

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

*KEY*

**Quiz: Density Calculations**

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1. A sample of platinum is found to have a mass of 171.2 g, and its volume is 8.0 cm<sup>3</sup>. Determine the density of platinum.

$$D = \frac{m}{V}$$

$$D = \frac{171.2 \text{ g}}{8.0 \text{ cm}^3}$$

$$D = 21 \text{ g/cm}^3$$

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2. The density of carbon dioxide at standard conditions is 0.00197 g/mL. If a sample of the gas has a mass of 0.227 g, what is the volume of the sample?

$$V = \frac{m}{D}$$

$$V = \frac{0.227 \text{ g}}{0.00197 \text{ g/mL}}$$

$$V = 115 \text{ mL}$$

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3. Calcium chloride is used to de-ice roads in the winter. It has a density of 2.50 g/cm<sup>3</sup>. What is the mass of 15.0 cm<sup>3</sup> of CaCl<sub>2</sub>?

$$m = DV$$

$$m = (2.50 \text{ g/cm}^3)(15.0 \text{ cm}^3)$$

$$m = 37.5 \text{ g}$$

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4. What is the density of a wood board whose dimensions are 5.54 cm x 10.6 cm x 175 cm and whose mass is 28,600 g?

$$V = lwh$$

$$V = 5.54 \text{ cm} \times 10.6 \text{ cm} \times 175 \text{ cm}$$

$$V = 10,300 \text{ cm}^3$$

$$D = \frac{m}{V}$$

$$D = \frac{28,600 \text{ g}}{10,300 \text{ cm}^3}$$

$$D = 2.78 \text{ g/cm}^3$$