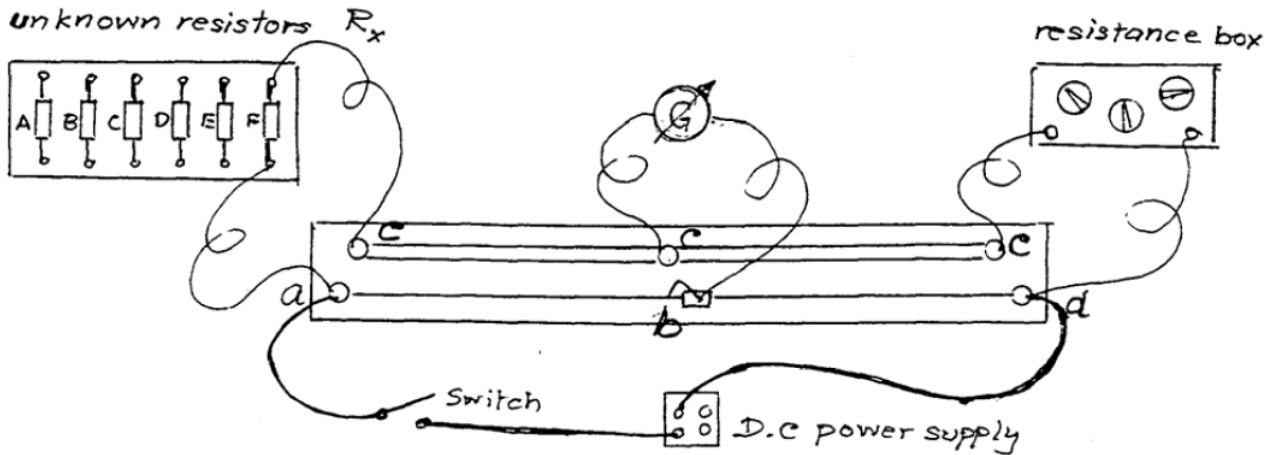


Physics 1040L
**WHEATSTONE BRIDGE,
 SERIES AND PARALLEL RESISTANCES**

SECTION _____ STUDENT _____ DATE _____

PARTNER(s) _____

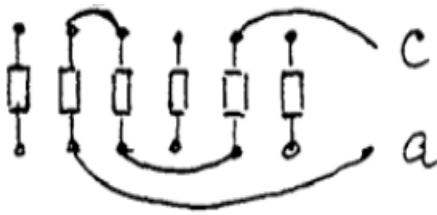
- Look at the unknown resistors and choose three of them you will be using during this experiment. Record their labels
 R_1 is resistor _____; R_2 is resistor _____; R_3 is resistor _____;
- Connect circuit as shown on the picture, use R_1 as your unknown resistor.



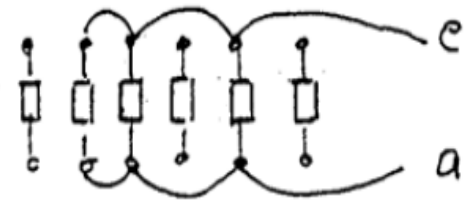
- Fill in the table

R_x	L_{ab} , m	R_{box} (measured by Ohm meter), Ohms	$R_x = \frac{L_{ab} R_{box}}{1 - L_{ab}}$, Ohms
R_1			
R_2			
R_3			
Series connection (see diagram)			$R_{ser}^{exp} =$
Parallel connection (see diagram)			$R_{par}^{exp} =$

Series connection



Parallel connection



Data analysis:

You need to compare your experimental results for R_{ser} and R_{par} with calculated from data for individual resistances.

$$R_{ser}^{cal} = R_1 + R_2 + R_3 = \underline{\hspace{10cm}} \quad (\quad)$$

% difference

$$\left(\frac{R_{ser}^{exp} - R_{ser}^{cal}}{R_{ser}^{cal}} \right) 100\% = \underline{\hspace{10cm}} \% \text{ (do not forget to round)}$$

$$\frac{1}{R_{par}^{cal}} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}$$

$$R_{par}^{cal} = \underline{\hspace{10cm}} \quad (\quad)$$

% difference

$$\left(\frac{R_{par}^{exp} - R_{par}^{cal}}{R_{par}^{cal}} \right) 100\% = \underline{\hspace{10cm}} \% \text{ (do not forget to round)}$$