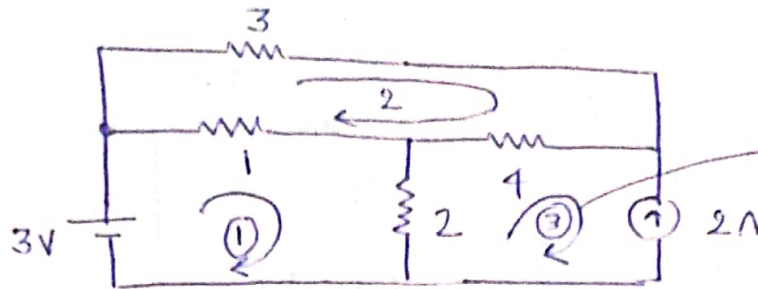


Solve By Using KVL

Prob-1

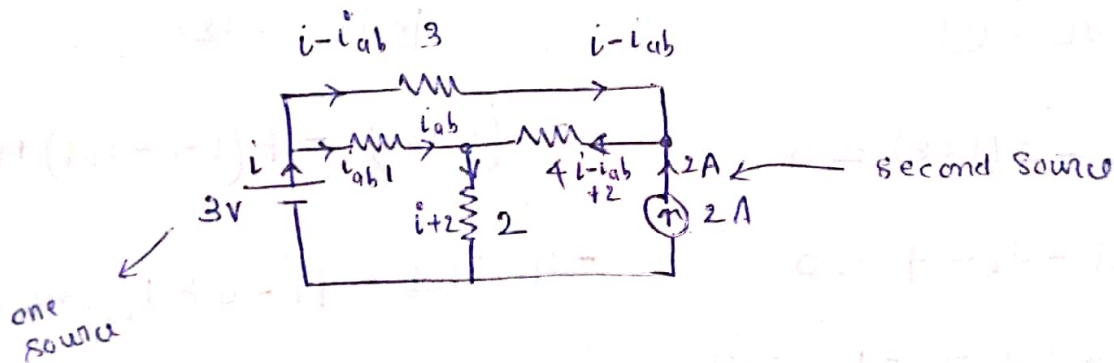


do not apply KVL in this loop as it comprises of current source.

Solⁿ

step-1

start flowing current in the circuit from source and see how many unknown.

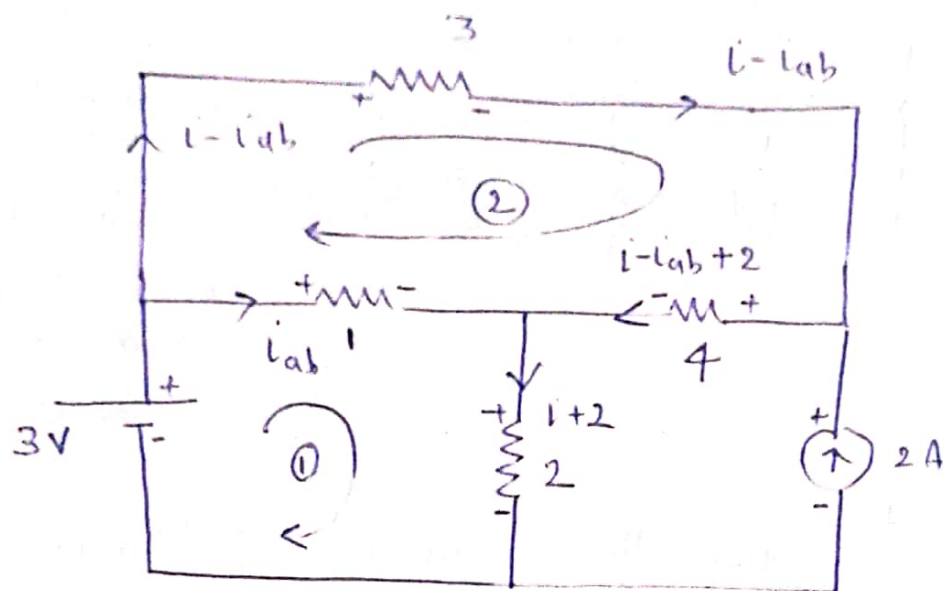


step-2 observe fig. above. two unknown " i " and " i_{ab} "

That means two KVL Equation are required.

to solve this problem.

Step 3



KVL - (1)

$$3 - i_{ab} - 2(i+2) = 0$$

$$3 - i_{ab} - 2i - 4 = 0$$

$$2i + i_{ab} = -1 \quad \text{--- (1)}$$

KVL - (2)

$$-3(i - i_{ab}) - 4(i+2 - i_{ab}) + i_{ab} = 0$$

$$-3i + 3i_{ab} - 4i - 8 + 4i_{ab} + i_{ab} = 0$$

$$8i_{ab} - 7i = 8 \quad \text{--- (2)}$$

from (1) and (2)

Multiply (1) by (-8)

$$-16i - 8i_{ab} = 8$$

$$-7i + 8i_{ab} = 8 \quad \text{--- (2)}$$

$$\text{add, } -23i + 0 = 16$$

$$i = -\frac{16}{23}$$