

GUIDED PRACTICE

1. **Vocabulary** ____? ____ lines have the same slope. (*Parallel* or *Perpendicular*)

SEE EXAMPLE 1

p. 349

- Identify which lines are parallel.

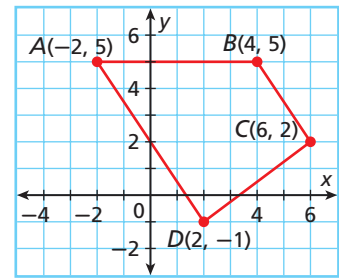
2. $y = 6$; $y = 6x + 5$; $y = 6x - 7$; $y = -8$

3. $y = \frac{3}{4}x - 1$; $y = -2x$; $y - 3 = \frac{3}{4}(x - 5)$; $y - 4 = -2(x + 2)$

SEE EXAMPLE 2

p. 350

4. **Geometry** Show that $ABCD$ is a trapezoid.
(*Hint*: In a trapezoid, exactly one pair of opposite sides is parallel.)



SEE EXAMPLE 3

p. 351

- Identify which lines are perpendicular.

5. $y = \frac{2}{3}x - 4$; $y = -\frac{3}{2}x + 2$; $y = -1$; $x = 3$

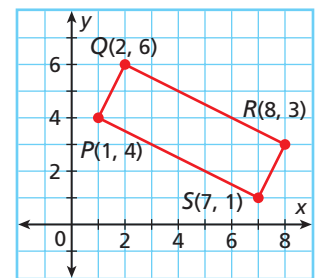
6. $y = -\frac{3}{7}x - 4$; $y - 4 = -7(x + 2)$;

$y - 1 = \frac{1}{7}(x - 4)$; $y - 7 = \frac{7}{3}(x - 3)$

SEE EXAMPLE 4

p. 351

7. **Geometry** Show that $PQRS$ is a rectangle. (*Hint*: In a rectangle, all four angles are right angles.)



SEE EXAMPLE 5

p. 352

8. Write an equation in slope-intercept form for the line that passes through $(5, 0)$ and is perpendicular to the line described by $y = -\frac{5}{2}x + 6$.

PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
9–11	1
12	2
13–15	3
16	4
17	5

Extra Practice

Skills Practice p. S13

Application Practice p. S32

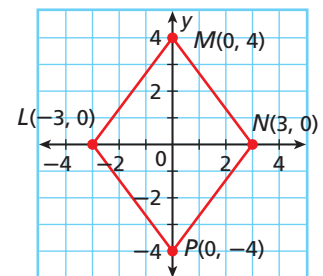
- Identify which lines are parallel.

9. $x = 7$; $y = -\frac{5}{6}x + 8$; $y = -\frac{5}{6}x - 4$; $x = -9$

10. $y = -x$; $y - 3 = -1(x + 9)$; $y - 6 = \frac{1}{2}(x - 14)$; $y + 1 = \frac{1}{2}x$

11. $y = -3x + 2$; $y = \frac{1}{2}x - 1$; $-x + 2y = 17$; $3x + y = 27$

12. **Geometry** Show that $LMNP$ is a parallelogram.



- Identify which lines are perpendicular.

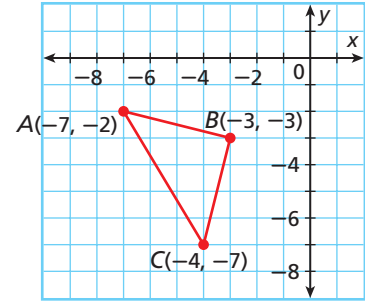
13. $y = 6x$; $y = \frac{1}{6}x$; $y = -\frac{1}{6}x$; $y = -6x$

14. $y - 9 = 3(x + 1)$; $y = -\frac{1}{3}x + 5$; $y = 0$; $x = 6$

15. $x - 6y = 15$; $y = 3x - 2$; $y = -3x - 3$; $y = -6x - 8$; $3y = -x - 11$



16. **Geometry** Show that ABC is a right triangle.
17. Write an equation in slope-intercept form for the line that passes through $(0, 0)$ and is parallel to the line described by $y = -\frac{6}{7}x + 1$.



Without graphing, tell whether each pair of lines is parallel, perpendicular, or neither.

18. $x = 2$ and $y = -5$
19. $y = 7x$ and $y - 28 = 7(x - 4)$
20. $y = 2x - 1$ and $y = \frac{1}{2}x + 2$
21. $y - 3 = \frac{1}{4}(x - 3)$ and $y + 13 = \frac{1}{4}(x + 1)$

Write an equation in slope-intercept form for the line that is parallel to the given line and that passes through the given point.

22. $y = 3x - 7$; $(0, 4)$
23. $y = \frac{1}{2}x + 5$; $(4, -3)$
24. $4y = x$; $(4, 0)$
25. $y = 2x + 3$; $(1, 7)$
26. $5x - 2y = 10$; $(3, -5)$
27. $y = 3x - 4$; $(-2, 7)$
28. $y = 7$; $(2, 4)$
29. $x + y = 1$; $(2, 3)$
30. $2x + 3y = 7$; $(4, 5)$
31. $y = 4x + 2$; $(5, -3)$
32. $y = \frac{1}{2}x - 1$; $(0, -4)$
33. $3x + 4y = 8$; $(4, -3)$

Write an equation in slope-intercept form for the line that is perpendicular to the given line and that passes through the given point.

34. $y = -3x + 4$; $(6, -2)$
35. $y = x - 6$; $(-1, 2)$
36. $3x - 4y = 8$; $(-6, 5)$
37. $5x + 2y = 10$; $(3, -5)$
38. $y = 5 - 3x$; $(2, -4)$
39. $-10x + 2y = 8$; $(4, -3)$
40. $2x + 3y = 7$; $(4, 5)$
41. $4x - 2y = -6$; $(3, -2)$
42. $-2x - 8y = 16$; $(4, 5)$
43. $y = -2x + 4$; $(-2, 5)$
44. $y = x - 5$; $(0, 5)$
45. $x + y = 2$; $(8, 5)$

46. Write an equation describing the line that is parallel to the y -axis and that is 6 units to the right of the y -axis.
47. Write an equation describing the line that is perpendicular to the y -axis and that is 4 units below the x -axis.
48. **Critical Thinking** Is it possible for two linear functions whose graphs are parallel lines to have the same y -intercept? Explain.
49. **Estimation** Estimate the slope of a line that is perpendicular to the line through $(2.07, 8.95)$ and $(-1.9, 25.07)$.



50. **Write About It** Explain in words how to write an equation in slope-intercept form that describes a line parallel to $y - 3 = -6(x - 3)$.

**MULTI-STEP
TEST PREP**



51. This problem will prepare you for the Multi-Step Test Prep on page 364.
- Flora walks from her home to the bus stop at a rate of 50 steps per minute. Write a rule that gives her distance from home (in steps) as a function of time.
 - Flora's neighbor Dan lives 30 steps closer to the bus stop. He begins walking at the same time and at the same pace as Flora. Write a rule that gives Dan's distance from *Flora's* house as a function of time.
 - Will Flora meet Dan along the walk? Use a graph to help explain your answer.