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Title: Verification of Ohm's Law and Determination of Effective Resistance of Resistors in Series and Parallel Combination

Objective:
1. To verify Ohm's Law.
2. To determine the effective resistance of resistors in series and parallel combination.

Theory:

1) Determination of each resistor from their colour bands:

	Resistance (Ω)
Resistor 1	
Resistor 2	
Resistor 3	

2) Calculate using the following equation

a. For resistors in series,

$$R_{eff} = R_1 + R_2 + R_3$$

b. For resistors in parallel,

$$R_{eff} = (R_1^{-1} + R_2^{-1} + R_3^{-1})^{-1}$$

From the equations in 2a and 2b,

Resistors configuration	$R_{eff}(\Omega)$
Parallel	
Series	

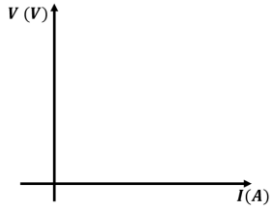
Experimental data:

1. Resistors in Series

a.

Minimum reading of milliammeter		
Reading	Voltage (V)	Current (I)
1		
2		
3		
4		
5		

b. Graph should have axes of the following



c. Uncertainties

I	$I - \bar{I}$	$(I - \bar{I})^2$	V	$\hat{V}$	$V - \hat{V}$	$(V - \hat{V})^2$

Uncertainty of gradient, Δm	

*The idea is that this document allows you to be able to record experimental data, perform data analysis and prepare lab report quickly and efficiently. Shaded region are to be filled during and after the experiment.

Uncertainty of intercept, Δc	

d. Percentage Error Calculation

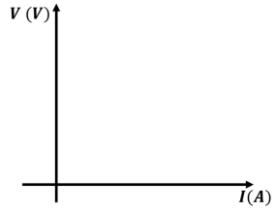
$\%_{error}$	

2. Resistors in Parallel

e.

Minimum reading of milliammeter		
Reading	Voltage (V)	Current (I)
1		
2		
3		
4		
5		

f. Graph should have axes of the following



g. Uncertainties

I	$I - \bar{I}$	$(I - \bar{I})^2$	V	$\hat{V}$	$V - \hat{V}$	$(V - \hat{V})^2$

Uncertainty of gradient, Δm	
Uncertainty of intercept, Δc	

h. Percentage Error Calculation

$\%_{error}$	

Errors and Precautions:

Error 1	
Precaution 1	
Error 2	
Precaution 2	

Discussion:

Conclusion:

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