41–44 ■ **Sets**   Find the indicated set if

$$A = \{1, 2, 3, 4, 5, 6, 7\} \qquad B = \{2, 4, 6, 8\}$$
$$C = \{7, 8, 9, 10\}$$

41. (a) $A \cup B$ (b) $A \cap B$

42. (a) $B \cup C$ (b) $B \cap C$

43. (a) $A \cup C$ (b) $A \cap C$

44. (a) $A \cup B \cup C$ (b) $A \cap B \cap C$

45–46 ■ **Sets**   Find the indicated set if

$$A = \{x \mid x \geq -2\} \qquad B = \{x \mid x < 4\}$$
$$C = \{x \mid -1 < x \leq 5\}$$

45. (a) $B \cup C$ (b) $B \cap C$

46. (a) $A \cap C$ (b) $A \cap B$

47–52 ■ **Intervals** Express the interval in terms of inequalities, and then graph the interval.

47. $(-3, 0)$

48. $(2, 8]$

49. $[2, 8)$

50. $\left[-6, -\frac{1}{2}\right]$

51. $[2, \infty)$

52. $(-\infty, 1)$

53–58 ■ **Intervals** Express the inequality in interval notation, and then graph the corresponding interval.
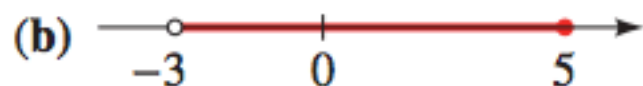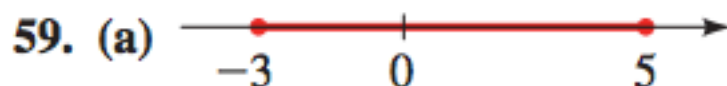
53. $x \leq 1$

54. $1 \leq x \leq 2$

55. $-2 < x \leq 1$

56. $x \geq -5$

57. $x > -1$

58. $-5 < x < 2$

59–60 ■ **Intervals** Express each set in interval notation.

59. (a)

(b)

60. (a)

(b)

61–66 ■ **Intervals**   Graph the set.

61. $(-2, 0) \cup (-1, 1)$

62. $(-2, 0) \cap (-1, 1)$

63. $[-4, 6] \cap [0, 8)$

64. $[-4, 6) \cup [0, 8)$

65. $(-\infty, -4) \cup (4, \infty)$

66. $(-\infty, 6] \cap (2, 10)$