Student's Name:

Introduction to circuit analysis

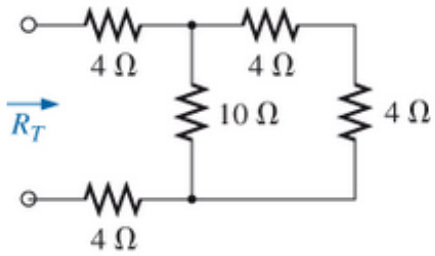
Homework # 5 – Series-Parallel dc circuit

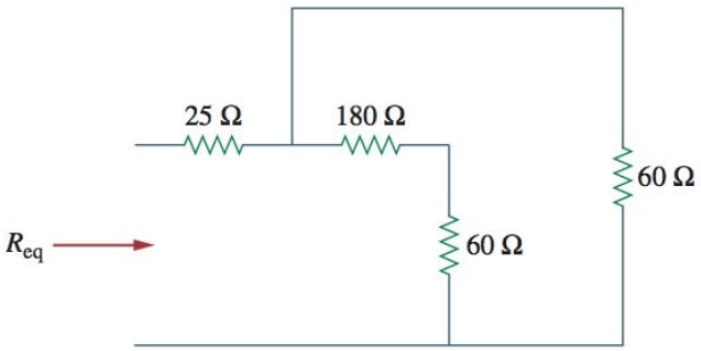
Instructions:

- You have to show all work in order to receive full credit
- All answer must be in engineering notation rounded off to the hundredth

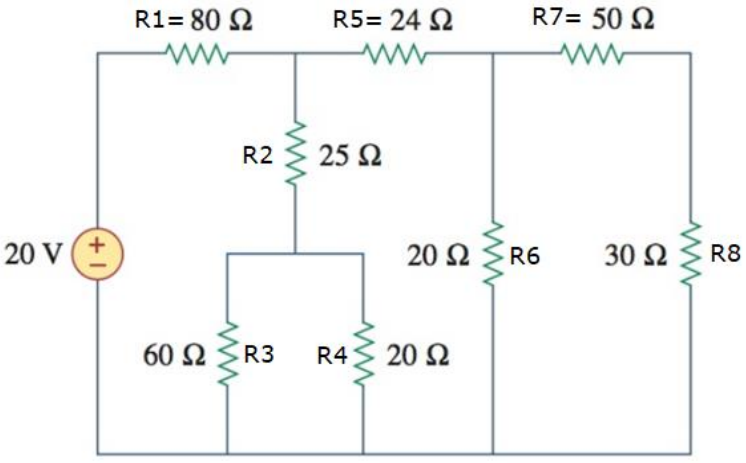
---

1) Determine the total resistance, R_T (3 pts)





2) For the following circuit:



a. Sketch 3 equivalent circuit (3 pts)

b. (6 pts)Find the total resistance, R_T _____

c. (2 pts) Calculate I_T or I_S _____

Find the voltage across each resistor (2 pts each)

V_{R1}_____

V_{R2}_____

V_{R3}_____

V_{R4}_____

V_{R5}_____

V_{R6}_____

V_{R7}_____

V_{R8}_____

Find the current through each resistor (2 pts each)

I_{R1}_____

I_{R2}_____

I_{R3}_____

I_{R4}_____

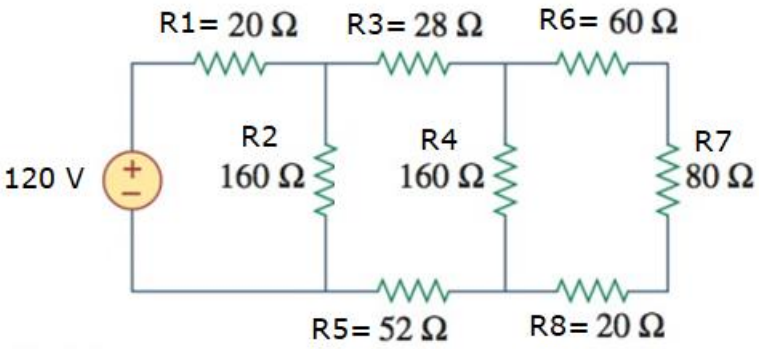
I_{R5}_____

I_{R6}_____

I_{R7}_____

I_{R8}_____

3) For the ladder network



a. Sketch three equivalent circuit (3pts)

b. (8 pts) Determine R_T _____

c. (2 pts) Calculate I_S _____

Find the voltage across each resistor (2 pts each)

V_{R1}_____

V_{R2}_____

V_{R3}_____

V_{R4}_____

V_{R5}_____

V_{R6}_____

V_{R7}_____

V_{R8}_____

Find the current through each resistor (2 pts)

I_{R1}_____

I_{R2}_____

I_{R3}_____

I_{R4}_____

I_{R5}_____

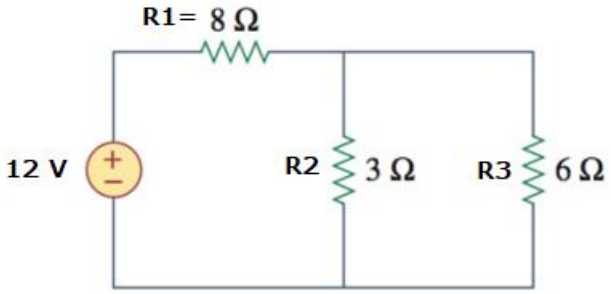
I_{R6}_____

I_{R7}_____

I_{R8}_____

4) For the network

a. (2 pts) Sketch two equivalent circuit
b. (3 pts) Determine R_T
b. (3 pts) Find I_{R1}, $I_{R2,}$ and I_{R3}
c. (3 pts) Find voltage V_{R1}, V_{R2}, and V_{R3}



---------- HOMEWORK ENDS HERE ----------