Student's Name:

Introduction to circuit analysis

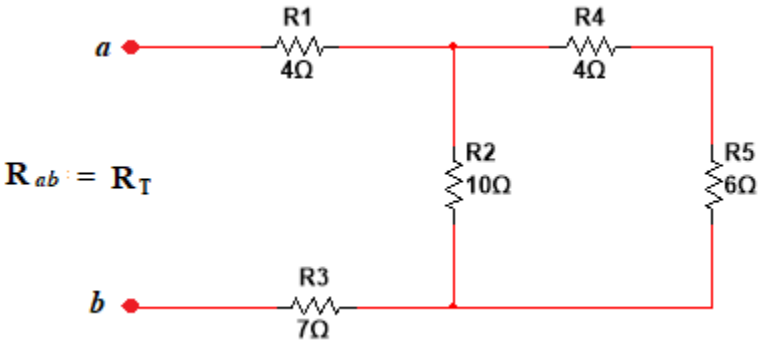
Homework 5 – Series-Parallel Circuit

Instructions:

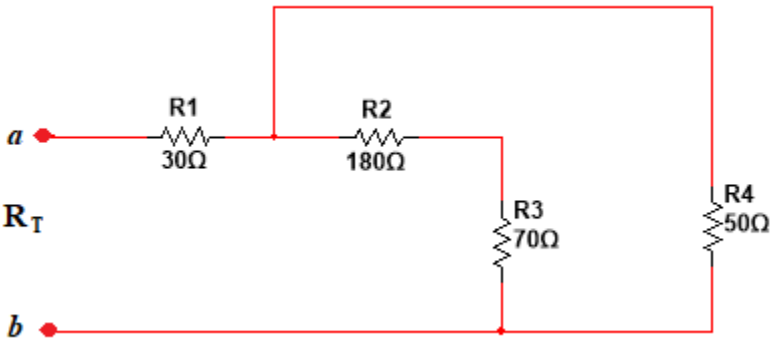
- YOU HAVE TO SHOW ALL WORK IN ORDER TO RECEIVE FULL CREDIT
- All answer must be in engineering notation rounded off to the hundredth

---------- **Homework Starts Here** ----------

1) Determine the total resistance, R_T



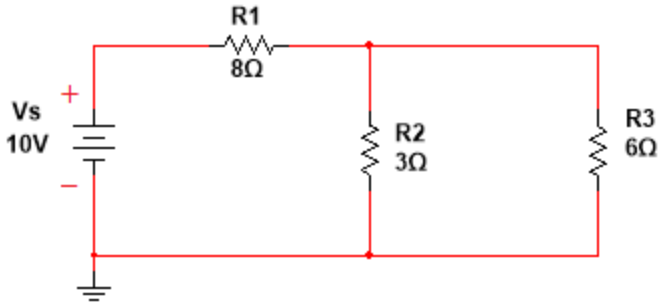
$R_{ab} = R_T$



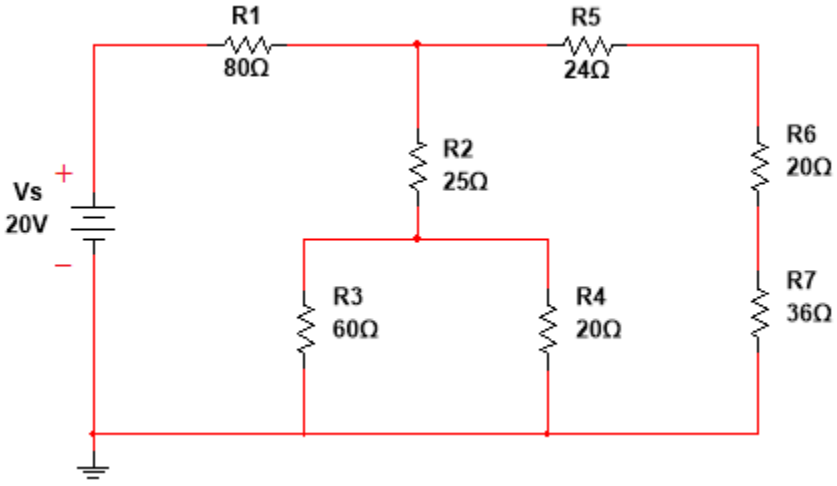
$R_{ab} = R_T$

2) For the network

a. Sketch two equivalent circuit
b. Determine R_T
c. Find I_{R1}, I_{R2}, and I_{R3}
d. Find voltage V_{R1}, V_{R2}, and V_{R3}



3) For the following circuit:



a. Sketch 3 equivalent circuit
b. Find the total resistance, R_T _____
c. Calculate I_T or I_S _____

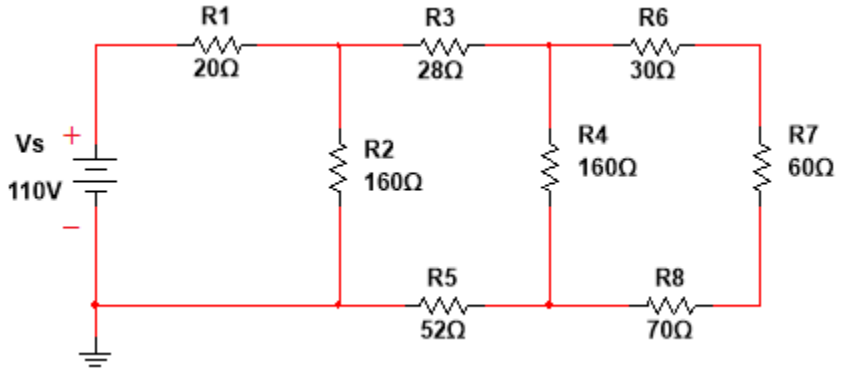
d. Find the voltage across each resistor

V_{R1}_____
V_{R2}_____
V_{R3}_____
V_{R4}_____
V_{R5}_____
V_{R6}_____
V_{R7}_____

e. Find the current through each resistor

I_{R1}_____
I_{R2}_____
I_{R3}_____
I_{R4}_____
I_{R5}_____
I_{R6}_____
I_{R7}_____

4) For the ladder network



a. Sketch three equivalent circuit

b. Determine R_T _____

c. Calculate I_S _____

d. Find the voltage across each resistor

V_{R1}_____

V_{R2}_____

V_{R3}_____

V_{R4}_____

V_{R5}_____

V_{R6}_____

V_{R7}_____

V_{R8}_____

e. Find the current through each resistor

I_{R1}_____

I_{R2}_____

I_{R3}_____

I_{R4}_____

I_{R5}_____

I_{R6}_____

I_{R7}_____

I_{R8}_____

---------- **HOMEWORK 5 ENDS HERE** ----------