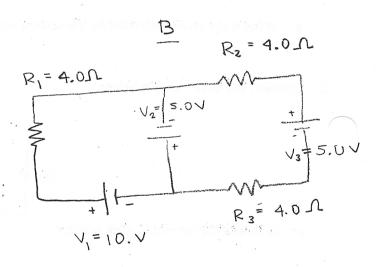
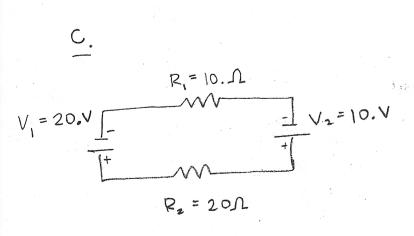
## Do on a separate sheet of paper!

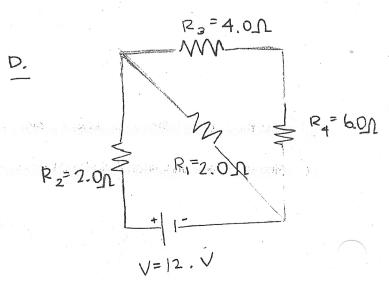
## **Capacitor & Circuits Practice**

- 1. The first capacitor was invented by Pieter van Musschenbroek in 1745 when he and his assistant stored charge in a device called a Leydan jar. If 5 x 10<sup>-4</sup> C of charge were stored in the jar over a potential difference of 10,000 V, what was the capacitance of the Leydan jar?
- 2. The nervous system of the human body contains axons whose membranes each act as small capacitors. A membrane is capable of storing 1.2 x 10<sup>-9</sup> C of charge across a potential difference of 0.070 V before discharging nerve impulses through the body. What is the capacitance of one of these axon membranes?
- 3. On Saturday nights, Greg likes to go to the Disco, where he can dance under the strobe light. The strobe contains a 200. µF capacitor that stores charge over a 1000. V potential difference. If the strobe flashes four times per second, what is the current flow created by the strobe's capacitor?
- 4. Amber accidentally leaves the headlights on overnight and is unable to start the car in the morning. The two headlights connected in parallel each draw 2.00 A of current from the 12.0 V battery. If the battery stores 7.50x105J of energy, how long will it take for the headlights to go off? Why are the headlights connected in parallel?
- 5. Find the current in each resistor for each of the circuits.

A. 
$$R_1 = 2.0\Omega$$
 $V_1 = 6.0V$ 
 $V_2 = 6.0V$ 
 $V_3 = 6.0V$ 
 $V_4 = 6.0V$ 







Corralejo 2