

ECE 2210/00 Exam 1 given: Fall 08

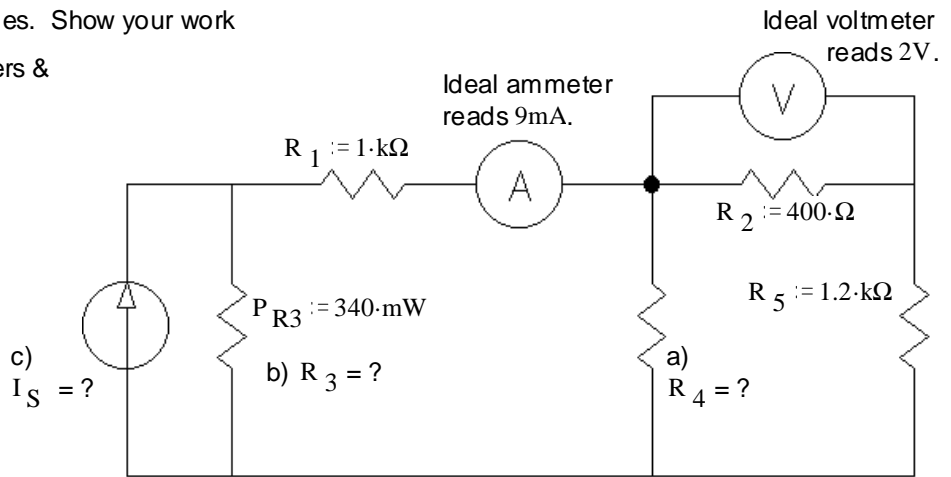
(The space between problems has been removed.)

To get the most possible partial credit, always show all the intermediate values that you can calculate. If further calculations depend on a value that you can't figure out, just use a letter (like I_{R1}) or a guessed value and proceed.

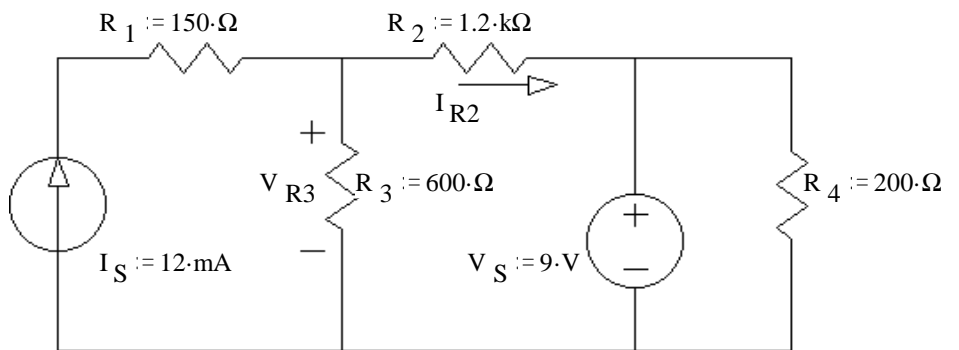
1. (24 pts) Find the resistor values. Show your work

Note: feel free to show answers & work right on the schematic

- a) $R_4 = ?$
- b) $R_3 = ?$
- c) $I_S = ?$



2. (20 pts) Use the method of superposition to find the voltage across R_3 (V_{R3}) and the current through R_2 (I_{R2}). Be sure to clearly show and **circle** your intermediate results.



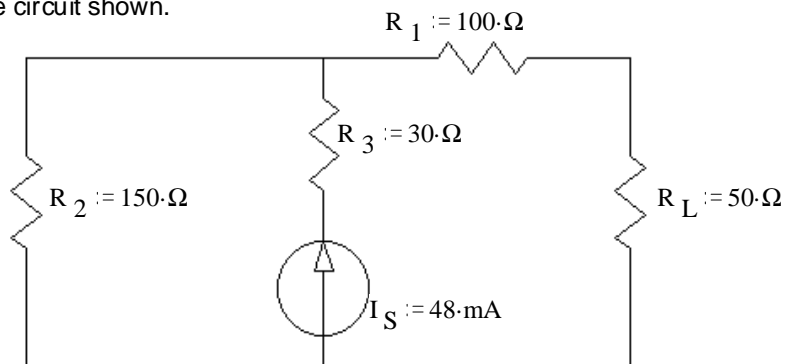
3. (27 pts) a) Find and draw the Thévenin equivalent of the circuit shown.

The load resistor is R_L .

b) Find and draw the Norton equivalent of the same circuit.

c) Find the power dissipated in the load using your Thévenin equivalent circuit.

$P_{RL} = ?$



d) Select a load resistor to maximize the power delivered to the load and find that maximum power.

$P_{RLmax} = ?$

