

Name _____

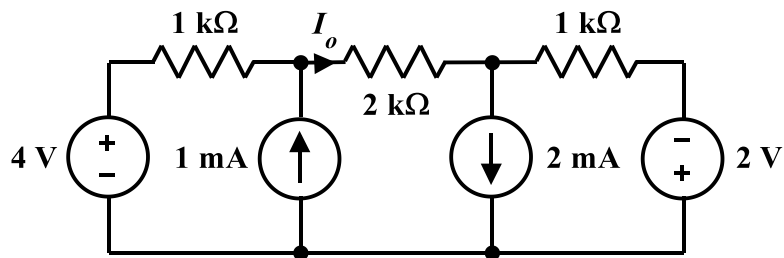
EE 2240

Exam #2

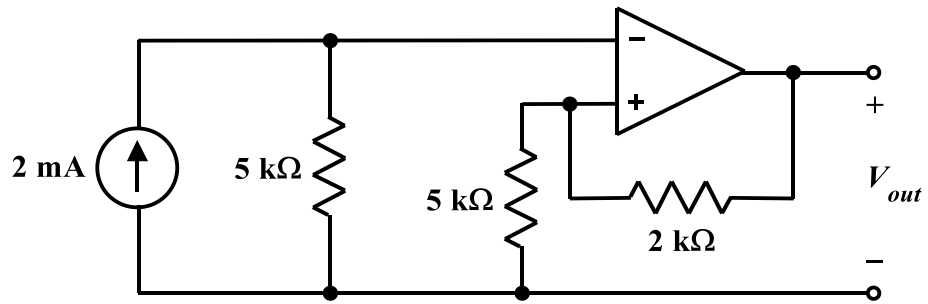
Thursday, March 31, 2016

2:30PM – 3:45PM

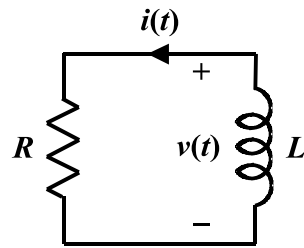
1. [Superposition] Suppose you have decided to use the superposition method to solve for the value of I_o in the circuit shown below. As a first step, you want to solve for the contribution due to the 2mA independent current source. Show your work and determine this contribution. *You are not required to find the value of I_o , but just to determine the contribution due to the 2mA current source.*



2. [Operational Amplifier Circuit] Find the output voltage, V_{out} , of the circuit shown below:



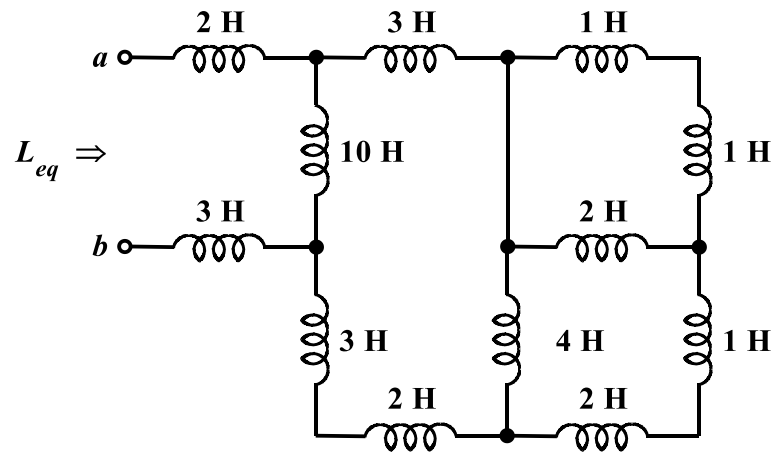
3. [RL Circuit] In the circuit shown below, $v(t) = 10e^{-2t}$ V and $i(t) = 2e^{-2t}$ A.



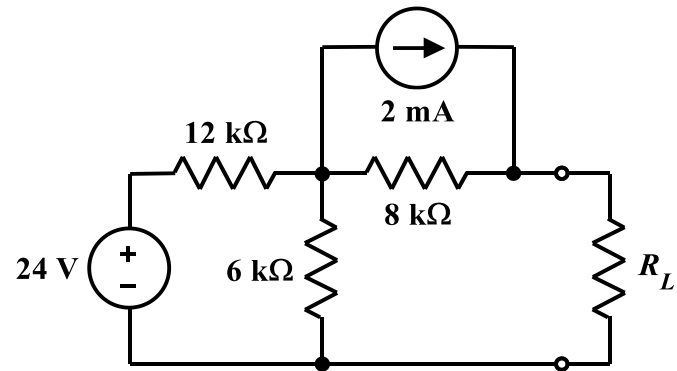
(a) Determine the value of R .

(b) Determine the value of L .

4. [Capacitance/Inductance] Determine the equivalent inductance with respect to terminals a - b .



5. [Maximum Power Transfer Theorem] For the circuit shown below:



(a) Find the value of the load resistance R_L needed for maximum power transfer to the load.

(b) For R_L equal to the value determined in part (a), find the power delivered to the load.