

# HW: worksheet Solving Systems of Equations by Elimination #s 1-11 (odds)

$$\begin{array}{r} 1.) \quad 3x + y = 17 \\ \quad 4x - y = 18 \\ \hline \quad 7x = 35 \\ \quad 7 \quad \quad 7 \end{array}$$

$$\begin{array}{l} x = 5 \\ 3x + y = 17 \\ 3(5) + y = 17 \\ 15 + y = 17 \\ -15 \quad -15 \end{array}$$

solution  $y = 2$   
(x, y)  
(5, 2)

$$\begin{array}{r} 5.) \quad x + 3y = 15 \\ \quad -1(-8x + 3y = -12) \\ \hline \quad x + 3y = 15 \\ \quad 8x - 3y = 12 \\ \hline \quad 9x = 27 \\ \quad 9 \quad \quad 9 \end{array}$$

$$\begin{array}{l} x = 3 \\ x + 3y = 15 \\ 3 + 3y = 15 \\ -3 \quad -3 \\ \hline 3y = 12 \\ 3 \quad 3 \end{array}$$

$y = 4$   
(x, y) solution  
(3, 4)

$$\begin{array}{r} 3.) \quad -x - 7y = 18 \\ \quad 4x + 7y = -30 \\ \hline \quad 3x = -12 \\ \quad 3 \quad \quad 3 \end{array}$$

$$\begin{array}{l} x = -4 \\ -x - 7y = 18 \\ -(-4) - 7y = 18 \\ 4 - 7y = 18 \\ -4 \quad -4 \\ \hline -7y = 14 \\ -7 \quad -7 \end{array}$$

$y = -2$   
(x, y)  
(-4, -2)  
 solution

$$\begin{array}{r} 7.) \quad 3x + 2y = 0 \\ \quad 9x - 2y = 24 \end{array}$$

$$\begin{array}{r} 9x - 2y = 24 \\ 3x + 2y = 0 \\ \hline 12x = 24 \\ 12 \quad 12 \end{array}$$

$$\begin{array}{l} x = 2 \\ 3x + 2y = 0 \\ 3(2) + 2y = 0 \\ 6 + 2y = 0 \\ -6 \quad -6 \\ \hline 2y = -6 \\ 2 \quad 2 \\ \hline y = -3 \end{array}$$

solution  
(x, y)  
(2, -3)

line up the #s

$$\begin{array}{r} 9.) \quad 4y + 4 = 7x \\ -4y + 36 = 3x \\ \hline 40 = 10x \\ 10 \quad 10 \end{array}$$

$$4 = x$$

$$4y + 4 = 7x$$

$$4y + 4 = 7(4)$$

$$4y + 4 = 28$$

$$\underline{-4 \quad -4}$$

$$\begin{array}{r} 4y = 24 \\ 4 \quad 4 \end{array}$$

$$y = 6$$

Solution  
 $(x, y) \rightarrow (4, 6)$

$$\begin{array}{r} 11.) \quad 3x - 10y - 29 = 0 \rightarrow 3x - 10y = 29 \\ -11x - 10y + 13 = 0 \rightarrow (-11x - 10y = -13) \end{array}$$

rewrite

$$3x - 10y = 29$$

$$\underline{11x + 10y = 13}$$

$$\begin{array}{r} 14x = 42 \\ 14 \quad 14 \end{array}$$

$$x = 3$$

$$3x - 10y - 29 = 0$$

$$3(3) - 10y - 29 = 0$$

$$9 - 10y - 29 = 0$$

$$\underline{-10y - 20 = 0}$$

$$\begin{array}{r} +20 \quad +20 \\ \hline -10y = 20 \\ -10 \quad -10 \end{array}$$

$$\underline{-10y = 20}$$

$$y = -2$$

Solution

$(x, y)$   
 $(3, -2)$