Name_____

Hr_____

Density Worksheet
Physical Science
D=m/V

Densities of Common Substances @ 20°C				
Substance	**Density (g/cm^3)**		**Substance**	**Density (g/cm^3)**
Oxygen	0.00133		Aluminum	2.70
Hydrogen	0.000084		Iron	7.87
Ethanol	0.785		Copper	8.96
Benzene	0.880		Silver	10.5
Water	1.000		Lead	11.34
Magnesium	1.74		Mercury	13.6
Salt (sodium chloride)	2.16		Gold	19.32

1. The ratio of an object's mass to its _____ is called the *density* of the object.

2. A kilogram of lead occupies a much smaller volume than a kilogram of water, because _____ has a much higher *density*.

3. For the masses and volumes indicated, calculate the **density** in grams per cubic centimeters.

   a. mass = 453 g; volume = 225 cm3

   b. mass = 5.0 g; volume = 10.0 cm3

   c. mass = 26.1 g; volume = 2.0 mL

4. If 89.2 mL of a liquid has a mass of 75.2 g, calculate the liquid's density.

5. A cube of metal weighs 1450 g and displaces 542 mL of water when immersed. Calculate the density of the metal.

6. Calculate the volume of 50.0 g of each of the following substances:

a. sodium chloride

b. mercury

c. benzene

d. silver

7. Calculate the mass of 50.0cm^3 of each of the following substances.

a. gold

b. iron

c. lead

d. aluminum

8. A cubic block of one of the substances listed on the chart has a side length of 5.0 cm and a mass of 224 grams. Which material is it?

9. Archemedes was commissioned to determine if the crown given to the king was pure gold or not. If the crown had a mass of 882 grams and displaced 50.0 mL of water, was the crown pure gold? Show the calculation.