NAME _____ DATE _____

Module 8 Writing Linear Equations of Two Variables
Lesson 2 Writing Equations of Lines, Given the Slope and *y*-Intercept

independent practice

Use the given information to write an equation of the line in slope-intercept form.

1. Slope: $\frac{4}{3}$ *y*-intercept: 2

2. Slope: $-\frac{1}{3}$ *y*-intercept: –1

3. Slope: $\frac{2}{11}$ *y*-intercept: 10

4. Slope: $-\frac{1}{4}$ *y*-intercept: 6

5. Slope: 0 Passes through: (–4, 2)

6. Slope: $\frac{6}{7}$ *y*-intercept: –7

7. Slope: $-\frac{3}{7}$ *y*-intercept: –2

8. Slope: undefined Passes through: (9, 1)

9. Slope: –6 *y*-intercept: 2

10. Slope: $\frac{4}{3}$ *y*-intercept: 3

11. Slope: $\frac{4}{7}$ *y*-intercept: –7

12. Slope: $\frac{5}{2}$ *y*-intercept: –4

Write the slope-intercept form of the equation of the line described.

13. The line is parallel to the line $y = -\frac{1}{2}x + 4$ and passes through the point (0, –3).

14. The line is perpendicular to the line $y = -4x - 2$ and passes through the point (0, 4).

15. The line is perpendicular to the line $y = -\frac{2}{3}x - 8$ and passes through the origin.

16. The line is parallel to the line $y = -\frac{1}{5}x$ and passes through the point (0, –1).

17. The line is perpendicular to the line $y = 3x - 1$ and passes through the point (0, –6).

18. The line is parallel to the line $y = \frac{1}{4}x + 1$ and passes through the point (0, –1).

19. The line is perpendicular to the line $y = \frac{6}{5}x + 2$ and passes through the point (0, 3).

20. The line is parallel to the line $y = -9x + 2$ and passes through the point (0, –7).

Journal

1. An iceberg is 50 feet high and melts at a rate so that its height decreases 5 feet each year. Write a linear equation that can be used to find the height of the iceberg at any time. Explain why the equation is correct and include slope and *y*-intercept in the explanation.
2. Explain how to convert $4x + 2y = 6$ into slope-intercept form.
3. Explain the relationship between the graphs of the two equations $y = 3x - 1$ and $-2y = -6x + 2$.
4. From the graph of a line, explain how the linear equation of the line in slope-intercept form can be determined.
5. Explain how to graph a line with a slope of 0 and a *y*-intercept of 0.

Cumulative Review

Solve each equation for *x*.

1. $y = x + 1$

2. $y = -x + 14$

3. $y = 12 - 6x$

4. $y = 4x - 16$

5. $y = 2x + 1$

6. $y = -\frac{1}{3}x - 2$

7. $y = \frac{1}{5}x - 3$

8. $y = \frac{5}{2}x - \frac{5}{3}$

9. $y = \frac{1}{4}x^2$

10. $y = 3x + 7s - 3t + 2$