CHEM 2115 **Chem I Lab**

LAB REPORT Experiment #2 Data Analysis on Excel

Name _____ Section #_____ Station #_____ Date_____

Data Section: Attach the following three pages to this Lab Report:

1. Your Solution B plot showing both your data and class data, with trendlines and equations.
2. A plot showing the class data for both Solution A and Solution B, with trendlines and equations for each.
3. A table of calculated and fit densities from your spreadsheet showing your density values for both Solution A and Solution B determined using different methods: calculated average from your data, graphical method with your data, and graphical method with class data.

Results Section: Interpret your data and discuss the results by answering the following questions.

1. Do any of the data points for Solutions A or B disagree significantly with the rest of the class data? If so, note that here and circle these points on the plot.

2. Compare your density for Solution A determined by the averaging and graphical method. How well do they agree?

3. Compare your density for Solution B determined by the averaging and graphical method. How well do they agree?

4. Compare your densities for Solution A with the class value. How well do they agree?

5. Compare your densities for Solution B with the class value. How well do they agree?

6. Compare the class densities for Solutions A and B. Are they the same? Based on this result, are Solutions A and B the same? Explain why.

"What if" *questions will be included in many of the CHEM I Lab exercises. They are designed to help you think about the experiments by asking you to figure out* ***what*** *would have happened to the result of an the experiment* ***if*** *certain things had occurred. Scientists use this sort of reasoning to understand the relationship between the ideal case (what was supposed to have happened) and the real experiment (what might have happened in the lab.) To answer these questions, look at each hypothetical circumstance and try to see, step by step, how it would have changed the results in the experiment that you did.*

For example, suppose that one drop of solution A accidentally fell out of the pipet after it was filled but before it was put into the 50 mL beaker. Would the density calculated for that point be too high, too low, or unchanged? The answer is that the volume actually transferred was smaller than what was recorded. The density is calculated by dividing the measured mass by the recorded volume. The measured mass did not include the missing drop, but the drop was included in the recorded volume. The result is that the calculated density was too small either because the measured mass was too small for the recorded volume or because the recorded volume was too big for the measured mass.

Q1. If there were some dirt on your 50 mL beaker that was not removed before you began the experiment, it is important to understand how it would affect your mass measurements and your density result. Would the masses be high, low or unchanged by the dirt? Would the density be high, low or unchanged by the dirt? Explain your answer.

Q2. If there were some dirt on the beaker and it fell off between the 10 mL and the 15 mL measurement, this might also affect your mass measurements and your density result. Would the masses be high, low or unchanged by the dirt? Would the density be high, low or unchanged by the dirt? Explain your answer.