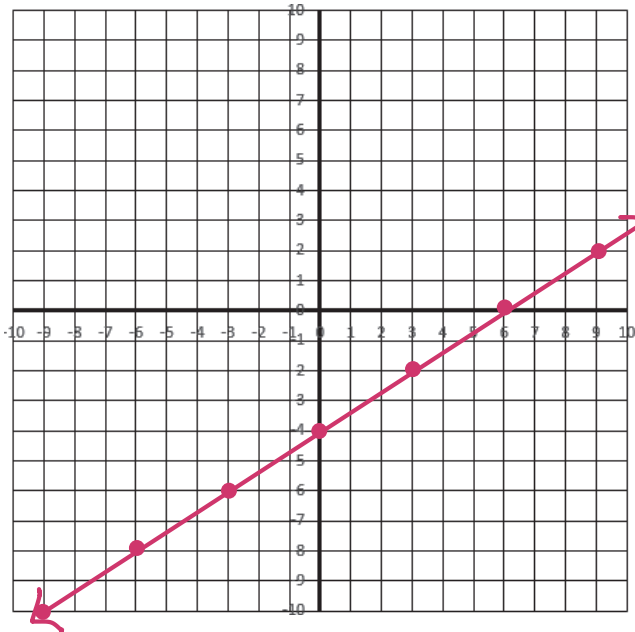


NAME: \_\_\_\_\_ PERIOD: \_\_\_\_\_ DATE: \_\_\_\_\_

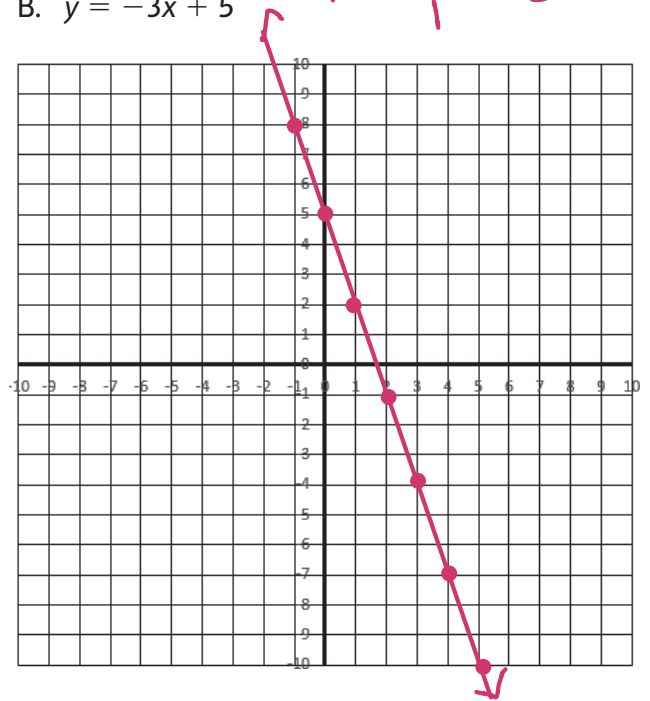
# Homework Problem Set

1. Graph the following lines.

A.  $y = \frac{2}{3}x - 4$   $m = \frac{2}{3}$   $b = -4$

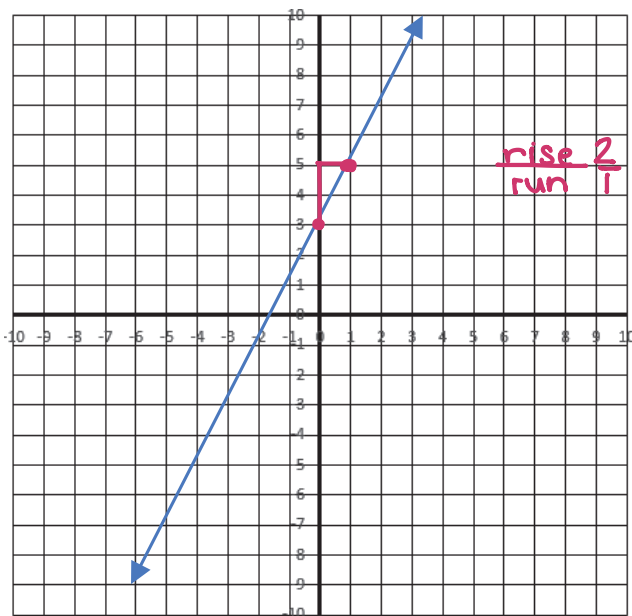


B.  $y = -3x + 5$   $m = -\frac{3}{1}$   $b = 5$



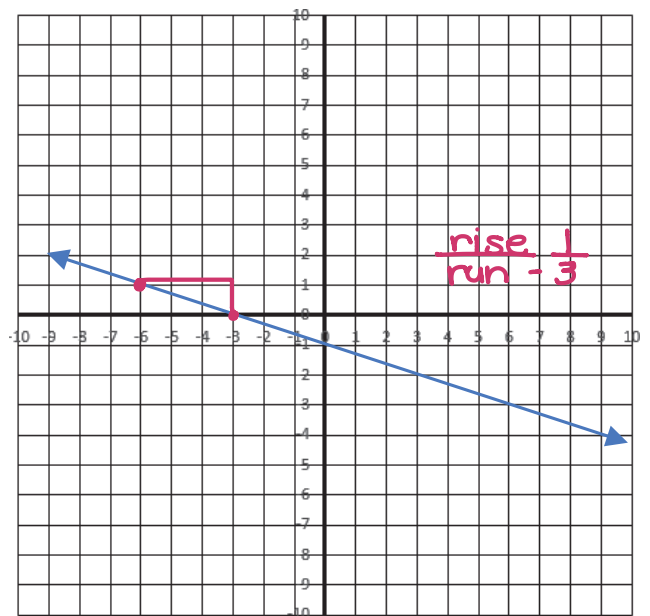
2. Write the equation of the line in slope-intercept form.

A.  $y = 2x + 3$



$m = 2$   
 $b = 3$

B.  $y = -\frac{1}{3}x - 1$



$m = -\frac{1}{3}$   
 $b = -1$

3. A. Why is  $y = mx + b$  called "slope-intercept" form and  $y - y_1 = m(x - x_1)$  is called "point-slope" form?

possible answers  $\left\{ \begin{array}{l} \text{slope intercept — clearly shows slope (m) and y-intercept (b)} \\ \text{point slope — shows slope (m) and a point on the line (x_1, y_1)} \end{array} \right.$

B. If you wanted to change an equation from point-slope to slope-intercept form, what would you do?

you could distribute the slope(m) & isolate the y

See # \_\_\_ as example

4. Change  $y - 3 = -2(x + 1)$  to slope-intercept form.

$$\begin{array}{r} y-3 = -2(x+1) \\ y-3 = -2x-2 \\ \hline y = -2x+1 \end{array}$$

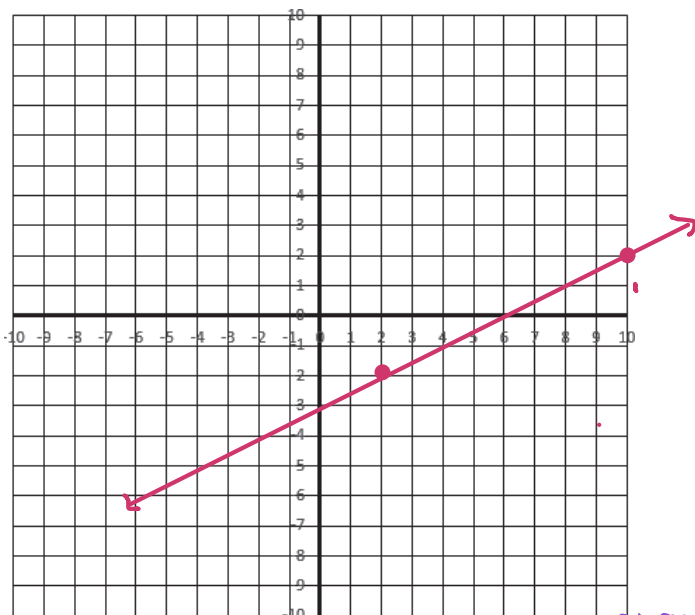
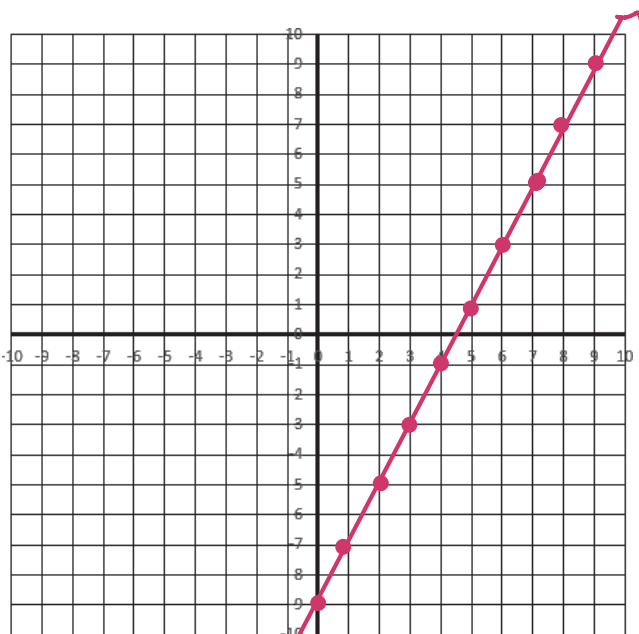
$$y = -2x + 1$$

5. Write the equation of the line in point-slope form. Then change the equation to slope-intercept form and graph the equation to see if your calculations were correct.

$$m = \frac{2 - (-2)}{10 - 2} = \frac{4}{8} = \frac{1}{2}$$

A. (5, 1) and  $m = 2$

B. (2, -2) and (10, 2)



Point-Slope:  $y - 1 = 2(x - 5)$   
 possible answer  
 Slope-Intercept:  $y = 2x - 9$

$y - 2 = \frac{1}{2}(x - 10)$  OR  $y + 2 = \frac{1}{2}(x - 2)$   
 be careful of sign  
 $y = \frac{1}{2}x - 3$

pt slope  $\rightarrow$  slope intercept

$$\begin{array}{r} y-1 = 2(x-5) \\ y-1 = 2x-10 \\ \hline y = 2x-9 \end{array}$$

6. Write the equation in both point-slope and slope-intercept forms.

A. (2, 5) and (5, -1)  $m = \frac{-1-5}{5-2} = \frac{-6}{3} = -2$

B. (0, 5) and  $m = \frac{1}{3}$

Point-slope form:  $y-5 = -2(x-2)$  OR  $y+1 = -2(x-5)$

$y-5 = \frac{1}{3}(x-0)$

Slope-intercept form:  $y = -2x + 9$

$y = \frac{1}{3}x + 5$

7. Write the equation of the line represented by the data in the table. Write your answer in slope-intercept and point-slope forms.

x	-2	-1	0	1	2	3
y	9	7	5	3	1	-1

Ex using pt (2,1)

Point-slope form:

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

\* answer will vary depending upon point chosen.

pick 2 pts & find slope  
(-2, 9) (-1, 7)

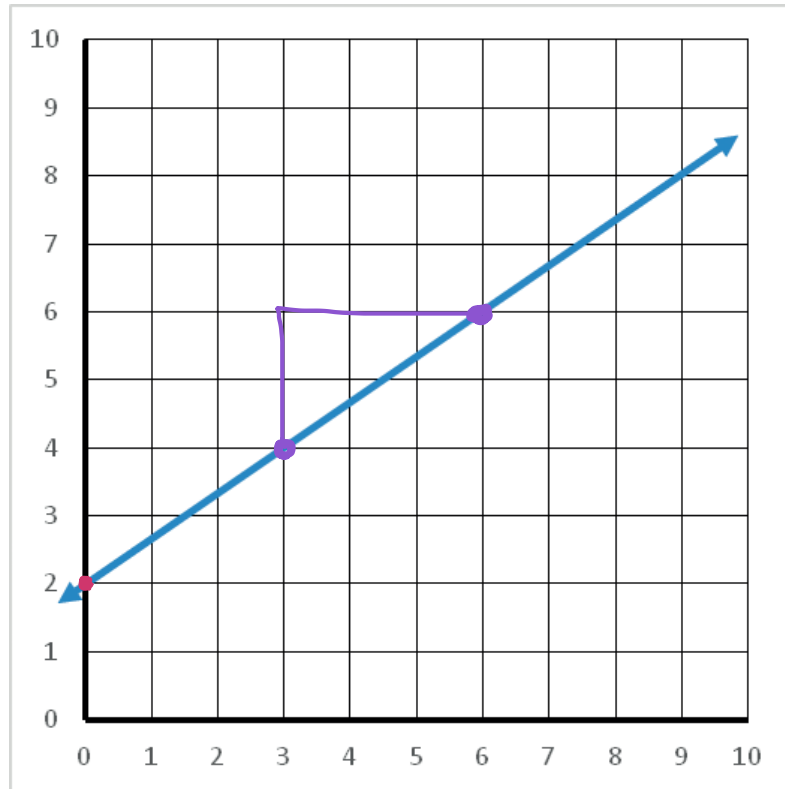
Slope-intercept form:

$y = -2x + 5$

$m = \frac{7-9}{-1-(-2)} = \frac{-2}{1} = \boxed{-2}$

8. Write the equation of the line in point-slope and slope-intercept forms.

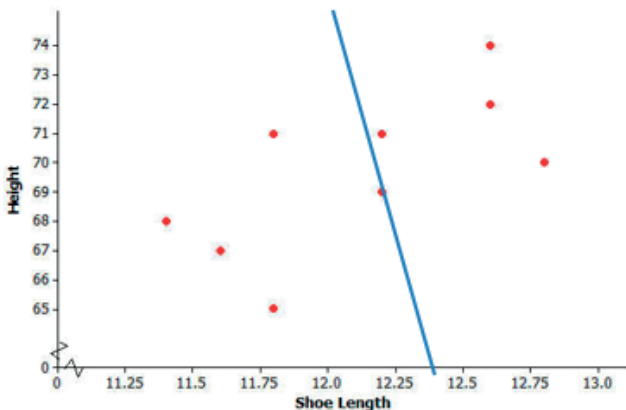
$m = \frac{2}{3}$   
 $b = (0, 2)$



Point-slope form:  $y - 4 = \frac{2}{3}(x - 3)$  \* possible answer  
 Slope-intercept form:  $y = \frac{2}{3}x + 2$

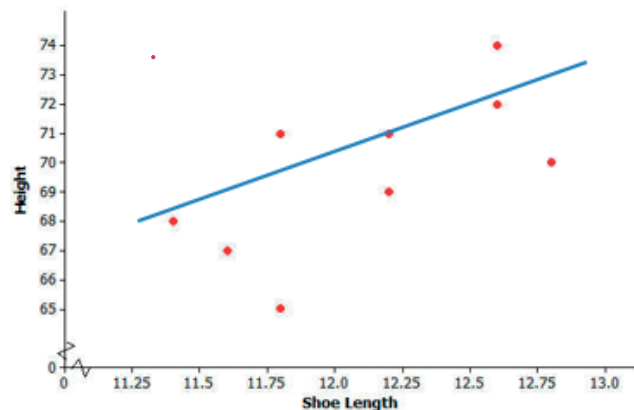
**Spiral REVIEW—Lines of Best Fit**

9. Rachel misunderstood how a line of best fit works. Her line is shown below. What might have Rachel been considering when she drew this line?



She probably thought she had to cut data into 2 equal parts.

10. Josh drew the line of best fit as shown below. Explain to Josh why his line is not appropriate for this data.



Line is a little too high. There should be about same number of points above & below line.