ET 110/C13 – Electric Circuit Analysis
Homework 5 – Series dc circuit

Due date: Monday - 10/17/16

YOU HAVE TO SHOW ALL WORK IN ORDER TO RECEIVE FULL CREDIT

Note: All answer must be in engineering notation rounded off to the hundredth

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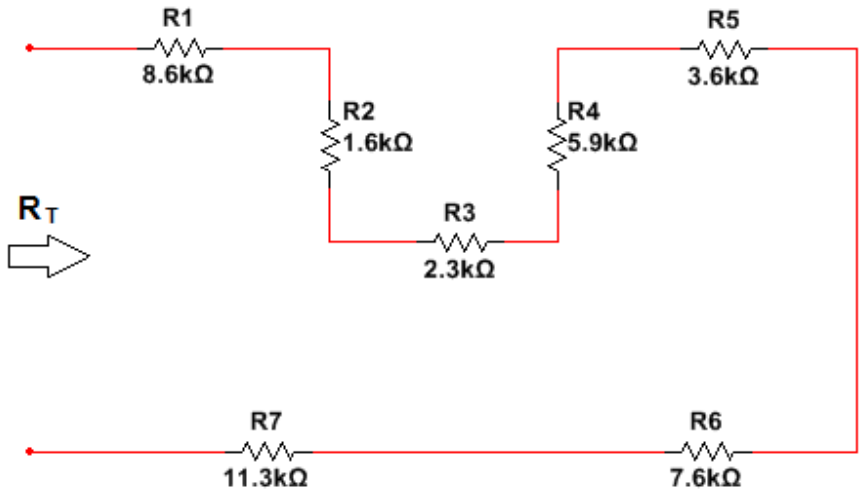
1. Find the total resistance R_T of a given circuit (7 points)



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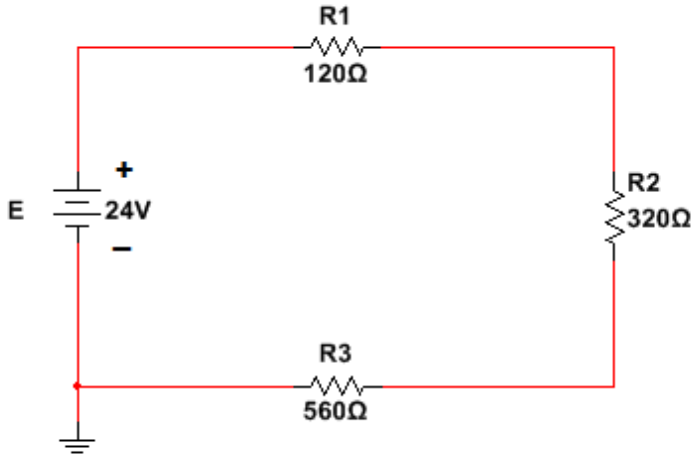
2. For the series configuration circuit

   a. Find the total resistance (6 points)
   b. Calculate the source current (3 points)
   c. Find the voltage across each resistor (6 points)
   d. Calculate the power dissipated by the source (3 points)
   e. Calculate the power dissipated by each resistor (6 points)



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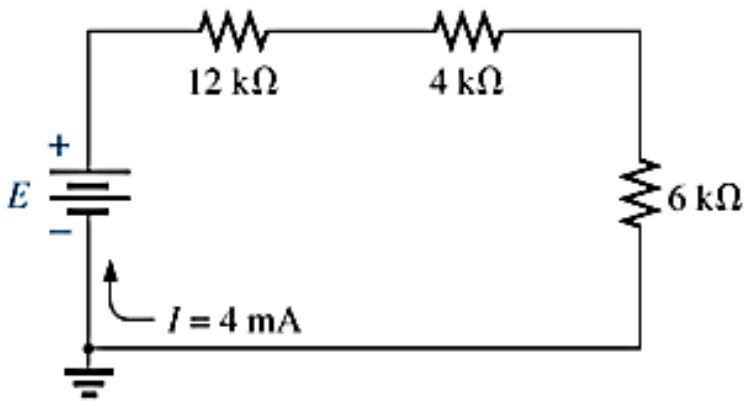
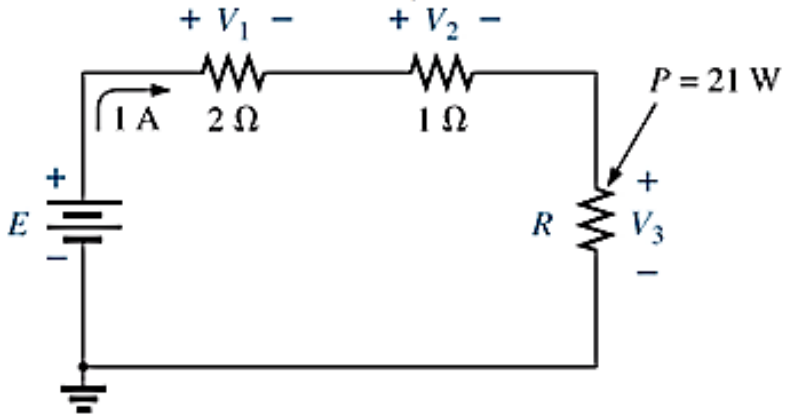
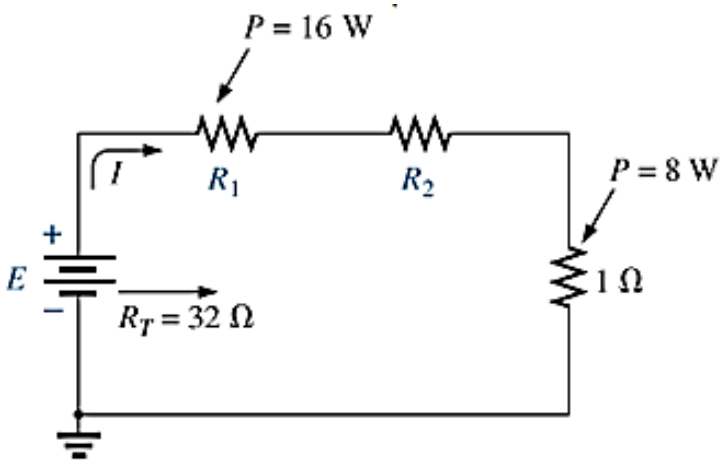
3. Find the voltage source value, E, that will result in the given current (9 points)



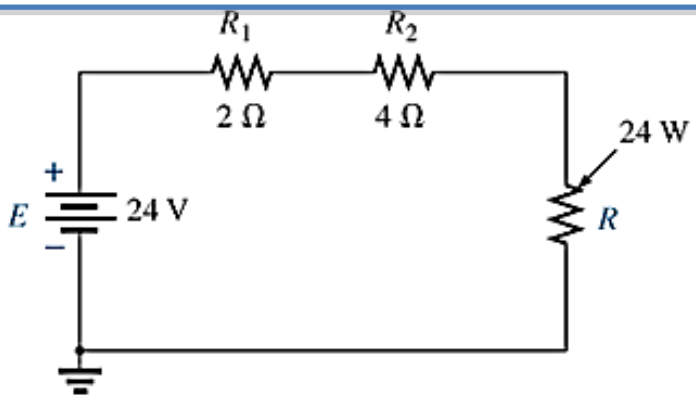
4. Using the provided information, find the unknown quantities for E, V_1, V_2, V_3, and R (12 points)



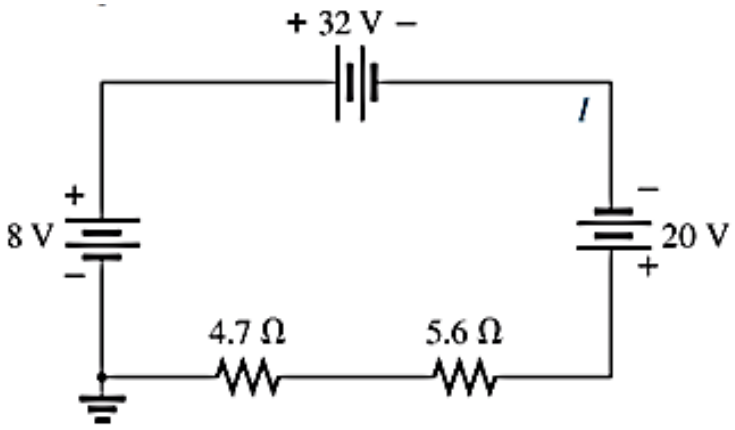
5. Find the unknown values for E, R_1, and R_2 using the information provided in the circuit (12 points)



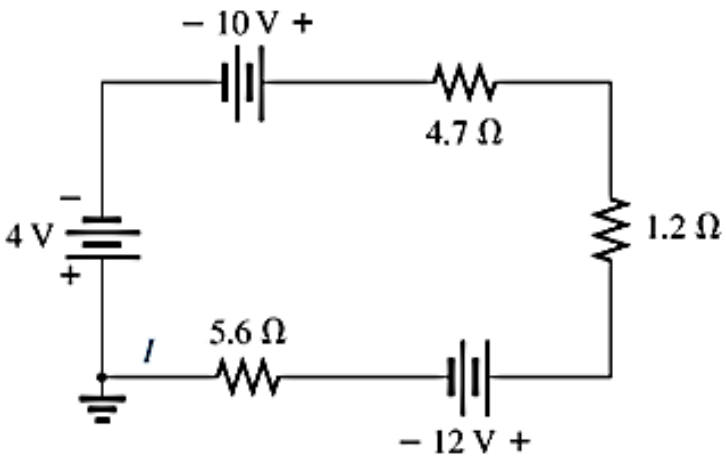
6. Find the value of the unknown resistance R and the voltage source E using the given conditions (12 points)



7. For the following circuits, determined the current direction and value of the circuit, and the voltage drop through each resistor with their respective voltage polarities (12 points each)



(a)



(b)