**Phys2610 (2019) Assignment 2**
Due Thursday, Feb 7, 2019

1. For the circuit below, if v is a sinusoidal voltage with an amplitude of 8 V, $R_1 = 5.6$ kΩ, and $R_2 = 2.8$ kΩ, calculate the peak, the rms, and the average voltage across R_2. What is the maximum instantaneous power dissipated by the R_2? What is the average power dissipated by R_2? What is the average power supplied by the signal generator?
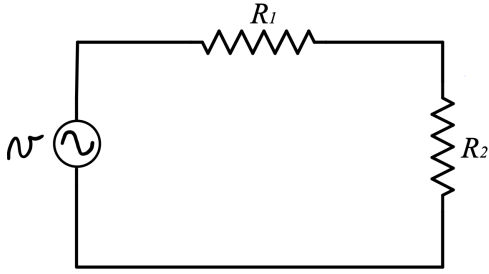
2. In the circuit below, the capacitors are initially uncharged. The switch is first put in position A for a long time, and then switched to position B. Find the final charges on the 3 capacitors after equilibrium is established.
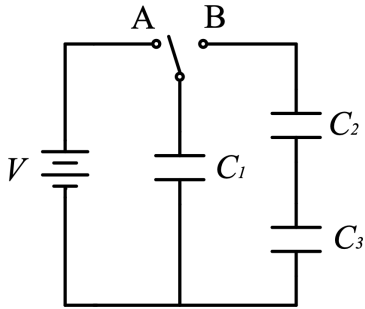
3. Determine the output voltage as a function of time for the circuit shown below if the input is a step function from − 1 V to +6 V, for $R = 1$ MΩ, and $C = 100$ μF. Sketch the voltage to scale as a function of time from zero to 4 time constants.
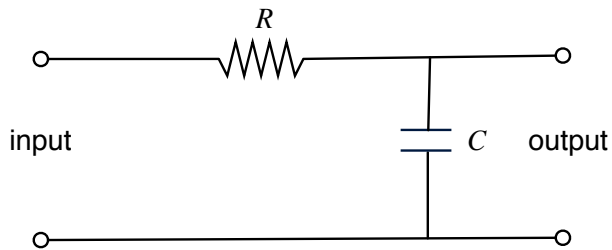
4. For the circuit below, with $V_0 = 10$ V, $R = 10$ Ω, and $L = 100$ mH, what is the current after the circuit reaches equilibrium? How long does it take for the current to increase from 0.1 A to 0.9 A?