

## Unit 3 Part 1 Day 3 Assignment

Solve the following systems of equations using substitution.

$$\begin{aligned} 1. \quad y &= -x - 1 \\ y &= -5x - 17 \end{aligned}$$

$$\begin{array}{r} -x - 1 = -5x - 17 \\ +5x \quad +5x \\ \hline 4x - 1 = -17 \end{array}$$

$$\begin{array}{r} 4x - 1 = -17 \\ +1 \quad +1 \\ \hline 4x = -16 \end{array}$$

$$\frac{4x}{4} = \frac{-16}{4}$$

$$x = -4$$

$$y = -5(-4) - 17$$

$$y = 20 - 17$$

$$y = 3$$

$$(-4, 3)$$

$$\begin{aligned} 2. \quad y &= 4x + 6 \\ y &= -5x - 21 \end{aligned}$$

$$\begin{array}{r} 4x + 6 = -5x - 21 \\ +5x \quad +5x \\ \hline 9x + 6 = -21 \end{array}$$

$$\begin{array}{r} 9x + 6 = -21 \\ -6 \quad -6 \\ \hline 9x = -27 \end{array}$$

$$\frac{9x}{9} = \frac{-27}{9}$$

$$x = -3$$

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

$$y = -12 + 6$$

$$y = -6$$

$$(-3, -6)$$

$$\begin{aligned} 3. \quad y &= 5x + 13 \\ y &= x + 1 \end{aligned}$$

$$\begin{array}{r} 5x + 13 = x + 1 \\ -x \quad -x \\ \hline 4x + 13 = 1 \end{array}$$

$$\begin{array}{r} 4x + 13 = 1 \\ -13 \quad -13 \\ \hline 4x = -12 \end{array}$$

$$\frac{4x}{4} = \frac{-12}{4}$$

$$x = -3$$

$$y = (-3) + 1$$

$$y = -2$$

$$(-3, -2)$$

$$\begin{aligned} 4. \quad y &= -x + 10 \\ y &= 5x - 2 \end{aligned}$$

$$\begin{array}{r} -x + 10 = 5x - 2 \\ +x \quad +x \\ \hline 10 = 6x - 2 \end{array}$$

$$\begin{array}{r} 10 = 6x - 2 \\ +2 \quad +2 \\ \hline 12 = 6x \end{array}$$

$$\frac{12}{6} = \frac{6x}{6}$$

$$2 = x$$

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

$$y = 10 - 2$$

$$y = 8$$

$$(2, 8)$$

$$\begin{aligned} 5. \quad y &= 2x - 3 \\ y &= 4x + 7 \end{aligned}$$

$$\begin{array}{r} 2x - 3 = 4x + 7 \\ -2x \quad -2x \\ \hline -3 = 2x + 7 \end{array}$$

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

$$\frac{-10}{2} = \frac{2x}{2}$$

$$x = -5$$

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

$$y = -10 - 3$$

$$y = -13$$

$$(-5, -13)$$

$$\begin{aligned} 6. \quad y &= -3x + 8 \\ y &= 6x - 19 \end{aligned}$$

$$\begin{array}{r} -3x + 8 = 6x - 19 \\ +3x \quad +3x \\ \hline 8 = 9x - 19 \end{array}$$

$$\begin{array}{r} 8 = 9x - 19 \\ +19 \quad +19 \\ \hline 27 = 9x \end{array}$$

$$\frac{27}{9} = \frac{9x}{9}$$

$$3 = x$$

$$y = 6(3) - 19$$

$$y = 18 - 19$$

$$y = -1$$

$$(3, -1)$$