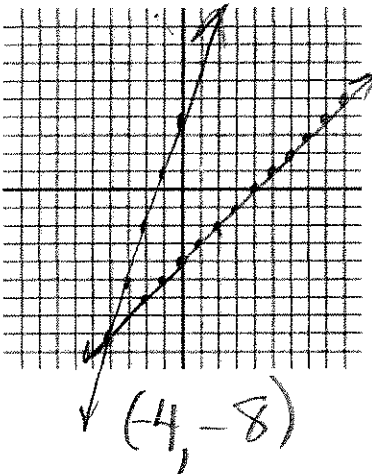


Algebra I
 Test Review Worksheet
 Systems of Equations and Inequalities

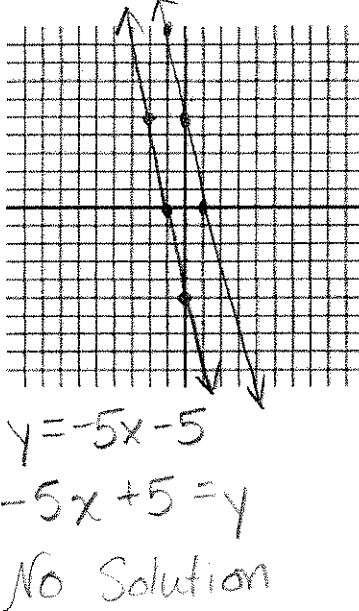
Name: _____

Solve each system by graphing. Make sure you specify if there is *one solution*, *no solution* or *infinitely many solutions*.

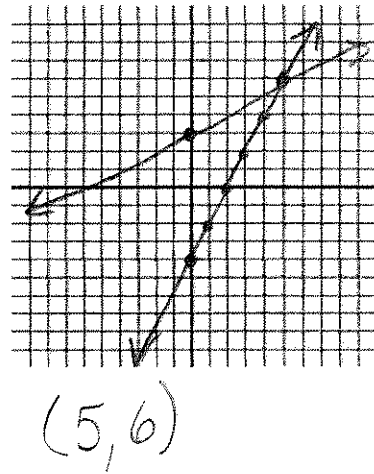
1. $y = x - 4$
 $y = 3x + 4$



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



3. $y = 2x - 4$
 $y = (3/5)x + 3$



Solve each system by substitution. Make sure you specify if there is *one solution*, *no solution* or *infinitely many solutions*.

4. $y = 5x$
 $2x + 3y = 34$
 $2x + 3(5x) = 34$
 $2x + 15x = 34$
 $17x = 34$
 $x = 2$
 $y = 10$
 $(2, 10)$

5. $6y = 3x - 6$
 $y = x - 1$
 $6(x - 1) = 3x - 6$ $y = 0 - 1$
 $6x - 6 = 3x - 6$ $y = -1$
 $3x = 0$
 $x = 0$
 $(0, -1)$

6. $2x - y = -4$
 $-3x + y = -9$
 $y = 3x - 9$
 $2x - (3x - 9) = -4$
 $2x - 3x + 9 = -4$
 $-1x = -13$
 $x = 13$
 $y = 3(13) - 9$
 $y = 30$
 $(13, 30)$

7. $8x + 2y = 13$
 $12x + 3y = 33$
 $3y = -12x + 33$
 $y = -4x + 11$
 $8x + 2(-4x + 11) = 13$
 $8x - 8x + 22 = 13$
 $22 = 13$
 No Solution

Solve each system by elimination. Make sure you specify if there is *one solution*, *no solution* or *infinitely many solutions*.

8. $x = -y + 7$
 $x - y = 3$

$$\begin{array}{r} x + y = 7 \\ + x - y = 3 \\ \hline 2x = 10 \\ x = 5 \end{array}$$

$$\begin{array}{r} 5 + y = 7 \\ y = 2 \end{array}$$

$(5, 2)$

9. $4x + 5y = 7$ (-1)
 $8x + 5y = 9$
 $-4x - 5y = -7$
 $\hline 4x = 2$
 $x = \frac{1}{2}$

$$\begin{array}{r} 4(\frac{1}{2}) + 5y = 7 \\ 2 + 5y = 7 \\ 5y = 5 \\ y = 1 \end{array}$$

$(\frac{1}{2}, 1)$

10. $4y = -2x - 10$
 $-5y - 3x = 11$

$$\begin{array}{r} 3(4y + 2x) = -10(3) \\ 2(-5y - 3x) = 11(2) \\ \hline 12y + 6x = -30 \\ -10y - 6x = 22 \\ \hline 2y = -8 \\ y = -4 \end{array}$$

$$\begin{array}{r} 4(-4) + 2x = -10 \\ -16 + 2x = -10 \\ 2x = 6 \\ x = 3 \end{array}$$

$(3, -4)$

11. $(\frac{3}{2}x + 2y) = 3 \cdot 2$
 $2(\frac{5}{2}x - 5) = 3y \cdot 2$

$$\begin{array}{r} 3x + 4y = 6 \\ 5x - 10 = 6y \\ \hline 3(2) + 4y = 6 \\ 6 + 4y = 6 \\ 4y = 0 \\ y = 0 \end{array}$$

$$\begin{array}{r} 3(3x + 4y) = 6 \cdot 3 \\ 2(5x - 6y) = 10(2) \\ \hline 9x + 12y = 18 \\ + 10x - 12y = 20 \\ \hline 19x = 38 \\ x = 2 \end{array}$$

$(2, 0)$

Determine whether the ordered pair is a solution of the linear inequality.

12. $7x + 2y > -5$; $(-1, 1)$

$$\begin{array}{r} 7(-1) + 2(1) > -5 \\ -7 + 2 > -5 \\ -5 > -5 \\ \text{No!} \end{array}$$

13. $x - y \leq 3$; $(2, -1)$

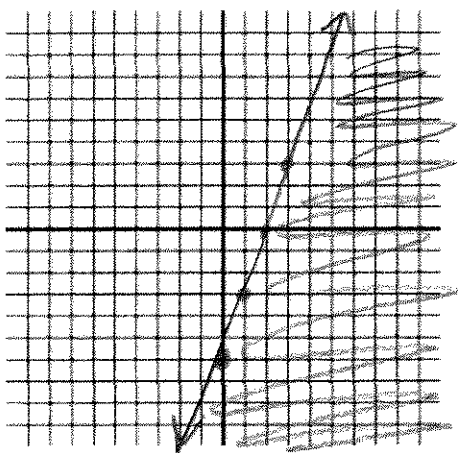
$$\begin{array}{r} 2 - (-1) \leq 3 \\ 3 \leq 3 \checkmark \\ \text{Yes} \end{array}$$

14. $y + 2x > 5$; $(4, 1)$

$$\begin{array}{r} 1 + 2(4) > 5 \\ 9 > 5 \\ \text{Yes} \end{array}$$

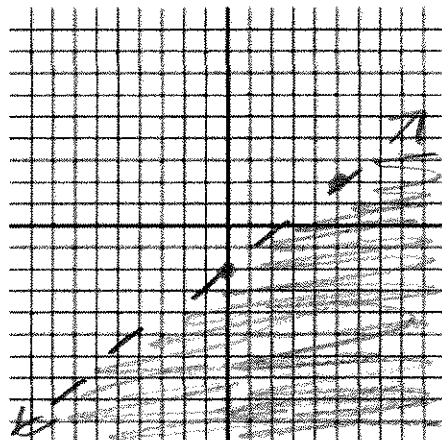
Graph each linear inequality.

15. $3x - y \geq 6$



$$\begin{array}{r} -y \geq -3x + 6 \\ y \leq 3x - 6 \end{array}$$

16. $-4x + 5y < -10$



$$\begin{array}{r} 5y < 4x - 10 \\ y < \frac{4}{5}x - 2 \end{array}$$