

Math 95 HW 18 (7.3) Simplifying Radical Expressions

Name: _____

Multiplying and Dividing:

In exercises 11 - 61 odd, simplify the expression assuming that all variables are positive.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

In exercises 75 - 97 odd, simplify the radical expression by factoring out the largest perfect n^{th} power assuming all variables are positive.

75. $\sqrt{200}$

83. $\sqrt{b^5}$

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

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

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

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

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

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

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

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

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

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

In exercises 101 - 109 odd, simplify the expression letting all variables be positive and write your answer in radical notation.

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

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

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

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

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