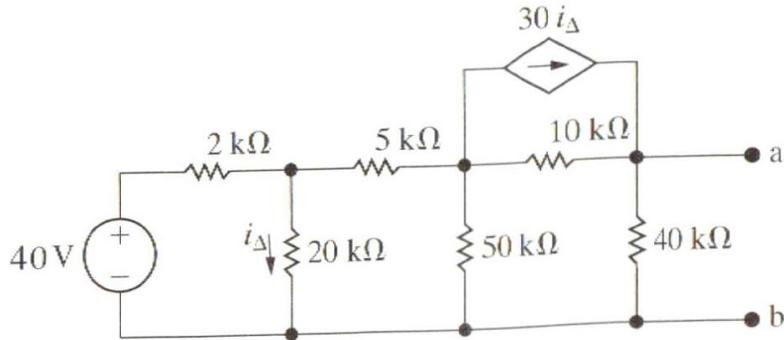


Open book, open notes, and use of a laptop equipped with Freemat is allowed.

PLEASE SHOW ALL WORK IN THE SPACE PROVIDED. All questions are worth 25 points

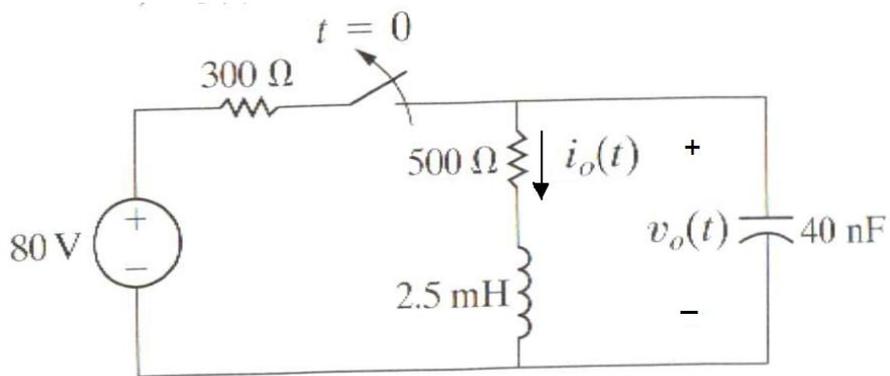
- 1) Find the Thevenin Equivalent of the circuit at terminals a-b



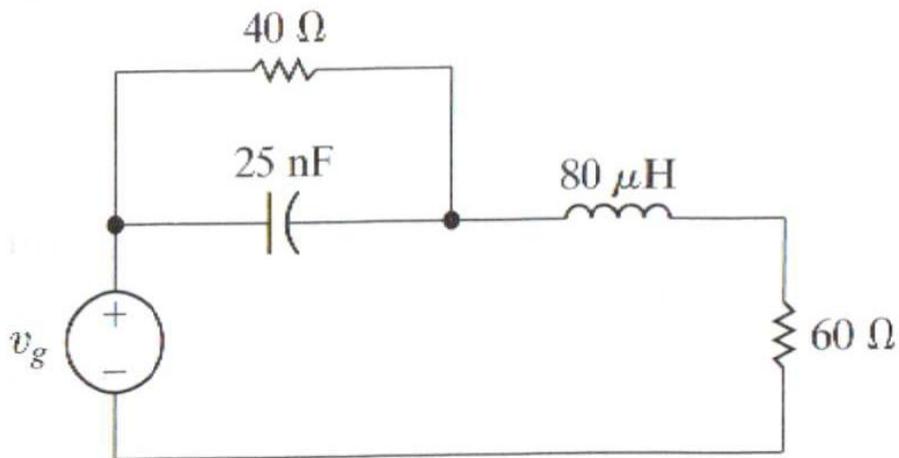
2) The switch has been closed a long time before opening at $t=0$. Find

a. $i_o(t)$

b. $v_o(t)$



- 3) Find the average power, the reactive power and the apparent power supplied by the voltage source in the circuit if $v_g = 40\cos(1000000t)$ Volts (this is magnitude, not rms).



4) The sinusoidal voltage source $v_g = 4\cos(200t)$. If the op-amp is ideal, find the output voltage $v_o(t)$

