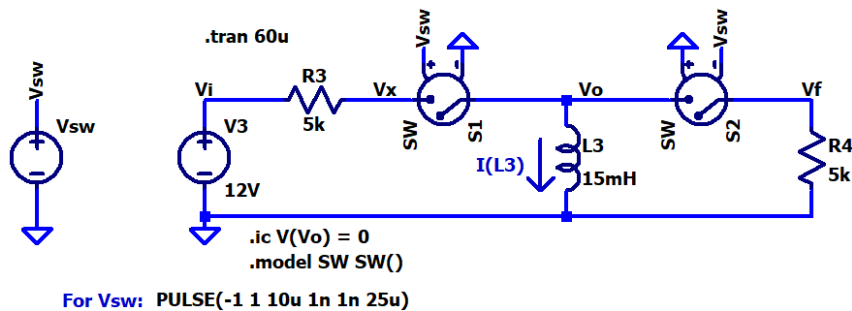


**HW16 – Due Wednesday, April 13**  
**EE220 – Circuits I**  
**Spring 2022**

To get full credit:

- Show your work.
- Put a box around each of your answers.
- Make sure to **follow all instructions**.

1. Sketch the waveforms (yes, by hand) for  **$V_i$ ,  $V_x$ ,  $V_o$ ,  $V_f$ , and  $I(L3)$**  in the following circuit. Specifically, determine and put a box around the equations that you use to sketch these waveforms. Verify that your waveforms are correct using LTspice. (6 points)



2. Discuss the operation of the circuit from problem 1 in your own words. In your brief, written discussion, mention specifically each of the four labeled voltages and the inductor current and explain their behavior. How would the behavior of the circuit change if we connected another 5k resistor in parallel with R4? What about in series with R4? (4 points)
3. Sketch the waveforms (yes, by hand) for  **$V_{in}$ ,  $V_{out}$ , and  $I(L)$**  in each of the circuits given below. Specifically, determine and put a box around the equations that you use to sketch these waveforms. Verify that your waveforms are correct using LTspice. Also, briefly explain the behavior of  **$V_{out}$**  and  **$I(L)$**  for each circuit. Are there any sudden jumps in voltage or current? If so, why? If not, why not? (8 points)

