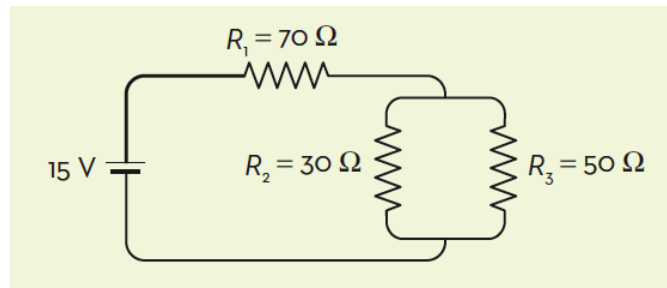


REVIEW ACTIVITIES (TECHNOLOGY; 3º ESO)

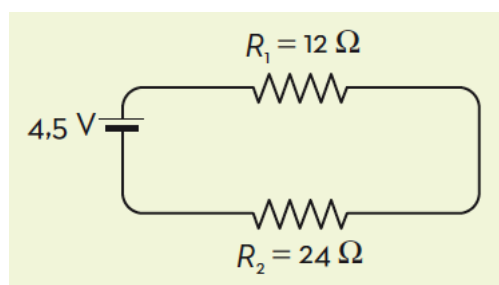
A. Electricity

1. What is the force between two charges of $2 \mu\text{C}$ and $-3 \mu\text{C}$ placed 5 mm apart. ($K = 9 \cdot 10^9 \text{ N} \cdot \text{m}^2 \cdot \text{C}^{-2}$)
2. Two identical charges placed at a distance of 3 cm repel each other with a force of 250 N. What is the value of the charges? Remember that $K = 9 \cdot 10^9 \text{ N} \cdot \text{m}^2 \cdot \text{C}^{-2}$
3. Two charges of $0,6 \mu\text{C}$ and $-2 \mu\text{C}$ are placed 0,5 mm apart. What is the force between them? ($K = 9 \cdot 10^9 \text{ N} \cdot \text{m}^2 \cdot \text{C}^{-2}$)
4. A charge of $2 \mu\text{C}$ is attracted with a force of 28,8 N by another charge, placed at a distance of 5 cm. What is the value of the second charge? Remember that $K = 9 \cdot 10^9 \text{ N} \cdot \text{m}^2 \cdot \text{C}^{-2}$
5. Consider the following circuit:



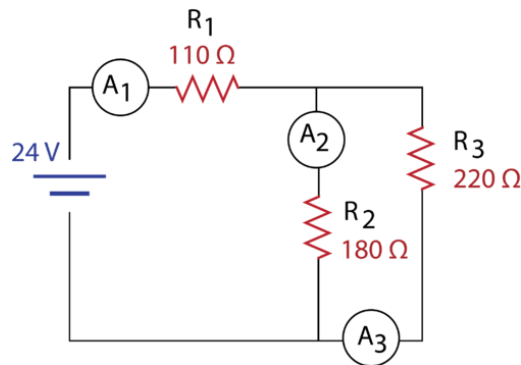
Calculate:

- a) The total equivalent resistance.
 - b) The total current through the circuit.
 - c) The current through resistors R_2 and R_3
6. A current of 3 mA runs through a circuit for 2,5 hours. Calculate the amount of charge consumed.
 7. Consider the following circuit:



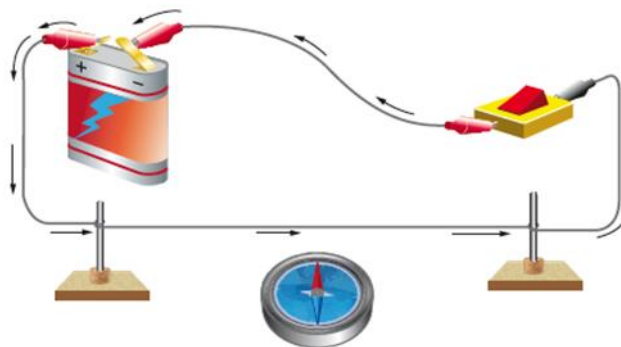
Calculate the power dissipated at each resistor.

8. Consider the following circuit:



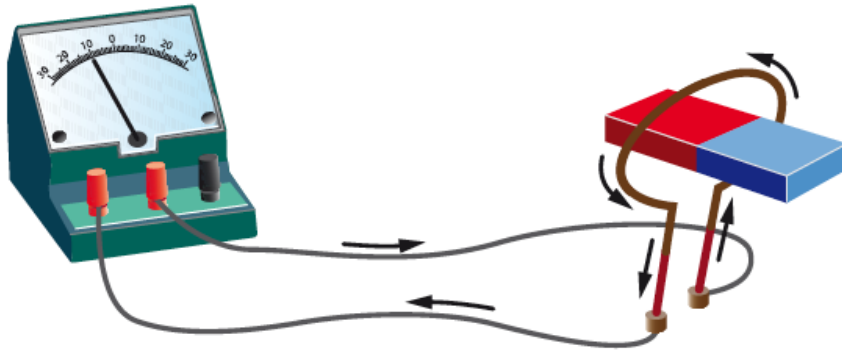
Calculate:

- The total equivalent resistance.
 - The current measured with ammeter A_1 .
 - The currents measured with ammeters A_2 and A_3
 - The power dissipated at each resistor.
- The label of a light bulb indicates that its power is 60 W. Calculate the resistance of the bulb if we connect it to a source of 230 V.
 - Name three receptors and indicate, in each case, the type of energy in which they transform the electric energy of the circuit.
 - Give a brief definition of voltage and power.
 - Define electric current and name the types of components that can be found in an electric circuit.
 - Consider the following experimental device:



- How does the compass behave when the current is switched on through the circuit?
- What is the name of the scientist who observed this phenomenon for the first time?
- Do you know other experiments related to this one?

14. Consider the following experimental device:



If we move the magnet an electric current is created through the circuit. Answer the following questions:

- a) **What is the name of the principle which explains this phenomenon?**
- b) **What is the name of the scientist who discovered that principle?**
- c) **When did that discovery take place?**