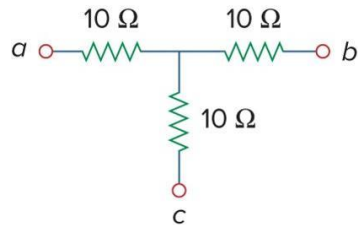


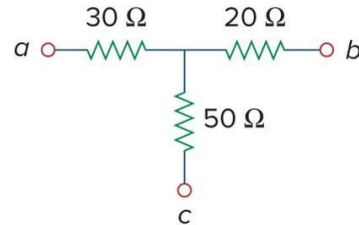
# Electric Circuits

## Homework Set 4

1. Convert the following circuits from Y to  $\Delta$ .

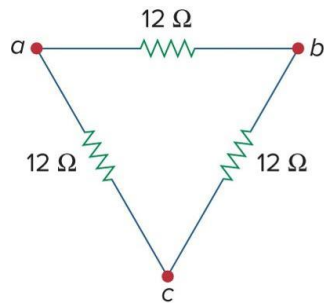


(a)

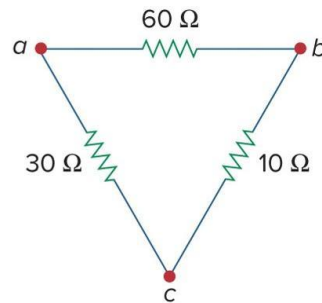


(b)

2. Transform the following circuits from  $\Delta$  to Y.

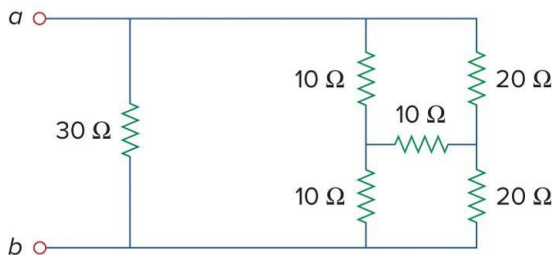


(a)

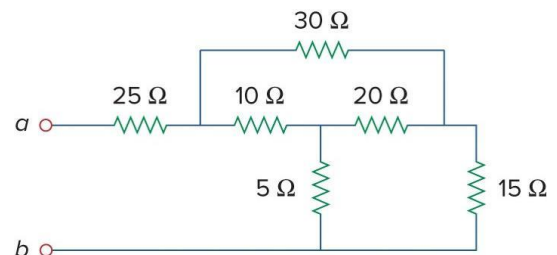


(b)

3. Obtain the equivalent resistance at the terminals  $a$ - $b$  for each of the following circuits.

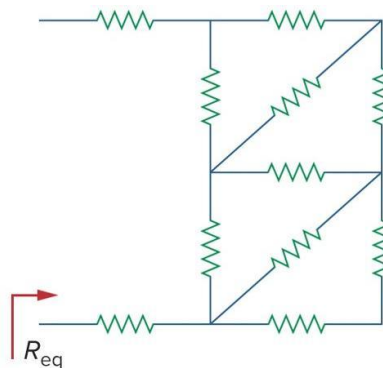


(a)

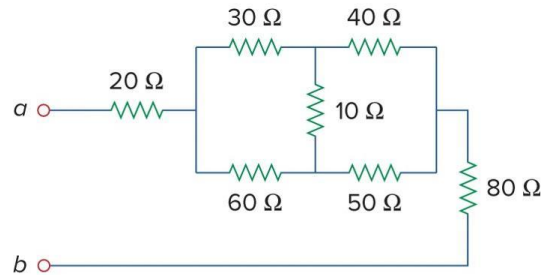


(b)

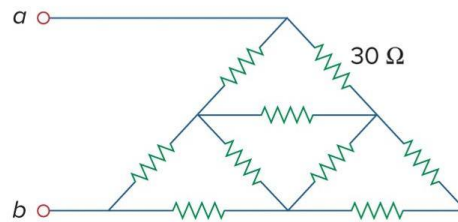
4. For the circuit below, find the equivalent resistance. All resistors are  $3\ \Omega$ .



5. Obtain the equivalent resistance  $R_{ab}$  in each of the following circuits. In (b), all resistors have a value of  $30\ \Omega$ .



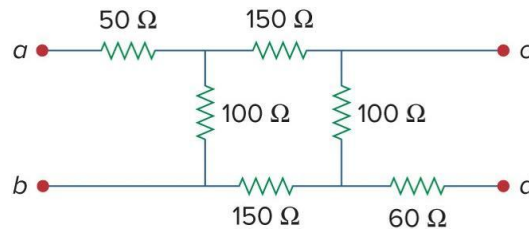
(a)



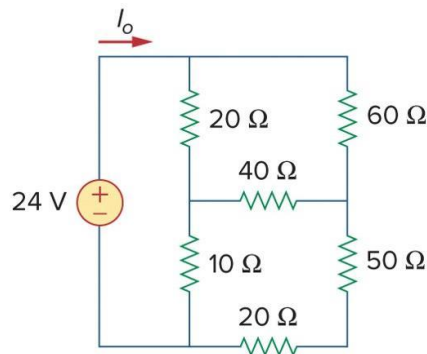
(b)

6. In the following circuit, find the equivalent resistance at the terminals:

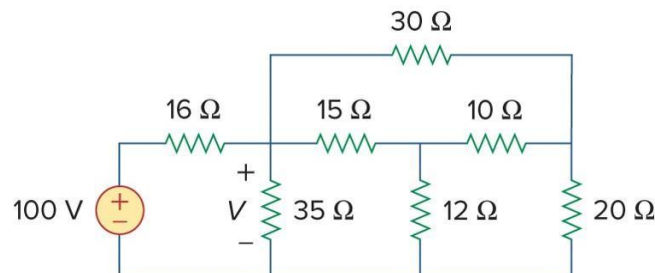
- a.  $a-b$
- b.  $c-d$



7. Calculate  $I_o$  in the following circuit.



8. Determine  $V$  in the circuit below.



9. Find  $R_{eq}$  and  $I$  in the following circuit.

