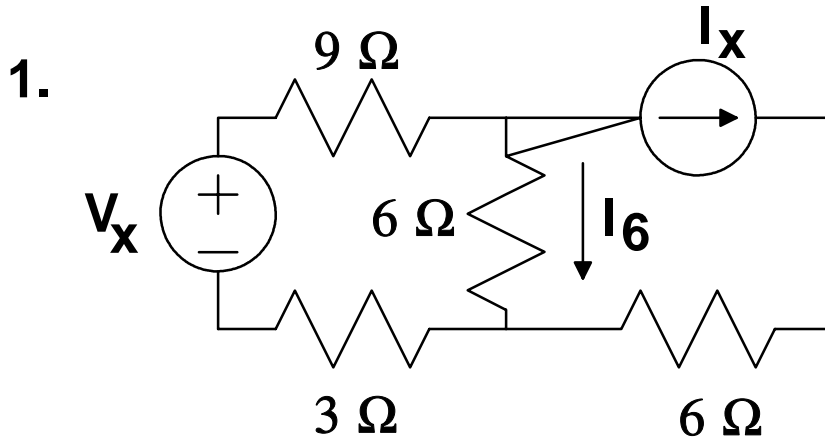


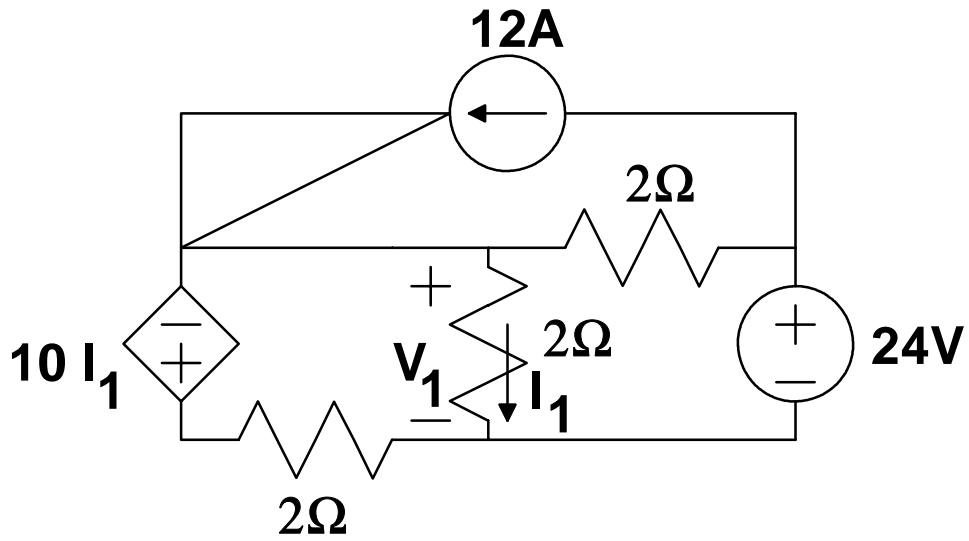
Phy 3270
Exam #2



(a.) How much of current I_6 is due to the current source alone? Show your work in detail.

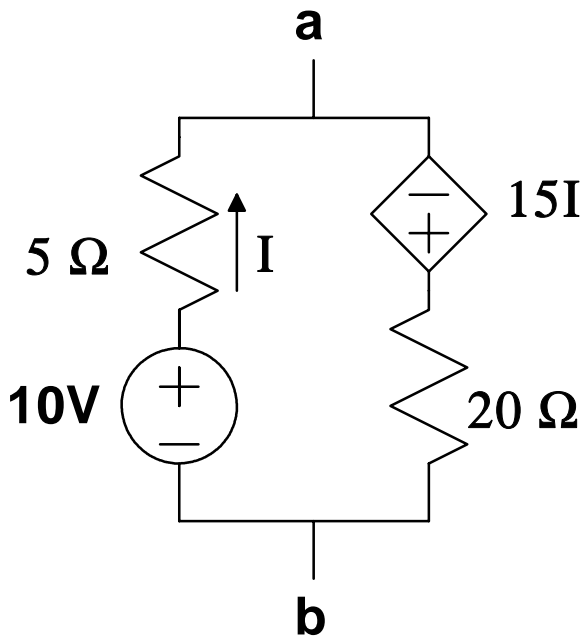
(b.) How much of current I_6 is due to the voltage source alone?

2.



Use superposition to find V_1 . Show each subcircuit that you use, and show all steps.

3.



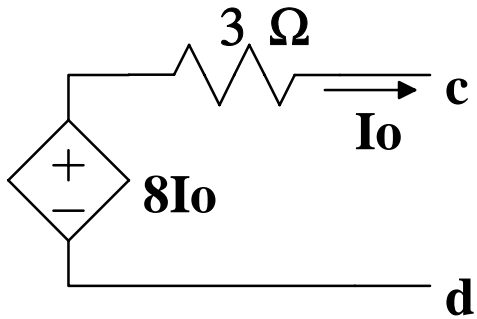
(a.) Find $V(a,b)$; that is, find the potential at 'a' relative to the potential at 'b'.

(b.) If a shorting wire is connected between 'a' and 'b', how much current flows from 'a' through the shorting wire to 'b'?

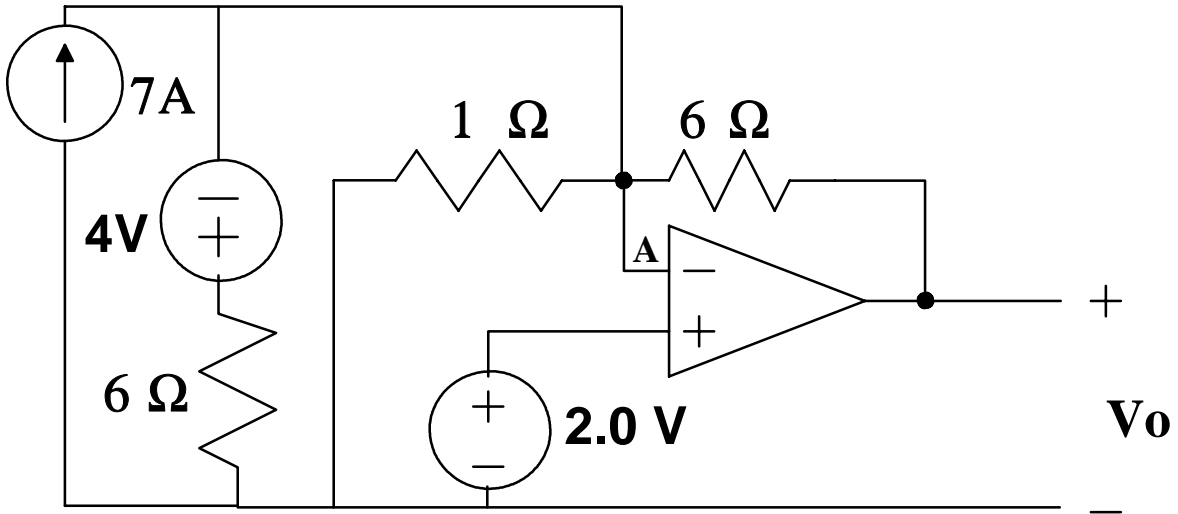
(c.) Determine and draw the Thevenin equivalent circuit with terminals 'a' and 'b'.

(d.) What is the maximum amount of power that can be delivered by this circuit to a load?

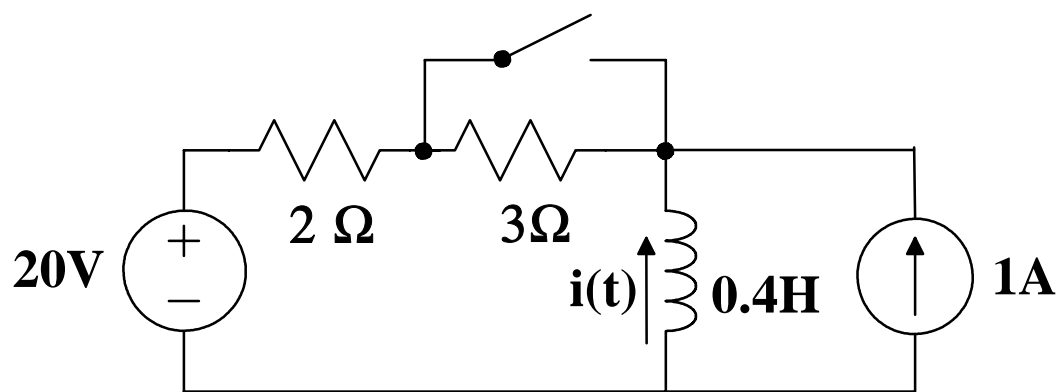
4. Find the Thevenin resistance between terminals c and d for the circuit shown below.



5. Determine the output voltage for the ideal op amp circuit shown below. The op amp is powered with a +/- 24V bipolar supply.



6.



The switch has been open a very long time. At $t=2$ seconds, the switch is closed. Determine the current in the inductor as a function of time for times greater than or equal to 2 seconds.