Analyzing the Effects of the Changes in m and b on the Graph of $y = mx + b$

Name:

Date:

Vocabulary Review:
In your own words, define each of the following vocabulary terms.

- Slope

- Slope-Intercept Form

- *y*-intercept

Apply New Learning:

1. Complete the table below.

	Equation	Slope (m)	*y*-intercept (b)
1	$y = 2x$		
2	$y = 2x + 2$		
3	$y = 2x + 4$		
4	$y = 2x - 4$		

2. Graph lines #1–4 on the same screen using a graphing calculator. Describe any similarities or differences you notice when you view lines #1–4 on the same graph.

3. Complete the table below.

	Equation	Slope (m)	*y*-intercept (b)
5	$y = 2x$		
6	$y = 4x$		
7	$y = 6x$		
8	$y = -2x$		

4. Graph lines #5–8 on the same screen using a graphing calculator. Describe any similarities or any differences you notice when you view lines #5–8 on the same graph.

5. If two equations have the same slope, or m value, but different *y*-intercepts, or b values, how will these lines be similar? How will these lines be different?

6. If two equations have the same *y*-intercept, or b value, but different slopes, or m values, how will these lines be similar? How will these lines be different?