Algebra I

Review 4.4 - 4.6

Name _____

Write two equations in standard form that are equivalent to the given equation.

1. $6x + 24y = 18$
2. $8x - 14y = 2$
3. $6x + y = 1$
4. $-4x - 2y = 16$
5. $2x + 3y = 11$
6. $-9x + 4y = 5$

Write an equation in standard form of the line that passes through the given point and has the given slope *m*.

7. $(4, 3), m = 7$
8. $(5, -1), m = 2$
9. $(-2, 6), m = 1$
10. $(-7, 8), m = -3$
11. $(9, -10), m = -4$
12. $(-15, -4), m = \frac{1}{2}$

Write an equation in standard form of the line that passes through the given points.

13. $(2, 6), (3, 8)$
14. $(-1, 2), (5, 4)$
15. $(7, -3), (4, 1)$
16. $(3, -8), (5, -9)$
17. $(-5, 6), (2, -3)$
18. $(-3, -1), (6, -8)$

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

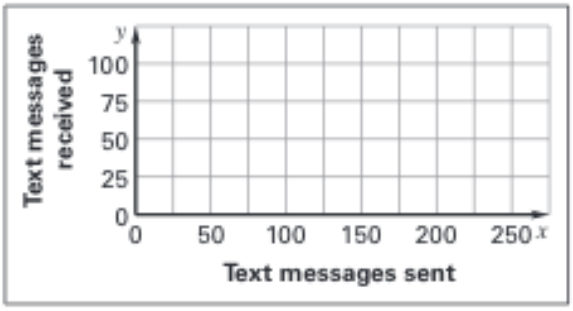
19. $(8, 3)$
20. $(-2, 6)$
21. $(5, -5)$

22. Text Messaging Your cell phone plan charges you \$.02 to send a text message and \$.07 to receive a text message. You plan to spend no more than \$5 a month on text messaging.

a. Write an equation in standard form that models the possible combinations of sent text messages and received text messages.

b. Graph the equation from part (a). *Explain* what the intercepts of the graph mean in this situation.

c. List three other possible combinations of the number of messages you can send and receive.



LESSON 4.5

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

1. $(4, 7), y = 5x - 3$

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

3. $(-6, 1), 4x + y = 7$

4. $(-5, -5), 6x - y = 1$

5. $(0, -8), 8x + 4y = 5$

6. $(-9, 11), 5x - 10y = 3$

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

7. $(1, -1), y = 3x + 2$

8. $(5, 0), y = \frac{2}{3}x - 4$

9. $(3, -7), y = -\frac{1}{5}x + 1$

10. $(-9, 2), 10x - 5y = 6$

11. $(10, -11), -2x + 5y = 1$

12. $(-4, -8), 8x + 3y = 7$

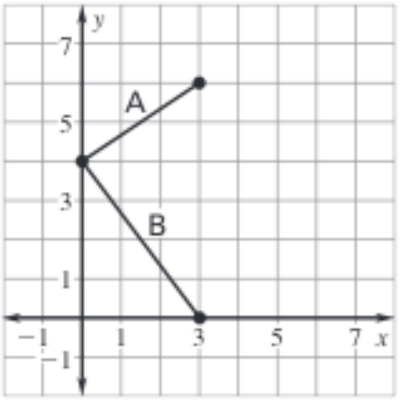
Determine which of the following lines, if any, are parallel or perpendicular.

13. Line a: $y = 8x - 5$, Line b: $y = \frac{1}{8}x + 1$, Line c: $8x + y = 2$

14. Line a: $y = -2x + 5$, Line b: $2y - x = 3$, Line c: $2x + y = 1$

15. Line a: $6x + 2y = 5$, Line b: $y = \frac{1}{3}x - 4$, Line c: $y = -3x + 5$

16. Kite Design You are beginning to model a kite design on the coordinate plane, as shown.



a. Write an equation that models part A of the kite.

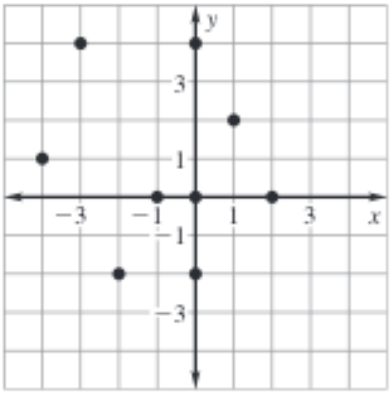
b. Write an equation that models part B of the kite.

c. Do the kite parts form a right angle? *Justify* your answer.

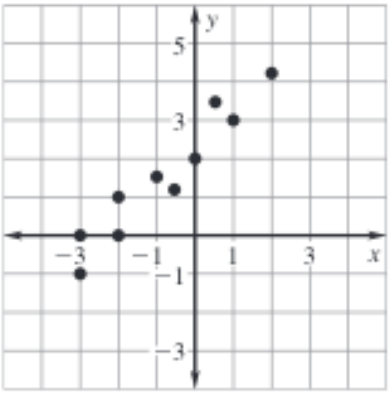
LESSON 4.6

Tell whether *x* and *y* show a *positive correlation*, a *negative correlation*, or *relatively no correlation*.

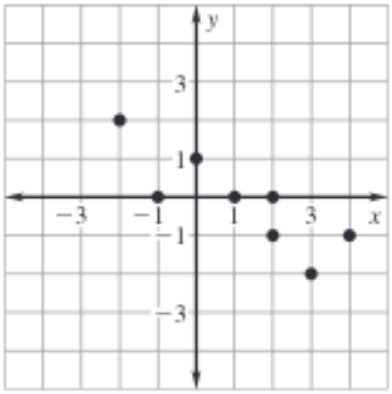
1.



2.



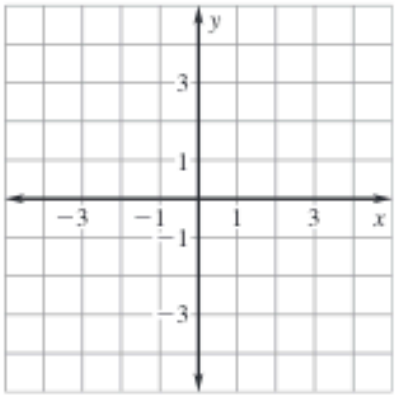
3.



Make a scatter plot of the data. Draw a line of fit. Write an equation for the line.

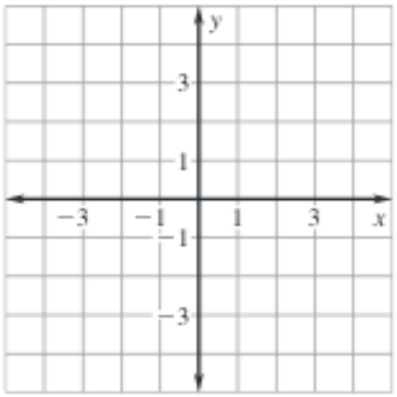
4.

x	-2	-1	0	1	2	3
y	4	2	1	-2	-1	-2



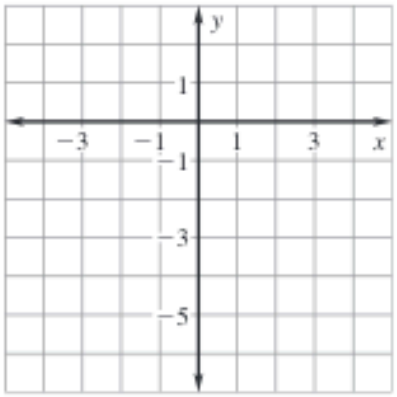
5.

x	0	0	0.5	1.5	2	2.5
y	-4	-3	-1.5	1	3	4



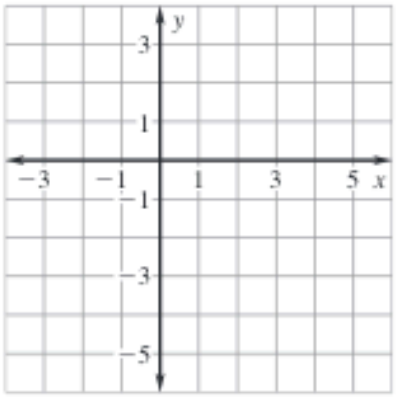
6.

x	-3	-2	-1	0	1	2
y	1	-1	0	-2	-4	-5



7.

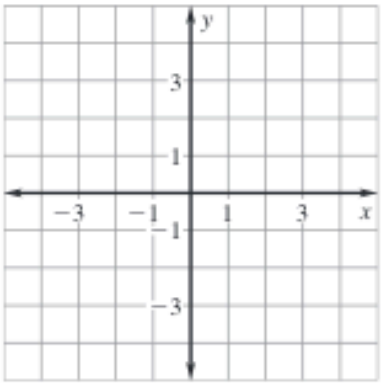
x	0	4	3	2	1	0
y	-3	-2	0	-1	1	1



Make a scatter plot of the data. *Describe* the correlation of the data. If possible, fit a line to the data and write an equation of the line.

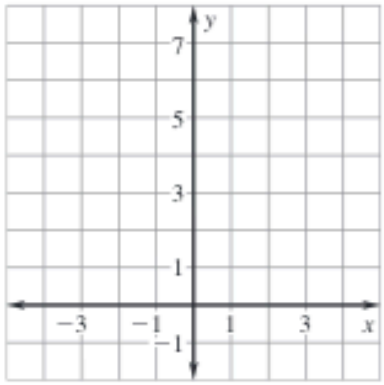
8.

x	−2	−2	−1	0	1	1	2
y	−4	−3	−2	−1	0	2	1



9.

x	−4	−3	−2	−2	−1	0	1
y	7	5	6	3	4	2	1



10. Thermostat The table shows the thermostat setting (in units called gas marks) on a British gas oven and the corresponding temperature in degrees Celsius.

Setting (gas mark)	2	3	4	5	6	7	8
Temperature (°C)	150	160	180	190	200	220	230

a. Make a scatter plot of the data where x represents the thermostat setting (in gas marks) and y represents the temperature (in degrees Celsius).

b. *Describe* the correlation of the data.

c. An oven set to gas mark 10 heats to a temperature of 260°C. Does this fit the trend shown by your scatter plot? *Explain* your reasoning.