ET 110/C13 – Electric Circuit Analysis

Homework 6 – Parallel dc circuit (Due date: Monday - 10/24/16)

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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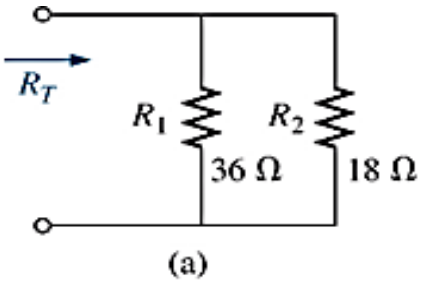
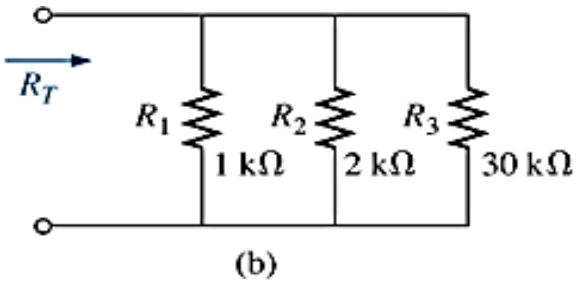
1. Find the total resistance for each configuration parallel circuit (a = 5 pts, b = 6 pts)

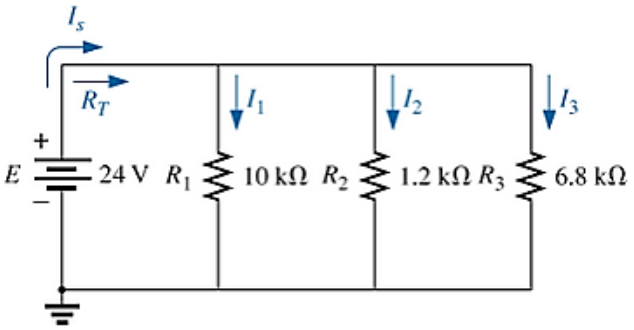


(a)



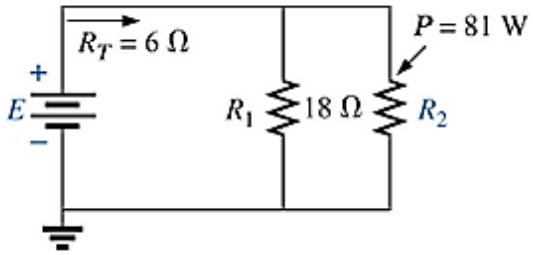
(b)

2. For the parallel circuit



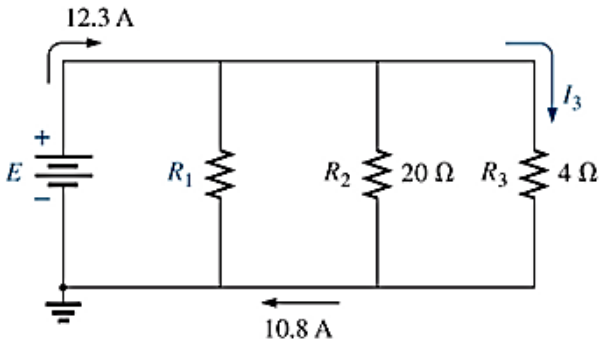
a. Find the current through each branch (6 pts)
b. Find the total resistance (6 pts)
c. Calculate current source I_S using the result of part (b) (3 pts)
d. Find the source current using the result of part (a) (3 pts)

3. Given the information provided



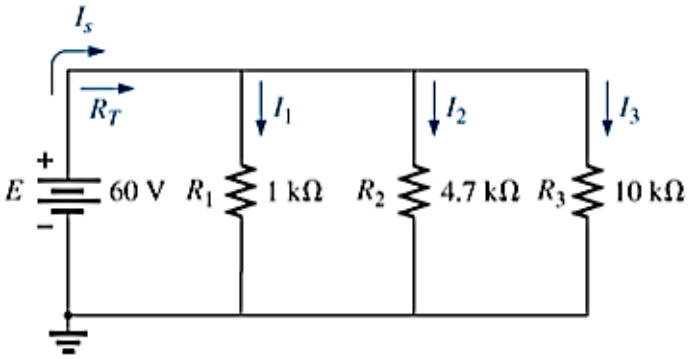
a. The resistance R_2 (5 pts)
b. The supply voltage E (4 pts)

4. Given the following parallel circuit, find the unknown quantities, E, R_1 and I_3 (4 points each)

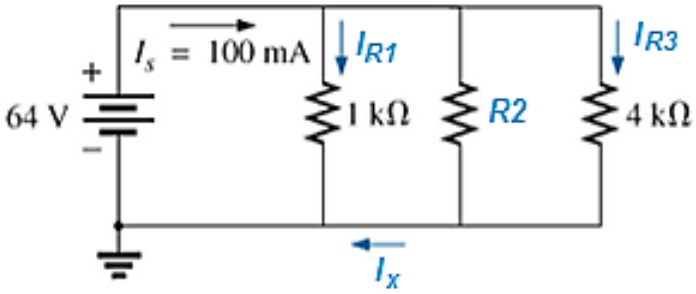


5. For the following parallel circuit

a. Find the total resistance and the current through each branch (6 pts)
b. Find the power delivered to each resistor (6 pts)
c. Calculate the power delivered by the source (3 pts)



6. Find the unknown quantities for the following parallel circuit, I_{R1}, Ix, I_{R3}, R (4 points each)



7. Find the unknown quantities for the following parallel circuit, I_{R1}, I_{R3}, R_2, R_3, P_{R2}, and E (4 points each)