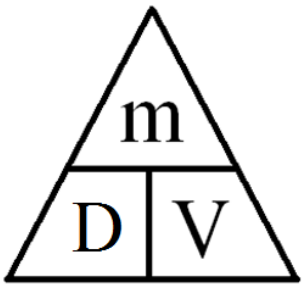
Density Practice! Name: _____Date: _____

Period: ____

Use the density equation at right to solve the following problems. *Don't forget to show full GUESS for each problem.*

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



FYI:

- Water has a density of about 1 g/mL and if something floats in water it must have a density of less than 1 g/mL. If something has a density greater than that, it will sink.
- The eraser on the end of your pencil is about 1 cm^3.
- 1 cm^3 = 1 mL so 1 g/cm^3 = 1 g/mL

Example Problem:

A gas tank holds 50 L. If the density of gasoline is 0.7 g/mL, how much mass will the tank of gas have?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

1. A 150 g piece of ice falls off an icicle and falls into a lake. If the icicle has a volume of 163 cm^3, will the ice sink or float?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

2. Sometimes new kittens have to be given milk from a dropper if they are away from their mother. What is the mass of 10 mL of milk if the density of milk is 1.03 g/mL?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

3. A blacksmith was making a horseshoe when a 100 cm^3 piece of iron flew off. If the density of iron is 7.8 g/cm^3 then what is the mass of that piece of iron?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

4. You have a piece of jewelry that you were told was pure gold. You decide to check. You know that the density of pure gold is 19.3g/cm^3. You measure the volume of the piece of jewelry to be 3.6cm^3, and the mass to be 53g. Is the jewelry pure gold? Why or why not?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

5. Platinum is a very popular metal for jewelry and has a density of 21.4 g/cm^3. A platinum ring has a mass of 15 g. What is its volume?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

6. If you were to put the platinum ring in #5 into a graduated cylinder that was filled to the 10 mL mark, how much would the water rise? Why?

7. From #4 you learned the density of gold. If you had a gold ring that had the same mass as the platinum ring in #5, what would its volume be?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

8. An aluminum block has a mass of 45 g and takes up 16.7 cm^3 of space. Will this block of aluminum float in water?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

9. The aluminum block above is hallowed out into a boat shape so that is takes up the same amount of space but only has a mass of 10 g. Will the hollowed out aluminum block float in water now?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

10. Osmium is the densest material with a mass of 22.5 g per cm^3. If you had a piece of Osmium about the volume of your text book (2400 cm^3), how much mass would it have?

Givens	**U**nknown	**E**quation	**S**ubstitute	**S**olve

11. To put your answer to #10 into perspective, complete the following conversion:

_____ g× (1 kg/1000 g) x (2.21 lbs/1 kg)=_____ lbs