

Name:

Date:

**CHEM 1110 Experiment #2. Density Determination of Solids Post-Lab Questions**

**Part 1**

1. Referring to the following table, use the density obtained to identify the unknown.

Unknown	Density (g/cm <sup>3</sup> )
Polystyrene	1.05
Nylon	1.15
Acrylic	1.17
PETG	1.28
PVC	1.37
Acetal	1.42
CPVC	1.54
Teflon	2.2
Aluminum	2.70

2. Which method was more accurate for determining the density, using the distance measurements to obtain the volume or using the graduated cylinder to obtain the volume? Explain.

3. Which method was more precise for determining the density, using the distance measurements to obtain the volume or using the graduated cylinder to obtain the volume? Explain.

## Part 2

1. Assuming you start the experiment with twice the amount of water, how much salt do you think you would need to make the egg float?
2. Considering the definition of density, and your answer to the previous question, does the density depend on the amount of solution?
3. Based on your answer to the previous question, is density an intensive or extensive property? Explain.
4. How do you think the density of a hard-boiled egg would compare to the density of a fresh and older raw egg? Explain your reasoning (Hint: the egg shell allows water to leave, but also to seep in).
5. Why do you think your body would sink in a fresh water pond, but it would float on the surface of sea water?
6. **Bonus:** Submarines can float on the surface, hover at a certain depth, or sink to the bottom. How do you think they can do that?