

EXERCISES

For more exercises, see *Extra Skill and Word Problem Practice*.

Practice and Problem Solving

A Practice by Example

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Find the slope and y-intercept of each equation.

1. $y = -2x + 1$

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

3. $y = x - \frac{5}{4}$

4. $y = 5x + 8$

5. $y = \frac{2}{3}x + 1$

6. $y = -4x$

7. $y = -x - 7$

8. $y = -0.7x - 9$

9. $y = -\frac{3}{4}x - 5$

Write an equation of a line with the given slope and y-intercept.

10. $m = \frac{2}{9}, b = 3$

11. $m = 3, b = \frac{2}{9}$

12. $m = \frac{9}{2}, b = 3$

13. $m = 0, b = 1$

14. $m = -1, b = -6$

15. $m = -\frac{2}{3}, b = 5$

16. $m = 0.3, b = 4$

17. $m = 0.4, b = 0.6$

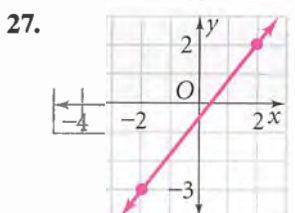
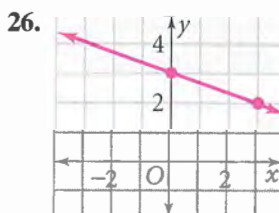
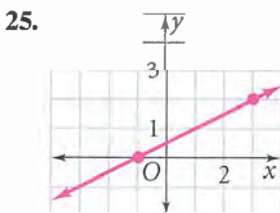
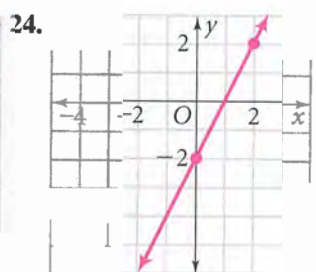
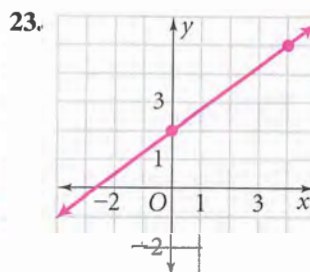
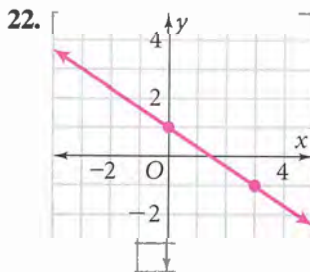
18. $m = -7, b = \frac{1}{3}$

19. $m = -\frac{1}{5}, b = -\frac{2}{5}$

20. $m = -\frac{1}{4}, b = \frac{5}{4}$

21. $m = \frac{8}{3}, b = \frac{2}{3}$

Write the slope-intercept form of the equation for each line.



Use the slope and y-intercept to graph each equation.

28. $y = \frac{1}{2}x + 4$

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

30. $y = -5x + 2$

31. $y = 2x + 5$

32. $y = x + 4$

33. $y = -x + 2$

34. $y = 4x - 3$

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

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

37. $y = -\frac{2}{3}x + 2$

38. $y = -\frac{4}{5}x + 4$

39. $y = -0.5x + 2$

40. **Retail Sales** A music store is offering a coupon promotion on its CDs. The regular price for CDs is \$14. With the coupon, customers are given \$4 off the total purchase. The equation $t = 14c - 4$, where c is the number of CDs and t is the total cost of the purchase, models this situation.

- Graph the equation.
- Find the total cost for a sale of 6 CDs.

B Apply Your Skills

Find the slope and y-intercept of each equation.

41. $y - 2 = -3x$

42. $y + \frac{1}{2}x = 0$

43. $y - 9x = \frac{1}{2}$

44. $y = 3x - 9$

45. $2y - 6 = 3x$

46. $-2y = 6(5 - 3x)$

47. $y - d = cx$

48. $y = (2 - a)x + a$

49. $2y + 4n = -6x$

Use the slope and y-intercept to graph each equation.

50. $y = 7 - 3x$

51. $2y + 4x = 0$

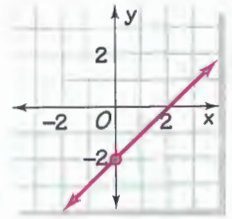
52. $3y + 6 = -2x$

53. $y + 2 = 5x - 4$

54. $4x + 3y = 2x - 1$

55. $-2(3x - 4) + y = 0$

56. **Error Analysis** Fred drew the graph at the right for the equation $y = -2x + 1$. What error did he make?



57. a. A candle begins burning at time $t = 0$. Its original height is 12 in. After 30 min the height of the candle is 8 in. Draw a graph showing the change in the height of the candle.

b. Write an equation that relates the height of the candle to the time it has been burning.

c. How many minutes after the candle is lit will it burn out?



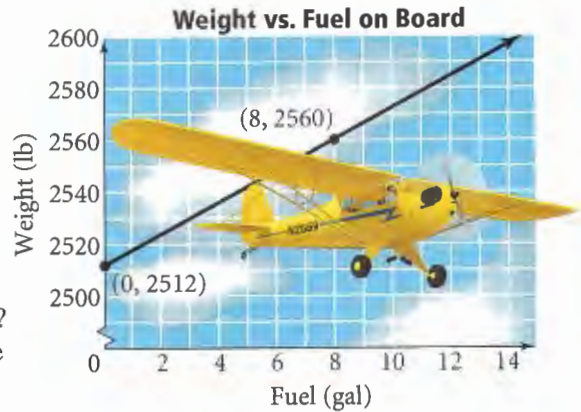
Real-World Connection

Careers Airport ground crews direct airplanes to and from their gates.

58. **Airplane Fuel** The graph shows the relationship between the number of gallons of fuel in the tank of an airplane and the weight of the airplane. The equation $y = 6x + 2512$, where x is the number of gallons of fuel and y is the weight of the airplane, models this situation.

a. What does the slope represent?

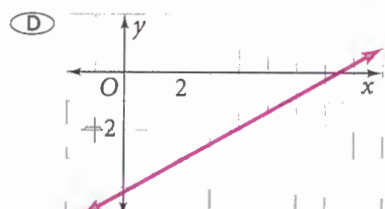
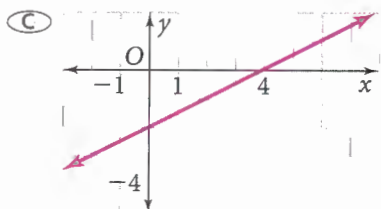
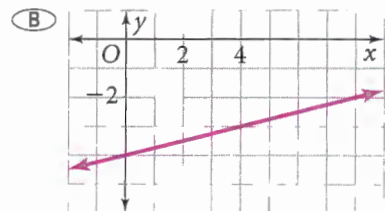
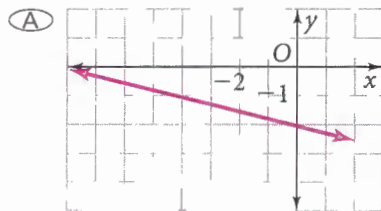
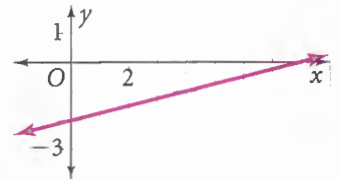
b. Use the equation to predict the weight of the plane when the tank contains 25 gallons of fuel.



Is the ordered pair on the graph of the given equation?

59. $(-3, 4); y = -2x + 1$ 60. $(-6, 5); y = -\frac{1}{2}x + 2$ 61. $(0, -1); y = x - \frac{5}{4}$

62. **Multiple Choice** At the right is the graph of $y = \frac{1}{4}x - 2$. Which of the graphs below represents the linear function if the slope is doubled and the y-intercept stays the same?



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