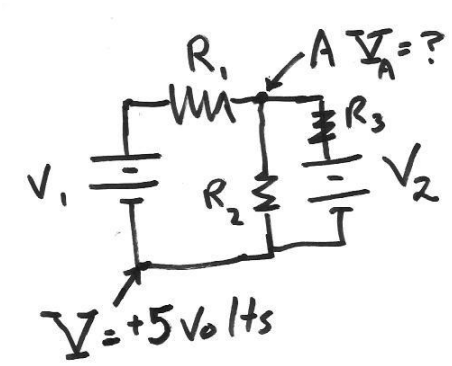
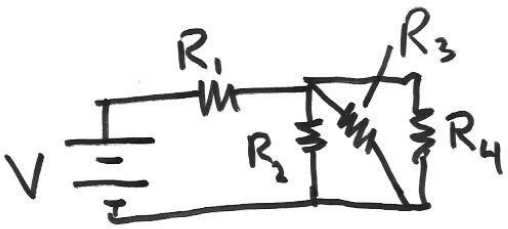
Physics 2B Quiz Set 4

1. Find the electric potential at point A in the diagram.



Let V_1 = 12 volts and V_2 = 6 volts. R_1 = 10 Ω, R_2 = 20 Ω and R_3 = 30Ω.

2. Solve the circuit given in the diagram for all the currents.



Let V = 20 volts: R_1 = 10 Ω, R_2 = 20 Ω and R_3 = 30Ω R_4 = 40Ω.

3. Two parallel plate capacitors, C_1 and C_2, are initially arranged such that only C_1 has an initial charge, Q_{i1}. C_2 is initially uncharged. They are then connected in parallel. Find the ratio of the initial energy to the final energy (after they have been connected).

4. From the diagram, consider $\mathcal{E}$ and R_1 given. For what value of R_2 would the power delivered to the circuit by the battery be a maximum?

7. How much will it cost to run an 800W appliance for 2 hours at V= 120 volts if a kW-hr of electricity costs $0.20. How much current will the appliance use?

8. Find all the currents in the bottom circuit.

9. Find the electric potential at point A. The capacitor is fully charged.