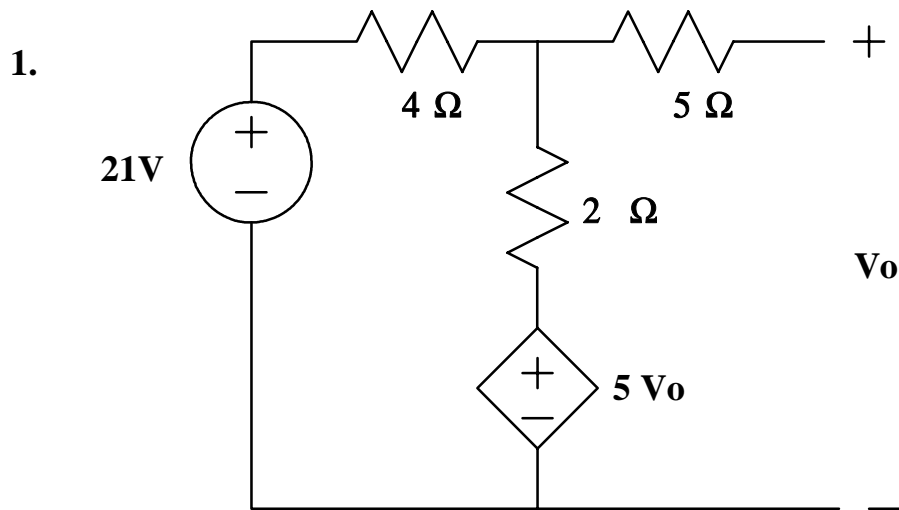


**PHY 3270
EXAM #2**

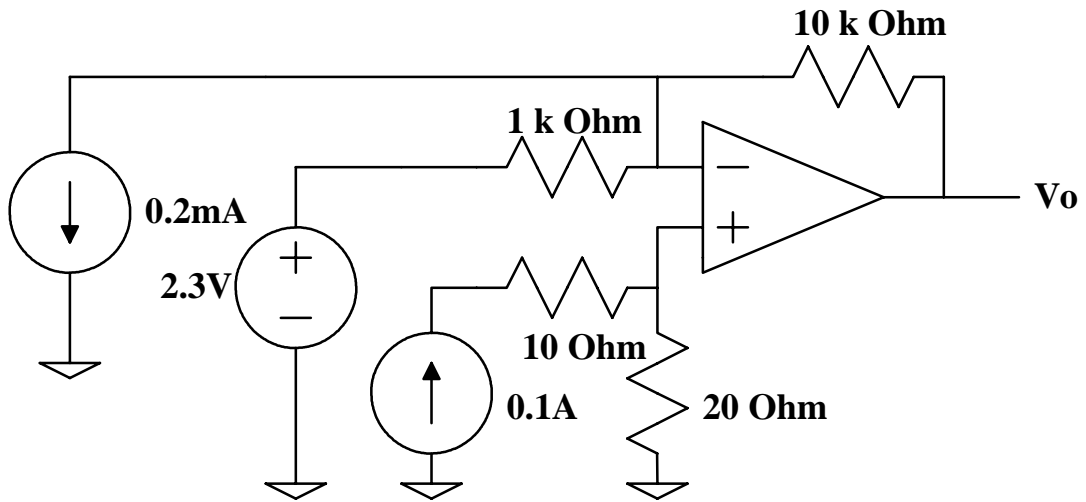


(a.) Determine the open circuit voltage, V_o .

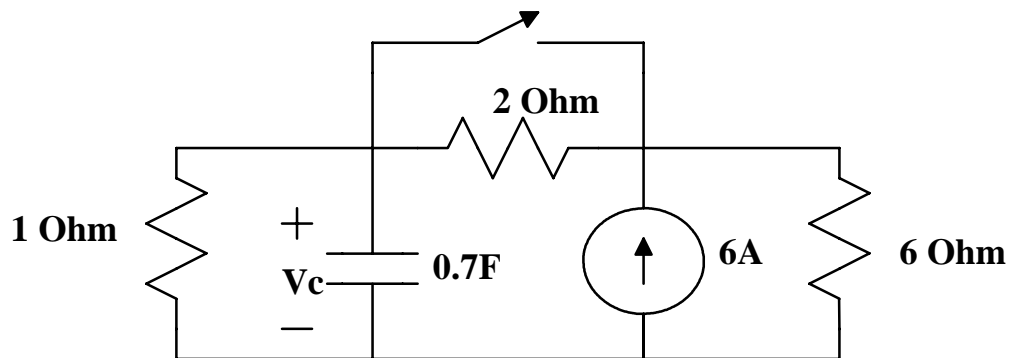
(b.) Determine the short circuit current at the same pair of terminals.

(c.) Draw the Thevenin equivalent circuit and give values.

2. Use the node-voltage technique and the properties of an ideal op amp to determine the voltage at the output of the following op amp circuit. Assume that the op amp is not saturated.



3. The switch in the circuit shown below has been open a long time. At $t=0$ the switch is closed.

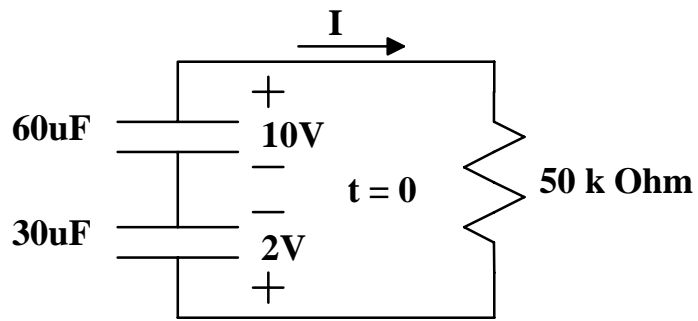


(a.) Find the voltage across the capacitor just before the switch is closed.

(b.) Find the voltage across the capacitor a long time after the switch is closed.

(c.) Find the voltage across the capacitor as a function of time for times greater than zero.

4. The voltages across the two capacitors are shown at $t=0$.



(a.) Find I as a function of time for $t > 0$.

(b.) Find the final voltage across the $60\mu\text{F}$ capacitor.