المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

Worksheet |

Lower Secondary Stage (6-8)

1st Semester | 2023-2024

Name: _____Answer Key_____

Subject: Physics **Topic:** Ohm's Law

Objectives:

- To be able to solve different word equations regarding Ohm's Law

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Using Ohm's Law solve the following problems.

1) What is the resistance of a component if the current going through it is 36A and the voltage across it is 12V?

$$R = \frac{V}{I} = \frac{12}{36} = 0.33\Omega$$

2) What is the voltage across a component with a resistance of 130 Ω that has a current of 2.5A going through it?

$$V = I \times R = 2.5 \times 130 = 325\ V$$

3) What is the current through a component if the component has a resistance of 4.5 Ω and the voltage across the resistor is 60V?

$$I = \frac{V}{R} = \frac{60}{4.5} = 13.33\ A$$

4) If the current through a 10Ω component is 16A, what is the voltage across the component?

$$V = I \times R = 16 \times 10 = 160\ V$$

5) What voltage is necessary to produce a current of 200 amperes through a component of 10 Ω?

$$V = I \times R = 200 \times 10 = 20000V$$

6) What is the voltage if a resistance of 25 Ω produces a current of 250 amperes?

$$V = I \times R = 250 \times 25 = 6250\,V$$

7) What is the current produced by a voltage of 240 V through a resistance of 0.2 Ω?

$$I = \frac{V}{R} = \frac{240}{0.2} = 1200A$$

8) What voltage is necessary to produce a current of 200 amperes through a resistance of 100 Ω?

$$V = I \times R = 200 \times 100 = 20000V$$

9) What resistance would produce a current of 120 amps from a 6 V battery?

$$R = \frac{V}{I} = \frac{6}{120} = 0.05\Omega$$

10) What is the current produced by a 9V battery flowing through a resistance of 200 Ω?

$$I = \frac{V}{R} = \frac{9}{200} = 0.045\,A$$