

Homework 1.1

Date

Does the given point satisfy the system of equations.

1) Does $(-3, 3)$ satisfy:

$$-8x - 6y = 6$$

$$y = -7x - 18$$

$$\textcircled{1} -8(-3) - 6(3) = 6$$

$$24 - 18 = 6$$

$$6 = 6$$

✓

$$\textcircled{2} 3 = -7(-3) - 18$$

$$3 = 21 - 18$$

$$3 = 3$$

✓

Satisfies!!

2) Does $(-7, 7)$ satisfy:

$$-x - 2y = 21$$

$$5x + 9y = 21$$

$$\textcircled{1} -(-7) - 2(7) = 21$$

$$7 - 14 = 21$$

$$-7 = 21$$

✗

$$\textcircled{2} 5(-7) + 9(7) = 21$$

$$-35 + 63 = 21$$

$$28 = 21$$

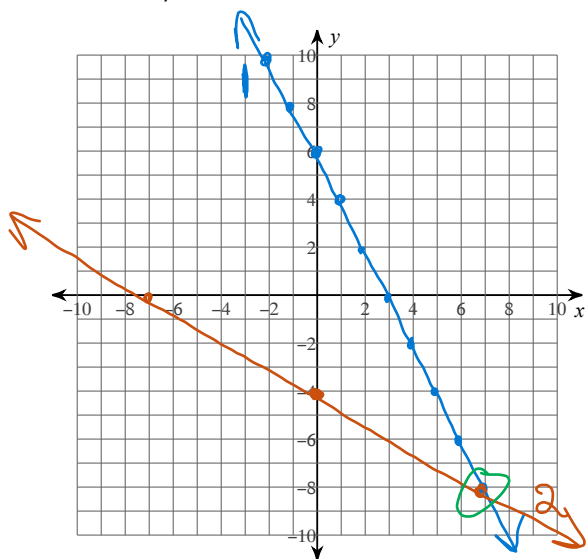
✗

Does not satisfy

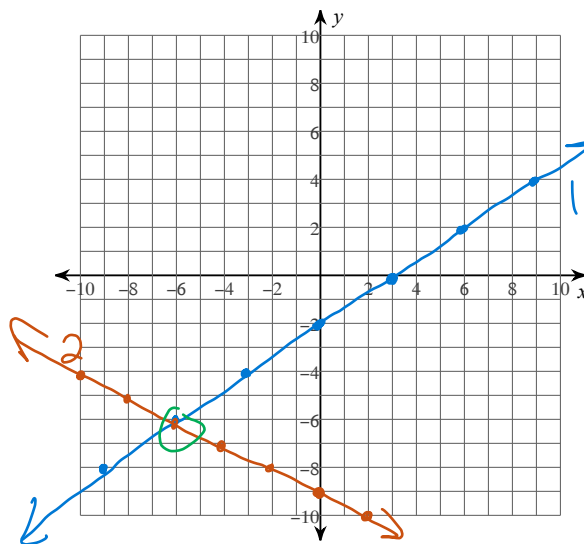
Solve each system by graphing.

3) $y = -2x + 6$ $\textcircled{1}$

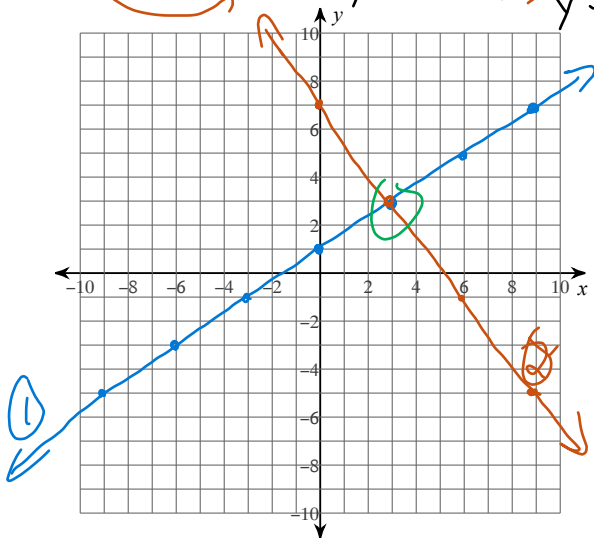
$$y = -\frac{4}{7}x - 4$$
 $\textcircled{2}$

PoI is $(7, -8)$ 4) $y = \frac{2}{3}x - 2$ $\textcircled{1}$

$$y = -\frac{1}{2}x - 9$$
 $\textcircled{2}$

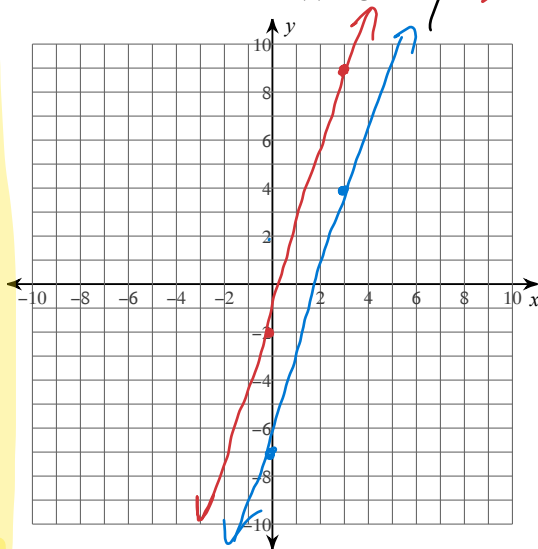
PoI is $(-6, -6)$

$$5) \begin{aligned} 2x - 3y &= -3 \rightarrow 2x + 3 = 3y \rightarrow \frac{2}{3}x + 1 = y \\ 4x + 3y &= 21 \rightarrow 3y = -\frac{4}{3}x + 21 \rightarrow y = -\frac{4}{3}x + 7 \end{aligned}$$



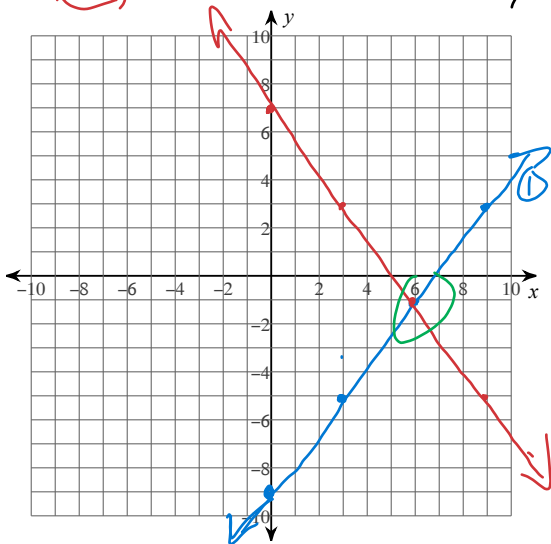
PoI is (3,3)

$$6) \begin{aligned} 11x - 3y &= 21 \rightarrow 11x - 21 = 3y \rightarrow \frac{11}{3}x - 7 = y \text{ (1)} \\ 11x - 3y &= 6 \rightarrow 11x - 6 = 3y \rightarrow \frac{11}{3}x - 2 = y \text{ (2)} \end{aligned}$$



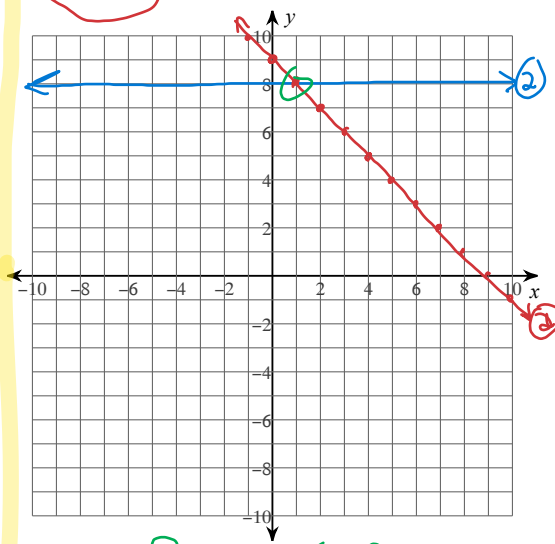
Parallel, no solution.

$$7) \begin{aligned} 12x &= 3y + 27 \rightarrow 12x - 27 = 3y \rightarrow \frac{4}{3}x - 9 = y \text{ (1)} \\ 4x &= -3y + 21 \rightarrow 3y = -4x + 21 \rightarrow y = -\frac{4}{3}x + 7 \text{ (2)} \end{aligned}$$



PoI is (6, -1)

$$8) \begin{aligned} -y + 8 &= 0 \rightarrow 8 = y \text{ (1)} \\ 0 &= -x - y + 9 \rightarrow y = -\frac{1}{1}x + 9 \text{ (2)} \end{aligned}$$



PoI is (1,8)