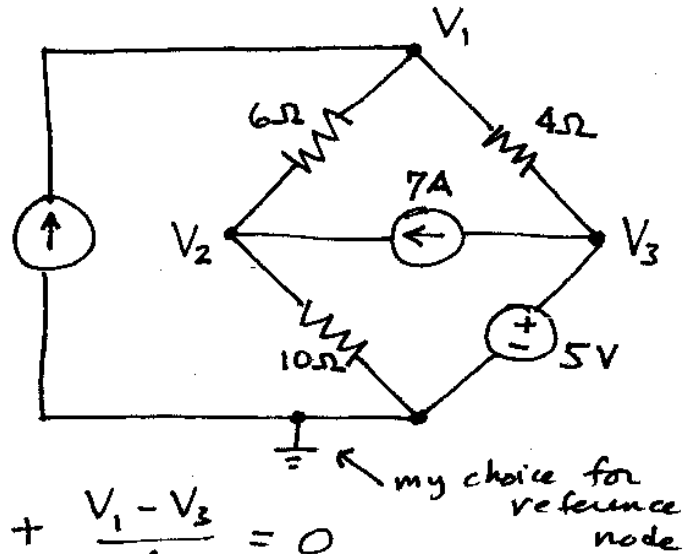


CM:

- ① Write a complete set of equations that can be solved to find all the node voltages (use node voltage analysis technique). Define your node voltages on the circuit.

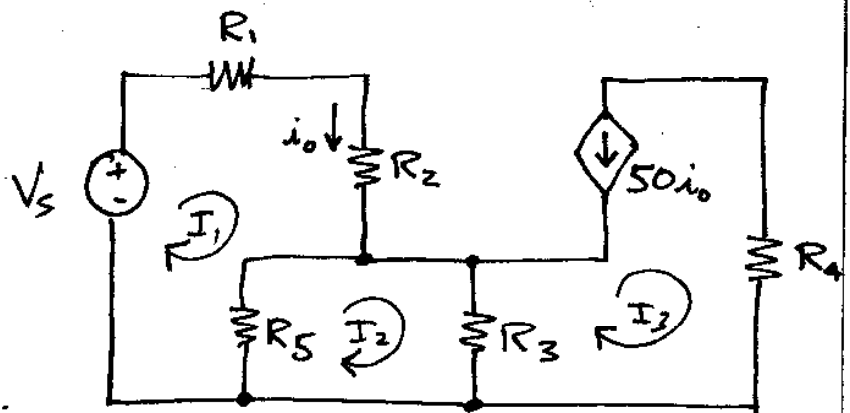


$$1: -3 + \frac{V_1 - V_2}{6} + \frac{V_1 - V_3}{4} = 0$$

$$2: \frac{V_2 - V_1}{6} - 7 + \frac{V_2}{10} = 0$$

$$3: V_3 = 5$$

- ② Write a complete set of equations that can be solved to find all the mesh currents (use mesh current analysis technique).



Define your mesh currents on the circuit.

$$1: -V_s + R_1 I_1 + I_1 R_2 + (I_1 - I_2) R_5 = 0$$

$$2: (I_2 - I_1) R_5 + (I_2 - I_3) R_3 = 0$$

$$3: (I_3 - I_2) R_3 + \dots \text{ (oops... just use } I_3 = -50i_0)$$

$$\hat{e}, i_0 = I_1$$