

Name _____

CHAPTER 4 TEST FORM E

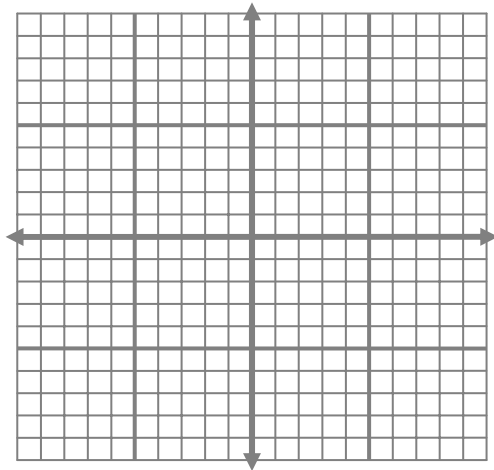
1. If two lines intersect in one point, the system is called
 - a. consistent and dependent
 - b. consistent and independent
 - c. inconsistent and independent
 - d. inconsistent and dependent

2. A system of equalities that has no solution is called a(n) _____ system.
 - a. inconsistent
 - b. consistent
 - c. independent
 - d. dependent

3. Determine if $\left(-\frac{1}{2}, 3\right)$ is a solution of $\begin{cases} 2x - 4y = -13 \\ 4x + y = 1 \end{cases}$

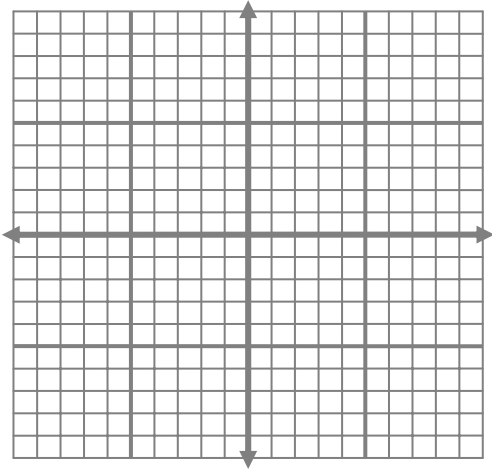
4. Determine if $(4, -3)$ is a solution of $\begin{cases} 2x - 3y = 17 \\ x - 2y = -2 \end{cases}$

5. Solve the following system by graphing. Write the solution as an ordered pair.
$$\begin{cases} x + y = 3 \\ x - y = 5 \end{cases}$$

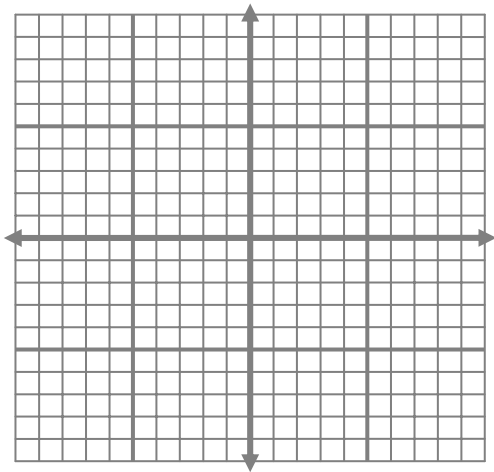


6. Solve the following system by graphing. Write the solution as an ordered pair.

$$\begin{cases} y = -\frac{3}{2}x + 4 \\ y = 1 \end{cases}$$



7. Suppose that the equation $-3 = 2$ is obtained when a system is solved by the substitution method. Draw a possible graph of the solution.



8. If line 1 has slope 2 and y-intercept 4 and line 2 has slope $-\frac{1}{2}$ and y-intercept 3, how many solutions does the system have?
- no solution
 - infinitely many solutions
 - cannot determine from the information given
 - one solution

9. What must a and b equal so that the following system has infinitely many solutions?

$$\begin{cases} 3x - 2y = 6 \\ y = ax + b \end{cases}$$

- $a = -\frac{3}{2}$, $b = -3$
 - $a = \frac{3}{2}$, $b = -3$
 - $a = \frac{3}{2}$, $b = 6$
 - $a = -\frac{3}{2}$, $b = 6$
10. Find the slope and y-intercept of the graph of each line in the system $\begin{cases} y = -2x - 3 \\ 8x - 4y = 2 \end{cases}$. Using this information the number of solutions of the system is
- one solution
 - two solutions
 - infinitely many solutions
 - no solution

11. The substitution method will be used to solve $\begin{cases} 4x - y = 5 \\ 3x + 2y = 6 \end{cases}$. Solve equation 1 for y .
- $y = -4x + 5$
 - $y = 4x + 5$
 - $y = 4x - 5$
 - $y = -4x - 5$

12. Solve the system $\begin{cases} y + x = 2x + 2 \\ 6x - 4y = 21 - y \end{cases}$ by substitution.

13. Find the y -coordinate of the ordered pair of the solution of $\begin{cases} 3x + 4y = 6 \\ 5x - 4y = -22 \end{cases}$.

- a. $y = 0$
- b. $y = 3$
- c. $y = -3$
- d. $y = 8$

14. Solve the following system by elimination (addition).

$$\begin{cases} 3x + 2y = -1 \\ 5x + 6y = -7 \end{cases}$$

15. Find the x -coordinate of the ordered pair of the solution of $\begin{cases} 4x + 3y = 3 \\ 5x - 2y = -25 \end{cases}$

- a. $x = -\frac{22}{23}$
- b. $x = \frac{81}{23}$
- c. $x = 5$
- d. $x = -3$

16. Solve the following system by elimination (addition)

$$\begin{cases} \frac{x}{2} + \frac{y}{3} = \frac{1}{2} \\ 4x + 2y = 2 \end{cases}$$

17. Solve the following system by elimination (addition)

$$\begin{cases} 4x - 3y = 2 \\ -\frac{2}{3}x + \frac{1}{2}y = -\frac{1}{3} \end{cases}$$

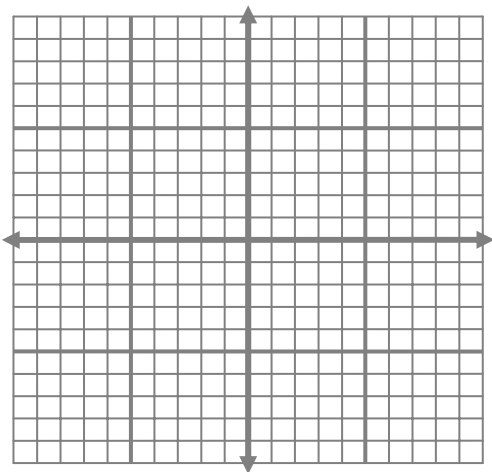
- a. the equations are dependent
- b. the system is inconsistent
- c. $(1,2)$
- d. $(-1,2)$

In problems 18 – 20, solve the following applications by writing a system of two equations in two variables.

18. Two angles are complementary. The measure of the larger angle is two more than three times the smaller angle. Find the larger angle.
19. At the concession stand hotdogs sold for \$1.25 and hamburgers for \$2.00. At the last football game 175 hotdogs and hamburgers were sold and \$305 was collected. How many hotdogs were sold?
20. Jennifer invested some money at 4% and some at 7%. The interest for 1 year on the combined investment of \$10,000 was \$565. How much money was invested at 4%?
21. A merchant wishes to mix peanuts that sell for \$2.50 per pound and cashews that sell for \$6 per pound to get 100 pounds of mixed nuts that sell for \$4.50 per pound. Let x equal the number of pounds of peanuts and y equal the number of pounds of cashews. If solving this by writing two equations in two variables, which of the following could be one of the equations?
- a. $2.50x + 6y = 100$
 - b. $2.50x + 6y = 4.50$
 - c. $2.50x + 6y = 450$
 - d. $x + y = 4.50$

22. When graphing $3x - 5y \geq 7$, is the boundary a solid or dotted line?
23. Which of the following points cannot be used as a test point to determine which region to shade for $3x - 5y \leq -2$?
- a. $(4, -2)$
 - b. $(-1, 1)$
 - c. $(1, -1)$
 - d. $(-4, -2)$

24. Graph the solution of the system of inequalities $\begin{cases} x - y \leq 3 \\ x + y < 2 \end{cases}$



25. The solutions for the system $\begin{cases} x > 0 \\ y < 0 \end{cases}$ are located in
- a. Quadrant I
 - b. Quadrant II
 - c. Quadrant III
 - d. Quadrant IV