

Name _____

EE 2240

Final Exam

Friday, May 6, 2016

LIBR B32 and TAB 115, 10:00AM – 12:00PM

Please read these comments and instructions before starting the exam:

This is an **open-book** exam, with **any additional paper-based resources you wish** and a **calculator** allowed. No other resources may be used – this means no cell phones, tablets, laptops or any other kind of device capable of electronic communication.

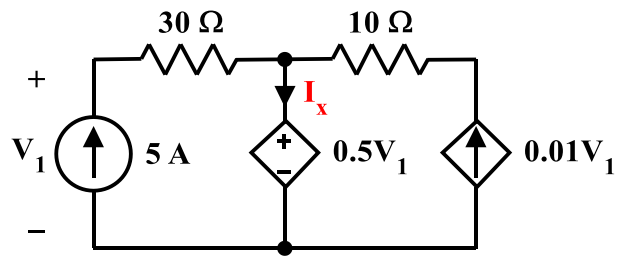
Books, other reference materials and calculators may not be shared.

Define any variables you use in your solutions (Show them on the circuit diagram.) and present your solution in a neat and organized manner. If it's difficult to follow, it's not worth as many points as one that is easy to follow.

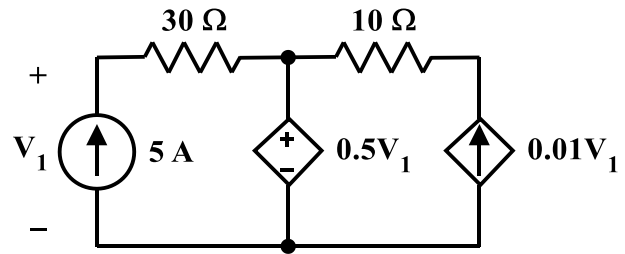
Please do not ask for an explanation of any of the symbols, words, or concepts used in the makeup of this exam. All have been adequately described in class and, and I cannot disadvantage other students by providing additional explanation(s) just for one.

Note that there are no restroom breaks allowed during this exam. If you feel a need to go, please turn in your exam and do not return. Your exam will not be returned to you.

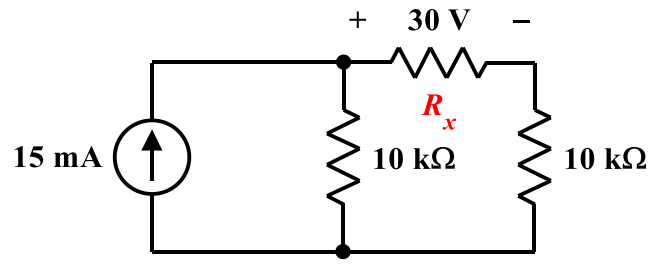
1. Find the numerical value of the current I_x .



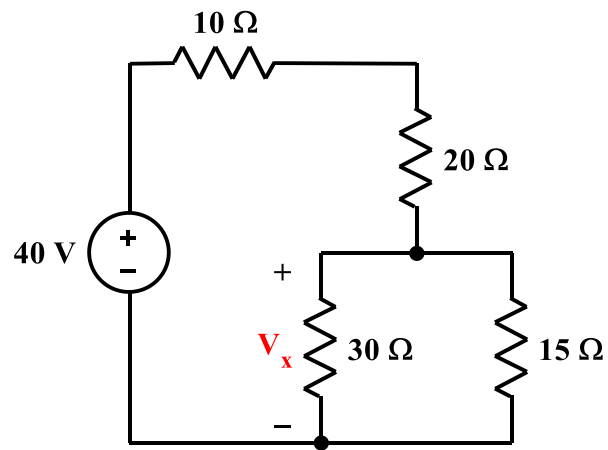
2. Determine whether the dependent voltage source *delivers* or *absorbs* power, and **how much**.



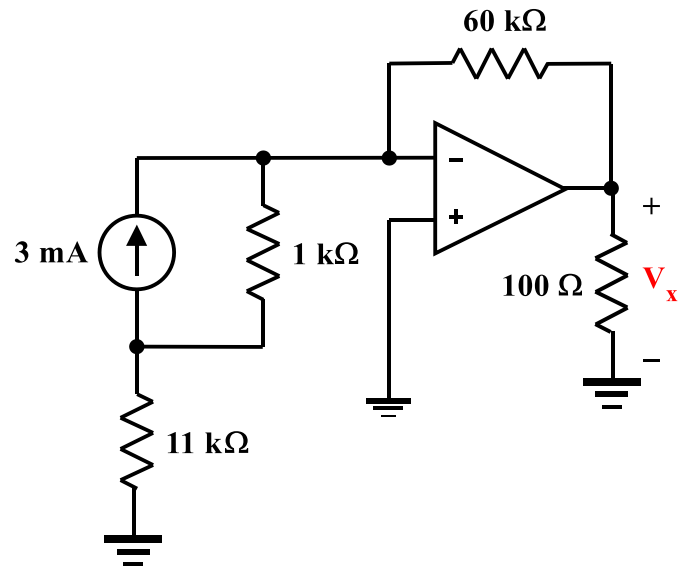
3. Determine the value of the resistor R_x .



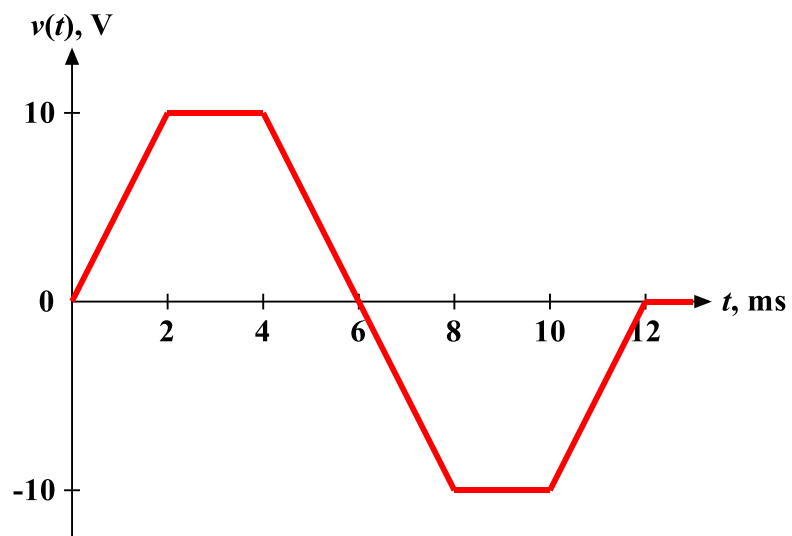
4. Determine the numerical value of V_x .



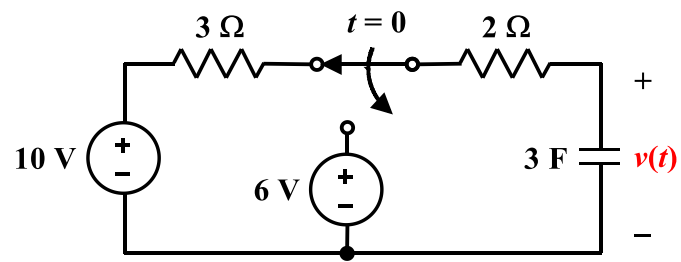
5. Determine the numerical value of V_x .



6. The voltage across a $30\mu\text{F}$ capacitor is shown below. Accurately sketch the current through the capacitor.



7. Determine the function that describes the capacitor voltage in the circuit shown below for $t \geq 0$. Assume the circuit has reached a DC steady state prior to $t = 0$.



8. The switch has been in the position shown for a very long time. Suddenly, at $t=0$, its position is changed. Determine $v_o(t)$ for $t \geq 0$.

