

Things to check before submitting your lab report.

- Have you included the names of all members of your lab group?
- Have you answered all the questions in the lab manual?
- Have you included your data (measurements)?
- Have you included graphs/fits of your data where relevant?
- Are the axes on your graphs properly labelled?
- Are the labels and other quantities on your graphs readable?
- Have you included units for all relevant quantities?
- Have you included uncertainties whenever possible?
- Have you compared measured and predicted values using σ ?
- Have you stated whether the measured and predicted values agree or disagree?
- Have you discussed sources of uncertainty?

Reporting and rounding measurements and uncertainties.

Report measurements and uncertainties together as in these examples:

- $3.12 \pm 0.04 \text{ m}$
- $(5.127 \pm 0.013) \times 10^{-5} \text{ g}$
- $14,200 \pm 300 \frac{\text{m}}{\text{s}^2}$

The uncertainty should be rounded to one significant digit (or two digits if the single digit would be a one). The measured value should then be rounded to the same decimal place as the uncertainty. Example: in the first example above, the uncertainty is rounded to $\pm 0.04 \text{ m}$. This has two digits after the decimal place, so the value is also rounded to two digits after the decimal place, 3.12 m .

Measurement Significance.

In situations where there is a measured value, $x_{\text{measured}} \pm \sigma_x$, and a predicted value, $x_{\text{predicted}}$, calculate the significance of your result, that is, “how many σ ” the measurement is from the prediction:

$$\text{significance} = \frac{x_{\text{measured}} - x_{\text{predicted}}}{\sigma_x}$$

Typically if the significance is between -3 and $+3$ we interpret this as agreement between the measured and predicted values.

Before leaving lab:

- Have you turned off all equipment?
- Have you logged off of the computer?