

name:

UNIT 4 - DAY 8 - HOMEWORK (APPLICATIONS & MORE)

Is it Spring Training yet?



1. Luke loves collecting baseball cards. He wants to keep track of his collection. He notices that after 60 days, he has 120 baseball cards. After 100 days, he has 250 baseball cards.

a. Write an equation in Point-Slope form that represents this situation.

$$\begin{matrix} (60, 120) \\ (100, 250) \end{matrix} \quad m = \frac{250-120}{100-60} = \frac{130}{40} = \frac{13}{4}$$

$$y - 120 = \frac{13}{4}(x - 60)$$

$$y - 250 = \frac{13}{4}(x - 100)$$

b. Define your variables.

$$x = \text{\# of days}$$

$$y = \text{\# of baseball cards}$$

c. Convert your equation to slope-intercept form.

$$y - 120 = \frac{13}{4}(x - 60)$$

$$y - 120 = \frac{13}{4}x - 195$$

$$y = \frac{13}{4}x - 75$$

d. What does your slope represent?

$$m = \frac{13}{4}$$

you gain 13 cards every 4 days

e. How many baseball cards will Luke have in 40 days?

$$x = 40 \text{ days}$$

$$y = \frac{13}{4}(40) - 75$$

2. Write an equation in point slope form for a line with points $(-2, 3)$ and $(-5, 6)$

$$m = \frac{6-3}{-5-(-2)} = \frac{3}{-3} = -1$$

$$y - 3 = -1(x + 2)$$

$$\text{or } \frac{4}{13} \cdot 575 = \frac{13}{4}x \cdot \frac{4}{13}$$

$$y - b = -1(x + 5)$$

$$176.9 = x$$

3. Rewrite the equation from Question #2 in slope-intercept form.

$$y - 3 = -1(x + 2)$$

$$y - 3 = -x - 2$$

$$y = -x + 1$$

about 177 days

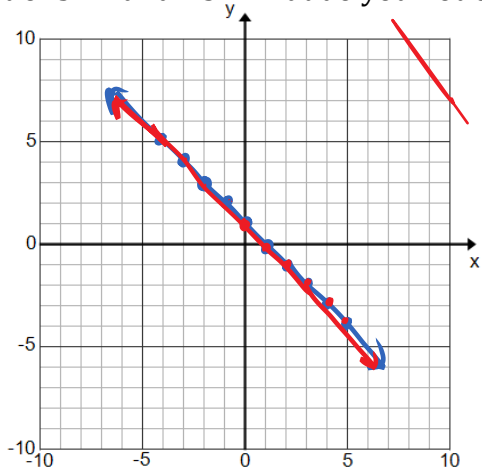
4. Graph the lines in Questions #2 and #3. What do you notice about these lines?

$$y - 3 = -1(x + 2)$$

point $(-2, 3)$
 $m = -1$

$$y = -x + 1$$

same line 😊



5. Write the equation of the line in point-slope form with an x-intercept of 5 and a y-intercept of -3.

$$\begin{matrix} (5, 0) \\ (0, -3) \end{matrix} \quad m = \frac{-3 - 0}{0 - 5} = \frac{-3}{-5} = \frac{3}{5}$$

$$y + 3 = \frac{3}{5}(x - 0)$$

6. Graph the line using point slope form.

$$y - 5 = -\frac{2}{3}(x + 4)$$

$$p + (-4, 5)$$

$$m = -\frac{2}{3}$$

