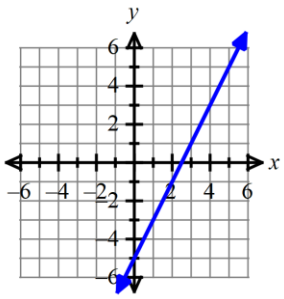
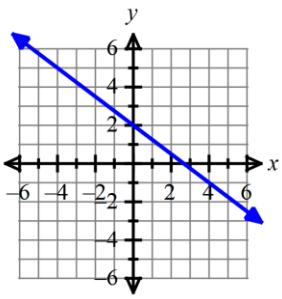
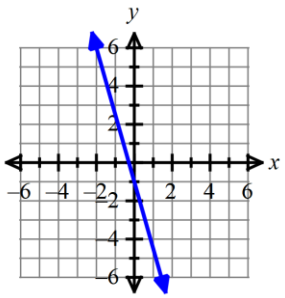
Alg1 2.1 Worksheet

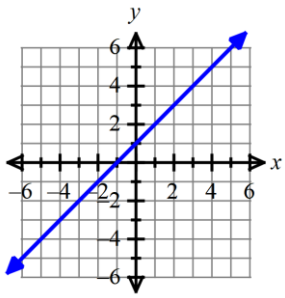
Name _____ **Per** ___

For # 1 – 4, match graph to its to the correct equation in the box below. You will not use every equation.

1) 

2) 

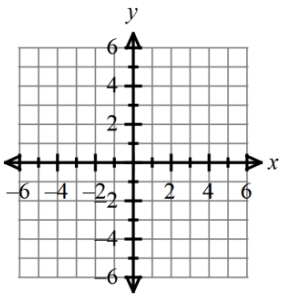
3) 

4) 

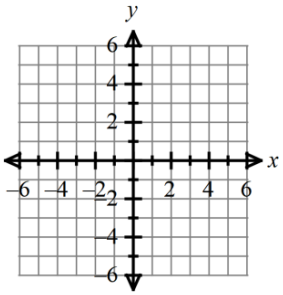
A) $y = x + 1$	B) $y = 2x + 5$	C) $y = \frac{3}{4}x + 2$	D) $y = \frac{7}{2}x - 1$
E) $y = -x + 1$	F) $y = -\frac{7}{2}x - 1$	G) $y = -\frac{3}{4}x + 2$	H) $y = 2x - 5$

For #5 – 10, sketch the graph of each linear equation.

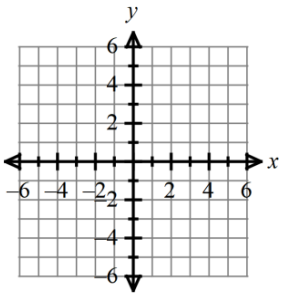
5) $y = \frac{3}{5}x - 3$



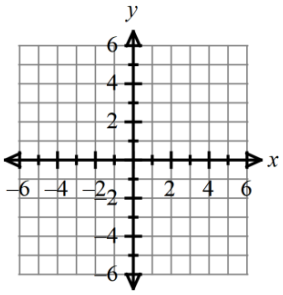
6) $y = 2x + 3$



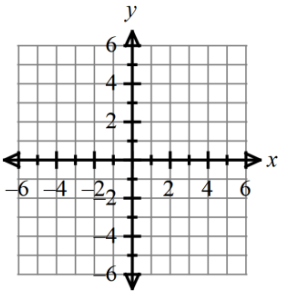
7) $y = -\frac{1}{4}x$



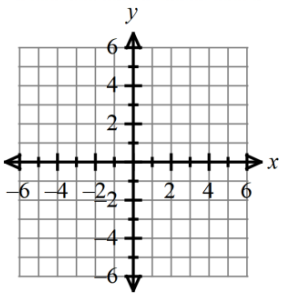
8) $y = x + 2$



9) $y = -4x + 2$



10) $y = x$



11) Find the slope and *y*-intercept of the line $3x - 5y = -15$.

12) Aisha and Carolina each sketch a graph of the linear equation $y = -\frac{3}{4}x + 2$. Both students start by correctly plotting the *y*-intercept at (0, 2). Aisha then uses the slope to find a second point by moving down three units and to the right four units from the *y*-intercept. Caroline uses the slope to find a second point by moving up three units and the left four units from the *y*-intercept. Will their two graphs look the same? Explain your reasoning.

For #13 – 17, write the equation of the line going through the two given points. Write your answer in slope-intercept form.

13) $(3, 1)$ and $(0, -4)$

14) $(0, 1)$ and $(2, -2)$

15) $(-2, -1)$ and $(0, -5)$

16) (- 4, 0) and (0, 2)

17) $(1, 3)$ and $(4, 12)$

18) $(-1, -5)$ and $(4, -2)$

19) Purposely deleted

20) Which of the following statements are true about the line $y = \frac{3}{4}x - 1$? Select all that apply.

A) The slope of the line is -1.

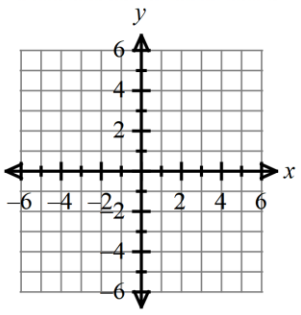
B) The line passes through the point $\left(0, -\frac{3}{4}\right)$.

C) The line passes through the point (0, 1).

D) The *y*-intercept of the line is (0, -1).

E) The slope of the line is $\frac{3}{4}$.

21) Graph the line: $y = \frac{5}{2}x - \frac{1}{2}$.



22) Solve for a: $5 - 3(a + 1) = 4a + 2$

Alg1 2.2 Worksheet

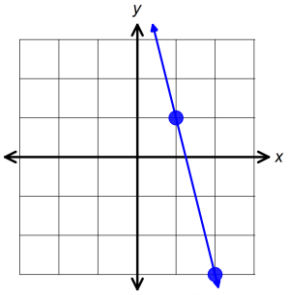
Name _____ **Per** ___

For #1 – 6: Write an equation of the line that passes through the given point and has a slope *m*.

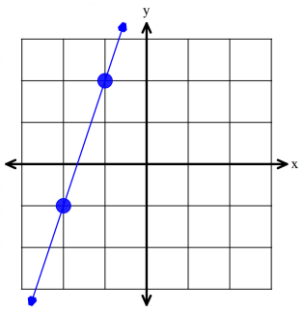
Point and Slope	(-1, 6); $m = 5$	(10, 3); $m = -2$	(-8, 1); $m = -\frac{3}{4}$
(h, k) form:	1.	3.	5.
Slope-intercept form:	2.	4.	6.

For #7 – 8: Write an equation of the line shown in ***(h, k) form***.

7.



8.



For #9 – 11. Write an equation in ***(h,k) form*** to represent the line passing through each set of points.

9. (2, 6) and (5, 10)

10. $\left(\frac{5}{8}, 5\right)$ and $\left(\frac{-3}{8}, 3\right)$

11. (0, 2) and (5, 3)

For #12 – 13: Write the equation of the line that passes through the given points in ***slope-intercept form.***

12. (-10, 7) and (0, -3)

13. $f(-5) = -3$ and $f(15) = 17$

Multiple Choice: For #14 – 15: Select the equation of the line in ***(h, k) form*** that passes through the points.

14. $\left(-\frac{2}{3}, 4\right)$ and $\left(\frac{1}{3}, 7\right)$

A $y = \left(x - \frac{2}{3}\right) + 7$

B $y = \left(x - \frac{1}{3}\right) + 7$

C $y = 3\left(x - \frac{1}{3}\right) + 7$

D $y = 3\left(x - \frac{2}{3}\right) + 4$

15. $f(4) = 1$ and $f(-2) = -4$

A $y = -\frac{5}{6}(x + 4) - 4$

B $y = -\frac{2}{3}(x - 2) - 4$

C $y = 5(x - 4) + 1$

D $y = \frac{5}{6}(x + 2) - 4$

Use the given table of values to write a linear equation for the given data in slope intercept form.

16.

x	1	2	3
$f(x)$	8	4	0

17.

x	$f(x)$
2	8
6	10
10	12

For #18 – 20: A railroad system on a hillside moves passengers at a constant rate to an elevation of 50 meters. The table shows elevations for different locations.

18) Write an equation in slope-intercept form to represent the elevation of the train in terms of time. Decimal answers are okay.

Time in seconds x	**Elevation in meters** $f(x)$
14	9
24	20

19) Find the rate of increase in meters per second.

20) Find the starting elevation.

21. Which of the following is a solution for the inequality statement shown below? (Choose ALL that apply).

$$7x + 9 \geq 12x - 6$$

A. 7
B. 9
C. 2
D. 1

Alg1 2.3 Worksheet

Name_____**Per**___

#1 – 4: Identify the *x*- and *y*-intercepts of the graph of each equation.

1. $2x + 5y = 10$

$x - int$: _____ $y - int$: _____

2. $3x - 4y = -24$

$x - int$: _____ $y - int$: _____

3. $10x + 5y = 120$

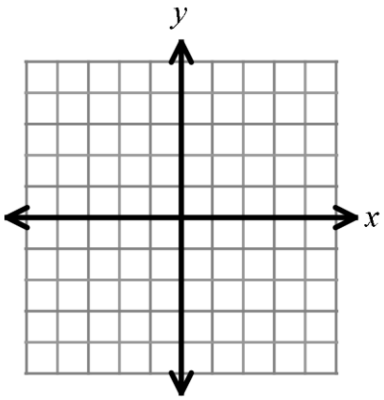
$x - int$: _____ $y - int$: _____

4. $2x - y = 8$

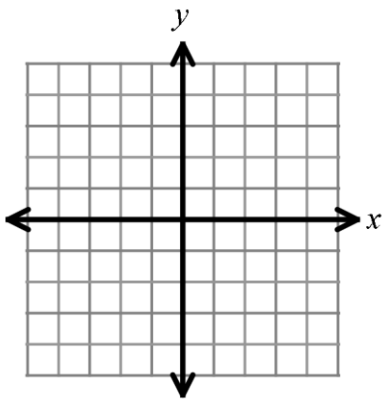
$x - int$: _____ $y - int$: _____

#5 – 13: Sketch the graph of each function.

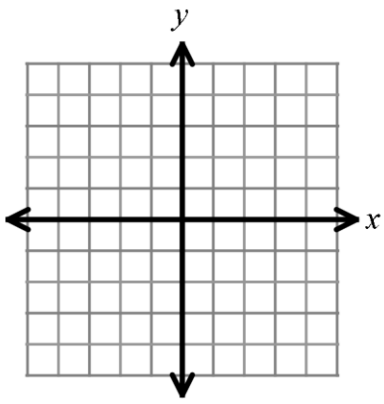
5. $2x - 4y = 8$



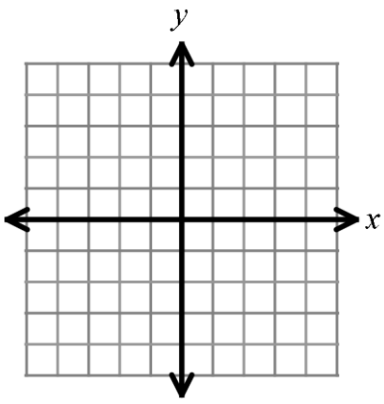
6. $3x + 5y = 15$



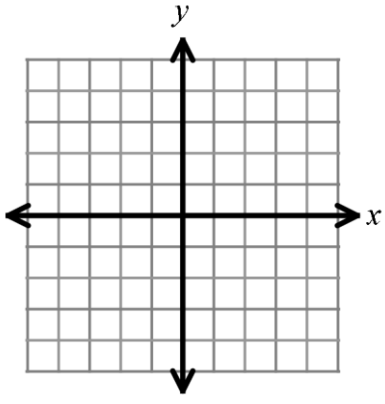
7. $3x - 6y = -12$



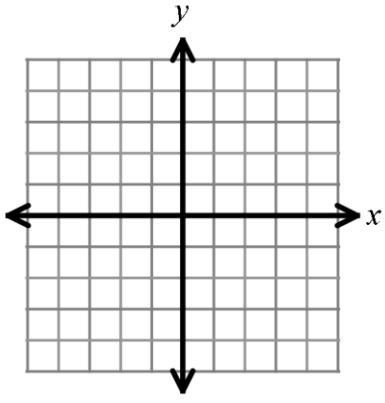
9. $8x + 12y = -24$



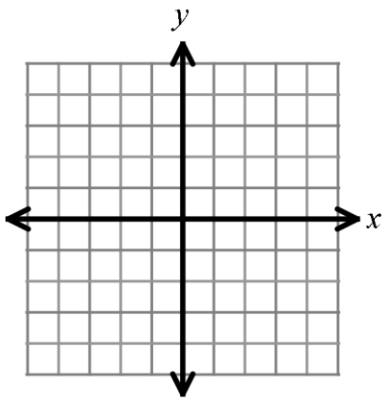
10. $4x = 10$



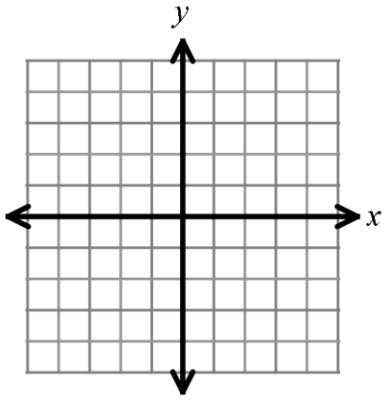
11. $-6y = 3$



12. $3y = -15$



13. $-9x = -27$

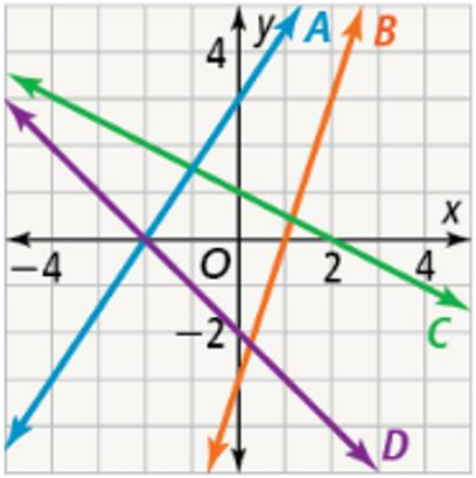


#14 – 17: Which line matches each equation?

14. $4x + 4y = -8$

15. $3x - 2y = -6$

16. $x + 2y = 2$



17. $3x - y = 3$

18. Write an equation in (h, k) form that passes through the point $(-4, 7)$ and has a slope of $\frac{1}{2}$.

19. Find the slope of the line containing the points $(3, 8)$ and $(-2, 6)$.

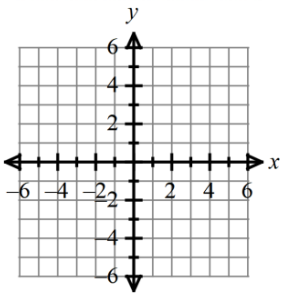
Alg1 2.4 Worksheet

Name_____Per__

For # 1– 4, determine if the lines given are parallel, perpendicular or neither.

1) $y = 2x - 4$ and $2x - y = 16$

2) $y = \frac{1}{2}$ and $y = -3$ (hint: sketch a graph of the situation)



3) $x = 4$ and $y = -3$

4) $y = -\frac{5}{2}x + 6$ and $-2x + 5y = -4$

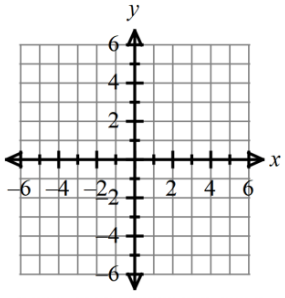
For #5 – 8, write the equation in slope intercept form of the line that passes through the given point and is <u>parallel</u> to the given line.

5) Point (5, -4) and line $y = \frac{1}{5}x - 4$

Hint: 1) Decide what slope to use (parallel/perpendicular), 2) use the point and slope and write the equation in (h, k) form, and 3) distribute and simplify to get slope intercept form.

6) Point (2, 7) and line $3x - y = 5$ (hint: change to $y = mx + b$ first)

7) Point (-3, 2) and line $y = -4$ (hint: sketch a graph of the situation)



8) Point (6, 4) and line $2x + 3y = 16$

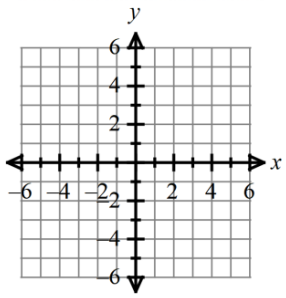
For #9 – 12, write the equation in slope intercept form of the line that passes through the given point and is <u>perpendicular</u> to the given line.

9) Point (-6, -3) and line $y = -\frac{2}{5}x$

Hint: 1) Decide what slope to use (parallel/perpendicular), 2) use the point and slope and write the equation in (h, k) form, and 3) distribute and simplify to get slope intercept form.

10) Point (0, 3) and line $3x - 4y = -8$ (hint: change to $y = mx + b$ first)

11) Point (-2, 5) and line $x = 3$ (hint: sketch a graph of the situation)



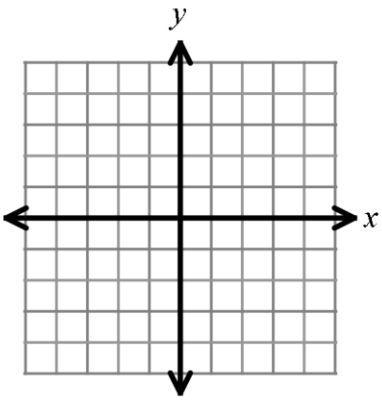
12) Point (4, 3) and line $4x - 5y = 30$

Algebra 1 Chapter 2 Practice Test

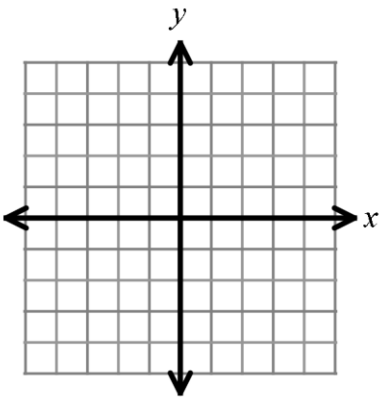
Name _____ **Per** ____

For #1 – 3: Graph the line that represents each linear equation.

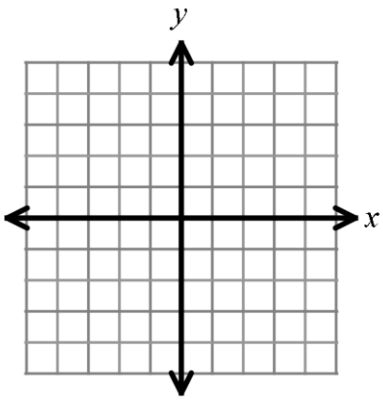
1. $y = -5x + 1$



2. $y = \frac{2}{3}x - 5$

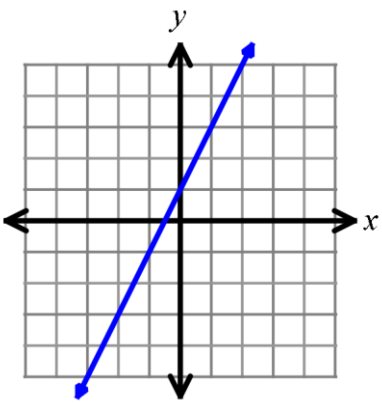


3. $y = -2(x + 1) - 3$

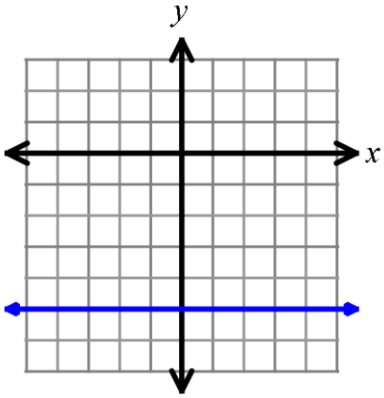


For #4 – 5: Write the equation, in slope-intercept form, of the given graphs below.

4.



5.



For #6 – 8: Write the equation of each line with the given information in the requested form.

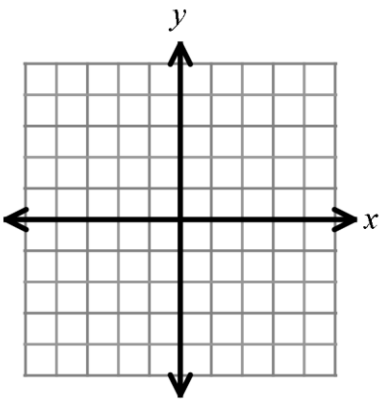
6. slope = 4; *y*-intercept = -2; slope-intercept form.

7. through (−5, 1); slope = -3; in (h, k) form **and** slope-intercept form.

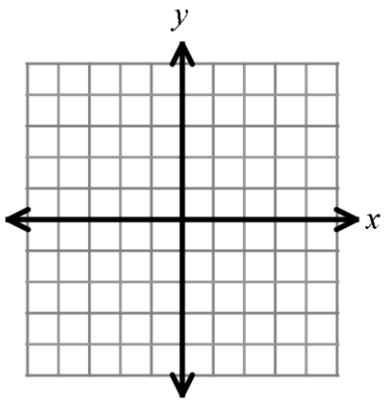
8. (9, 2) and (–3, –2); in (h, k) form **and** slope-intercept form.

For #9 – 14: Graph the line that represents each linear equation.

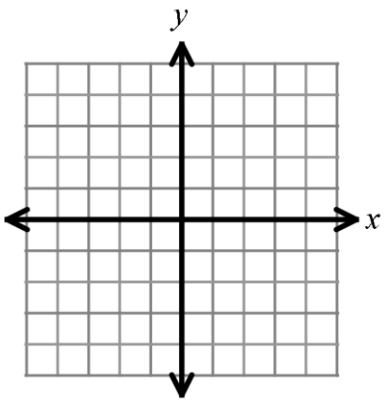
9. $-5x + y = -5$



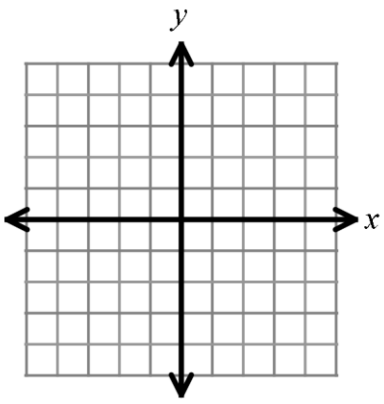
10. $4x - 12y = -24$



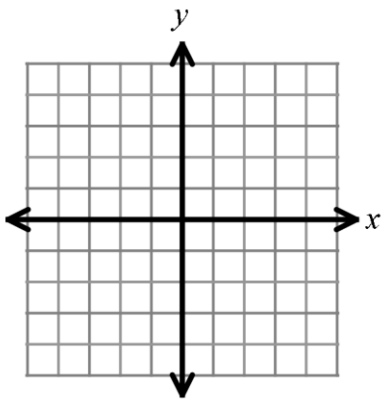
11. $-3x - 6y = 12$



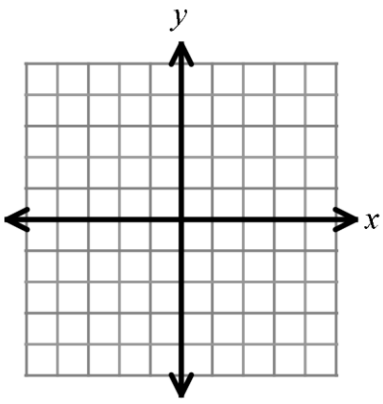
12. $5x = -15$



13. $6x + 8y = 24$



14. $-4y = -20$



15. Zachary has $500 in savings and will be adding $75 each month to save up for a trip this summer. Write an equation that models the amount A after *m* months? What does the slope signify in Zachary's equation? What does the *y*-intercept signify in his equation?

For #16 – 18: Find the *x*- and *y*-intercepts of each equation.

16. $4x - 5y = 80$ **17.** $7x + 8y = 112$ **18.** $-8x + 12y = -144$

For #19 – 20: Write an equation, in slope-intercept form, for the line that passes through the given point and is parallel to the graph of the given equation.

19. $y = 3x - 2$; (3, 2) **20.** $3x + 4y = 12$; (−4, 7)

For #21 – 22: Write an equation, in slope-intercept form, for the line that passes through the given point and is perpendicular to the graph of the given equation.

21. $y = -2x - 1$; (2, −1) **22.** $y + 4 = \frac{2}{3}(x - 2)$; (4, −2)

For #23 – 24: Determine whether the graphs of the given equations are *parallel, perpendicular,* or *neither*.

23. $y = 4x + 5$
$2x + 8y = 16$

24. $y - 7x = 3$
$14x - 2y = 28$

For #25 – 26, write the equation of each line described.

25. The vertical line passes through (7, -2).

26. The horizontal line passing through (7, -2).

27. Gerry has $400 and wants to buy pants and shirts. The pants cost $30 each pair, and the shirts cost $30 each. Write an equation to represent the situation with Gerry buying *x* pairs of pants and *y* shirts.