

Name: _____ Date: _____

Hour: _____ Assignment: _____

Sequencing: Solving Systems of Equations by Elimination (Addition)

Put in order the given steps used to solve the system.

$$7x + 3y = 21$$

$$-7x + y = 15$$

Show	Step
$\begin{array}{r} 7x + 3y = 21 \\ -7x + y = 15 \end{array}$	Line up the x and y terms
$\begin{array}{r} 7x + 3y = 21 \\ -7x + y = 15 \\ + \hline 0x + 4y = 36 \end{array}$	Add the two equations together
$\begin{array}{r} 4 \quad 36 \\ \frac{4}{4}y = \frac{36}{4} \\ y = 9 \end{array}$	Divide by 4
$\begin{array}{r} -7x + 9 = 15 \\ -7x = 6 \\ -7x = 6 \\ \quad \quad -6 \\ x = \frac{-6}{7} \end{array}$	Plug in 9 for y and solve for x
$\begin{array}{ll} 7x + 3y = 21 & -7x + y = 15 \\ 7\left(\frac{-6}{7}\right) + 3(9) = 21 & -7\left(\frac{-6}{7}\right) + 9 = 15 \\ -6 + 27 = 21 & 6 + 9 = 15 \\ 21 = 21 & 15 = 15 \end{array}$ $\left(\frac{-6}{7}, 9\right)$	Check your answer

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$\begin{array}{r} 7x + 3y = 21 \\ -7x + y = 15 \end{array}$	
$\begin{array}{r} 7x + 3y = 21 \\ -7x + y = 15 \\ + \hline 0x + 4y = 36 \end{array}$	
$\begin{array}{r} \frac{4}{4}y = \frac{36}{4} \\ y = 9 \end{array}$	
$\begin{array}{r} -7x + 9 = 15 \\ -7x = 6 \\ -7x = 6 \\ \quad \quad \quad -6 \\ x = \frac{-6}{7} \end{array}$	
$\begin{array}{ll} 7x + 3y = 21 & -7x + y = 15 \\ 7\left(\frac{-6}{7}\right) + 3(9) = 21 & -7\left(\frac{-6}{7}\right) + 9 = 15 \\ -6 + 27 = 21 & 6 + 9 = 15 \\ 21 = 21 & 15 = 15 \end{array}$ $\left(\frac{-6}{7}, 9\right)$	

Line up the x and y terms

Plug in 9 for y and solve for x

Check your answer

Add the two equations together

Divide by 4

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Put in order the given steps used to solve the system.

$$-4x + 2y = 8$$

$$4x + y = 1$$

Show	Step
$\begin{array}{r} -4x + 2y = 8 \\ 4x + y = 1 \end{array}$	Line up the x and y terms
$\begin{array}{r} -4x + 2y = 8 \\ 4x + y = 1 \\ + \hline 0x + 3y = 9 \end{array}$	Add the two equations together
$\begin{array}{r} \frac{3}{3}y = \frac{9}{3} \\ y = 3 \end{array}$	Divide by 3
$\begin{array}{r} 4x + 3 = 1 \\ \frac{4}{4}x = \frac{-2}{4} \\ x = \frac{-1}{2} \end{array}$	Plug in 3 for y and solve for x
$\begin{array}{l} 4x + y = 1 \qquad -4x + 2(3) = 8 \\ 4\left(\frac{-1}{2}\right) + (3) = 1 \qquad -4\left(\frac{-1}{2}\right) + 6 = 8 \\ -2 + 3 = 1 \qquad 2 + 6 = 8 \\ 1 = 1 \qquad 8 = 8 \\ \qquad \qquad \qquad \left(\frac{-1}{2}, 3\right) \end{array}$	Check your answer

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Put in order the given steps used to solve the system.

$$-4x + 2y = 8$$

$$4x + y = 1$$

Show	Step
	Line up the x and y terms
	Add the two equations together
	Divide by 3
	Plug in 3 for y and solve for x
	Check your answer

$$\begin{aligned} -4x + 2y &= 8 \\ 4x + y &= 1 \end{aligned}$$

$$\begin{aligned} -4x + 2y &= 8 \\ 4x + y &= 1 \\ + \hline 0x + 3y &= 9 \end{aligned}$$

$$\begin{aligned} 4x + 3 &= 1 \\ \frac{4}{4}x &= \frac{-2}{4} \quad 4x = -2 \\ x &= \frac{-1}{2} \end{aligned}$$

$$\begin{aligned} 4x + y &= 1 & -4x + 2(3) &= 8 \\ 4\left(\frac{-1}{2}\right) + (3) &= 1 & -4\left(\frac{-1}{2}\right) + 6 &= 8 \\ -2 + 3 &= 1 & 2 + 6 &= 8 \\ 1 &= 1 & 8 &= 8 \end{aligned}$$

$\left(\frac{-1}{2}, 3\right)$

$$\begin{aligned} \frac{3}{3}y &= \frac{9}{3} \\ y &= 3 \end{aligned}$$

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Put in order the given steps used to solve the system.

$$x + 2y = 6 \qquad 4x - 2y = 14$$

Show	Step
$\begin{array}{r} x + 2y = 6 \\ 4x - 2y = 14 \end{array}$	Line up the x and y terms
$\begin{array}{r} x + 2y = 6 \\ 4x - 2y = 14 \\ + \hline 5x + 0y = 20 \end{array}$	Add the two equations together
$\begin{array}{r} 5 \quad 20 \\ \frac{5}{5}x = \frac{20}{5} \\ x = 4 \end{array}$	Divide by 5
$\begin{array}{r} 4 + 2y = 6 \\ 2y = 2 \\ \frac{2}{2}y = \frac{2}{2} \\ y = 1 \end{array}$	Plug in 4 for x and solve for y
$\begin{array}{ll} x + 2y = 6 & 4x - 2y = 14 \\ 4 + 2(1) = 6 & 4(4) - 2(1) = 14 \\ 4 + 2 = 6 & 16 - 2 = 14 \\ 6 = 6 & 14 = 14 \\ & (4,1) \end{array}$	Check your answer

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Put in order the given steps used to solve the system.

$$x + 2y = 6 \qquad 4x - 2y = 14$$

Show	Step

<p>Check your answer</p>	$\begin{array}{r} x + 2y = 6 \\ 4x - 2y = 14 \\ + \hline 5x + 0y = 20 \end{array}$
$\begin{array}{r} x + 2y = 6 \\ 4x - 2y = 14 \end{array}$	<p>Divide by 5</p>
<p>Plug in 4 for x and solve for y</p>	$\begin{array}{r} x + 2y = 6 \\ 4 + 2(1) = 6 \\ 4 + 2 = 6 \\ 6 = 6 \end{array} \qquad \begin{array}{r} 4x - 2y = 14 \\ 4(4) - 2(1) = 14 \\ 16 - 2 = 14 \\ 14 = 14 \end{array}$ <p>(4,1)</p>
<p>Line up the x and y terms</p>	$\begin{array}{r} 4 + 2y = 6 \\ 2y = 2 \\ \frac{2}{2}y = \frac{2}{2} \\ y = 1 \end{array}$
$\begin{array}{r} \frac{5}{5}x = \frac{20}{5} \\ x = 4 \end{array}$	<p>Add the two equations together</p>