Name_____   Period_____

Chapter 1

1. Solve: $3|5b+4|-6=36$

2. Solve: $|4p+2|=3$

3. Solve: ½ (6x + 2) = 5(x + 3)

4. Determine whether each equation can be classified as having one, many or no solutions.

      a. 4c − 2 = 2c   b. 5(-g − 10) = 6 − 5g   c. 8x + 12 = 4(2x + 3)

5. Find a number such that, 13 less than 3 times a number is -34.

6. A shirt costs $24.00 and you have a coupon for 15% off. Write and solve an equation to determine how much the coupon will save you.

Chapter 2

7. Solve the inequality. If necessary, state what the solution means. $10h + 6 - 3h \geq 11 + 7h$

8. Write the sentence as an inequality. Solve the inequality.

         Fifteen is no more than a number *t* divided by 5.

9. Solve: $\frac{3}{4}(12c - 4) < 15c + 15$

10. Solve and graph the inequality: $-3 \le 4x - 7 \le 13$

11. Translate the following into an inequality and solve the inequality.

   "Six is greater than or equal to 6 times the sum of a number and 2"

12. Solve and graph the inequality: $-6 < 3n + 9 < 21$
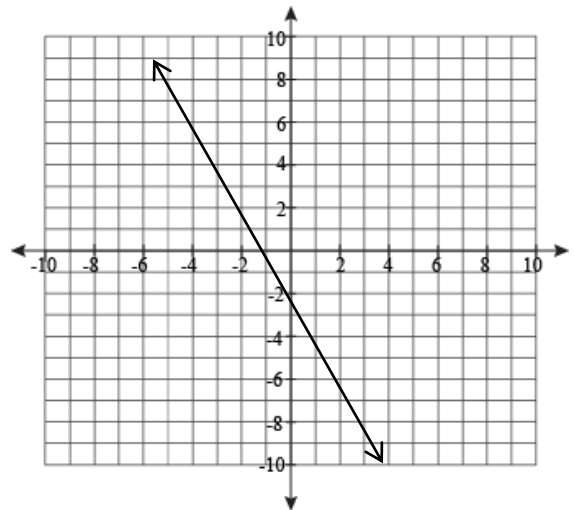
Chapter 3

13. Use the graph to the right to determine the following:

   a. slope:

   b. y-intercept

   c. x – intercept

   d. If the x-intercepts decreases by 3, but the slope remains the same, what is the new y-intercept?
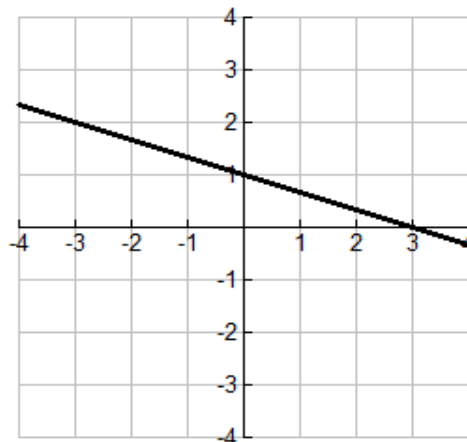

14. What is the slope and y-intercept of the equation of the line on the graph to the right?

   a. slope:

   b. y-intercept:

   c. equation of the line:

15. Determine which table represent a linear function.

A.

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

B.

X	0	2	4	6
Y	-8	-3	3	7

16. Write the function $g(x)$ that represents the described transformation of the function $f(x) = x$.
Example: $f(x)$ is translated 2 units right and 1 unit down: $g(x) = (x - 2) - 1$

   a. $f(x)$ is translated 3 units left and 5 units up

   b. $f(x)$ is translated 8 units right

17. Find the x- and y-intercepts of the graph of the linear equation: $2x - 5y = 10$

18. Evaluate the function $g(x) = -4.5x + 17$ when $x = -3$.

19. What value of x will make $f(x) = -13$, given: $f(x) = -3x + 11$

20. Determine if the given relations are functions. Explain why or why not.

   A. (-5, 3), (-3,7), (-1,11), (1, 15), (3, 19)   B. (-2, -2), (2, 0), (-2, 3), (3, 7), (5, 9)

21. Tim uses the function $C = .20m + 25$ to determine his phone bill for the month using m minutes.
Identify the independent and dependent variables and explain their relationship. Find the monthly
bill C when he talks for 75 minutes.

Chapter 4

22. Evaluate the piecewise function at the given values.

$$f(x) = \begin{cases} -x + 2, & \text{if } x < -3 \\ 7, & \text{if } -3 \le x < 0 \\ 3x - 1, & \text{if } x \ge 0 \end{cases}$$

a. $f(-5)$

b. $f(4)$

c. $f\left(-\frac{1}{2}\right)$

d. $f(0)$

23. Determine which lines, if any, are parallel or perpendicular:

Line a: $y = 6x - 2$

Line b: $6y = -x$

Line c: $y + 6x = 1$

24. Determine which of the lines, if any are parallel.

Line a: y = 3x + 8   **Line b: 3y + x = 5**   **Line c: 6x – 2y = 14**

25. What is the equation of the line that passes through the given point and is parallel to the given equation?

(4, -3); $y = -3x + 5$

26. Find the common difference of the arithmetic sequence. State the next 3 terms.

-16, -12, -8, -4, …

27. Find the equation that can be used to generate the table of values below.

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

28. Write the explicit rule for the given arithmetic sequence. Find the 20th term in the sequence.

Sequence: 2, -1, -4, -7, …

Chapter 5

29. Solve the system of linear equations: $2x - 3y = -5$ and $5x + 2y = 16$

30. Use the slopes and y-intercepts to determine whether the system of linear equations has *one solution*, *no solution*, or *infinitely many solutions*.

    a. $y = 5x + 1$ b. $y = -3x + 7$ c. $5x + y = -3$

        $y = 5x - 1$ $3x + 2y = -6$ $2y = -10x - 6$

31. You are renting a car for the weekend. The equation $2m + 15 = 3.5m$ represents the number m miles you must drive to spend the same amount at each of two rental companies. How many miles must you drive to spend the same amount at each company?

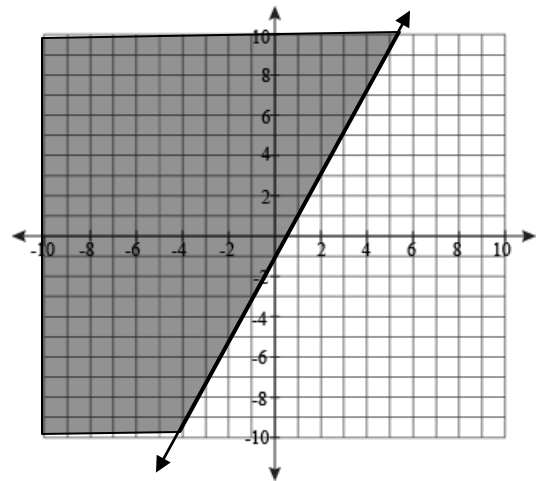Use the graphed linear inequality to the right to answer #32 and #33.

32. Which points are NOT solutions to the inequality?
    Explain why.

      a. (0, 0)   b. (-3, -10)   c. (1, 0)

33. Write the inequality represented by the graph.

34. Solve the system of equations using any method.

$$\begin{cases} 4x + 3y = -1 \\ 3x + y = -7 \end{cases}$$

35. Describe the number of solutions for the system below.

    $2x + 3y = -6$
    $-4x - 6y = 12$

36. You plant a spruce tree that is 14 inches tall and grows 4 inches a year and a hemlock tree that is 8 inches tall that grows 6 inches a year.
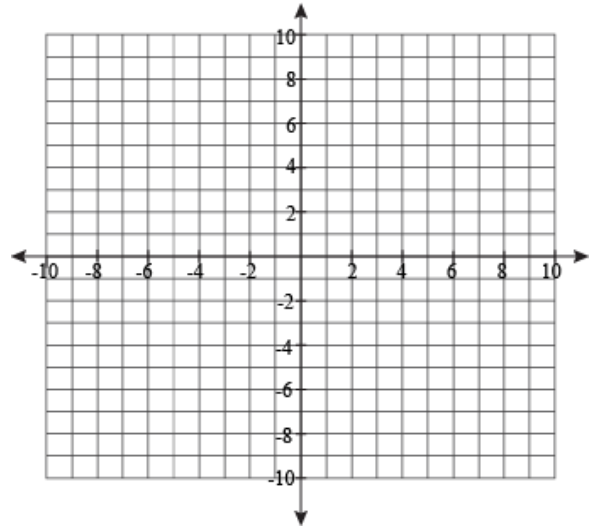
       a. write a system of linear equations that represent this situation.

       b. Solve the system using any method.

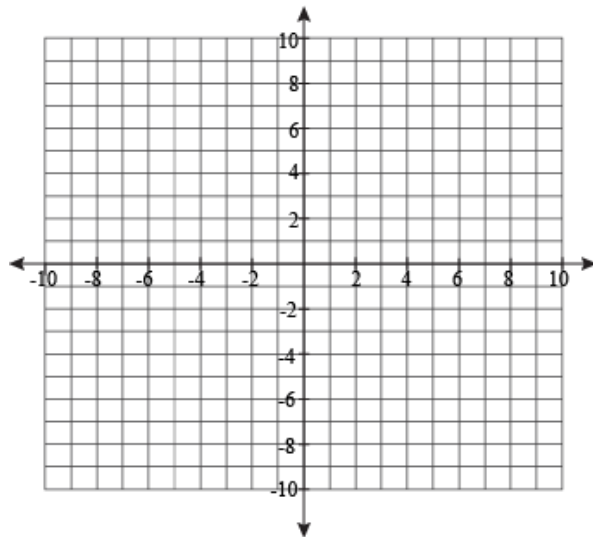37. Graph the system on equations. State what the solution is.
$$x - 5y = -30$$
$$3x + 5y = 10$$

38. Graph the system of inequalities:

  $y > -2x - 4$

  $y \leq \frac{2}{3}x + 1$

Probability

39. Find $P(\overline{A})$:   a. $P(A) = 0.75$ b. $P(A) = 0.02$ c. $P(A) = \frac{1}{5}$

40. What is the sample space and number of outcomes for the give situations?

a. When flipping 2 coins.   b. rolling a six-sided die   c. rolling a 6-sided die
                                                             and flipping a coin