Let’s talk about last night’s homework

I’m obviously not here to check yesterday’s homework, so I will check last night’s homework and tonight’s homework tomorrow. Please don’t lose it between now and then!

Mid-Unit Quiz

Standard Form

11/2/2018

This is a self-paced lesson. I will circulate and answer questions.

Standard Form of a Linear Equation

$$Ax+By=C$$

Special Rules:

1. A, B, and C cannot be fractions or decimals

The goal is to get the equation into the form Ax+By=C with no fractions!

1. Get rid of the fractions
2. Move x and y to the same side

Change an equation into Standard From

What is $y = -\frac{3}{7}x + 5$ written in standard form using integers?

$$y = -\frac{3}{7}x + 5$$

$$7y = 7\left(-\frac{3}{7}x + 5\right) \quad \text{Multiply each side by 7.}$$

$$7y = -3x + 35 \quad \text{Distributive Property}$$

$$3x + 7y = 35 \quad \text{Add } 3x \text{ to each side.}$$

You try...

Write each equation in standard form:

1. $y + 3 = 4(x-1)$

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

3. $y + 2 = \frac{2}{3}(x+4)$

The goal is to get the equation into the form Ax+By=C with no fractions!

1. Get rid of the fractions
2. Move x and y to the same side

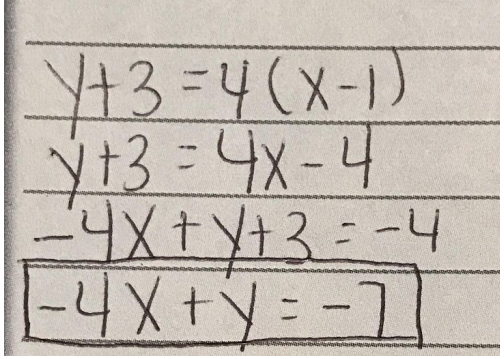
You try… Answers

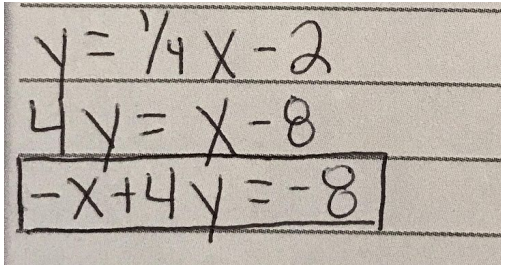
Write each equation in standard form:

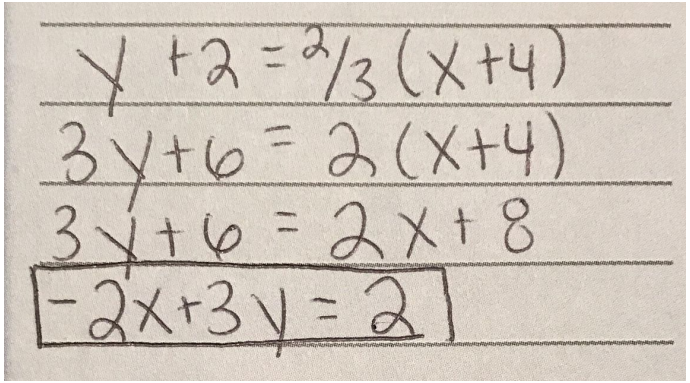
1. y + 3 = 4(x-1)

2. y = ¼ x - 2

3. y + 2 = ⅔ (x+4)



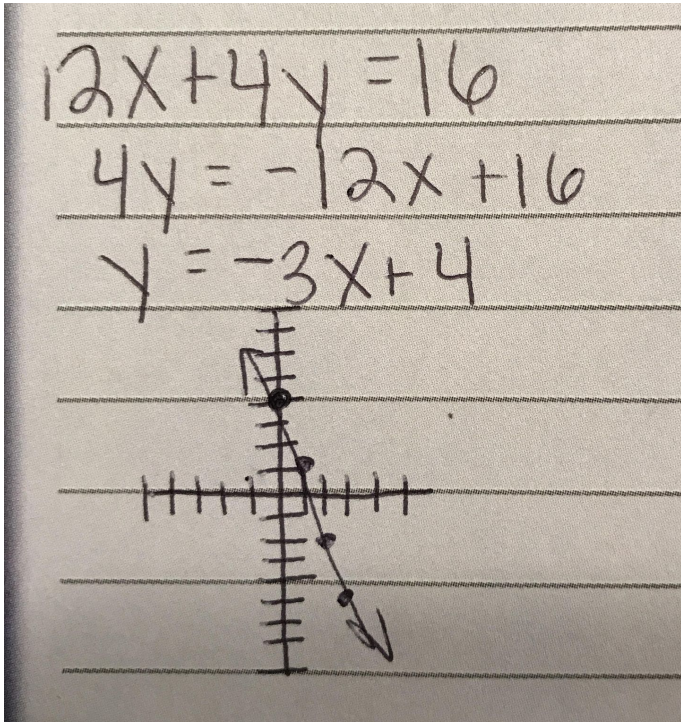




Graphing from Standard Form (Ax+By=C)

Method 1 - Change to Slope Intercept Form and graph

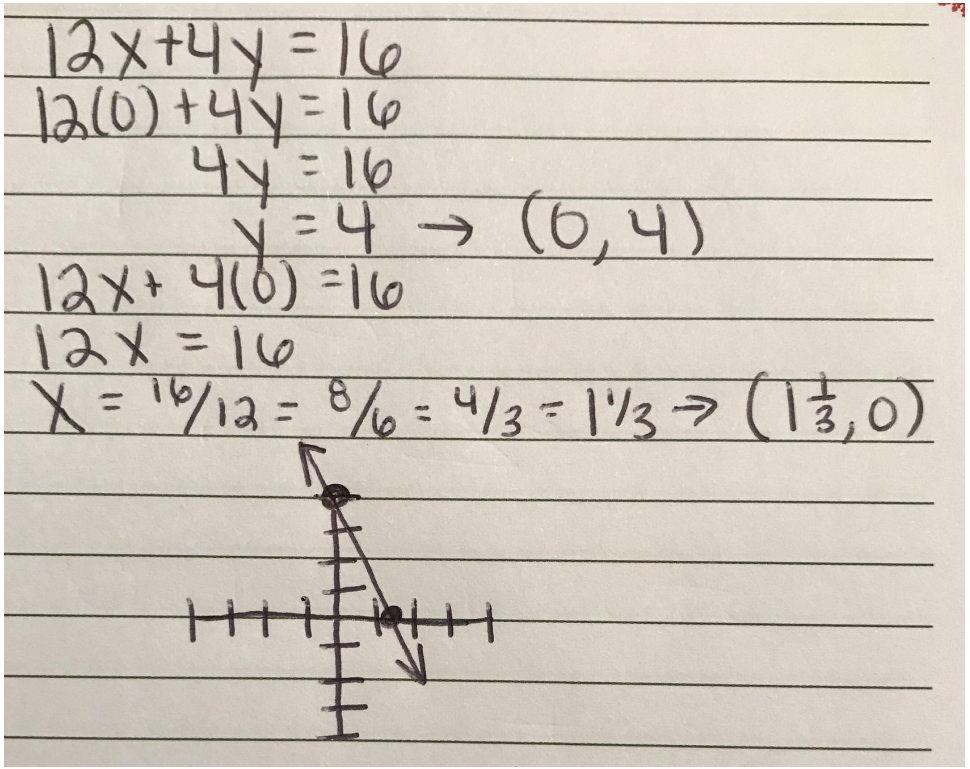
To change to Slope Intercept Form, just solve for y!



Graphing from Standard Form (Ax+By=C)

Method 2 - Find and graph your x and y intercepts

1. Find the y intercept
   a. Plug in 0 for x
   b. Solve for y
2. Find the x-intercept
   a. Plug in 0 for y
   b. Solve for x
3. Graph your intercepts and connect!



You try…
Example 1
Attempt using Method 1 → Change to Slope Intercept Form

Graph 3x + 5y = 15

You try…
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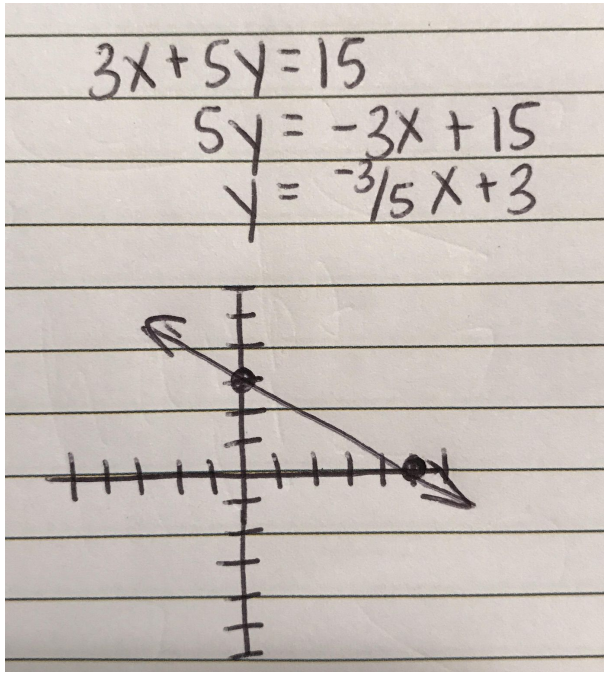
Attempt using Method 1 → Change to Slope Intercept Form

Graph 3x + 5y = 15

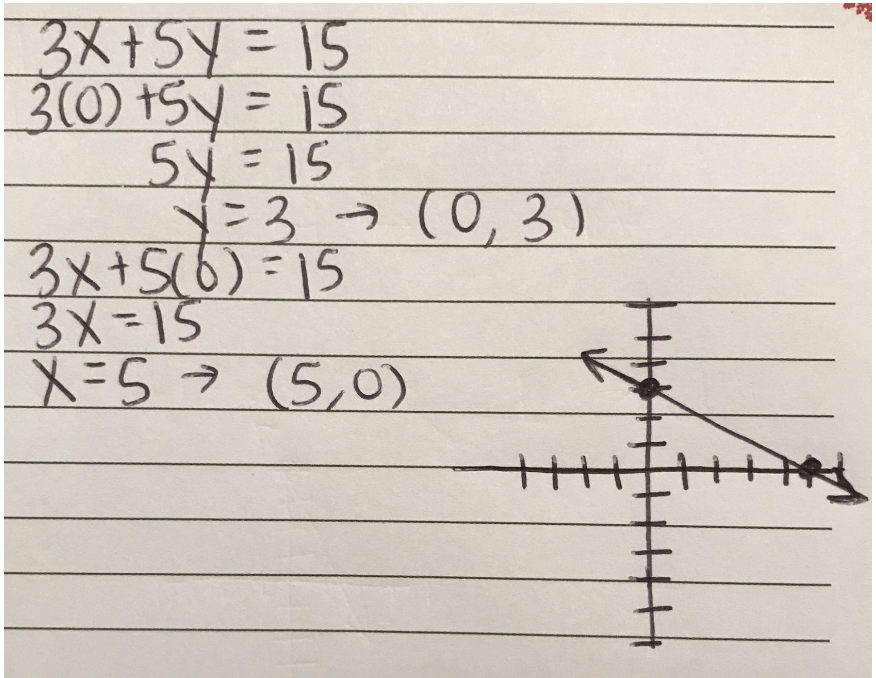


You try…
Example 2
Attempt Method 2 → Find the x and y intercepts

Graph $3x + 5y = 15$

You try…
Example 2
Attempt Method 2 → Find the x and y intercepts

Graph 3x + 5y = 15



Some things to notice about Standard Form

In standard form, A, B, and C **do not represent anything** (unlike m and b in slope intercept form). It's just the equation rearranged in a different order with specific rules!

You cannot just take an equation that's in standard form and graph it… you have to either find the intercepts or switch it to slope intercept form!

So… what's the point of Standard Form? Why even use it if A, B, and C don't really mean anything?

Well standard form makes a lot of sense in a lot of word problems… look at this example.

Online Shopping **A media download store sells songs for $1 each and movies for $12 each. You have $60 to spend. Write and graph an equation that describes the items you can purchase. What are three combinations of numbers of songs and movies you can purchase?**

We would write the equation 1x+12y = 60 where x represents songs and y represents movies. It's natural to write this equation in standard form! So we need to know how to evaluate equations in standard form :)

Let’s get some practice with Standard Form...

Click on the Reteaching Document for practice.

Homework

Page 324 #9, 11, 15, 21, 25, 29, 30, 33, 35, 43