Identify each of the following as an example of a physical property or a chemical property.

1. Silver tarnishes when it comes in contact with hydrogen sulfide in the air.
2. A banana is yellow.
3. A sheet of copper can be pounded into a bowl.
4. Barium melts at 725 C.
5. Gasoline is flammable.
6. A diamond is the hardest natural substance.
7. Helium does not react with any other element.
8. A bar of lead is more easily bent than is a bar of aluminum of the same size.
9. Potassium metal is kept submerged in oil to prevent contact with oxygen or water.
10. An apple will turn brown is left in oxygen.
11. Diamond dust can be used to cut or grind most other materials.
12. Acid in tomato sauce can corrode aluminum foil.
13. Rocks containing carbonates can be identified because they fizz when hydrochloric acid is applied.
14. A piece of charcoal, which is mostly the substance carbon, glows red, gives off heat, and becomes a gray ash.

**Density Calculations**

**Equation: density = mass/volume** D = m/V m = DV V = m/D

1. A block of copper has a mass of 4000g. The block has a volume of 446.9mL. What is the density of copper?
2. Silver has a density of 10.5 g/mL. What is the mass of a block of silver that measures 25cm by 25 cm by 10 cm?



1. A particular rock has mass of 350g. It was placed in a graduated cylinder that had 90.0 mL of water in it and the water in the cylinder rose to 125 m. What is the density of the rock?
2. The following materials are all dumped into the same container:

**Material Density**

Methanol 0.79 g/mL

Mercury 13.6 g/mL

Iodine 7.86 g/mL

Bromine 3.12 g/mL

Lead 11.34 g/mL

In the space provided to the right,

list the names of the material in the order that they would settle in the container.

1. What is the volume of a 40.0g lump of gold? (density of gold is 19.3 g/mL)
2. A scientist found a bottle of clear liquid in her lab, but the label had fallen off the bottle. She made a number of measurements to try to determine the identity of the liquid. Use the data below, and the table of densities given, to determine the identity of the liquid.

Volume of liquid = 10.0 mL

Mass of **dry** 10 mL graduated cylinder = 11.5 g

Mass of graduated cylinder with 10mL of the unknown liquid = 24.1 g

**Table of densities of some colourless liquids:**

**Liquid density**

Ethanol 0.70 g/mL

Glycerine 1.26 g/mL

Hydrogen peroxide 1.45 g/mL

Methanol 0.79 g/mL

Propanol 0.79 g/mL

Water 1.00 g/mL