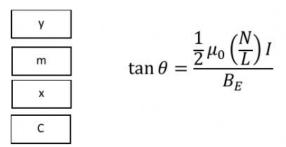
Name:	Class:
Expe	riment 5: Magnetism
Read o	ver the lab manual and then answer the following question.
a)	State the objective of the experiment.
b)	Identify the variables of the experiment.
	Manipulated variable :
	Constant variable :
c)	Theory:
	i) What is the quantities represented by the symbol $\overrightarrow{B}$ , $\overrightarrow{B_S}$ and $\overrightarrow{B_E}$ $\overrightarrow{B_S}$ :
	ii) The magnetic field strength at the end of solenoid is given by $B_E=\frac{\frac{1}{2}\mu_0N}{Lm}$ $B_S=\frac{1}{2}\Big(\frac{\mu_0NI}{L}\Big)$
d)	Procedures:
	i) What is the first thing you need to record?
	ii) At what direction the compass needle should be adjusted in the beginning of the experiment?

- iii) How to do you adjust the value of current, ??
- e) Data tabulation and analysis.
  - i) What graph do you need to plot for this experiment?
  - ii) What is equation used to plot the graph?

$$B_E = \frac{\frac{1}{2}\mu_0 N}{Lm}$$
 
$$B_S = \frac{1}{2} \left(\frac{\mu_0 NI}{L}\right)$$
 
$$\tan \theta = \frac{\frac{1}{2}\mu_0 \left(\frac{N}{L}\right)I}{B_E}$$

iii) Compare the equation used to plot the graph from e) (ii) with straight line equation, y = mx + C



iv) How do you determine the value of horizontal component of the earth's magnetic field,  $B_E$ ?

$$B_E = \frac{\frac{1}{2}\mu_0 N}{Lm}$$

$$B_s = \frac{1}{2} \left( \frac{\mu_0 N I}{L} \right)$$