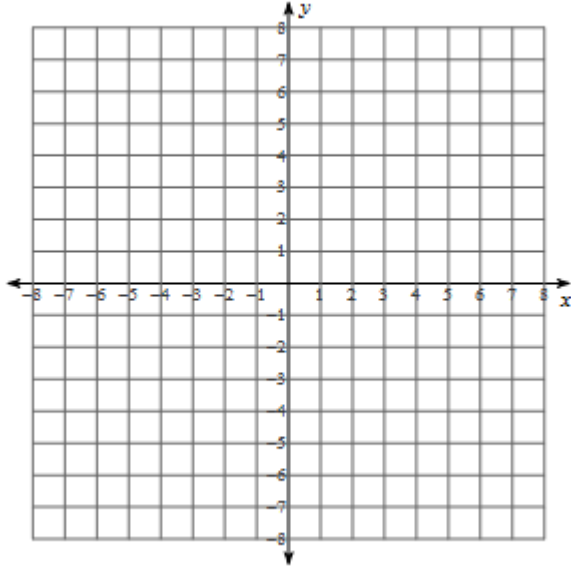


Test Review – Systems of Equations

Score _____ Per _____

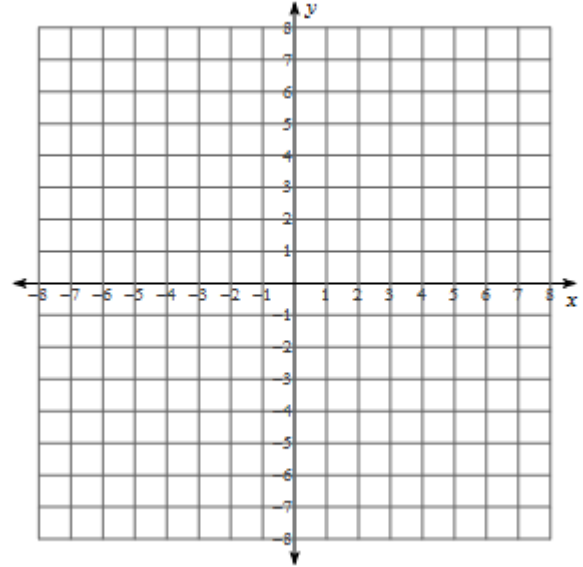
Solve the following systems of equations by graphing.

$$1. \quad \begin{aligned} -3x + 2y &= 4 \\ y &= \frac{3}{2}x + 4 \end{aligned}$$



Solution: _____

$$2. \quad \begin{aligned} y &= -\frac{1}{2}x - 1 \\ y &= 2x - 6 \end{aligned}$$



Solution: _____

Solve the following system of equations using substitution.

$$3. \quad \begin{aligned} y &= 8x - 7 \\ -8x + y &= 7 \end{aligned}$$

Solution: _____

$$4. \quad \begin{aligned} 6x - 3y &= 24 \\ y &= -2x - 8 \end{aligned}$$

Solution: _____

Solve the following system of equations using elimination.

$$5. \quad \begin{aligned} 3x + 5y &= 10 \\ x - 2y &= 7 \end{aligned}$$

Solution: _____

$$6. \quad \begin{aligned} -2x + 5y &= -10 \\ 3x + 3y &= -6 \end{aligned}$$

Solution: _____

Write and solve a system of equations to answer the following.

7. Savannah and Diana are running a race. Savannah can run 9 meters per second, and gets no head start. Diana gets a head start of 10 meters and can run 8 meters per second. At what time will Savannah and Diana tie the race? At that time, what will be their distance in meters?

Savannah and Diana will tie the race after _____ seconds at a distance of _____ meters.

8. Karen buys 4 tickets to *Les Miserables* and 5 tickets to *Mary Poppins* and spends a total of \$245. Cassidy buys 2 tickets to *Les Miserables* and 3 tickets to *Mary Poppins* and spends a total of \$135. Find the price of a *Les Miserables* ticket and a *Mary Poppins* ticket.

A *Les Miserables* ticket costs \$_____ and a *Mary Poppins* ticket costs \$_____.

Determine if each of the following systems of equations has *no solution*, *one solution*, or *infinitely many solutions*. If there is one solution, find the solution. If there are no or infinitely many solutions, explain how you know.

9. $y = 3x$
 $y - 4 = 3x$

10. $5x + 2y = 8$
 $5x + 2y = -8$

11. $y - 6 = 2x$
 $y = 2(x + 1) + 4$

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

13. What does “infinitely many solutions” mean for a system of equations?

14. Can a system of linear equations have exactly 2 solutions? Why or why not?

15. What does a system of equations with “no solution” look like on a graph?

16.
$$\begin{aligned} y &= 3x + 8 \\ -2x - y &= 5 \end{aligned}$$

Is $(-3, -1)$ a solution to the above system of equations? **Yes** **No** How do you know?

17. Write (but don't solve!) a system of equations that would best be solved by elimination.

18. Write a system of equations that has $(-1, 1)$ as its only solution.

19. Write a system of equations that has no solution.

20. Write a system of equations that has infinitely many solutions.