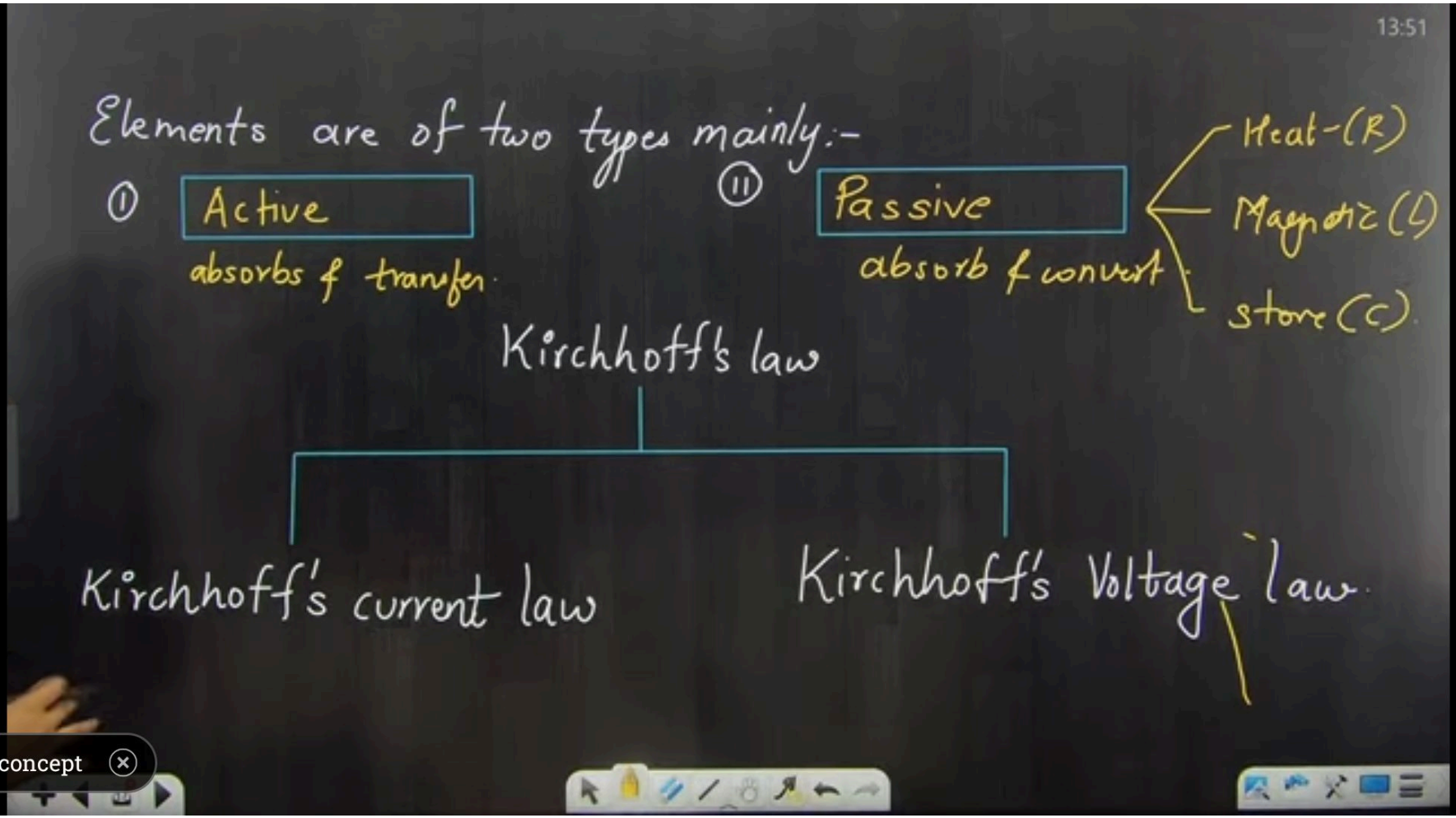


Some basic definitions :-

Node :- A node of a network is an equipotential surface at which two or more circuital elements are joined.

Junction :- A junction is a point in electric circuit where three or more element is joined.

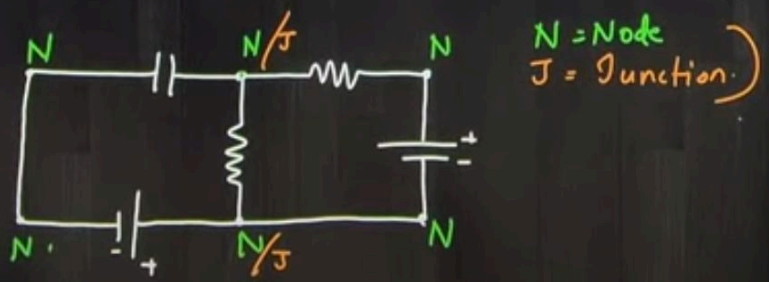
Some basic definitions :-

13:55

Node :- A node of a network is an equipotential surface at which two or more circuital elements are joined.

Junction :- A junction is a point in electric circuit where three or more element is joined.

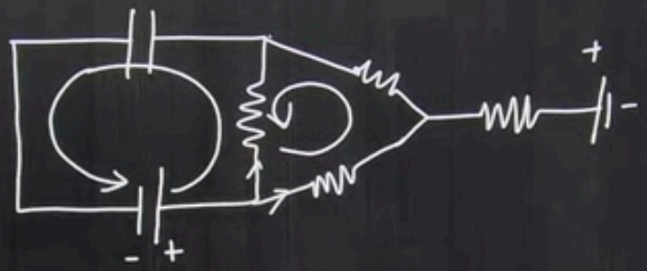
All junction can be node but all nodes are not junction.



N = Node
J = Junction

13:58

Loop :- A loop is any closed path of electric network.

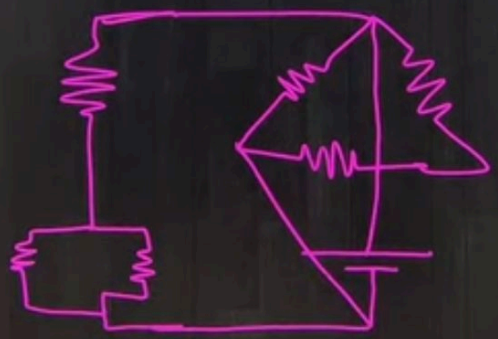


Mesh :- A mesh is most elementary form of loop, it cannot be further divided into loop.

13:59

- +

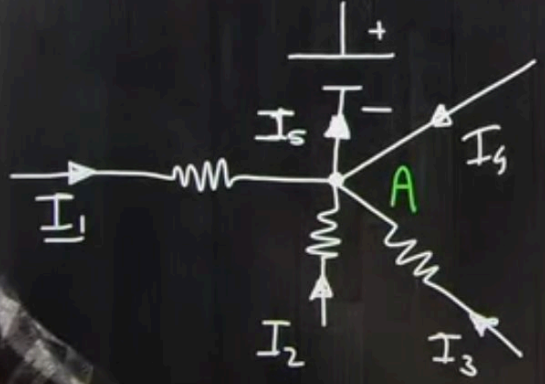
Mesh:- A mesh is most elementary form of loop, it cannot be further divided into loop.



14:05

Kirchhoff's current law

The algebraic sum of currents leaving or entering a node is equal to zero.

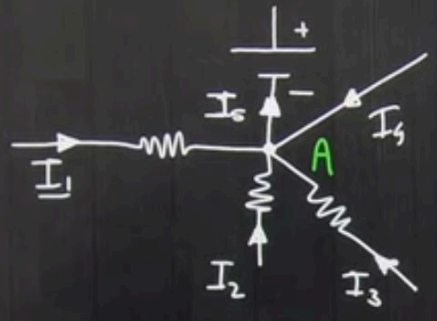


① Applying KCL at node A

② Current entering towards node is +ve

③ Current leaving, away from the node is −ve

entering a node is equal to zero.



① Applying KCL at node A.

② Current entering towards node is +ve.

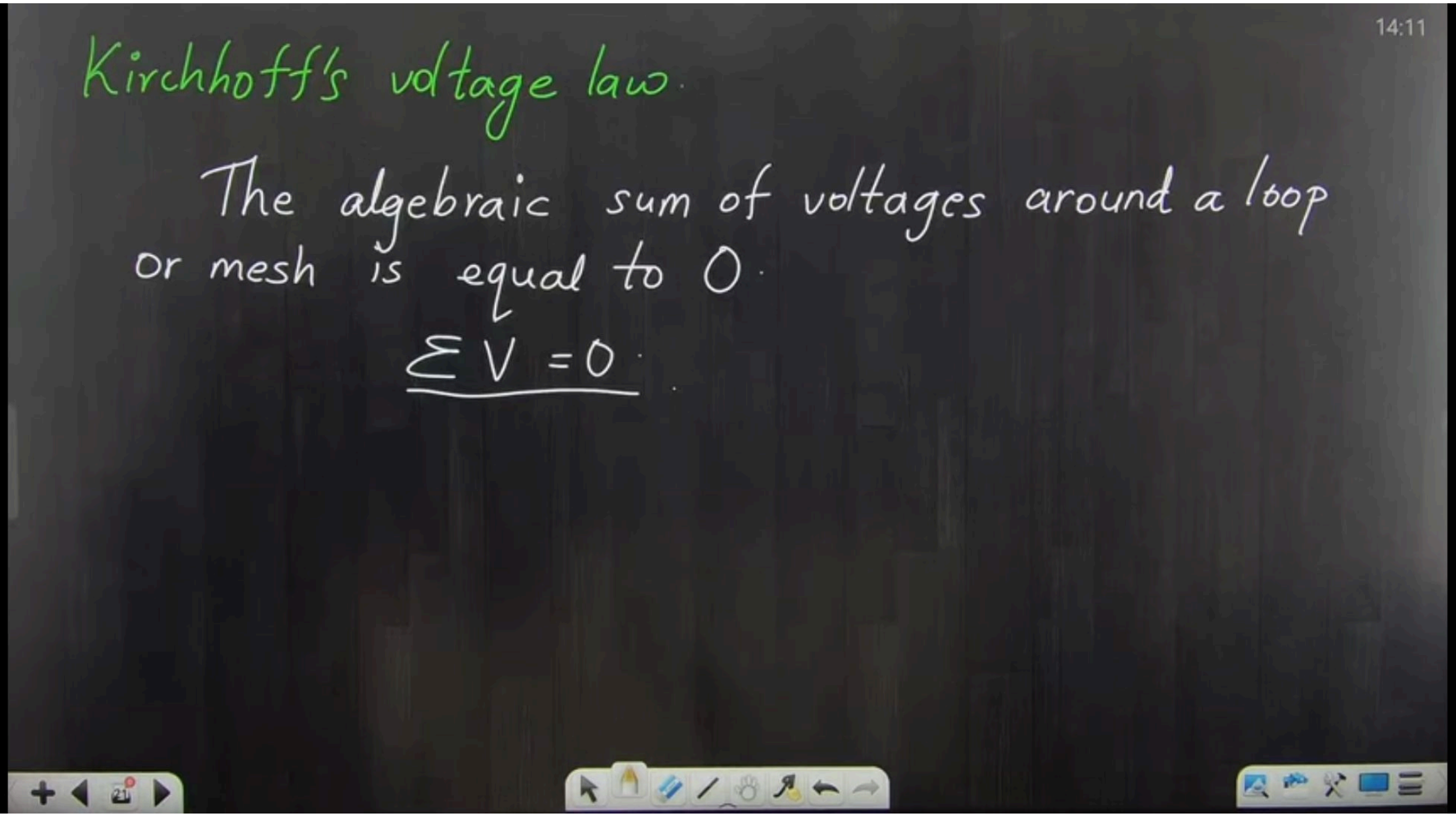
③ Current leaving, away from the node is −ve.

$$\Sigma I = 0$$

$$+I_1 + I_2 + I_3 + I_4 - I_5 = 0$$

$$I_1 + I_2 + I_3 + I_4 = I_5$$

At any node Current entering = Current leaving.


14:11
Kirchhoff's voltage law.
The algebraic sum of voltages around a loop or mesh is equal to 0.
$\Sigma V = 0$.

The algebraic sum of voltages around a loop or mesh is equal to 0.

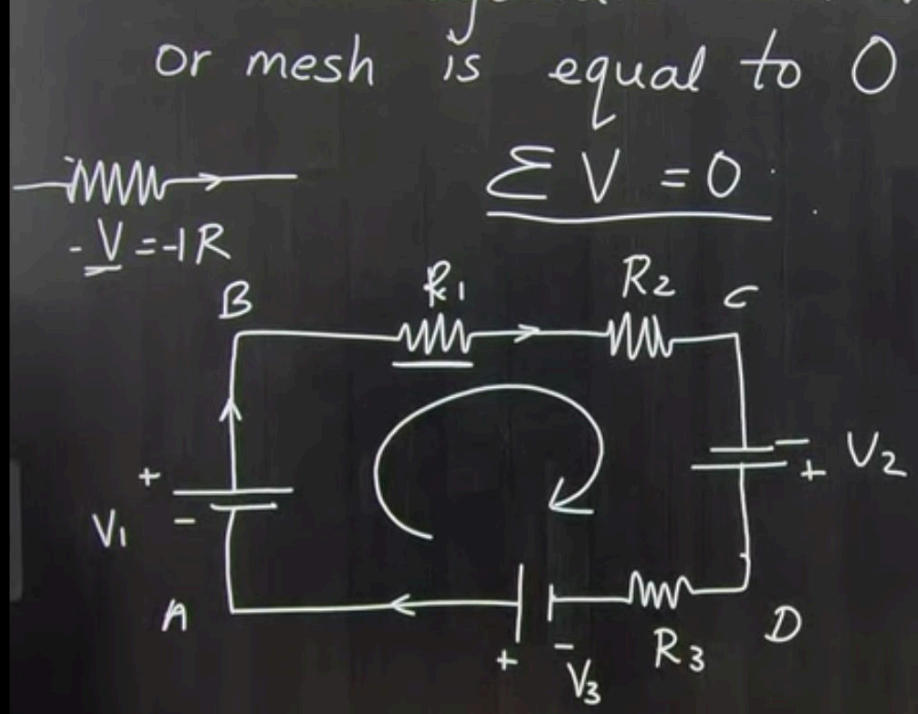
$$\Sigma V = 0$$

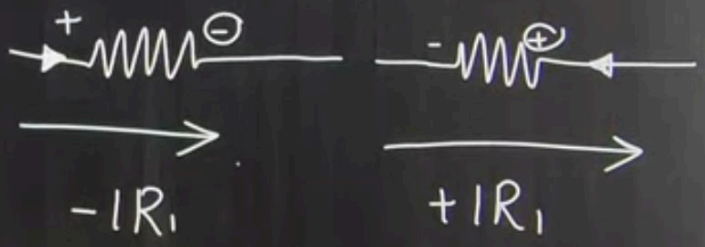
14:18

① Applying KVL to loop ABC

② $+V_1$

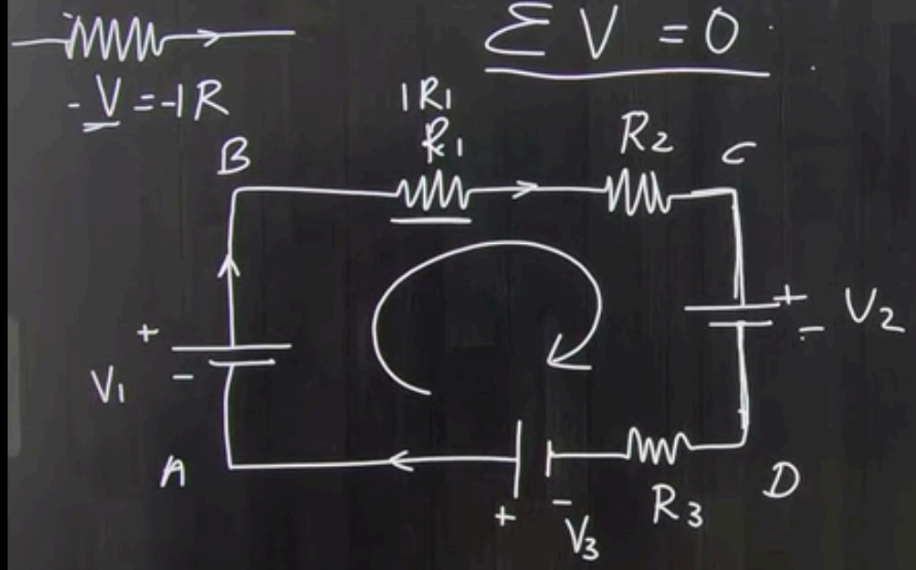
Current enters in + & leaves from −.





The algebraic sum of voltages around a loop or mesh is equal to 0.

$\Sigma V = 0$



① Applying KVL to loop ABCD

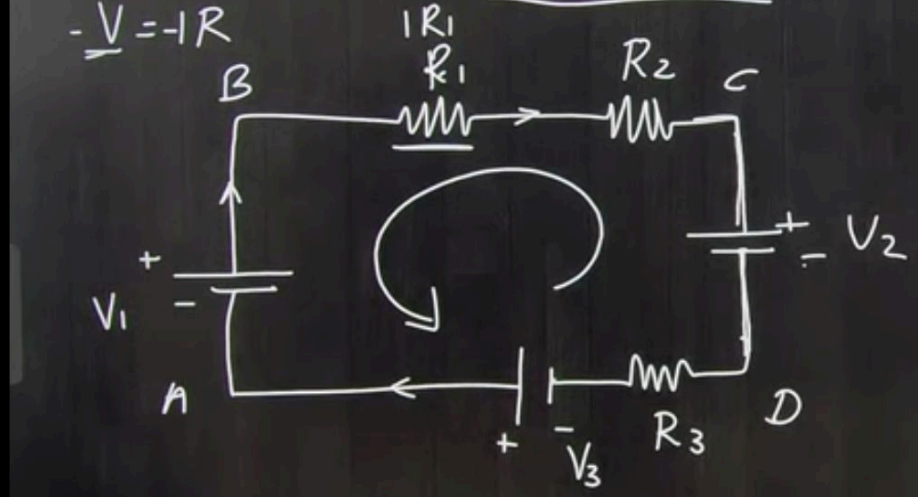
② $+V_1 - IR_1 - IR_2 - V_2 - IR_3 + V_3 = 0$

14:21

The algebraic sum of voltages around a loop or mesh is equal to 0.

$\Sigma V = 0$

$-V = -IR$



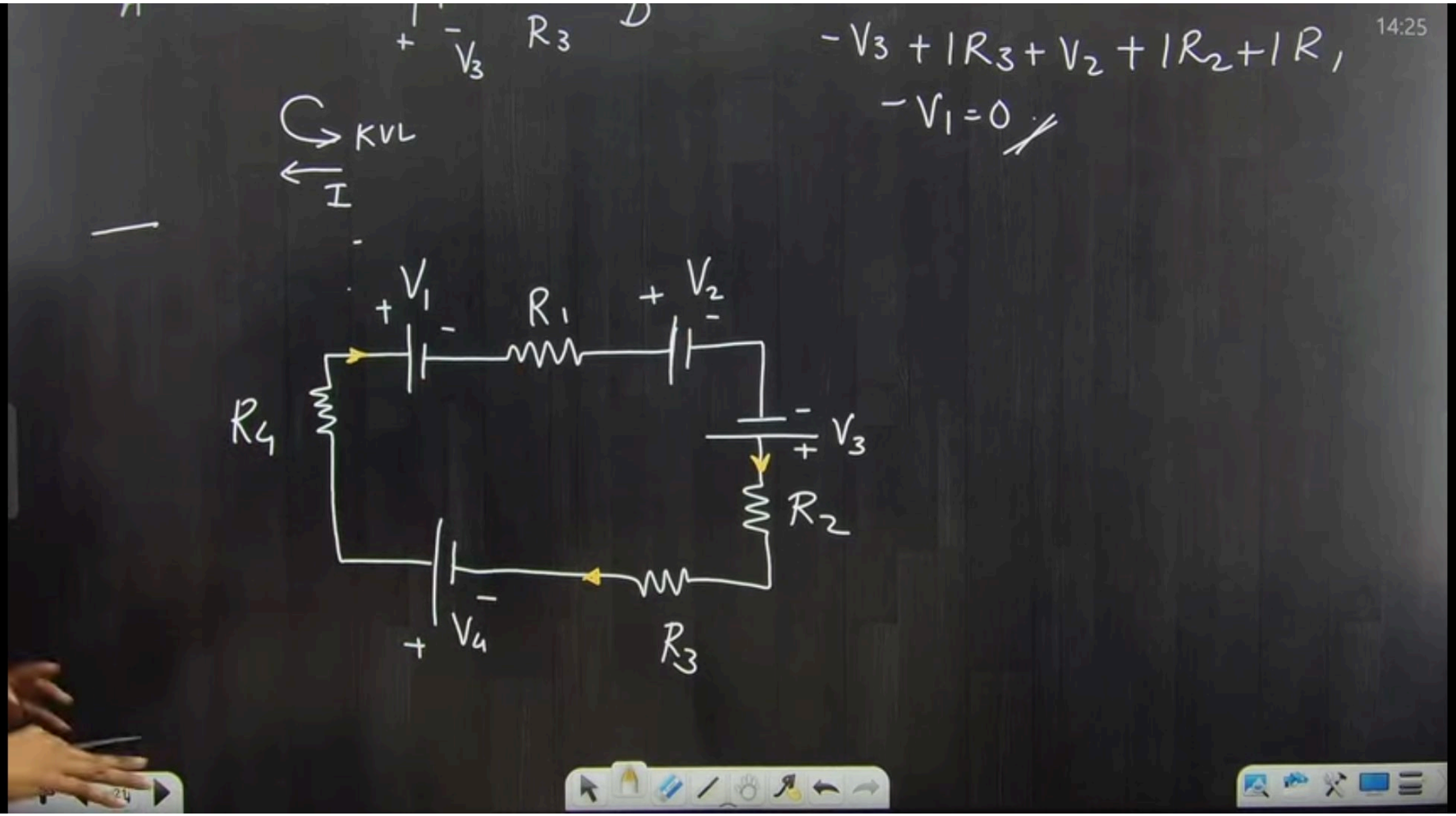
① Applying KVL to loop ABCD

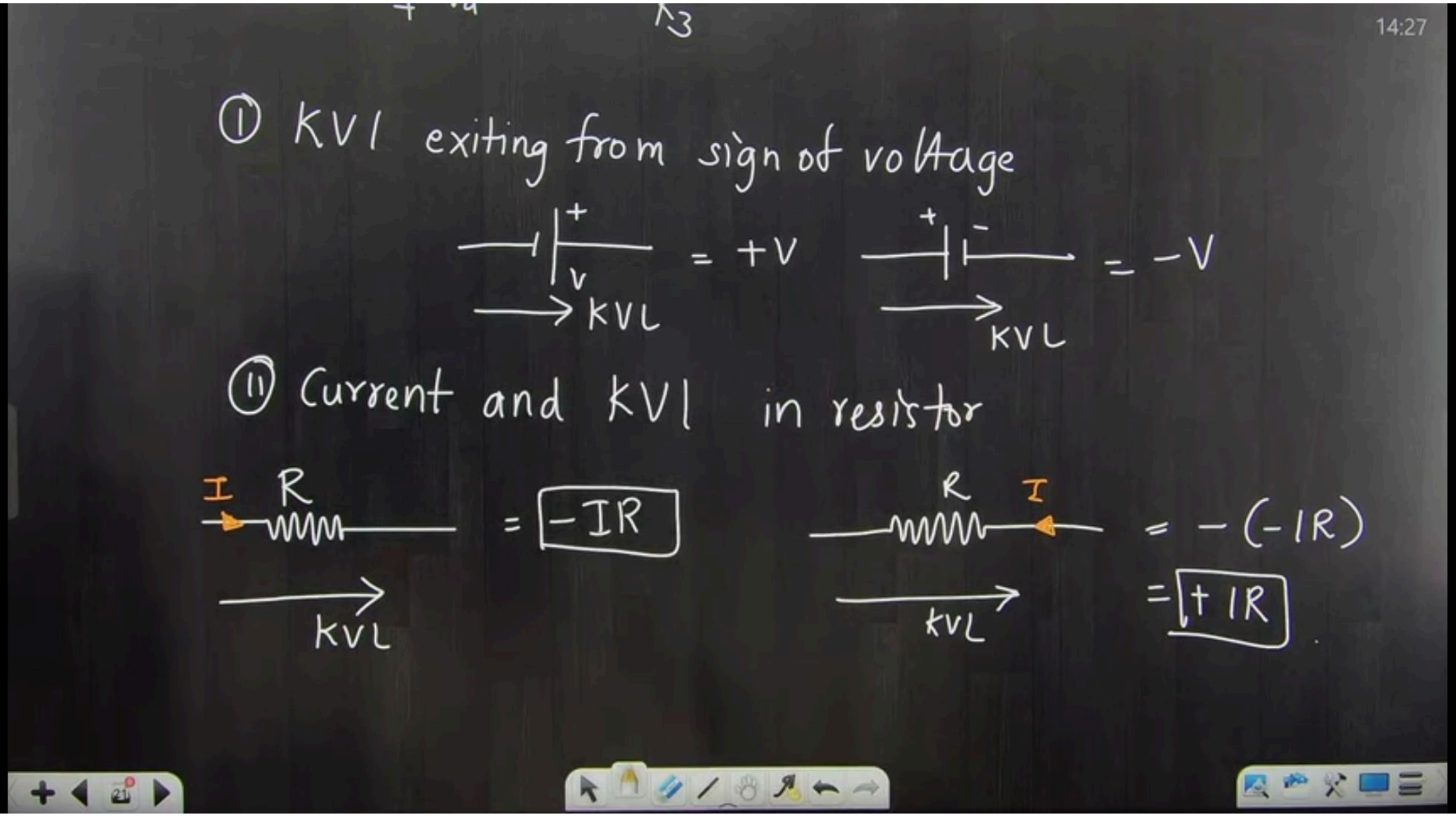
② $+V_1 - IR_1 - IR_2 - V_2 - IR_3 + V_3 = 0$

Anticlockwise

$-V_3 - (-IR_3) + V_2 - (-IR_2) - (-IR_1) - V_1 = 0$

$-V_3 + IR_3 + V_2 + IR_2 + IR_1 - V_1 = 0$


+ V3 − R3
KVL
I
−V3 + IR3 + V2 + IR2 + IR1
−V1 = 0
14:25
+ V1 − R1 + V2 −
R4
V3
R2
+ V4 −
R3


14:27
① KVl exiting from sign of voltage
+
V
KVL
= +V
+
-
KVL
= -V
⑪ Current and KVl in resistor
I R
= -IR
KVL
R I
= -(-IR)
= +IR
KVL