

3-7

Practice

Form K

Equations of Lines in the Coordinate Plane

Find the slope of the line passing through the given points.

1. $(2, 0), (-6, 8)$

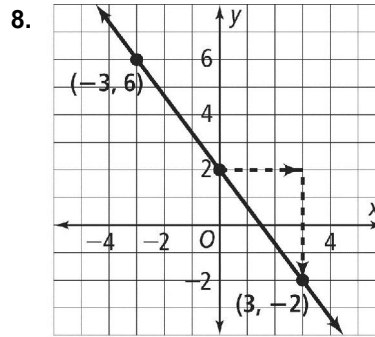
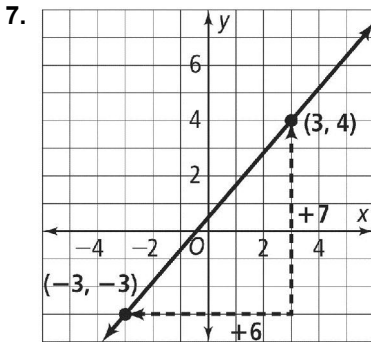
2. $(9, 1), (-9, -3)$

3. $(-3, -1), (2, 8)$

4. $(4, 6), (8, -2)$

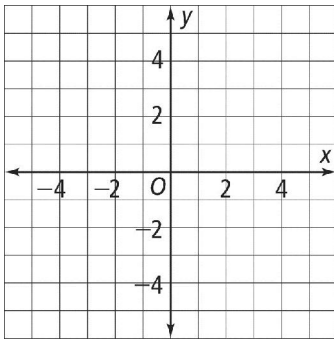
5. $(-5, 4), (3, 6)$

6. $(11, 2), (-1, 4)$

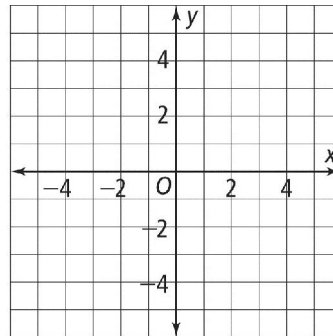


Graph each line.

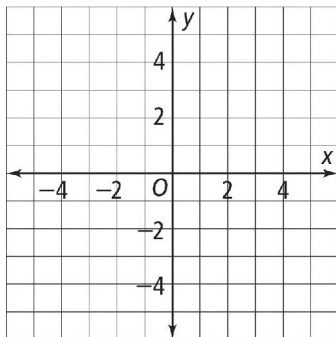
9. $y = x - 4$



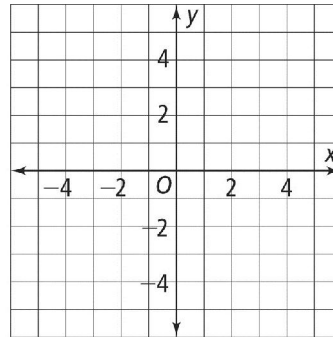
10. $y = 2x + 3$



11. $y = \frac{1}{4}x$



12. $y = -\frac{3}{4}x - 1$



3-7**Practice** (continued)

Form K

Equations of Lines in the Coordinate Plane

Use the given information to write an equation of each line.

13. slope $\frac{1}{3}$, y -intercept 6

14. slope -10 , y -intercept -3

15. slope -5 , passes through $(2, -3)$

16. slope $\frac{3}{4}$, passes through $(-8, 2)$

17. passes through $(0, 6)$ and $(4, -2)$

18. passes through $(-1, 8)$ and $(5, -4)$

Write the equations of the horizontal and vertical lines through the given point.

19. $(5, 6)$

20. $(-2, -3)$

21. $(8, -1)$

22. $(10, 0)$

Write each equation in slope-intercept form.

23. $y - 5 = 3(x - 4)$

24. $y + 2 = -5(x - 1)$

25. $2x + 4y = 8$

26. $10y + 16x + 4 = 2y$

27. Coordinate Geometry The vertices of a quadrilateral are $A(-1, 1)$, $B(2, 4)$, $C(2, -4)$, and $D(0, -2)$.

a. Write an equation for the line through A and B .

b. Write an equation for the line through C and D .

c. Without graphing the lines, what can you tell about the lines from their slopes?

28. Error Analysis A classmate says that the equation of a line through $(3, -6)$ and $(-1, -3)$ is $y - 6 = \frac{3}{4}(x - 3)$. Explain your classmate's error and write the correct equation.

3-7

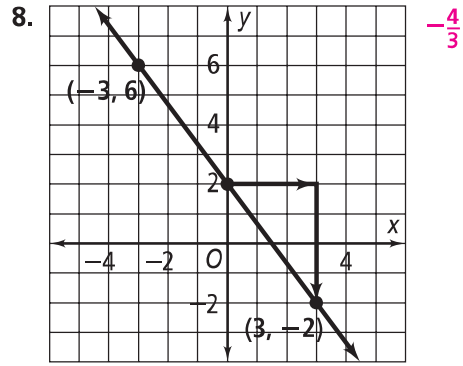
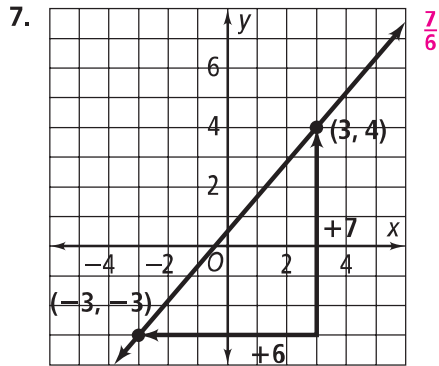
Practice

Form K

Equations of Lines in the Coordinate Plane

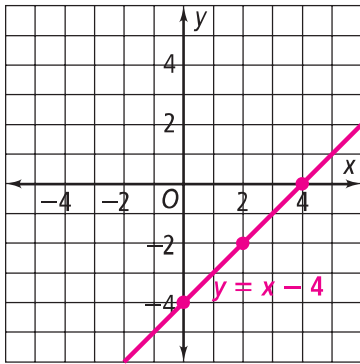
Find the slope of the line passing through the given points.

1. $(2, 0), (-6, 8)$ -1 2. $(9, 1), (-9, -3)$ $\frac{2}{9}$ 3. $(-3, -1), (2, 8)$ $\frac{9}{5}$
 4. $(4, 6), (8, -2)$ -2 5. $(-5, 4), (3, 6)$ $\frac{1}{4}$ 6. $(11, 2), (-1, 4)$ $-\frac{1}{6}$

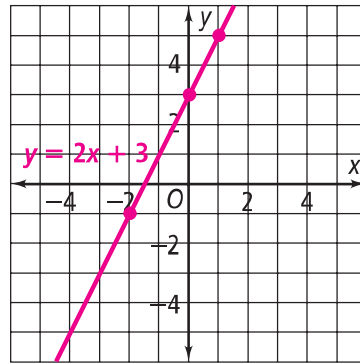


Graph each line.

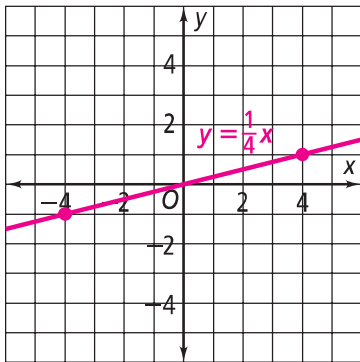
9. $y = x - 4$



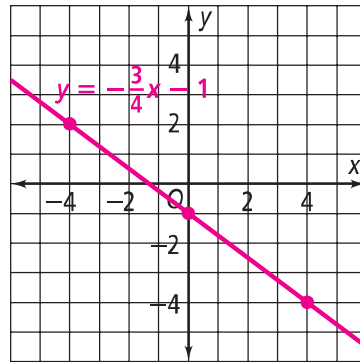
10. $y = 2x + 3$



11. $y = \frac{1}{4}x$



12. $y = -\frac{3}{4}x - 1$



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Practice (continued)

Form K

Equations of Lines in the Coordinate Plane

Use the given information to write an equation of each line.

13. slope $\frac{1}{3}$, y -intercept 6

$$y = \frac{1}{3}x + 6$$

15. slope -5 , passes through $(2, -3)$

$$y = -5x + 7$$

17. passes through $(0, 6)$ and $(4, -2)$

$$y = -2x + 6$$

14. slope -10 , y -intercept -3

$$y = -10x - 3$$

16. slope $\frac{3}{4}$, passes through $(-8, 2)$

$$y = \frac{3}{4}x + 8$$

18. passes through $(-1, 8)$ and $(5, -4)$

$$y = -2x + 6$$

Write the equations of the horizontal and vertical lines through the given point.

19. $(5, 6)$

$$y = 6; x = 5$$

20. $(-2, -3)$

$$y = -3; x = -2$$

21. $(8, -1)$

$$y = -1; x = 8$$

22. $(10, 0)$

$$y = 0; x = 10$$

Write each equation in slope-intercept form.

23. $y - 5 = 3(x - 4)$

$$y = 3x - 7$$

24. $y + 2 = -5(x - 1)$

$$y = -5x + 3$$

25. $2x + 4y = 8$

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

26. $10y + 16x + 4 = 2y$

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

27. **Coordinate Geometry** The vertices of a quadrilateral are $A(-1, 1)$, $B(2, 4)$, $C(2, -4)$, and $D(0, -2)$.

a. Write an equation for the line through A and B . $y = x + 2$

b. Write an equation for the line through C and D . $y = -x - 2$

c. Without graphing the lines, what can you tell about the lines from their slopes? **Answers may vary. Sample: The lines have the same steepness because the absolute value of m is the same, but they point in opposite directions because one slope is negative and the other is positive.**

28. **Error Analysis** A classmate says that the equation of a line through $(3, -6)$ and $(-1, -3)$ is $y - 6 = -\frac{3}{4}(x - 3)$. Explain your classmate's error and write the correct equation.

The classmate failed to subtract -6 from y . The correct equation is $y + 6 = -\frac{3}{4}(x - 3)$.