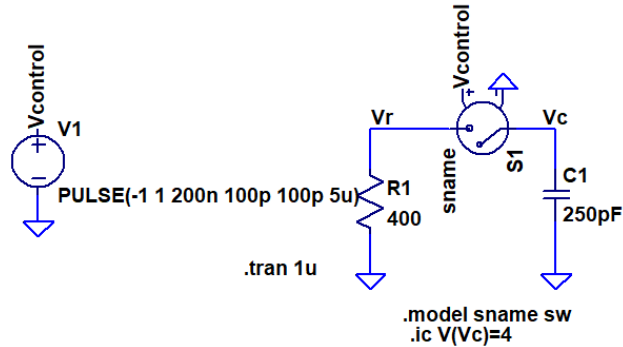
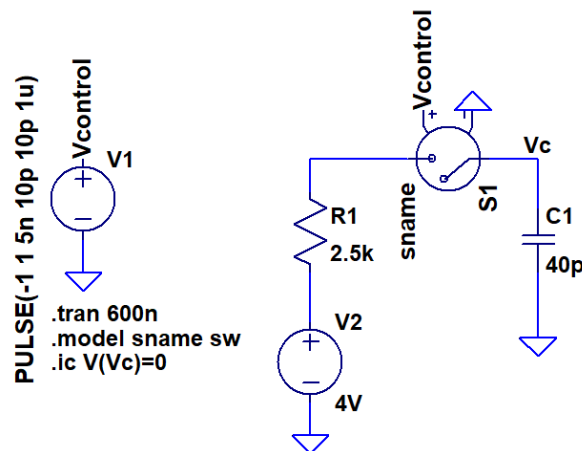


Show your work for credit!

- Hand calculate  $V_c$  and  $V_r$  in the following circuit (note that they are not always the same). Compare your hand calculations to simulation results. Note that the switch closes at 200 ns. Make sure you understand how to use switches since we'll use them often. (4 points)



- Write the equation describing the voltage across the capacitor in the following circuit. Use LTspice to verify your answer. (3 points)



Note that the capacitor is discharged.

- Write the (2) equations describing the voltage across the capacitor,  $V_c$ , in the following circuit for both the rising and falling edges of the input pulse. Again, use LTspice to verify your answer. (3 points)

