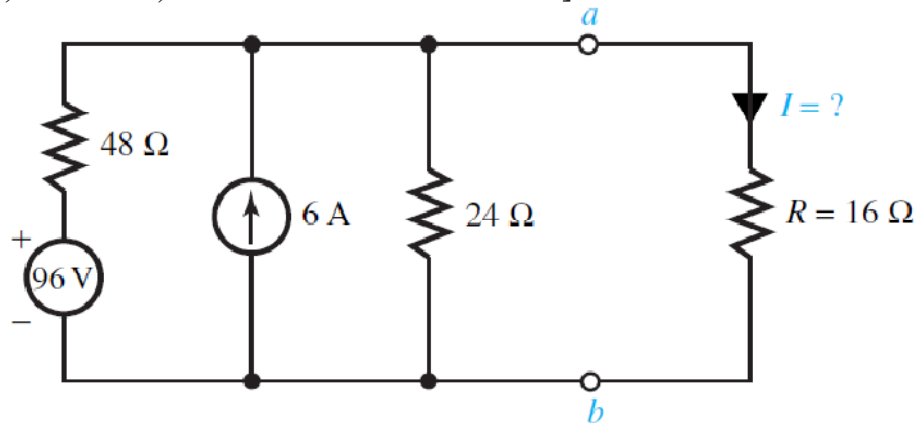
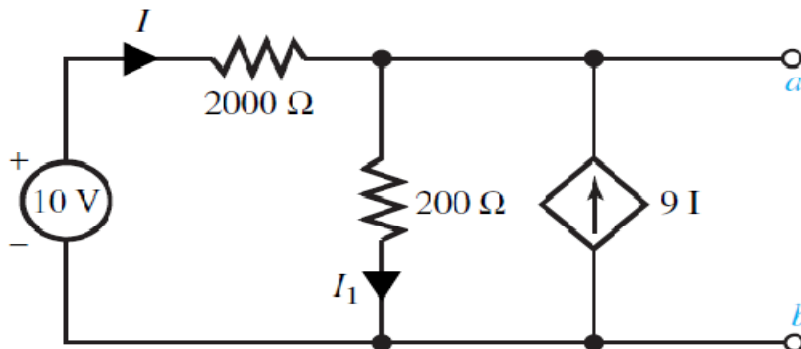


GOVERNMENT ENGINEERING COLLEGE, DAHOD
Electrical Engineering Department
Assignment
Semester- II
Subject- Basic Electronics (2110016)

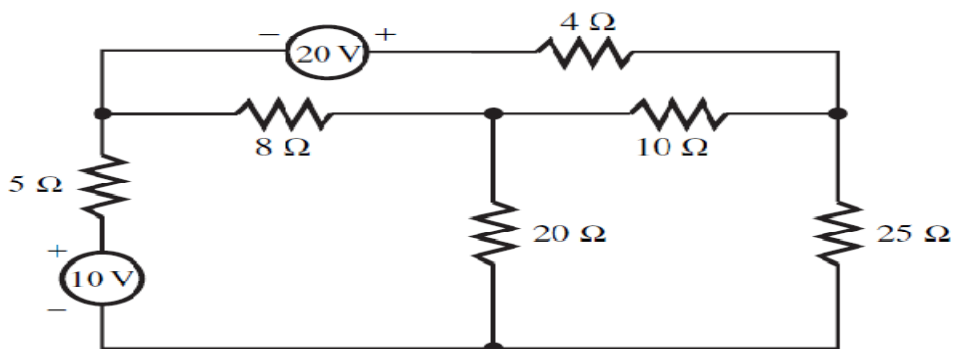
Ex-1. Consider the circuit shown in Figure .Reduce the portion of the circuit to the left of terminals $a-b$ to Find (a) Thevenin equivalent and (b) Norton equivalent. Find the current through $R = 16 \text{ Ohm}$
[Ans. $R_{th} = R_n = 16 \Omega$, $V_{th} = 128 \text{ V}$, $I_n = 8 \text{ A}$ & $I = 4 \text{ A}$ from a to b]



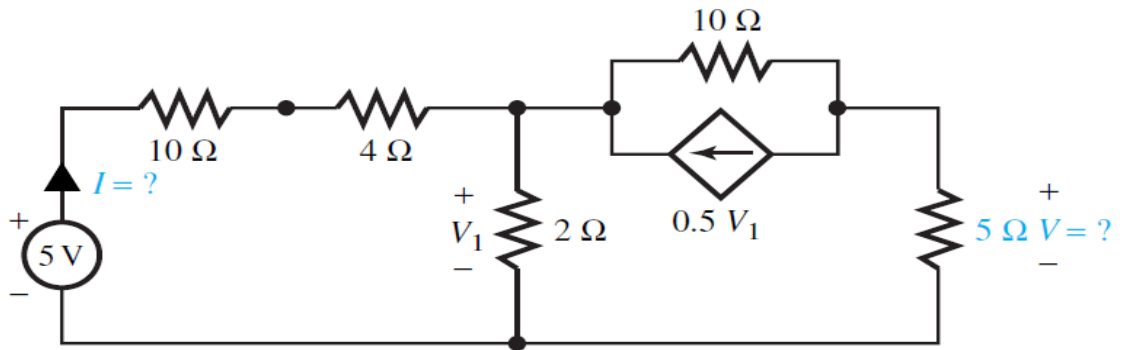
Ex-2. Consider the circuit of Figure E2.1.2(a), including a dependent source. Obtain the Thevenin equivalent at terminals $a-b$. **[Ans. $R_{th} = 100 \Omega$ & $V_{th} = 5 \text{ V}$]**



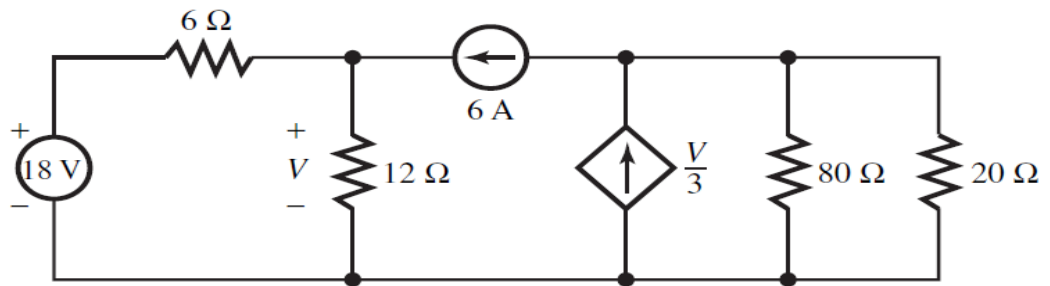
Ex-3. Find the current delivered by 10 V source and also find voltage across 10 ohm resistor by using nodal analysis. **[Ans. $I = 1.13 \text{ A}$ & $V = 9.34 \text{ V}$]**



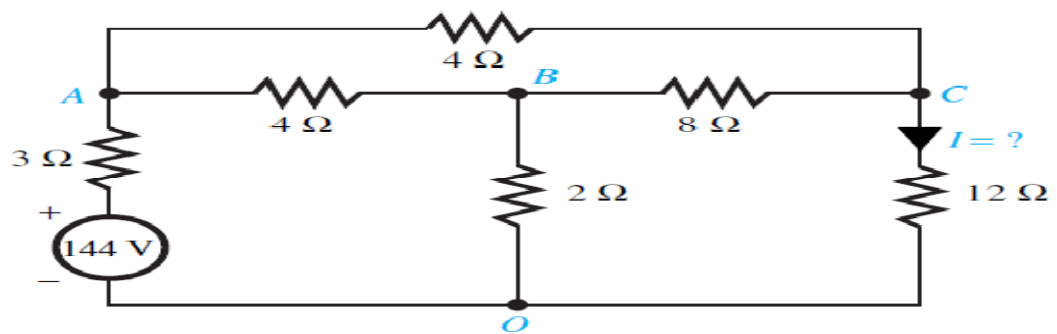
Ex-4. Consider the circuit in Figure which include a controlled source, and find the current in the 5 Ω source and the voltage across the 5 Ω resistor by using (a) the loop-current method and (b) the node-voltage method. [Ans. $I = 0.273 \text{ A}$ & $V = -1.56 \text{ V}$]



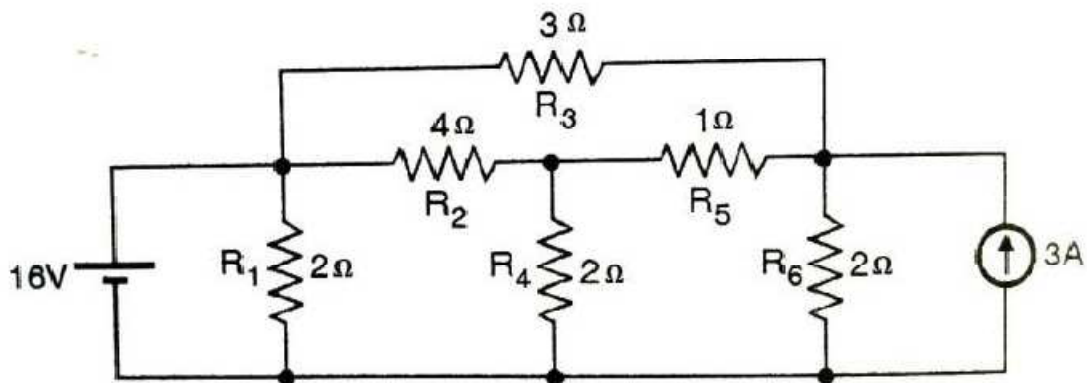
Ex-5. By using superposition theorem, find voltage across 20 Ω resistor in given circuit. [Ans. 96 V]



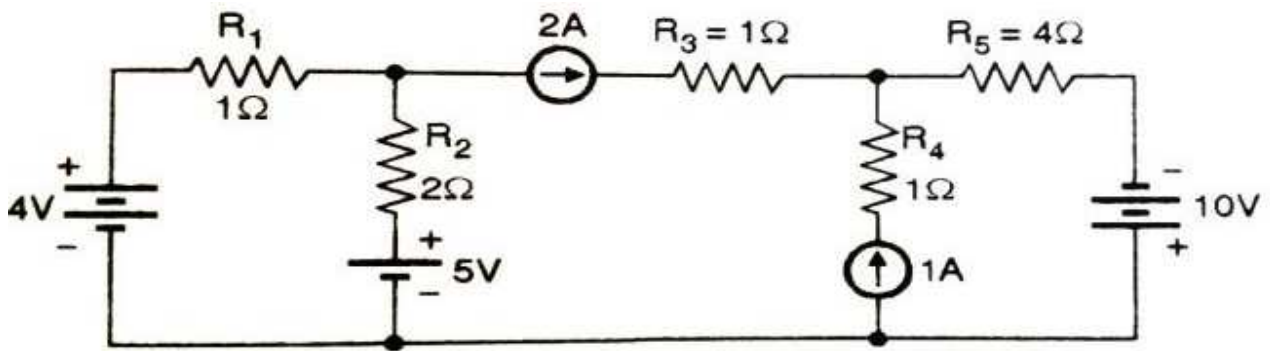
Ex-6. By using delta-wye reduction of network, find current through 12 Ω resistor in given circuit. [Ans. 4.5 A]



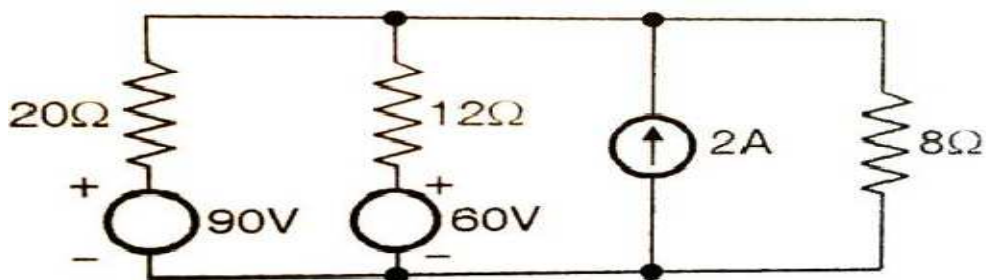
Ex-7. Calculate node voltages for all nodes given in the circuit by using nodal analysis method.



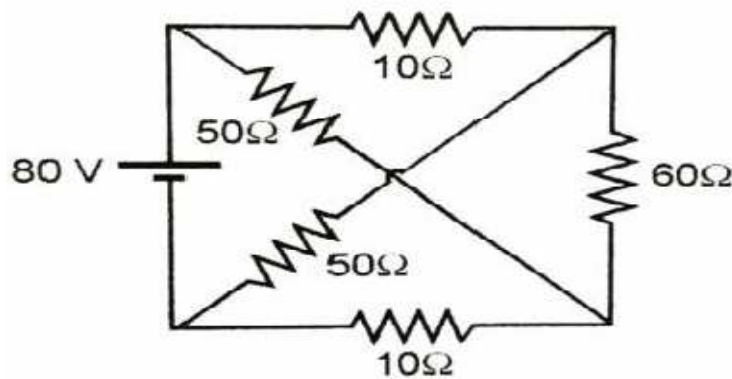
Ex. 8. By using mesh analysis method, find voltage and current for all circuit elements.



Ex.9. State superposition theorem? By using superposition theorem, find current through the 20 Ω resistor. [Ans. I= 2.274 A]



Ex.10. State Thevenin's theorem. Calculate current passing through 60 Ω resistor by using thevenin's theorem. [Ans. 0.695 A]



By

P.A.Kabrawala

Note:

Last Date of submission - 28 March-2016