

University of Portland
School of Engineering

EE 261-Electrical Circuits-3 cr. hrs.
Fall 2012

Midterm Exam # 1

(Friday, September 28, 2012)
(Closed Book Exam, One Formula Sheet Allowed)
(Total Time: 55 minutes)

Name: _____ 😊

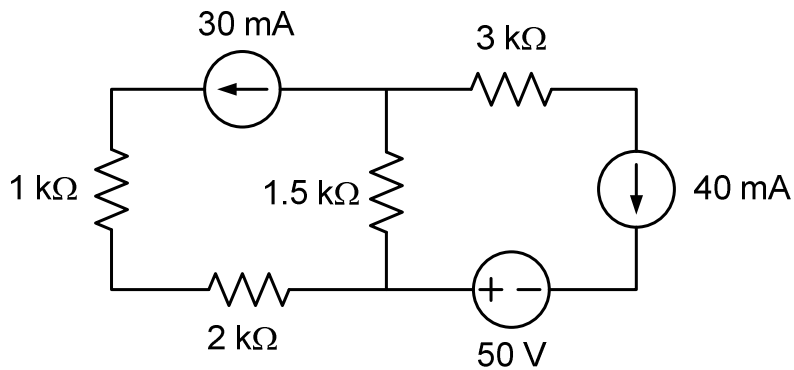
Signature: _____ 😊

“An honest mind possesses a kingdom.”
Lucius Annaeus Seneca (4B.C.–65A.D.)

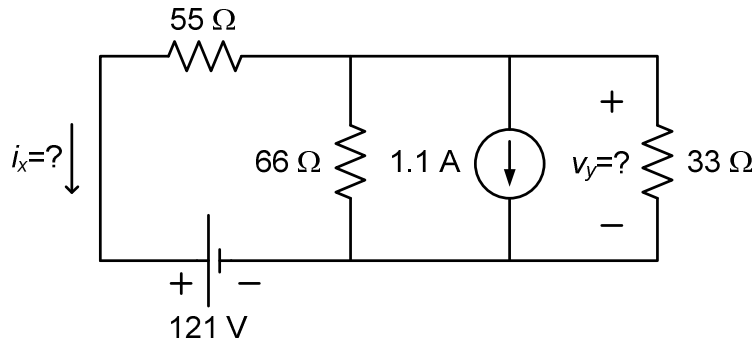
“Honest people are the true winners of the universe.”
Anonymous

NOTE: On all the problems, please show your work clearly, and provide the appropriate units for your answers. Also mark on the schematic to show any current or voltage that you define in your solution.

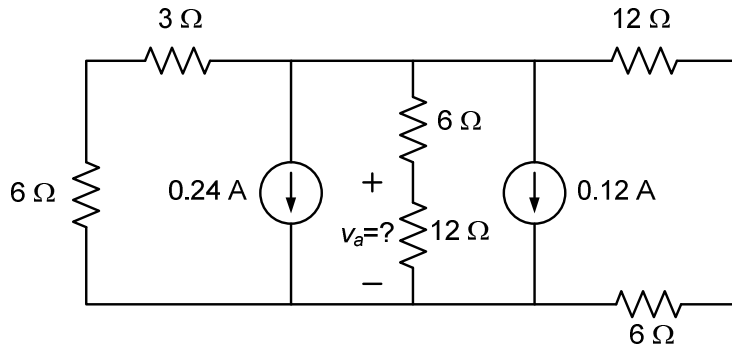
1. (20 points) In the electric circuit shown, find the power of each source. Provide your answers based on passive convention. Show your work and provide brief justifications for the steps you take. Also, don't forget to provide the correct units for your answers. Please box each answer.



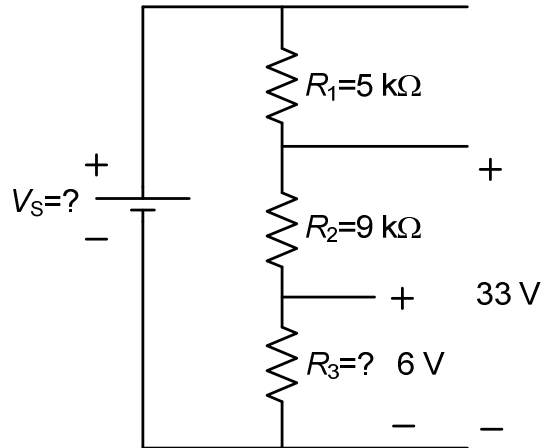
2. (20 Points) Consider the electric circuit shown. Find the current i_x and the voltage v_y . Show your work step by step including justifications. Box your answers with appropriate units.



3. (20 Points) Consider the electric circuit shown. Determine the voltage v_a across the $12\ \Omega$ resistor as indicated. Please provide your work step by step with justifications. Box your answer.



4. (20 Points) For the electric circuit shown, using the two voltage measurements provided, find the values of V_S and R_3 . Show your work step by step and provide justifications. Box your answers with appropriate units.



5. (20 Points) In the electric circuit shown, apply node voltage method to solve for the voltage v_a . Show your work step by step.

