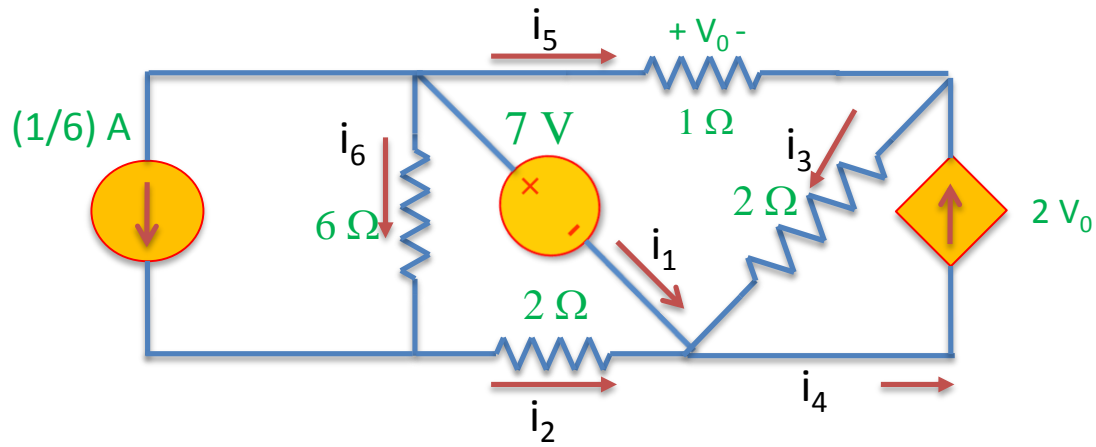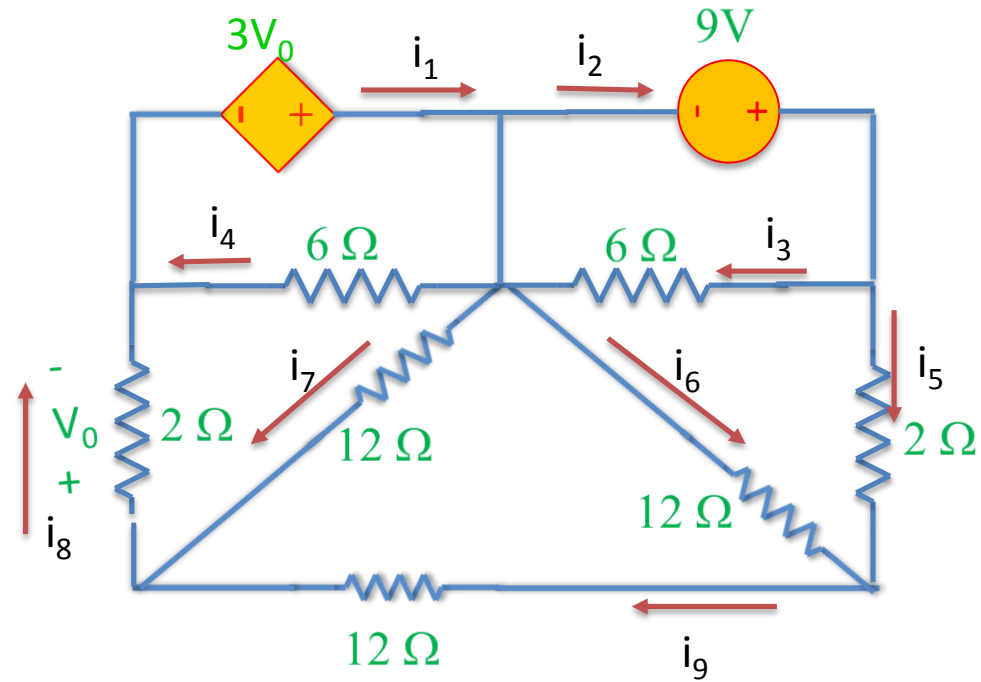# EECS 70A: Network Analysis

## Homework #3

- The homework is due Thursday 5/08/2014 at 5:30pm.
- You can choose either way to turn in your homework.
  - 1) Turn it in during discussions (Highly recommended)
  - 2) Turn it in during TA or Grader's office hour
  - 3) Slide it under TA's lab office door (Any time before deadline @EH5109)
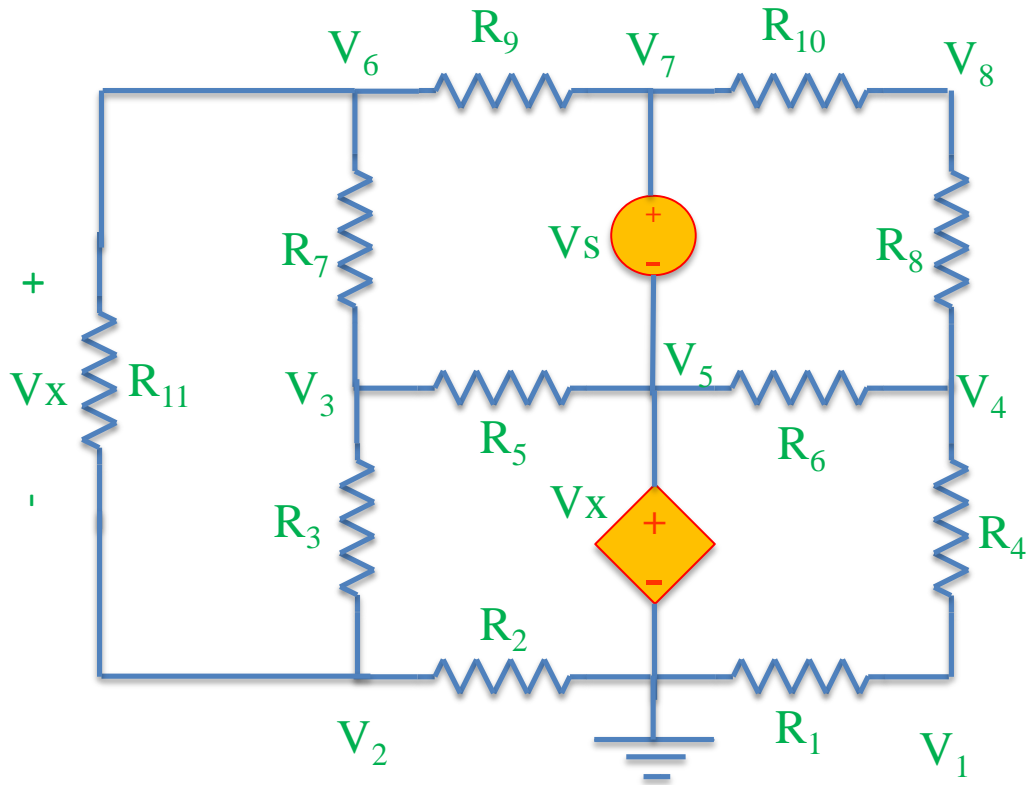- Note: lab location is different from office hour location.

Problem 1:
    -Use nodal analysis to find all node voltages.
    -Find all the currents.
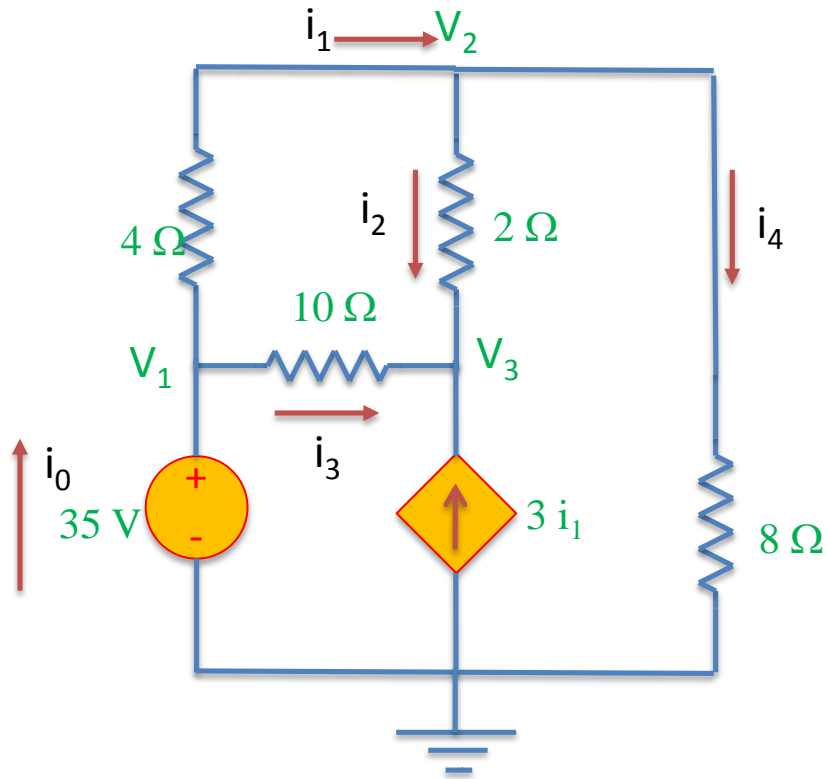
# Problem 2: Use nodal analysis to find all the node voltages and currents



$3V_0$

$i_1$

$i_2$

$9V$

$i_4$

$6\ \Omega$

$6\ \Omega$

$i_3$

$-$

$V_0$

$2\ \Omega$

$i_7$

$12\ \Omega$

$i_6$

$i_5$

$2\ \Omega$

$+$

$i_8$

$12\ \Omega$

$12\ \Omega$

$i_9$

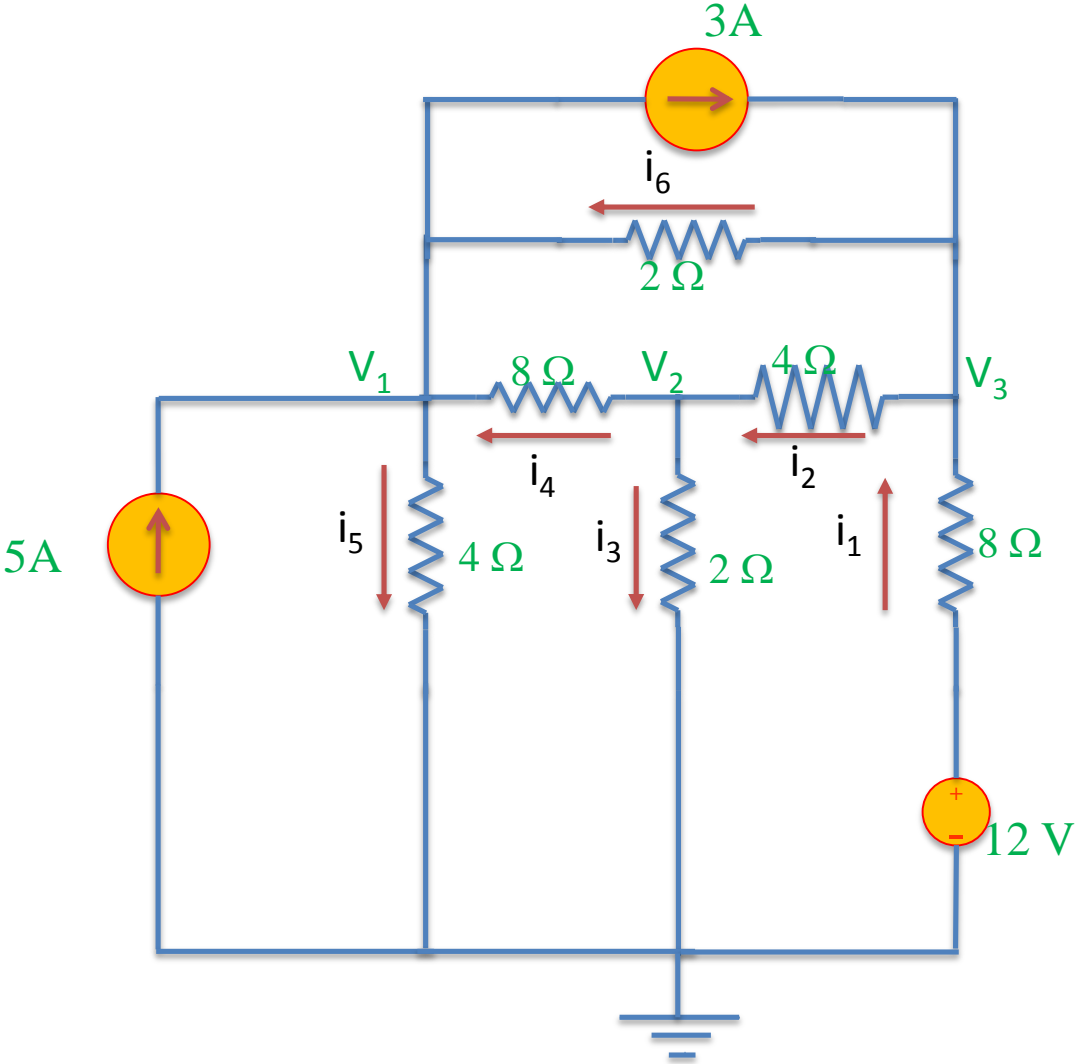Problem 3: Write all the node voltage equations and put them in the matrix form. You don't need to solve

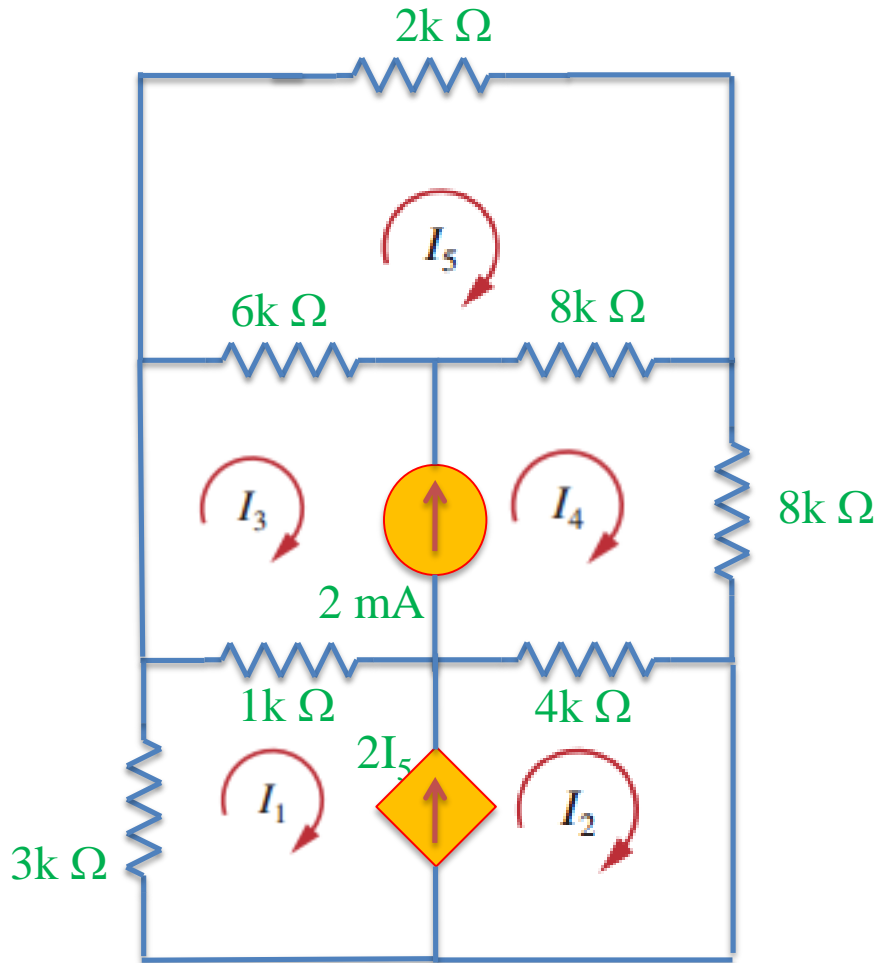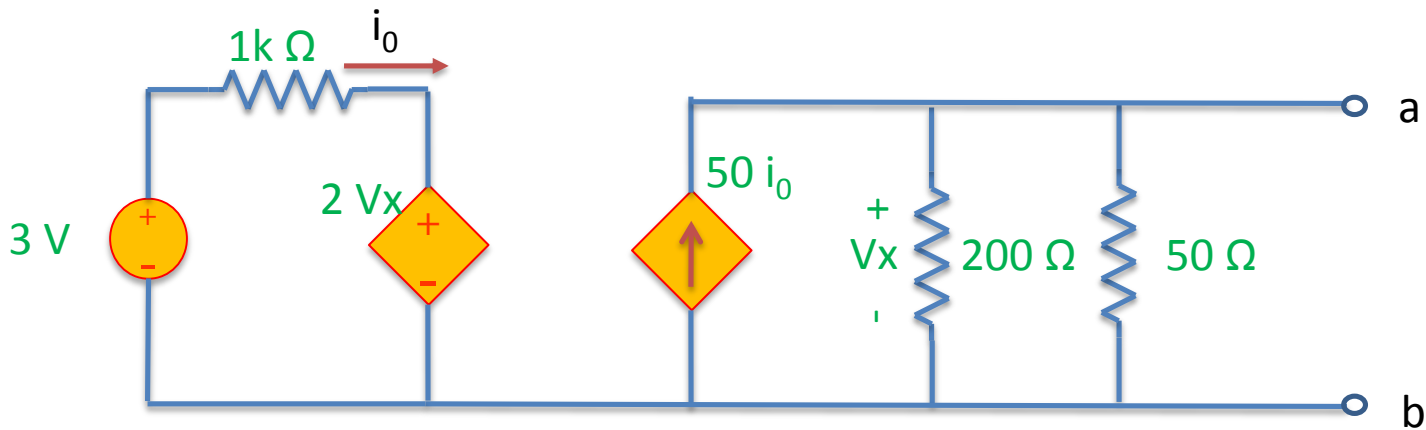Problem 4: use mesh analysis to find all the currents and node voltages.

# Problem 5:

-Use mesh analysis to find resistor currents and the all node voltages

Problem 6: Write all the mesh current equations and put them in the matrix form. You don't need to solve

## Problem 7: Obtain the Thevenin and Norton equivalent as seen from a-b terminals:



1k Ω   $i_0$

3 V   +   −

2 Vx   +   −

50 $i_0$

+   Vx   −   200 Ω   50 Ω

a

b

Problem 8: Obtain the Thevenin and Norton equivalent as seen from a-b terminals: