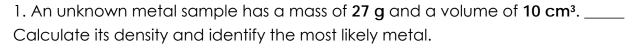
Name			

Mystery Metals and Hidden Materials

Every substance has its **own characteristic density**, which can be used as an **identifying property** - like a fingerprint. Use the density formula to find the density, then compare it to known reference values.

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

Reference Densities (g/cm³): Aluminum - 2.7 | Zinc - 7.1 | Iron - 7.9 Copper - 8.9 | Silver - 10.5 | Lead - 11.3 | Gold - 19.3



- 2. A gray metal cube has a side length of **3 cm** and a mass of **243 g**. _______ Find its density and possible identity.
- 3. A student measures the mass of a metal cylinder as **355 g** and its volume as **50 cm³**. What is its density? Which metal could it be? _____
- 5. An unknown coin displaces **4.0 mL** of water and has a **mass of 35.6 g**. _______ldentify the metal.
- 6. A rectangular sample measures 2 cm × 3 cm × 4 cm and has a mass of 192 g.

 What is its density, and what might the metal be?
- 7. A scientist finds that an unknown sample has a **density of 7.2 g/cm³**. ______ Which two metals is it most likely between?
- 8. If a 100 g piece of copper is cut in half, what is the density of each half? What does this show about density as a property? _____
- 9. A metal sample weighs 227~g in air but only 202~g when submerged in water. The loss in apparent weight equals the volume of displaced water (in cm³).

Find the metal's density and identify it.

