Assignment 6.2_1	**Period (circle one):** 5 7	**Date:** 1/20/15	**Name:** Key

4 steps

Solve the system of equations by substitution. Determine whether the system is consistent or inconsistent.

(1) $3x - 2y = 9$

$-3x \quad -3x$

$\frac{-2y}{-2} = \frac{-3x}{-2} + \frac{9}{-2}$

$y = \frac{3}{2}x - \frac{9}{2}$ ✓

(2) $\begin{cases} y = 3x - 7 \\ 3x - 2y = 9 \end{cases}$ ✓

$2 \cdot (3x - 7 = \frac{3}{2}x - \frac{9}{2})$

$6x - 14 = 3x - 9$

$-3x \quad -3x$

$3x - 14 = -9$

$+14 \quad +14$

$\frac{3x}{3} = \frac{5}{3}$

$x = \frac{5}{3}$ or $1.\overline{6}$

(3) $y = 3x - 7$

$y = 3(\frac{5}{3}) - 7$

$y = \frac{15}{3} - 7$

$y = 5 - 7$

$y = -2$

everything is lined up

(4) $(1.\overline{6}, -2)$

Solve the system of linear equations using the linear combinations method.

$+ \begin{cases} 2x - 3y = 12 \\ -5x + 3y = 15 \end{cases}$

$-3x = 27$

$\frac{-3x}{-3} = \frac{27}{-3}$

$x = -9$

* This method only works if both equations are "lined up"
* One of the variables must be opposites

$2x - 3y = 12$

$2(-9) - 3y = 12$

$-18 - 3y = 12$

$+18 \quad +18$

$+18$

$\frac{-3y}{-3} = \frac{30}{-3}$

$y = -10$

once you have x, plug in to find y

write the solution

$(-9, -10)$

the xs are opposites

$+ \begin{cases} -x + 17y = 127 \\ x - 12y = -62 \end{cases}$

$\frac{5y}{5} = \frac{55}{5}$

$y = 11$

$x - 12y = -62$

$x - 12(11) = -62$

$x - 132 = -62$

$+132 \quad +132$

$x = 70$

$(70, 11)$