

University of Portland
School of Engineering

EE 261-Electrical Circuits-3 cr. hrs.
Spring 2011

Midterm Exam # 2

(Wednesday, March 30, 2011)
(Closed Book Exam, Two Formula Sheets Allowed)
(Total Time: 55 minutes)

Name: _____ 😊

Signature: _____ 😊

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

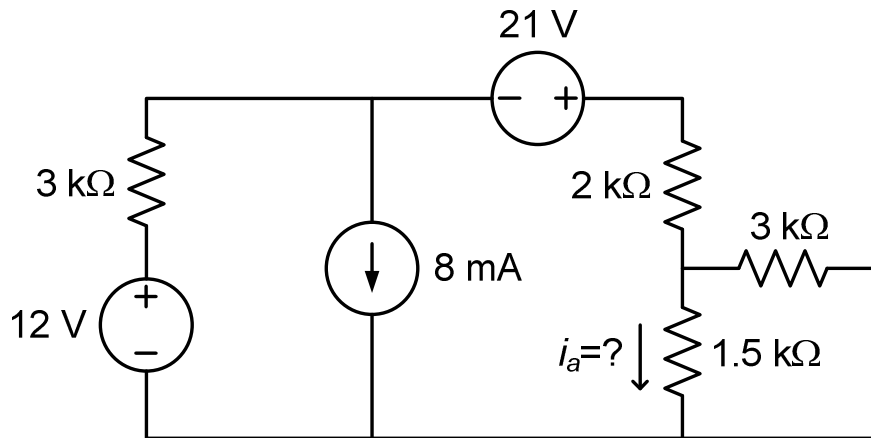
“Honest people are the true winners of the universe.”
Anonymous

NOTE: On all the problems, please show all your work, and provide the appropriate units for your answers. Also mark on the schematic to show any currents or voltages that you define in your solution. Please also box your answers!

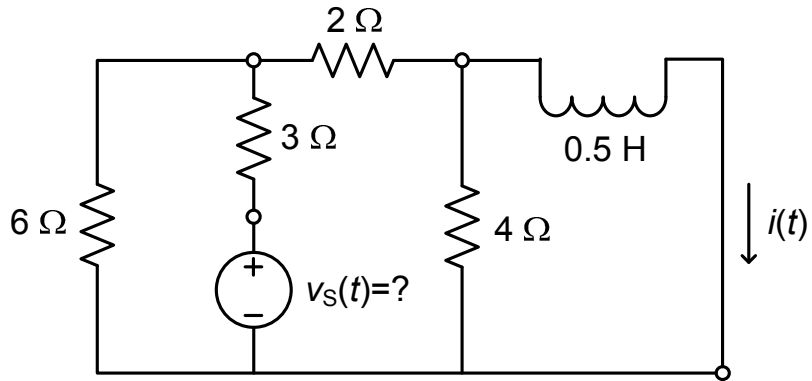
This table is to be used by Inan to record the grades:

Problem # 1	Problem # 2	Problem # 3	Problem # 4	Total Score

1. (25 points) For the electric circuit as shown, find the current i_a that flows through the $1.5 \text{ k}\Omega$ resistor. Please present your solution step by step and provide justifications.

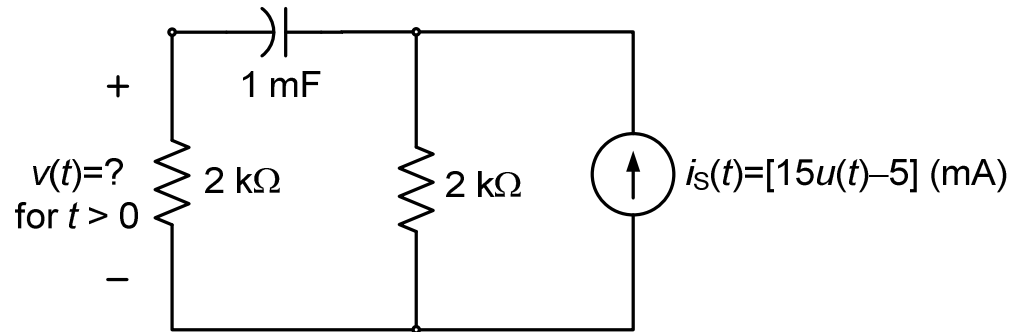


2. (25 points) In the electric circuit as shown, the current waveform $i(t)$ is given for $t > 0$. Find the complete mathematical expression for the source voltage $v_s(t)$ for $t > 0$. Please present your work step by step with justifications provided.



Given $i(t) = 3 + 6e^{-4t}$ (A) for $t > 0$

3. (25 points) In the circuit shown, given the mathematical waveform expression for the source current $i_s(t)$, find the mathematical expression for the voltage $v(t)$ for $t > 0$.



4. (25 points) For the electric circuit shown, find the voltage v_0 across the $600\ \Omega$ resistor.

