

## Answers for Lesson 7-2 Exercises

- |   |                                     |                                  |
|---|-------------------------------------|----------------------------------|
| 1. 16   | 2. 4                                | 3. -9                            |
| 4. 4  | 5. not possible                     | 6. 5                             |
| 7. -6   | 8. 6                                | 9. $2x\sqrt{5x}$                 |
| 10. $3\sqrt[3]{3x^2}$   | 11. $5x^2\sqrt{2x}$                 | 12. $2a\sqrt[3]{4a^2}$           |
| 13. $\sqrt[3]{2y}$  | 14. $10a^3b^3\sqrt{2b}$             | 15. $-5x^2y\sqrt[3]{2y^2}$       |
| 16. $2y\sqrt[4]{4x^3y^2}$   | 17. $2\sqrt[3]{12}$                 | 18. $8y^3\sqrt{5y}$              |
| 19. $7x^3y^4\sqrt{6y}$  | 20. $40xy\sqrt{3}$                  | 21. $30y^2\sqrt[3]{2y}$          |
| 22. $-2x^2y\sqrt[3]{30x}$   | 23. 10                              | 24. $\frac{4x}{y}$               |
| 25. $2x^2y^2\sqrt{2}$   | 26. $5x\sqrt[3]{x^2y^2}$            | 27. $\frac{\sqrt{2x}}{2}$        |
| 28. $\frac{\sqrt{10x}}{4x}$   | 29. $\frac{\sqrt[3]{4x}}{2}$        | 30. $\frac{\sqrt[3]{45x^2}}{3x}$ |
| 31. $\frac{\sqrt[4]{250}}{5}$   | 32. $5x^2\sqrt{5}$                  | 33. $\frac{\sqrt{15y}}{5y}$      |
| 34. $\frac{x\sqrt{10}}{2y}$   | 35. $r = \frac{\sqrt{Gm_1m_2F}}{F}$ |                                  |
| 36. a. $\frac{\sqrt{6} + 3}{15}$  |                                     |                                  |
| b. $\frac{\sqrt{6} + 3}{15}$  |                                     |                                  |
| c. Answers may vary. Sample: First simplify the denominator. Since $\sqrt{98} = \sqrt{2 \cdot 49} = 7\sqrt{2}$ , to rationalize the denominator, multiply the fraction by $\frac{\sqrt{2}}{\sqrt{2}}$ . This yields $\frac{\sqrt{2} \cdot 2 + \sqrt{3} \cdot 2}{7\sqrt{2} \cdot 2} = \frac{2 + \sqrt{6}}{14}$ . |                                     |                                  |
| 37. $10\sqrt{2}$  | 38. $4\sqrt[3]{5}$                  | $3\sqrt{2y^6y^5}$                |
| 40. $20x^2y^3\sqrt{y}$  | 41. $10 + 7\sqrt{2}$                | 42. $15 + 3\sqrt{21}$            |
| 43. $\sqrt[3]{x} + 5\sqrt{3}$   | 44. $2x\sqrt[3]{2}$                 | 45. $3x^2$                       |

## Answers for Lesson 7-2 Exercises (cont.)

$$46. \frac{x\sqrt{10y}}{2y^2}$$

$$47. \frac{5\sqrt{14x}}{21x}$$

$$48. \frac{\sqrt[3]{3x^2}}{3x}$$

$$49. \frac{2\sqrt[3]{25x}}{x}$$

$$50. \frac{\sqrt[3]{2xy^2}}{xy}$$

$$51. -\frac{\sqrt{33x}}{4x}$$

$$52. -4\sqrt[3]{4} - 6\sqrt[3]{2}$$

$$53. \frac{3\sqrt{5} + 5}{5}$$

$$54. \frac{\sqrt{6} - 2}{4}$$

55. about 212 mi/h greater

$$56. 20\sqrt{22}\text{cm}^2$$

57. A product of two square roots can be simplified in this way only if the square roots are real numbers.  $\sqrt{-2}$  and  $\sqrt{-8}$  are not.

$$58. 288a^5 \text{ ft}$$

59. For some values; it is easy to see that the equation is true if  $x = 0$  or  $x = 1$ . But when  $x < 0$ ,  $\sqrt{x^3}$  is not a real number, although  $\sqrt[3]{x^2}$  is.

60. Check students' work.

$$61. 2xy$$

$$62. 2xy^2$$

$$63. 2\sqrt{5}$$

$$\frac{\sqrt[3]{x^2y}}{xy}$$

65.

$$66. \frac{\sqrt[6]{x^4y^3}}{y}$$

$$67. a = -2c, b = -6d$$

68. No changes need to be made; since they are both odd roots, there is no need for absolute value symbols.