Name:_____

Density Calculations Worksheet - Honors

density = $\frac{\text{mass}}{\text{volume}}$	UNITS OF DENSITY g/cm^3 or g/mL

1) Find the density of a wood block that has a volume of 5.0 cm^3 and a mass of 30.5 g.

2) Which has the greater mass – 10 cm^3 of steel (density = 7.8 g/cm^3) or 5 cm^3 of mercury (density = 13.6 g/cm^3)?

3) Calculate the mass of a wooden block that is 4 cm long, 2 cm wide, 6 cm high, and has a density of 0.5 g/cm^3. (hint: find the volume of a block first)

4) In the table below are the mass and volume of some mineral samples. Calculate the density of sample B.

Sample	Mass (g)	Volume (mL)
A	19.5	6.54
B	12.4	3.1
C	6.8	3.4

5) What volume would a rock occupy if it had a mass of 31.2 g and a density of 10.4 g/cm^3?

6) The density of oak is 0.7 g/cm^3, and the density of pine is 0.4 g/cm^3. Compare the masses of a 30 cm^3 block of each type of wood.

7) How large a container would you need to hold 195 g of a liquid that has a density of 1.3 g/mL?

8) A jeweler suspects that a piece of gold jewelry in his collection is fake. He knows that the density of gold is 19.3 g/cm^3. If the volume of the piece of jewelry is 6 cm^3, and its mass is 109 g, is the piece fake? Why or why not?

9) A 500 mL glass container filled with milk has a mass of 620 g. The mass of the container is 35 g. What is the density of the milk?

10) Substances A and B have the same volume, but the mass of B is twice as great as the mass of A. How do the densities of the two substances compare?

11) 28.5 g of iron shot is added to a graduated cylinder containing 45.50 mL of water. The water level rises to the 49.10 mL mark. From this information, calculate the density of iron.

12) Calculate the density of a metal that has a mass of 36.457 g and a volume of 13.5 cm^3. Identify the metal.