4. Algebra 1: Systems of Linear Equations
Assignment

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No.	Study Guide	Assignment
1	$5x - 2 = -6x + 20$ $+6x \quad +6x$ $11x - 2 = 20$ $+2 \quad +2$ $11x = 22$ $\dfrac{11}{11} \quad \dfrac{22}{11}$ $\boxed{x = 2}$	$x - 1 = 5x + 15$ $-x \quad -x$ $-1 = 4x + 15$ $-15 \quad -15$ $-16 = 4x$ $\dfrac{-16}{4} \quad \dfrac{4x}{4}$ $\boxed{-4 = x}$
2	Solve by graphing $\begin{cases} y = -\dfrac{1}{2}x - 3 \\ y = x + 3 \end{cases}$ $m = -\frac{1}{2}\ b = -3$ $m = \frac{1}{1}\ b = 3$ $(-4, -1)$ Solution:	$\begin{cases} y = 2x - 1 \\ y = -x - 4 \end{cases}$ $m = \frac{2}{1}\ b = -1$ $m = -\frac{1}{1}$ $b = 4$ $(-1, -3)$ Solution:
3	$\begin{cases} 6x + 10y = -23 \\ -6x - 10y = 16 \end{cases}$ $0 = -7$ NO SOLUTION	$\begin{cases} -2x + y = 3 \\ 2x + y = -3 \end{cases}$ $0 = 0$ INFINITELY MANY SOLUTIMS

4	$3\begin{pmatrix}5x - 3y = -14\end{pmatrix}3$ $\begin{pmatrix}-15x - 4y = 3\end{pmatrix}$ $15x - 9y = -42$ $\dfrac{-13y}{-13} = \dfrac{-39}{-13}$ $\boxed{y = 3}$ Substitute in eqn ① $5x - 3(3) = -14$ $5x - 9 = -14$ $\quad +9 \quad +9$ $\dfrac{5x}{5} = \dfrac{-5}{5} \quad x = -1$ $(-1, 3)$	$2\begin{pmatrix}3x - 7y = 15\end{pmatrix}2$ $\begin{pmatrix}2x + 14y = 10\end{pmatrix}$ $6x - 14y = 30$ $\dfrac{8x}{8} = \dfrac{40}{8}$ $\boxed{x = 5}$ Substitute $x = 5$ in ② $2(5) + 14y = 10$ $10 + 14y = 10$ $-10 \qquad -10$ $\dfrac{14y}{14} = \dfrac{0}{14} \quad y = 0$ $(5, 0)$
5	$3\begin{pmatrix}3x + 2y = -5\end{pmatrix}3$ $\begin{pmatrix}-4x - 6y = 10\end{pmatrix}$ $9x + 6y = -15$ $\dfrac{5x}{5} = \dfrac{-25}{5}$ $x = -5$ Subst. $x = -5$ in eqn ① $3(-5) + 2y = -5$ $-15 + 2y = -5$ $+15 \qquad +15$ $\dfrac{2y}{2} = \dfrac{10}{2} \quad y = 5$ $(-5, 5)$	$2\begin{pmatrix}4x - 3y = 3\end{pmatrix}2$ $\begin{pmatrix}-8x + 6y = -6\end{pmatrix}$ $8x - 6y = 6$ $0 = 0$. Many Solutions

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