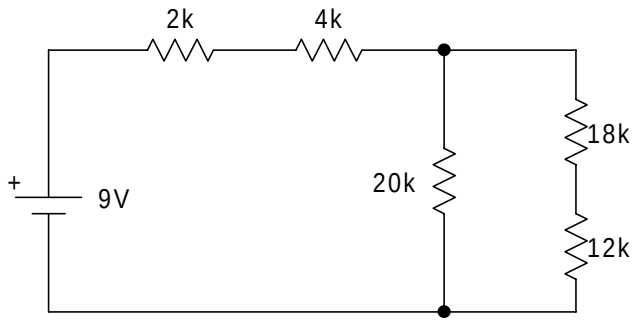
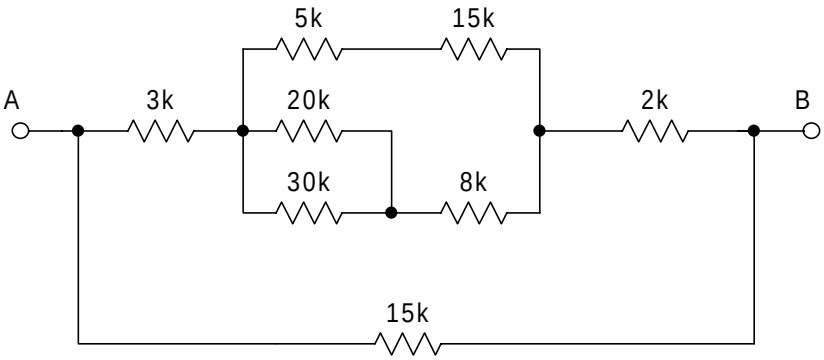
ELECTRONICS
HOMEWORK SET #1

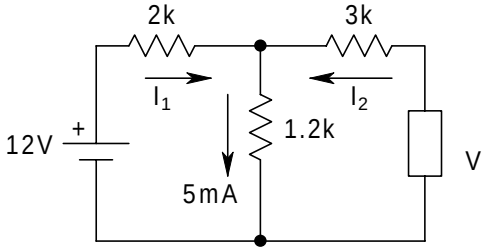
1) For the circuit shown, calculate the <u>current</u> in each resistor, and calculate the <u>voltage</u> across each resistor:



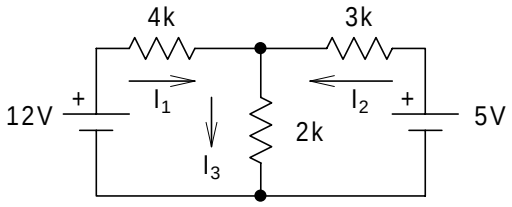
2) Calculate the equivalent resistance between points A and B for the circuit shown below:



3) Use Kirchoff's rules to evaluate the <u>currents</u> I_1, I_2, and the <u>voltage</u> V in the circuit below:



4) Use the principle of superposition to evaluate the currents in the circuit shown below:



5) Evaluate the voltage indicated by V_x on the diagram below for the following values of R_x:

a) $R_x \rightarrow \infty$ (open circuit)

b) 1MΩ

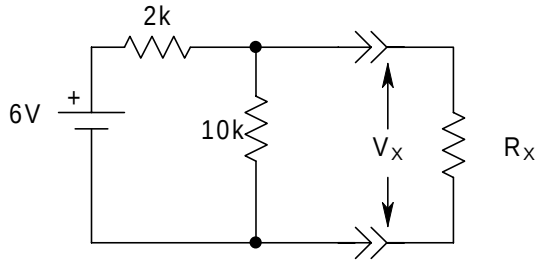
c) 10KΩ

d) 1KΩ

e) 100Ω

f) 1Ω

g) 0Ω (short circuit)



6) In the previous problem, the symbol "——〉〉——" represents terminals (with removable connections, such as banana plugs and jacks). Calculate the Thevenin voltage and resistance for the terminals indicated (excluding $R_{x)}$.

7) Use Kirchoff's Laws to evaluate the currents in the circuit of problem 4.

8) Use Thevenin's theorem to evaluate the current I_3 in the circuit of problem 4.