



The Ohio State University
Department of Electrical Engineering

ECE 205

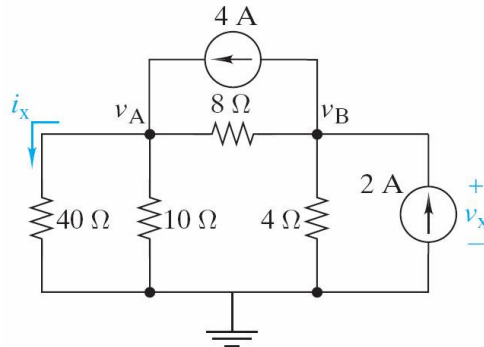
Circuit Analysis

Home work Set # 3

Print Your Name

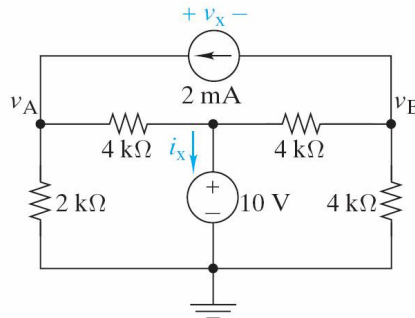
Problem#1: Problem 3-2 textbook

- Formulate node voltage equations for the circuit.
- Solve these equations and find v_x and i_x .



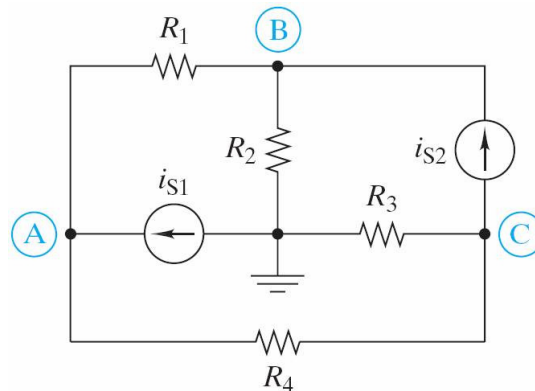
Problem#2: Problem 3-4 textbook

- Formulate node voltage equations for the circuit.
- Solve these equations and find v_x and i_x .



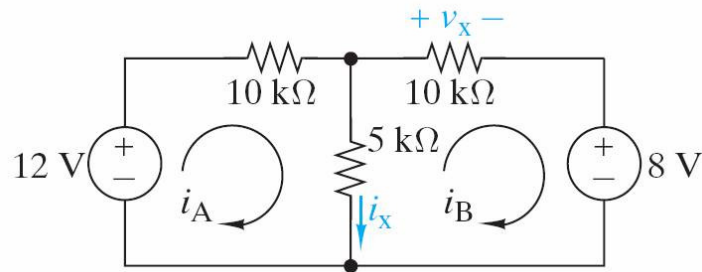
Problem#3: Problem 3-7 textbook

- Formulate the node voltage equations for the circuit.
- Use **MATLAB** to solve for v_A , v_B , v_C when $R_1=1\text{ k}\Omega$, $R_2=2\text{ k}\Omega$, $R_3=4\text{ k}\Omega$, $R_4=2\text{ k}\Omega$, and $i_{s1}=i_{s2}=2\text{ mA}$.



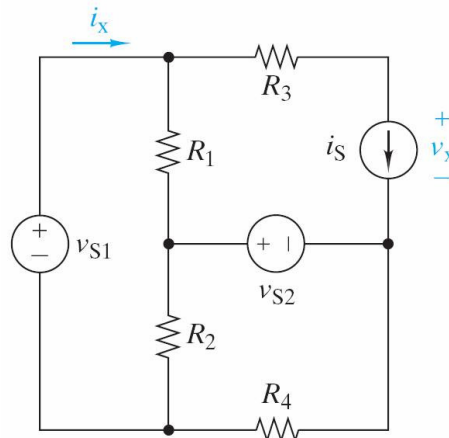
Problem#4: Problem 3-9 textbook

- Formulate the mesh-current equations for the circuit.
- Use equations to find v_x and i_x .



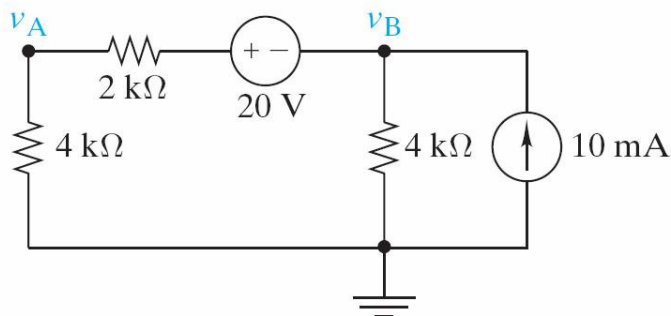
Problem#5: Problem 3-13 textbook

- Formulate mesh-current equations for the given circuit.
- Solve these equations with **MATLAB** to find v_x and i_x when $R_1=, R_2=10\text{ k}\Omega$, $R_3=2\text{ k}\Omega$, $R_4=1\text{ k}\Omega$, $i_s=2.5\text{ mA}$, $v_{s1}=12\text{ V}$ and $v_{s2}=0.5\text{ V}$.
- Find the power supplied by v_{s1} .



Problem#6: Problem 3-19 textbook

Find the node voltages v_A and v_B in the Figure.



Problem#7: Problem 3-20 textbook

Find the mesh currents i_A , i_B and i_C in the circuit.

