

7-3 Exercises



**Extra Help
On the Web**

Look for worked-out examples at the Prentice Hall Web site.

www.phschool.com

A

Mental Math Simplify by finding roots of the numerator and denominator.

1. $\sqrt{\frac{16}{25}}$ 2. $\sqrt{\frac{100}{81}}$ 3. $\sqrt[3]{\frac{64}{27}}$ 4. $\sqrt{\frac{49}{y^2}}$ 5. $\sqrt{\frac{121}{x^2}}$

Simplify.

6. $\sqrt[3]{\frac{343}{512}}$ 7. $\sqrt{\frac{25y^3}{x^4}}$ 8. $\sqrt{\frac{36a^5}{b^6}}$ 9. $\sqrt[3]{\frac{8x^5}{27y^3}}$ 10. $\sqrt[3]{\frac{64x^7}{216y^6}}$

Divide. Then simplify by finding roots, if possible.

11. $\frac{\sqrt{21a}}{\sqrt{3a}}$ 12. $\frac{\sqrt{28y}}{\sqrt{4y}}$ 13. $\frac{\sqrt[3]{54}}{\sqrt{2}}$ 14. $\frac{\sqrt[3]{40}}{\sqrt{5}}$
 15. $\frac{\sqrt{40xy^3}}{\sqrt{8x}}$ 16. $\frac{\sqrt{56ab^3}}{\sqrt{7a}}$ 17. $\frac{\sqrt[3]{96a^4b^2}}{\sqrt[3]{12a^2b}}$ 18. $\frac{\sqrt[3]{189x^3y^7}}{\sqrt[3]{7x^2y^2}}$
 19. $\frac{\sqrt{72xy}}{2\sqrt{2}}$ 20. $\frac{\sqrt{75ab}}{3\sqrt{3}}$ 21. $\frac{\sqrt{x^3 - y^3}}{\sqrt{x - y}}$ 22. $\frac{\sqrt{r^3 + s^3}}{\sqrt{r + s}}$

Add or subtract. Simplify by collecting like radical terms, if possible.

23. $6\sqrt{3} + 2\sqrt{3}$ 24. $8\sqrt{5} + 9\sqrt{5}$ 25. $9\sqrt[3]{5} - 6\sqrt[3]{5}$
 26. $14\sqrt[5]{2} - 6\sqrt[5]{2}$ 27. $4\sqrt[3]{y} + 9\sqrt[3]{y}$ 28. $6\sqrt[4]{t} - 3\sqrt[4]{t}$
 29. $8\sqrt{2} - 6\sqrt{2} + 5\sqrt{2}$ 30. $2\sqrt{6} + 8\sqrt{6} - 3\sqrt{6}$
 31. $4\sqrt[3]{5} - \sqrt{3} + 2\sqrt[3]{5} + \sqrt{3}$ 32. $5\sqrt{7} - 8\sqrt[4]{11} + \sqrt{7} + 9\sqrt[4]{11}$
 33. $6\sqrt{8} + 11\sqrt{2}$ 34. $2\sqrt{12} + 5\sqrt{3}$ 35. $8\sqrt{27} - 3\sqrt{3}$
 36. $9\sqrt{50} - 4\sqrt{2}$ 37. $8\sqrt{45} + 7\sqrt{20}$ 38. $9\sqrt{12} + 16\sqrt{27}$
 39. $18\sqrt{72} + 2\sqrt{98}$ 40. $12\sqrt{45} - 8\sqrt{80}$ 41. $3\sqrt[3]{16} + \sqrt[3]{54}$
 42. $\sqrt[3]{27} - 5\sqrt[3]{8}$ 43. $5\sqrt[3]{32} - 2\sqrt[3]{108}$ 44. $9\sqrt[3]{40} - 7\sqrt[3]{135}$
 45. $2\sqrt{128} - \sqrt{18} + 4\sqrt{32}$ 46. $5\sqrt{50} - 2\sqrt{18} + 9\sqrt{32}$

LESSON 7-3

- Exercises 1. $\frac{4}{5}$ 3. $\frac{4}{3}$ 5. $\frac{11}{|x|}$ 7. $\frac{5|y|\sqrt{y}}{x^2}$ 9. $\frac{2x\sqrt[3]{x^2}}{3y}$ 11. $\sqrt{7}$
13. 3 15. $|y|\sqrt{5y}$ 17. $2\sqrt[3]{a^2b}$ 19. $3\sqrt{xy}$ 21. $\sqrt{x^2 + xy + y^2}$
23. $8\sqrt{3}$ 25. $3\sqrt[3]{5}$ 27. $13\sqrt[3]{y}$ 29. $7\sqrt{2}$ 31. $6\sqrt[3]{5}$
33. $23\sqrt{2}$ 35. $21\sqrt{3}$ 37. $38\sqrt{5}$ 39. $122\sqrt{2}$ 41. $9\sqrt[3]{2}$
43. $4\sqrt[3]{4}$ 45. $29\sqrt{2}$