

**ECE 2100 Circuit Analysis**  
**Spring 2015**  
**Exam #1**

**NAME:** \_\_\_\_\_

**INSTRUCTIONS:**

1. **THIS EXAM IS CLOSED BOOK AND CLOSED NOTES.**
2. **NO ELECTRONIC DEVICES ARE ALLOWED.**
3. Work each problem in the provided space.
4. Show ALL work required to arrive at a solution for either full or partial credit.
5. READ the entire question before answering.
6. CIRCLE YOUR ANSWERS.
7. Have your student ID on your desktop for inspection by the instructor.
8. SIGN the honesty pledge at the bottom of the page. Exams without a signature will receive no credit.

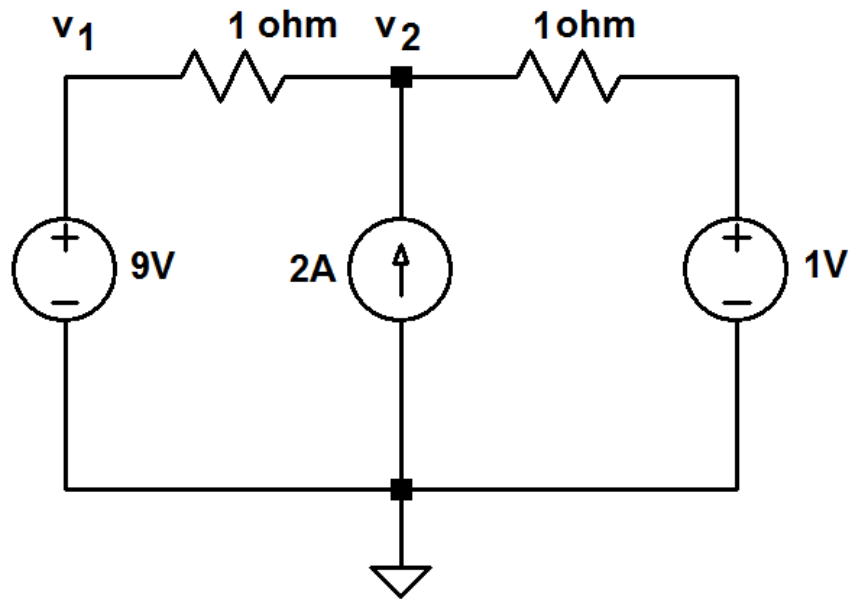
**I have neither given nor received assistance from anyone in regards to completion of this exam. I have followed the instructions as provided on this sheet.**

**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

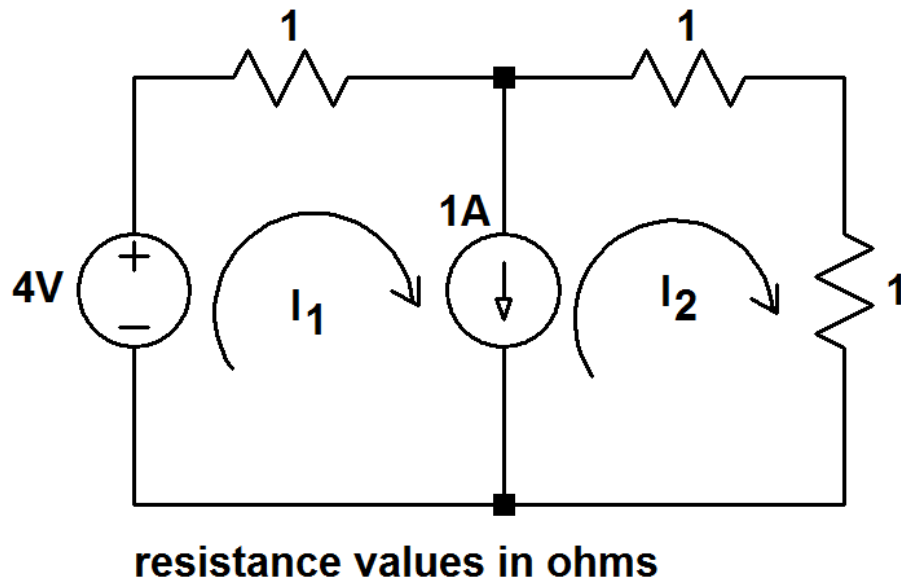


3. (5 points) A meter movement has a series resistance of  $1\Omega$  and a full scale current of  $1\text{mA}$ . Use this meter movement to design a  $100\text{mA}$  full scale ammeter. Be sure to show a schematic of your design.

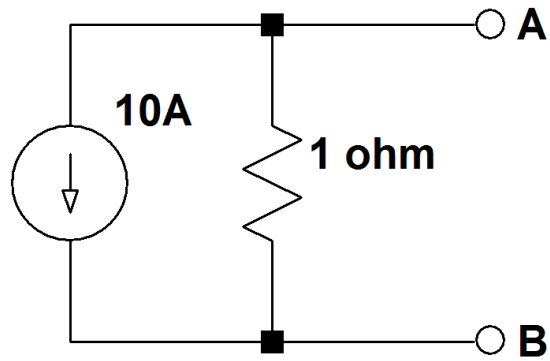
4. (5 points) Find node voltages  $v_1$  and  $v_2$  using nodal analysis.



5. (5 points) Find mesh currents  $I_1$  and  $I_2$  using mesh analysis.



6. (5 points) Thevenize the following circuit “looking into” terminals A-B. Be sure to sketch the Thevenin equivalent circuit.



7. (5 points) Find the power of each circuit element.

