Tutorial-3
Winter 2024
Basic Electronics (ECE113)

Q1: In the given following circuit (Figure-1), find the value of voltage across 100 ohm ($\mathbf{V_p}$) by using nodal analysis.

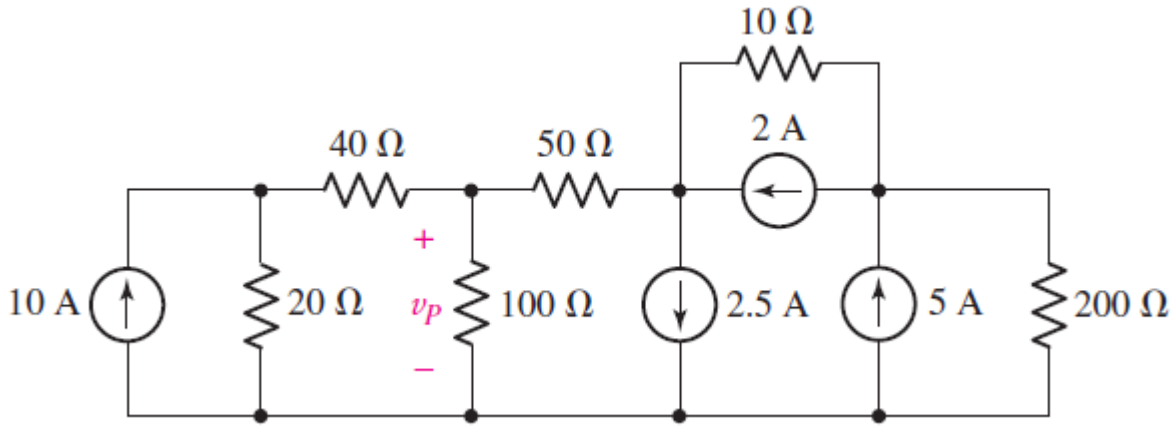

Figure 1

Q2: By bottom node as reference node (Figure-2), find the all node voltages and current through 7 Ω resistance by using nodal analysis.

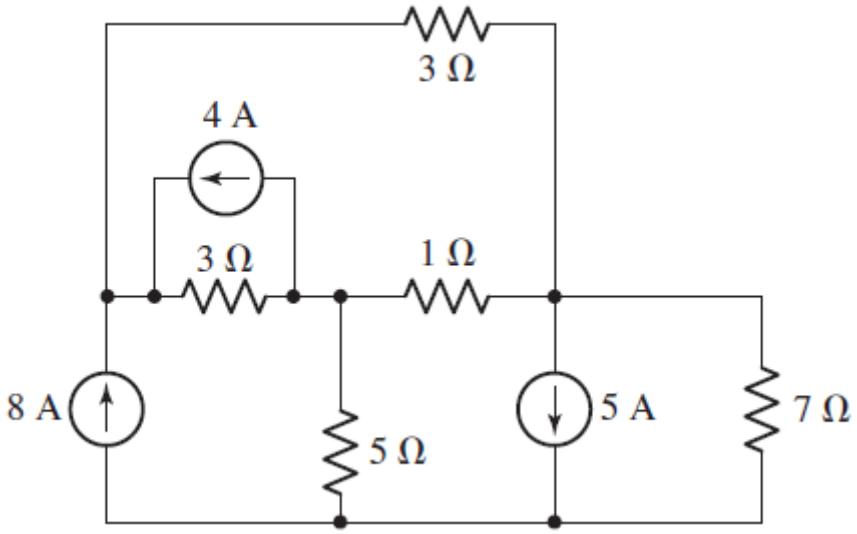

Figure 2

Q3: Find all node voltages with the help of nodal analysis in the given following circuit (Figure-3).

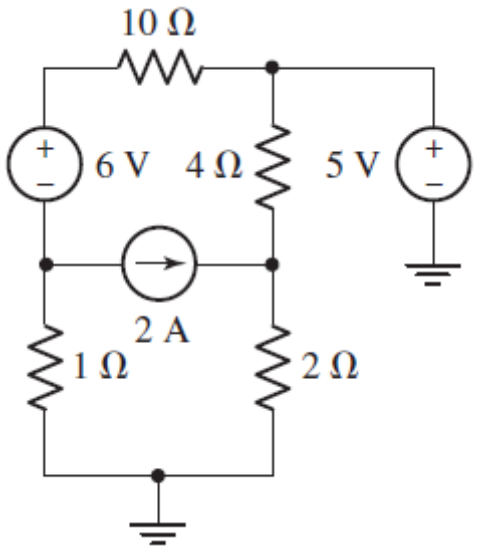

Figure 3

Q4: In the given following circuit (Figure-4), find all node voltages and power dissipation in 1 Ω resistance.

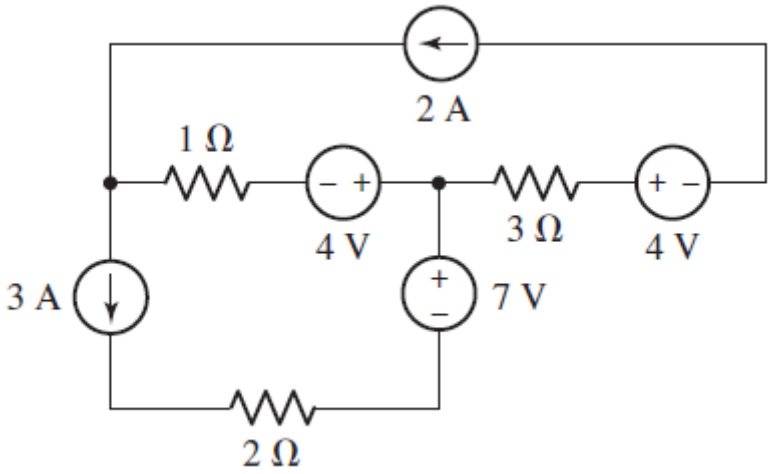

Figure 4

Q5: In the given following circuit (Figure-5), find all node voltages and power delivered by 1V ideal voltages source.

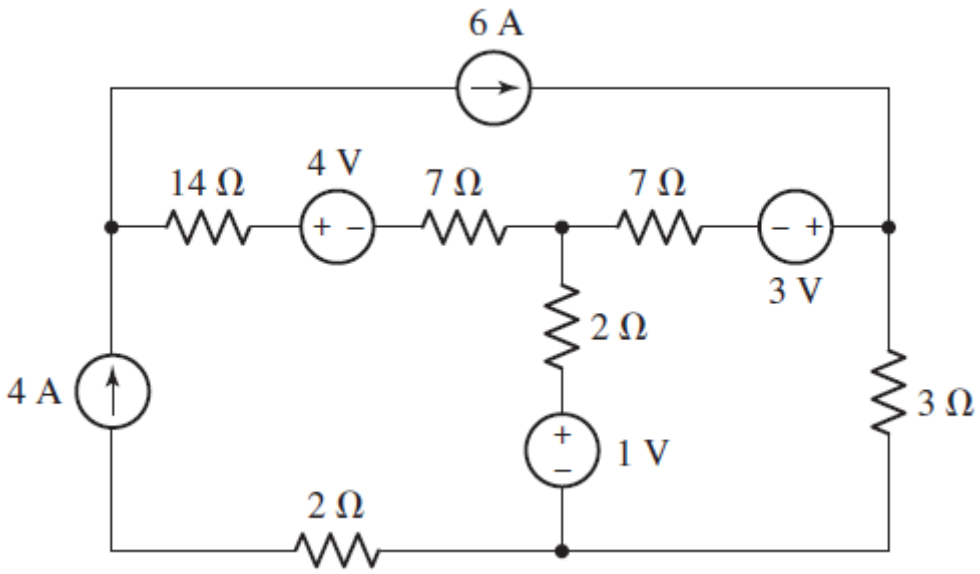

Figure 5

Q6: In the given following circuit (Figure-6), find the value of voltage across 3 Ω resistance by using nodal analysis.

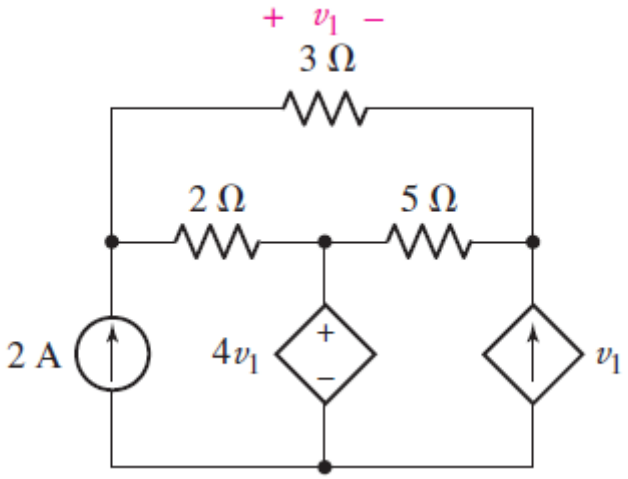

Figure 6

Q7: In the given circuit (Figure-7), set of two **5 volt**, practical voltage source are connected in across the load (4Ω). Both sources are represented by their actual voltage and internal resistance. Do the following analysis-

(a) Find out the current across the load (4Ω).

(b) Is there any internal current in between the two practical sources? If yes then what is the value?

(c) What will happen, when both practical sources are replaced by ideal voltage source?

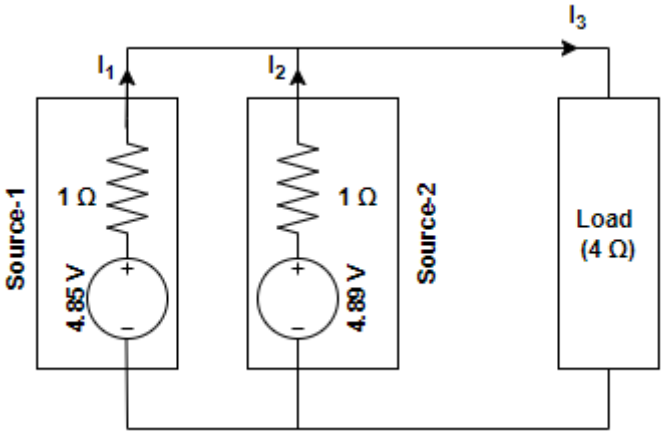

Figure 7