Lab Report Guidelines

A: Purpose for laboratory reports:
The purpose of having students write laboratory reports instead of just completing worksheets for each experiment is to develop the students’ written communication skills and critical thinking skills.

B: Contents: The following should be included in every lab report.

1. **Your name and your lab partner(s) name.** It should be apparent who the author is and who the lab partner(s) is/are. The same names should appear on your data sheet.
2. **Title of the experiment,** not just the experiment number. The title should also appear on your data sheet.
3. **Purpose:** What is the reason for doing the lab? What will be determined or tested?
4. **Procedure:** A brief explanation of how you obtained your data. You needn't describe calculations. Your procedure should be written in complete sentences and in the past tense.
5. **Data:** Present your data in a concise manner. Each item should be clearly labeled with a written description (ex: The mass of the metal cylinder) and units. This may be your data sheet if it is well written (clear).
6. **Calculations and Analysis:**
   (a) **Calculations:** Always show a sample calculation for each type of calculation. Include the original formula used. Show the substitution of the data into the formula, including units. Give the calculated value with the proper number of significant figures, units, and a written description.
   
   (b) **Graphs:** All graphs must be done on 8.5” × 11” graph paper with at least 10 squares per inch. All graphs should have a written title which is specific, labeled axis (with units) and a well chosen scale. The scale should be chosen so that the data graphed fills at least ½ of the page horizontally and vertically. As a result of the above criteria, only one graph may be done on each sheet.
   
   (c) **Questions:** Questions asked in the calculation section of each lab should be answered with complete sentences.
7. **Sources of Error:** A description of the likely sources of error in your data. For each error, you should state whether it was systematic or random and whether it caused your results to be too large, too small or imprecise. Normally these errors have to do with assumptions that were made in performing the calculations.
8. **Conclusion:** A few sentences stating whether the experiment was successful or not, if not why. And what you have learned from performing the experiment.
9. **A Data Sheet:** A sheet which contains all of the measurements and observations you make while performing the experiment. Everything necessary (well not the formulas) for completing the laboratory report should be on the data sheet. Each item should be clearly labeled with a written description (ex: The mass of the metal cylinder) and units. The data sheet must also contain my initials.

C: The Rules:
1. Both the Data Sheet and Lab Report must be done in blue or black ink or typed.
2. Mistakes should be marked out with a single line. I should be able to read what is lined out. If anything is lined out on your data sheet, you should state why.
3. No "white out" or "liquid paper" may be used.
4. No abbreviations in sentences or descriptions. Only units should be abbreviated.
D: Lab Scoring: Labs will be scored out of 50 points total. Those points are divided as shown below.

- **Participation** (5) Awarded for each member of the group working together and doing some of each type of measurement. If you arrive after we have begun the lab, you will lose at least 1 point.

- **Data Sheet**
  - Coming to class with a prepared data sheet (5)
  - Recording data legibly to correct precisions and in proper notation with units (5)
  
  This requires following directions during the lab, both written in the lab and spoken by the instructor. If you do not follow directions for part of the lab, you may lose points here and be asked to repeat the measurements correctly.

  **Before you leave the lab you must get my initials or this score will be a zero.**

- **Report**
  - Completeness (5) Awarded for attempting all calculations for the lab.
  - Correctness (5) Awarded for agreement of results with data (correctly doing calculations from your data).
  - Accuracy (5) Awarded for reporting results to the correct number of significant figures, choosing appropriate scales for graphs and plotting points on graphs accurately.
  - Labeling (5) Awarded for labeling graphs, tables and calculated quantities and using/stating units correctly.
  - Presentation (5) Awarded for presenting results clearly and concisely. Tables should be used when appropriate.
  - Purpose/Procedure/Conclusion (5)
  - Sources of Error (5)

A lab turned in after the due date will lose 5 points (10%) from the total score.
A lab turned in more than one week after the due date will receive a score of 0.