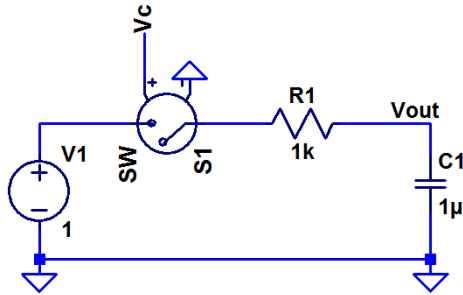
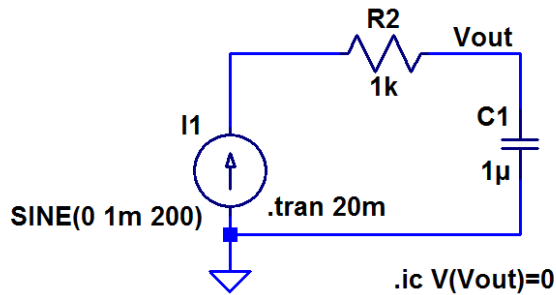


H.W. #15 EE 220 Summer 2014

1. In the following circuit the output voltage is initially at zero and the switch is open. Write an equation for the output voltage after the switch closes. Hand sketch the output voltage. Verify your hand calculations using LTspice.



2. For the circuit in problem 1 write an equation for the current that flows in the circuit. Hand sketch this current and verify your sketch using LTspice.
3. Repeat problem 1 if the resistor and capacitor are swapped.
4. Repeat problem 2 if the resistor and capacitor are swapped.
5. Find, and sketch relative to the input current, the AC output voltage in the following circuit. Use LTspice to verify your hand calculations. In the simulation results you can ignore the DC shift in the output voltage and focus only on the AC (sinusoidal) portion of the output waveform.



6. Find  $V_1$  and  $V_2$  in the following circuit. Verify your answers using LTspice.

