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ECE 301  
Fall Semester, 2005  
Test #1

wlg Version B

Name \_\_\_\_\_  
print( last, first)

Work the exam on your own engineering paper. Work on one side of your paper only. Attach your work to the back of this exam sheet and staple in the top left hand corner. You may omit one problem: either problem 1, or 2. Indicate at the top of the exam cover sheet which problem you omit. Each problem counts 25%.

(1) You are given the circuit of Figure 1. Find the current  $I_o$ . Use any method.

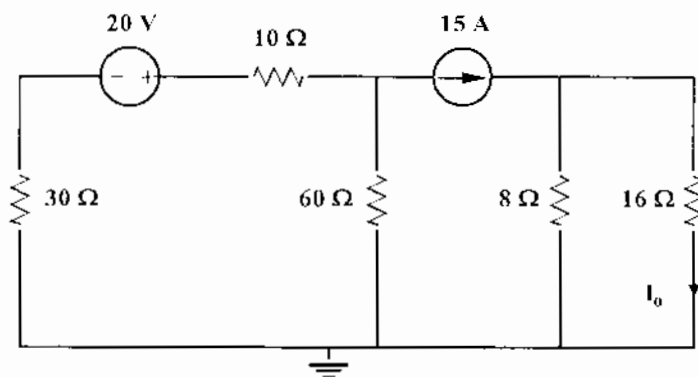


Figure 1: Circuit for problem 1.

(2) You are given the circuit of Figure 2.  
(a) Find the voltage  $V_{ab}$ . Use any method.  
(b) Find the power dissipated in the  $5\Omega$  resistor.

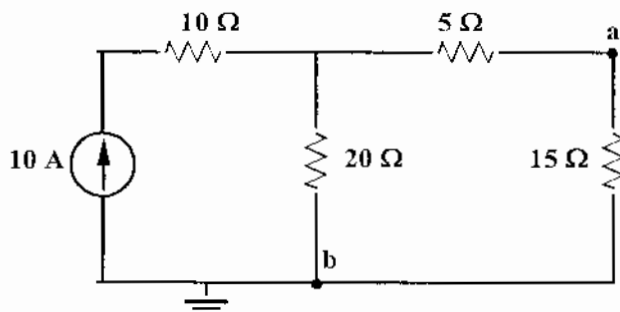


Figure 2: Circuit for problem 2.

- (3) You are given the circuit of Figure 3. Use mesh analysis to find the mesh currents  $I_1$  and  $I_2$  as indicated in the diagram.

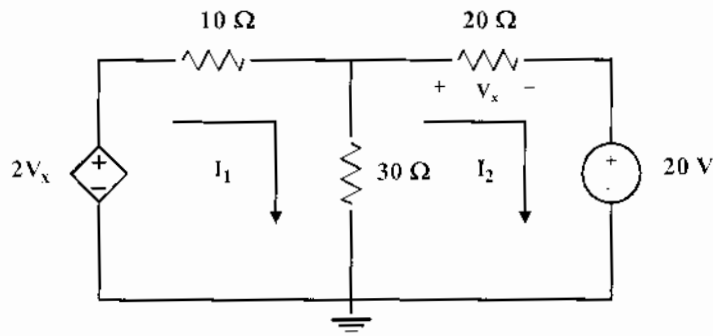


Figure 3: Circuit for problem 3.

- (4) You are given the circuit of Figure 4.  
 (a) Find  $V_{TH}$  and  $R_{TH}$  for the circuit looking into terminals a-b.  
 (b) Draw the Thevenin circuit. Show the terminals a-b on your diagram.

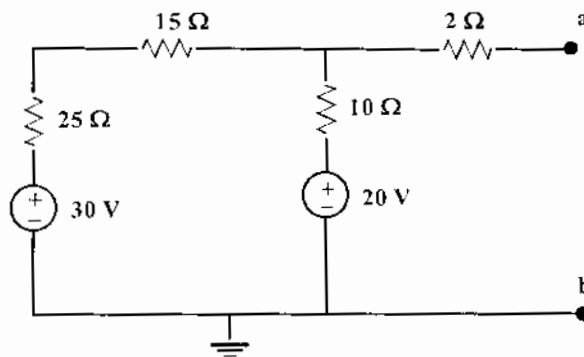


Figure 4: Circuit for problem 4

- (5) You are given the circuit of Figure 5.  
 (a) Use nodal analysis to find  $V_1$  and  $V_2$ .  
 (b) Find the current  $I_0$  in the  $30 \Omega$  resistor.

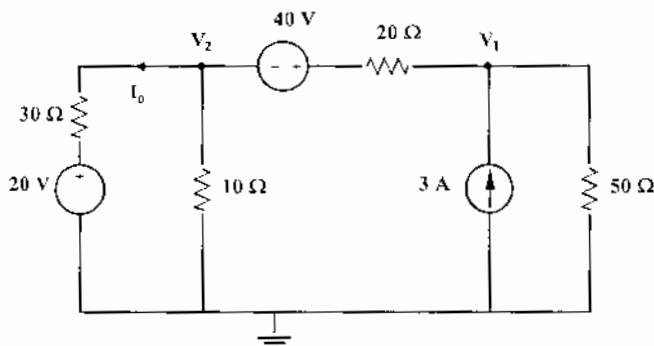


Figure 5: Circuit for problem 5.