Slinky Magnetic Field Lab

Procedure

Briefly, but completely, describe the procedure for this lab – and include labeled sketches.

Data $n =$ _____ $I =$ _____

B	I

B	L	n

Graphs

Graph **B** on the *y*-axis and current, **I**, on the *x*-axis. Then, graph **B** on the *y*-axis and #turns per unit length, **n**, on the *x*-axis. Draw the best fits line for each graph.

Questions

1) Draw a circuit diagram (different from the sketch from procedure). Draw the direction of the current. Which end is the North end, and which is the South, for the slinky solenoid? Explain your answer.

2) Find the slope of your first graph. Use your slope to find the permeability constant. Show your work, and include units.

3) Find the slope of your second graph. Use your slope to find the permeability constant. Show your work, and include units.

4) Find the percent errors for both of your values compared with the actual value.

5) Which method was more accurate? Give good, specific reasons to support your answer.

Error Analysis

Thoroughly explain what the main sources of error are for this lab, and how you would correct them.

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OK, OK... I'LL GET RID OF SOME OF THE MAGNETS...

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