other downwards.

## Part 5: Evaluation and Creation

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Which of the following statements best evaluates the function  $(f(x) = 3x^2 - 6x + 2)$  for its vertex form?

undefined. A)  $f(x) = 3(x - 1)^2 - 1$  ✓

undefined. B)  $f(x) = 3(x + 1)^2 + 1$

undefined. C)  $f(x) = 3(x - 1)^2 + 1$

undefined. D)  $f(x) = 3(x + 1)^2 - 1$

The correct vertex form is  $f(x) = 3(x - 1)^2 - 1$ .

Create a quadratic equation with roots at  $(x = 3)$  and  $(x = -2)$ . Which of the following equations could represent this scenario? (Select all that apply)

undefined. A)  $x^2 - x - 6 = 0$  ✓

undefined. B)  $x^2 - x + 6 = 0$

undefined. C)  $x^2 - x - 6 = 0$  ✓

undefined. D)  $x^2 - x + 6 = 0$

The correct equations are  $x^2 - x - 6 = 0$ .

Design a real-world problem that can be modeled by the equation  $(2x + 3y = 12)$ . Explain the scenario and how this equation applies.

A possible scenario could involve budgeting for two types of expenses.