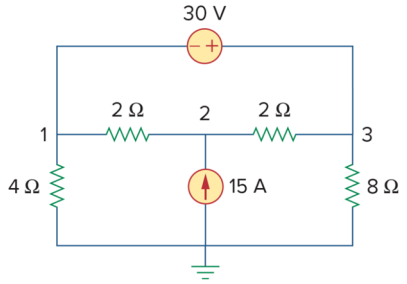
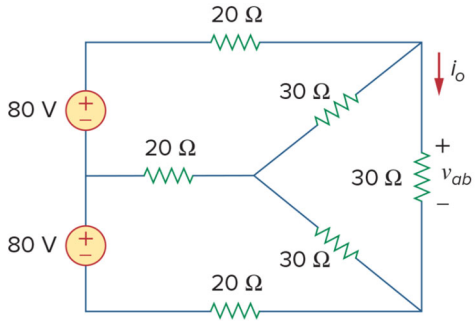
EE1002 Principles of Electrical Engineering Assignment 2

(Questions from the Textbook by Alexander & Sadiku, 7th edition Problems 3.18, 3.43, 3.44, 4.39, 4.43, 4.51, 4.24, 4.40, and 4.48)

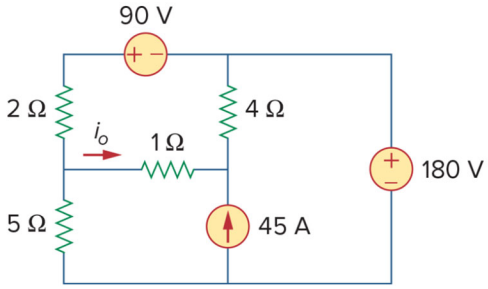
1. Determine the node voltages at nodes 1, 2, and 3 in the circuit in the following figure using nodal analysis.



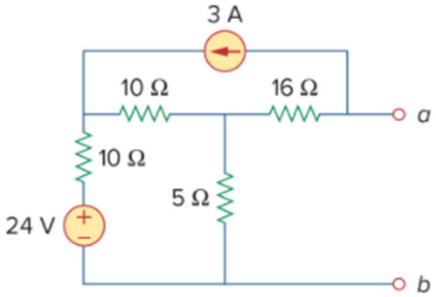
2. Use mesh analysis to find v_{ab} and i_o in the circuit in the following figure.



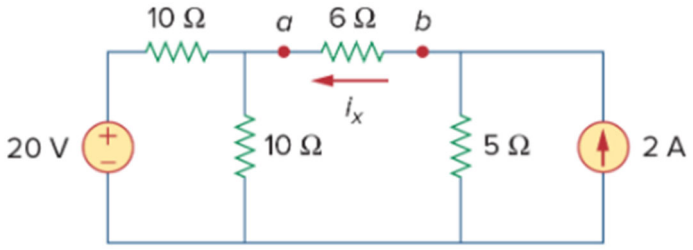
3. Use mesh analysis to obtain i_o in the circuit of the following figure.



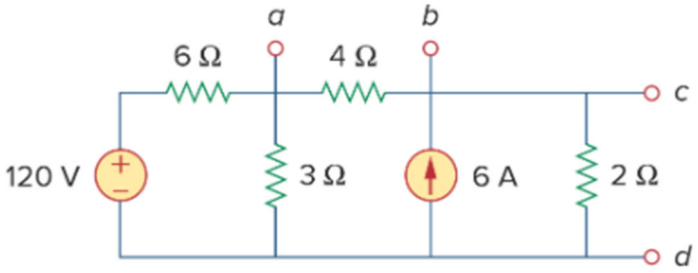
4. Obtain the Thevenin equivalent at terminals *a*-*b* of the following circuit.



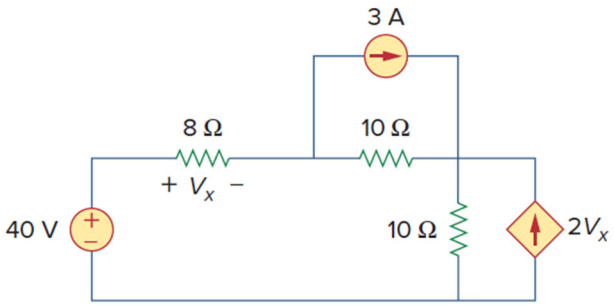
5. Find the Thevenin equivalent looking into terminals *a-b* of the following circuit and solve for i_x.



6. Given the following circuit, obtain the Norton equivalent as viewed from terminals
(a) *a-b*; and
(b) *c-d*.



7. Use source transformation to find the voltage V_x in the following circuit.



8. Find the Thevenin equivalent at terminals *a-b* of the circuit in Fig. Q8.

9. Determine the Norton equivalent at terminals *a-b* for the circuit in Fig. Q9.

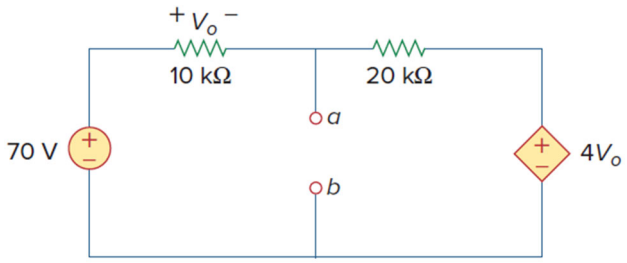


Fig. Q8

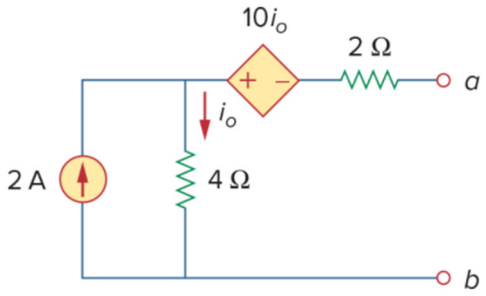


Fig. Q9