Hw: worksheet
Systems of Equations by Substitution #1-13 (odds)

1.) $y = 3x$ AS
$5x + 2y = 44$
$5x + 2(3x) = 44$
$5x + 6x = 44$
$\frac{11x}{11} = \frac{44}{11}$
$x = 4$
$y = 3x$
$y = 3(4)$
$y = 12$
Solution
$(x, y) \rightarrow (4, 12)$

3.) $y = 2x + 7$ AS
$3x - y = -9$
$3x - (2x + 7) = -9$
$3x - 2x - 7 = -9$
$x - 7 = -9$
$+7 \quad +7$
$x = -2$
$y = 2x + 7$
$y = 2(-2) + 7$
$y = -4 + 7$
$y = 3$
Solution
(x, y)
$(-2, 3)$

5.) $y = 6x - 5$ Know
$y = -x + 9$
$6x - 5 = -x + 9$
$+x \quad +x$
$7x - 5 = 9$
$+5 \quad +5$
$\frac{7x}{7} = \frac{14}{7}$
$x = 2$
$y = -x + 9$
$y = -2 + 9$
$y = 7$
Solution
(x, y)
$(2, 7)$

7.) $x - y = 11 \rightarrow x = y + 11$
$3x + 10y = -6$
$3(y + 11) + 10y = -6$
$3y + 33 + 10y = -6$
$13y + 33 = -6$
$-33 \quad -33$
$\frac{13y}{13} = \frac{-39}{13}$
$y = -3$
$x - y = 11$
$x - (-3) = 11$
$x + 3 = 11$
$-3 \quad -3$
$x = 8$
Solution
(x, y)
$(8, -3)$
was

9.) $x + y = 1 \rightarrow y = -x + 1$

first $5x - 4y = -7$

$5x - 4(-x+1) = -7$

$5x + 4x - 4 = -7$

$9x - 4 = -7$

$+4 \quad +4$

$\frac{9x}{9} = \frac{-3}{9}$

$x = -\frac{1}{3}$

$x + y = 1$

$(-\frac{1}{3}) + y = 1$

$+\frac{1}{3} \quad +\frac{1}{3}$

$y = \frac{4}{3}$

(x, y) solution

$(-\frac{1}{3}, \frac{4}{3})$

11.) $x + 9y = -1 \rightarrow x = -9y - 1$

$2x + 4y = 5$

dressed

$2(-9y-1) + 4y = 5$

$-18y - 2 + 4y = 5$

$-14y - 2 = 5$

$+2 \quad +2$

$\frac{-14y}{-14} = \frac{7}{-14}$

$y = -\frac{1}{2}$

$x + 9y = -1$

$x + 9(-\frac{1}{2}) = -1$

$x - 4.5 = -1$

$+4.5 \quad +4.5$

$x = 3.5$

$\frac{7}{2}$

(x, y)

$(\frac{7}{2}, -\frac{1}{2})$

13) Let statements

x = # 3 pts problems

y = # 4 pts problems

$x + y = 30$ problems $\rightarrow y = -x + 30$

$3x + 4y = 100$ points

$3x + 4(-x + 30) = 100$

$3x - 4x + 120 = 100$

$-x + 120 = 100$

$-120 \quad -120$

$\frac{-x}{-1} = \frac{-20}{-1}$

$x = 20$

$x + y = 30$

$20 + y = 30$

$-20 \quad -20$

$y = 10$

solution

There are 10 4 pt problems