



Fluids, Thermodynamics, Waves, & Optics Lab Report

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Overview

- due date and lab
- style of the lab report
- things the lab report should contain

Lab report

You need to do a lab report for this lab, the Sonometer lab. The report will be due Wednesday, June 6th. (That's after the 3rd test.)

You still should make sure all data is recorded in your lab book.

Calculations for the error analysis should appear in your lab book.

Lab report

Style of the lab report: pretend you are a scientist, writing a paper for other scientists. Your goals:

- clearly communicate precisely what you did, and the results you got
- let others know exactly how to repeat your experiment, confirm your results
- give an introduction to the reader of any theory involved
- you do not need to show all the steps of your error analysis calculations, but do give the formulae you use, the data, and the uncertainties

Lab report

What to assume about the reader:

- they do not know what was on the instruction sheet
- they do not know what precise equipment you used
- they already know how to use all of the equipment
- they are skeptical

Lab report

The lab report should contain:

- an introduction: what are you investigating in this experiment, introduce a reader to what you did and how
- the hypothesis: the theoretical predictions you are trying to test
- a description of the experimental procedure and all equipment used
- your data / measurements

Lab report

(cont'd) The lab report should contain:

- analysis: how well did your data agree with the predictions? (quote uncertainties here)
- conclusion: Does the theory seem correct? Does your data support it? If not, why not? If there are a few data points that deviate from predictions, try to explain what may have occurred. Were there any sources of experimental error? Were they systematic or random? What would you do differently in the future to improve this experiment? What other related questions could you investigate in similar experiments, or using similar equipment?

Lab report

Other things:

- diagrams and tables are often very helpful
- do not make statements without evidence
- do error analysis, and you can give percentage errors where appropriate

