

11- 1 Finding "b"

Directions: Complete the table for each function and then graph the function on the coordinate plane below.

1) Graph the equation $y = 2x$ by completing the table below:

x	2x	y	(x, y)

RED

2) Graph the equation $y = 2x - 3$ by completing the table below:

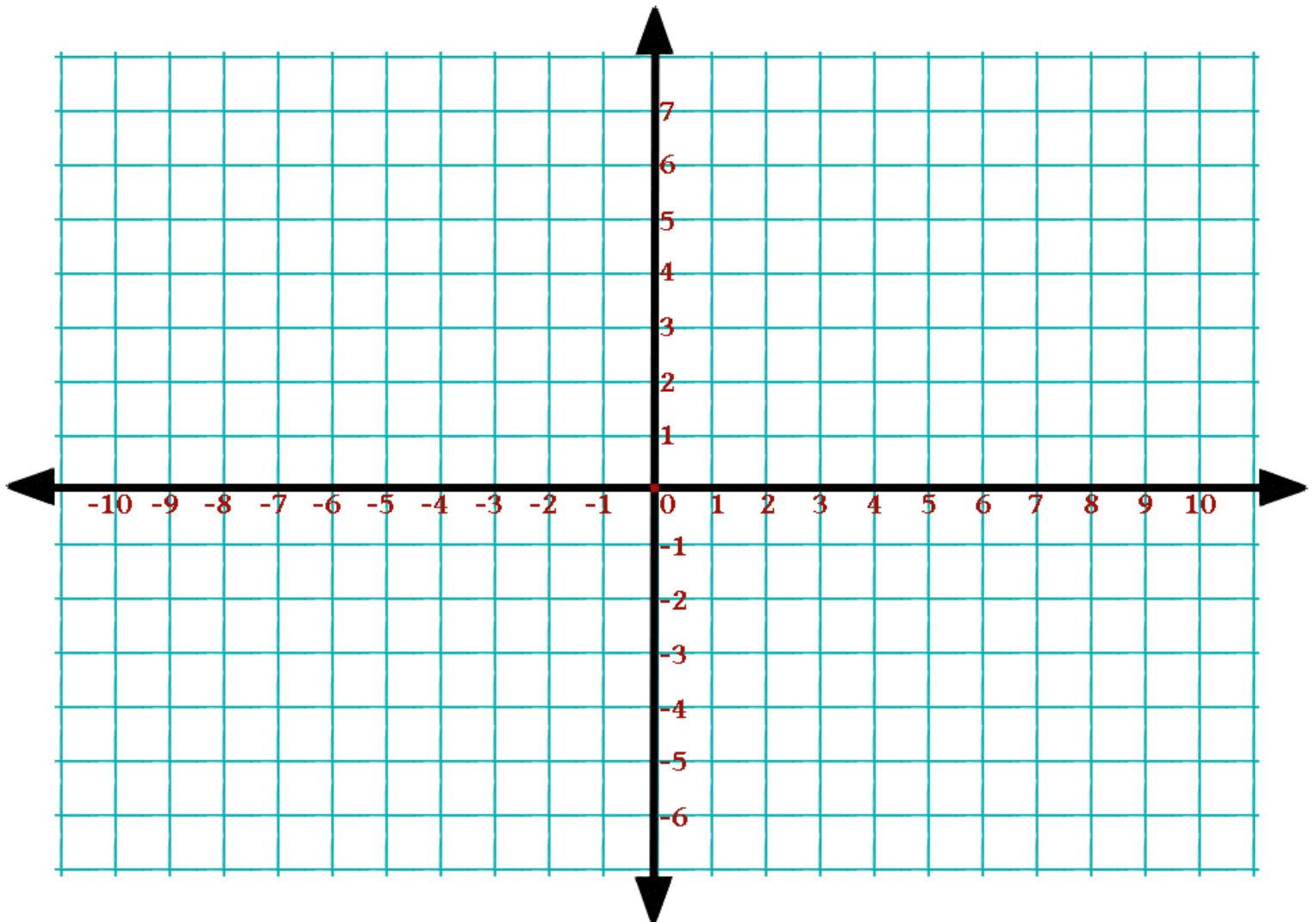
x	2x - 3	y	(x, y)

BLUE

3) Graph the equation $y = 2x + 5$ by completing the table below:

x	2x + 5	y	(x, y)

GREEN



Use the graphs from questions 1-3 to answer the following questions:

1. How are the lines the same?
2. What is different about the lines?
3. Where does the line for equation 1, $y = 2x$, cross the y-axis? _____
 - What is the slope of the line? _____
4. Where does the line for equation 2, $y = 2x - 3$, cross the y-axis? _____
 - What is the slope of the line? _____
5. Where does the line for equation 3, $y = 2x + 5$, cross the y-axis? _____
 - What is the slope of the line? _____
6. What happened to the line when we changed the constant in each equation?
(For example, the constant in each equation changed from 0 to -3 and then +5.)
7. Using what you know from question 6, where does each of the following lines cross the y-axis?
 - $y = 2x + 7$ _____ What is the slope (m)? _____
 - $y = -x + 11$ _____ What is the slope (m)? _____
 - $y = \frac{1}{2}x - 8$ _____ What is the slope (m)? _____
 - $y = 3x - 4$ _____ What is the slope (m)? _____
 - $y = 5x$ _____ Hmm... you'll have to think about
this one!

NOTE:

- the point where a line crosses the y-axis is called the **y-intercept**
- we use the variable "**b**" for the y – intercept
- the coefficient of x is the **slope of the line**
- we use the variable "**m**" for slope

You can write an equation for a line using the formula; _____