## 9. WEEK 9

7. In the following circuit, all bulbs are identical. The voltage drop across bulb A is 10.0 volts.

(A) Rank the bulbs in terms of brightness, starting with the brightest.

(B) Find the voltage between points 1 and 2. State: "the voltage at point 1 is _____ volts relative to point 2." (In other words, if I use my voltmeter, connecting the black lead at point 2 and the red lead at point 1, what would the voltage reading be?)
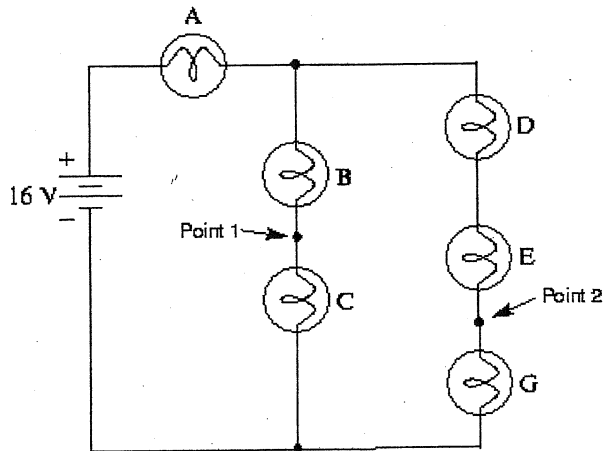
10. WEEK 10

7. In the circuit below, the current through the 15-ohm resistor is 0.20 A. (A) Find the voltage drop across the 40-ohm resistor. (B) Find the battery voltage V. (C) Find the total current supplied by the battery.
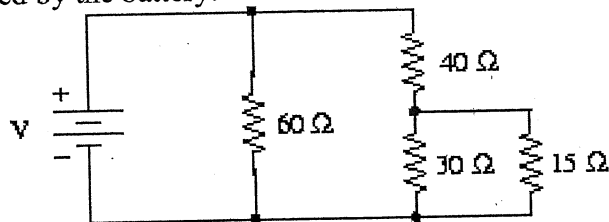
8. The circuit shown is sometimes called a "bridge" configuration. The current through two of the resistors is indicated. We will call the negative battery terminal our "zero" voltage reference, or "ground." (A) Find the battery voltage. (Hint: what are the voltage drops across the two right-hand resistors?) (B) Find the current through the

3.73-ohm resistor. (C) Find the potential, relative to ground, at point B. (D) Find the potential, relative to ground, at point A. (Hint: you will want to use the voltage at point B to solve this.) (E) Find the current through the 4.0-ohm resistor. (F) Find the total current supplied by the battery. (G) Suppose we replaced the bridge circuit with a single resistor, and that the current through the battery remained the same. What would the value of this "equivalent resistor" be?