

Warm Up Questions

1. $x = 3 - 2y$
 $4x + 9y = 16$

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

3. $-7x + 7y = 21$
 $2y = 16 + 4x$

$$1. \quad x = 3 - 2y \quad \textcircled{1}$$

$$4x + 9y = 16 \quad \textcircled{2}$$

$$4x + 9y = 16$$

$$4(3 - 2y) + 9y = 16$$

$$12 - 8y + 9y = 16$$

$$\textcircled{1a} + 1y = 16 - 12$$

$$y = 4$$

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

$$x = 3 - 8$$

$$x = -5$$

Point of Intersection $\begin{matrix} x, y \\ (-5, 4) \end{matrix}$

$$\begin{array}{l} 2. \quad y = -6 - 2x \quad \textcircled{1} \\ \quad \quad 4x + 3y = -2 \quad \textcircled{2} \end{array}$$

$$\begin{aligned} 4x + 3y &= -2 \\ 4x + 3(-6 - 2x) &= -2 \\ 4x - 18 - 6x &= -2 \\ -2x - 18 &= -2 \\ -2x &= 16 \\ \frac{-2x}{-2} &= \frac{16}{-2} \\ x &= -8 \end{aligned}$$

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$$\begin{aligned} y &= -6 - 2(-8) \\ y &= -6 + 16 \\ y &= 10 \end{aligned}$$

$$(-8, 10)$$

$$\begin{aligned} 3. \quad & -7x + 7y = 21 \quad \textcircled{1} \\ & \underline{\underline{2y = 16 + 4x}} \quad \textcircled{2} \end{aligned}$$

Rearrange $\textcircled{2}$

$$\frac{2y}{2} = \frac{16}{2} + \frac{4x}{2}$$
$$y = \underline{\underline{8 + 2x}} \quad \textcircled{2}$$

$$-7x + 7y = 21 \quad \textcircled{1}$$

$$-7x + 7(8 + 2x) = 21$$

$$-7x + 56 + 14x = 21$$

$$7x + 56 = 21 - 56$$

$$\frac{7x}{7} = \frac{-35}{7}$$

$$x = -5$$

$$(-5, -2)$$

Sub in $\textcircled{2}$

$$y = 8 + 2(-5)$$

$$y = 8 - 10$$

$$y = -2$$