

**Warm Up**

2/26

Notebook Check



Upload select assignments.

*You have 10 minutes.*

# 1.2 Recap

## Problem 1.2

**A** Four students tried to write  $12x + 3y = 9$  in equivalent  $y = mx + b$  form. Did each student get an equation equivalent to the original  $Ax + By = C$  form? If so, explain the reasoning for each step. If not, tell what errors the student made.

get y alone

✓

**Jared**

$$12x + 3y = 9$$

$$3y = -12x + 9 \quad (1)$$

$$y = -4x + 3 \quad (2)$$

✗

**Molly**

$$12x + 3y = 9$$

$$3y = 9 - 12x \quad (1)$$

$$y = 3 - 12x \quad (2)$$

$$y = -4x + 3 \quad (3)$$

✓

**Mia**

$$12x + 3y = 9$$

$$4x + y = 3 \quad (1)$$

$$y = 3 - 4x \quad (2)$$

$$y = -4x + 3 \quad (3)$$

✗

**Ali**

$$12x + 3y = 9$$

$$3y = 9 - 12x \quad (1)$$

$$y = 3 - 4x \quad (2)$$

$$y = 4x - 3 \quad (3)$$

$y = 3 - 4x$   
 $y = -4x + 3$

negative always stays with term it's in front of

**This is called:**

- Rearranging equations
- solving for y
- isolating y


**B** Write each equation in  $y = mx + b$  form.

1.  $x - y = 4$

2.  $2x + y = 9$

3.  $8x + 4y = -12$

4.  $c = ax + dy$

No numbers 

Answers:

**B.** 1.  $y = x - 4$

2.  $y = -2x + 9$

3.  $y = -2x - 3$

4.  $y = -\frac{a}{d}x + \frac{c}{d}$

Do exactly what you would do if  $a$ ,  $c$ , and  $d$  were numbers.

$$\begin{array}{r} c = ax + dy \\ -dy \quad -dy \\ \hline -dy + c = ax \\ \frac{-dy}{-d} + \frac{c}{-d} = \frac{ax}{-d} \end{array}$$

$$\begin{array}{r} y - \frac{c}{d} = -\frac{a}{d}x \\ +\frac{c}{d} \quad +\frac{c}{d} \\ \hline \end{array}$$

$$y = -\frac{a}{d}x + \frac{c}{d}$$

© Write each equation in  $Ax + By = C$  form.

1.  $y = 5 - 3x$

2.  $y = \frac{3}{4}x + \frac{1}{4}$

3.  $x = 2y - 3$

4.  $fy + 3 = gx - 15$

Answers:

1.  $3x + y = 5$

2.  $3x - 4y = -1$

3.  $x - 2y = -3$

4.  $gx - fy = 18$

$4y - 3x = 1$   
 $-1 [-3x + 4y = 1]$   
 $3x - 4y = -1$

How to find slope, y-intercept and x-intercept from an equation.

$$3x - 4y = 12$$

y-intercept? value of y when  $x=0$

$$3x - 4y = 12$$

$(0, -3)$

$$3(0) - 4y = 12$$

$$-4y = 12$$

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

$$y = -3$$

x-intercept? value of x when  $y=0$

$$3x - 4y = 12$$

$(4, 0)$

$$3x - 4(0) = 12$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

Slope?  $3x - 4y = 12$

change into  $y = mx + b$

$$3x - 4y = 12$$

$$\frac{+4y}{+4y} \quad \frac{+4y}{+4y}$$

$$3x = 4y + 12$$

$$\frac{-12}{-12} \quad \frac{-12}{-12}$$

$$\frac{3x-12}{4} = \frac{4y}{4}$$

$$\left(\frac{3}{4}\right)x - 3 = y$$

slope

Another way: use the intercepts

$$+4 \left\langle \begin{matrix} (0, -3) \\ (4, 0) \end{matrix} \right\rangle +3$$

$$\frac{\Delta y}{\Delta x} = \frac{3}{4}$$

slope!

## Today's assignment:

Classwork: Page 14, #'s 9-19 odd

Homework: Page 14, #'s 10-20 even

Overall: page 14, #'s 9-20

Write the equation in equivalent  $Ax + By = C$  form. Then, identify the  $x$ -intercept,  $y$ -intercept, and slope.

9.  $y = 4x - 2$

10.  $y = -3x + 5$

11.  $y = x - 7$

12.  $y = 5x + 3$

13.  $y = -8x - 12$

14.  $y = -9x + 5$

Standard Form Refresher:

$$Ax + By = C$$

- $A$ ,  $B$ , and  $C$  are integers
- $A$  must be positive

#9  $y = 4x - 2$

- Standard form
- slope 4
- $y$ -int =  $(0, -2)$
- $x$ -int

**For Exercises 15–20, write the equation in  $y = mx + b$  form. Identify the  $x$ -intercept,  $y$ -intercept, and slope.**

**15.**  $-2x - y = -5$

**16.**  $6x + 3y = -9$

**17.**  $x - y = 4$

**18.**  $3x + 4y = 12$

**19.**  $-7x + 2y = -16$

**20.**  $x - 5y = 55$



# Homework

Finish classwork