

Appendix A

Contents of a Lab Report

Write clearly and neatly in full sentences. Avoid wordiness and excessive detail. This is a general list of items and sections which should be included in every lab report.

Data and Spreadsheet

- Write your name and your lab partner's name at the top of your Excel spreadsheet.
- The spreadsheet should have the data columns labeled, **including units**.
- Include any calculations that the lab manual asked you to do.
- Include a print-out of the formula view of your spreadsheet. To go to the formula view use the **Ctrl+~** keys. Make sure none of the formulas are cut-off, you may need to resize some columns.
- Fit the Excel sheets to 1 page: go to **File ► Page Setup ► Scaling**: Fit "1" page wide by "1" page tall. If the page is not legible try changing the orientation to landscape.

Graphs

Every graph should have the following (see example in Fig. [A.1](#)):

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1. Title - should describe the physical situation the graph represents, not just the units, and be in the format of ‘vertical axis’ vs. ‘horizontal axis’.
2. Axes labelled with the quantity being plotted including units
3. Curve fit (if appropriate)
4. Legend (if needed)
5. Error bars (when appropriate)
6. Observations - hand written on the bottom of each graph should be a $\sim 3 - 4$ sentence observation which covers the following points:
 - What does this plot represent? Why did you make this particular plot?
 - What did you expect the plot to look like? What is the expected functional form of the equation describing the data?
 - What does the graph actually tell you? What can you conclude?

Answers to questions

- Answer the questions at the end of the lab and turn in those sheets. Space is provided for your answers.
- If your measurement is incompatible with the expected value give an explanation for why that might be. “Human error” does not count as an explanation, be more specific if your results are different from what you expected.

Ordering of Pages

1. Coversheet
2. Data in Excel spreadsheet
3. Formula view of Excel spreadsheet
4. Graphs with observations
5. Answers to the questions

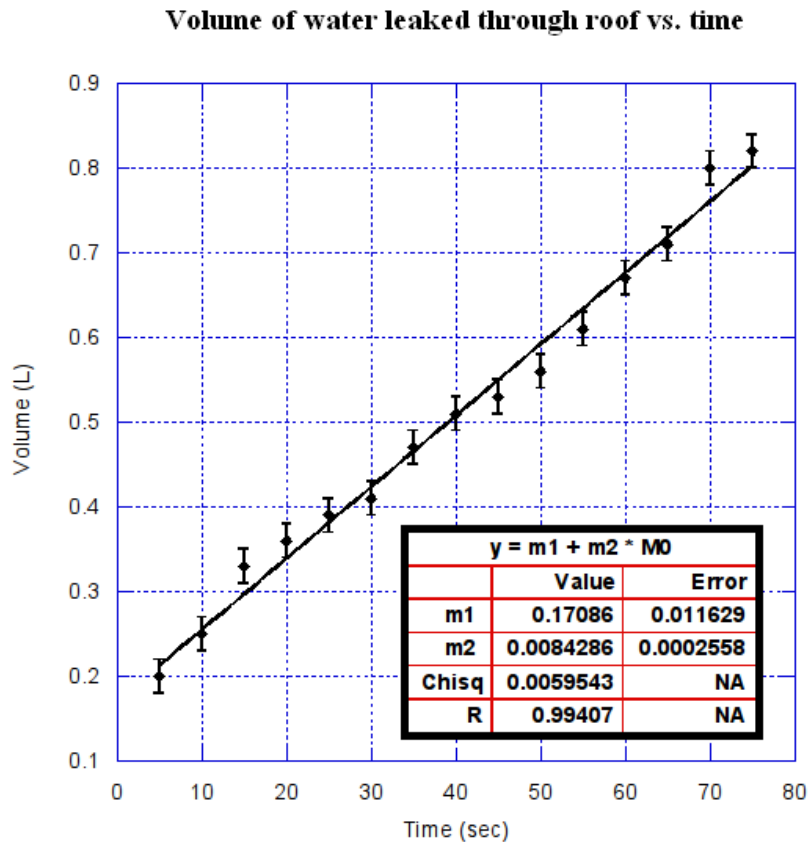


Figure A.1: The graph represents the volume of water leaking through a roof versus time. The water volume is expected to follow the linear equation $V = R \cdot t$. The leak rate R is given by the slope of the best-fit line and is 0.0084 ± 0.0003 L/s. The data generally follows the expected linear trend, except that the volume at $t=0$ is not consistent with zero as the formula would predict.