University of Portland
School of Engineering

EE 261-Electrical Circuits-3 cr. hrs.
Spring 2013

Midterm Exam # 2

(Monday, April 8, 2013)
(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

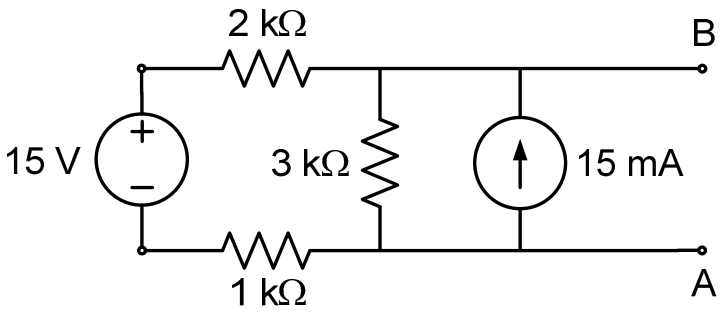
1. (10 mins., Total: 25 Points) For the circuit shown:

(a) (10 Points) Find the value of the external load resistance R_L to be connected between terminals "A" and "B" such that it will receive maximum power from the circuit.

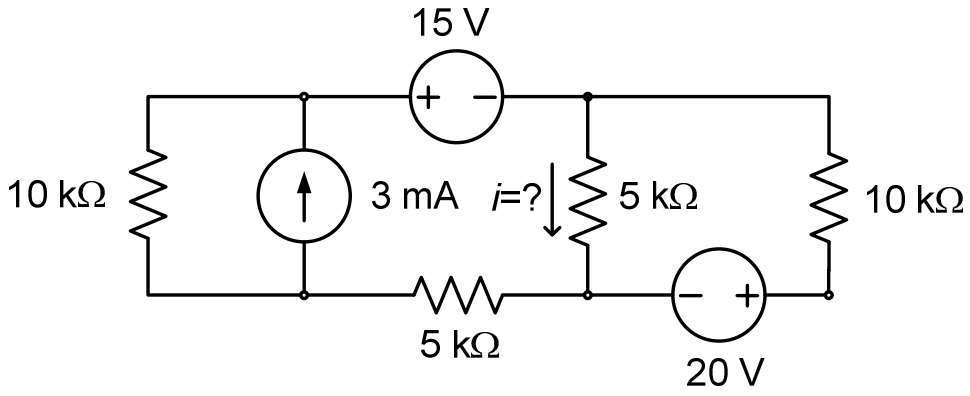
(b) (15 Points) Find the maximum power received by the load resistance found in part (a). Box your answers. Provide units.

Inan's table!

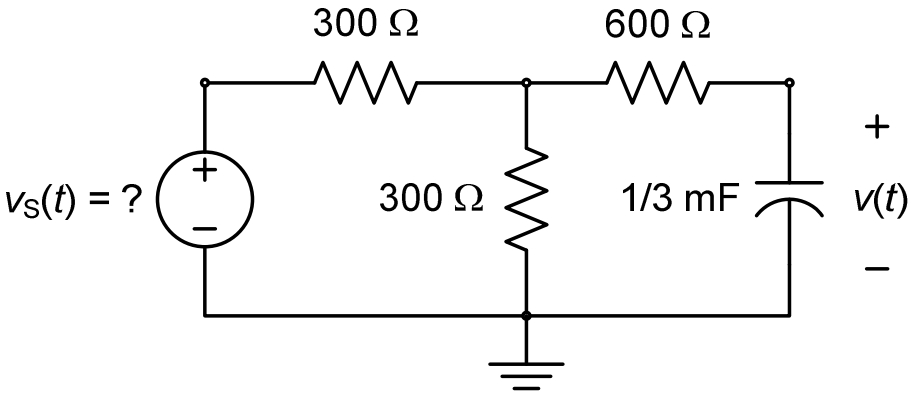
#1	
#2	
#3	
#4	
Total	



2. (10 mins., 25 points) For the circuit shown, find the current *i* that flows through the 5 kΩ resistor. Provide your steps and box your answer with the appropriate unit.



3. (15 mins., 25 points) For the circuit shown, given the voltage $v(t)$ of the 1/3 mF capacitor, find the source voltage $v_S(t)$. Show your work step-by-step. Box your answer.



Given $v(t) = 6 - 10e^{-4t}$ (V) for $t \geq 0$

4. (15 mins., 25 points) In the first-order *RL* circuit shown, find and sketch(!) the complete mathematical expression for the voltage $v(t)$ of the 4 kΩ resistor for $t > 0$. Please provide the answer in its simplest form and put it in a rectangular box.