Name _____ Class _____ Date _____

5-3 Practice

Form G

Slope-Intercept Form

Find the slope and y-intercept of the graph of each equation.

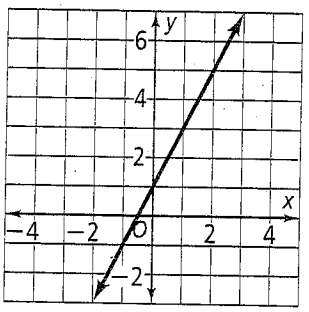
1. $y = 3x - 5$
2. $y = -5x + 13$
3. $y = -x - 1$
4. $y = -11x + 6$
5. $y = -5$
6. $y = \frac{1}{2}x + 6$
7. $y = -6.75x + 8.54$
8. $y = -\frac{2}{3}x - \frac{1}{9}$
9. $y = 2.25$

Write an equation of a line with the given slope m and y-intercept b.

10. $m = -1, b = 3$
11. $m = 4, b = -2$
12. $m = -5, b = -8$
13. $m = 0.25, b = 6$
14. $m = 0, b = -11$
15. $m = 1, b = \frac{3}{8}$

Write an equation in slope-intercept form of each line.

16.



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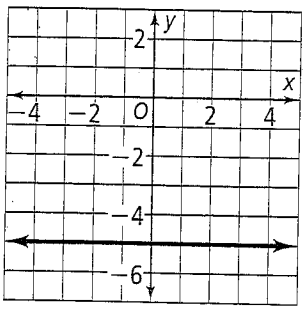

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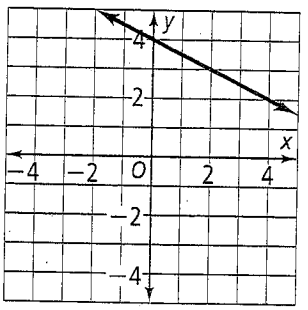


Write an equation in slope-intercept form of the line that passes through the given points.

19. (3, 5) and (0, 4)
20. (2, 6) and (−4, −2)
21. (−1, 3) and (−3, 1)
22. (−7, 5) and (3, 0)
23. (10, 2) and (−2, −2)
24. (0, −1) and (5, 6)
25. (3, 2) and (−1, 6)
26. (−4, −3) and (3, 4)
27. (2, 8) and (−3, 6)

Name _____ Class _____ Date _____

5-3 Practice (continued)

Form G

Slope-Intercept Form

Graph each equation.

28. $y = x + 3$

29. $y = 4x - 1$

30. $y = -x + 6$

31. $y = 3x - 2$

32. $y = -5x + 1$

33. $y = -7x - 4$

34. Hudson is already 40 miles away from home on his drive back to college. He is driving 65 mi/h. Write an equation that models the total distance d travelled after h hours. What is the graph of the equation?

35. When Phil started his new job, he owed the company \$65 for his uniforms. He is earning \$13 per hour. The cost of his uniforms is withheld from his earnings. Write an equation that models the total money he has m after h hours of work. What is the graph of the equation?

Find the slope and the y-intercept of the graph of each equation.

36. $y + 4 = -6x$

37. $y + \frac{1}{2}x = -4$

38. $3y - 12x + 6 = 0$

39. $y - 5 = \frac{1}{3}(x - 9)$

40. $y - \frac{2}{5}x = 0$

41. $2y + 6a - 4x = 0$

Name _____ Class _____ Date _____

5-4 Practice

Form G

Point-Slope Form

Write an equation of the line in slope-intercept form through the given point and with the given slope m.

1. $(2, 1)$; $m = 3$

2. $(-3, -5)$; $m = -2$

3. $(-4, 11)$; $m = \frac{3}{4}$

4. $(0, -3)$; $m = -\frac{2}{3}$

Graph each equation.

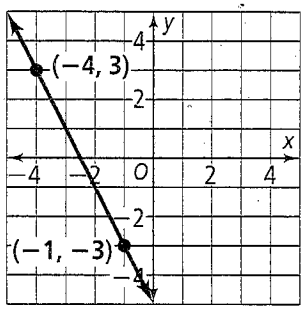
5. $y - 2 = 2(x + 3)$

6. $y + 3 = -2(x + 1)$

7. $y + 1 = -\frac{3}{5}(x + 5)$

Write an equation in point-slope form for each line.

8.



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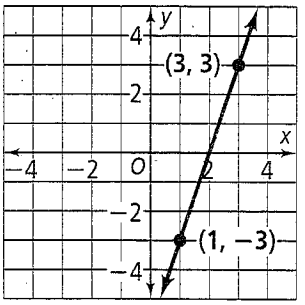

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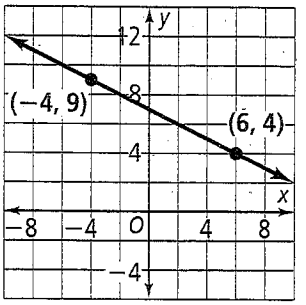

Write an equation in point-slope form of the line through the given points. Then write the equation in slope-intercept form.

11. $(4, 0)$, $(-2, 1)$

12. $(-3, -2)$, $(5, 3)$

13. $(-5, 1)$, $(3, 4)$

14. **Open-Ended** Write an equation of a line that has a slope of $-\frac{1}{2}$ in each form.

a. point-slope form

b. slope-intercept form

Name _____ Class _____ Date _____

5-4 Practice (continued)

Form G

Point-Slope Form

Model the data in each table with a linear equation in slope-intercept form. What do the slope and y-intercept represent?

15.

Time Washing (hr)	Cars washed
3	18
5	30
6	36
8	48

16.

Time Flying (hr)	Distance from Airport (mi)
2	3600
4	2700
6	1800
8	900

Graph the line that passes through the given point and has the given slope m.

17. $(-3, -4)$; $m = 6$

18. $(-2, 1)$, $m = -3$

19. $(-4, -2)$; $m = \frac{1}{2}$

20. **Writing** Describe what you know about the graph of a line represented by the equation $y - 3 = -\frac{2}{3}(x + 4)$.

21. **Writing** Describe how you would use the point-slope form to write the equation of a line that passes through the points $(-1, 4)$ and $(-3, -5)$ in slope-intercept form.

22. **Writing** Describe how linear data given in a table can help you write an equation of a line in slope-intercept form.

23. A sign says that 3 tickets cost \$22.50 and that 7 tickets cost \$52.50. Write an equation in point-slope form that represents the cost of tickets. What is the graph of the equation?

Name _____ Class _____ Date _____

5-5 Reteaching

Standard Form

The **standard form** of a linear equation is $Ax + By = C$, where A, B, and C are real numbers, and A and B are not both zero. You can easily determine the x- and y-intercepts of the graph from this form of the equation.

Each intercept occurs when one coordinate is 0. When substituting 0 for either of x or y, one of the terms on the left side of the standard form equation disappears. This leaves a linear equation in one variable, with a variable term on the left and a constant on the right. Determining the other coordinate of the intercept requires only multiplication or division.

Problem

What are the x- and y-intercepts of the graph of $6x - 9y = 18$?

First find the x-intercept.

$6x - 9y = 18$

$6x - 9(0) = 18$ Substitute 0 for y.

$6x = 18$ Simplify.

$x = 3$ Divide each side by 6.

Then find the y-intercept.

$6x - 9y = 18$

$6(0) - 9y = 18$ Substitute 0 for x.

$-9y = 18$ Simplify.

$y = -2$ Divide each side by -9.

The x-intercept is 3 and the y-intercept is -2.

Exercises

Find the x- and y-intercepts of the graph of each equation.

1. $x - y = 12$
2. $3x + 2y = 12$
3. $-7x + 3y = 42$
4. $8x - 6y = 24$
5. $5x - 4y = -40$
6. $-4x + y = 28$
7. $6x + 3y = -30$
8. $7x - 2y = 28$
9. $8x + 2y = -32$
10. Write an equation in standard form with an x-intercept of 5 and a y-intercept of -4.

Name _____ Class _____ Date _____

5-5 Practice

Form G

Standard Form

Find the x- and y-intercepts of the graph of each equation.

1. $x + y = 7$
2. $x - 3y = 9$
3. $2x + 3y = -6$
4. $-4x - 2y = -8$
5. $5x - 4y = -12$
6. $-2x + 7y = 11$

Draw a line with the given intercepts.

7. x-intercept: 4, y-intercept: 5
8. x-intercept: -3, y-intercept: 1
9. x-intercept: -6, y-intercept: -8

Graph each equation using x- and y-intercepts.

10. $-5x + y = -10$
11. $-3x - 6y = 12$
12. $4x - 12y = -24$

For each equation, tell whether its graph is a *horizontal* or a *vertical* line.

13. $y = -2$ horizontal
14. $x = 0$
15. $y = -0.25$
16. $x = -\frac{3}{5}$ vertical

Graph each equation.

17. $y = 6$
18. $x = -2$
19. $y = -7$
20. $x = 3$