

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

1.  $\sqrt[3]{7}$

2.  $(\sqrt[3]{6})^2$

3.  $(\sqrt[5]{14})^4$

4.  $(\sqrt[7]{-21})^3$

5.  $(\sqrt[8]{11})^7$

6.  $(\sqrt[9]{-2})^4$

**Rewrite the expression using radical notation.**

7.  $17^{1/3}$

8.  $44^{1/6}$

9.  $33^{2/3}$

10.  $9^{5/3}$

11.  $(-28)^{7/5}$

12.  $39^{4/7}$

**Evaluate the expression without using a calculator.**

13.  $(\sqrt[3]{8})^2$

14.  $(\sqrt[4]{16})^3$

15.  $(\sqrt[4]{81})^4$

16.  $36^{3/2}$

17.  $4^{5/2}$

18.  $27^{2/3}$

19.  $125^{4/3}$

20.  $(-8)^{1/3}$

21.  $(-32)^{3/5}$

**LESSON**  
**6.1****Practice** *continued*  
*For use with pages 414–419*

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

22.  $\sqrt[3]{38}$

23.  $\sqrt[6]{112}$

24.  $\sqrt[7]{-215}$

25.  $(241)^{1/5}$

26.  $(-133)^{1/3}$

27.  $(69)^{1/4}$

28.  $(96)^{2/3}$

29.  $(356)^{5/9}$

30.  $(-2427)^{4/7}$

31. **Geometry** Find the radius of a sphere with a volume of 589 cubic centimeters.

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

32.  $x^3 + 17 = 132$

33.  $2x^5 + 73 = 53$

34.  $(x + 3)^4 = 362$

**In Exercises 35–38, use the following information.**

**Water and Ice** Water, in its liquid state, has a density of 0.9971 gram per cubic centimeter. Ice has a density of 0.9168 gram per cubic centimeter. A cubic container is filled with 600 grams of liquid water. A different cubic container is filled with 600 grams of ice. Round the answers to two decimal places when appropriate.

35. Find the volume of the container filled with liquid water.

36. Find the length of the edges of the cubic container that is filled with liquid water.

37. Find the volume of the container filled with ice.

38. Find the length of the edges of the cubic container that is filled with ice.