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Warmup $12/(6\times3! + 6) \div 7$

*****Make sure there is a whiteboard, marker, & eraser in your desk.*****

1. Find <u>as many points as you can</u> that would be on the graph of the equation **5x + 2y = 60.**

(12, 0) **(14, -5)** **(6, 15)** **(4, 20)** **(0, 30)** **(8, 10)** **(10, 5)** **(2, 25)** **(1, 27.5)** **(20, -20)** **(9, 7.5)**

Guided Notes from yesterday…

Another strategy…

- **If an equation is not in slope-intercept form, you can PUT it in slope intercept form:**
- **(Get y by itself!)**

- $y - 3x = 8$
  $+3x \quad +3x$

Not like terms – do not combine!

$y = 8 + 3x$ **or**

$y = 3x + 8$

Getting y by itself

$x + y = 8$

$-x \quad -x$

$y = 8 - x$

$4x + 2y = 20$

$-4x \quad -4x$

$\frac{2y}{2} = \frac{20}{2} - \frac{4x}{2}$

$y = 10 - 2x$

$y + 4 = \frac{1}{2}x$

$-4 \quad -4$

$y = \frac{1}{2}x - 4$

To graph an equation that is NOT in slope-intercept form:

- **Make a table and figure out numbers that work in the equation (at least 2 points)**

OR

- **Get y by itself, then graph using slope-intercept rules**

Example 8

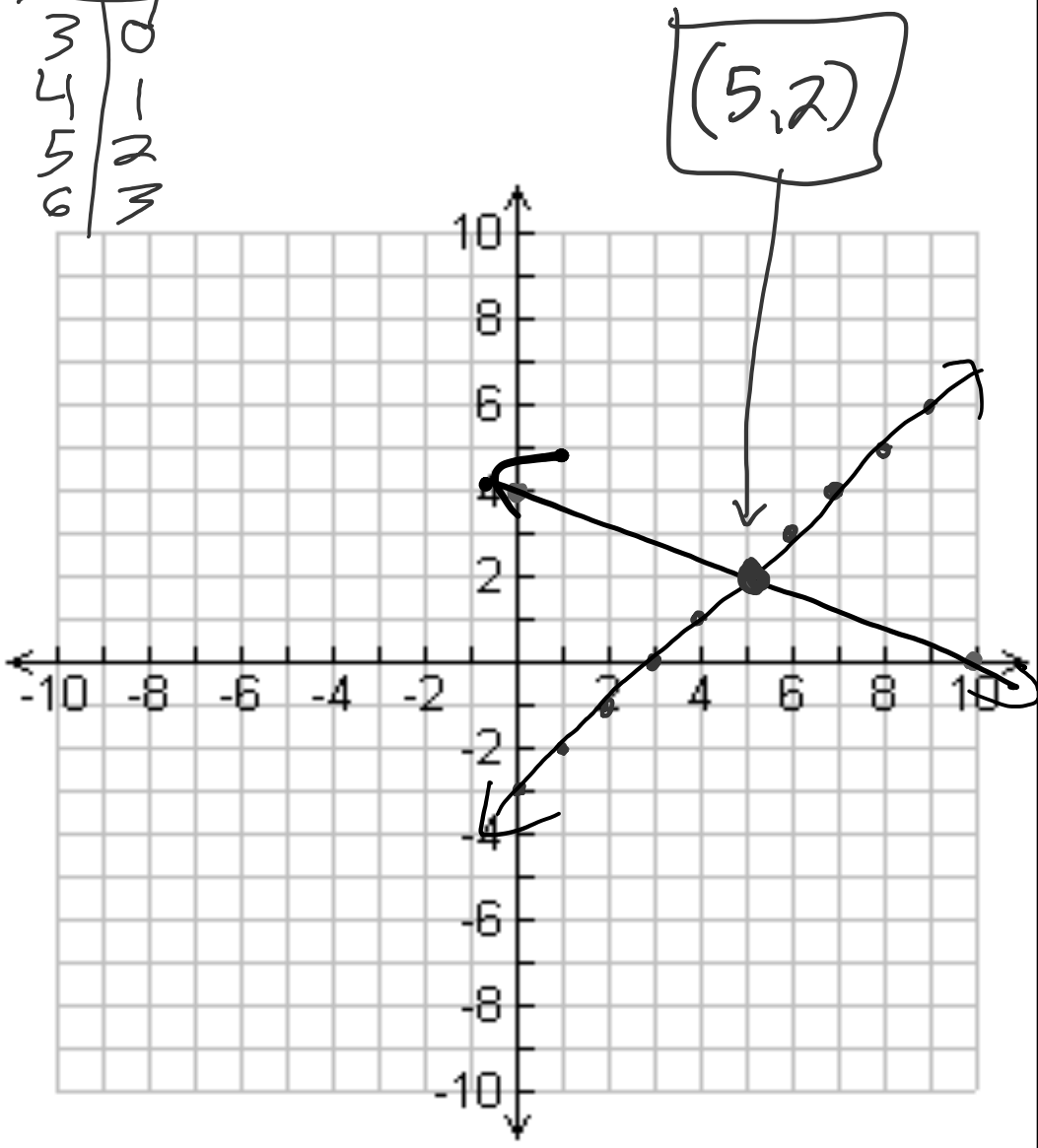
$$\begin{cases} x - y = 3 \\ 2x + 5y = 20 \end{cases}$$

$-2x \qquad -2x$

$$\frac{5y}{5} = \frac{20}{5} - \frac{2x}{5}$$

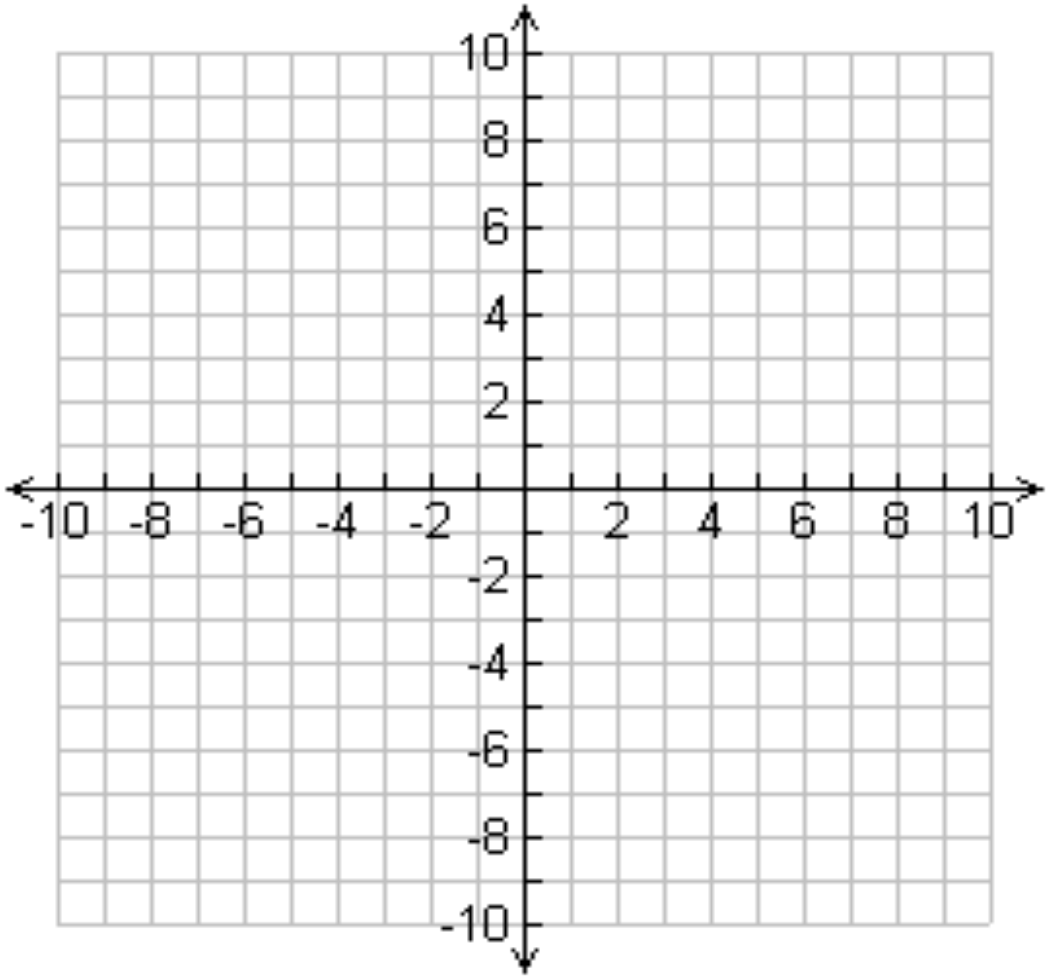
$$y = 4 - \frac{2}{5}x$$

x	y
3	0
4	1
5	2
6	3



Example 9

$$\begin{cases} y - 3x = 8 \\ \frac{1}{4}x = y + 3 \end{cases}$$

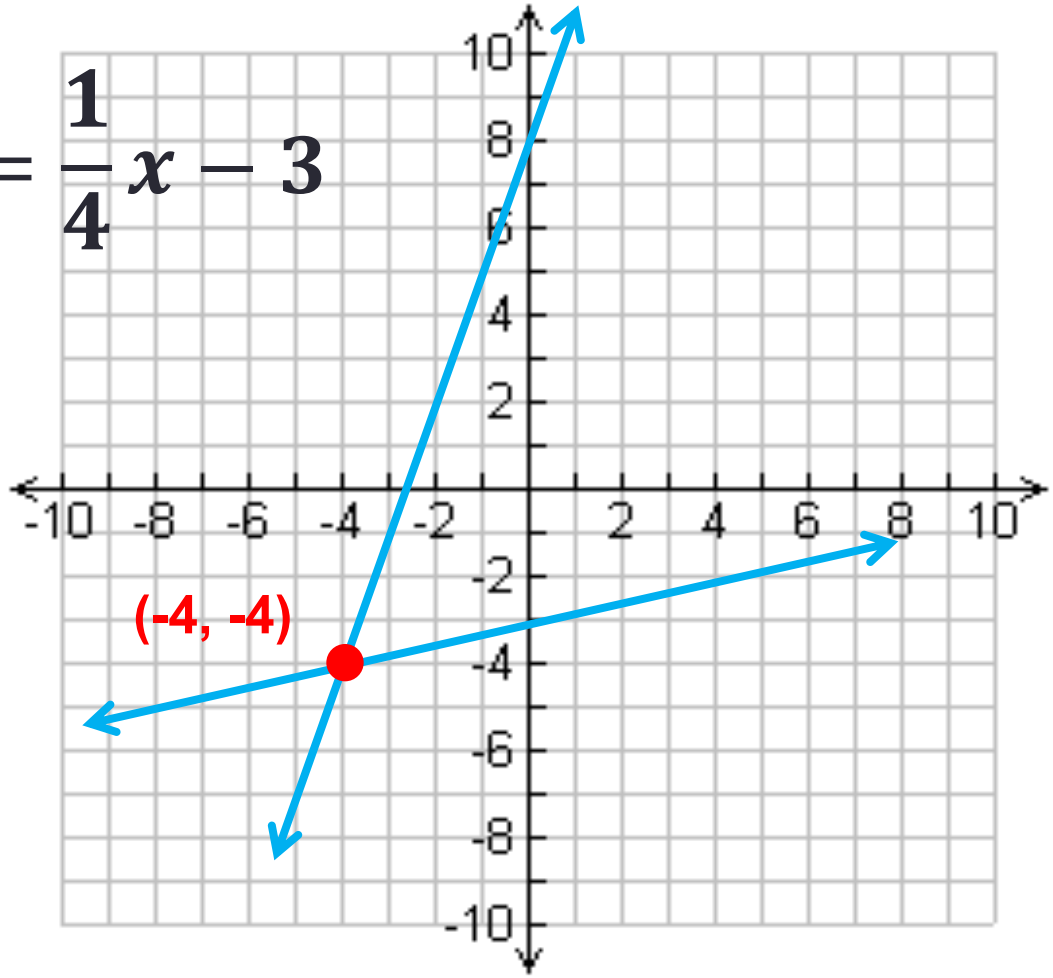


Example 9

$$\begin{cases} y - 3x = 8 \\ \frac{1}{4}x = y + 3 \end{cases}$$

$y = 3x + 8$

$y = \frac{1}{4}x - 3$



A little bit of time…

- To finish/check/compare #13, 14, 15

Another way to solve systems…

- Look at #2 on your homework.

$$\begin{cases} y = 2x - 8 \\ y = -3x + 7 \end{cases}$$

Since y = both, you can set them equal to each other

$$2x - 8 = -3x + 7$$

Then solve…

- $x = 3$ **(Does this match your original answer?)**
- **How can we get y?**

Table of Contents

Solving Systems by Substitution

Objective:

-Use a new strategy (substitution) to solve systems of equations. (No graphs, just pencil/paper)

WHITEBOARDS

Solve the System of Equations using Substitution

$$x + y = 10$$

$$y = 2$$

(8, 2)

Solve the System of Equations using Substitution

$$5x + 5y = 100$$

$$y = 5$$

(15, 5)

Solve the System of Equations using Substitution

$$y = x + 100$$

$$y = 45$$

(-55, 45)

Solve the System of Equations using Substitution

$$3x + 10y = 20$$

$$x = 6$$

$$\left(6, \frac{1}{5}\right)$$

Solve the System of Equations using Substitution

$$4x + y = 24$$

$$y = 2x$$

$$4x + y = 24$$

$$4x + 2x = 24$$

$$6x = 24$$

$$x = 4$$

Now find y:

$$y = 2x$$

$$y = 2(4)$$

$$y = 8$$

(4, 8)

Homework (Due Monday)

- p.247 (1 – 10, 14, 15)