

# Review - ANSWERS

## R1 Exercises

1. true                                      3. true                                      5. false
7.  $\{1,2,3,4,5,6,7,8\}$                       9.  $\{2,4,6, \dots\}$                       11.  $\{4,5,6,7,8\}$
13. Answers may vary. Examples of correct answers:  $\{n \in \mathbb{W} \mid n < 6\}$ ,  $\{n \in \mathbb{Z} \mid 0 \leq n \leq 5\}$
15.  $\{x \in \mathbb{R} \mid x > -3\}$ , or  $\{x \mid x > -3\}$
17. Answers may vary. An example of a correct answer:  $\{n \in \mathbb{Z} \mid n = 3k, k \in \mathbb{Z}\}$
19.  $\in$                                       21.  $\notin$                                       23.  $\notin$                                       25.  $\in$                                       27.  $=$
29. a.  $\sqrt{16}$ ;    b.  $0, \sqrt{16}$ ;    c.  $0, \sqrt{16}$                       d.  $0.999 \dots, -5.001, 0, 5\frac{3}{4}, 1.4\overline{05}, \frac{7}{8}, \sqrt{16}$ ,  
 e.  $\sqrt{2}, 9.010010001 \dots$                       f.  $0.999 \dots, -5.001, 0, 5\frac{3}{4}, 1.4\overline{05}, \frac{7}{8}, \sqrt{2}, \sqrt{16}, 9.010010001 \dots$
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.  $17 \geq x$                                       5.  $2x + 3 \neq 0$                                       7.  $2 < x < 5$
9.  $-2 \leq 2x < 6$                                       11.  $[-4, \infty)$                                       13.  $(-\infty, \frac{5}{2})$                                       15.  $(0, 6)$
17.  $[-5, 16)$                                       19.  $-7$                                       21.  $8$                                       23.  $-12$
25.  $<$                                       27.  $=$                                       29.  $\leq$                                       31.  $25$
33.  $\frac{1}{6}$                                       35.  $|y - 5|$                                       37.  $\{-5, 5\}$                                       39.  $\{a - 5, a + 5\}$
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**R3 Exercises**

1. true

9. false

17. 0

25. -8

33.  $-\frac{101}{24}$  or  $-4\frac{5}{24}$ 41.  $-x$ 49.  $-25x^2$ 57.  $66x + 14$ 65.  $\frac{8}{9}$ 73.  $\frac{8}{5} \cdot 30 = 48$ 

3. true

11.  $7 \cdot (5 \cdot 2)$ 19.  $\frac{7}{20}$ 

27. -10

35. -61

43.  $-13x^2 + 12x$ 51.  $a + 7$ 59.  $-12x + 615$ 

67. no

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

5. false

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

29. 18

37.  $-x + y$ 45.  $2\sqrt{x} - 4$ 53.  $-3x + 5$ 

61. -8

69. no

7. true

15. 1

23.  $-6x$ 31.  $-\frac{41}{24}$  or  $-1\frac{17}{24}$ 39.  $16x + 8y - 10$ 

47. -2

55.  $33a - 10$ 

63. 24

71.  $29 \cdot 100 = 2900$