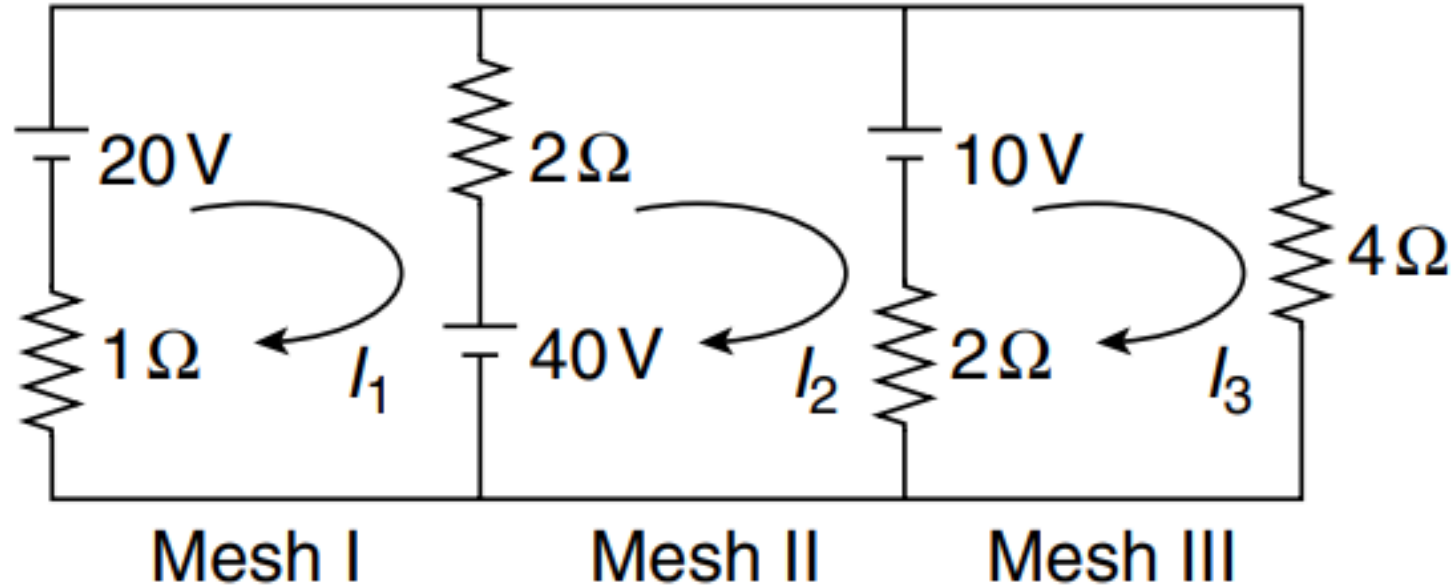


- Steps required for Mesh Analysis:
 1. Assign mesh currents i_1, i_2, \dots, i_n to the n meshes.
 2. Apply KVL to each of the n meshes. Use Ohm's law to express the voltages in terms of the mesh currents.
 3. Solve the resulting n simultaneous equations to get the mesh currents.

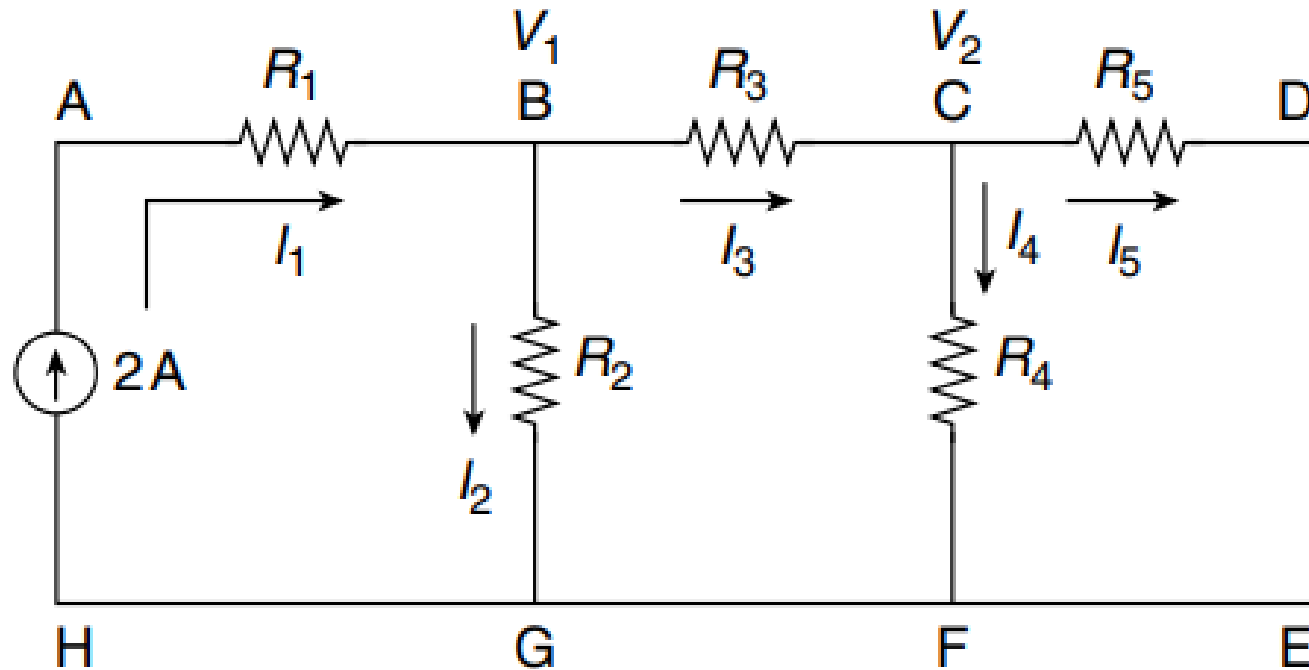
Q: Using mesh analysis to find voltage across the $4\ \Omega$ resistance in the circuit shown in following figure [Ans: 20V]:



- Nodal analysis provides a general procedure for analyzing circuits using node voltages as the circuit variables.

- Steps required for Nodal Analysis:
 1. Select a node as the reference node. Assign voltages v_1, v_2, \dots, v_{n-1} to the remaining $(n - 1)$ nodes. The voltages are referenced with respect to the reference node.
 2. Apply KCL to each of the $(n - 1)$ nonreference nodes. Use Ohm's law to express the branch currents in terms of node voltages.
 3. Solve the resulting simultaneous equations to obtain the unknown node voltages.

Q: Write equations for the given circuit (using nodal analysis):



Q: Find the current in $50\ \Omega$ resistance in the network shown in following figure, using the nodal analysis [$0.294\ \text{A}$]:

