

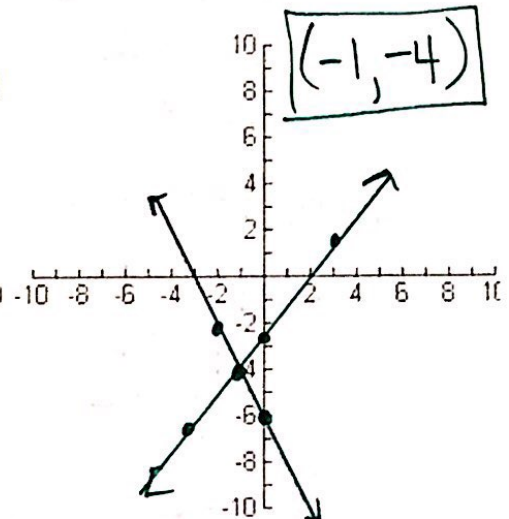
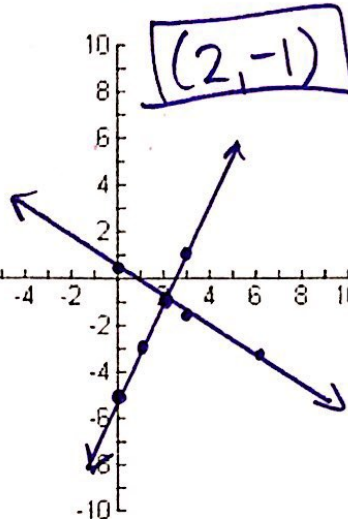
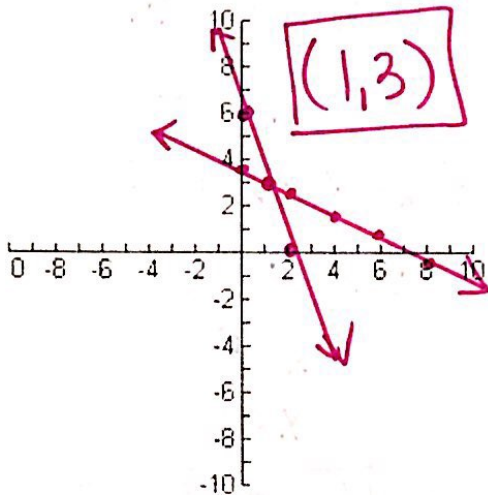
Systems of Equations Quiz Review

Graph the linear system and estimate the solution. Then check the solution algebraically.

1. $x + 2y = 7$
 $3x + y = 6$

2. $2x + 3y = 1$
 $2x - y = 5$

3. $4x - 3y = 8$
 $4x + 2y = -12$



$x + 2y = 7$ $3x + y = 6$
 $2y = -x + 7$ $y = -3x + 6$
 $y = -\frac{1}{2}x + 3.5$

$2x + 3y = 1$ $2x - y = 5$
 $3y = -2x + 1$ $-y = -2x + 5$
 $y = -\frac{2}{3}x + \frac{1}{3}$ $y = 2x - 5$

$4x - 3y = 8$ $4x + 2y = -12$
 $-3y = -4x + 8$ $2y = -4x - 12$
 $y = \frac{4}{3}x - \frac{8}{3}$ $y = -2x - 6$

Solve the system using the substitution method.

4. $2x + 4y = -4$
 $x - 2y = 10$

5. $2x + y = -3$
 $-6x - 4y = 0$

6. $4x + y = -1$
 $8x + 2y = -2$

$x = 2y + 10$

$y = -2x - 3$

$y = -4x - 1$

$2(2y + 10) + 4y = -4$
 $4y + 20 + 4y = -4$
 $8y + 20 = -4$
 $8y = -24$
 $y = -3$

$-6x - 4(-2x - 3) = 0$
 $-6x + 8x + 12 = 0$
 $2x + 12 = 0$
 $2x = -12$
 $x = -6$

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

$x = 2(-3) + 10$
 $x = 4$

$y = -2(-6) - 3$
 $y = 9$

Infinitely Many Solutions

$(4, -3)$

$(-6, 9)$

Solve the system using the elimination method.

$$\begin{array}{r} 7. \quad 2x + 4y = -10 \\ \quad \quad 2(-3x - 2y = -1) \\ \hline -6x - 4y = -2 \\ + 2x + 4y = -10 \\ \hline -4x = -12 \\ x = 3 \end{array}$$

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

$$\boxed{(3, -4)}$$

$$\begin{array}{r} 8. \quad 6x + 12y = -7 \\ \quad \quad -6(x + 2y = 2) \\ \hline -6x - 12y = -12 \\ + 6x + 12y = -7 \\ \hline 0 = -19 \end{array}$$

$$\boxed{\text{N.S.}}$$

$$\begin{array}{r} 9. \quad 3(5x + 4y = -3) \\ \quad \quad -5(3x - 7y = 17) \\ \hline 15x + 12y = -9 \\ + -15x + 35y = -85 \\ \hline 47y = -94 \\ y = -2 \end{array}$$

$$\begin{array}{r} 5x + 4(-2) = -3 \\ 5x - 8 = -3 \\ 5x = 5 \\ x = 1 \end{array}$$

$$\boxed{(1, -2)}$$

Solve the system by either algebraic method.

$$10. \quad \begin{array}{r} 2x + 3y = 5 \\ x - 5y = 9 \end{array}$$

$$x = 5y + 9$$

$$x = 5(-1) + 9$$

$$2(5y + 9) + 3y = 5$$

$$x = 4$$

$$10y + 18 + 3y = 5$$

$$13y + 18 = 5$$

$$13y = -13$$

$$y = -1$$

$$\boxed{(4, -1)}$$

$$11. \quad \begin{array}{r} 2(-x - 4y = -3) \\ 2x + y = 15 \end{array}$$

$$-2x - 8y = -6$$

$$+ 2x + y = 15$$

$$-7y = 9$$

$$y = -\frac{9}{7}$$

$$\boxed{\left(\frac{57}{7}, -\frac{9}{7}\right)}$$

$$2x - \frac{9}{7} = 15$$

$$2x = \frac{114}{7}$$

$$x = \frac{57}{7}$$

12. Last year you mowed grass and shoveled snow for 10 households. You earned \$200 per house mowing and \$180 per house shoveling snow. If you earned a total of \$1880 last year, for how many houses did you mow their lawn?

X = Mowing
y = Shoveled

$$x + y = 10$$

$$200x + 180y = 1880$$

$$y = -x + 10$$

$$200x + 180(-x + 10) = 1880$$

$$200x - 180x + 1800 = 1880$$

$$20x + 1800 = 1880$$

$$20x = 80$$

$$x = 4$$

$$\boxed{4 \text{ lawns mowed}}$$