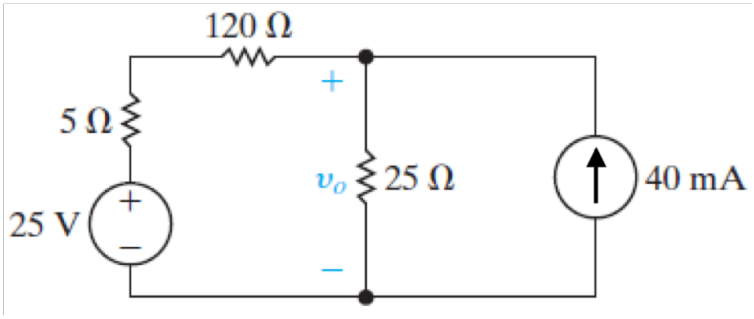
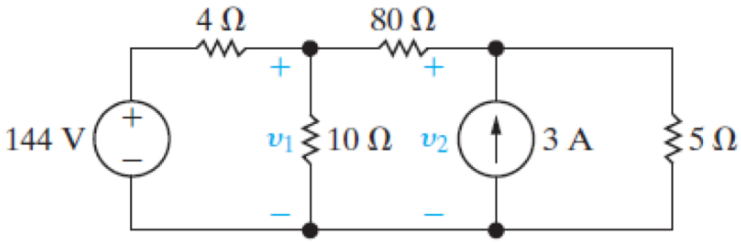
ENGR 2910-101: Circuit Analysis
Homework 4: 02/01/23

Instructor: Brian Rashap
Due: 02/08/23

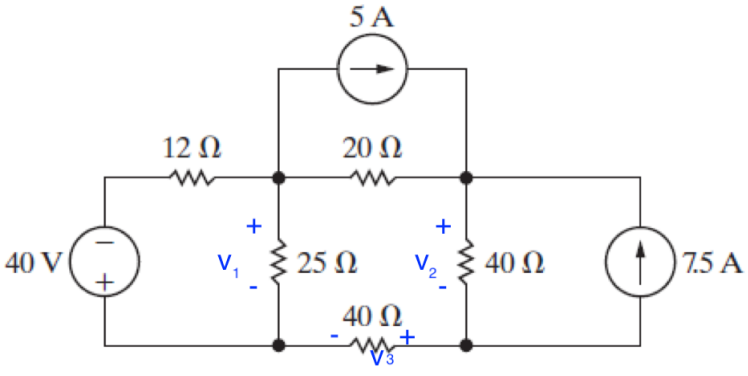
Question 1 [10]
Use the node-voltage method to find: v_o and the power developed in the voltage source.



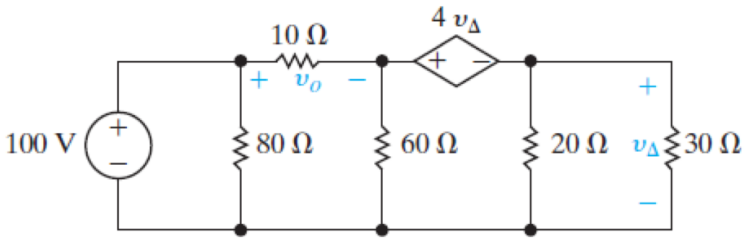
Question 2 [10]
Use the node-voltage method to find v_1 and v_2 in the circuit below.



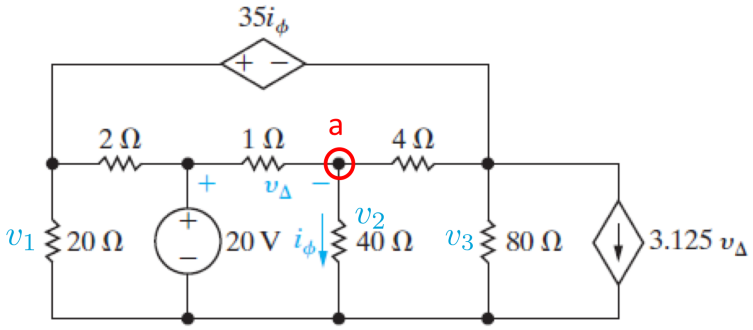
Question 3 [10]
Use the node-voltage method to find the voltages shown, v_1, v_2, and v_3.



Question 4 [10]
Use the node-voltage method to find v_o in the circuit shown below.



Question 5 [10]
Use the node-voltage method to find: [Hints: identify the supernode and also use the node labeled a.]



(a) the voltage across the 20 Ω resistor, v_1,

(b) the voltage across the 40 Ω resistor, v_2,

(c) the voltage across the 80 Ω resistor, v_3,

(d) the controlling voltage, v_Δ,

(e) the controlling current, i_ϕ.