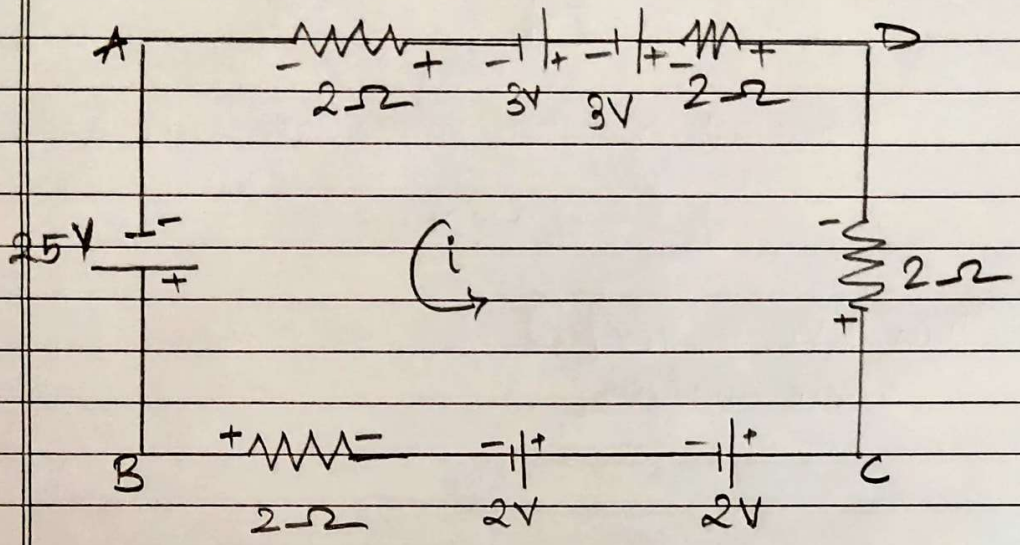
EXPERIMENT: No. 3 Verification of KVL

Page No. Date

01 Apply KVL and find voltage across the given circuit resistors.



Applying KVL to loop ABCDA.

Assume a current 'i' flows in anticlockwise direction.

$$\therefore V_2 + V_2 + V_2 + V_2 = 2 + 2 - 3 - 3 + 25$$

$$4V_2 = 23$$

$$4 \times 2 \times I_2 = 23$$

$$\boxed{I = 2.875\ A}$$

* Added the voltages as there is same current flowing through same value of resistors.

$$R_{net} = 8\ \Omega$$

$$V_{net} = I R_{net}$$

$$= 2.875 \times 8 = 23$$

Teacher's Sign. : _____

Applying voltage division to find voltage across each resistor.

$$V_2 = \frac{23 \times 2}{8}$$

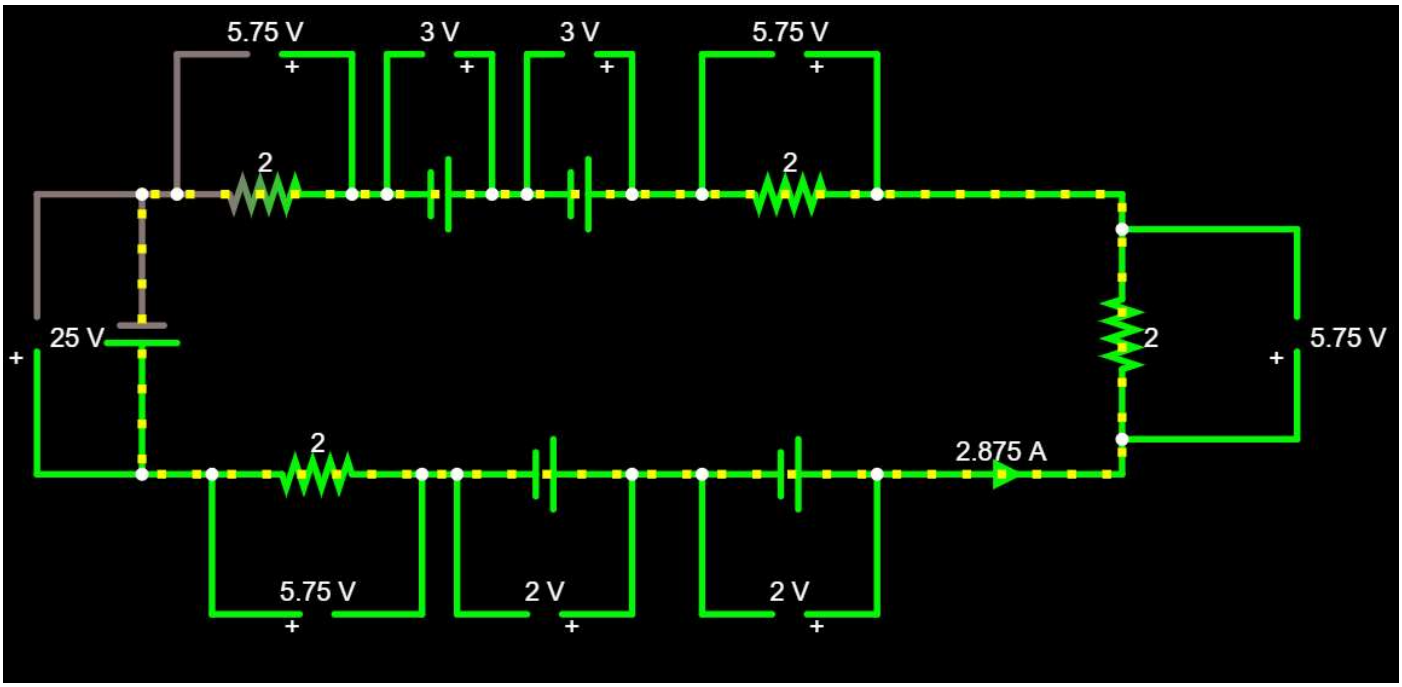
(This is same as applying ohm's Law $V = IR$)

$$\boxed{V_2 = 5.75\ V}$$

Since all resistor values are same and currents too

$$V_{all} = 5.75\ V$$

Thus KVL is verified fom from the above analysis.


5.75 V
3 V
3 V
5.75 V
2
2
25 V
2
5.75 V
2
2.875 A
5.75 V
2 V
2 V