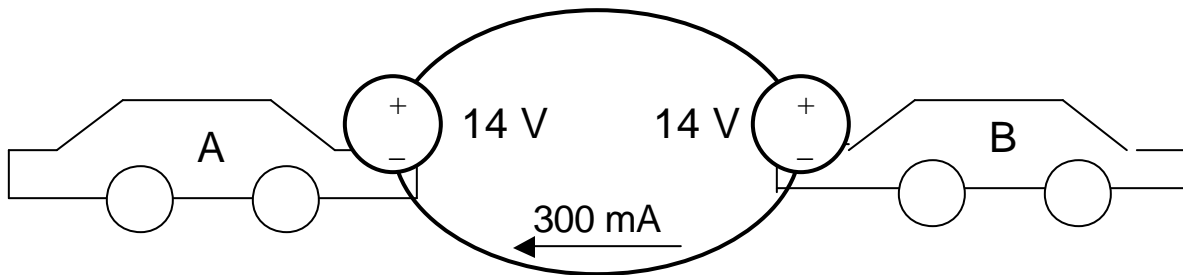


Due February 4, 2003

Problem 1: 6 Points Possible

Prof. Ross's lovely blue Honda Civic has a dead battery. A passerby offers to recharge her battery using his car battery. Unfortunately, he is one of the thousands of people in the Bay area driving an identical Honda Civic, and once the cars are hooked up, Prof. Ross cannot tell which car is hers!

Luckily, she carries a digital multimeter wherever she goes, and determines that a 300 mA current is flowing as shown between the 14 V batteries.

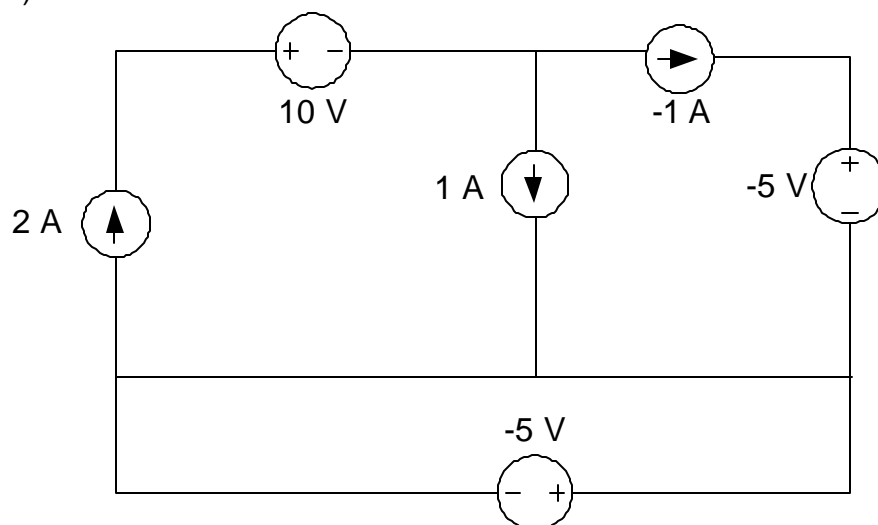


- Draw a circuit diagram showing how the multimeter is attached to measure current.
- Which car belongs to Prof. Ross (which battery is being charged)? Justify your answer.
- How much power is Prof. Ross's battery absorbing?

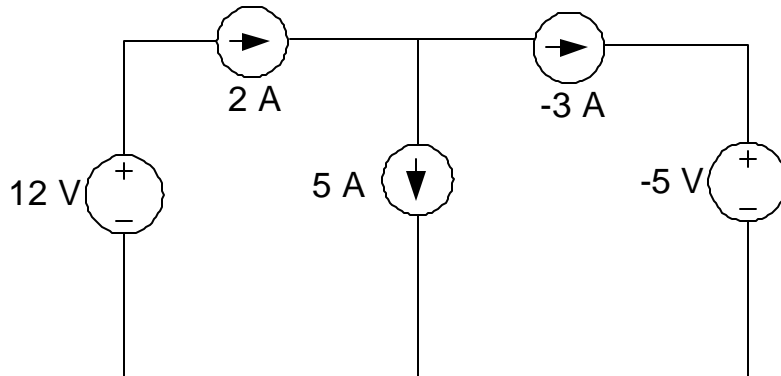
Problem 2: 6 Points Possible

For each of the circuits below, determine whether the circuit violates any physical laws, and state the violation. In addition, state whether there are any undetermined voltages or currents.

a)

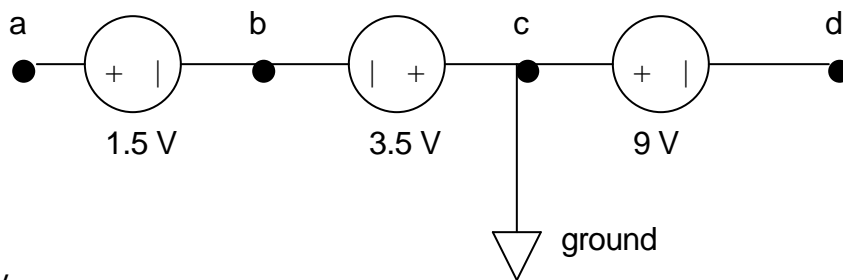


b)



Problem 3: 8 Points Possible

Find the voltages:



- a) V_{ba}
- b) V_{ad}
- c) V_d
- d) V_c

Problem 4: 10 Points Possible

Determine the power absorbed by each element in this circuit.

