

Date _____ Name _____
Section _____ Team _____
Instructor _____

Pre-Lab Study Questions

1. What property of oil makes it float on water?
2. Why would heating the gas in a hot air balloon make the balloon rise?
3. What is the difference between density and specific gravity?
4. An object has a mass of 18.4 g and a volume of 11.2 mL.
 - a. What is the density of the object?
 - b. What is the specific gravity of the object?
 - c. Will the object sink or float in water?
5. A 15.0 g-sample of a liquid has a density of 0.875 g/mL.
 - a. What is the volume, in milliliters, of the liquid? Use conversion factors to calculate answer.
 - b. What mass, in grams, of the liquid is in 34.6 mL of the liquid?

Date _____ Name _____
Section _____ Team _____
Instructor _____

REPORT SHEET

Density and Specific Gravity

A. Density of Liquids

A.1 Density of Water

1. Volume (mL) _____
2. Mass of beaker _____
3. Mass of beaker + liquid _____
4. Mass of liquid _____
5. Density _____

(Show calculations)

A.2 Density of an Unknown Liquid

1. Type of liquid sample _____
Volume of liquid _____
2. Mass of beaker _____
3. Mass of beaker + liquid _____
4. Mass of liquid _____
5. Density _____

(Show calculations)

B. Specific Gravity

1. Specific gravity of water _____
2. Specific gravity of liquid sample _____
3. Specific gravity of water using a hydrometer _____
4. Specific gravity of liquid using a hydrometer _____

How do the *calculated* specific gravity of water and the liquid sample (1, 2) compare to the hydrometer readings (3, 4) for water and the liquid sample?

C. Density of Solids

1. Mass of the solid _____
2. Initial water level _____
3. Final water level with solid _____
4. Volume of solid (3 - 2) _____
5. Density of the solid _____ g/mL
(Show calculations)
6. Type of metal _____

D. Graphing Mass and Volume

1. Initial volume of water _____ mL
2. Initial mass of cylinder + water _____ g
3. Type of metal _____

Total Mass of Cylinder, Water, and Metal Pieces

4. _____ g
5. _____ g
6. _____ g
7. _____ g

Total Volume of Water and Metal Pieces

4. _____ mL
5. _____ mL
6. _____ mL
7. _____ mL

Calculations

- | | | |
|--------------------------------|----------------------------------|--------------------------|
| 8. Mass of Metal Pieces | 9. Volume of Metal Pieces | 10. Density (8/9) |
| (4-2) _____ g | (4-1) _____ mL | _____ g/mL |
| (5-2) _____ g | (5-1) _____ mL | _____ g/mL |
| (6-2) _____ g | (6-1) _____ mL | _____ g/mL |
| (7-2) _____ g | (7-1) _____ mL | _____ g/mL |