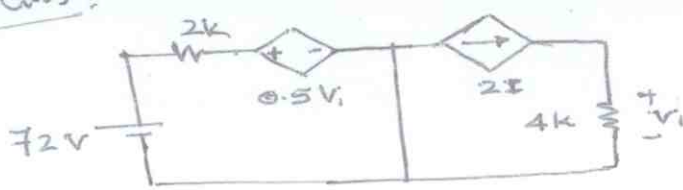


# Exercises

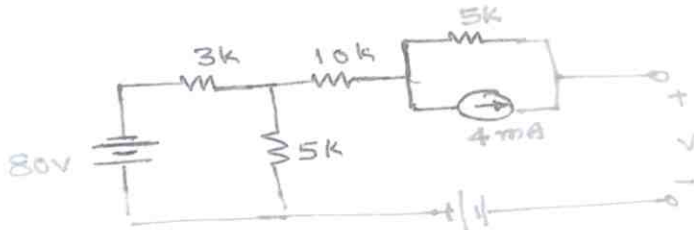
①



Calculate  $V_1$

Ans:  $V_1 = 96V$

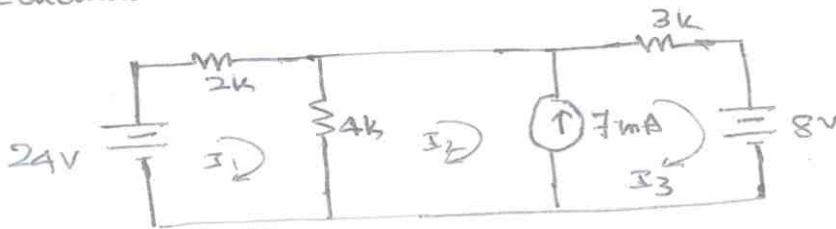
②



Find  $V$

Ans:  $-45V$

③ Calculate mesh currents

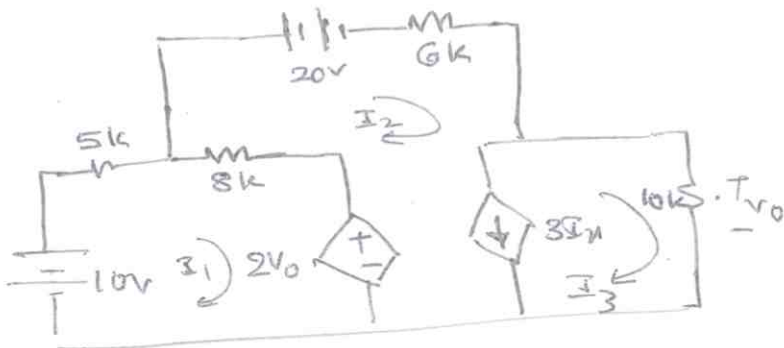


Ans:  $I_1 = 2mA$

$I_2 = -3mA$

$I_3 = 4mA$

④ Determine the mesh currents



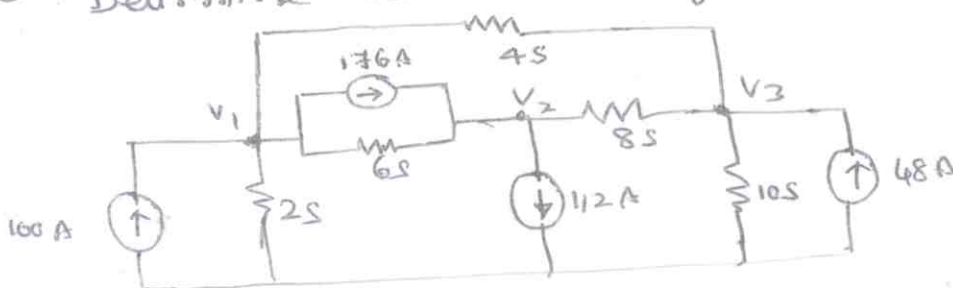
Ans

$I_1 = -3.26mA$

$I_2 = -1.99mA$

$I_3 = 1.82mA$

⑤ Determine the node voltages



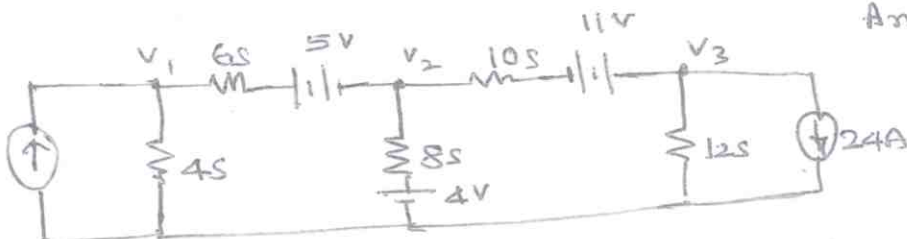
Ans:

$V_1 = 3V$

$V_2 = 4V$

$V_3 = 5V$

⑥ Determine node voltages

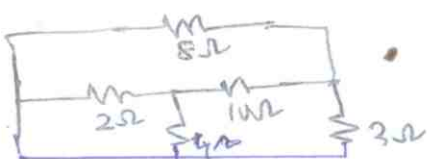


Ans:  $V_1 = 5V$

$V_2 = 6V$

$V_3 = 4V$

⑦ Use  $\Delta$ -Y transformation in finding voltage  $V$  that causes 2A to flow through the 3 $\Omega$  resistor.



Ans

$V = 19.5V$