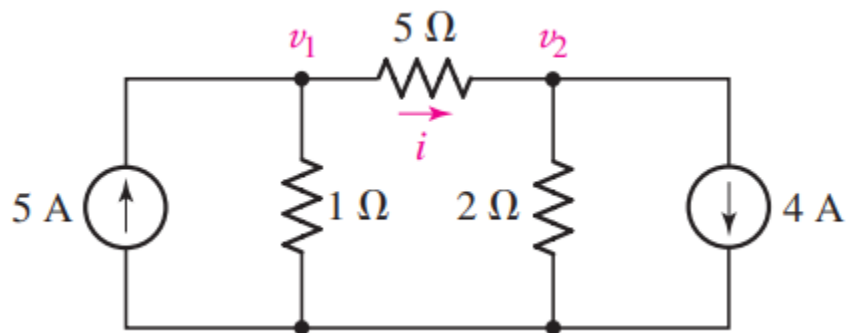# Basic Electronics (ECE113)
Tutorial 2

1. Identify the obvious errors in the following complete set of nodal equations if the last equation is known to be correct:

$$7 = \frac{v_1}{4} - \frac{(v_2 - v)}{1} + \frac{(v_1 - v_3)}{9}$$

$$0 = \frac{(v_2 - v_1)}{2} + \frac{(v_2 - v_3)}{2}$$

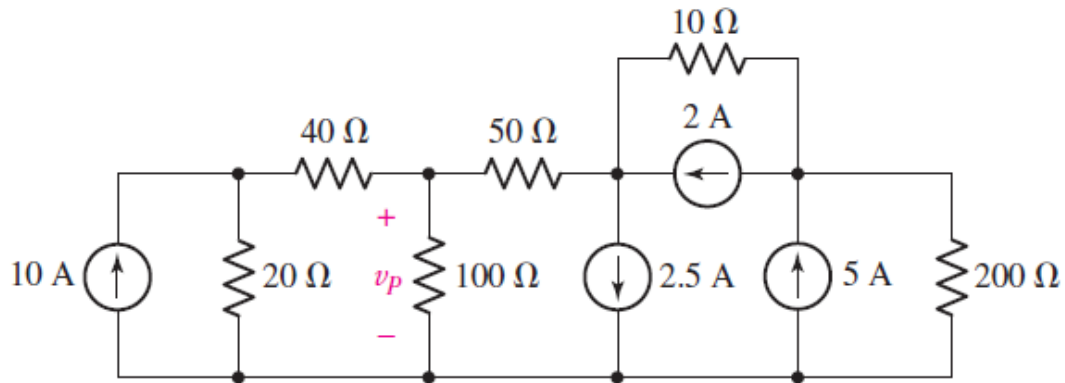$$4 = \frac{v_3}{7} + \frac{(v_3 - v_1)}{19} + \frac{(v_3 - v_2)}{2}$$

2. In the circuit given below, determine the current labeled *'i'* with the assistance of nodal analysis techniques.
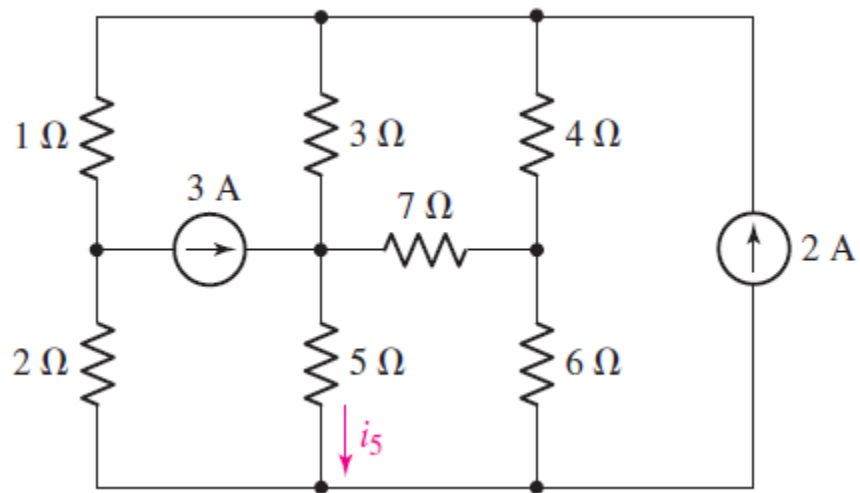

3. For the circuit of Fig. 4.37, determine the value of the voltage labeled v_1 and the current labeled i_1.
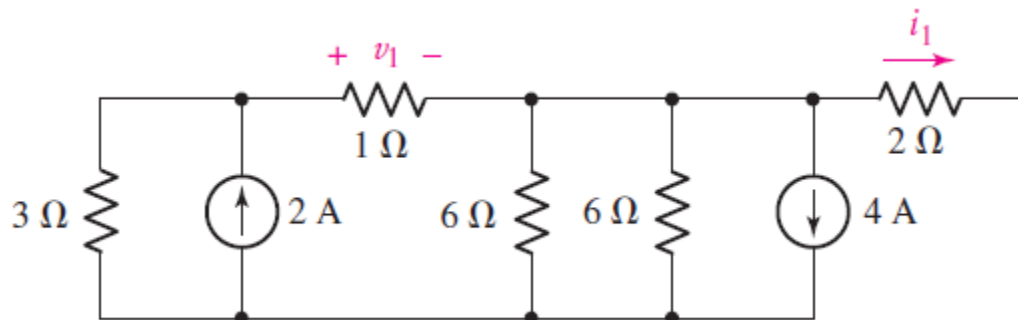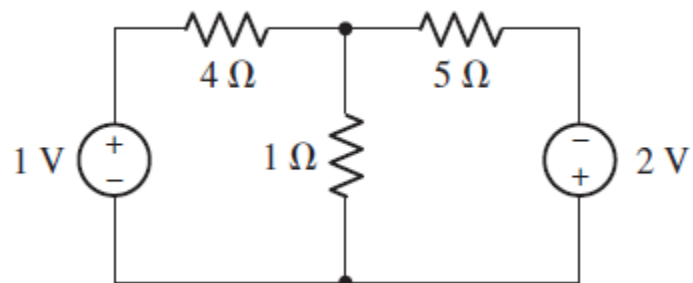
4. Use nodal analysis to find v_p in the circuit shown in Fig. shown below

5. For the circuit below, use nodal analysis to determine the current i_5.

6. Determine the currents flowing out of the positive terminal of each voltage source in the circuit shown below.

7. Use mesh analysis as appropriate to determine the two mesh currents labeled in Fig. shown below

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