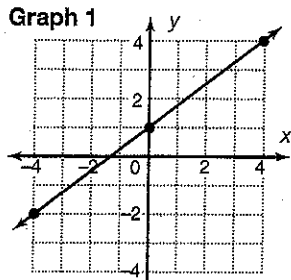
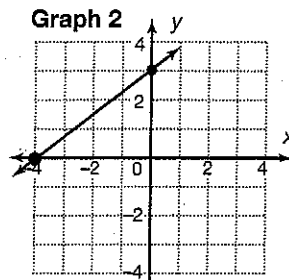


Patterns in Graphs

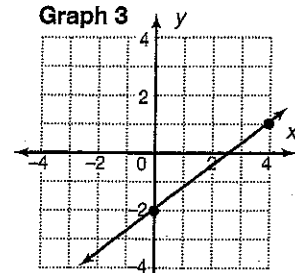
You know that the *y*-intercept is where the graph of a line crosses the *y*-axis. Study each of the following equations and their graphs.



$$y = \frac{3}{4}x + 1$$



$$y = \frac{3}{4}x + 3$$



$$y = \frac{3}{4}x - 2$$

Name the slope and *y*-intercept of each graph.

1. Graph 1: Slope = _____ *y*-intercept = _____
2. Graph 2: Slope = _____ *y*-intercept = _____
3. Graph 3: Slope = _____ *y*-intercept = _____
4. Describe any pattern that you notice about the equations and their graphs.

5. What do you think the number in front of *x* represents in each equation?

6. What do you think the number added or subtracted represents in each equation?

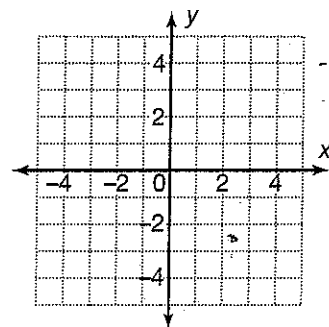
7. Predict the slope and the *y*-intercept for these equations. Then graph the equation to verify your predictions.

8. $y = 2x + 3$

Slope _____ *y*-intercept _____

9. $y = -2x + 4$

Slope _____ *y*-intercept _____



10. Why is *slope-intercept form* a good name for equations such as $y = 2x + 3$?

Name _____

**Practice
4-5**

Patterns in Linear Equations and Graphs

For each line, find the slope, the x -intercept, and the y -intercept.

1. Line through A and B

slope: _____

x -intercept: _____

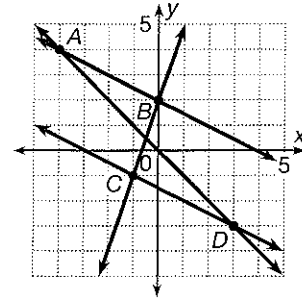
y -intercept: _____

2. Line through B and C

slope: _____

x -intercept: _____

y -intercept: _____



3. Line through C and D

slope: _____

x -intercept: _____

y -intercept: _____

4. Line through A and D

slope: _____

x -intercept: _____

y -intercept: _____

5. Which lines in Exercises 1–4 are parallel? Explain.

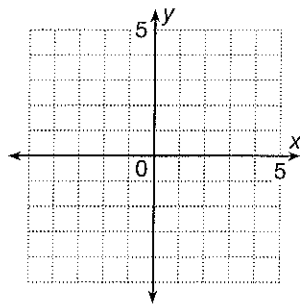
Graph each equation. Find the slope, the x -intercept, and the y -intercept.

6. $y = -x + 2$

slope: _____

x -intercept: _____

y -intercept: _____

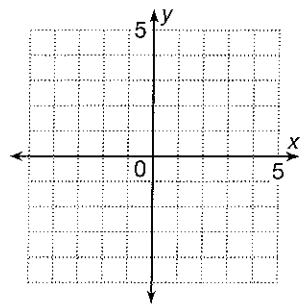


7. $y = \frac{1}{2}x + 3$

slope: _____

x -intercept: _____

y -intercept: _____

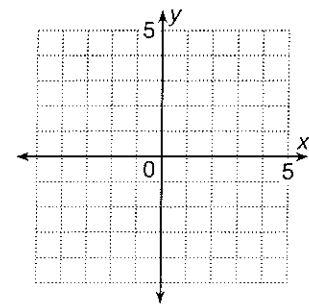


8. $y = 2x - 4$

slope: _____

x -intercept: _____

y -intercept: _____



9. Which lines in Exercises 6–8 are parallel? Explain.
