Density Worksheet

Density is a measurement of mass per unit of volume (in layman's terms: "how light or heavy an object is.") In other words, a golf ball has more mass per unit of volume than a ping pong ball does. (A golf ball has a higher density than a ping-pong ball).

The standard unit for density is grams per milliliter or:

$$\frac{g}{mL}$$

Part One: Calculate the densities of the following substances:

MASS	VOLUME	DENSITY	SUBSTANCE
1) 12.42 g	6 mL		
2) 12.19 g	23 mL		
3) 11.766 g	5.3 mL		
4) 7.76 g	8 mL		
5) .783 g	.45 mL		
6) 3.02 g	2 mL		
7) 13.95 g	9 mL		
8) 40.137 g	5.1 mL		
9) 79.21 g	8.9 mL		
10) 52.45 g	5 mL		
11) 36.49 g	5 cm^3		
12) 4.93 g	1 cm^3		
13) 135.24 g	7 cm^3		
14) 67.75 g	5 cm^3		
15) 45.36 f	4 cm^3		
16) 37.4 g	2 cm^3		
17) 6.435 g	.3 cm^3		
18) 7.74 g	9 cm^3		
19) 2.699 g	1 cm^3		
20) 34.38 g	6 cm^3		

Part Two: You have just figured the densities of known substances. Find the name below and write it in the last column above:

NAME	DENSITY	NAME	DENSITY
Aluminum	2.699 g/mL	Magnesium	1.74 g/mL
Arsenic	5.73 g/mL	Mercury	13.55 g/ cm^3
Calcium	1.55 g/ cm^3	Nickel	8.9 g/mL
Carbon	2.22 g/mL	Platinum	21.45 g/ cm^3
Chlorine	1.51 g/mL	Potassium	.86 g/mL
Gold	19.32 g/ cm^3	Silver	10.49 g/mL
Iodine	4.93 g/mL	Sodium	.97 g/mL
Iron	7.87 g/mL	Sulfur	2.07 g/ cm^3
Lead	11.34 g/ cm^3	Tin	7.298 g/mL
Lithium	.53 g/mL	Uranium	18.7 g/mL

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Part Three: The table below lists some substances and their densities. Look at the table carefully. Arrange the substances, by name, in the order of their densities. Begin with the least dense and end with the most dense.

LIQUIDS	DENSITY (g/ mL)
Carbon tetrachloride	1.595
Formalin	0.815
Methanol	0.796
Sulfuric Acid	1.63
Water	1.0
GASES	**DENSITY (g/ cm^3)**
Air	0.0013
Carbon dioxide	0.0018
Helium	0.00018
Hydrogen	0.00009
Nitrogen	0.0012
SOLIDS	**DENSITY (g/ cm^3)**
Ashwood	0.65
Balsawood	0.37
Glass	2.6
Oak wood	0.68
Tin	7.18

Liquids:
1. _____
2. _____
3. _____
4. _____
5. _____

Gases:
1. _____
2. _____
3. _____
4. _____
5. _____

Solids:
1. _____
2. _____
3. _____
4. _____
5. _____

Part Four: If the statement is true, write true in the space provided. If the statement is not correct, change the underlined word to make it correct.

1. A block of <u>ashwood</u> will float in methanol.   _____
2. Carbon tetrachloride will <u>sink</u> in sulfuric acid.   _____
3. To float in air, a blimp would be filled with <u>helium</u>.   _____
4. The same blimp might also be filled with <u>carbon dioxide</u>.   _____

Part Five: These five balloons escaped from the balloon seller in the park. Each one is filled with one of the gases listed in part three. In the spaces below, write the name of the gas that you think each balloon contains.

Balloon 1: _____

Balloon 2: _____

Balloon 3: _____

Balloon 4: _____

Balloon 5: _____