In Exercises 13–20, determine whether the values of x are solutions of the inequality.
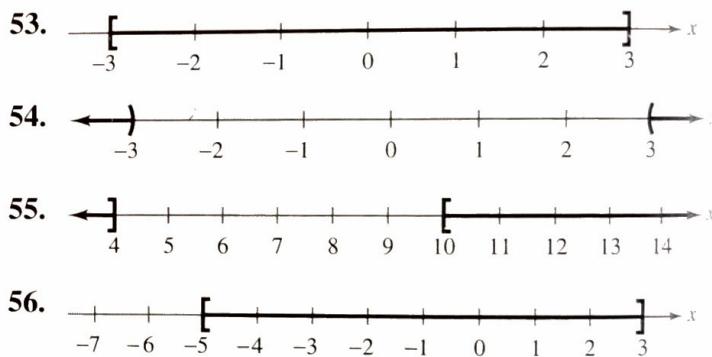
Inequality	Values	
13. $5x - 12 > 0$	(a) $x = 3$	(b) $x = -3$
	(c) $x = \frac{5}{2}$	(d) $x = \frac{3}{2}$
14. $x + 1 < \dfrac{2x}{3}$	(a) $x = 0$	(b) $x = 4$
	(c) $x = -4$	(d) $x = -3$
15. $0 < \dfrac{x-2}{4} < 2$	(a) $x = 4$	(b) $x = 10$
	(c) $x = 0$	(d) $x = \frac{7}{2}$
16. $|2x - 3| < 15$	(a) $x = -6$	(b) $x = 0$
	(c) $x = 12$	(d) $x = 7$
17. $x^2 - 3 < 0$	(a) $x = 3$	(b) $x = 0$
	(c) $x = \frac{3}{2}$	(d) $x = -5$
18. $x^2 - x - 12 \geq 0$	(a) $x = 5$	(b) $x = 0$
	(c) $x = -4$	(d) $x = -3$
19. $\dfrac{x+2}{x-4} \geq 3$	(a) $x = 5$	(b) $x = 4$
	(c) $x = -\frac{9}{2}$	(d) $x = \frac{9}{2}$
20. $\dfrac{3x^2}{x^2 + 4} < 1$	(a) $x = -2$	(b) $x = -1$
	(c) $x = 0$	(d) $x = 3$

In Exercises 21–52, solve the inequality and sketch the solution on the real number line.

21. $4x < 12$ 22. $2x > 3$

23. $-10x < 40$ 24. $-6x > 15$

25. $x - 5 \geq 7$ 26. $x + 7 \leq 12$

27. $4(x + 1) < 2x + 3$ 28. $2x + 7 < 3$

29. $4 - 2x < 3$ 30. $6x - 4 \leq 2$

31. $1 < 2x + 3 < 9$

32. $-8 \leq 1 - 3(x - 2) < 13$

33. $-4 < \dfrac{2x - 3}{3} < 4$

34. $0 \leq \dfrac{x + 3}{2} < 5$

35. $\dfrac{3}{4} > x + 1 > \dfrac{1}{4}$

36. $-1 < -\dfrac{x}{3} < 1$

37. $|x| < 5$

38. $|2x| < 6$

39. $\left|\dfrac{x}{2}\right| > 3$

40. $|5x| > 10$

41. $|x - 20| \leq 4$

42. $|x - 7| < 6$

43. $|x - 20| \geq 4$

44. $|x + 14| + 3 > 17$

45. $\left|\dfrac{x - 3}{2}\right| \geq 5$

46. $|1 - 2x| < 5$

47. $|9 - 2x| - 2 < -1$

48. $\left|1 - \dfrac{2x}{3}\right| < 1$

49. $2|x + 10| \geq 9$

50. $3|4 - 5x| \leq 9$

51. $|x - 5| < 0$

52. $|x - 5| \geq 0$

In Exercises 53–60, use absolute value notation to define each interval (or pair of intervals) on the real number line.

53.

54.

55.

56.

57. All real numbers within 10 units of 12

58. All real numbers at least five units from 8

59. All real numbers more than five units from -3

60. All real numbers no more than seven units from -6

61. **Think About It**   The graph of $|x - 5| < 3$ can be described as *all real numbers within three units of 5.* Give a similar description of $|x - 10| < 8$.

62. **Think About It**   The graph of $|x - 2| > 5$ can be described as *all real numbers more than five units from 2*. Give a similar description of $|x - 8| > 4$.