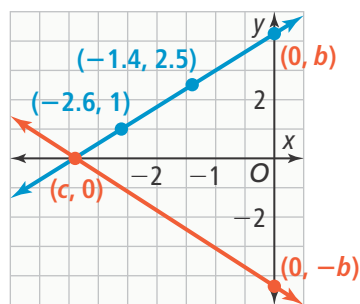




UNDERSTAND

13. **Use Structure** Aisha and Carolina each sketch a graph of the linear equation $y = -\frac{3}{4}x + 2$. Aisha uses the equation $y = -\frac{3}{4}x + 2$ to sketch the graph, and Carolina uses the equation $y = \frac{3}{-4}x + 2$.
- Explain how this leads them to use different steps to construct their graphs.
 - Will the two graphs look the same? Explain.
14. **Make Sense and Persevere** Line g passes through the points $(-2.6, 1)$ and $(-1.4, 2.5)$, as shown. Find the equation of the line that passes through $(0, -b)$ and $(c, 0)$.

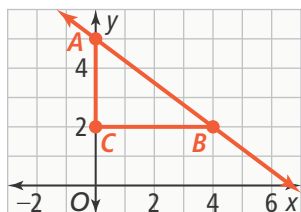


15. **Error Analysis** Describe and correct the error a student made when graphing the linear equation $y = -\frac{3}{4}x - 6$.

- Plot the y -intercept at $(0, 6)$.
- Plot a second point 3 units down and 4 units right from $(0, 6)$ at $(4, 3)$.
- Connect the points with a line.



16. **Mathematical Connections** The points $A(0, 5)$, $B(4, 2)$ and $C(0, 2)$ form the vertices of a right triangle in the coordinate plane. What is the equation of the line that forms the hypotenuse?



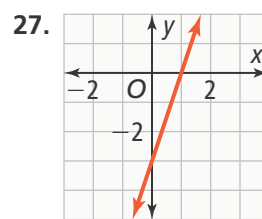
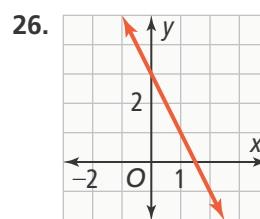
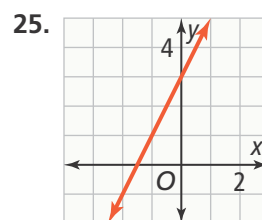
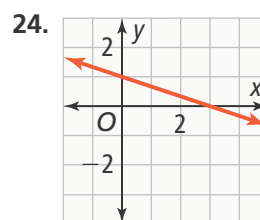
17. **Higher Order Thinking** The line $y = -0.5x + b$ passes through the points $(1, 5.5)$, $(3, p)$, $(4, 4)$, and $(7, n)$. Find b , n , and p .

PRACTICE

Sketch the graph of each equation. SEE EXAMPLE 1

18. $y = \frac{3}{8}x + 5$ 19. $y = -\frac{1}{2}x + 3$
 20. $y = -2x + 3$ 21. $y = 3x - 6$
 22. $y = -\frac{3}{5}x + 4$ 23. $y = \frac{5}{2}x - \frac{1}{2}$

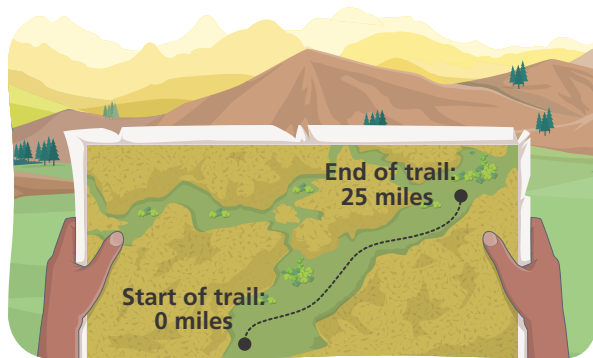
Write the equation of each line in slope-intercept form. SEE EXAMPLE 2



Write the equation of the line that passes through the given points. SEE EXAMPLE 3

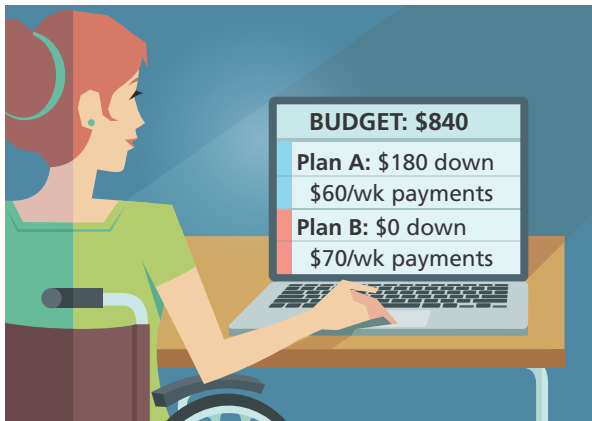
28. $(0, 1)$ and $(2, 2)$ 29. $(-2, -1)$ and $(0, -5)$
 30. $(4, 0)$ and $(0, 2)$ 31. $(-2, -6)$ and $(1, 2)$
 32. $(\frac{3}{8}, 0)$ and $(\frac{5}{8}, \frac{1}{2})$ 33. $(2, 1.5)$ and $(0, 4.5)$

34. Jordan will hike the trail shown at a rate of 4 mi/h. Write a linear equation to represent the distance Jordan still has to walk after x hours. What does the y -intercept of the equation represent? SEE EXAMPLE 4



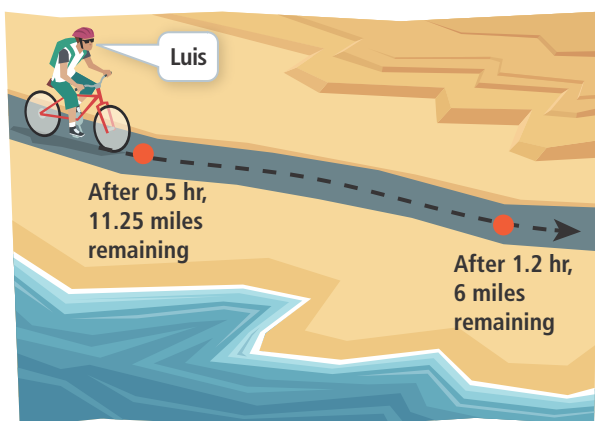
APPLY

35. Make Sense and Persevere Naomi wants to buy a new computer for \$840. She is considering two payment plans that require weekly payments. Which plan will pay for the computer faster? Explain.



36. Model With Mathematics Becky is competing in an 8-mi road race. She runs at a constant speed of 6 mi/h. Write an equation in slope-intercept form to represent the distance Becky has left to run.

37. Construct Arguments Luis and Raul are riding their bicycles to the beach from their respective homes. Luis proposes that they leave their respective homes at the same time and plan to arrive at the beach at the same time. The diagram shows Luis's position at two points during his ride to the beach.



Write an equation in slope-intercept form to represent Luis's ride from his house to the beach. If Raul lives 5 miles closer to the beach than Luis, at what speed must Raul ride for the plan to work?

ASSESSMENT PRACTICE

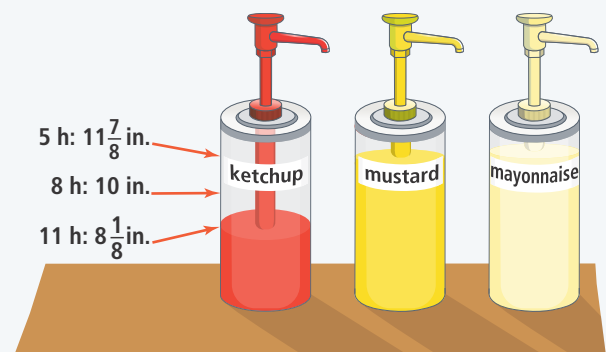
38. Which of the following statements about the graph of $y = \frac{3}{4}x - 1$ are true? Select all that apply.

- (A) The slope of the line is -1 .
- (B) The line intersects the point $(0, -\frac{3}{4})$.
- (C) The line intersects the point $(0, 1)$.
- (D) The y -intercept is -1 .
- (E) The slope of the line is $\frac{3}{4}$.
- (F) The y -intercept is $\frac{3}{4}$.

39. SAT/ACT What is the equation of the line that has a slope of -3 and a y -intercept of 2 ?

- (A) $y = 2x - 3$
- (B) $y = 2x + 3$
- (C) $y = -3x + 2$
- (D) $y = -3x - 2$
- (E) $y = -3x - 3$

40. Performance Task After filling the ketchup dispenser at the snack bar where she works, Kelley measures the level of ketchup during the day at different hourly intervals.



Part A Assuming the ketchup is used at a constant rate, write a linear equation that can be used to determine the level of ketchup in the dispenser after x hours.

Part B How can you use the equation from Part A to find the level of ketchup when the dispenser is full?

Part C If Kelley fills the ketchup dispenser just before the restaurant opens, and the restaurant is open for 18 hours, will the dispenser need to be refilled before closing time? Explain.