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Section

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The Masters School

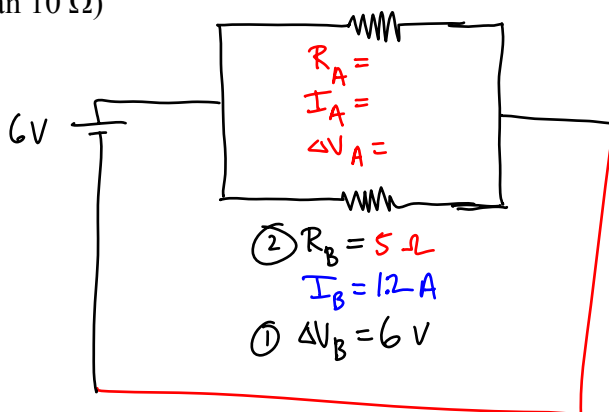
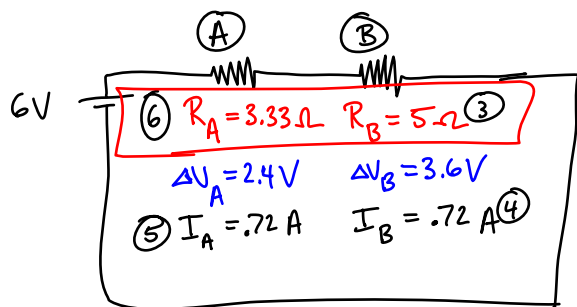
Mr. Alex Rawson

Physics

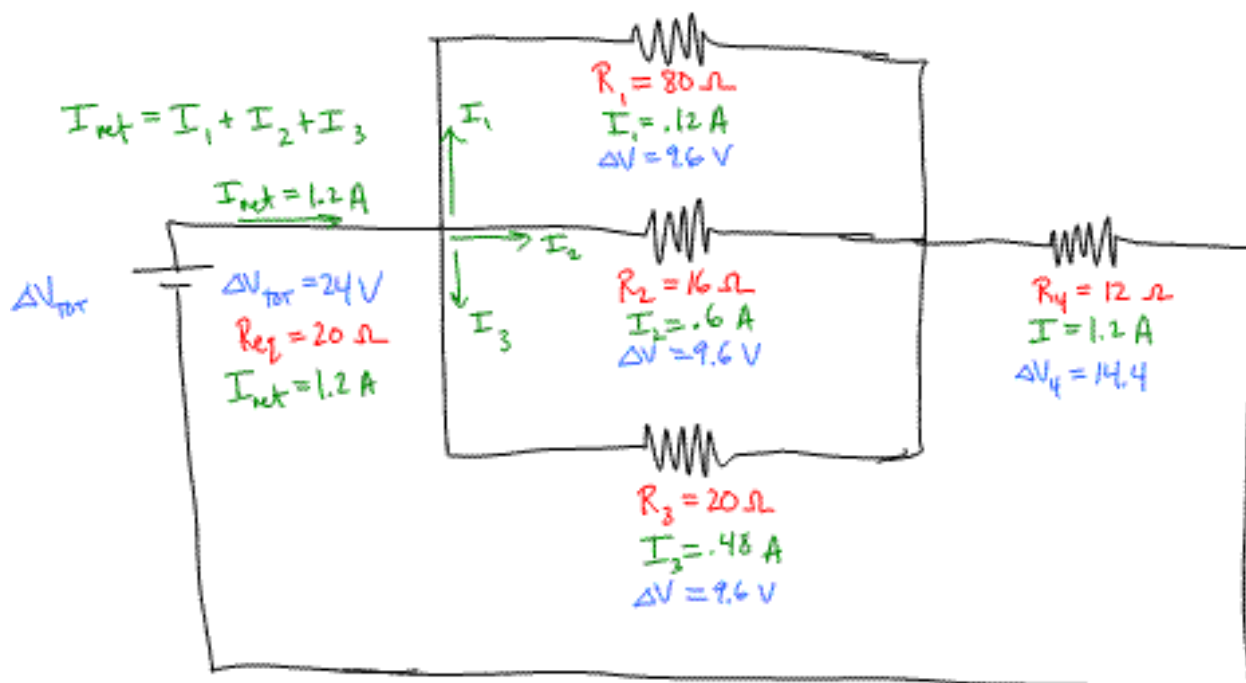


Circuitry IV

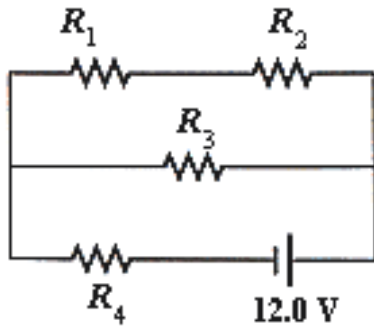
1. Two resistors, A and B, are connected in series to a 6.0 V battery. A voltmeter connected across resistor A measures a potential difference of 2.4 V. When the two resistors are connected in parallel across the 6.0 V battery, the current in B is found to be 1.2 A. Find the resistances of A and B. (Your should find that $A \neq B$, but both resistances should be less than 10Ω)



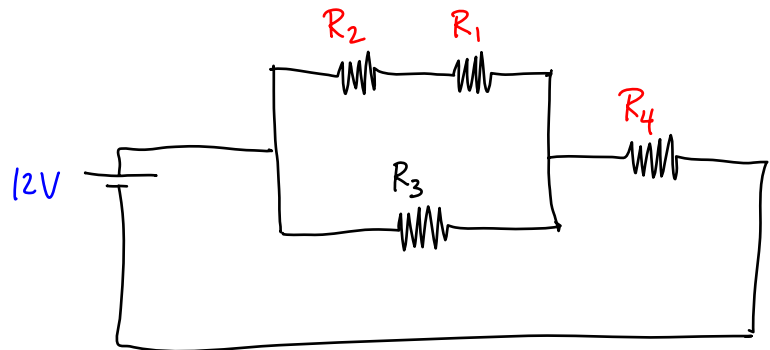
2. Three resistors are connected in parallel – an 80Ω resistor, a 16.0Ω resistor, and a 20Ω resistor, and then joined in series to a 12.0Ω resistor from a battery source with a potential difference of $24.0 V$.
- Draw a schematic diagram for this circuit.
 - Calculate the equivalent resistance and the net current in the circuit. (Your answers should be between $15 - 22 \Omega$, and $1 - 2 A$, respectively)
 - Find the current and potential difference in each resistor. (Remember your rules)



3. Four resistors are connected to a battery with a terminal voltage of 12.0 V, as shown in the figure below. Assume that $R_1 = 30.0\ \Omega$, $R_2 = 80.0\ \Omega$, $R_3 = 100.0\ \Omega$ and $R_4 = 15.0\ \Omega$



- a. Re-draw the circuit.



- b. Determine the equivalent resistance and the net current in the circuit. (Your answer should be between 50 – 70 Ω , and 0 – 1 A, respectively.)

- c. Determine the potential difference in the 30 Ω resistor. (Your answer should be between 2 – 3 V)

