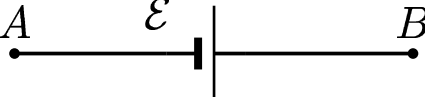


Find the node equation for the junction  $A$ .

- A)  $i_1 + i_2 + i_3 = 0$
- B)  $i_1 - i_2 + i_3 = 0$
- C)  $i_1 + i_2 - i_3 = 0$
- D)  $i_1 - i_2 - i_3 = 0$

For the junction  $A$ , the sum of the currents exiting minus the sum of the currents entering the junction is zero,  $i_1 + i_2 + i_3 = 0$ .

Convention 1:   $\Delta V = V_B - V_A = +\mathcal{E}$

  $\Delta V = V_B - V_A = -\mathcal{E}$

Convention 2:   $\Delta V = V_D - V_C = -iR$

  $\Delta V = V_D - V_C = +iR$

Convention 3: Currents into a junction are positive and currents out of a junction are negative.

Answer **A**.