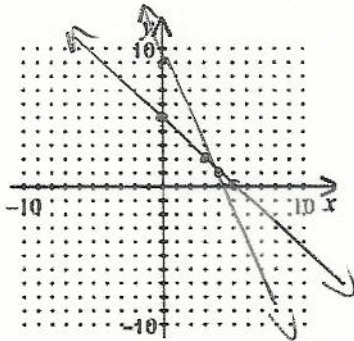


Chapter 3 Test Review

Name Key Date _____ Period _____

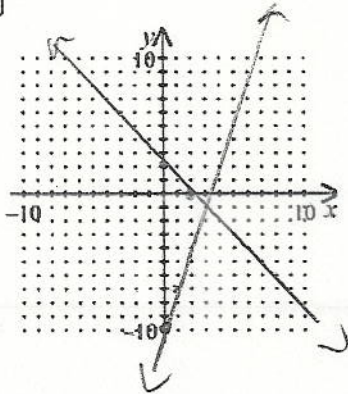
Graph the linear system and write the solution as an ordered pair.

1. $x + y = 5$
 $2x + y = 9$



1. 4, 1

2. $x + y = 2$
 $y = 3x - 10$



2. 3, -1

Tell whether the linear system has *infinitely many solutions*, *one solution*, or *no solution*.

3. $3x - 4y = 2$ $-4y = -3x + 2$ $y = \frac{3}{4}x - .5$
 $2x - 8y = 12$ $-8y = -2x + 12$
 $y = \frac{1}{4}x - 1.5$

3. one sol.

4. $x - 4y = 2$ $x = 2$ $y = -\frac{1}{4}$
 $2x - 8y = 4$ $x = 2$ $y = -\frac{1}{4}$

4. inf. many sol.

$$y = \frac{2}{3}x - \frac{7}{3}$$

$$\begin{aligned} 5. \quad 2x - 3y &= 7 & -3y &= -2x + 7 \\ 6x - 9y &= 15 & -9y &= -6x + 15 \\ & & y &= \frac{2}{3}x - \end{aligned}$$

5. no sol.

6. Is (5, 1) a solution of the system?

$$\begin{aligned} 2x + 4y &= -2 & 10 + 4 &= -2 \quad X \\ x + y &= 6 \end{aligned}$$

6. no

Solve the linear system 7 - 10. (show your work)

$$\begin{aligned} 7. \quad -4x + 2y &= -12 & / & \times -3 \\ 3x + 3y &= 27 & / & \times 2 \end{aligned}$$

7. 5, 4

$$\begin{aligned} 12x - 6y &= 36 \\ 6x + 6y &= 54 & 15 + 3y &= 27 \\ 18x &= 90 \\ x &= 5 \end{aligned}$$

$$\begin{aligned} 8. \quad 2x - y &= 13 \\ -4x - y &= -11 \\ 4x + y &= 11 \end{aligned} \quad 8 - y = 13$$

8. 4, -5

$$\begin{aligned} 6x &= 24 \\ x &= 4 \end{aligned}$$

$$\begin{aligned} 9. \quad 2x + 3y &= 17 \\ x - 3y &= -5 \\ 4 - 3y &= -5 \\ -7y &= -9 \\ y &= 3 \end{aligned}$$

9. 4, 3

$$10. \begin{cases} 2x + 3y = 4 \\ 3x + y = -1 \end{cases} \quad | \cdot (-3y)$$

$$-9x + 13y = 3$$

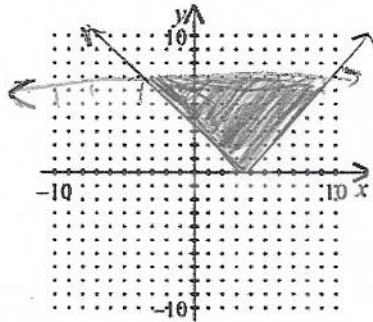
$$-7x = 7$$

$$x = -1$$

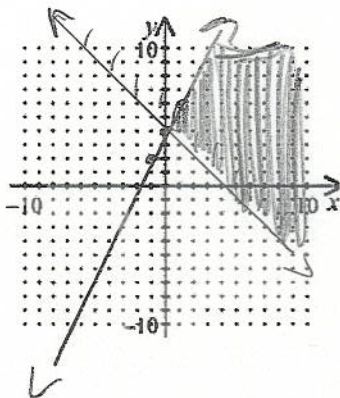
$$10. \underline{-1, 2}$$

Graph the system of inequalities.

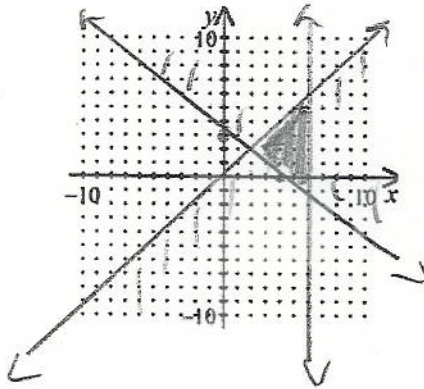
$$11. \begin{cases} y \leq 7 \\ y \geq |x - 3| \end{cases}$$



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

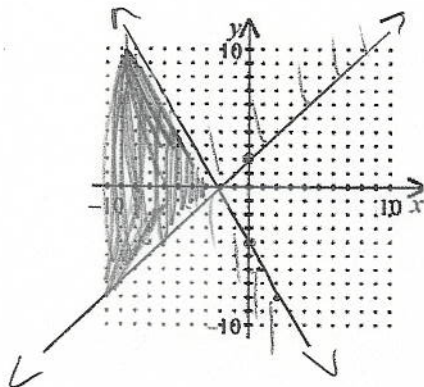


13. $3x + 4y \geq 12$
 $x \geq y$
 $x \leq 6$



Sketch the graph of the system of linear inequalities.

14. $y \leq -2x - 4$
 $y \geq x + 2$



Use PlySmlt2 to solve the systems of equations.

$$\begin{aligned}
 19. \quad & 4x + 2y + z = 10 \\
 & -6x - y - 5z = -34 \\
 & 3x + 3y + 6z = 9
 \end{aligned}$$

$$\begin{aligned}
 & x = 5 \\
 & y = -6 \\
 19. \quad & z = 2
 \end{aligned}$$

$$\begin{aligned}
 20. \quad & x + 4y + 2z = 5 \\
 & 3x + 12y + 6z = 7 \\
 & 2x - 3y + z = 12
 \end{aligned}$$

20. no solution

$$\begin{aligned}
 21. \quad & 2x + y + 3z = 6 \\
 & x + y - 3z = 4 \\
 & 7x + 5y - 3z = 24
 \end{aligned}$$

21. infinite many solutions

22. The drama club sold 1500 tickets for the end-of-year performance. Admission prices were \$12 for adults and \$6 for students. The total amount collected at the box office was \$15,600. How many students attended the play?

$$a + s = 1500 \quad a = 1500 - s$$

400

$$12a + 6s = 15600$$

$$12(1500 - s) + 6s = 15600$$

$$18000 - 12s + 6s = 15600$$

$$18000 - 6s = 15600$$

$$-6s = -2400$$

$$400 = s$$

