

## Systems of Equations: Lesson 4

### Linear Elimination: Worksheet 1

Name: answer key!

MATH 4 ALL

Solve using elimination:

$$\begin{aligned} -2(2x+7y &= -4) \\ 4x+3y &= 14 \\ \hline -4x-14y &= 8 \\ 11y &= 22 \\ y &= -2 \\ 2x+7(-2) &= -4 \\ 2x-14 &= -4 \\ 2x &= 10 \\ x &= 5 \\ \hline & \mathbf{(5, -2)} \end{aligned}$$

$$\begin{aligned} 8x-3y &= -11 \\ 3(-10x+y &= 11) \\ \hline -30x+3y &= 33 \\ 8x-3y &= -11 \\ \hline -22x &= 22 \\ x &= -1 \\ 8(-1)-3y &= -11 \\ -8-3y &= -11 \\ -3y &= -3 \\ y &= 1 \\ \hline & \mathbf{(-1, 1)} \end{aligned}$$

$$\begin{aligned} 3(4x+5y &= -30) \\ -2(6x-2y &= 12) \\ \hline 12x+15y &= -90 \\ -12x+4y &= -24 \\ \hline 19y &= -114 \\ y &= -6 \\ 4x+5(-6) &= -30 \\ 4x-30 &= -30 \\ 4x &= 0 \\ x &= 0 \\ \hline & \mathbf{(0, -6)} \end{aligned}$$

$$\begin{aligned} 3(3x+2y &= -5) \\ -9x+3y &= 33 \\ \hline 9x+6y &= -15 \\ 9y &= 18 \\ y &= 2 \\ 3x+2(2) &= -5 \\ 3x+4 &= -5 \\ 3x &= -9 \\ x &= -3 \\ \hline & \mathbf{(-3, 2)} \end{aligned}$$

$$\begin{array}{l}
 -2(-5x + 3y = -5) \\
 -10x + 7y = -5 \\
 \hline
 10x - 6y = 10 \\
 \hline
 y = 5 \\
 \leftarrow \\
 -5x + 3\overset{5}{y} = -5 \\
 -5x + 15 = -5 \\
 -5x = -20 \\
 x = 4 \\
 \hline
 (4, 5)
 \end{array}$$

$$\begin{array}{l}
 3(4x - 7y = 17) \\
 4(-3x + 2y = -3) \\
 \hline
 12x - 21y = 51 \\
 -12x + 8y = -12 \\
 \hline
 -13y = 39 \\
 y = -3 \\
 \leftarrow \\
 4x - 7\overset{-3}{y} = 17 \\
 4x + 21 = 17 \\
 4x = -4 \\
 x = -1 \\
 \hline
 (-1, -3)
 \end{array}$$