Name_____
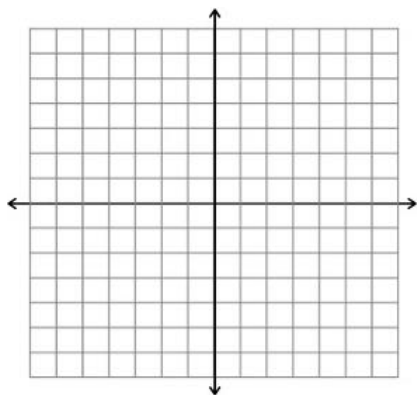
Algebra 1 Unit 4 Review-Systems

Solve each system by graphing

1. $y = -2x - 5$
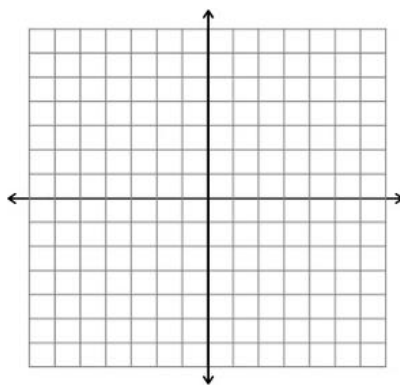
    $y = x + 7$
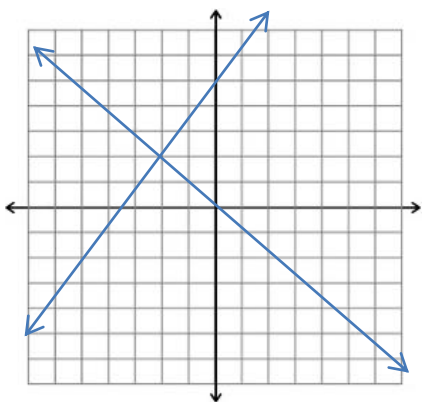
2. How many solutions does the system have?
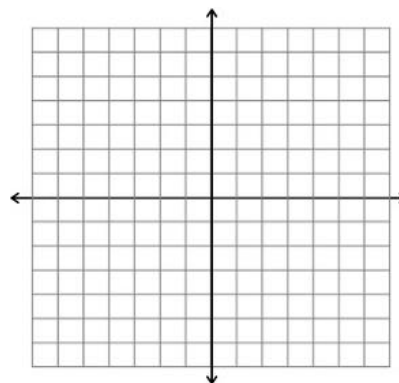
    y = -3x + 4

    3x + y = -1

3. Estimate the solution to the system

4. What is the solution to the system of equations?

    $y = \frac{1}{5}x + 2$

    $-x + 5y = 10$

Pick what you believe would be the best method to solve the system. You do not actually need to solve.
Choose from:

                    Elimination   Substitution   Graphing

5. $\begin{array}{l} 4x - 2y = 8 \\ x + 2y = 10 \end{array}$

6. $\begin{array}{l} y = \frac{1}{5}x + 2 \\ y = 3x - 6 \end{array}$

7. $\begin{array}{l} x = 4x + 6 \\ 2x - 5y = 10 \end{array}$

8. Amy wants to eliminate the variable y from the system $\begin{cases} 5x - 4y = 12 \\ 3x + 2y = 16 \end{cases}$ by elimination. First, she will have to multiply one of the equations by a number. Which step will enable her to eliminate y by adding?

a. Multiply each term in 5x – 4y = 12 by 2

c. Multiply each term in 3x + 2y = 16 by 2

b. Multiply each term in 5x – 4y = 12 by -2

d. Multiply each term in 3x + 2y = 16 by -2

Solve each system by substitution or elimination. Write your final answers as ordered pairs.

9. $\begin{aligned} 7x - 6y &= -3 \\ 5x + 2y &= 23 \end{aligned}$

10. $\begin{aligned} y &= \frac{1}{2}x - 4 \\ -2x + 4y &= -16 \end{aligned}$

11. $\begin{aligned} 6x + 8y &= 4 \\ -2x + 6y &= 3 \end{aligned}$

12. $\begin{aligned} x + 4y &= 4 \\ -2x + 8y &= 8 \end{aligned}$

13. Tony's Gym charges a $24 monthly membership fee, plus $3 per kickboxing class. Jamie's Workout World charges an $18 monthly fee, plus $4 per kickboxing class. For what number of classes taken would the cost of the two gyms be the same?

14. At AnnMarie's Deli the cost of 3 bowls of soup and 5 sandwiches cost $30.25. The cost of 1 bowl of soup and 2 sandwiches costs $11.50. What is the price of one sandwich?
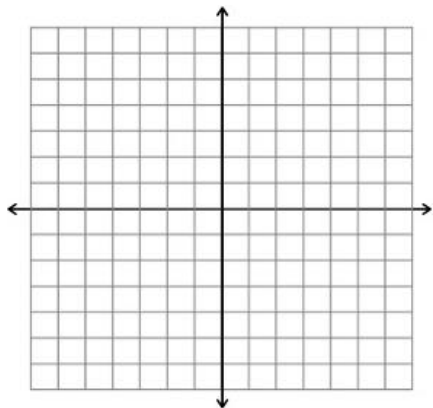
15. The admission price at a fair is $5 per child and $8 per adult. The fair's manager wants the income from Saturday to be at least $1000. Let x be the number of child tickets sold and y be the number of adult tickets sold. Write an inequality to show the number of fair tickets that need to be sold.

16. An animal shelter holds a turtle race for a fundraiser. Tim the Turtle is 5 feet from the starting gate and is crawling at 2 feet per minute. Tasha the Turtle is 2 feet from the starting gate and is crawling at a rate of 3 feet per minute.

a. In how many minutes will the turtles be at the same distance from the starting gate?

b. What will that distance be?

16. Graph the inequality: y < -3x + 5

17. Graph the system of inequalities

$$-x+y>2$$
$$x+3y\le12$$

18. Pick the inequality that the graph represents

a. $y < \dfrac{1}{2}x$

c. $y > \dfrac{1}{2}x$

b. $y \le \dfrac{1}{2}x$

d. $y \ge \dfrac{1}{2}x$

19. In the graph of an inequality, the area below a dashed line through the points (-3, 4) and (4, 4) is shaded. Which inequality does this graph represent?

HINT: Make a sketch!

a. x > 4

c. y < 4

b. y > 4

d. y ≤ 4

21. Pick the system of inequalities for the graph

a. $y > x - 2$
     $y < -2x + 1$

c. $y \ge x - 2$
     $y > -2x + 1$

b. $y \le x - 2$
     $y > -2x + 1$

d. $y > x - 2$
     $y \ge -2x + 1$

22. Pick the system of inequalities for the graph

a. $x < -3$
     $y < \dfrac{2}{3}x + 2$

c. $x \ge -3$
     $y < \dfrac{3}{2}x + 2$

b. $x \le -3$
     $y > \dfrac{2}{3}x + 2$

d. $x \le -3$
     $y > -\dfrac{2}{3}x + 2$