ECE 2100 Circuit Analysis Spring 2015 Exam #1

NAM	E:
INST	RUCTIONS:
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.
	e neither given nor received assistance from anyone in regards to letion of this exam. I have followed the instructions as provided on this .
SIGN	ATURE: DATE:

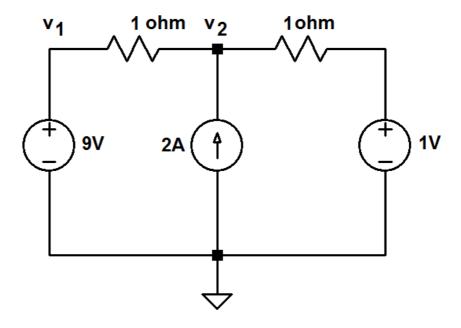
Maximum exam score is 30 points.

1. (3 points) What is the ideal input resistance of a voltmeter? Justify your response using an example of the effects of an ideal and non-ideal voltmeter on measuring the voltage of a Thevenin equivalent circuit.

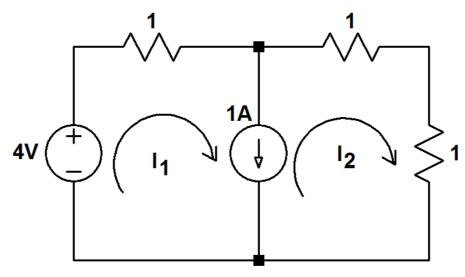
2. (2 points) Can the power of a circuit element due to each independent source (with dependent sources operating) be added to find the total power of that element; i.e., can the principal of superposition be directly applied to find the power of a circuit element? Justify your response.

© 2015 Damon A. Miller	3	Schematics drawn using LTspice IV (linear.com) Some problems might be adapted from the course
current of 1mA. Use this ammeter. Be sure to show		o design a 100mA full scale our design.
		sistance of 1Ω and a full scale

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

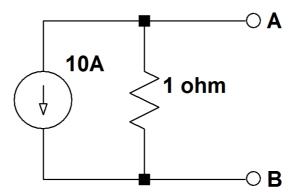


5. (5 points) Find mesh currents I_1 and I_2 using mesh analysis.



resistance values in ohms

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.

