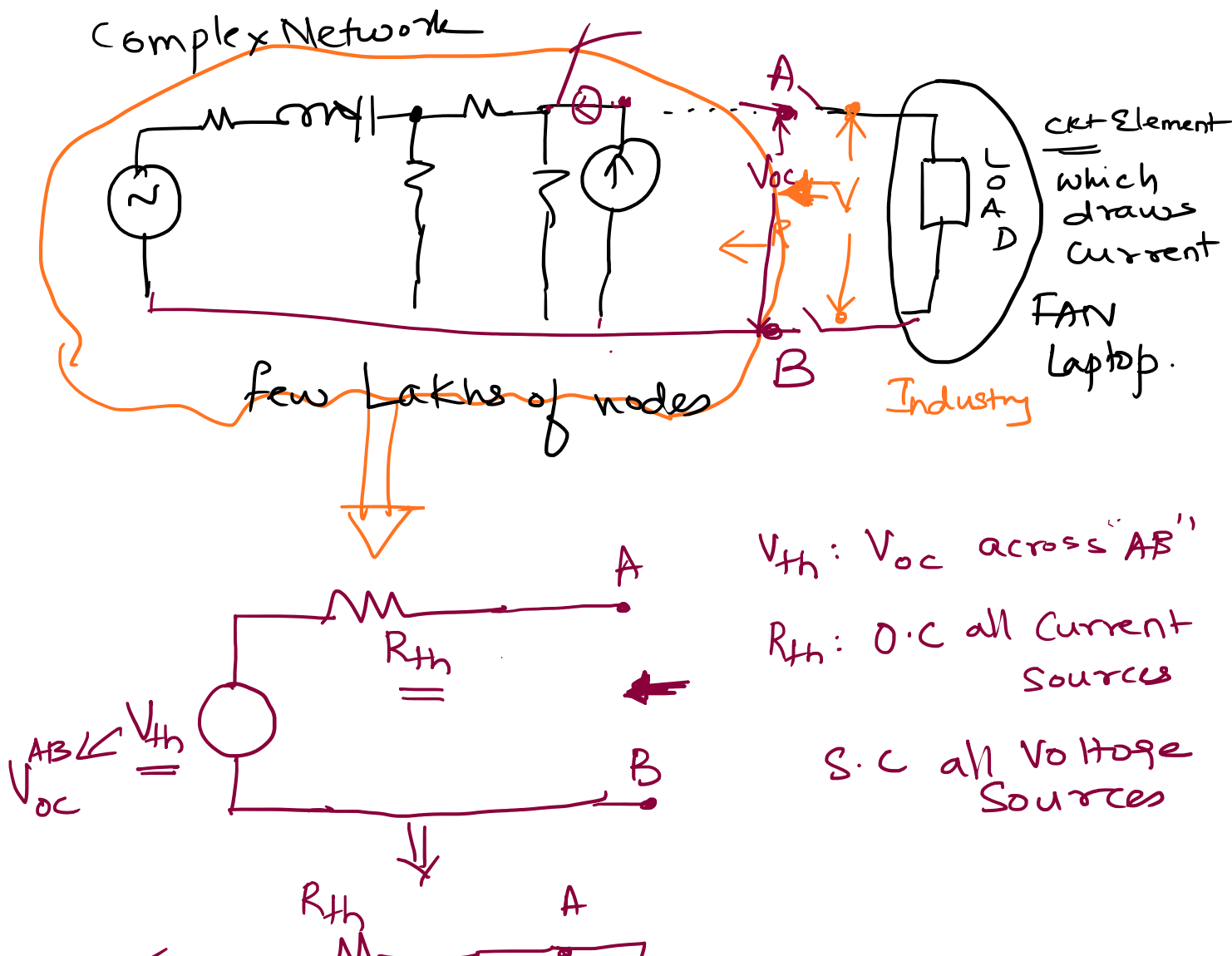


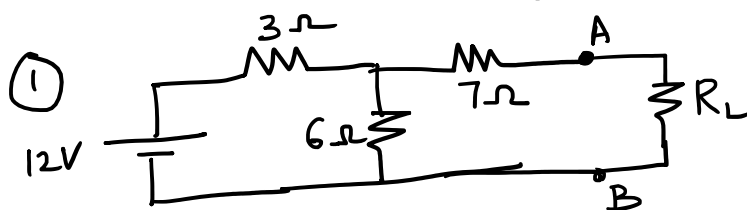
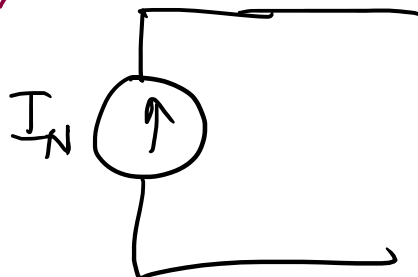
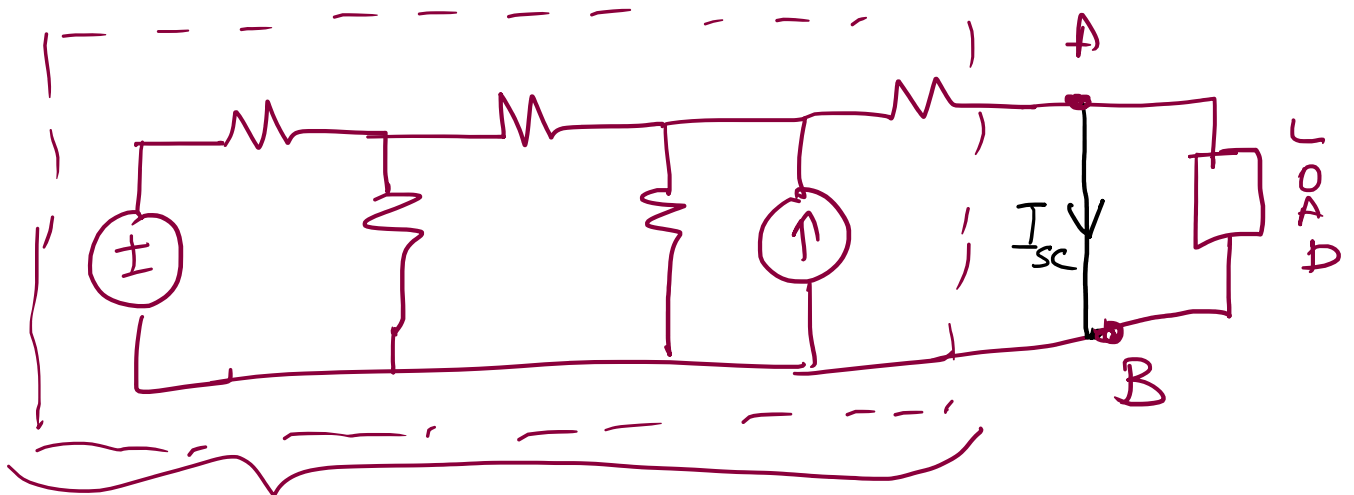
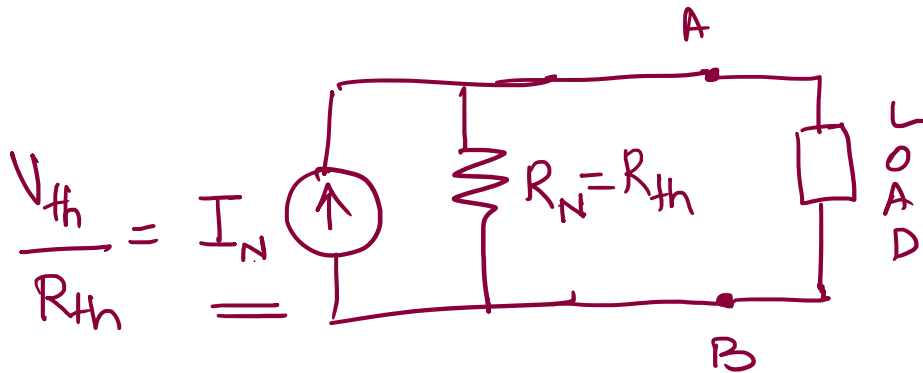
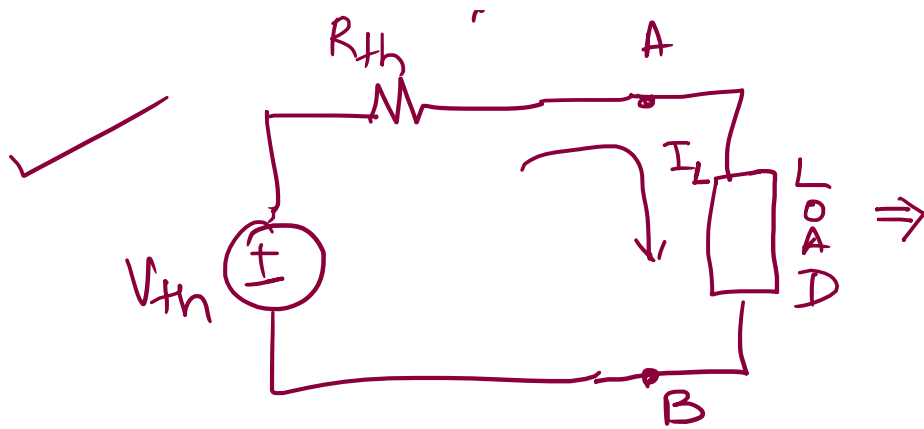
Thevenin's Theorem  $\rightarrow$  L. C. Thevenin (French Engg)

Norton's "  $\rightarrow$  E. L. Norton (Bell Telephone Labs).

$\rightarrow$  BEL  $\rightarrow$  Bharat Electronic Limited

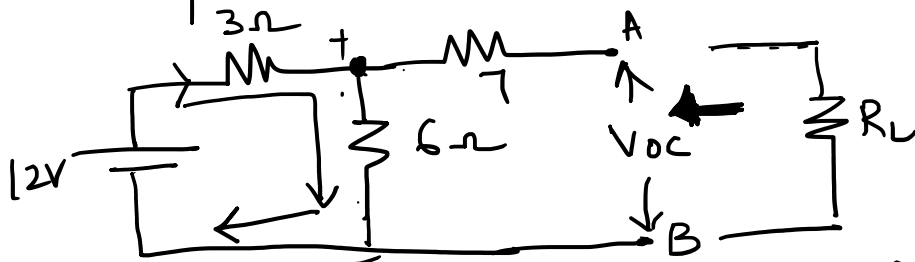
BHEL  $\rightarrow$  " Heavy Electrical Limited  
 Tran, CB, PE





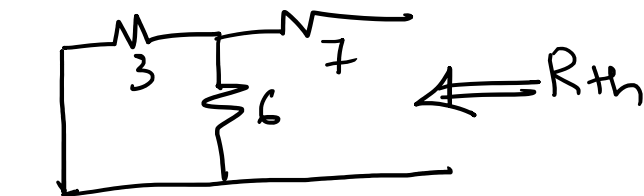
... + Deliver through  $R_L$  using Thevenin's equivalent

Compute Power through  $R_L$  using Thevenin's equivalent Network.

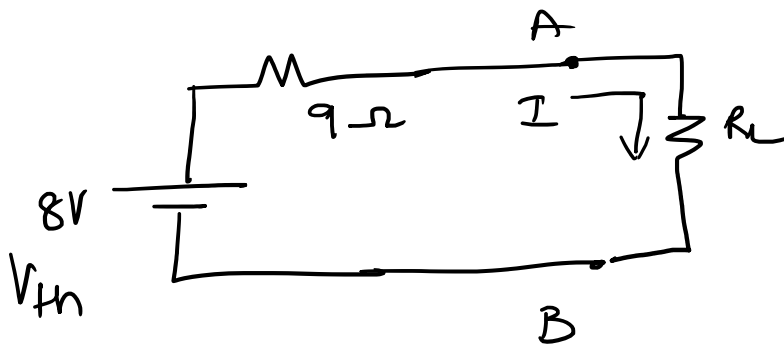
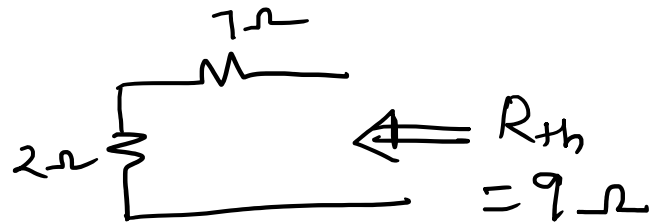


$$I = \frac{12}{9} = \frac{4}{3} \quad ; \quad V_{6\Omega} = 6 \times \frac{4}{3} = \underline{\underline{8V}}$$

$$V_{th} = V_{OC} = V_{6\Omega} = 8V.$$

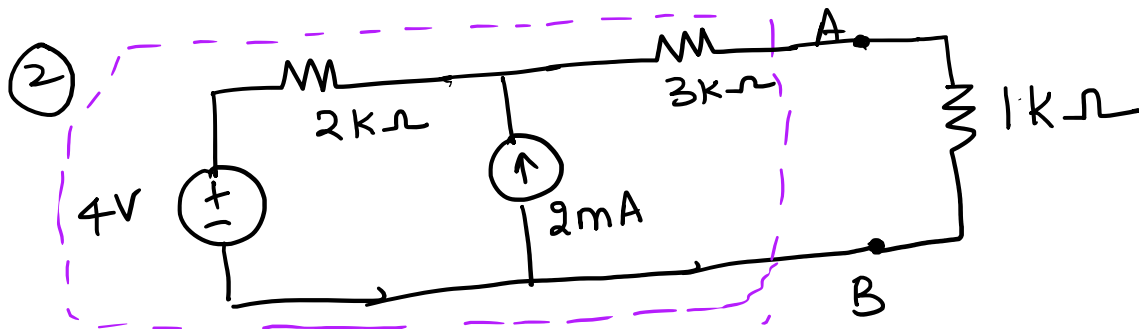


$$\frac{3 \times 6}{3+6} = 2\Omega$$



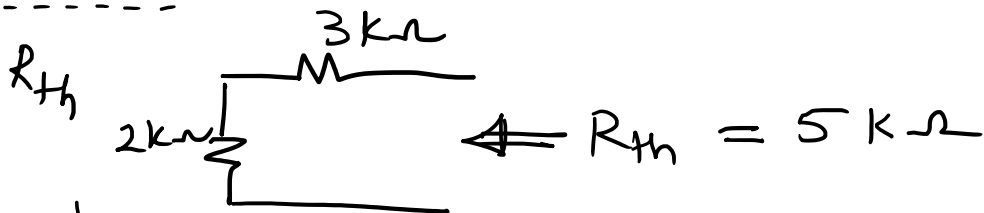
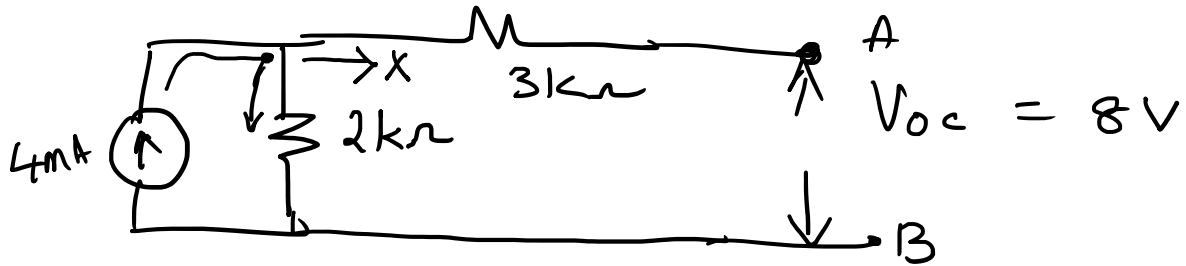
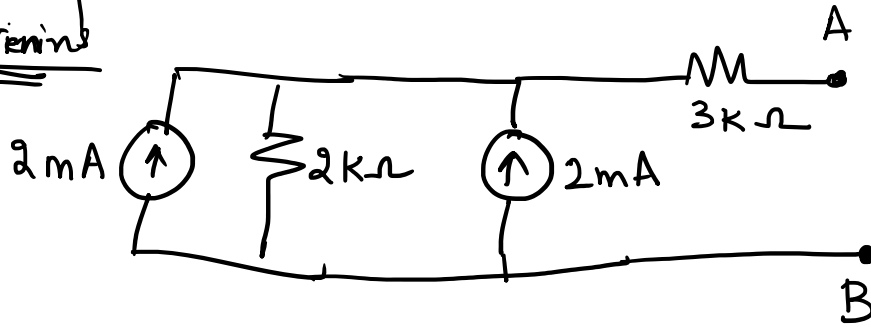
Power thro'  $R_L$

$$\Rightarrow P = \left[ \frac{8}{(9+R_L)} \right]^2 \cdot R_L$$

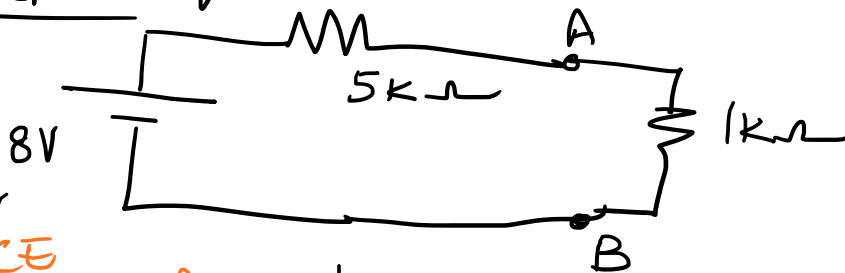


Find Thevenin's & Norton's equivalent CKts.  
Seen across AB.

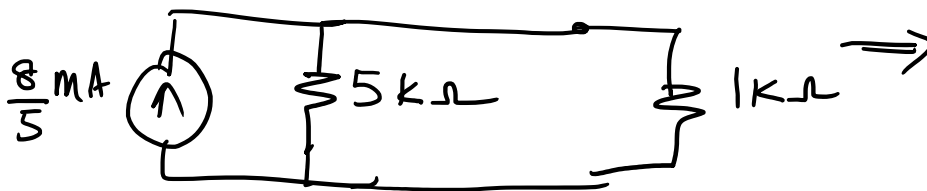
Thevenin's



Thevenin's equivalent

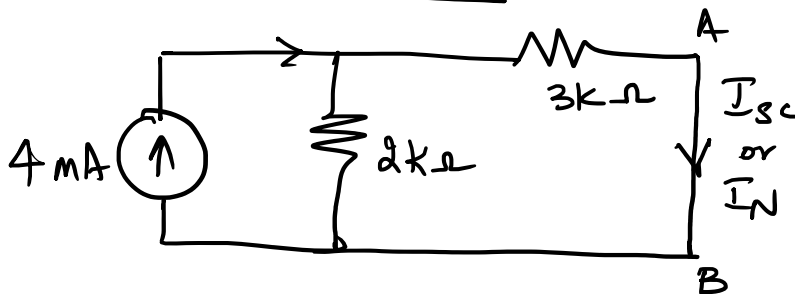


SOURCE Transform



Norton's equivalent

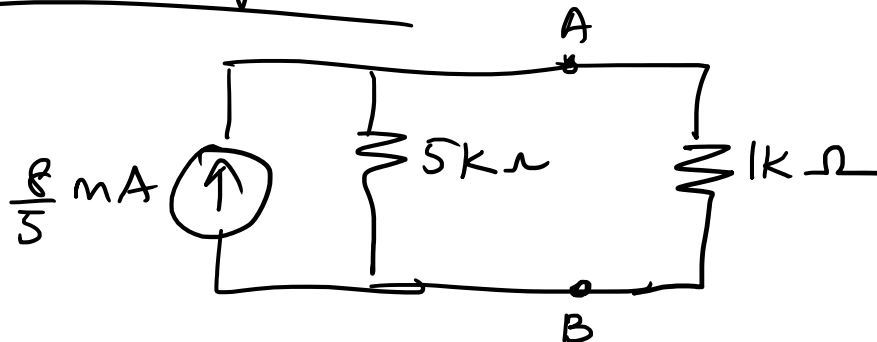
Norton's equivalent



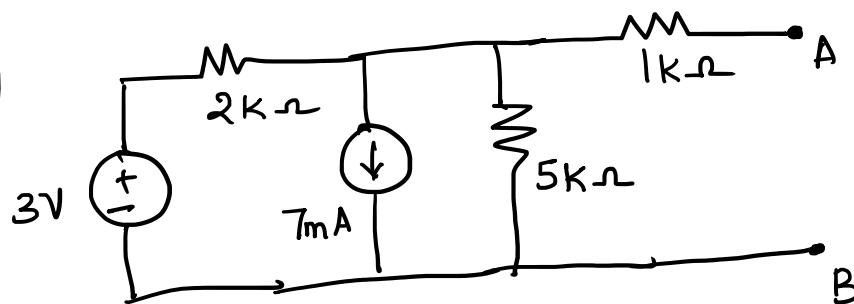
$$I_N = \frac{4 \times (2k\Omega)}{5k\Omega} = \frac{8}{5} \text{ mA}$$

$$R_N = R_{Th} = 5k\Omega$$

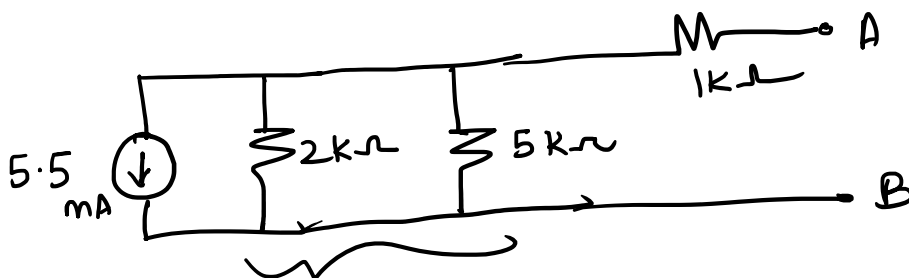
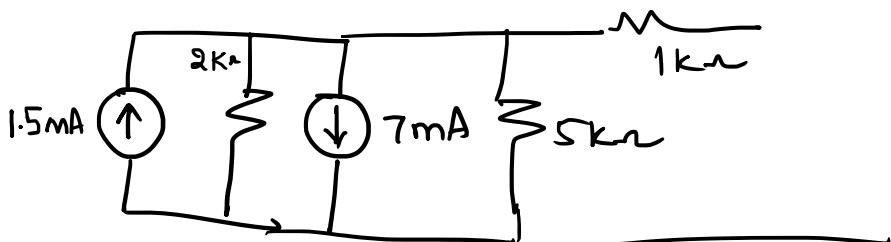
Norton's equivalent



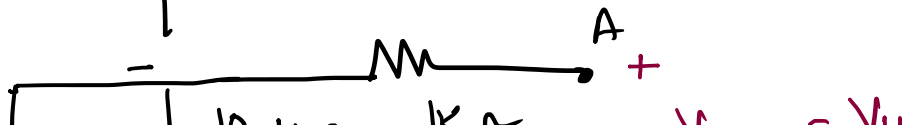
③

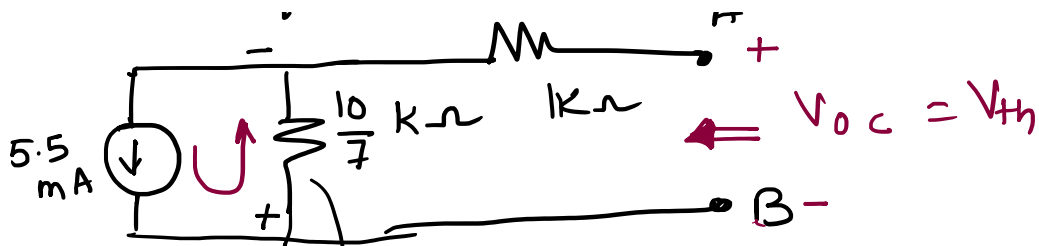


Determine  
Thevenin's & Norton's  
equivalent across  
AB terminal.



$$\frac{2.5}{7} = \frac{10}{7} k\Omega$$

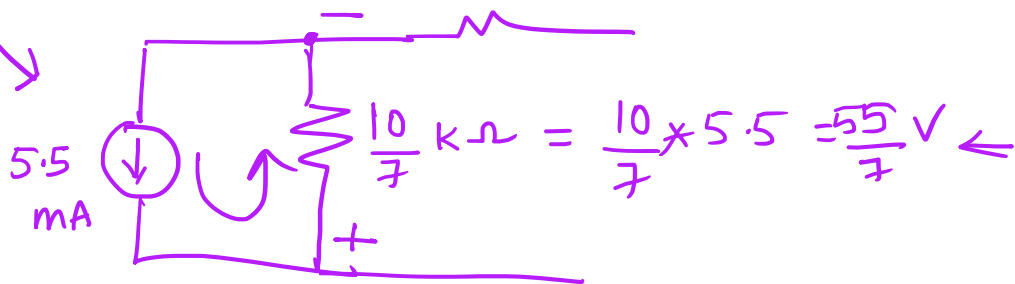




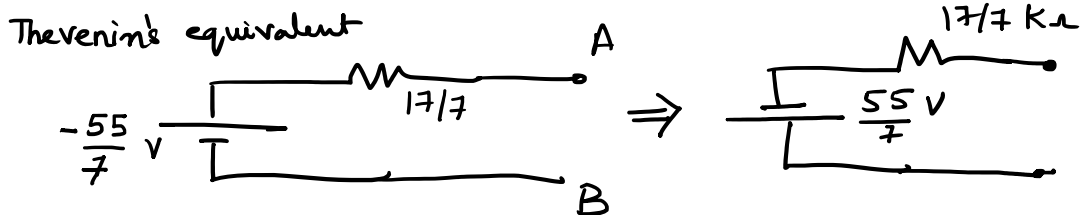
Thevenin's equivalent

$$V_{\frac{10}{7} \Omega} = V_{\frac{10}{7} \Omega} = 5.5 \text{ mA} \times \frac{10}{7} \text{ k}\Omega = \frac{55}{7} \text{ V}$$

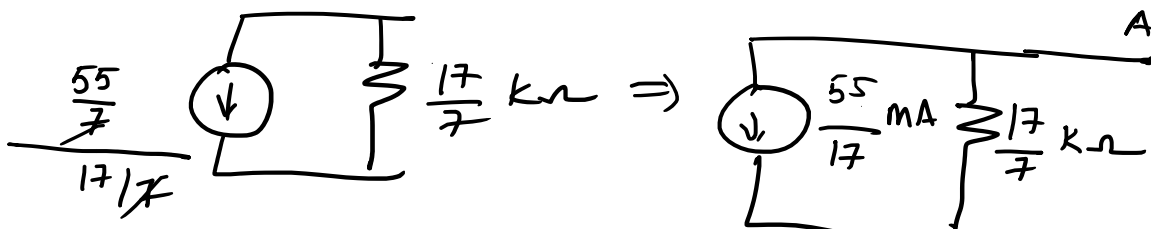
$$V_{Th} = V_{OC} = -V_{\frac{10}{7} \Omega} = -\frac{55}{7} \text{ V}$$

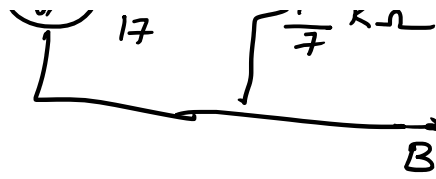


$$R_{Th}: R_{Th} = \frac{10}{7} + 1 = \frac{17}{7} \text{ k}\Omega$$

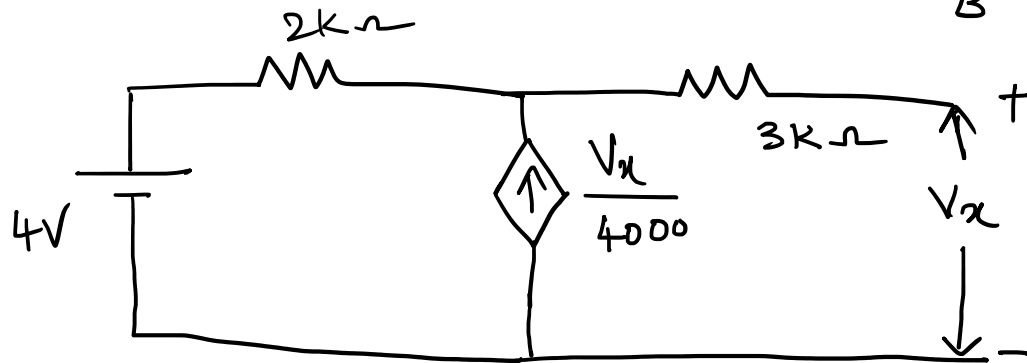


Norton's equivalent { Source transformation }





④



Compute Th & Nor eq. of the ckt.