

HW: Systems by Substitution

#s 1-13 (odds)

1/24

9

1.) $y = 3x$
 $5x + 2y = 44$

$$5x + 2(3x) = 44$$

$$5x + 6x = 44$$

$$\frac{11x}{11} = \frac{44}{11}$$

$$x = 4$$

$$y = 3x$$

$$y = 3(4)$$

$$y = 12$$

1 solution
 (4, 12)
 x y

AS

5.) $y = 6x - 5$
 $y = -x + 9$

$$6x - 5 = -x + 9$$

$$+1x \quad +1x$$

$$7x - 5 = 9$$

$$+5 \quad +5$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$x = 2$$

$$y = -(2) + 9 \text{ known}$$

$$y = 7 \quad x, y$$

1 solution (2, 7)

3.) $y = 2x + 7$
 $3x - y = -9$

$$3x - (2x + 7) = -9$$

$$3x - 2x - 7 = -9$$

$$x - 7 = -9$$

$$+x \quad +7$$

$$x = -2$$

$$3x - y = -9$$

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

$$-6 - y = -9$$

$$+6 \quad +6$$

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

AS

1 solution $y = 3$
 (-2, 3)
 x y

7.) $x - y = 11 \rightarrow x = y + 11$
 $3x + 10y = -6$

$$3(y + 11) + 10y = -6$$

$$3y + 33 + 10y = -6$$

$$13y + 33 = -6$$

$$-33 \quad -33$$

$$\frac{13y}{13} = \frac{-39}{13}$$

$$y = -3$$

$$3x + 10(-3) = -6$$

$$3x - 30 = -6$$

$$+30 \quad +30$$

$$\frac{3x}{3} = \frac{24}{3}$$

$$x = 8$$

was

(8, -3) 1 solution
 x, y

9) $x + y = 1 \rightarrow y = -x + 1$ 13) let

$5x - 4y = -7$

$x = 3$ pt questions

$y = 4$ pt questions

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

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

$9x - 4 = -7$

$+4 +4$

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

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

$x + y = 30$
 $3x + 4y = 100$

get y by itself
 $y = -x + 30$

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

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

$3x - 4x + 120 = 100$

$-1x + 120 = 100$

$-120 -120$

$-x = -20$
 $-1 -1$

$x = 20$

First

1 solution

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

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

$x + y = 30$

$20 + y = 30$

$y = 10$

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

$2x + 4y = 5$

10-4 pt questions

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

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

$-14y - 2 = 5$

$+2 +2$

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

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

$(20, 10)$
 x y

dressa
 1 solution

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

$x - 4.5 = -1$

$+4.5 +4.5$

$x = 3.5$

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