

**Name:** \_\_\_\_\_ **Course/Section:** \_\_\_\_\_ **Instructor:** \_\_\_\_\_

**Chapter 10 Graphing Equations**  
**10.5 Slope-Intercept Form**

Basic Concepts ~ Finding Slope-Intercept Form ~ Parallel and Perpendicular Lines

**STUDY PLAN**

**Read:** Read Section 10.5 on pages 642-649 in your textbook or eText.

**Practice:** Do your assigned exercises in your  Book  MyMathLab  Worksheets

**Review:** Keep your corrected assignments in an organized notebook and use them to review for the test.

**Key Terms**

*Exercises 1-7: Use the vocabulary terms listed below to complete each statement.  
Note that some terms or expressions may not be used.*

**parallel**  
**point-slope**  
**perpendicular**  
**undefined slope**

**slope**  
**zero slope**  
**slope-intercept**  
**negative reciprocal**

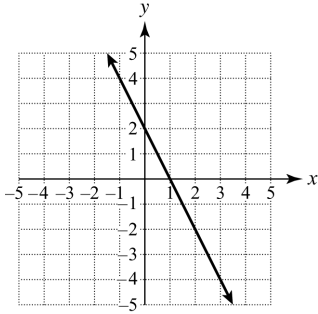
1. A line with \_\_\_\_\_ is horizontal.
2. Two nonvertical \_\_\_\_\_ lines have the same slope.
3. The \_\_\_\_\_  $m$  of the line passing through the points  $(x_1, y_1)$  and  $(x_2, y_2)$  is  $m = \frac{y_2 - y_1}{x_2 - x_1}$ , where  $x_1 \neq x_2$ .
4. If two lines have slopes  $m_1$  and  $m_2$  such that  $m_1 \cdot m_2 = -1$ , then they are \_\_\_\_\_ lines.
5. The \_\_\_\_\_ form of a line with slope  $m$  and y-intercept  $b$  is given by  $y = mx + b$ .
6. The slopes of two perpendicular lines are \_\_\_\_\_(s) of each other.
7. A vertical line has \_\_\_\_\_.

**Finding Slope-Intercept Form**

*Exercises 1-7: Refer to Examples 1-5 on pages 643-646 in your text and the Section 10.5 lecture video.*

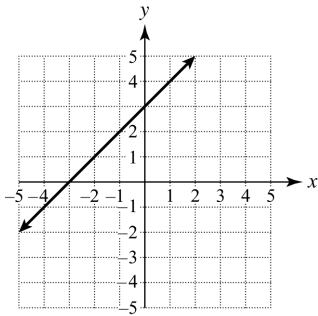
*For each graph write the slope-intercept form of the line.*

1.



1. \_\_\_\_\_

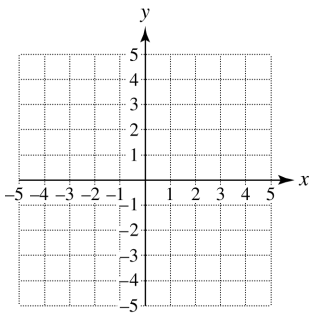
2.



2. \_\_\_\_\_

3. Sketch a line with slope  $\frac{1}{3}$  and y-intercept  $-4$ . Write its slope-intercept form.

3. \_\_\_\_\_



Write each equation in slope-intercept form. Then give the slope and y-intercept of the line.

4.  $3y - 5x = 15$

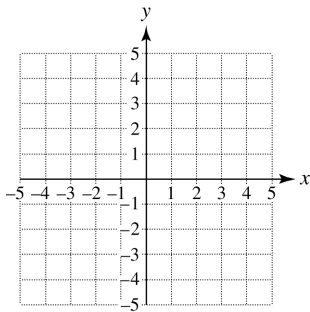
4. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5.  $x = -3y + 6$

5. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6. Write the equation  $3x - y = 2$  in slope-intercept form and then graph it.

6. \_\_\_\_\_



7. Production of a certain item involves fixed costs of \$34,000 plus \$120 for each item made.

(a) How much does it cost to produce 2000 items?

7. (a) \_\_\_\_\_

(b) Write the slope-intercept form that gives the cost to produce  $x$  items.

(b) \_\_\_\_\_

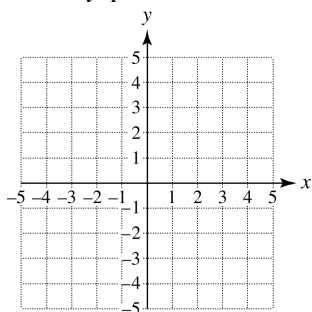
(c) If the cost is \$454,000, how many items were produced?

(c) \_\_\_\_\_

**Parallel and Perpendicular Lines**

*Exercises 8-12: Refer to Examples 6-8 on pages 646-648 in your text and the Section 10.5 lecture video.*

8. Find the slope-intercept form of a line parallel to  $y = 2x - 7$  and passing through the point  $(-2, 1)$ . Sketch each line in the same  $xy$ -plane. 8. \_\_\_\_\_



*For each of the given lines, find the slope-intercept form of a line passing through the origin that is perpendicular to the given line.*

9.  $y = -4x$  9. \_\_\_\_\_
10.  $y = \frac{2}{3}x - 4$  10. \_\_\_\_\_
11.  $5x + 2y = -10$  11. \_\_\_\_\_
12. Find the slope-intercept form of a line perpendicular to  $y = \frac{3}{4}x + 2$  and passing through the point  $(3, -1)$ . Sketch each line in the same  $xy$ -plane. 12. \_\_\_\_\_

