Contents

How to Use this Full Solution Answer Key

Full Solution Key

The full solution answer key provides answers to all Algebra 1 exercises. It gives detailed solutions for most exercises to make it easier for students, teachers, and parents to find errors in calculations. The original problem is given in black. Steps for simplifying and solving are in gray and final answers in bold black.

Simplify, Solve, or Evaluate?

In this course, simplify means to remove grouping symbols and combine like terms. Solve means to find the numerical values of the variables in an equation. Evaluate means to find the numerical value of an expression.

Exercise Coding

Direction lines are followed with a code telling where the concept was taught. 1.1 means Unit 1, Lesson 1; 1.7 means Unit 1, Lesson 7.

Value for π

Use 3.14 as the numerical value for π unless directed otherwise.

Rounding

Unless otherwise directed in the exercise, when doing calculations that result in decimals that do not terminate at tenths or hundredths, round to the nearest hundredth.

Reporting Equation Answers

This solution key will generally report the answer with the variable on the left, regardless of the side the variable occurs in solving the equation.

Terms in the Text

Italicized words in the text call attention to important concepts and terms that are not in the glossary. Bold words are Words to Know and their definitions are found in the margin of the lesson they first occur and the glossary at the back of the textbook.

Rules, Properties, and Steps in the Text

Rules, properties, and steps for completing a process are set off in boxes. The sticky notes in the margins contain information students need to know. Other information in the sidebars are Words to Know, applications of algebra and interesting historical math facts that are related to the chapter theme.

Tests and Quizzes

Tests and quizzes are designed for the student to write on. Each quiz is one two-sided sheet. Tests are usually three pages. Each test and quiz has a total of 100 points. Points allotted for each problem are shown at the end of each direction line. When students have the wrong answer, but did part of the work correctly, credit should be given based on how much they did correctly.

It is suggested that to calculate a final unit score, average the two quiz grades, then add the test score and divide by two.

Unit 6

Lesson 6.1 – pp. 255-257

1. $x - 2y = 6$

$0 - 2y = 6$

$-2y = 6$

$\frac{-2y}{-2} = \frac{6}{-2}$

$y = -3$

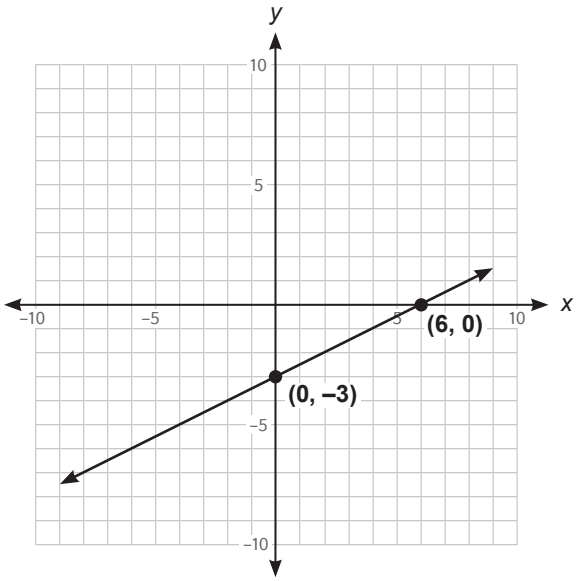
y-intercept **(0, –3)**

$x - 2y = 6$

$x - 2(0) = 6$

$x = 6$

x-intercept **(6, 0)**



2. $9x + 4y = -18$

$9(0) + 4y = -18$

$4y = -18$

$\frac{4y}{4} = \frac{-18}{4}$

$y = -\frac{9}{2}$

y-intercept **(0, $-\frac{9}{2}$)**

$9x + 4y = -18$

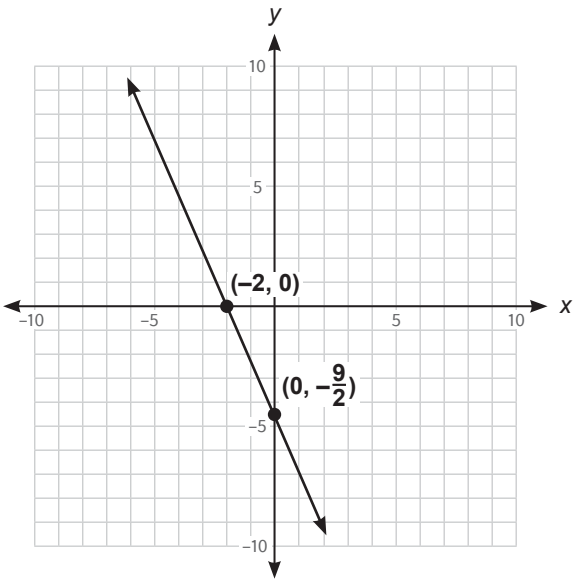
$9x + 4(0) = -18$

$9x = -18$

$\frac{9x}{9} = \frac{-18}{9}$

$x = -2$

x-intercept **(–2, 0)**



UNIT 6

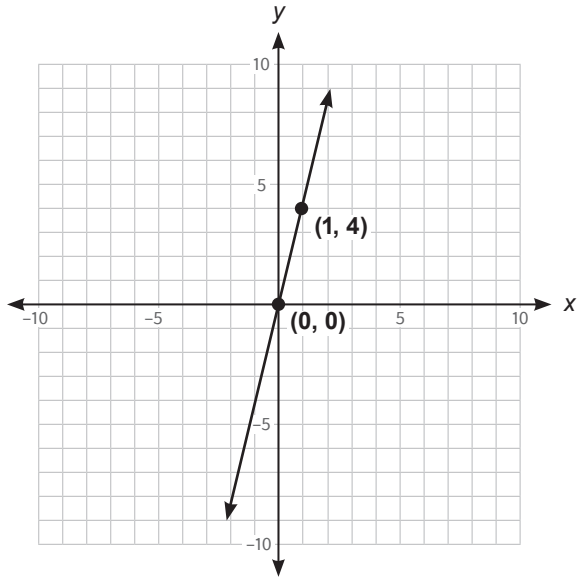
3. $3y = 12x$

$\frac{3y}{3} = \frac{12x}{3}$

$y = 4x$

$b = 0$

$m = 4$



4. $x^2 - 25$

$(x + 5)(x - 5)$

5. $y^2 + 36$

cannot factor

6. $9x^2 - 49$

$(3x + 7)(3x - 7)$

7. $4\sqrt{5} \cdot 2\sqrt{5}$

$4 \cdot 2\sqrt{5 \cdot 5}$

$8 \cdot 5$

40

8. $5\sqrt{32} \cdot 6\sqrt{2}$

$2\overline{)32}$

$2\overline{)16}$

$2\overline{)8}$

$2\overline{)4}$

2

$5\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2} \cdot 6\sqrt{2}$

$5 \cdot 6\sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

$5 \cdot 6 \cdot 2 \cdot 2 \cdot 2$

240

9. $3\sqrt[3]{2} \cdot 2\sqrt[3]{4}$

$3 \cdot 2 \cdot \sqrt[3]{2 \cdot 4}$

$6\sqrt[3]{8}$

$6 \cdot 2$

12

10. $5\sqrt[3]{3} \cdot 2\sqrt[3]{3}$

$10\sqrt[3]{9}$

11. $(3x - 3y)(3x + 3y)$

$9x^2 - 9y^2$

12. $(2xy - 9)(2xy + 9)$

$4x^2y^2 - 81$

13. $(\sqrt{2} - 2x)(\sqrt{2} + 2x)$

$2 - 4x^2$

14. $6x + 2 > -7$

$\underline{-2} \quad \underline{-2}$

$6x > -9$

$\frac{6x}{6} > \frac{-9}{6}$

$x > -\frac{3}{2}$

15. $-2x + 1 < 2x - 19$

$\underline{+2x} \quad \underline{+2x}$

$1 < 4x - 19$

$\underline{+19} \quad \underline{+19}$

$20 < 4x$

$\frac{20}{4} < \frac{4x}{4}$

$5 < x$

$x > 5$

16. $3x < 33 - 8x$

$\underline{+8x} \quad \underline{+8x}$

$11x < 33$

$\frac{11x}{11} < \frac{33}{11}$

$x < 3$

17. slope $= \frac{\text{rise}}{\text{run}} = \frac{4}{1} =$ **4**

18. slope $= \frac{\text{rise}}{\text{run}} = \frac{0}{3} =$ **0 slope**

19. slope $= \frac{\text{rise}}{\text{run}} = \frac{-6}{4} =$ **$-\frac{3}{2}$**

UNIT 6