1. What is the best reason for salt (NaCl) being a solid at room temperature whereas water (H_2O) is a liquid at room temperature?
   (A) Salt is colder than water, therefore it is a solid.
   (B) Salt has less average kinetic energy than water, therefore it is a solid.
   (C) Salt has particles that do not move, therefore it is a solid.
   (D) Salt particles have stronger intermolecular forces of attraction, therefore it is a solid.

2. Graphite and sugar both have covalent bonding (sharing electrons). Which one has a higher melting point and why?
   (A) Graphite has a higher melting point since it is a covalent network solid.
   (B) Graphite has a higher melting point since it is very hard and brittle.
   (C) Sugar has a higher melting point since it is a molecular solid.
   (D) Sugar has a higher melting point since it is very hard and brittle.

3. Solid forms of covalent network, ionic, and molecular crystals are all poor conductors of electricity. Why are metallic crystalline solids very good conductors of electricity?
   (A) Metallic crystalline solids have very high melting points.
   (B) Metallic crystalline solids have very soft, malleable characteristics.
   (C) Metallic crystalline solids have a sea of electrons that are free and delocalized.
   (D) Metallic crystalline solids have very hard exteriors.

4. Which is more dense and why – a piece of copper wire or the Statue of Liberty?
   (A) The Statue of Liberty because there is more copper present.
   (B) The Statue of Liberty because density is an "extensive" property.
   (C) The piece of copper wire because there is a greater concentration of copper per unit area.
   (D) Both have the same density because density is an "intensive" property.

5. A sample of pure zinc is measured to have a mass of 21.405 kg when its volume is 0.003 m^3. What is the density of pure zinc?
   (A) 0.00014 kg/m^3
   (B) 0.064 kg/m^3
   (C) 7135 kg/m^3
   (D) 7.93 x 10^8 kg/m^3

6. A student obtained a piece of lead measuring 0.01 m x 0.02 m x 0.4 m. Lead is known to have a density of 11340 kg/m^3. What will be the mass of this piece of aluminum?
   (A) 0.9072 kg
   (B) 113.4 kg
   (C) 226.8 kg
   (D) 4536 kg

Questions 7-9 refer to the graph below of Volume (cm³) vs. Mass (g).
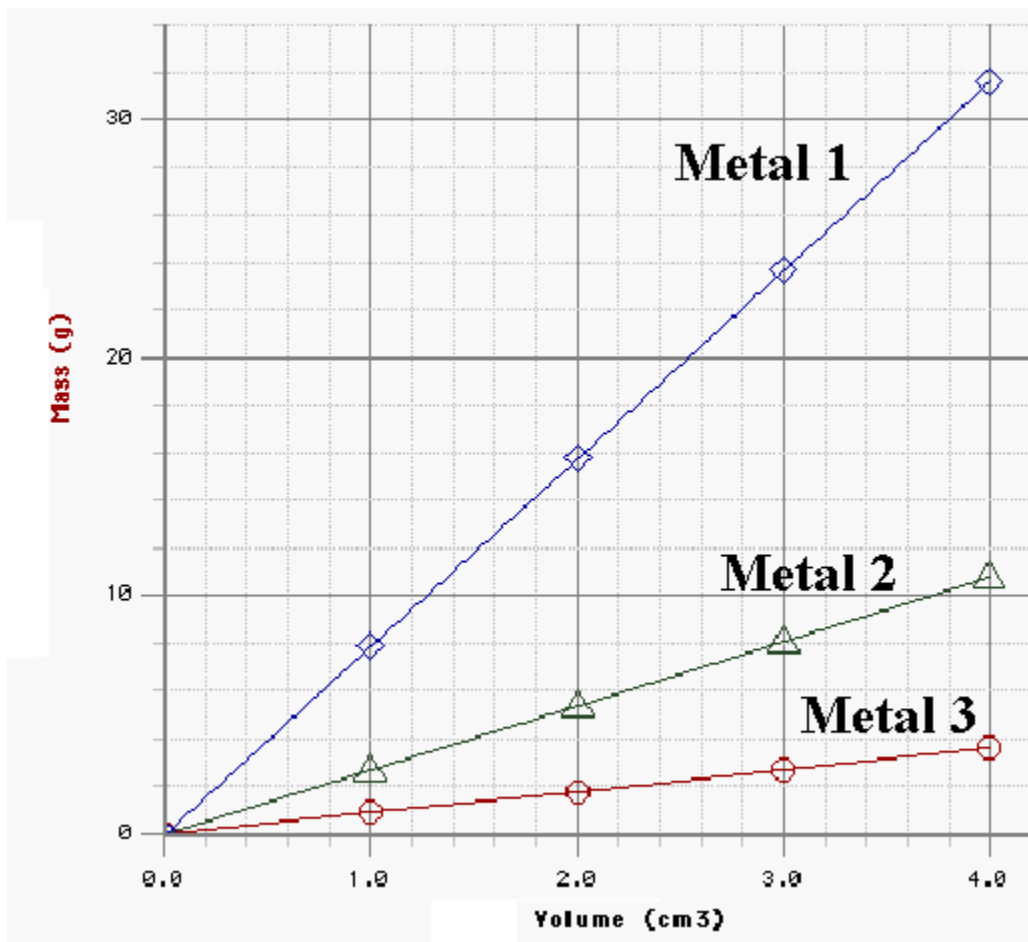
7. What does the slope of each line represent?
   (A) The hardness of the metal.
   (B) The mass of the metal.
   (C) The density of the metal.
   (D) The volume of the metal.

8. What is the approximate density of Metal 2?
   (A) 1.33 g/cm³
   (B) 2.00 g/cm³
   (C) 2.67 g/cm³
   (D) 3.50 g/cm³

9. Which metal has the greatest density?
   (A) Metal 1
   (B) Metal 2
   (C) Metal 3
   (D) None, all densities are the same.

10. Which crystalline solid is made up of positive and negative ions in a systematic cube that repeats in an orderly fashion?
    (A) Covalent Network
    (B) Metallic
    (C) Ionic
    (D) Molecular