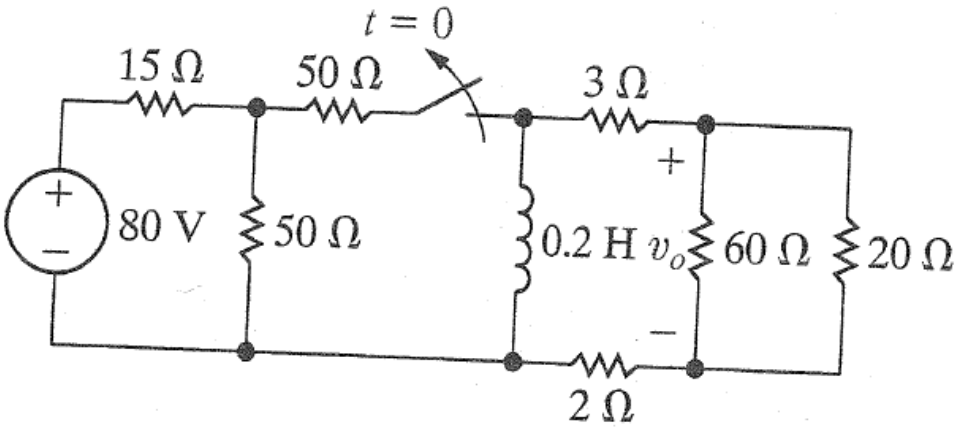
ENEE2301 CH7 HOMEWORK PROBLEMS

7.6 PSPICE The switch in the circuit in Fig. P7.6 has been closed a long time. At $t = 0$ it is opened. Find $v_o(t)$ for $t \geq 0$.

Figure P7.6

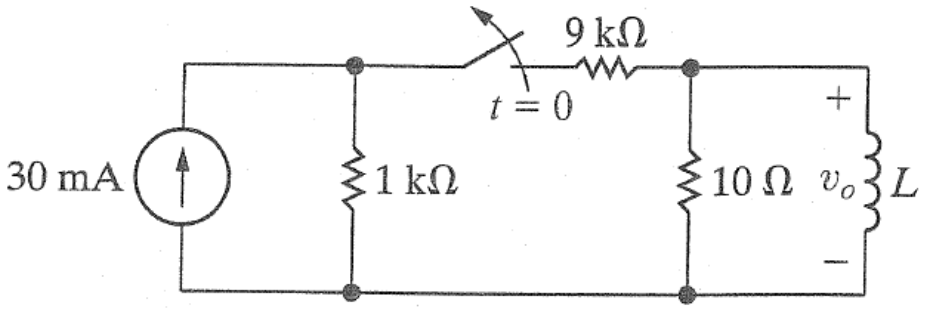


7.11 In the circuit in Fig. P7.11, the switch has been closed for a long time before opening at $t = 0$.

a) Find the value of L so that $v_o(t)$ equals $0.5\ v_o(0^+)$ when $t = 1$ ms.

b) Find the percentage of the stored energy that has been dissipated in the 10 Ω resistor when $t = 1$ ms.

Figure P7.11



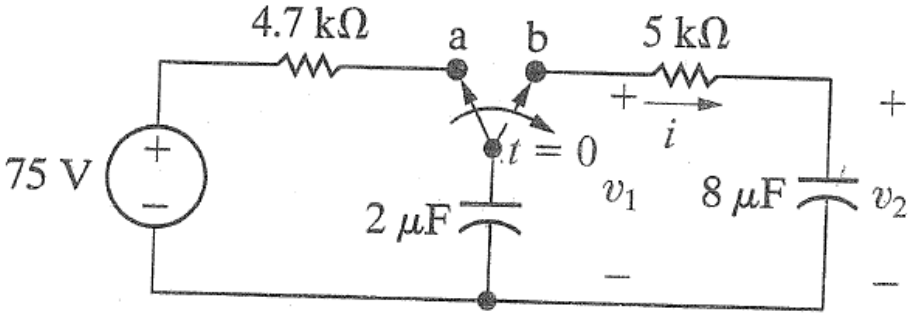
7.23 The switch in the circuit in Fig. P7.23 has been in position a for a long time and $v_2 = 0$ V. At $t = 0$, the switch is thrown to position b. Calculate

a) i, v_1, and v_2 for $t \geq 0^+$.

b) the energy stored in the capacitor at $t = 0$.

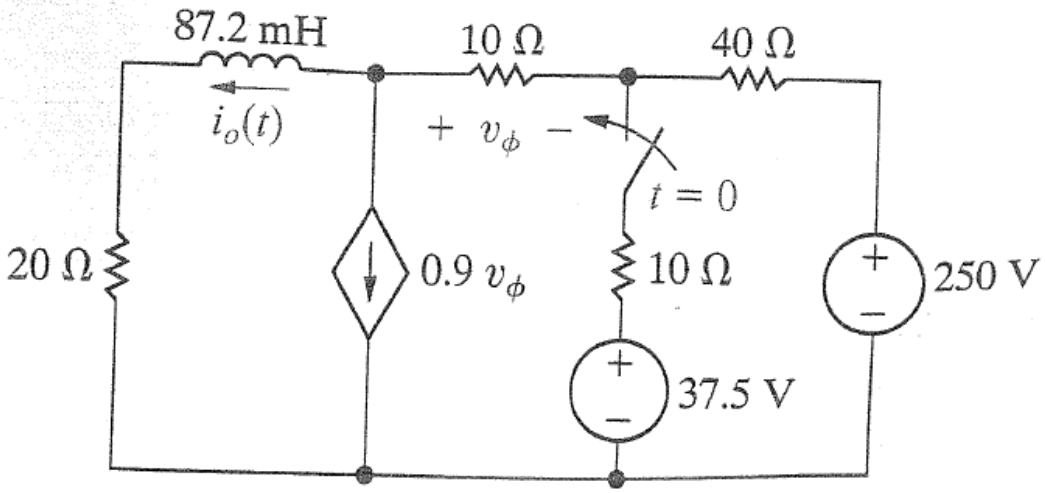
c) the energy trapped in the circuit and the total energy dissipated in the 5 kΩ resistor if the switch remains in position b indefinitely.

Figure P7.23



7.42 PSPICE The switch in the circuit in Fig. P7.42 has been open a long time before closing at $t = 0$. Find $i_o(t)$ for $t \geq 0$.

Figure P7.42



7.54 PSPICE MULTISIM

The switch in the circuit seen in Fig. P7.54 has been in position a for a long time. At $t = 0$, the switch moves instantaneously to position b. Find $v_o(t)$ and $i_o(t)$ for $t \geq 0^+$.

Figure P7.54