

ECE 301
Fall Semester, 2006
HW Set #1

Due: Sept 7, 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) For the circuit shown in Figure 1, find the currents I_1 , I_2 , I_3 , and I_4 .
 Answers: $I_1 = 12A$, $I_3 = 5 A$ (Answers for I_2 and I_4 on your own)

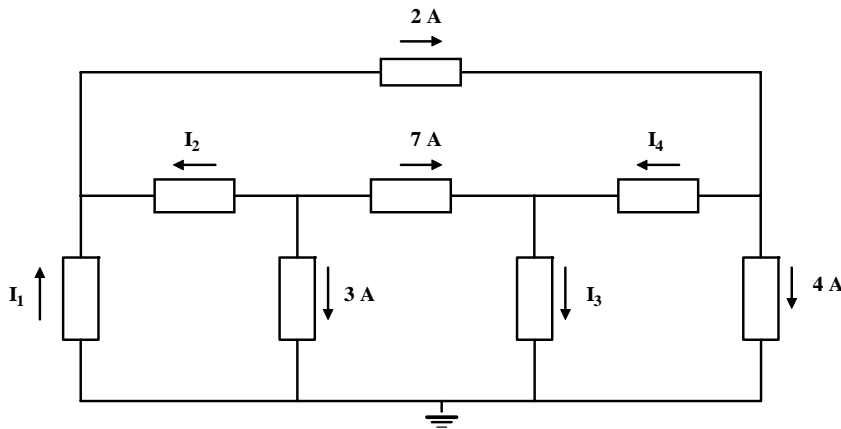


Figure 1: Circuit for problem 1.

- (2) You are given the circuit of Figure 2. Find V_x as indicted in the diagram. Answer on your own.

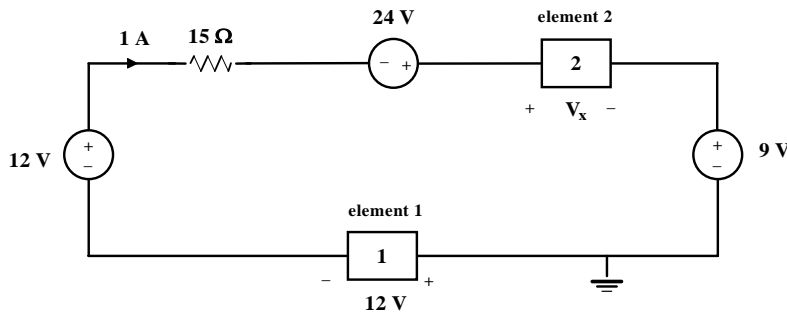


Figure 2: Circuit for problem 2.

- (3) You are given the circuit shown in Figure 3. Find the voltages V_1 , V_2 and V_3 .
Answers on your own.

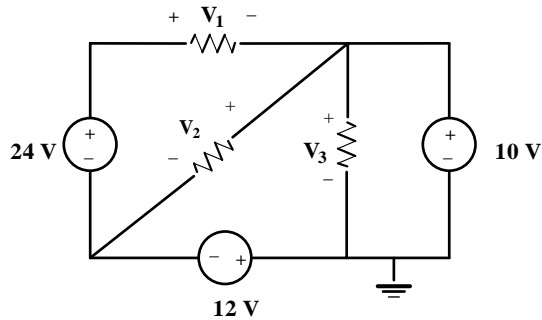


Figure 3: Circuit for problem 3.

- (4) You are given the circuit shown in Figure 4. Find R_{eq} and I_o . Ans: $R_{eq} = 12.09 \Omega$, $I_o = 3.309 A$

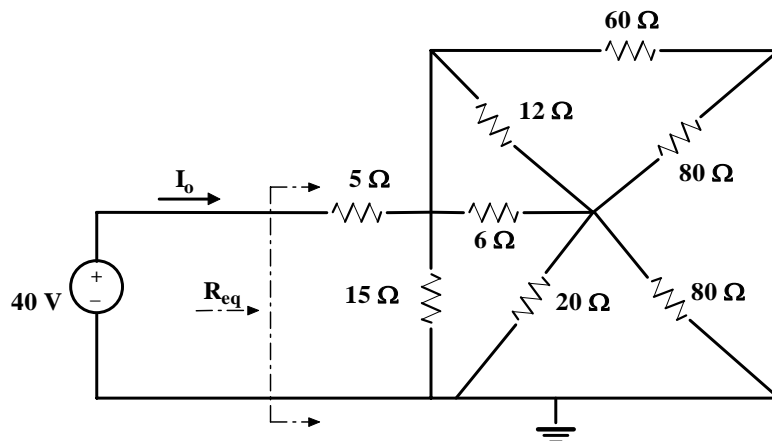


Figure 4: Circuit for problem 4.

- (5) Work problem 2.16 from the text. Ans: $V_1 = 12 V$, $V_2 = 2 V$
- (6) Work problem 2.21 from the text. Ans: $P_R = 30 W$, $P_{source} = 36 W$
- (7) Work problem 2.22 from the text. Ans: Supplied: $P_A = 60 W$, $P_b = 15 W$, $P_c = 25 W$
 $P_D = 30 W$, $P_E = 20 W$: Show $P_{supplied} = P_{absorbed}$
- (8) work problem 2.60 from the text. Ans $R_{eq} = 4.76 \Omega$, $I = 140 mA$
- (9) Work problem 2.67 from the text. Ans: $V_{AB} = 4.58 V$
- (10) Work problem 2.72 from the text.. Ans: (a) 0.0044Ω , (b) 60.97Ω