

Practice
3-2**Perfect Cubes, Cube Roots, and Equations of the form $x^3 = p$**

1. Use the fact that -512 is a perfect cube to evaluate $\sqrt[3]{-512}$. Write an integer or a simplified fraction.
2. Find the cube root $\sqrt[3]{-64}$.
3. Solve the equation $w^3 = 1,000$.
4. Solve the equation $d^3 = \frac{1}{125}$. Simplify your answer. Write an integer, proper fraction, or mixed number.
5. Solve the equation $v^3 = 12$. Use a calculator. Round to the nearest tenth.
6. The volume of a cube is 8 in.^3 . How long is each side?

7. a) **Writing** Evaluate $\sqrt[3]{-216}$. Write an integer or a simplified fraction.

b) Explain how you can check that your result is correct.

8. **Error Analysis** On a math test, George writes 9 as the solution to the equation $d^3 = 27$.

a) Find the correct solution. Write an integer or a simplified fraction.

b) What error did George likely make on the test?

- A. George cubed 27.
- B. George divided 27 by 3.
- C. George multiplied 27 by 3.
- D. George divided 27 by 30.

9. a) **Reasoning** Find the value of z in the equation $z^3 = \frac{27}{1,000}$. Simplify your answer. Write an integer, proper fraction, or mixed number.

b) If the cube of a number is less than 1, does it follow that the number must be less than 1? Include examples to explain your reasoning.

c) If the cube of a positive number is greater than 1, does it follow that the number must be greater than 1? Include examples to explain your reasoning.