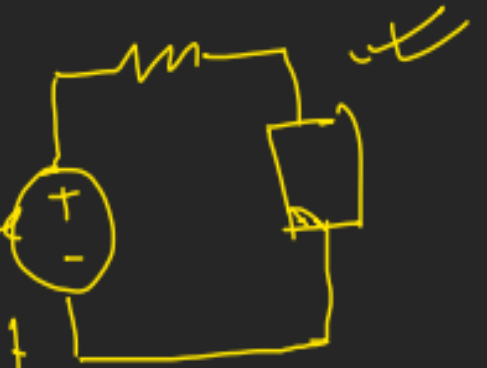
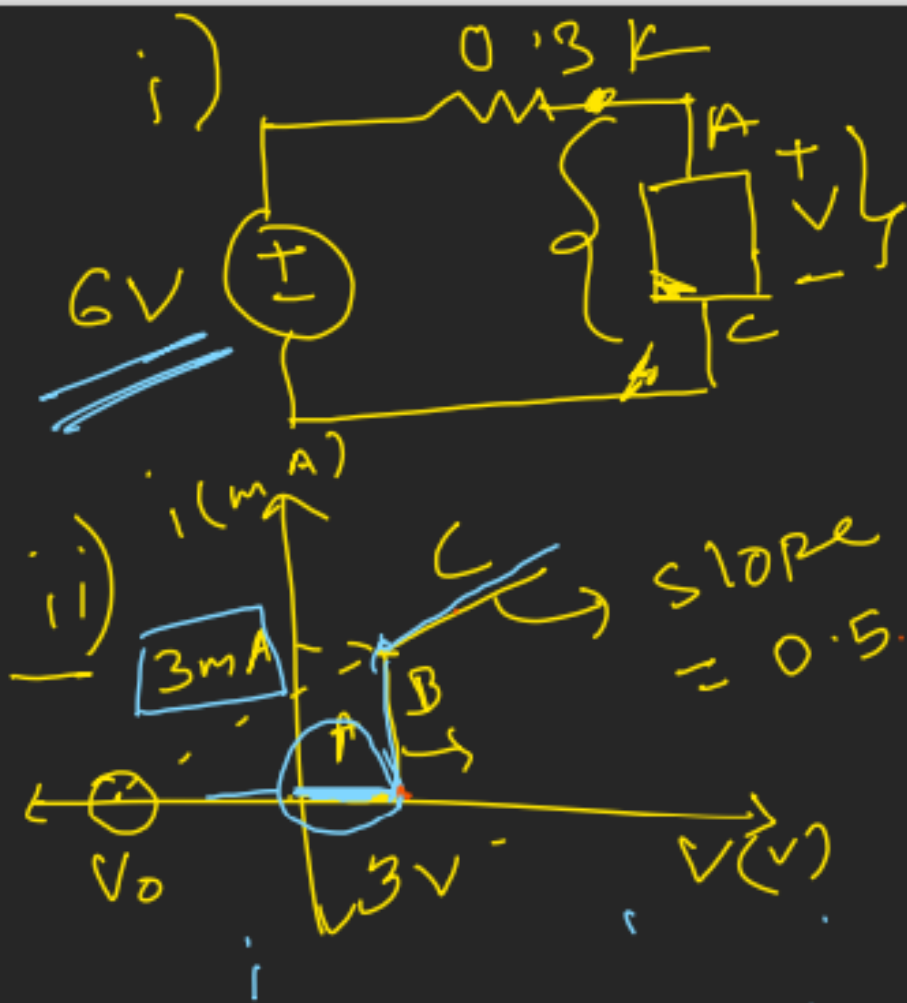


Method of Assumed State:

- Assume the state of the device
- Solve the circuit for that model
- Check
- Repeat (1-3) if mistake





Modelling:

(A)  $V < 3V$  ;

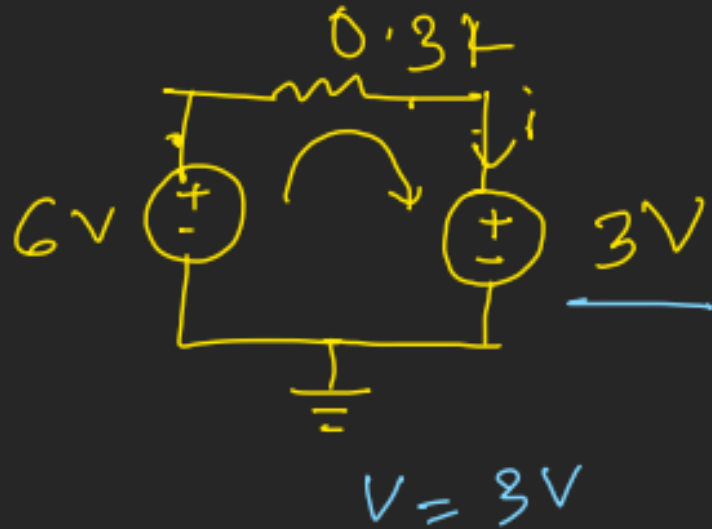
(B) :  $0 < i < 3mA$  ;



(C)  $V > 3V$



Let's assume, B is correct.

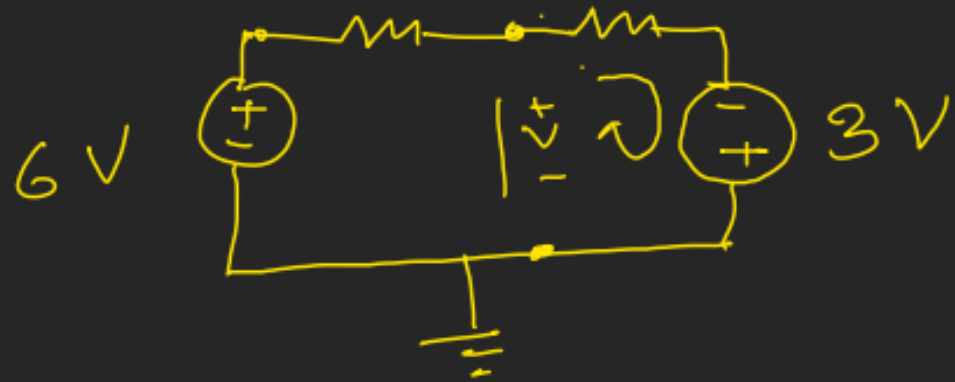


$$i = \frac{(6-3)V}{0.3k} = 10 \text{ mA}$$

$\therefore i$  is not equal to or less than 3 mA, therefore this assumption is wrong!

Now we assume  $C$  is correct -

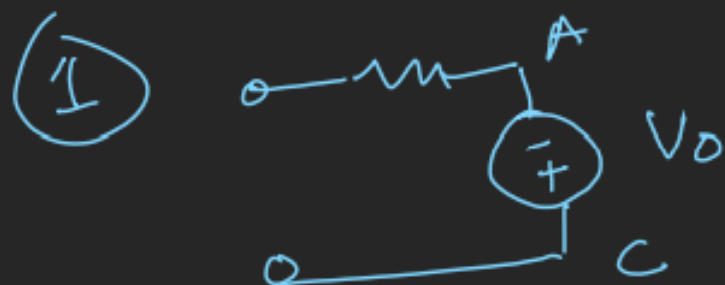
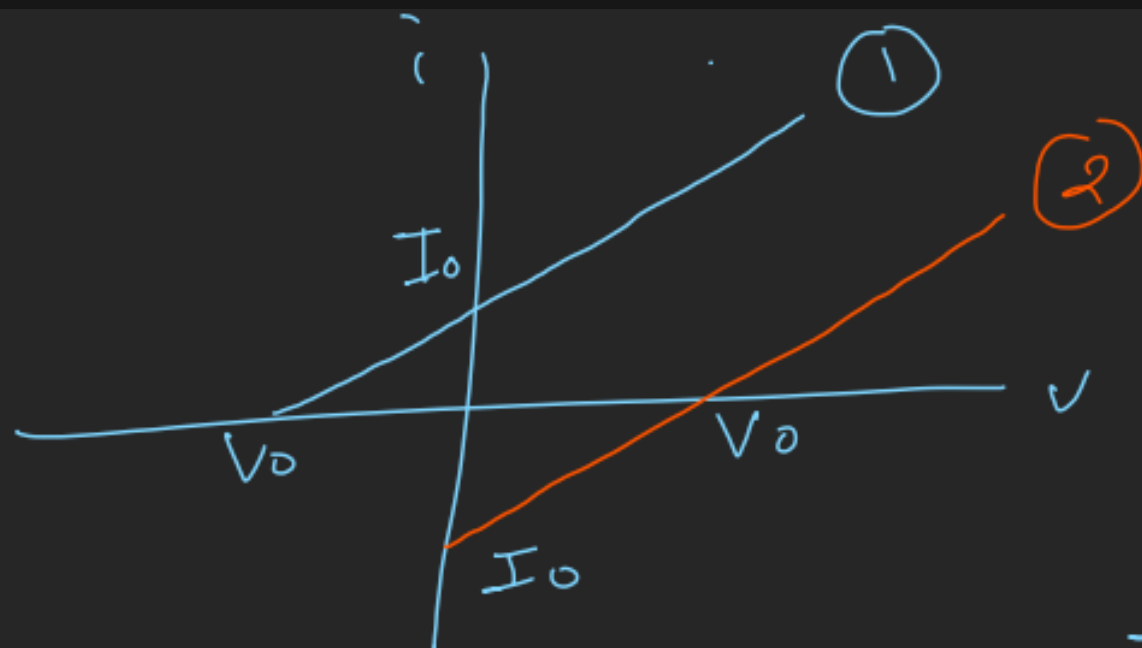
$$0.3k \quad R = \frac{1}{m} = \frac{1}{0.5} = 2k\Omega$$



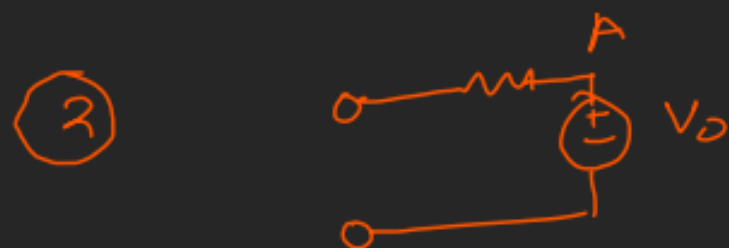
$$I = \frac{6 - (-3)}{0.3 + 2} \text{ mA} \\ = 3.91 \text{ mA}$$

$$\text{KVL: } 2 \times 3.91 - 3 - V = 0 \\ \Rightarrow V = (2 \times 3.91 - 3) \text{ V} \\ = 4.82 \text{ V}$$

$\Rightarrow$  Assumption is right



on



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