Mesh Current Method

The mesh current method uses KVL, but writes all the voltages in terms of currents.

1. Draw a current loop for all available meshes in the circuit and then label each mesh current (i_1, i_2, …).

➔ *Typically, mesh currents are drawn in a clockwise direction for consistency*

2. Apply **KVL** around each mesh current loop for which the current is unknown.

➔ *Be mindful of the sign convention for currents traversing a voltage source.*

3. Rewrite each unknown voltage in terms of mesh currents using Ohm's law (**ΔV = IR**).

➔ *The net current through a branch will be either: the mesh current only, the sum of two mesh currents or the difference of two mesh currents.*

SUM ($i_1 + i_2$) **DIFFERENCE ($i_1 - i_2$)**

4. Solve the system of equations to get the mesh currents.

5. Use the mesh currents to find the appropriate unknown(s).

NOTE: **Steps 2** & **3** can be done simultaneously once you become familiar with the mesh current method.