

Name: _____ Date: _____ Hour: _____

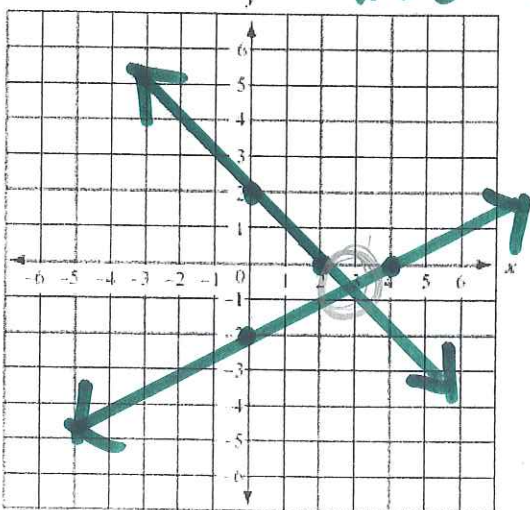
Key

Algebra 2
Chapter 3 PRACTICE Test

Solve the systems using the method given. Then state whether the solution is consistent and independent, consistent and dependent or inconsistent.

Solve the System by Graphing.

1) $2x - 4y = 8$ $x = 4$ $y = -2$
 $x + y = 2$ $x = 2$ $y = 2$



Solve the System by Substitution

2) $4x - y = 10$
 $y - 3x = -6 \rightarrow y = 3x - 6$

$$4x - (3x - 6) = 10$$

$$4x - 3x + 6 = 10$$

$$x + 6 = 10$$

$$-6 \quad -6$$

$$x = 4$$

$$(4, 6)$$

$$y = 3(4) - 6 = 12 - 6 = 6$$

Solve the System by Elimination

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

$$-15x - 6y = -3$$

$$4x + 6y = 14$$

$$\begin{array}{r} -11x = 11 \\ \hline -11 \quad -11 \end{array}$$

$$(-1, 3)$$

$$x = -1$$

$$\begin{array}{r} 5(-1) + 2y = 1 \\ -5 + 2y = 1 \\ +5 \quad +5 \\ \hline 2y = 6 \\ \hline y = 3 \end{array}$$

$$y = 3$$

Solve the System of Equations

4) $\begin{cases} 5x - 3y = 16 \\ 2x + 7y = -10 \end{cases}$

$$35x - 21y = 112$$

$$6x + 21y = -30$$

$$41x = 82$$

$$x = 2$$

$$5(2) - 3y = 16$$

$$10 - 3y = 16$$

$$-3y = 6$$

$$y = -2$$

$$(2, -2)$$

Solve the following systems of inequalities by graphing.

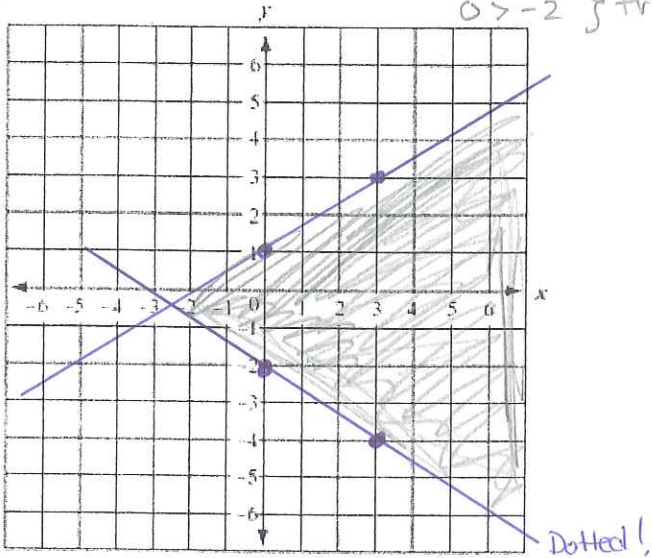
$$5) \begin{aligned} 2x - 3y &\geq -3 \rightarrow -3y \geq -2x - 3 \\ 3y &> -2x - 6 \end{aligned}$$

$$\frac{-3y}{-3} \geq \frac{-2x - 3}{-3} \quad \frac{3y}{3} > \frac{-2x - 6}{3}$$

$$y \leq \frac{2}{3}x + 1 \quad y > -\frac{2}{3}x - 2$$

Test point (0,0)

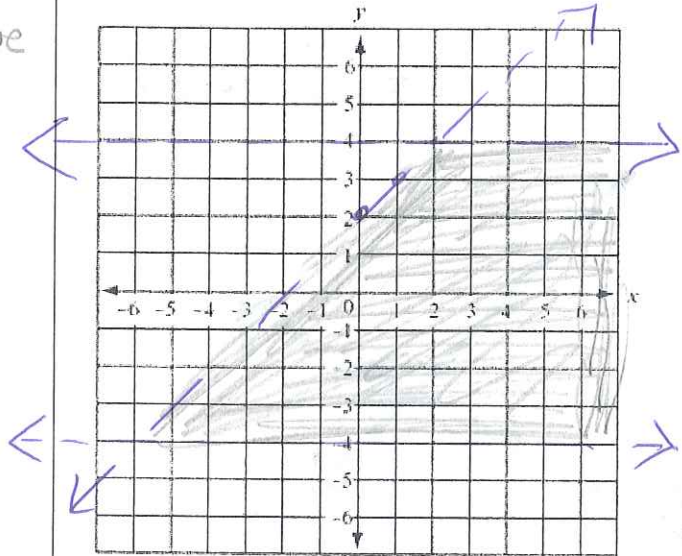
$$\left. \begin{aligned} 0 &\leq 1 \\ 0 &> -2 \end{aligned} \right\} \text{true}$$



$$6) \begin{aligned} |y| &< 4 \\ y &< x + 2 \end{aligned}$$

Test point (0,0)

$$\left. \begin{aligned} 0 &< 4 \\ 0 &> -4 \end{aligned} \right\} \text{True}$$



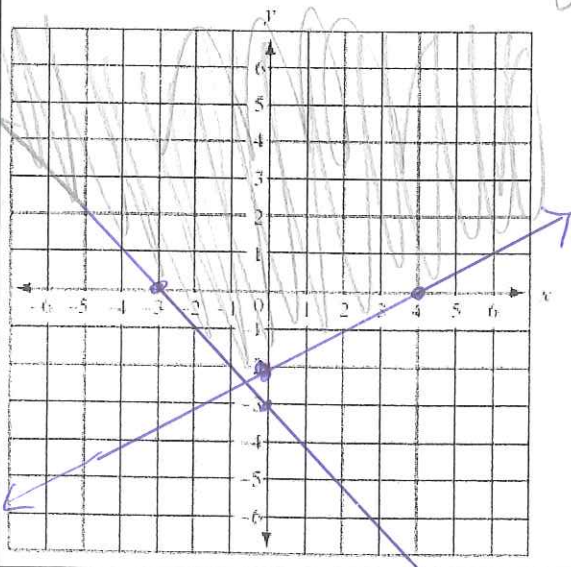
$$7) \begin{aligned} x + y &\geq -3 \\ x - 2y &\leq 4 \end{aligned}$$

$$\rightarrow \begin{aligned} -2y &\leq -x + 4 \\ \frac{-2y}{-2} &\leq \frac{-x + 4}{-2} \end{aligned}$$

$$y \geq -x - 3 \quad y \geq \frac{1}{2}x - 2$$

Test (0,0)

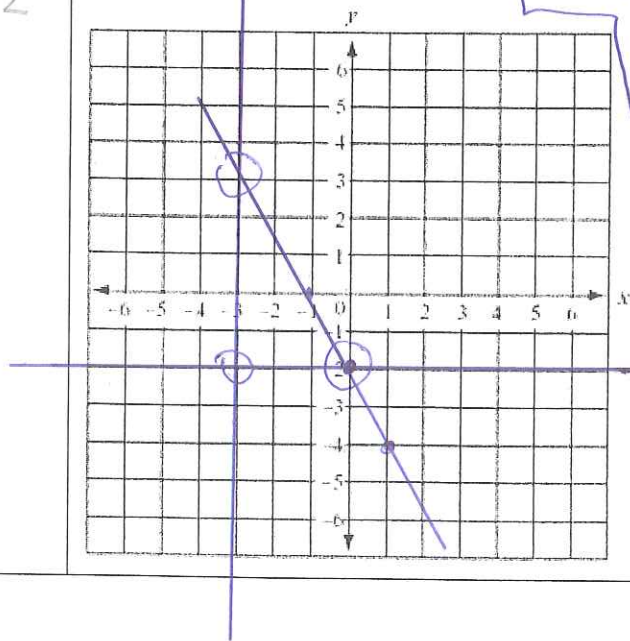
$$\left. \begin{aligned} 0 &\geq -3 \\ 0 &\geq -2 \end{aligned} \right\}$$



$$8) \text{ Find the vertices of the figure formed by}$$

$$\begin{aligned} x &\geq -3 \\ y &\geq -2 \\ 2x + y &\leq -2 \end{aligned}$$

$(-3, 3)$
 $(-3, -2)$
 $(0, -2)$



9) A printing company sells small packages of personalized stationary for \$7 each, medium packages for \$12 each, and large packages for \$15 each. Yesterday, the company sold 9 packages of stationary, collecting a total of \$86. Three times as many medium packages were sold as large packages. Write a system of three equations that represents the number of packages sold. Find the number of packages sold.

$$7s + 12m + 15l = 86$$

$$s + m + l = 9$$

$$m = 3l$$

$$s + 3l + l = 9$$

$$s + 4l = 9$$

$$\rightarrow s = -4l + 9$$

$$s = -4l + 9$$

$$s + m + l = 9$$

$$m = 3$$

$$7s + 12(3l) + 15l = 86$$

$$7s + 36l + 15l = 86$$

$$7s + 51l = 86$$

$$7(-4l + 9) + 51l = 86$$

$$-28l + 63 + 51l = 86$$

$$23l + 63 = 86$$

$$23l = 23$$

$$l = 1$$

10) Solve the system of equations.

$$x + 2y - 3z = 5$$

$$x - y + 2z = -3$$

$$x + y - z = 2$$

$$x + 2y - 3z = 5$$

$$-x + y - 2z = 3$$

$$3y - 5z = 8$$

(2)

$$x - y + 2z = -3$$

$$-x - y + z = -2$$

$$-2y + 3z = -5$$

(3)

$$3y + 5 = 8$$

$$3y = 3$$

$$y = 1$$

$$6y - 10z = 16$$

$$-6y + 9z = -15$$

$$-z = 1$$

$$z = -1$$

$$x + 2 + 3 = 5$$

$$x = 0$$

$$(0, 1, -1)$$

