

ECE 301
Fall Semester, 2006
HW Set #2

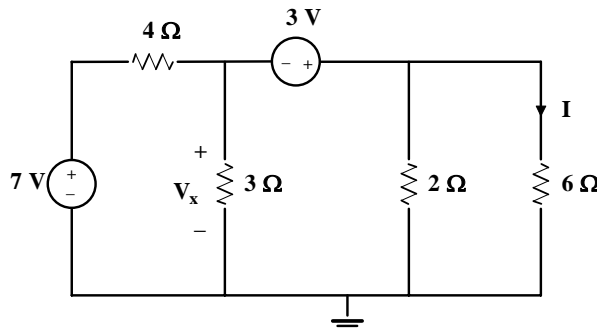
Due: Sept 14, 2006
 wlg

Name _____
 Print(last, first)

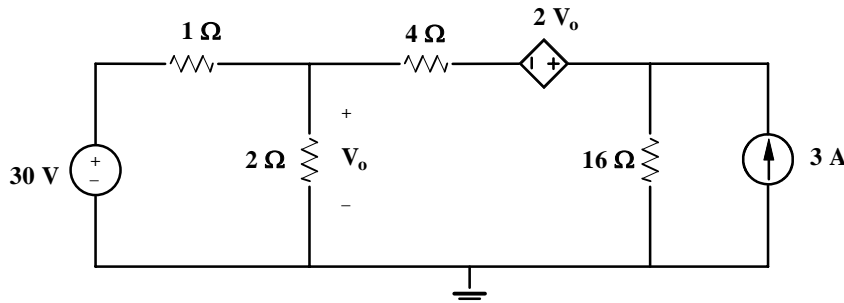
circle: 2:10 section 3:40 section

Use Engineering Paper. Work only on one side of the paper. Use this sheet as your cover sheet, placed on top of your work and stapled in the top left-hand corner. Number the problems at the top of the page, in the center of the sheet. **Do neat work. Underline your answers. Show how you got your equations. Be sure to show how you got your answers. Each problem counts 10 points.**

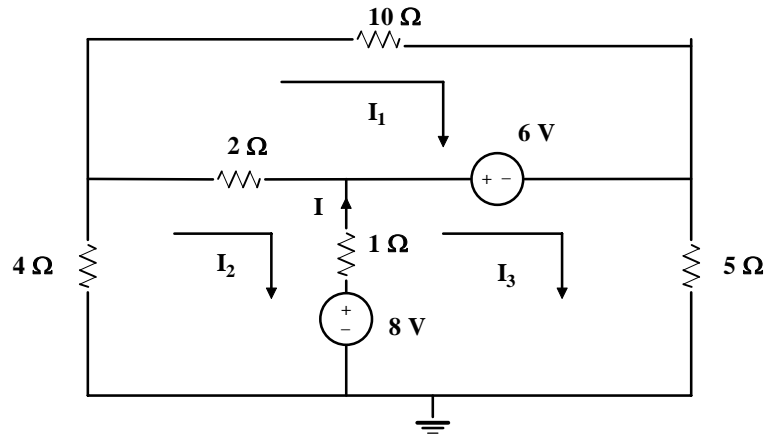
- (1) Work problem 3.2 in the text: Ans: $V_1 = 5.41 \text{ V}$, $V_2 = 3.24 \text{ V}$: use nodal analysis
- (2) Work problem 3.9 in the text: Find V_1 , V_2 , V_3 , and i : Ans: $V_1 = -45.53 \text{ V}$, $V_2 = -48.69 \text{ V}$
 Use nodal analysis. $V_3 = 1.31 \text{ V}$, $i = 0.497 \text{ A}$
- (3) Work problem 3.11 in the text: Find V_1 , V_2 and i : Ans: $V_1 = 1.125 \text{ V}$, $V_2 = 0.75 \text{ V}$, $i = 3.75 \text{ A}$
 Use nodal analysis.
- (4) Work problem 3.17 from the text: Ans: $I_1 = 0.333 \text{ A}$, $I_2 = -1.22 \text{ A}$, $I_3 = 0.778 \text{ A}$:
 Use mesh analysis.
- (5) Work problem 3.22 in the text. Work the problem by (a) nodal analysis, (b) mesh analysis.
 Ans: $V_{R3} = 84.59 \text{ V}$
- (6) You are given the circuit in the following diagram. Use nodal analysis to find V_x and I .
 Treat the 3 V source as a super node. Ans: $V_x = -0.2 \text{ V}$, $I = 0.467 \text{ A}$.



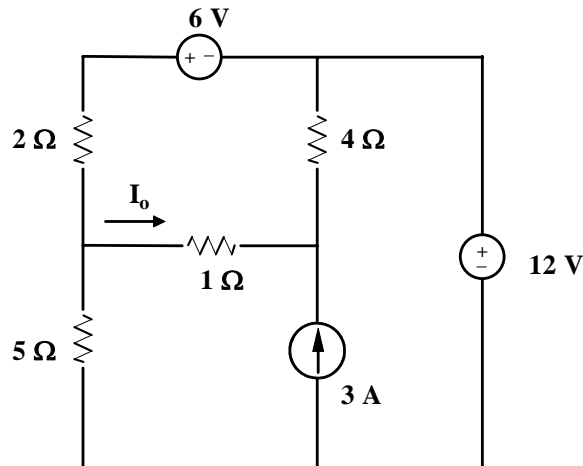
- (7) You are given the circuit in the following diagram. Use nodal analysis to find V_o . Ans: 19.64 V



- (8) You are given the circuit in the following diagram. Apply mesh analysis to find I_1 , I_2 , I_3 and I .
 Ans: $I = 1.186$ A: Other currents on your own.



- (9) You are given the circuit in the following diagram. Use mesh analysis to find the current I_o .
 Ans: $I_o = -1.733$ A



- (10) You are given the circuit in the following diagram. Use mesh analysis to find the current I_o .
 Ans: $I_o = 1.731$ A

