

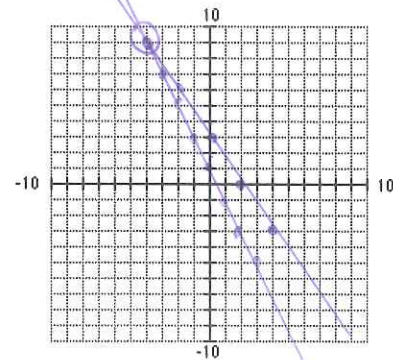
1. Solve the system below by *graphing it by hand* (graph at right)

$$\begin{cases} 6x + 4y = 12 \\ y = -2x + 1 \end{cases}$$

→ Solve for y to graph

$$\begin{aligned} 6x + 4y &= 12 \\ 4y &= 12 - 6x \\ y &= 3 - \frac{3}{2}x \end{aligned}$$

$(-4, 9)$



#2-3 Solve each system by using *substitution*

$$\begin{cases} x = 3y + 5 \\ 2x - 4y = 12 \end{cases}$$

$$\begin{aligned} 2(3y + 5) - 4y &= 12 \\ 6y + 10 - 4y &= 12 \\ 2y + 10 &= 12 \end{aligned}$$

$$\begin{aligned} x &= 3(1) + 5 \\ x &= 8 \end{aligned}$$

$$y = 1$$

$(8, 1)$

$$\begin{cases} a + b = 9 \\ 2a - 3b = 8 \end{cases}$$

$$\begin{aligned} 2(9 - b) - 3b &= 8 \\ 18 - 2b - 3b &= 8 \\ 18 - 5b &= 8 \end{aligned}$$

$$-5b = -10$$

$$\begin{aligned} b &= 2 \\ a &= 9 - 2 \\ a &= 7 \end{aligned}$$

$(7, 2)$

#4-5 Solve each system with the *elimination* or *Adding/Subtracting* method.

$$\begin{cases} 3x - 4y = -5 \\ -5x + 2y = 6 \end{cases} \cdot 2$$

$$\begin{aligned} + \quad -10x + 4y &= 12 \\ \hline -7x &= 7 \\ x &= -1 \end{aligned}$$

$$\begin{aligned} 3(-1) - 4y &= -5 \\ -4y &= -2 \\ y &= \frac{1}{2} \end{aligned}$$

$$\begin{cases} 5x - 2y = 11 \\ 15x - 6y = -20 \end{cases} \cdot (-3)$$

$$-15x + 6y = -33$$

$0 = 53$
No Solutions

#6-7, Solve each system using any method you choose.

$$\begin{cases} 3m - n = 7 \\ 2m - 3n = 1 \end{cases}$$

$m = 2.86$
 $n = 1.57$

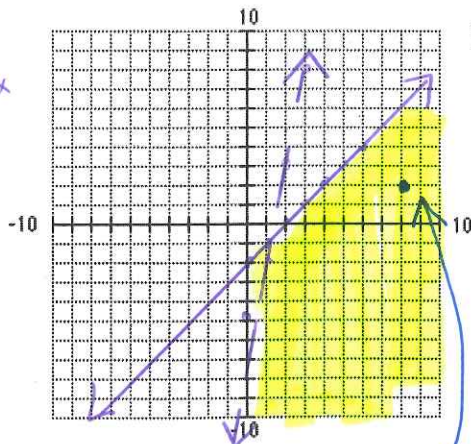
7. Two small pitchers and one large pitcher can hold 24 cups of water. One large pitcher minus one small pitcher constitutes 7.5 cups of water. How many cups can each pitcher hold?

$$\begin{aligned} 2S + 1L &= 24 \\ 1L - 1S &= 7.5 \end{aligned}$$

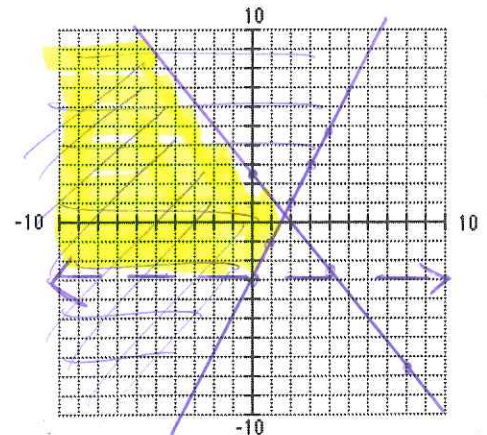
$L = 13.5 \text{ cups}$
 $S = 5.5 \text{ cups}$

#10-11, Graph the solutions to the systems of inequalities.

$$\begin{cases} -3x + y < -5 + 3x \\ 2 + y \leq x - 2 \end{cases}$$



$$\begin{cases} y \geq 2x - 3 \\ y < -\frac{5}{4}x + 2.5 \\ y > -3 \end{cases}$$



12. Is the point $(8, 2)$ a solution to the system from problem #10?

Yes $(8, 2)$ in shaded zone