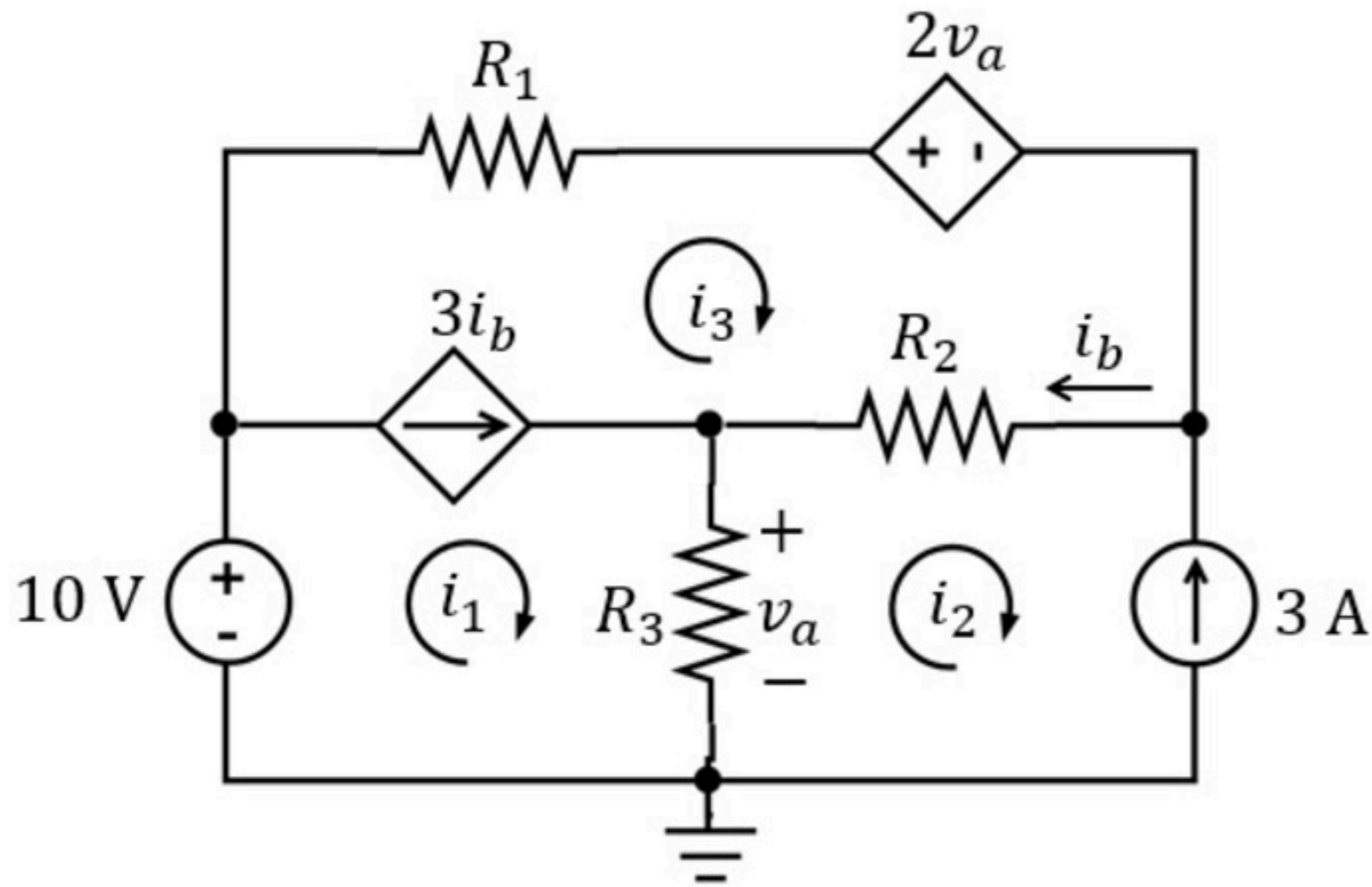


# Nodal Mesh 010

Problem has been graded.

Find the mesh currents  $i_1$ ,  $i_2$ , and  $i_3$ .



Given Variables:

$R_1$  : 8 ohm

$R_2$  : 2 ohm

$R_3$  : 2 ohm

Calculate the following:

$i_1$  (A) :

$i_2$  (A) :

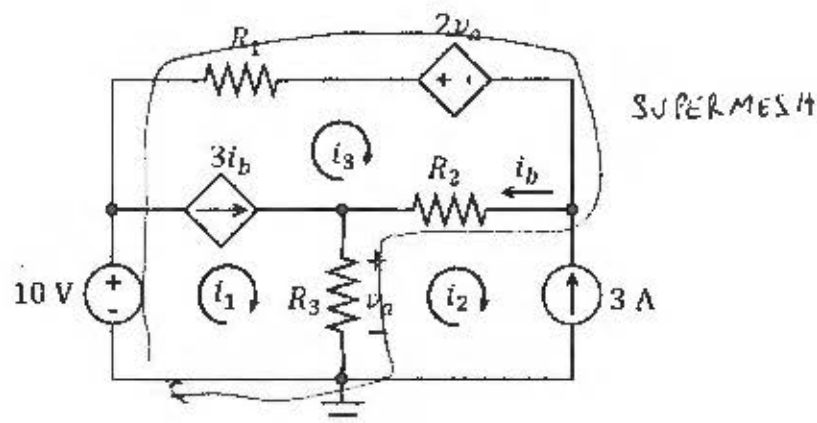
$i_3$  (A) :

Find the mesh currents  $i_1$ ,  $i_2$ , and  $i_3$ .

$$R_1 = 16 \Omega$$

$$R_2 = 1 \Omega$$

$$R_3 = 1 \Omega$$



$$\otimes \quad i_2 = -3 \text{ A}$$

$$\otimes \quad i_1 - i_3 = 3 \cdot i_b = 3(i_3 - i_2) = 3i_3 + 9 \Rightarrow i_1 = 4i_3 + 9 \quad (1)$$

$$\otimes \quad \text{KVL SUPERMESH: } -10 + 16 \cdot i_3 + 2 \cdot (R_3)(i_1 + 3) + 1(i_3 + 3) + 1 \cdot (i_1 + 3) = 0$$

$$\Rightarrow -10 + 16i_3 + 8i_3 + 24 + i_3 + 3 + 4i_3 + 12 = 0$$

$$\Rightarrow 29i_3 = -29$$

$$\Rightarrow \boxed{i_3 = -1 \text{ A}} \quad \boxed{i_1 = 5 \text{ A}}$$

CHECK KVL

