

$$4 \left(\frac{3}{4}x + \frac{1}{2}y \right) = \left(\frac{1}{4} \right) \leftarrow$$

$$6 \left(\frac{2}{3}x + \frac{1}{6}y \right) = \left(\frac{1}{2} \right) \leftarrow$$

$$\begin{aligned} 3x + 2y &= 1 \\ 4x + y &= 3 \end{aligned}$$

HW:6.2/8, 16-22

Warm up:

In the first two games of the season a football team scored a total of 76 points. They scored 18 points more in the second game than they did in the first. How many points did they score in each game?

1st → 29 pts
2nd → 47 pts

$$f + f + 18 = 76$$

$$\begin{array}{r} 2f + 18 = 76 \\ -18 \quad -18 \\ \hline 2f = 58 \\ \frac{2f}{2} = \frac{58}{2} \end{array}$$

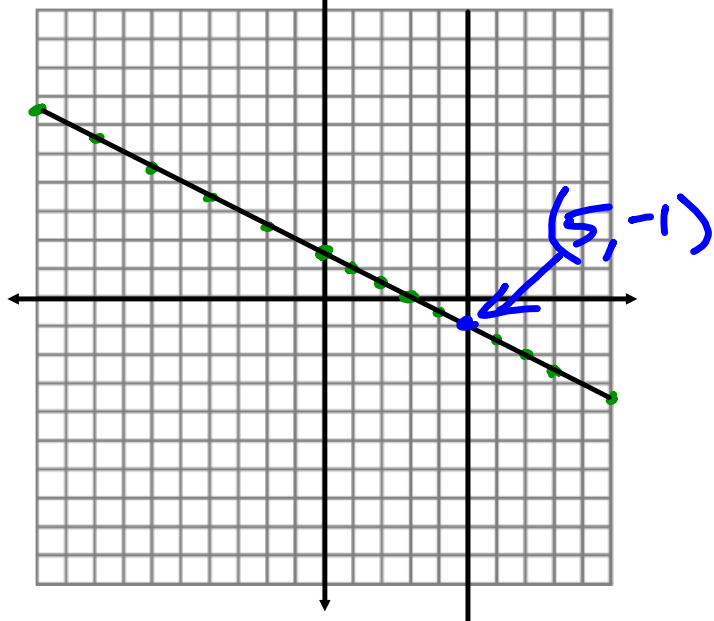
$$f = 29$$

$$f + s = 76$$

$$s = f + 18$$

HW Solutions

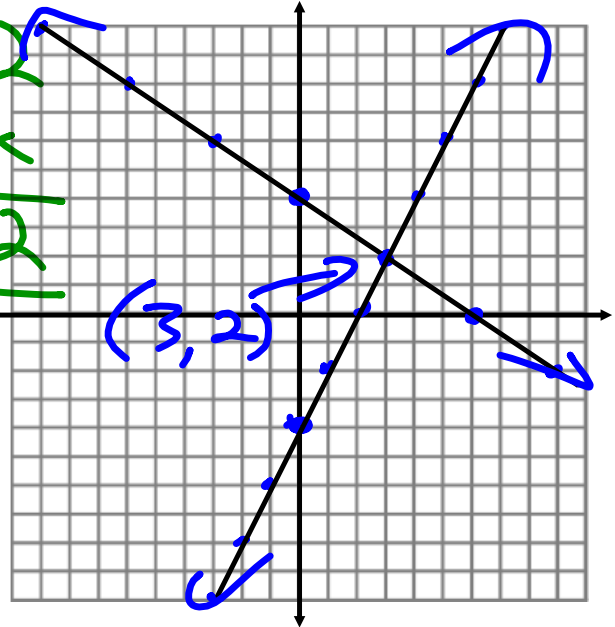
$$\begin{array}{r} \textcircled{2} \\ x + 2y = 3 \\ -x \quad -x \\ \hline 2y = -x + 3 \\ \frac{2y}{2} = \frac{-x + 3}{2} \\ \hline y = -\frac{1}{2}x + \frac{3}{2} \\ x = 5 \end{array}$$



$$\begin{array}{r}
 \text{Q2} \quad 2x + 3y = 12 \\
 -2x \qquad \qquad -2x \\
 \hline
 3y = -2x + 12 \\
 \frac{3y}{3} = \frac{-2x + 12}{3}
 \end{array}$$

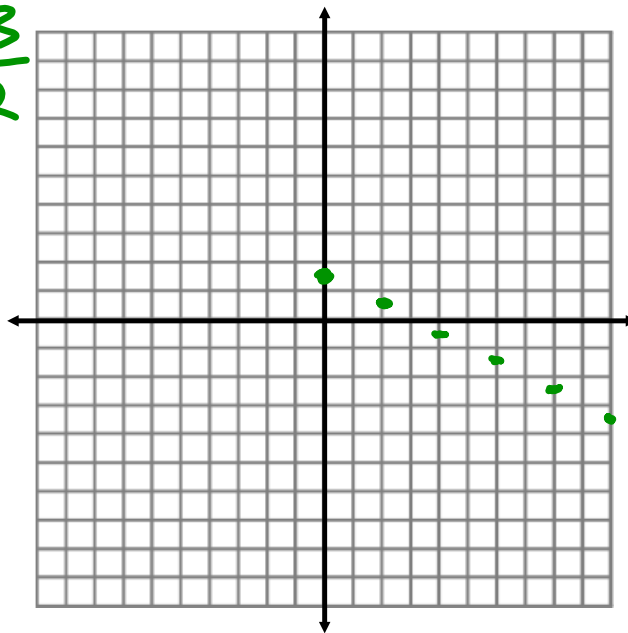
$$y = -\frac{2}{3}x + 4$$

$$\begin{array}{r}
 2x - y = 4 \\
 -2x \quad -2x \\
 \hline
 -y = -2x + 4 \\
 \frac{-y}{-1} = \frac{-2x + 4}{-1} \\
 \hline
 y = 2x - 4
 \end{array}$$



$$y = -\frac{1}{2}x + \frac{3}{2}$$

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



$$y = 3x$$

$$x + y = 8$$

$$x + 3x = 8$$

$$\frac{4x}{4} = \frac{8}{4}$$

$$x = 2$$

$$3(2) = 6$$

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

$$\begin{aligned} 2 + y &= 8 \\ -2 & \\ \hline y &= 6 \end{aligned}$$

$$y = x - 2$$

$$x + y = 12$$

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

$$x + x - 2 = 12$$

$$2x - 2 = 12$$

$$\frac{2x}{2} = \frac{14}{2}$$

$$x = 7$$

$$7 - 2 = 5$$

$$\begin{aligned} x &= 7 \\ y &= 5 \end{aligned}$$

$$3x + 2y = 10$$

$$x + y = 10$$

$$\begin{array}{r} -x \\ \hline y = 10 - x \end{array}$$

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

$$3x + 20 - 2x = 10$$

$$\begin{array}{r} x + 20 = 10 \\ -20 \quad -20 \\ \hline \end{array}$$

$$x = -10$$

$$10 - (-10) = 20$$

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

$$5a + 3b = 1$$

$$3a - b = 4$$

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

$$b = 3a - 4$$

$$\begin{array}{r} 3\left(\frac{13}{14}\right) - 4 \\ \frac{39}{14} - \frac{56}{14} = -\frac{17}{14} \end{array}$$

$$5a + 3(3a - 4) = 1$$

$$5a + 9a - 12 = 1$$

$$\begin{array}{r} 14a - 12 = 1 \\ +12 +12 \end{array}$$

$$\begin{array}{r} 14a = 13 \\ \hline 14 \quad 14 \end{array}$$

$$a = \frac{13}{14}$$

$$a = \frac{13}{14}$$

$$b = -\frac{17}{14}$$

$$c - d = 8$$

$$\left(\frac{c}{5}\right) = (d + 4)5$$

$$c = 5d + 20$$

$$\begin{aligned} 5(-3) + 20 \\ -15 + 20 \\ 5 \end{aligned}$$

$$5d + 20 - d = 8$$

$$4d + 20 = 8$$

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

$$\frac{4d}{4} = \frac{-12}{4}$$

$$d = -3$$

$$\begin{array}{l} c = 5 \\ d = -3 \end{array}$$

$$2\left(\frac{y}{2} + \frac{x}{2}\right) = (7) \cdot 2$$

$$y + x = 14$$

$$\begin{array}{r} -y \\ \hline x = 14 - y \end{array}$$

$$3y + 2x = 48$$

$$3y + 2(14 - y) = 48$$

$$3y + 28 - 2y = 48$$

$$y + 28 = 48$$

$$\begin{array}{r} -28 \\ \hline y = 20 \end{array}$$

$$14 - 20$$

$$-6$$

$$\begin{array}{l} x = -6 \\ y = 20 \end{array}$$

Solve using substitution.

$$1) \begin{cases} x = 2y + 3 \\ 2x - 3y = 4 \end{cases}$$

$$2) \begin{cases} x + y = 5 \\ 3x - 2y = 10 \end{cases}$$

$$3) \begin{cases} 6a - b = -5 \\ 4a - 3b = -8 \end{cases}$$

$$4) \begin{cases} \frac{a}{4} - b = -1 \\ a + b = 11 \end{cases}$$

$$5) \begin{cases} 2x - 4y = 18 \\ 3x + 7y = 1 \end{cases}$$

1) $x = 2y + 3$
 $2x - 3y = 4$

$x = 2(-2) + 3$
 $x = -4 + 3 = -1$

$$\begin{array}{r} 2(2y + 3) - 3y = 4 \\ 4y + 6 - 3y = 4 \\ y + 6 = 4 \\ \underline{-6 \quad -6} \\ y = -2 \end{array}$$

$x = -1$
 $y = -2$

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

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

$$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$$

$$\begin{array}{l} x = 4 \\ y = 1 \end{array}$$

$$3(5 - y) - 2y = 10$$

$$15 - 3y - 2y = 10$$

$$15 - 5y = 10$$

$$\begin{array}{r} -15 \\ \hline -5y = -5 \end{array}$$

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

$$y = 1$$

$$\begin{aligned} 3) \quad & 6a - b = -5 \\ & 4a - 3b = -8 \end{aligned}$$

$$4) \begin{cases} \frac{a}{4} - b = -1 \\ a + b = 11 \end{cases}$$

$$5) \quad 2x - 4y = 18$$

$$3x + 7y = 1$$

February 15, 2022

