Review - ANSWERS

R1 Exercises

1. true **3.** true **5.** false

7. $\{1,2,3,4,5,6,7,8\}$ **9.** $\{2,4,6,\ldots\}$ **11.** $\{4,5,6,7,8\}$

13. Answers may vary. Examples of correct answers: $\{n \in \mathbb{W} \mid n < 6\}$, $\{n \in \mathbb{Z} \mid 0 \le n \le 5\}$

15. $\{x \in \mathbb{R} | x > -3\}$, or $\{x | x > -3\}$

17. Answers may vary. An example of a correct answer: $\{n \in \mathbb{Z} | n = 3k, k \in \mathbb{Z}\}$

19. $\in$ **21.** $\notin$ **23.** $\notin$ **25.** $\in$ **27.** $=$

29. **a.** $\sqrt{16}$; **b.** $0, \sqrt{16}$; **c.** $0, \sqrt{16}$ **d.** $0.999\ldots, -5.001, 0, 5\frac{3}{4}, 1.4\overline{05}, \frac{7}{8}, \sqrt{16},$

e. $\sqrt{2}$, $9.010010001\ldots$ **f.** $0.999\ldots, -5.001, 0, 5\frac{3}{4}, 1.4\overline{05}, \frac{7}{8}, \sqrt{2}, \sqrt{16}, 9.010010001\ldots$

31. $1.\overline{02} = \frac{101}{99} \in \mathbb{Q}$ **33.** $2.0\overline{125} = \frac{4021}{1998} \in \mathbb{Q}$

35. $5.22\overline{54} = \frac{1437}{275} \in \mathbb{Q}$

R2 Exercises

1. $-6 < -3$ **3.** $17 \ge x$ **5.** $2x + 3 \ne 0$ **7.** $2 < x < 5$

9. $-2 \le 2x < 6$ **11.** $[-4, \infty)$ **13.** $\left(-\infty, \frac{5}{2}\right)$ **15.** $(0, 6)$

17. $[-5, 16)$ **19.** -7 **21.** 8 **23.** -12

25. $<$ **27.** $=$ **29.** $\le$ **31.** 25

33. $\frac{3}{2}$ **35.** $|y - 5|$ **37.** $\{-5, 5\}$ **39.** $\{a - 5, a + 5\}$

R3 Exercises

1. true

3. true

5. false

7. true

9. false

11. $7 \cdot (5 \cdot 2)$

13. $-a$

15. 1

17. 0

19. $\frac{7}{20}$

21. $-\frac{1}{2}$

23. $-6x$

25. -8

27. -10

29. 18

31. $-\frac{41}{24}$ or $-1\frac{17}{24}$

33. $\frac{61}{24}$ or $2\frac{13}{24}$

35. -61

37. $-x + y$

39. $16x + 8y - 10$

41. $-x$

43. $-13x^2 + 12x$

45. $2\sqrt{x} - 4$

47. -2

49. $-25x^2$

51. $a + 7$

53. $-3x + 5$

55. $33a - 10$

57. $66x + 14$

59. $-12x + 615$

61. -8

63. 24

65. $\frac{8}{9}$

67. no

69. no

71. $29 \cdot 100 = 2900$

73. $\frac{8}{5} \cdot 30 = 48$

75. $9 \cdot 5 + 2 - (8 \cdot 3 + 1) = 22$