

Course: ECE 53a  
Quiz #1  
Instructor: Pamela Cosman  
Date: 1/31/07

Name: \_\_\_\_\_

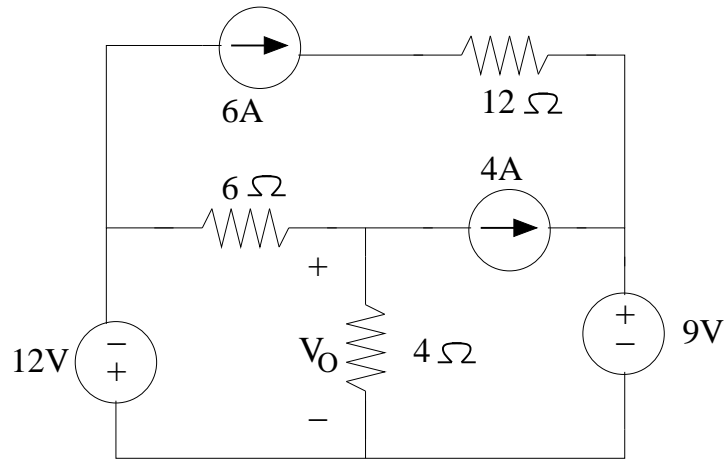
There are 4 problems.  
Each problem is worth 10 points.

| Problem | Possible | Score |
|---------|----------|-------|
| 1       | 10       |       |
| 2       | 10       |       |
| 3       | 10       |       |
| 4       | 10       |       |
| Total   | 40       |       |

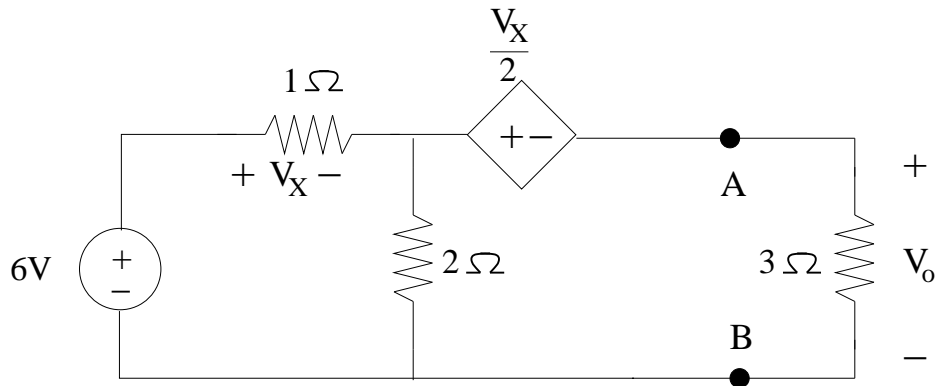
This quiz is **CLOSED BOOK, NO CALCULATORS ALLOWED.**  
You may use one page of notes, 8.5 by 11, both sides, written by you.

You need to show your work for all problems.

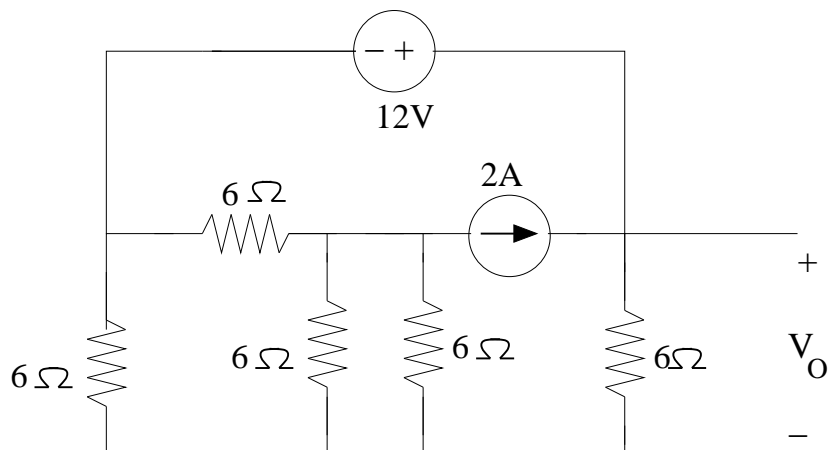
Problem 1: Use nodal analysis to find the voltage  $V_o$  in the following circuit:



Problem 2: (a) Find the Thevenin equivalent for the following circuit, to the left of the terminals A-B. Draw the Thevenin equivalent circuit. (b) Use the Thevenin equivalent circuit to determine the power dissipated in the  $3\ \Omega$  resistor on the right.



**Problem 3: Superposition:** What is the portion of the voltage  $V_o$  that is due to the 2A current source?



Problem 4: Use source transformations to reduce the following circuit to a circuit having only one mesh. Calculate  $V_o$  from this reduced circuit.

