

# EECS/CSE 70A Network Analysis I

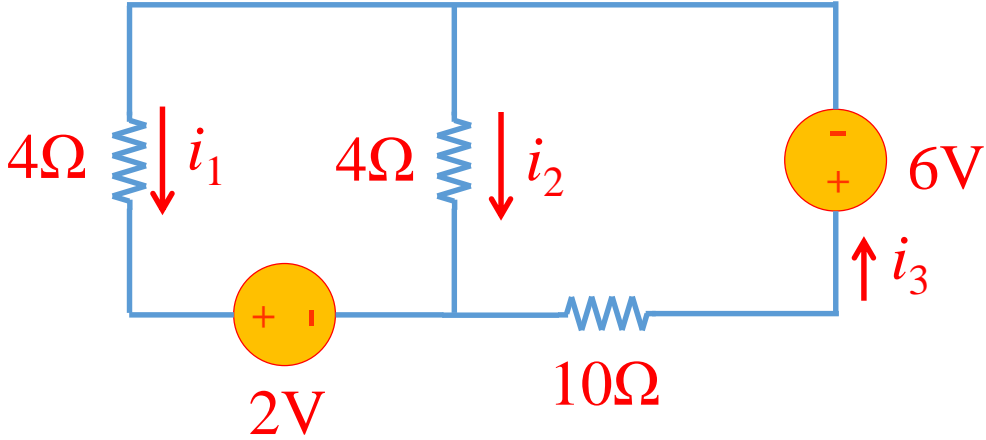
## Homework #3

Due on or before

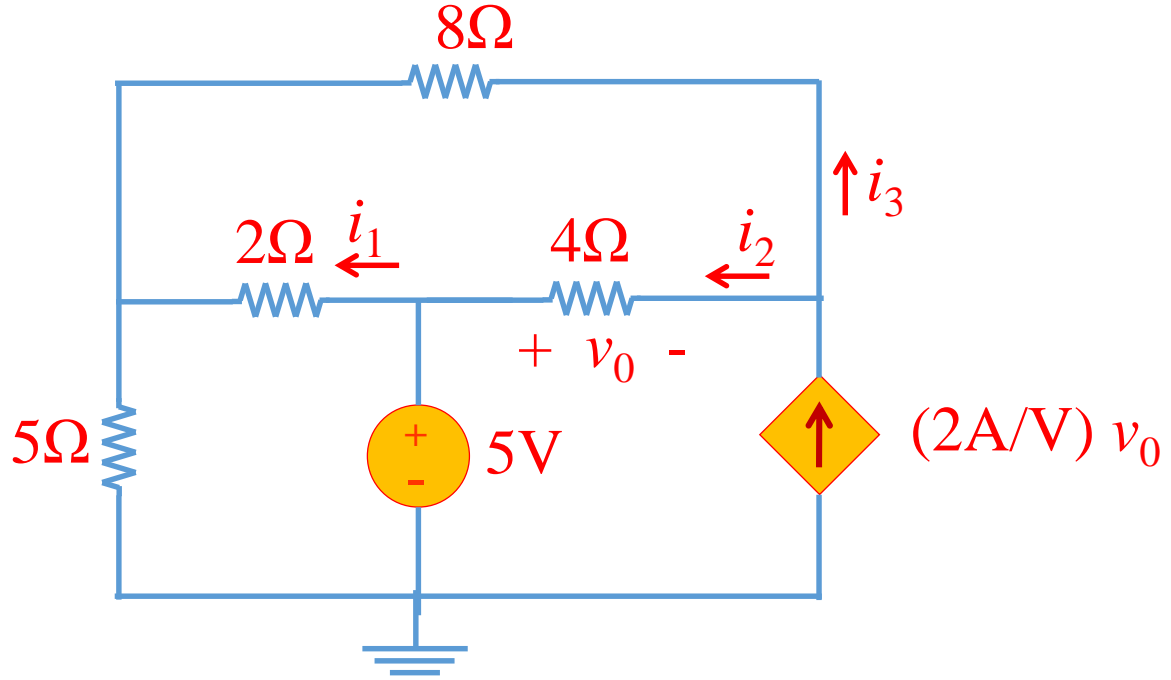
4/26/2016, Tuesday 6.00pm at ELH 110

(You can turn in homework assignments during any of the discussion sessions and office hours before the deadline)

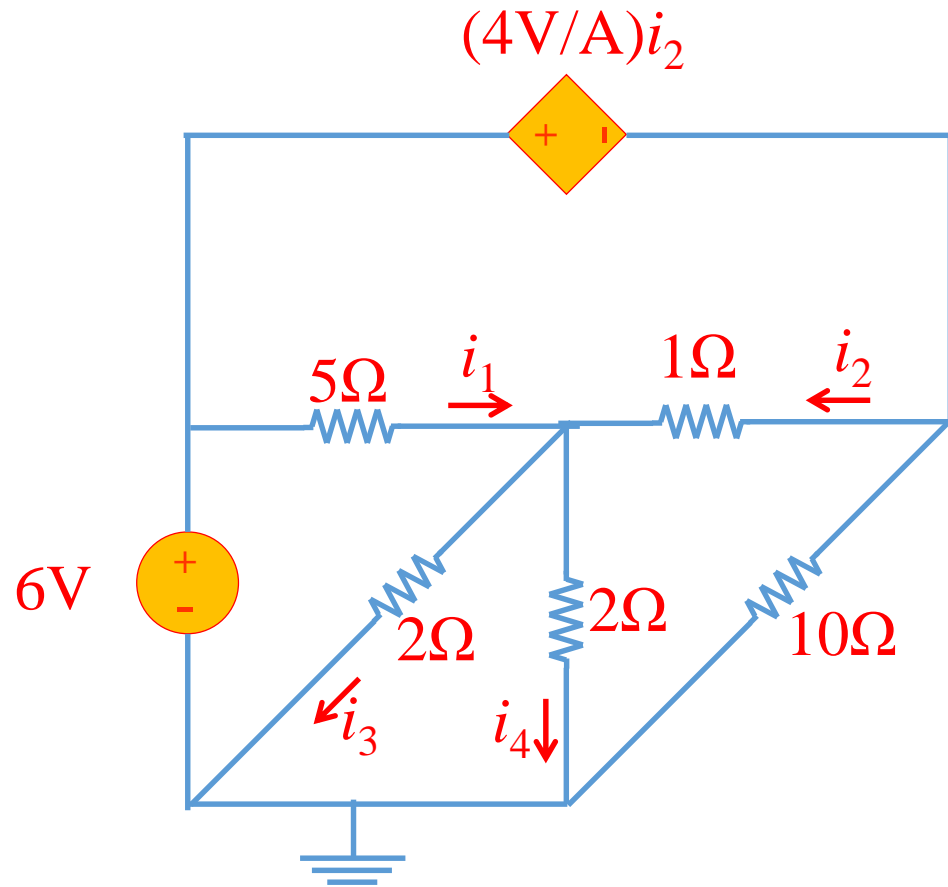
Problem 1: (KCL, KVL, Ohm's Law) Find currents  $i_1, i_2, i_3$ . (10pts.)



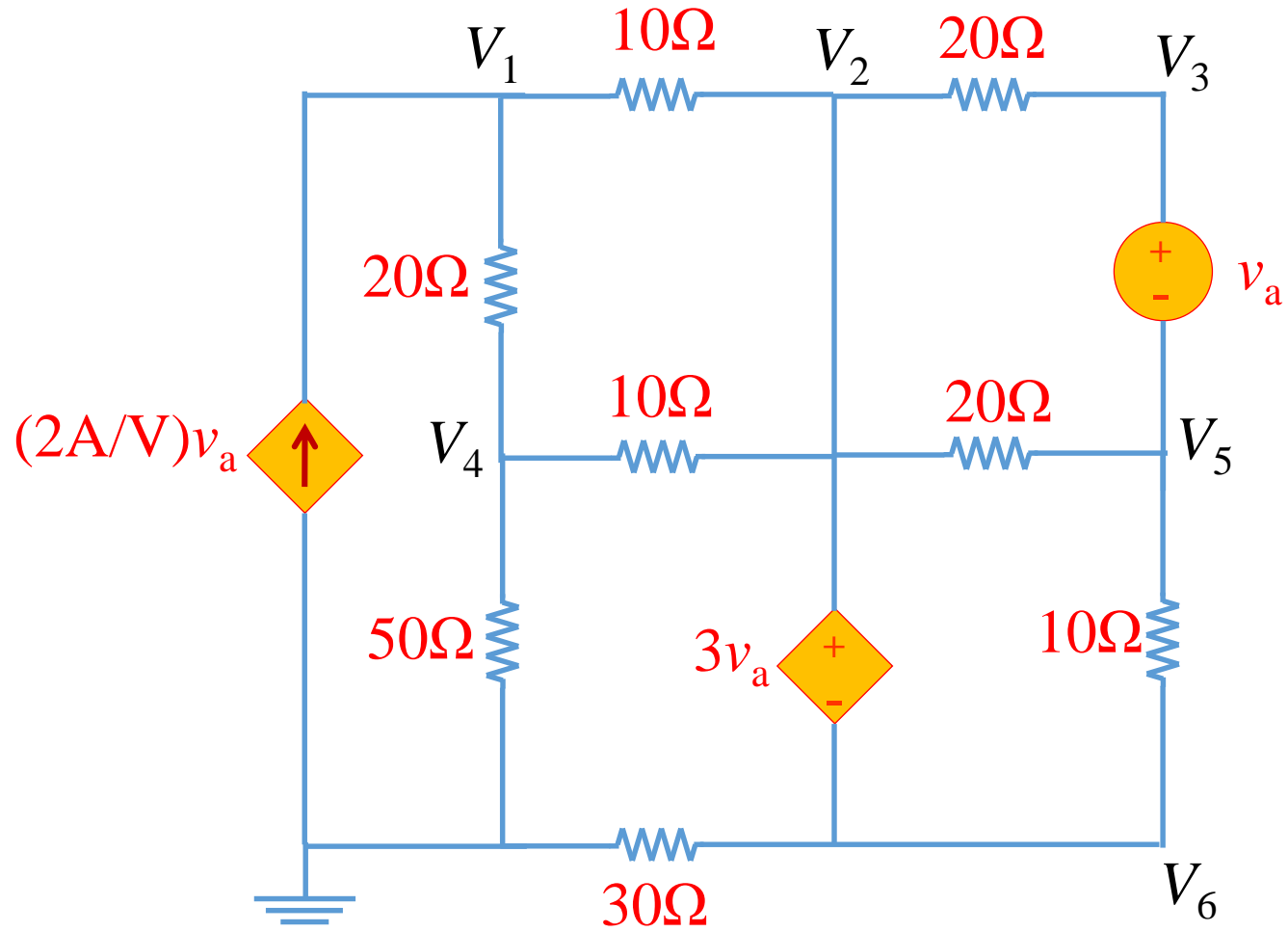
Problem 2: Use nodal analysis and find all node voltages and the currents  $i_1$ ,  $i_2$ ,  $i_3$ . (10pts.)



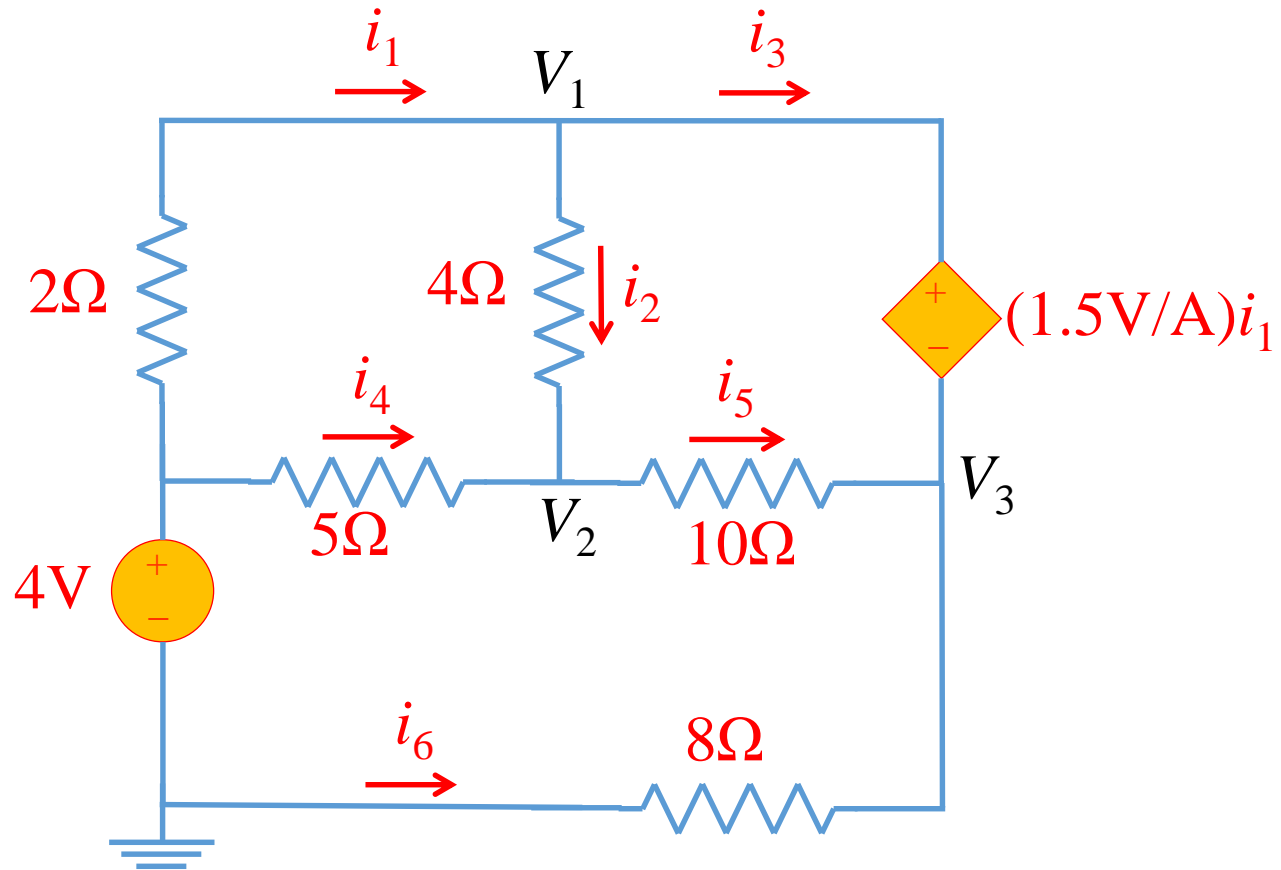
Problem 3: Use nodal analysis and find all node voltages and the currents  $i_1, i_2, i_3, i_4$ . (10pts.)



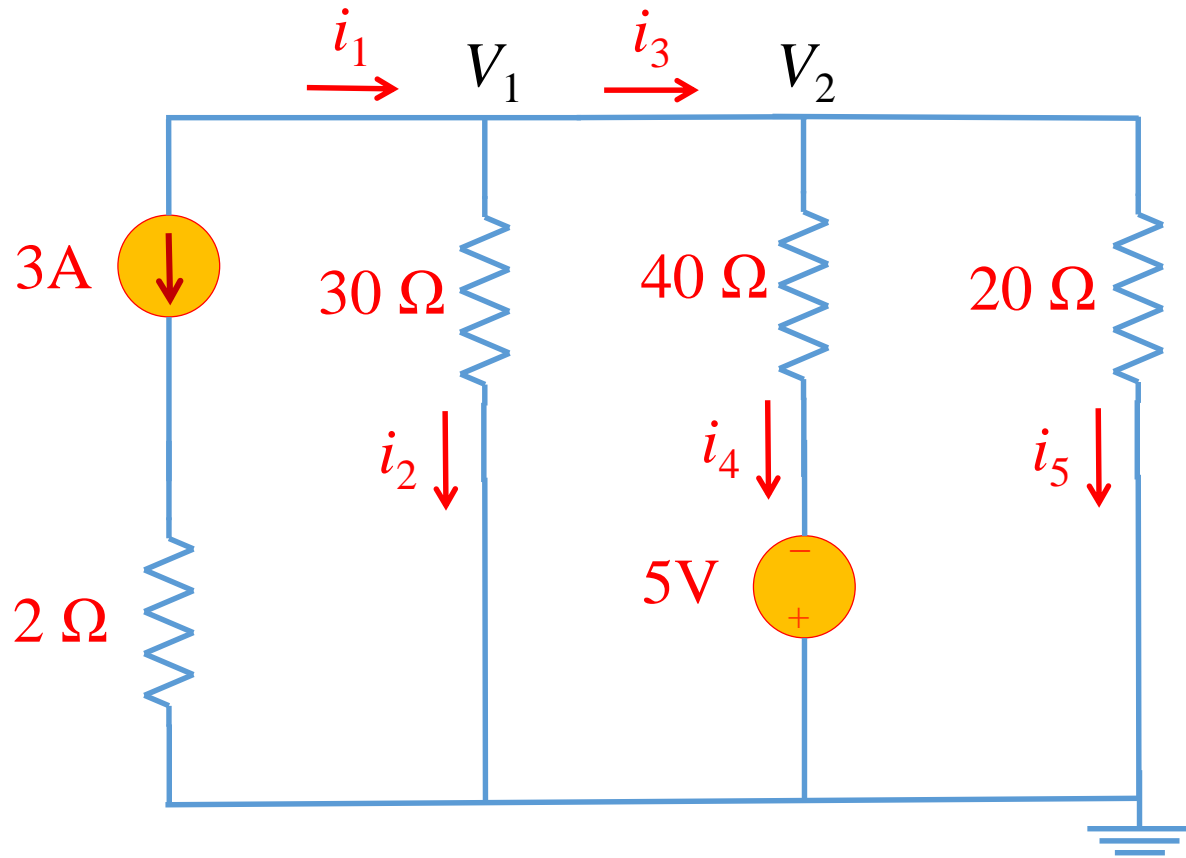
Problem 4: Write all node voltage equations and put them in the matrix form. (You do not need to solve.) (10pts.)



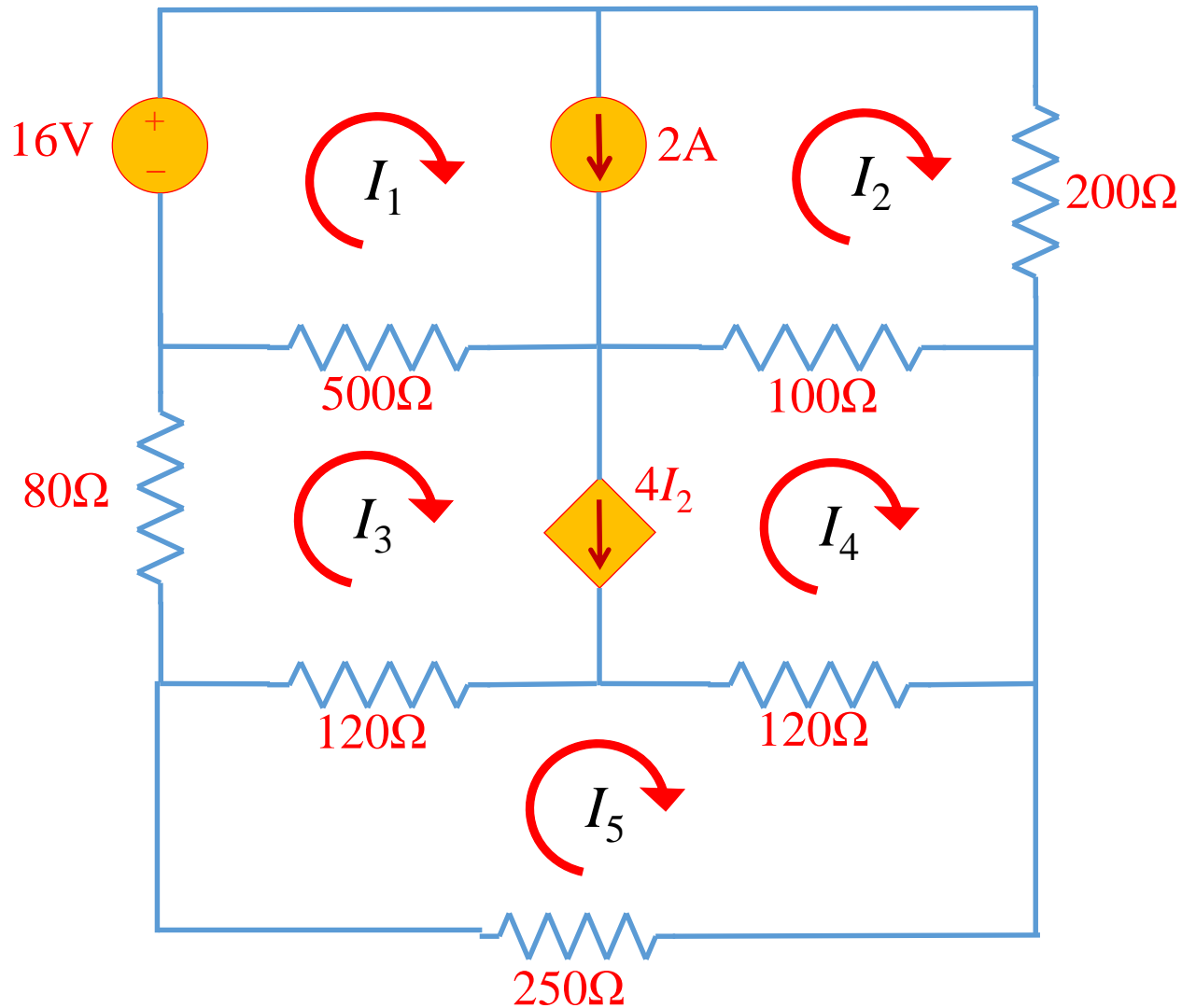
Problem 5: Use mesh analysis to find all the labeled currents and node voltages. (10pts.)



Problem 6: Use mesh analysis to find all the labeled currents and node voltages. (10pts.)

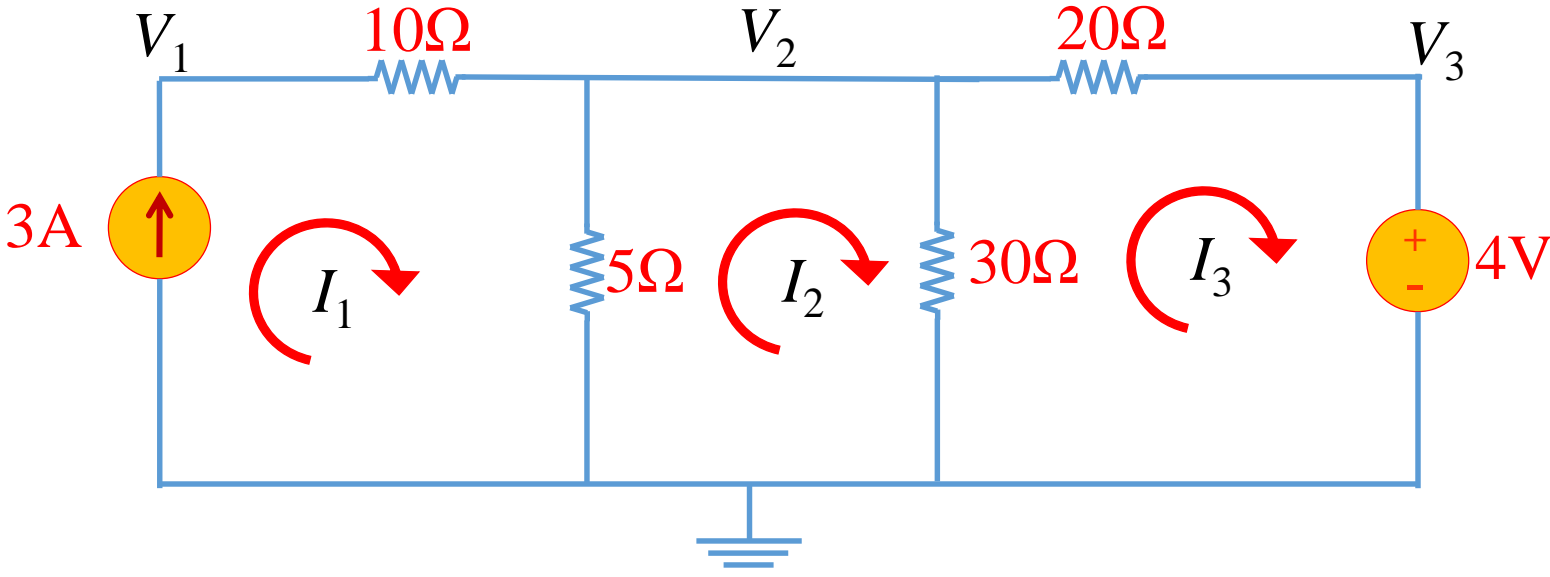


Problem 7: Write all the mesh current equations and put them in the matrix form. You don't have to solve. (10pts.)

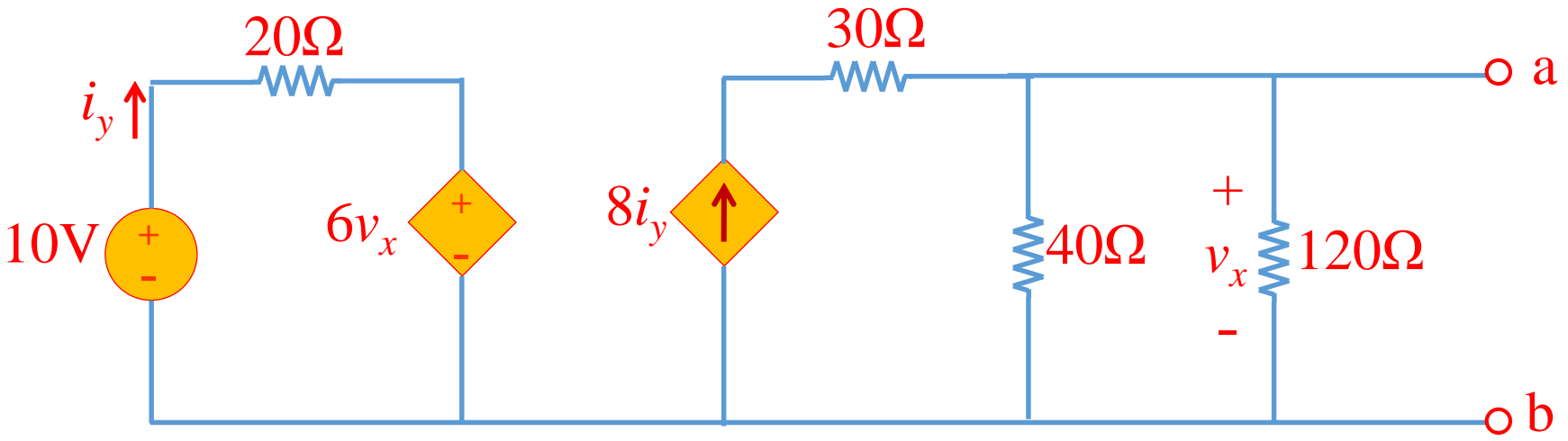




Problem 8: Use both nodal and mesh analyses to solve for all the node voltages and loop currents. (10pts.)



Problem 9: Obtain the Thévenin and Norton equivalent network representations as seen from the terminals a-b. (10pts.)



Problem 10: Obtain the Thévenin and Norton equivalent network representations as seen from the terminals a-b. (10pts.)

