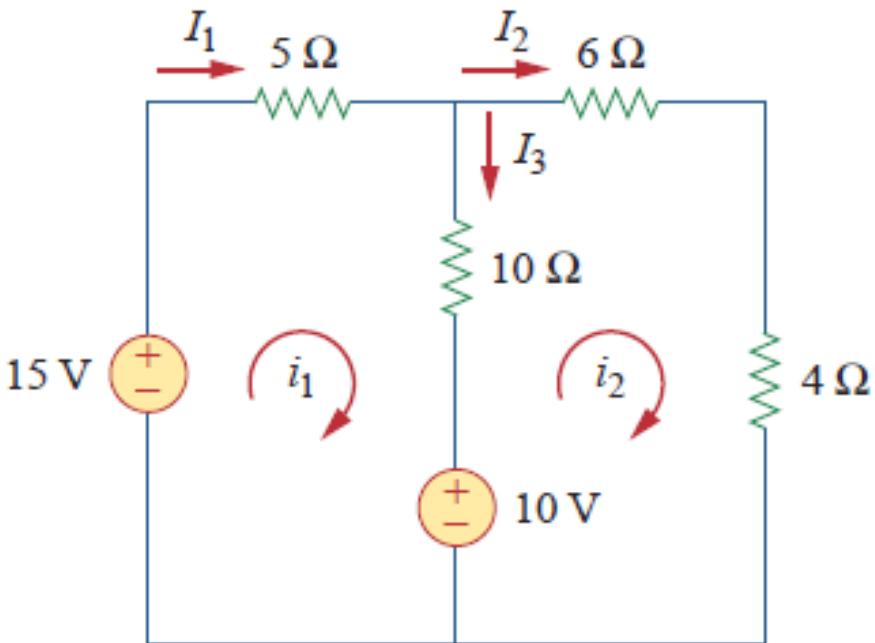


$$-V_1 + R_1 i_1 + R_3(i_1 - i_2) = 0$$

$$(R_1 + R_3)i_1 - R_3 i_2 = V_1$$

$$R_2 i_2 + V_2 + R_3(i_2 - i_1) = 0$$

$$-R_3 i_1 + (R_2 + R_3)i_2 = -V_2$$

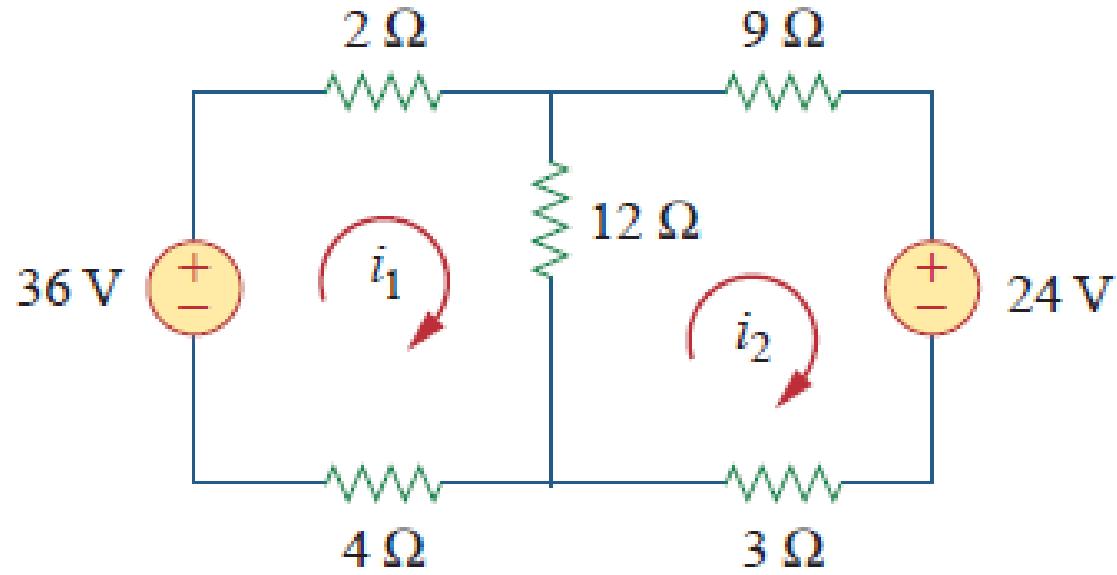


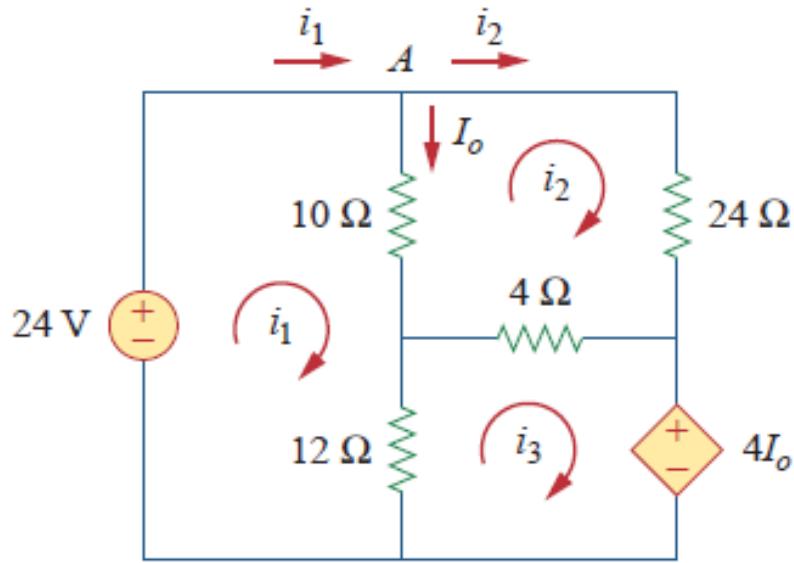
$$-15 + 5i_1 + 10(i_1 - i_2) + 10 = 0$$

$$3i_1 - 2i_2 = 1$$

$$6i_2 + 4i_2 + 10(i_2 - i_1) - 10 = 0$$

$$i_1 = 2i_2 - 1$$





$$-24 + 10(i_1 - i_2) + 12(i_1 - i_3) = 0$$

$$11i_1 - 5i_2 - 6i_3 = 12$$

$$24i_2 + 4(i_2 - i_3) + 10(i_2 - i_1) = 0$$

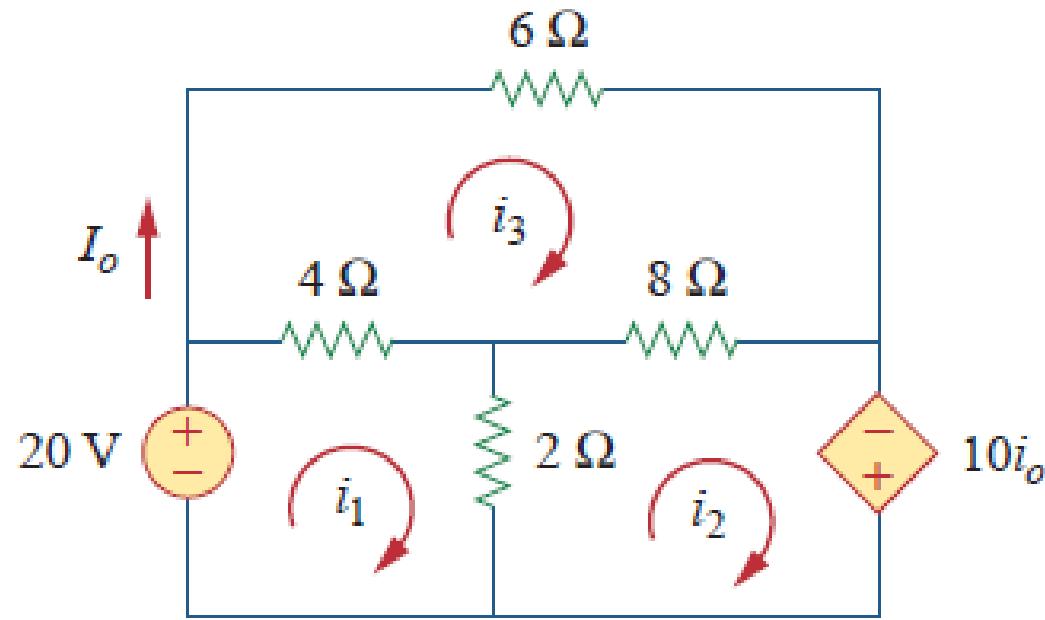
$$-5i_1 + 19i_2 - 2i_3 = 0$$

$$4I_o + 12(i_3 - i_1) + 4(i_3 - i_2) = 0$$

$$I_o = i_1 - i_2,$$

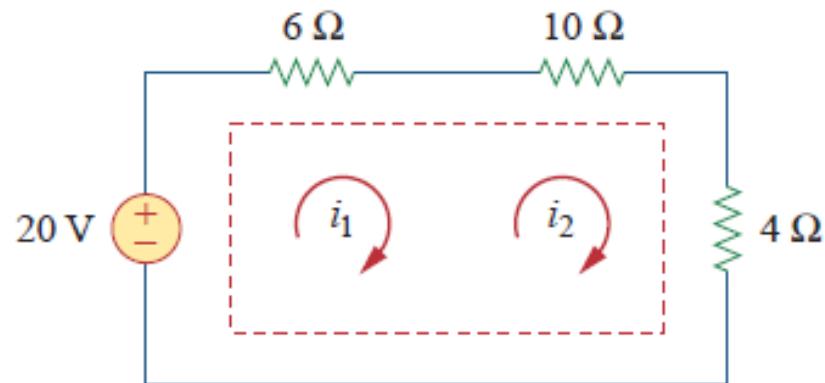
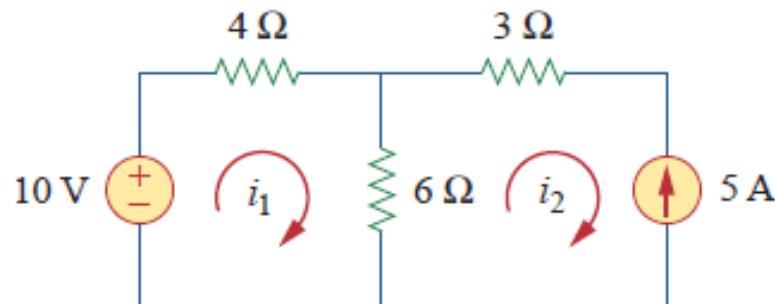
$$4(i_1 - i_2) + 12(i_3 - i_1) + 4(i_3 - i_2) = 0$$

$$-i_1 - i_2 + 2i_3 = 0$$



$$i_2 = -5 \text{ A}$$

$$-10 + 4i_1 + 6(i_1 - i_2) = 0 \quad \Rightarrow \quad i_1 = -2 \text{ A}$$

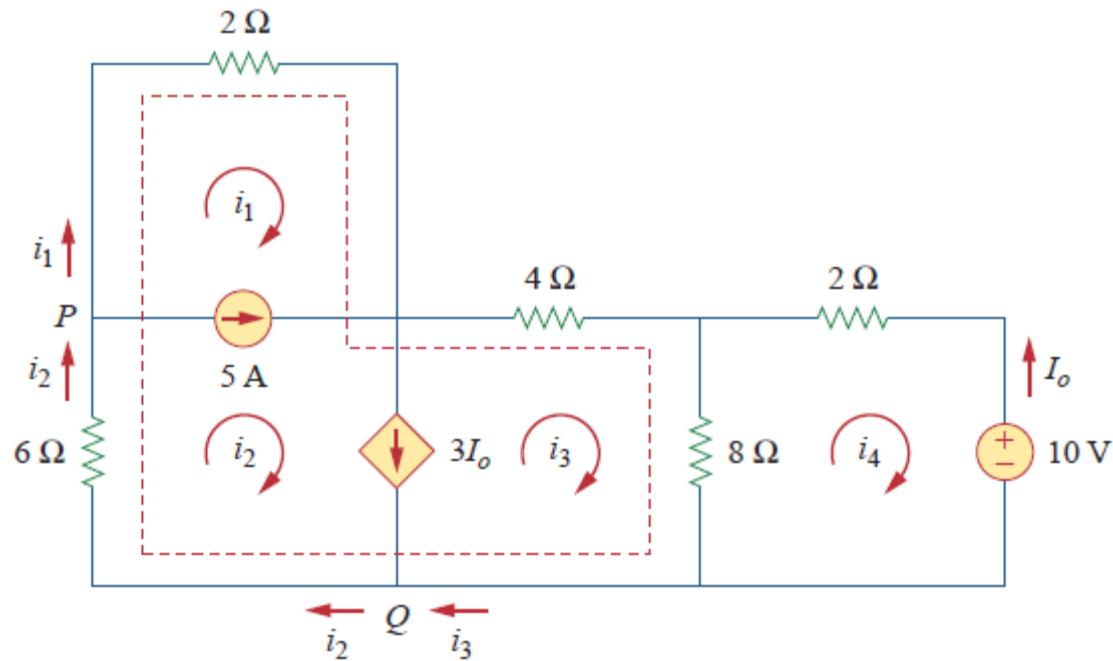


$$i_1 = -3.2 \text{ A}, \quad i_2 = 2.8 \text{ A}$$

$$-20 + 6i_1 + 10i_2 + 4i_2 = 0$$

$$6i_1 + 14i_2 = 20$$

$$i_2 = i_1 + 6$$



$$2i_1 + 4i_3 + 8(i_3 - i_4) + 6i_2 = 0$$

$$i_1 + 3i_2 + 6i_3 - 4i_4 = 0$$

$$i_2 = i_1 + 5$$

$$i_2 = i_3 + 3I_o$$

$$I_o = -i_4,$$

$$i_2 = i_3 - 3i_4$$

$$2i_4 + 8(i_4 - i_3) + 10 = 0$$

$$5i_4 - 4i_3 = -5$$

$$i_1 = -7.5 \text{ A}, \quad i_2 = -2.5 \text{ A}, \quad i_3 = 3.93 \text{ A}, \quad i_4 = 2.143 \text{ A}$$

