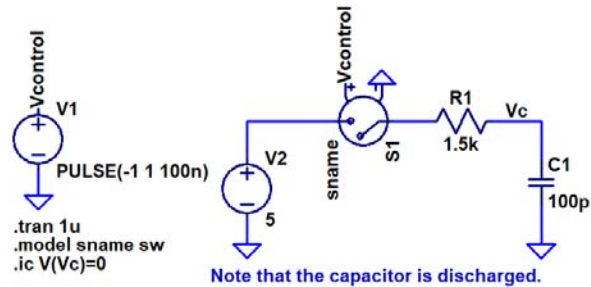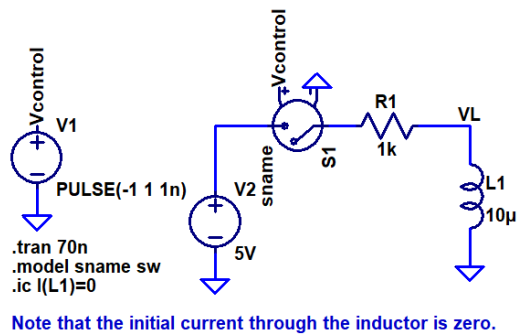H.W. #13 EE 221 Spring 2019

Show your work for credit and put a box around each of your answers (follow the hw guidelines!)
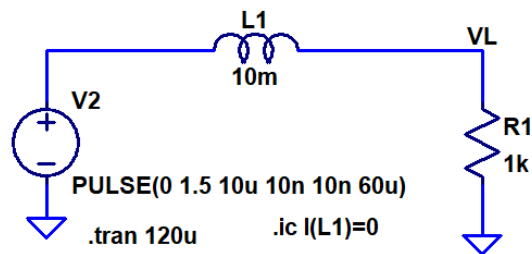
1. Write an equation for Vc in the following circuit. Verify your hand calculations with LTspice. (3 points)

Note that the capacitor is discharged.

2. Write the equation describing the voltage across, and current through, the inductor in the following circuit. Use LTspice to verify your answer. (3 points)

Note that the initial current through the inductor is zero.

3. Repeat problem 3 if the inductor and resistor positions are swapped. (3 points)
4. Write the equations describing the voltage across, and the current through, the inductor in the following circuit for both the rising and falling edges of the input pulse. Again, use LTspice to verify your answer. (3 points)

5. Repeat problem 4 if the inductor and resistor positions are swapped. (3 points)