Template_Error Propagation Exercise
(9 extra points toward final grade)

Type at the top of the first page (1 point):

Title of the exercise; Your name (prominent); Date of the Experiment; TA's name; Lab Section number.

Beginning of the new page – page 2:

Experimental Data section (1points)

In the table below present the raw data that will be used for further calculations in Data Analysis.

Hollow cylinder

Dimension	Mean value, unit	Stand. Deviation, unit	Error (stan.dev.of the mean Logger Pro), unit

(Add/delete rows as needed)

Important: All Logger Pro statistics graphs need to be attached at the end of the lab report. The graphs can also be inserted as a picture under the tables.

Data analysis section (4 points)

1. Volume calculations and its Error Propagation

1.1 The equation that was used to calculate volume of the Hollow cylinder is:

Equation:

Calculations:

1.2 The standard deviations of the mean for each dimension found with the following equation:

Equation:

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Calculations:

1.3 The error propagated in the volume of the hollow cylinder using the partial derivative method will be:

Equation:

Calculations:

Report the Result with its error: (1point)

The correct format to report the volume and its error is to

- report the error to one significant figure **unless** that one significant figure equals to 1, then use the following significant figure;
- make sure the value of mean volume is reported to the same number of decimal places as the error;
- report the whole result (volume +/- its error) in scientific notation

Conclusion: (2 points)

Explain the concepts of the error propagation and show how the calculated result for volume and its error show the concept of error propagation.