

# 1

## Chapter Review

Name:

Teacher:

### 1.1 Solving Simple Equations (pp. 3–10)

a. Solve  $x - 5 = -9$ . Justify each step.

$$x - 5 = -9$$

Write the equation.

Addition Property of Equality

$$\begin{aligned} &+ 5 & + 5 \\ x - 5 &= -9 & + 5 \\ x &= -4 \end{aligned}$$

Add 5 to each side.

Simplify.

▶ The solution is  $x = -4$ .

b. Solve  $4x = 12$ . Justify each step.

$$4x = 12$$

Write the equation.

Division Property of Equality

$$\begin{aligned} &4x &= &12 \\ &\frac{4x}{4} &= &\frac{12}{4} \\ x &= &3 \end{aligned}$$

Divide each side by 4.

Simplify.

▶ The solution is  $x = 3$ .

Solve the equation. Justify each step. Check your solution.

1.  $z + 3 = -6$

2.  $2.6 = -0.2t$

3.  $-\frac{n}{5} = -2$

### 1.2 Solving Multi-Step Equations (pp. 11–18)

Solve  $-6x + 23 + 2x = 15$ .

$$-6x + 23 + 2x = 15$$

Write the equation.

$$-4x + 23 = 15$$

Combine like terms.

$$-4x = -8$$

Subtract 23 from each side.

$$x = 2$$

Divide each side by  $-4$ .

▶ The solution is  $x = 2$ .

Solve the equation. Check your solution.

4.  $3y + 11 = -16$

5.  $6 = 1 - b$

6.  $n + 5n + 7 = 43$

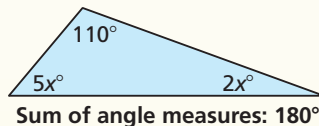
7.  $-4(2z + 6) - 12 = 4$

8.  $\frac{3}{2}(x - 2) - 5 = 19$

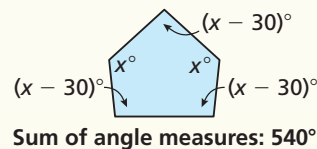
9.  $6 = \frac{1}{5}w + \frac{7}{5}w - 4$

Find the value of  $x$ . Then find the angle measures of the polygon.

10.



11.



### 1.3 Solving Equations with Variables on Both Sides (pp. 19–24)

Solve  $2(y - 4) = -4(y + 8)$ .

$$2(y - 4) = -4(y + 8)$$

Write the equation.

$$2y - 8 = -4y - 32$$

Distributive Property

$$6y - 8 = -32$$

Add  $4y$  to each side.

$$6y = -24$$

Add 8 to each side.

$$y = -4$$

Divide each side by 6.

▶ The solution is  $y = -4$ .

Solve the equation.

12.  $3n - 3 = 4n + 1$

13.  $5(1 + x) = 5x + 5$

14.  $3(n + 4) = \frac{1}{2}(6n + 4)$

### 3.3 Function Notation (pp. 121–126)

- a. Evaluate  $f(x) = 3x - 9$  when  $x = 2$ .

$$\begin{aligned} f(x) &= 3x - 9 && \text{Write the function.} \\ f(2) &= 3(2) - 9 && \text{Substitute 2 for } x. \\ &= 6 - 9 && \text{Multiply.} \\ &= -3 && \text{Subtract.} \end{aligned}$$

▶ When  $x = 2$ ,  $f(x) = -3$ .

- b. For  $f(x) = 4x$ , find the value of  $x$  for which  $f(x) = 12$ .

$$\begin{aligned} f(x) &= 4x && \text{Write the function.} \\ 12 &= 4x && \text{Substitute 12 for } f(x). \\ 3 &= x && \text{Divide each side by 4.} \end{aligned}$$

▶ When  $x = 3$ ,  $f(x) = 12$ .

Evaluate the function when  $x = -3$ ,  $0$ , and  $5$ .

8.  $f(x) = x + 8$

9.  $g(x) = 4 - 3x$

Find the value of  $x$  so that the function has the given value.

10.  $k(x) = 7x$ ;  $k(x) = 49$

11.  $r(x) = -5x - 1$ ;  $r(x) = 19$

Graph the linear function.

12.  $g(x) = -2x - 3$

13.  $h(x) = \frac{2}{3}x + 4$

### 3.4 Graphing Linear Equations in Standard Form (pp. 129–134)

Use intercepts to graph the equation  $2x + 3y = 6$ .

**Step 1** Find the intercepts.

To find the  $x$ -intercept, substitute  $0$  for  $y$  and solve for  $x$ .

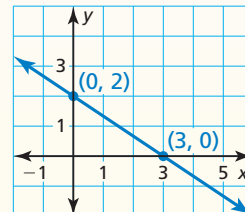
$$\begin{aligned} 2x + 3y &= 6 \\ 2x + 3(0) &= 6 \\ x &= 3 \end{aligned}$$

To find the  $y$ -intercept, substitute  $0$  for  $x$  and solve for  $y$ .

$$\begin{aligned} 2x + 3y &= 6 \\ 2(0) + 3y &= 6 \\ y &= 2 \end{aligned}$$

**Step 2** Plot the points and draw the line.

The  $x$ -intercept is  $3$ , so plot the point  $(3, 0)$ .  
The  $y$ -intercept is  $2$ , so plot the point  $(0, 2)$ .  
Draw a line through the points.



Graph the linear equation.

14.  $8x - 4y = 16$

15.  $-12x - 3y = 36$

16.  $y = -5$

17.  $x = 6$

### 3.5 Graphing Linear Equations in Slope-Intercept Form (pp. 135–144)

- a. The points represented by the table lie on a line. How can you find the slope of the line from the table? What is the slope of the line?

Choose any two points from the table and use the slope formula.  
Use the points  $(x_1, y_1) = (1, -7)$  and  $(x_2, y_2) = (4, 2)$ .

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - (-7)}{4 - 1} = \frac{9}{3}, \text{ or } 3$$

x	y
1	-7
4	2
7	11
10	20

► The slope is 3.

- b. Graph  $-\frac{1}{2}x + y = 1$ . Identify the x-intercept.

**Step 1** Rewrite the equation in slope-intercept form.

$$y = \frac{1}{2}x + 1$$

**Step 2** Find the slope and the y-intercept.

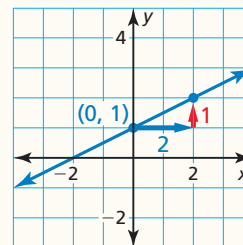
$$m = \frac{1}{2} \text{ and } b = 1$$

**Step 3** The y-intercept is 1. So, plot  $(0, 1)$ .

**Step 4** Use the slope to find another point on the line.

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{1}{2}$$

Plot the point that is 2 units right and 1 unit up from  $(0, 1)$ . Draw a line through the two points.



► The line crosses the x-axis at  $(-2, 0)$ . So, the x-intercept is  $-2$ .

The points represented by the table lie on a line. Find the slope of the line.

18.

x	y
6	9
11	15
16	21
21	27

19.

x	y
3	-5
3	-2
3	5
3	8

20.

x	y
-4	-1
-3	-1
1	-1
9	-1

Graph the linear equation. Identify the x-intercept.

21.  $y = 2x + 4$

22.  $-5x + y = -10$

23.  $x + 3y = 9$

24. A linear function  $h$  models a relationship in which the dependent variable decreases 2 units for every 3 units the independent variable increases. Graph  $h$  when  $h(0) = 2$ . Identify the slope, y-intercept, and x-intercept of the graph.