ROQED PHYSICS LAB

Investigation of the dependence of the current on the voltage in the circuit section. Checking Ohm's Law.

Purpose of work:
Establish experimentally the dependence of the current strength on voltage and resistance.

Equipment:
040 - Am laboratory meter,
041 - laboratory voltmeter,
043 - power supply,
073 - 1 Ohm resistor,
074 - 2 Ohm resistor,
075 - 4 Ohm resistor,
045 - rheostat,
042 - Current circuit key,

Theory:
In this work must be convinced of the validity of Ohm's law for a section of the circuit.
Ohm's law for a homogeneous section of a chain: *the current in a conductor is directly proportional to the applied voltage and inversely proportional to the resistance of the conductor.*
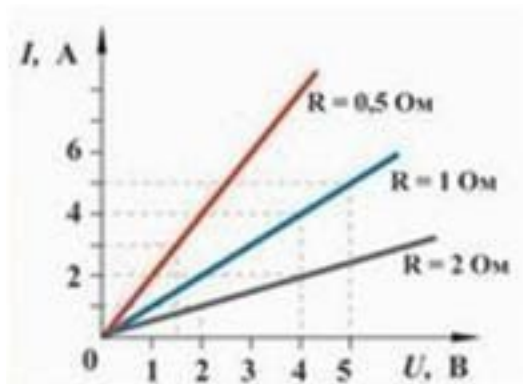
$$I = \frac{U}{R}$$

Graphical dependence of the current I on the voltage U - volt-ampere characteristic

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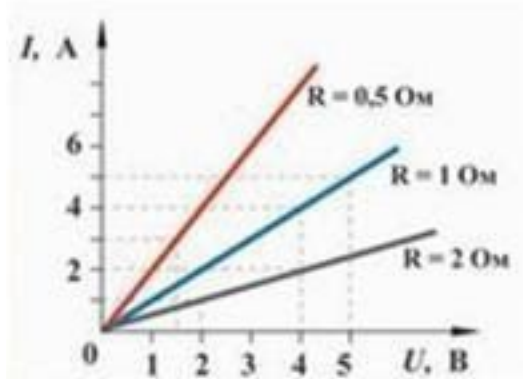
On the board:
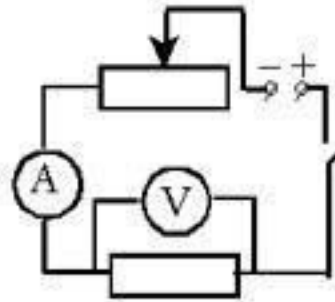
Ohm's law for a homogeneous section of the circuit: *the current in a conductor is directly proportional to the applied voltage and inversely proportional to the resistance of the conductor.*

Work progress:

1. Assemble the electrical circuit No. 1 shown in the figure.voltage valuevoltage at the Set thesource to 8 V. Start the simulation.

2. Change the resistance of the rheostat. Enter the results obtained on the measuring devices into table No. 1.

3. Repeat the experiment several times.

4. Table # 1.

n	Voltage, U, V	Current, I, A
1		
2		
3		

5. Carry out three measurements of the electrical circuit parameters, while adding resistors with a resistance of 1 Ohm, 2 Ohm, 4 Ohm to the electrical circuit No. 1. Using a rheostat, control the voltage across the circuit at 1 V. For each measurement, enter the resistance (R) and current (I) values in Table 2.

6. Table No. 2.

	Section resistance, R, Ohm	Current strength, I, A
1		
2		
3		

7. Make a conclusion.
 A. We made sure that the current in the section of the circuit is directly proportional to the voltage in this section and inversely proportional to its resistance.
In. We made sure that the current in the section of the circuit is inversely proportional to the voltage in this section and is directly proportional to its resistance.
C. Make sure that the current in the section of the circuit is equal to the product of voltage and resistance.