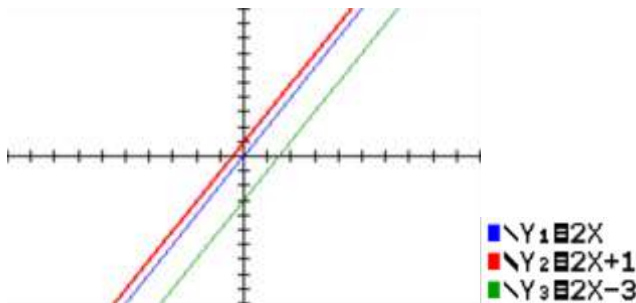
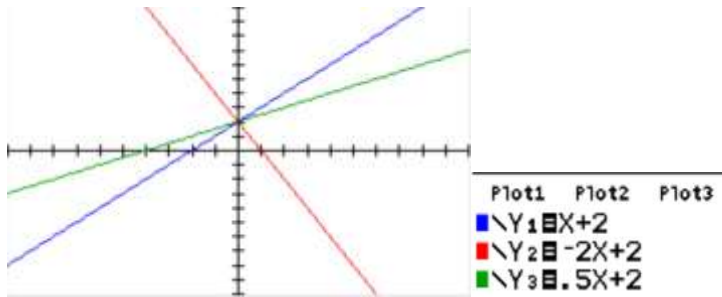


5.5 Homework – Page 157 #1-13, 15

- Use a graphing calculator. Enter the equations  $y = x + 2$ ,  $y = -2x + 2$ , and  $y = \frac{1}{2}x + 2$  in the  $Y=$  list on the function screen. Then graph them in an appropriate viewing window that shows the important features of each graph. Write a description of what you see. How are these graphs the same? How are they different?
- Use a graphing calculator. Enter the equations  $y = 2x$ ,  $y = 2x + 1$ , and  $y = 2x - 3$  in the  $Y=$  list on the function screen. Then graph them in an appropriate viewing window. Write a description of what you see. How are these graphs the same? How are they different?



For Exercises 3–6, write the equation in slope-intercept form. Then identify the slope and  $y$ -intercept.

3.  $2x - 3y = 12$

4.  $2x + 4y = 4$

5.  $6 - 2y = 0$

6.  $2x - y = 8$

3)  $2x - 3y = 12$   
 $-3y = -2x + 12$   
 $y = \frac{2}{3}x - 4$   
 $m = \frac{2}{3}$     $b = -4$

4)  $2x + 4y = 4$   
 $4y = -2x + 4$   
 $y = -\frac{1}{2}x + 1$   
 $m = -\frac{1}{2}$     $b = 1$

Questions to Ponder:

- Which graph is the steepest?
- How do you know?
- How would you describe this to a friend?

Similarities.

- All graphs cross the  $y$ -axis at 2 ( $y$ -int=2)
- The green and blue graph slant up from left to right because of the positive slope

Differences.

- All graphs have different slopes
- The red graph slants downwards from left to right b/c of negative slope.

Similarities:

- All graphs slant up from left to right (all have + slopes)
- All have same slope (11 lines)

Differences:

- All graphs have different  $y$ -int. Red graph drifted up 1 unit from blue graph. Green graph shifted down 3 units from blue graph.

5)  $6 - 2y = 0$   
 $-2y = -6$   
 $y = 3$   
 $m = 0$     $b = 3$

6)  $2x - y = 8$   
 $-y = -2x + 8$   
 $y = 2x - 8$   
 $m = 2$     $b = -8$

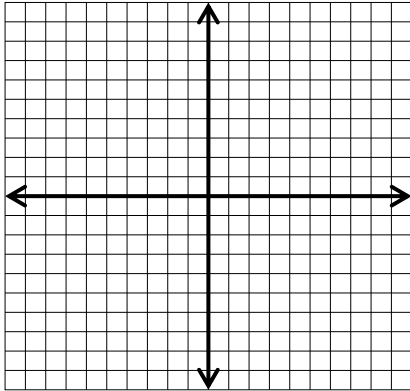
For Exercises 7-8, make a table of values and graph the equation.

7.  $y - 3x = -4$

8.  $x + 2y = 1$

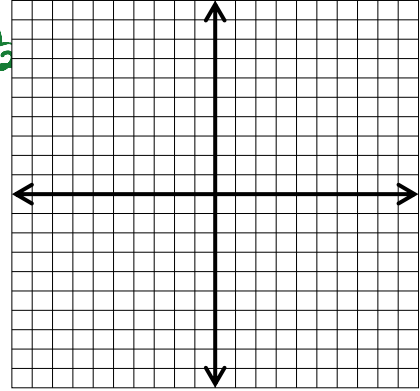
7)  $y = 3x - 4$

x	y
-2	-10
-1	-7
0	-4
1	-1
2	2



8)  $2y = -x + 1$   
 $y = -\frac{1}{2}x + \frac{1}{2}$

x	y
-1	1
0	1/2
1	0
2	-1/2
3	-1



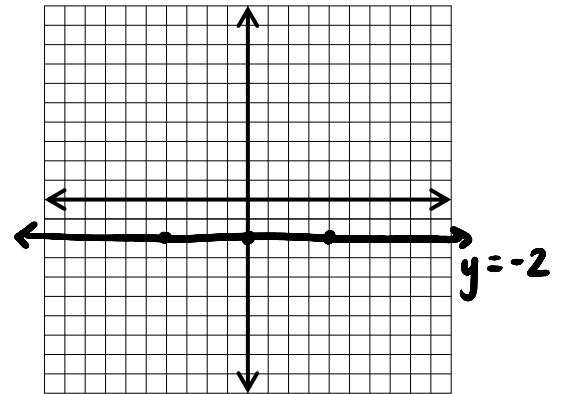
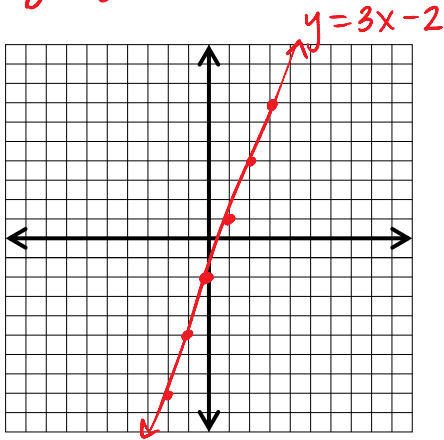
For Exercises 9-10, write the equation in slope-intercept form, identify the slope and y-intercept, and graph the equation.

9.  $3x - y = 2$

10.  $2y + 4 = 0$

9)  $-y = -3x + 2$   
 $y = 3x - 2$   
 $m = 3$   $b = -2$

10)  $2y = -4$   
 $y = -2$   
 $m = 0$   $b = -2$



For Exercises 11-12, identify the intercepts and graph the equation.

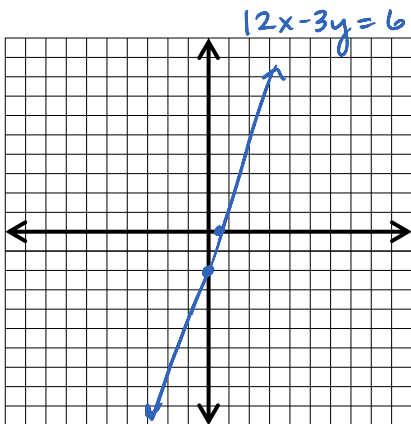
11.  $12x - 3y = 6$

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

11) 

x	y
1/2	0
0	-2

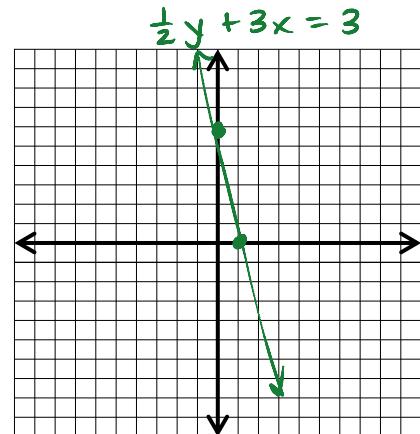
x-int:  $\frac{1}{2}$   
y-int: -2



12) 

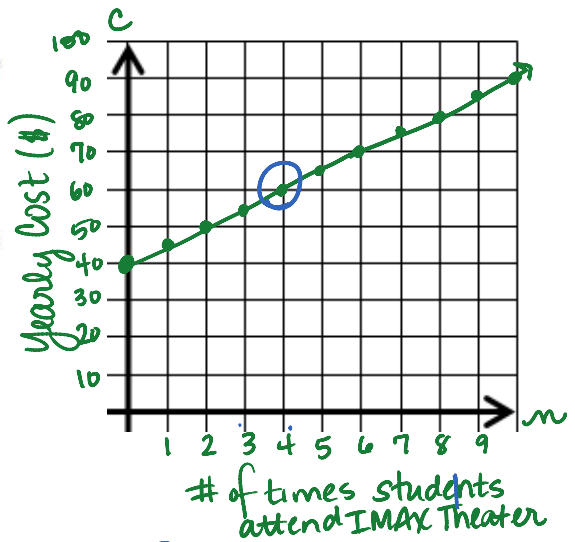
x	y
1	0
0	6

x-int: 1  
y-int: 6



13. The equation  $C = 40 + 5n$  can be used to represent the relationship between the yearly cost  $C$  in dollars for a student who has a membership to the Museum of Nature and Science in Dallas, Texas and the number of times  $n$  the student attends the IMAX® Theater at the museum.
- Graph the equation.
  - Use your graph to determine the cost of a student attending the theater four times.

\$60



15. Explain the statement "Not all linear equations represent linear functions."

The equation  $x = a$ , where  $a$  is any real #, is a linear equation, but is not a linear function, because there is more than one output for each input value.