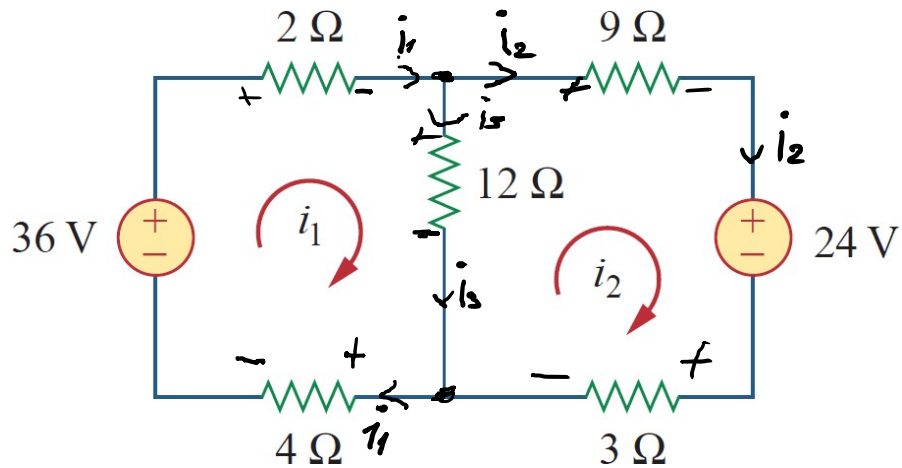


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Find the mesh currents i_1 , and i_2 .



$$i_1 = i_2 + i_3$$

$$i_3 = i_1 - i_2$$

$$-36 + 2 \cdot i_1 + 12 \cdot i_3 + 4i_1 = 0$$

$$-36 + 2i_1 + 12(i_1 - i_2) + 4i_1 = 0$$

$$18i_1 - 12i_2 = 36 \text{ Eq 1}$$

$$+ 24 + 3i_2 - 12(i_3) + 9i_2 = 0$$

$$+ 3i_2 - 12(i_1 - i_2) + 9i_2 = -24$$

$$+ 3i_2 - 12i_1 + 12i_2 + 9i_2 = -24$$

$$-12i_1 + 24i_2 = -24 \text{ Eq2}$$

$$2[18i_1 - 12i_2 = 36] \Rightarrow 36i_1 - 24i_2 = 72$$

$$3[-12i_1 + 24i_2 = -24] \Rightarrow -36i_1 + 72i_2 = -72$$

$$48i_2 = 0 \quad i_2 = 0$$

$$18i_1 - 12 \cdot 0 = 36 \Rightarrow i_1 = 2$$