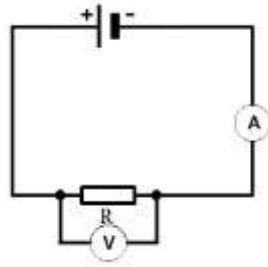
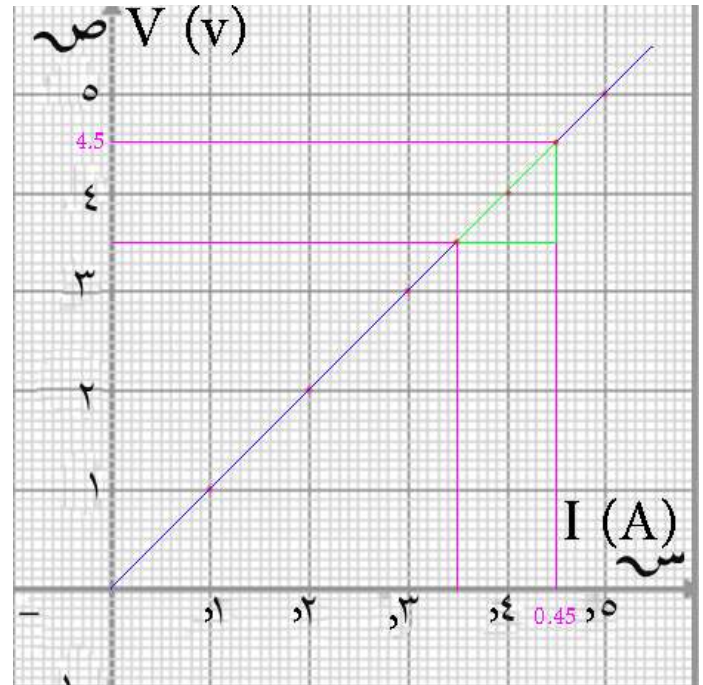


Experiment 1:



Data Table (1)

I (A)	V (v)
0.5	5
0.4	4
0.3	3
0.2	2
0.1	1

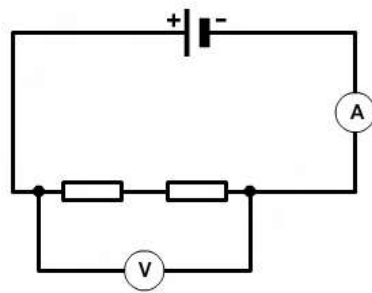


R value from slope:

$$R = \frac{X_1 - X_2}{y_1 - y_2} = \frac{4.5 - 3.5}{0.4 - 0.3} = \frac{1}{0.1} = 10 \, \Omega$$

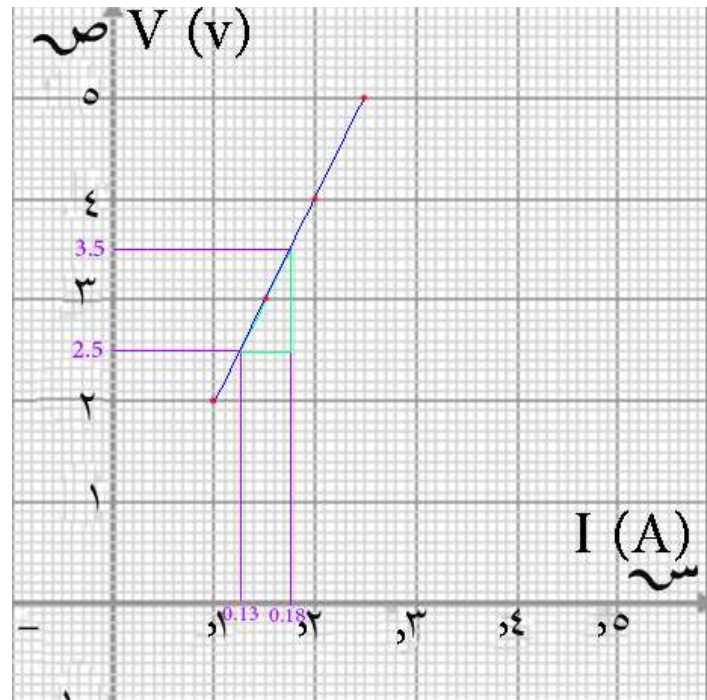
R value from mathematical formula: $R = \frac{V}{I} = \frac{5}{0.5} = 10 \, \Omega$

Experiment 2:



Data Table (2)

I (A)	V (v)
0.25	5
0.2	4
0.15	3
0.1	2



R value from slope:

$$R = \frac{x_1 - x_2}{y_1 - y_2} = \frac{3.5 - 2.5}{0.18 - 0.13} = \frac{1}{0.05} = 20 \, \Omega$$

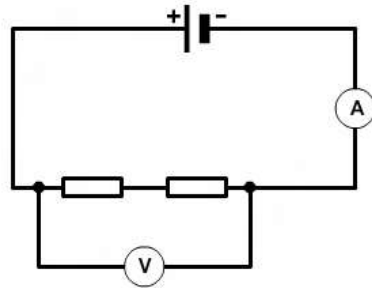
R value from mathematical formula:

$$R = \frac{V}{I} = \frac{5}{0.25} = 20 \, \Omega$$

R value from mathematical formula:

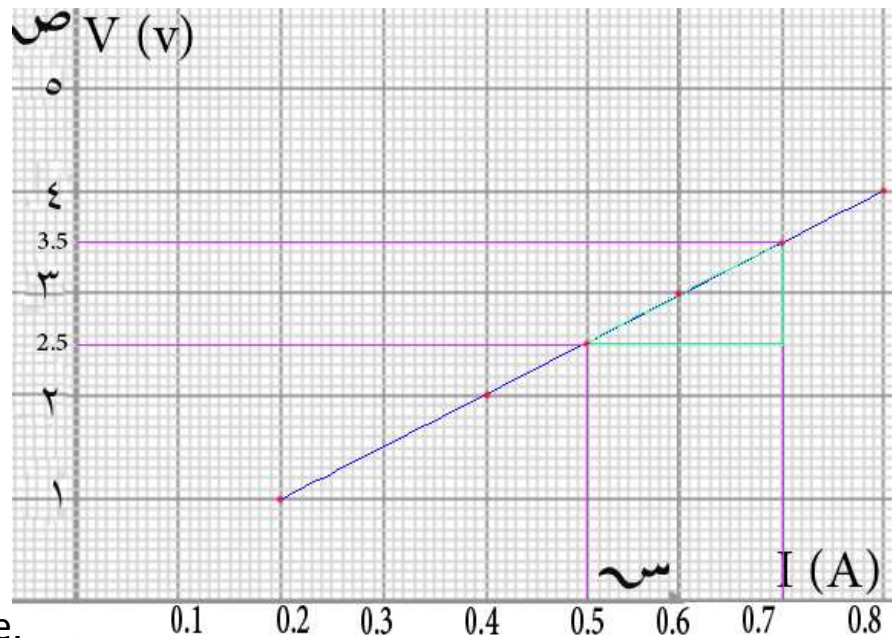
$$R_s = R_1 + R_2 = 10 + 10 = 20 \, \Omega$$

Experiment 3:



Data Table (3)

I (A)	V (v)
0.2	1
0.4	2
0.6	3
0.8	4



R value from slope.

$$R = \frac{X_1 - X_2}{y_1 - y_2} = \frac{3.5 - 2.5}{0.7 - 0.5} = \frac{1}{0.2} = 5 \, \Omega$$

R value from mathematical formula:

$$R = \frac{V}{I} = \frac{1}{0.2} = 5 \, \Omega$$

R value from mathematical formula:

$$R_p = \frac{R_1 R_2}{R_1 + R_2} = \frac{10 \times 10}{10 + 10} = \frac{100}{20} = 5 \, \Omega$$

Results and Calculations:

R (Ω)		R ₁ (Ω)		R _s (Ω)		R _p (Ω)	
I (A)	V (v)	I (A)	V (v)	I (A)	V (v)	I (A)	V(v)
0.5	5	0.5	5	0.25	5	0.2	1
0.4	4	0.4	4	0.2	4	0.4	2
0.3	3	0.3	3	0.15	3	0.6	3
0.2	2	0.2	2	0.1	2	0.8	4
0.1	1	0.1	1				

From the graph:

$$R = \frac{X_1 - X_2}{y_1 - y_2} = \frac{4.5 - 3.5}{0.45 - 0.35} = \frac{1}{0.10} = 10 \Omega$$

$$R_1 = \frac{X_1 - X_2}{y_1 - y_2} = \frac{4.5 - 3.5}{0.45 - 0.35} = \frac{1}{0.10} = 10 \Omega$$

$$R_s = 20 \Omega$$

$$R_p = 5 \Omega$$

$$R_s = R_1 + R_2 = 10 + 10 = 20 \Omega$$

$$R_p = \frac{R_1 R_2}{R_1 + R_2} = \frac{10 \times 10}{10 + 10} = \frac{100}{20} = 5 \Omega$$

Comparison between experimental and theoretical results:

R (Ω)	R ₁ (Ω)	R _s (Ω)	R _p (Ω)
10	10	20	5

Comment on results and calculate the percentage error: