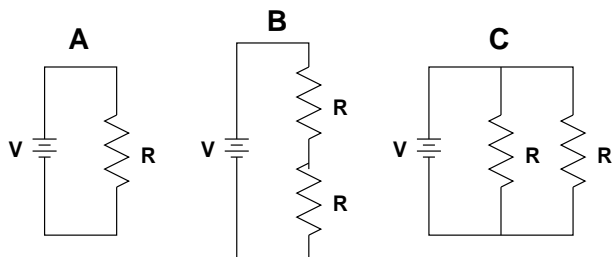


Due date: Fri 15 Oct 2004 08:00:01 AM MDT

Circuit concepts

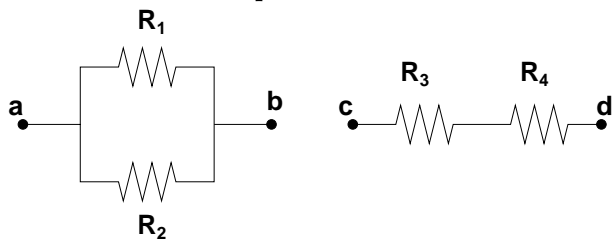


Consider the three circuits shown above. All the resistors and all the batteries are identical.

Choices: **True, False.**

- A. The voltage across a single resistor in circuit C is twice the voltage across a single resistor in circuit B.
- B. The current through a resistor is the same in circuits A and C.
- C. The current through a resistor is the same in circuits A and B.
- D. The power dissipated in circuit A is twice the power dissipated in circuit B.
- E. The total power dissipated in circuit C is twice the total power dissipated in circuit B.

more circuit concepts



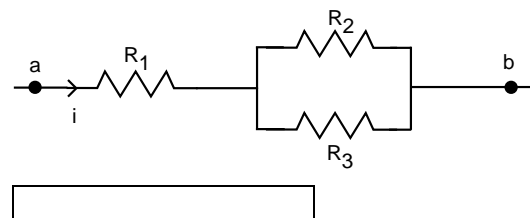
Consider the sections of two circuits illustrated above. Select True or False for all statements.

Choices: **True, False.**

- A. R_{ab} is always less than or equal to R_1 .
- B. After connecting **c** and **d** to a battery, the current through R_3 always equals the current through R_4 .
- C. R_{cd} is always less than or equal to R_3 .
- D. After connecting **a** and **b** to a battery, the voltage across R_1 always equals the voltage across R_2 .

Equivalent resistance

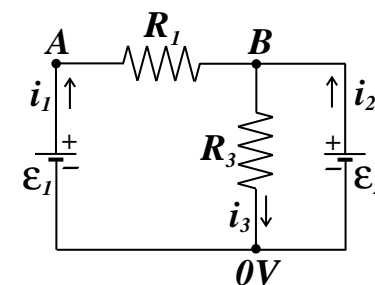
In the section of circuit below, $R_1 = 8.389 \Omega$, $R_2 = 1.210 \Omega$, and the voltage difference $V_a - V_b = 2.600 \text{ V}$. The current $i = 0.290 \text{ A}$. Find the current through R_3 .



Double Circuit

Consider the electric circuit in the figure below with the following parameters:

$\epsilon_1 = 3 \text{ V}$, $\epsilon_2 = 1.5 \text{ V}$, $R_1 = 500 \Omega$, $R_3 = 300 \Omega$.



What is the potential at point B?

Calculate the current i_1 .

Kirchhoffs law

What is the magnitude of the current through R_1 ? DATA: $R_1 = R_2 = R_3 = 20.0 \Omega$. $V_1 = 10.0 \text{ Volts}$. $V_2 = 2V_1$.

