

HW: Worksheet/7-12, 14

Warm up:

substitution

Solve the system of equations.

$$x = 5$$

$$x + y = 12$$

$$\begin{array}{r} 5 + y = 12 \\ -5 = -5 \\ \hline y = 7 \end{array}$$

$$\begin{array}{l} x = 5 \\ y = 7 \end{array}$$

$$\begin{aligned} y &= 3x \\ x + y &= 8 \\ x + 3x &= 8 \\ 4x &= 8 \\ \frac{4x}{4} &= \frac{8}{4} \\ x &= 2 \\ 2 + y &= 8 \\ \frac{-2}{-2} &= \frac{-2}{-2} \\ y &= 6 \end{aligned}$$

$$3(2) = 6$$

$$\begin{aligned} x &= 2 \\ y &= 6 \end{aligned}$$

$$\begin{aligned} y &= 2x \\ 5x - y &= 30 \\ 5x - 2x &= 30 \\ \frac{3x}{3} &= \frac{30}{3} \\ \hline x &= 10 \end{aligned}$$

$$2(10) = 20$$

$$\begin{aligned} x &= 10 \\ y &= 20 \end{aligned}$$

$$y = x - 2$$

$$7 - 2 = 5$$

$$x + y = 12$$

$$x + (x - 2) = 12$$

$$x + x - 2 = 12$$

$$2x - 2 = 12$$

$$2x = 14$$

$$x = 7$$

$$\begin{matrix} x = 7 \\ y = 5 \end{matrix}$$

$$a = 5b - 1$$

$$b - a = 13$$

$$b - (5b - 1) = 13$$

$$b - 5b + 1 = 13$$

$$-4b + 1 = 13$$

$$-1 \quad -1$$

$$-4b = 12$$

$$\frac{-4}{-4} \quad \frac{12}{-4}$$

$$b = -3$$

$$5(-3) - 1$$

$$-15 - 1$$

$$-16$$

$$a = -16$$

$$b = -3$$

$$3x + 2y = 10$$

$$x + y = 10$$

$$\begin{array}{r} -y \quad -y \\ \hline \end{array}$$

$$x = 10 - y$$

$$\begin{array}{r} 10 - 20 \\ -10 \end{array}$$

$$\begin{array}{l} x = -10 \\ y = 20 \end{array}$$

$$3(10 - y) + 2y = 10$$

$$30 - 3y + 2y = 10$$

$$\begin{array}{r} 30 - y = 10 \\ -30 \quad -30 \end{array}$$

$$\begin{array}{r} -y = -20 \\ \hline -1 \quad -1 \\ \hline y = 20 \end{array}$$

$$4a + 3b = 1$$

$$3a - b = 4$$

$$\begin{array}{r} -3a \quad -3a \\ \hline -b = 4 - 3a \\ \hline -1 \quad -1 \end{array}$$

$$\hline b = -4 + 3a$$

$$\begin{aligned} 1) \quad d &= 4c \\ c + d &= 20 \end{aligned}$$

$$\begin{aligned} 4) \quad 3a &= 2b - 6 \\ a &= b - 1 \end{aligned}$$

$$\begin{aligned} 2) \quad s &= t + 2 \\ 2t + s &= 17 \end{aligned}$$

$$\begin{aligned} 5) \quad 4f - 3h &= 0 \\ f + 4h &= 19 \end{aligned}$$

$$\begin{aligned} 3) \quad 3x + 1 &= y \\ 2x + 3y &= 25 \end{aligned}$$

$$\begin{aligned} 6) \quad 3y - x &= -9 \\ 2y + 5x &= 11 \end{aligned}$$

$$\begin{aligned} 1) \quad d &= 4c && 4 \cdot 4 = 16 \\ c + d &= 20 \\ c + 4c &= 20 \\ \frac{5c}{5} &= \frac{20}{5} \\ c &= 4 \end{aligned}$$

$c = 4$
 $d = 16$

$$2) s = t + 2$$

$$2t + s = 17$$

$$5 + 2 = 7$$

$$\begin{matrix} s = 7 \\ t = 5 \end{matrix}$$

$$2t + (t + 2) = 17$$

$$\underline{2t} + \underline{t} + 2 = 17$$

$$3t + 2 = 17$$

$$\underline{-2} \quad \underline{-2}$$

$$\underline{3t = 15}$$

$$\underline{\quad} \quad \underline{\quad}$$

$$t = 5$$

$$3(2) + 1$$

$$6 + 1$$

$$7$$

$$x = 2$$

$$y = 7$$

$$3) 3x + 1 = y$$

$$2x + 3y = 25$$

$$2x + 3(3x + 1) = 25$$

$$2x + 9x + 3 = 25$$

$$11x + 3 = 25$$

$$11x = 22$$

$$x = 2$$

$$4) 3a = 2b - 6$$

$$a = b - 1$$

$$\begin{array}{r}
 3(b-1) = 2b - 6 \\
 3b - 3 = 2b - 6 \\
 \underline{-2b} \quad \quad \underline{-2b} \\
 b - 3 = -6 \\
 \quad \quad \quad \underline{+3 \quad +3} \\
 \underline{\quad \quad \quad} \\
 b = -3
 \end{array}$$

$$-3 - 1 = -4$$

$$\begin{array}{l}
 a = -4 \\
 b = -3
 \end{array}$$

$$5) \begin{aligned} 4f - 3h &= 0 \\ f + 4h &= 19 \end{aligned}$$

$$6) \begin{cases} 3y - x = -9 \\ 2y + 5x = 11 \end{cases}$$

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