

Taken from § 7.2 in the text.

1. Does $\sqrt{2} \cdot \sqrt{3}$ equal $\sqrt{6}$?

3. $\sqrt[3]{a} \cdot \sqrt[3]{b} = \underline{\hspace{2cm}}$

5. $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{?}$

7. Does $\sqrt{5}] = \sqrt{25} + \sqrt{25}$?

9. Is $\sqrt[3]{3}$ equal to 1? Explain.

In exercises 11 - 61 odd and 75 - 97 odd, simplify the expression. Assume that all variables are positive.

11. $\sqrt{3} \cdot \sqrt{3}$

13. $\sqrt{2} \cdot \sqrt{50}$

15. $\sqrt[3]{4} \cdot \sqrt[3]{16}$

17. $\sqrt{\frac{9}{25}}$

19. $\sqrt{\frac{1}{2}} \cdot \sqrt{\frac{1}{8}}$

21. $\sqrt[3]{\frac{2}{3}} \cdot \sqrt[3]{\frac{4}{3}} \cdot \sqrt[3]{\frac{1}{3}}$

23. $\sqrt{x^3} \cdot \sqrt{x^3}$

25. $\sqrt[3]{\frac{7}{27}}$

27. $\sqrt[4]{\frac{x}{81}}$

29. $\sqrt{\frac{9}{z^2}}$

31. $\sqrt{\frac{x}{2}} \cdot \sqrt{\frac{x}{8}}$

$$33. \frac{\sqrt{45}}{\sqrt{5}}$$

$$35. \sqrt[3]{-4} \cdot \sqrt[3]{-16}$$

$$37. \sqrt[4]{9} \cdot \sqrt[4]{9}$$

$$39. \frac{\sqrt[5]{64}}{\sqrt[5]{-2}}$$

$$41. \frac{\sqrt{a^2b}}{\sqrt{b}}$$

$$43. \frac{\sqrt[3]{54}}{\sqrt[3]{2}}$$

$$45. \sqrt{4x^4}$$

$$47. \sqrt[3]{-5a^6}$$

$$49. \sqrt[4]{16x^4y}$$

$$51. \sqrt{3x} \cdot \sqrt{12x}$$

$$53. \sqrt[3]{8x^6y^3z^9}$$

$$55. \sqrt[4]{\frac{3}{4}} \cdot \sqrt[4]{\frac{27}{4}}$$

$$57. \sqrt[3]{12} \cdot \sqrt[3]{ab}$$

$$59. \sqrt[4]{25z} \cdot \sqrt[4]{25z}$$

$$61. \sqrt[5]{\frac{7a}{b^2}} \cdot \sqrt[5]{\frac{b^2}{7a^6}}$$

$$75. \sqrt{200}$$

$$77. \sqrt[3]{81}$$

$$79. \sqrt[4]{64}$$

$$81. \sqrt[5]{-64}$$

$$83. \sqrt{b^5}$$

$$85. \sqrt{8n^3}$$

$$87. \sqrt{12a^2b^5}$$

$$89. \sqrt[3]{-125x^4y^5}$$

$$91. \sqrt[3]{5t} \cdot \sqrt[3]{125t}$$

$$93. \sqrt[4]{\frac{9t^5}{r^8}} \cdot \sqrt[4]{\frac{9r}{5t}}$$

$$95. \sqrt[3]{\frac{27x^2}{y^3}}$$

$$97. \sqrt{\frac{7a^2}{27}} \cdot \sqrt{\frac{7a}{3}}$$

In exercises 101 - 109 odd, convert to exponential notation, simplify using laws of exponents then convert back to radical notation. Assume that all variables are positive.

$$101. \sqrt{3} \cdot \sqrt[3]{3}$$

$$103. \sqrt[4]{8} \cdot \sqrt[3]{4}$$

$$105. \sqrt[4]{27} \cdot \sqrt[3]{9} \cdot \sqrt{3}$$

$$107. \sqrt[4]{x^3} \cdot \sqrt[3]{x}$$

$$109. \sqrt[4]{rt} \cdot \sqrt[3]{r^2t}$$