ACTIVITY 2 Continued

Check Your Understanding

Debrief students' answers to these items to ensure that they understand concepts related to interpreting the rate of change and intercepts of an equation.

Answers

11. The y-intercept of 1360 represents the amount of money in dollars Roy will have if he does not buy any meals. The x-intercept of 34 represents the greatest number of meals Roy can buy before running out of money.
12. Write the ratio of the change in the dependent variable to the change in the independent variable.
13. The rate of change of a linear function is the same as the slope.
14. Sample answer: Use the coordinates of the two points to find the slope of the line. Then graph the two points and draw a line through them to determine the y-intercept of the line. Finally, write the equation in slope-intercept form.

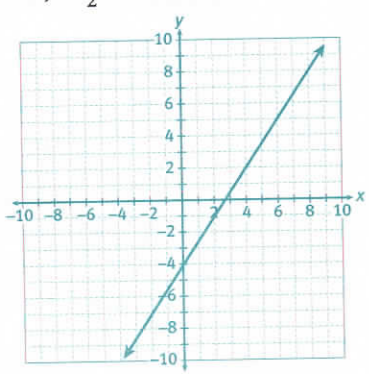
ASSESS

Students' answers to Lesson Practice problems will provide you with a formative assessment of their understanding of the lesson concepts and their ability to apply their learning.

See the Activity Practice for additional problems for this lesson. You may assign the problems here or use them as a culmination for the activity.

LESSON 2-1 PRACTICE

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



ADAPT

Check students' answers to the Lesson Practice to ensure that they understand basic concepts related to writing and graphing linear equations, as well as how to interpret rate of change and intercepts of equations. If students are continuing to having difficulty writing equations to model a given situation, have them practice writing word expressions and translating the word expressions into algebraic expressions.

My Notes

MATH TIP

The *slope-intercept form* of a line is $y = mx + b$, where m is the slope and b is the y-intercept.

Check Your Understanding

11. What do the x- and y-intercepts of your graph in Item 7 represent?
12. If you know the coordinates of two points on the graph of a linear function, how can you determine the function's rate of change?
13. What is the relationship between the rate of change of a linear function and the slope of its graph?
14. Using your answers to Items 12 and 13, explain how to write the equation of a line when you are given the coordinates of two points on the line.

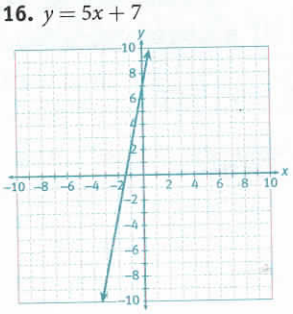
LESSON 2-1 PRACTICE

15. Write the equation of the line with y-intercept -4 and a slope of $\frac{3}{2}$. Graph the equation.
16. Write the equation of the line that passes through the point $(-2, -3)$ and has a slope of 5. Graph the equation.
17. **Model with mathematics.** Graph the function $f(x) = 3 - \frac{1}{2}(x - 2)$.

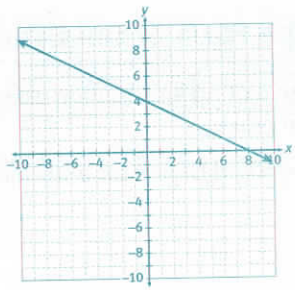
Use the following information for Items 18–20. Roy already has 10,368 frequent flyer miles, and he will earn 2832 more miles from his round-trip flight to New York City. In addition, he earns 2 frequent flyer miles for each dollar he charges on his credit card.

18. Write the equation of a function $f(d)$ that represents the total number of frequent flyer miles Roy will have after his trip if he charges d dollars on his credit card.
19. Graph the function, using appropriate scales on the axes.
20. **Reason quantitatively.** How many dollars will Roy need to charge on his credit card to have a total of 15,000 frequent flyer miles? Explain how you determined your answer.

16. $y = 5x + 7$

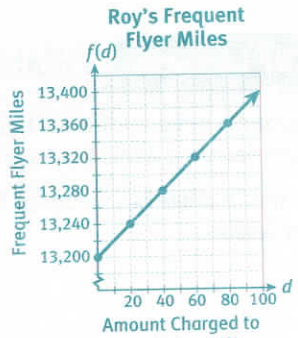


17.



18. $f(d) = 13{,}200 + 2d$

19.



20. $900; Sample explanation: Substitute 15,000 for $f(d)$ and then solve for d.