

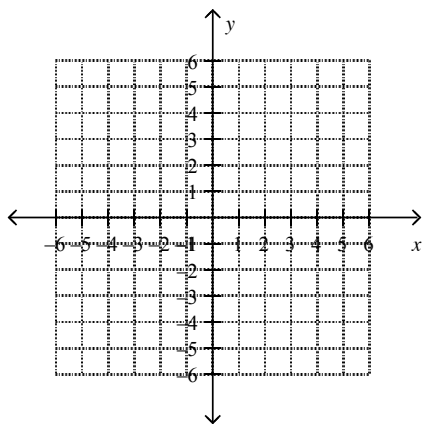
Chapter 7 Practice Test

1. The graph of which inequality would be represented with a dashed line?

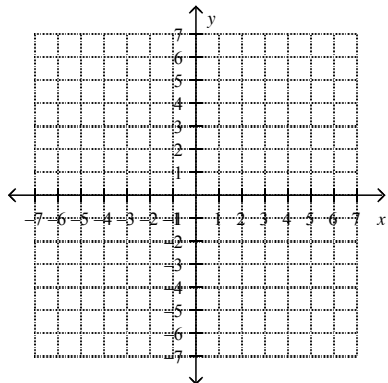
- a. $y \geq 15 - 5x$
- b. $y \geq 11 + 4x$
- c. $y \leq 16 - 2x$
- d. $y < 12 + 3x$

Graph the system of linear inequalities.

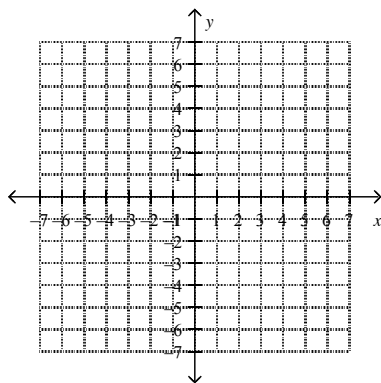
2. $y \geq -2$
 $x < 2$



3. $y \leq 2x + 3$
 $y > -x + 5$



4. $\begin{cases} x + y < 7 \\ 3x + y \geq 6 \end{cases}$

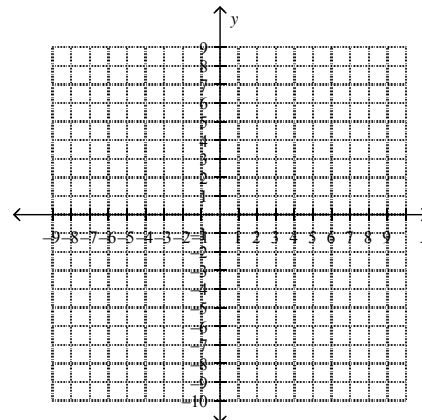


5. Which is a solution to the inequality $y > 2 + 9x$?

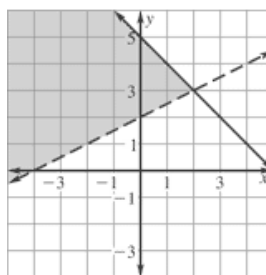
- a. (7,67)
- b. (8,74)
- c. (5,42)
- d. (4,37)

6. Graph the solution to this system of linear inequalities. **Identify 2 solutions to the system of inequalities.**

$$\begin{cases} y < -2x \\ y \leq 4x \\ y \geq -x - 5 \end{cases}$$



7. Which system of inequalities is represented by the graph?

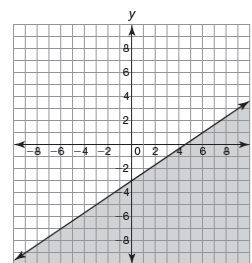


- a. $y < -x + 5$ and $y \geq \frac{1}{2}x + 2$
- b. $y > -x + 5$ and $y \leq \frac{1}{2}x + 2$
- c. $y \leq -x + 5$ and $y > \frac{1}{2}x + 2$
- d. $y \geq -x + 5$ and $y < \frac{1}{2}x + 2$

8. Tell whether the graph of each inequality would be represented with a dashed line or solid line.

a. $y < 14 - 7x$ b. $y + 9 \geq 3$

9. Write an inequality that is represented by the graph.

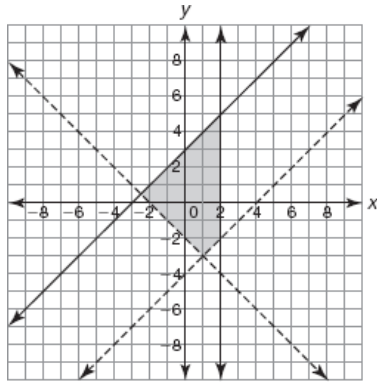


10. Wanda sews small and large gloves. It takes her 45 minutes to sew a small pair of gloves and 120 minutes to sew a large pair of gloves. The costs of producing the gloves are \$2 for a small pair and \$4 for a large pair. Wanda has 16 hours available to sew gloves. The materials to make the gloves must cost at most \$40. The system of linear inequalities represents this situation.

$$\begin{cases} 45x + 120y \leq 960 \\ 2x + 4y \leq 40 \end{cases}$$

Explain what the solution (16, 2) represents for this situation. Be specific!

11. Write a system of linear inequalities that is represented by the graph.



12. Which is a solution to the system of linear inequalities?

$$\begin{cases} y > 2x + 5 \\ y < -3x + 5 \end{cases}$$

- a. (0, 5)
 b. (2, 3)
 c. (1, 8)
 d. (-3, 0)

Define the variables and write a linear inequality in two variables to represent each problem situation.

13. The Foxes are playing the Titans. The Titans have been scoring 28 or more points per game this season. Between 7-point touchdowns and 3-point field goals, the Foxes need to score more than 28 points to have a hope of winning the game.

X = _____

Y = _____

Linear inequality _____

Define the variables and write a system of linear inequalities that represents each problem situation.

14. The maximum capacity for an average passenger elevator is 15 people and 3000 pounds. It is estimated that adults weigh approximately 200 pounds and children under 16 weigh approximately 100 pounds.

x = _____

y = _____

Inequality _____

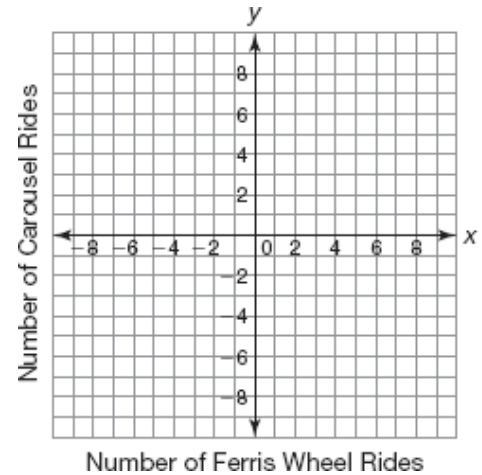
Inequality _____

15. Pablo's pickup truck can carry a maximum of 1000 pounds. He is loading his truck with 20-pound bags of cement and 80-pound bags of cement. He hopes to load at least 10 bags of cement into his truck.

x = _____

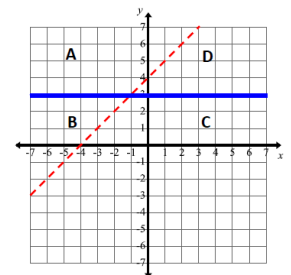
y = _____

16. Marcus has 50 tokens to spend at the school carnival. The Ferris wheel costs 7 tokens and the carousel costs 5 tokens. The inequality $7x + 5y \leq 50$ represents the possible ways Marcus could use his tokens on the two rides. Graph each inequality and determine if the ordered pair is a solution for the problem situation. Is the ordered pair (6, 3) a solution for the problem situation?



17. Which of the regions in the graph represent the solution to the system.

$$\begin{cases} y \leq 3 \\ y > x + 4 \end{cases}$$



CIRCLE ONE:

A B C D

Practice Test for Review Test 6

18. Determine the y-intercept for each of the following functions? (hint: to find y-intercept let $x=0$ and calculate.)

- A. $f(x) = 3^x - 5$ B. $f(x) = 3^x + 5$ C. $3x - 2y = 21$ D. $2x + 10y = 50$

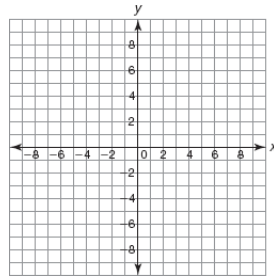
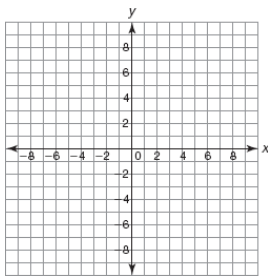
19. Is the function increasing or decreasing or constant? (put the equation in the graphing calculator and look at it)

- A. $f(x) = 3$ B. $f(x) = -3 \cdot 3^x$ C. $f(x) = -3^x$

20. Draw a system of equations that is:

- A. Consistent/Dependent (Infinite Solutions) B. Inconsistent (No Solution)

21. How many solutions does this system of equations have?



$$\begin{cases} y = 7 - 4x \\ y = -2(2x + 4) \end{cases}$$

- a. 0
b. 1
c. 2
d. infinitely many

22. Solve the following equations. Show all work.

- A. $3x + 10 = 21$ B. $\frac{1}{3}(3x - 12) = \frac{1}{4}(-28x - 100)$

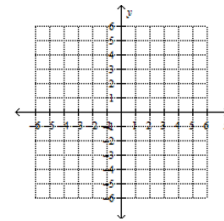
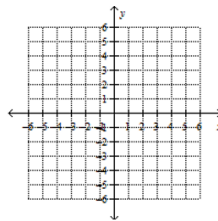
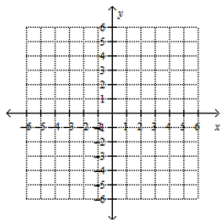
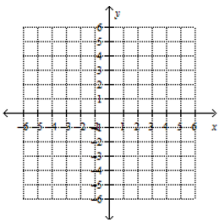
23. Sketch a graph of each type of function.

Linear

Absolute Value

Quadratic

Exponential.



24. $\sqrt[4]{4096} = \underline{\hspace{2cm}}$

25. $\sqrt[5]{15625} = \underline{\hspace{2cm}}$

26. Use the given functions and evaluate or simplify each problem.

$f(n) = n - 3$ Find $f(9)$ _____ Find $f(3) + g(3)$ _____ Find $f(2) - g(6)$ _____

$g(n) = 10 - 2n$

Find $(g + f)(n)$ _____ Find $g(f(n))$ _____

27. A backyard pool contains 500 gallons of water. It is filled with additional water at a rate of 6 gallons per minute. The function $f(t) = 6t + 500$ represents the volume of water in the pool as it is filled.

Input _____ Output _____ Y-intercept _____ Rate of Change or Slope _____

28. Evaluate the function $f(x) = -5x + 60$ at each of these values.

a. $f(20)$ _____ b. $f(2.8)$ _____ d. $f(-3.75)$ _____

29. Determine the independent value which results in the given function value. (Hint: replace the $f(t)$ in the first equation with the number it is equal to from the second equation and solve.)

a. $f(t) = -27t + 1170$ when $f(t) = 360$ _____ b. $f(t) = 50t$ when $f(t) = 4$ _____

Solve the system of equations using any method. (Substitution, Elimination, Graphing)

30. $x - 4y = -24$
 $x = -y + 1$

31. $3x - 4y = -8$
 $x + 4y = -8$

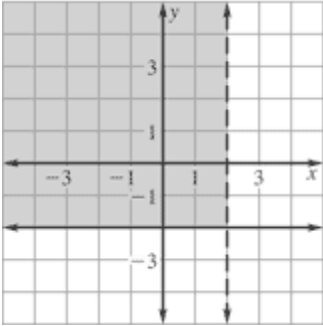
32. $2x + y = 4$
 $4x + 3y = 9$

Chapter 7 Practice Test

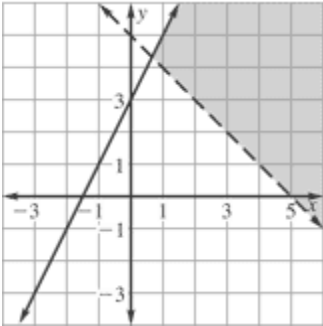
Answer Section

1. D

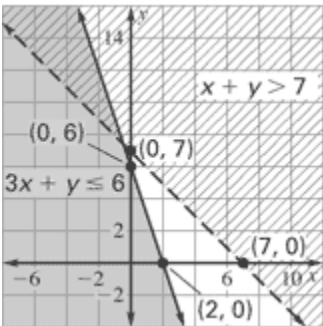
2. Answer:



3. Answer:

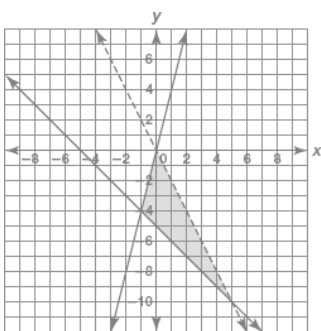


4. Answer:



5. A

6.



7. C

8. **a.** dashed line

b. solid line

$$9. \begin{cases} x + y \geq 400 \\ x \geq 20 \\ y \leq 500 \end{cases}$$

10. $y \leq \frac{2}{3}x - 3$

11. The solution (16, 2) is the point where the system of equations intersects. Wanda can make 16 pairs of small gloves and 2 pairs of large gloves and remain at a cost of \$40 in 16 hours.

12.
$$\begin{cases} y \leq x + 3 \\ y > x - 4 \\ y > -x - 2 \\ x \leq 2 \end{cases}$$

13. D

14. $7x + 3y > 28$

15. x = the number of adults
 y = the number of children

$$\begin{cases} x + y \leq 15 \\ 200x + 100y \leq 3000 \end{cases}$$

16. x = the number of 20-pound bags
 y = the number of 80-pound bags

$$\begin{cases} x + y \geq 10 \\ 20x + 80y \leq 1000 \end{cases}$$

17. No. The ordered pair (6, 3) is not a solution to the inequality. It is not in the shaded half-plane.

