

HW: Worksheet/6-9,11

Warm up:

Solve using substitution.

1) $3a - 5b = -5$

2) $2x - y = 13$

$$b = 2a - 6$$

$$3a - 5(2a - 6) = -5$$

$$3a - 10a + 30 = -5$$

$$-7a + 30 = -5$$

$$\begin{array}{r} 2(5) - 6 \\ 10 - 6 \\ \hline 4 \end{array}$$

$$\begin{array}{r} -7a + 30 = -5 \\ -30 \quad +30 \\ \hline -7a = -35 \\ \hline a = 5 \end{array}$$

$$\begin{array}{l} a = 5 \\ b = 4 \end{array}$$

$$a = 5$$

$$4x + 3y = 11$$

$$\begin{array}{r} 2x - y = 13 \\ -2x \quad -2x \\ \hline -y = 13 - 2x \\ \hline y = -13 + 2x \end{array}$$

$$\begin{array}{r} y = -13 + 2x \\ -13 + 2(5) \\ -13 + 10 \\ \hline -3 \end{array}$$

$$4x + 3(-13 + 2x) = 11$$

$$4x - 39 + 6x = 11$$

$$10x - 39 = 11$$

$$\begin{array}{r} +39 \quad +39 \\ \hline 10x = 50 \\ \hline 10 \quad 10 \\ \hline x = 5 \end{array}$$

$$x = 5$$

$$x = 5$$

$$x = 5$$

$$\begin{array}{l} x = 5 \\ y = -3 \end{array}$$

HW Solutions

10

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

$$\begin{aligned} x &= 4 \\ y &= 1 \end{aligned}$$

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

$5 - 1$
 4

$$\begin{array}{r} 3(5 - y) - 2y = 10 \\ 15 - 3y - 2y = 10 \\ 15 - 5y = 10 \\ -15 \quad -15 \\ \hline -5y = -5 \\ \frac{-5y}{-5} = \frac{-5}{-5} \\ y = 1 \end{array}$$

$$\begin{array}{r} 3 = 3 \\ + X \quad + 5 \\ \hline 3 + X = 8 \end{array}$$

$$X = 5$$

$$\begin{array}{r} 3 = 3 \\ + (X = 5) \\ \hline 3 + X = 8 \end{array}$$

$$\begin{array}{r} x + y = 7 \\ + (x - y = 3) \\ \hline 2x = 10 \\ \hline x = 5 \end{array}$$

$x = 5$

$$\begin{array}{r} 5 + y = 7 \\ -5 \quad -5 \\ \hline y = 2 \end{array}$$

$x = 5$
 $y = 2$

$$\begin{array}{r}
 3n - 2t = 16 \\
 + (5n + 2t = 8) \\
 \hline
 \end{array}$$

$$\frac{8n}{8} = \frac{24}{8}$$

$$n = 3$$

$$\begin{array}{l}
 n = 3 \\
 t = -\frac{1}{2}
 \end{array}$$

$$\begin{array}{r}
 15 + 2t = 8 \\
 \hline
 2t = -7 \\
 \hline
 t = -\frac{7}{2}
 \end{array}$$

$$12n + 3m = 18$$

$$- (5n + 3m = 4)$$

$$\hline 7n = 14$$

$$10 + 3m = 4 \quad n = 2$$

$$\hline -10 \quad -10$$

$$\frac{3m}{3} = \frac{-6}{3}$$

$$\hline m = -2$$

$$\begin{aligned} m &= -2 \\ n &= 2 \end{aligned}$$

$$\begin{array}{r}
 \cancel{6p} - 7q = 28 \\
 + (-\cancel{6p} + 3q = -12) \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 -4q = 16 \\
 \hline
 -4 \quad -4
 \end{array}$$

$$\begin{array}{r}
 -6p - 12 = -12 \\
 +12 \quad +12 \\
 \hline
 -6p = 0 \\
 \hline
 -6 \quad -6 \\
 \hline
 p = 0
 \end{array}$$

$$\begin{array}{r}
 q = -4 \\
 \hline
 p = 0 \\
 q = -4
 \end{array}$$

$$\begin{array}{r}
 12p - 18q = 14 \\
 - (-15p - 18q = -4) \\
 \hline
 27p = 18
 \end{array}$$

$14 - (-4)$
 $14 + 4$

$$42\left(\frac{2}{3}\right) - 18q = 14 \quad p = \frac{2}{3}$$

$$8 - 18q = 14$$

$$\frac{-8}{-18} = \frac{6}{-18} \quad q = -\frac{1}{3}$$

$$\begin{array}{l}
 p = \frac{2}{3} \\
 q = -\frac{1}{3}
 \end{array}$$

$$\begin{aligned} 1) \quad a - 2b &= 0 \\ a + 2b &= 12 \end{aligned}$$

$$\begin{aligned} 4) \quad 3p + 2q &= 19 \\ 3p - 5q &= 5 \end{aligned}$$

$$\begin{aligned} 2) \quad x - 5y &= 1 \\ 2x + 5y &= 17 \end{aligned}$$

$$\begin{aligned} 5) \quad 3a - 5b &= 31 \\ 7a - 5b &= 59 \end{aligned}$$

$$\begin{aligned} 3) \quad 3s + 4t &= 18 \\ -2s + 4t &= 8 \end{aligned}$$

$$\begin{aligned} 6) \quad -3x + 5y &= 45 \\ 3x + 13y &= 9 \end{aligned}$$

$$1) a - 2b = 0$$

$$+ (a + 2b = 12)$$

$$\begin{array}{r} 2a = 12 \\ \hline a = 6 \end{array}$$

$$\begin{array}{r} 6 + 2b = 12 \\ \hline 2b = 6 \\ \hline b = 3 \end{array}$$

$$\begin{array}{l} a = 6 \\ b = 3 \end{array}$$

$$\begin{array}{r} 2) \quad x - 5y = 1 \\ + (2x + 5y = 17) \\ \hline 3x = 18 \\ \hline x = 6 \end{array}$$

$$\begin{array}{r} 6 - 5y = 1 \\ -6 \quad -6 \\ \hline -5y = -5 \\ \hline y = 1 \end{array}$$

$$\begin{array}{l} x = 6 \\ y = 1 \end{array}$$

$$\begin{array}{r} 3) \quad 3s + 4t = 18 \\ - \quad (-2s + 4t = 8) \\ \hline 5s = 10 \\ \hline s = 2 \end{array}$$

$$\begin{array}{r} -4 + 4t = 8 \\ +4 \quad +4 \\ \hline 4t = 12 \\ \hline t = 3 \end{array}$$

$$\begin{array}{l} s = 2 \\ t = 3 \end{array}$$

$$4) \quad 3p + 2q = 19$$

$$3p - 5q = 5$$

$$5) \begin{aligned} 3a - 5b &= 31 \\ 7a - 5b &= 59 \end{aligned}$$

$$6) \begin{aligned} -3x + 5y &= 45 \\ 3x + 13y &= 9 \end{aligned}$$