Name _____ Date _____

LESSON 5.5

Practice C

For use with pages 318–324

Write an equation of the line that passes through the given point and is parallel to the given line.

1. $(-1, 4)$, $8x + 2y = 11$ **2.** $(0, -13)$, $4x - 4y = 12$ **3.** $(-6, -10)$, $-7x + 3y = 8$

4. $(-3, 11)$, $6x - 5y = 1$ **5.** $(5, -5)$, $-8x - 3y = -6$ **6.** $(15, -2)$, $2x + 9y = 12$

Write an equation of the line that passes through the given point and is perpendicular to the given line.

7. $(17, -3)$, $9x - 6y = 4$ **8.** $(-7, 7)$, $-4x + 3y = 8$ **9.** $(-8, -5)$, $-8x - 2y = -7$

10. $(2, -15)$, $6y - 5x = 2$ **11.** $(9, 0)$, $8y + 9x = 12$ **12.** $(13, 12)$, $3x - 2y = -4$

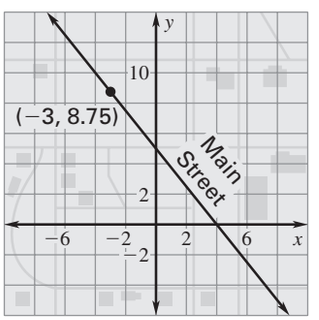
Determine which of the following lines, if any, are parallel or perpendicular.

13. Line a: $y = \frac{2}{3}x - 4$, Line b: $2y - 3x = 5$, Line c: $6x - 3y = 10$

14. Line a: $4x - 3y = 2$, Line b: $3x + 8 + 4y = 0$, Line c: $y - 6 = \frac{3}{4}(x - 1)$

15. Line a: $12x - 6y = 14$, Line b: $y = -\frac{1}{2}x - 5$, Line c: $10x + 6y = 1$

16. **Model Town** You are planning the scale model of a town that you will build. For now, you are laying everything out on a coordinate plane as shown. You want to draw Wooster Street so that it is perpendicular to Main Street. You know that Wooster Street will pass through the point $(-3, 8.75)$. Find the equation of the line for Wooster Street so that it is perpendicular to Main Street. *Explain* your reasoning.



17. **Bowling League** You and your friends are in a bowling league. If you pay for the entire season up front, then the entry fee is only $20. Otherwise, the entry fee is $32. The weekly cost for bowling is $7.

a. Write an equation that gives the total cost (in dollars) of bowling as a function of the number of weeks you bowl if you pay for the entire season up front.

b. Write an equation that gives the total cost (in dollars) of bowling as a function of the number of weeks you bowl if you pay as you go.

c. How are the graphs of these functions related? *Explain* how you know.

d. If the season is 12 weeks long, how much more do you pay if you did not pay everything up front? If the season is 16 weeks long? If the season is 18 weeks long?