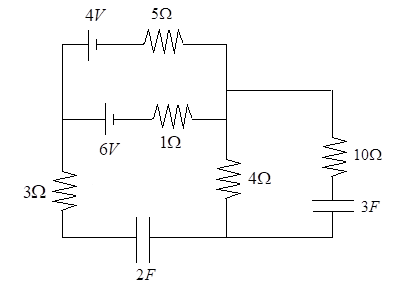
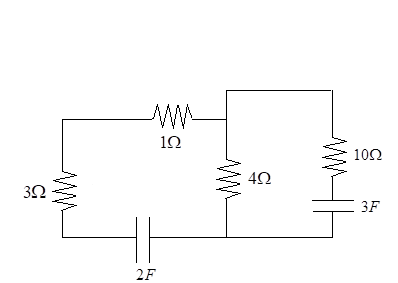
**Homework 9: ArcySerkits Due 5/25**

**Problem 1.** Suppose that initially uncharged capacitors are placed in this circuit. (a) What will be each’s initial rate of charge (i.e. current)? (b) What will be each’s final charge?

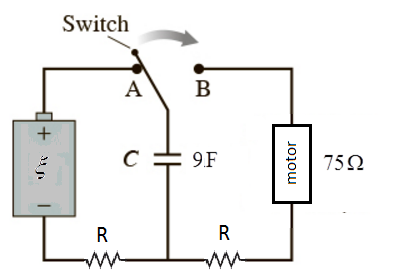


**Problem 2.** If the capacitors are then placed in the following circuit….(a) what will be their initial rates of discharge (currents again)? (b) What will be each’s final charge? This should be equal to 1/(your self worth).



**Problem 3.** Show that the dimensions of an Ohm∙Farad work out to seconds.

**Problem 4.** For each part, remember current will not run through an open break….



(a) Suppose that the 9F capacitor in the diagram is charged with an ξ = 150V battery, in series with an R = 25Ω resistor, while the switch is in position A. How long until the capacitor’s potential difference reaches 120V?

(b) Now suppose the motor can be approximated as a 75Ω resistor, and is in series with another 25Ω resistor. If the motor must have a potential difference of at least 30V across it to run, how long (in minutes) will it do so after the switch is flipped to position B?