Name _____ Class _____ Date _____

Practice 7-5

Example Exercises

Example 1

Solve each equation.

1. $x^3 = 27$ **2.** $\sqrt[3]{x+1} = 2$ **3.** $x^{\frac{2}{3}} = 4$ **4.** $x^{\frac{3}{4}} = 125$

5. $x^{\frac{3}{4}} = 27$ **6.** $w^{\frac{5}{2}} = 243$ **7.** $y^{\frac{2}{3}} = 81$ **8.** $x^{\frac{4}{5}} - 2 = 14$

9. $x^{\frac{1}{2}} + 3 = -1$ **10.** $x^4 + 12 = 3$ **11.** $x^{\frac{1}{4}} - 3 = 2$ **12.** $3x^{\frac{2}{3}} = 300$

Example 2

Use the formula $D^3 = 216T^2$ for Exercises 13–14.

13. Find what happens to the duration of a storm if its diameter is doubled.

14. Determine how long a storm will last if it has a diameter of 10 mi.

Example 3

Solve each equation. Check each solution.

15. $10^x = 182$ **16.** $8^n = 12$ **17.** $10^{2x} = 9$ **18.** $5^{n+1} = 3$

19. $10^{n-2} = 0.3$ **20.** $3^{3n} = 50$ **21.** $10^{2n-5} = 500$ **22.** $11^x - 50 = 12$

Example 4

Solve each equation. Check each solution.

23. $2^x = 243$ **24.** $7^n = 12$ **25.** $5^{2x} = 20$ **26.** $8^{n+1} = 3$

27. $4^{n-2} = 3$ **28.** $4^{3n} = 5$ **29.** $15^{2n-3} = 245$ **30.** $4^x - 5 = 12$

Example 5

Solve each logarithmic equation. Check each solution.

31. $\log 3x = 2$ **32.** $4\log x = 4$ **33.** $\log (3x - 2) = 3$

34. $2\log x - \log 5 = -2$ **35.** $\log 8 - \log 2x = -1$ **36.** $\log (x + 21) + \log x = 2$