Name:_____

Linear Relations Assignment

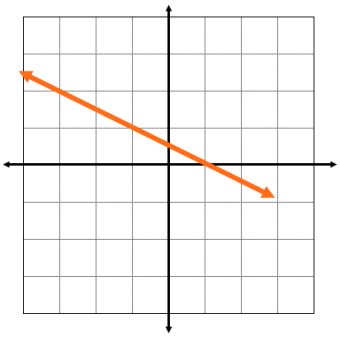
1. What is the general equation of a line?

2. In the equation of a line, what does "m" stand for? _____

3. In the equation of a line, what does "b" stand for? _____

4. Fill in the blank: Slope is equal to the _____ over the _____.

5. Taylor was asked to find the slope of the following graph.



He answered $\frac{2}{4}$ and was upset that Mr. McFarlane didn't give him full marks for his answer!

Explain why Taylor didn't get full marks for his answer. Provide the correct answer.

6. Rearrange the following equations in the form **y = mx + b**.
   Then, state the **slope** and the **y-intercept** of each line.

   a. $2x + y = 4$

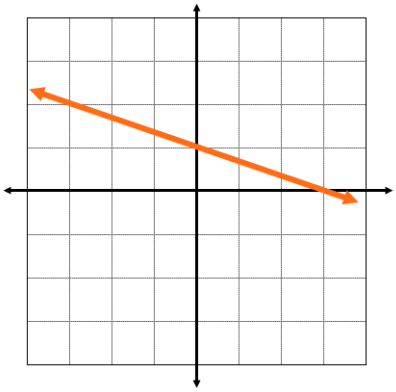
   b. $\frac{1}{4}x - y + 4 = 0$

   c. $3x + 6y - 12 = 0$

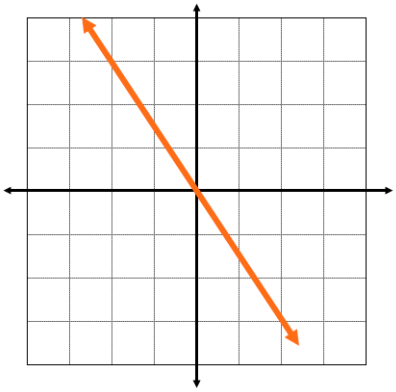
   d. $-5x - 15y + 10 = 0$

7. Find the **equation** of the following lines on the graphs provided. Remember, you need to find the **slope** and the **y-intercept**!

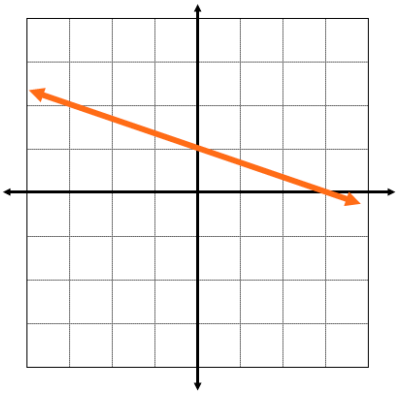
A)



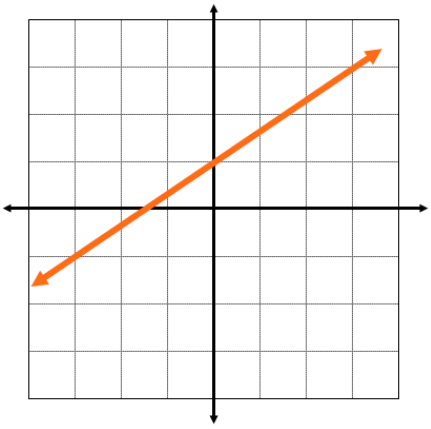
B)



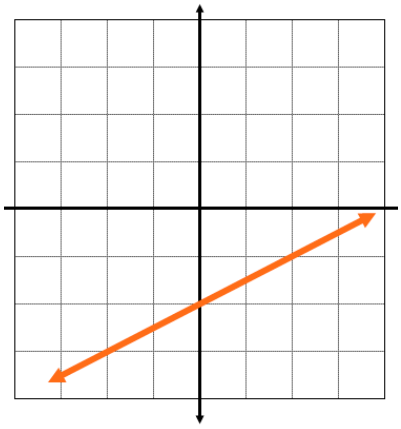
C)



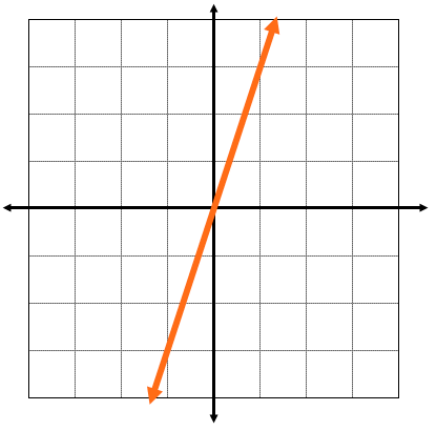
D)



E)

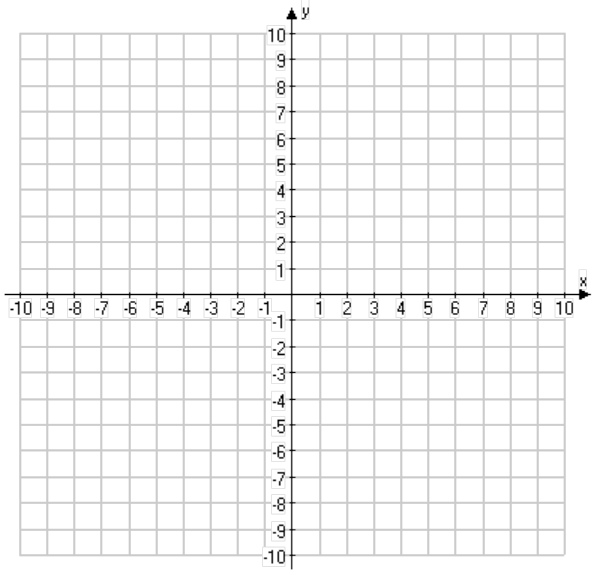


F)

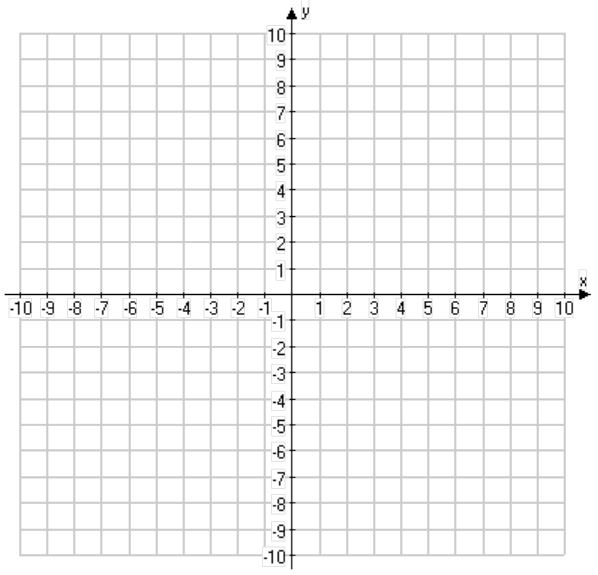


8. Using the equation of a line given, graph the lines on the grids provided.

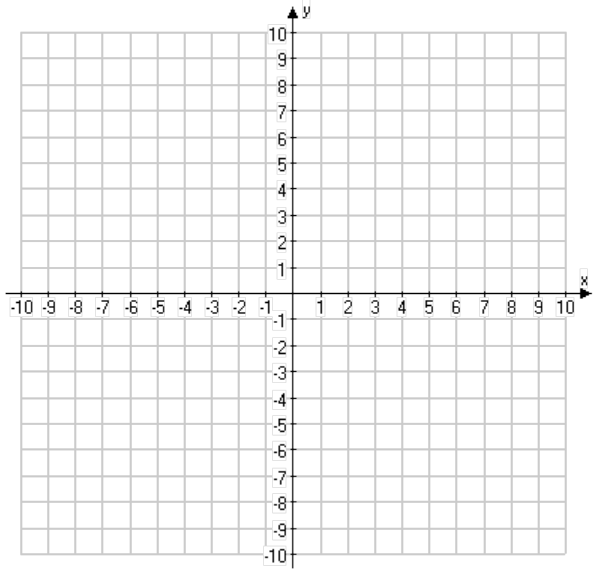
a) $y = -\frac{1}{5}x - 2$



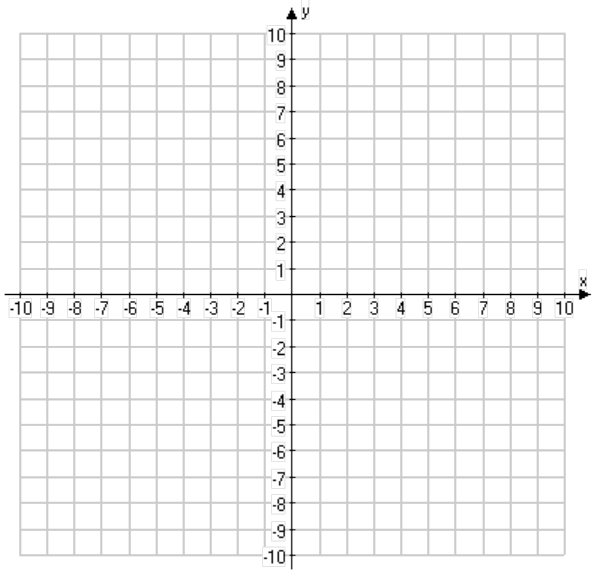
b) $y = -\frac{2}{3}x + 6$



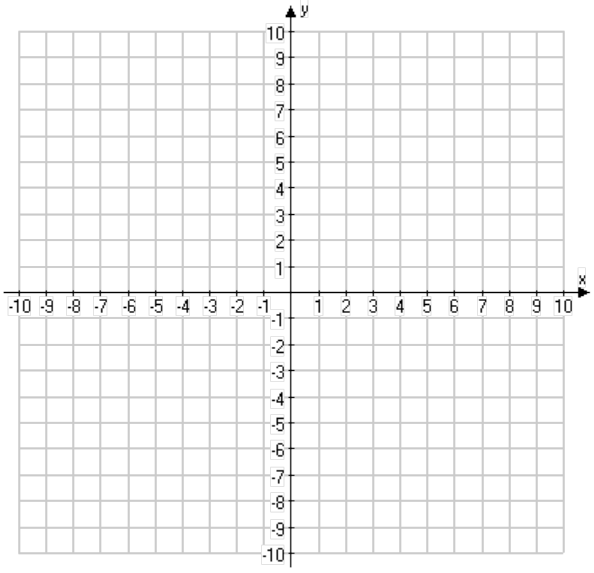
c) $y = -3x$



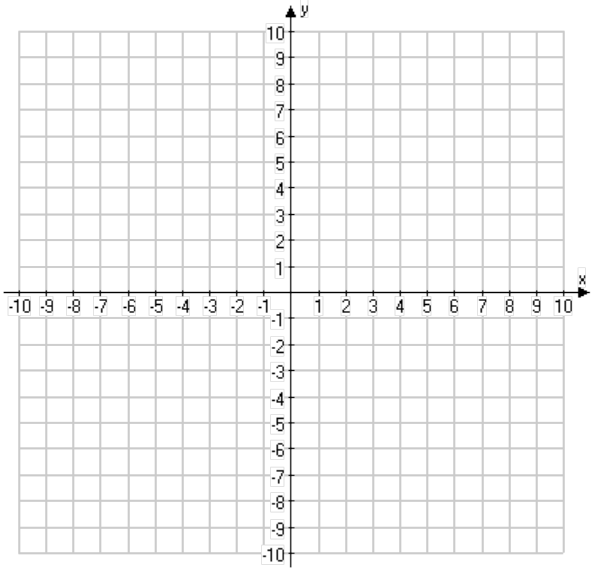
d) $y = \frac{1}{4}x - 6$



e) $y = \frac{5}{2}x$



f) $y = 5x + 1$



9. What is the formula to find slope when you are given two points?

   m =

10. Determine the equation of each line with the following information:

   a. slope is -5 and the y-intercept is 9 _____

   b. slope is $\frac{3}{4}$ and y-intercept is -4 _____

11. Find the **slope** of the lines passing through each pair of points. Remember to make sure the slope is in **lowest terms**!

   a. (15, 8) and (-17, 9)

   b. (6, -12) and (15, -3)

   c. (-2, -10) and (-8, -12)

   d. (4, -2) and (7, -2)

12. Find the **equation** of each line with the following information…

a. m=3, point(-8, -12)

b. m=$-\frac{1}{2}$, point (8, 6)

13. Find the **equation** of each line that passes through the given points. Remember, the equation needs the **slope** and the **y-intercept**.

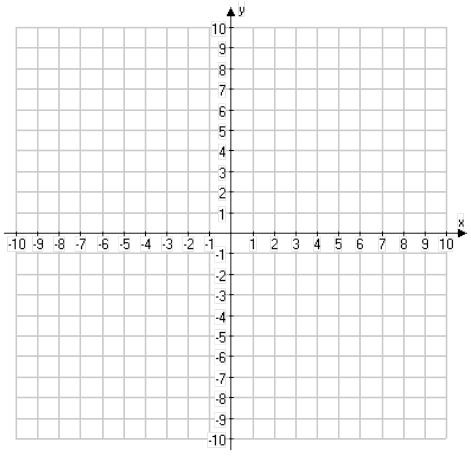
a. (3, -8) and (-9, 0)

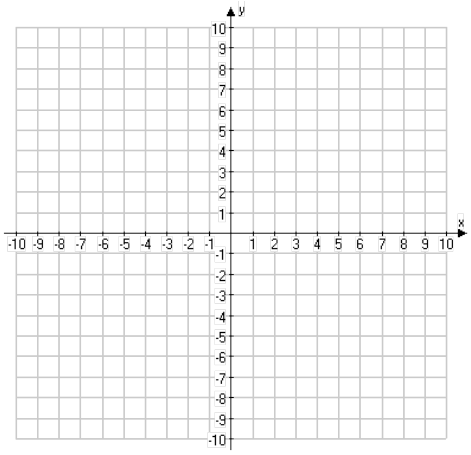
b. (-25, 16) and (15, 0)

14. For each equation,
    a. determine the **x and y-intercepts**
    b. use the x and y-intercepts to **graph** each line

i. $4x - y = 16$

ii. $2x + 3y = 8$





iii. $5x + 4y = 10$

iv. $3y = 2x - 9$