Extra Practice: Skills and Word Problems

● **Lesson 6-1** Find the rate of change for each situation.

1. growing from 1.4 m to 1.6 m in one year

2. bicycling 3 mi in 15 min and 7 mi in 55 min

3. growing 22.4 mm in 14 s

4. reading 8 pages in 9 min and 22 pages in 30 min

● **Lessons 6-2 and 6-3** Find the slope and y-intercept.

5. $y = 6x + 8$ **6.** $3x + 4y = -24$ **7.** $2y = 8$ **8.** $y = \frac{-3}{4}x - 8$

Graph each equation.

9. $y = 2x - 3$ **10.** $y = \frac{2}{3}x - 4$ **11.** $y = -\frac{1}{2}x + 4$ **12.** $y = -\frac{5}{4}x$

● **Lessons 6-4 and 6-5** Find the x- and y-intercepts for each equation.

13. $6x + y = 12$ **14.** $y = -7x$ **15.** $y = \frac{1}{2}x + 3$ **16.** $-2y = 5x - 12$

Write the equation in point-slope form for the line through the given point with the given slope.

17. $(4, 6); m = -5$ **18.** $(3, -1); m = 1$ **19.** $(8, 5); m = \frac{1}{2}$ **20.** $(0, -6); m = \frac{4}{3}$

Graph each equation.

21. $x + 4y = 8$ **22.** $y - 5 = -2(x + 1)$ **23.** $x + 3 = 0$

24. $4x - 3y = 12$ **25.** $y = -1$ **26.** $y + 1 = -\frac{1}{2}(x + 2)$

A line passes through the given points. Write an equation for the line in slope-intercept form.

27. $(2, 5)$ and $(4, 8)$ **28.** $(1, 6)$ and $(7, 3)$ **29.** $(-2, 4)$ and $(3, 9)$ **30.** $(1, 6)$ and $(9, -4)$

31. $(0, -7)$ and $(-1, 0)$ **32.** $(7, 0)$ and $(3, -4)$ **33.** $(0, 0)$ and $(-7, 1)$ **34.** $(10, 0)$ and $(0, 7)$

● **Lesson 6-5** Write an equation in standard form that satisfies the given conditions.

35. parallel to $y = 4x + 1$, through $(-3, 5)$ **36.** perpendicular to $y = -x - 3$, through $(0, 0)$

37. perpendicular to $3x + 4y = 12$, through $(7, 1)$ **38.** parallel to $2x - y = 6$, through $(-6, -9)$

39. parallel to the x-axis and through $(4, -1)$ **40.** through $(4, 44)$ and parallel to the y-axis

● **Lesson 6-6**

41. a. Graph the (ages, grades) data of some students in a school at the right.
  b. Draw a trend line.
  c. Find the equation of the line of best fit.

> $(10, 6), (16, 10), (15, 10), (18, 12), (17, 11),$
> $(17, 12), (19, 12), (16, 11), (11, 7), (15, 9), (13, 8)$

● **Lesson 6-7** Graph each equation by translating $y = |x|$ or $y = -|x|$.

42. $y = |x| + 1$ **43.** $y = |x + 2|$ **44.** $y = |x - 2|$ **45.** $y = -|x - 1|$

46. $y = -|x + 1|$ **47.** $y = -|x| + 1$ **48.** $y = |x + 0.5|$ **49.** $y = |x| - 4$