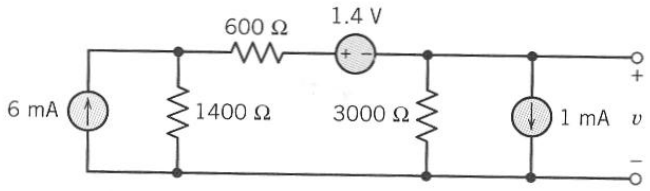
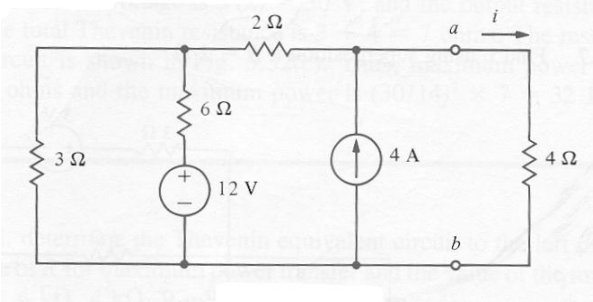
ENGR 203 Spring 2011 Homework #4 Due day of second test at 4 pm.

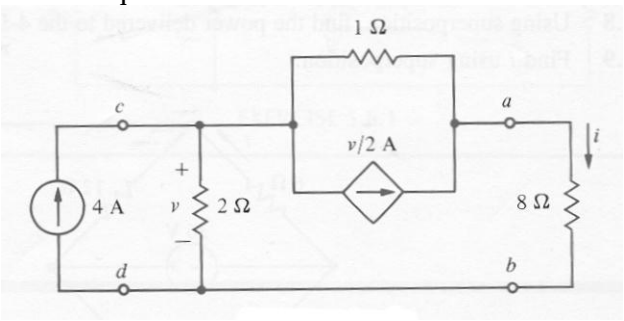
1. Find v using source transformations.



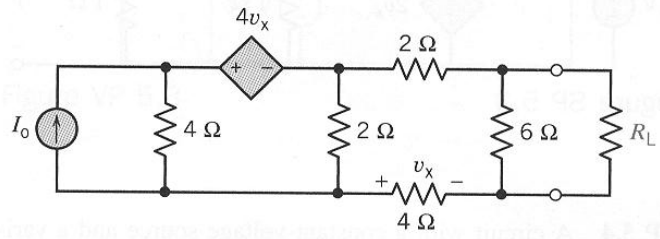
2. Find the Thevenin equivalent circuit to the left of terminals a-b and use that result to find i.



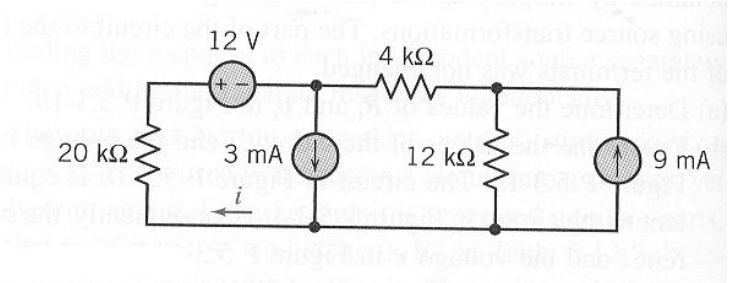
3. Find i by replacing the network to the left of terminals a-b by its Thevenin equivalent.



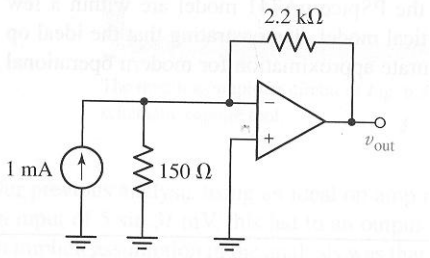
4. Find R_L such that R_L absorbs maximum power. Also, if maximum power through the load is 54 W, find I_o.



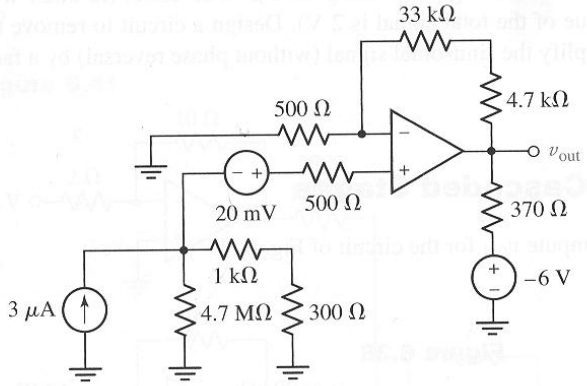
5. Find i using superposition.



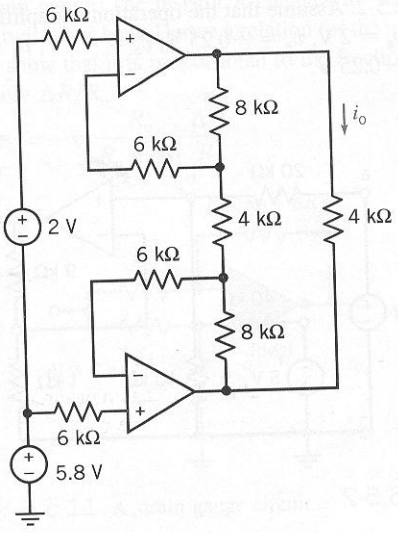
6. Find v_{out}. Assume an ideal op-amp operating in the linear region.



7. Find v_{out}. Assume an ideal op-amp operating in the linear region.



8. Find i_o. Assume ideal op-amps operating in the linear region.



9. A sinusoidal signal is riding on a 2 v DC offset (in other words, the average value of the total signal is 2 v). Design a circuit to remove the DC offset and amplify the sinusoidal signal (without phase reversal) by a factor of 100.