

LESSON
6.1**Practice C***For use with pages 414–419***Rewrite the expression using rational exponent notation.**

1. $(\sqrt[5]{63})^3$

2. $(\sqrt[3]{-25})^4$

3. $(\sqrt[6]{124})^7$

Rewrite the expression using radical notation.

4. $(-57)^{4/3}$

5. $13^{3/2}$

6. $204^{5/8}$

Evaluate the expression without using a calculator.

7. $(\sqrt[3]{27})^2$

8. $(\sqrt[4]{256})^3$

9. $(\sqrt[3]{-64})^2$

10. $36^{3/2}$

11. $(25)^{-3/2}$

12. $(16)^{1/4}$

13. $(-32)^{-3/5}$

14. $(81)^{-5/2}$

15. $(-125)^{-5/3}$

Evaluate the expression using a calculator. Round the result to two decimal places when appropriate.

16. $(\sqrt[3]{23})^5$

17. $(\sqrt[4]{65})^3$

18. $(\sqrt[5]{-124})^4$

19. $(39)^{4/3}$

20. $(-128)^{-2/5}$

21. $(256)^{5/8}$

22. $(-325)^{3/5}$

23. $(215)^{-4/9}$

24. $(-1012)^{8/5}$

Solve the equation. Round the result to two decimal places when appropriate.

25. $x^5 = 1321$

26. $3x^5 + 3 = 213$

27. $(x - 3)^6 = 502$

28. $-4x^3 = 132$

29. $2x^4 = 36$

30. $(3x + 2)^4 = 232$

31. $7 - x^5 = 3$

32. $4x^5 + 96 = 24$

33. $12 - (2x + 3)^3 = 84$

34. Geometry Find the radius of a sphere with a volume of 994 cubic centimeters.**35. Volume** A cylindrical container holds 20 ounces of liquid. One fluid ounce is approximately 1.8 cubic inches. The height of the container is 3.5 inches. Use the formula for the volume of a cylinder to find the radius of the container.**36. Critical Thinking** Use the following examples to determine when $\sqrt[n]{a^n} \neq a$.

a. $\sqrt[3]{(-2)^3}$

b. $\sqrt{(-2)^2}$

c. $\sqrt[3]{2^3}$

d. $\sqrt{2^2}$