

Question 1: (3 pts) In the circuit shown in Fig. Q1: Proof that  $\sum P_{delivered} = \sum P_{absorbed}$

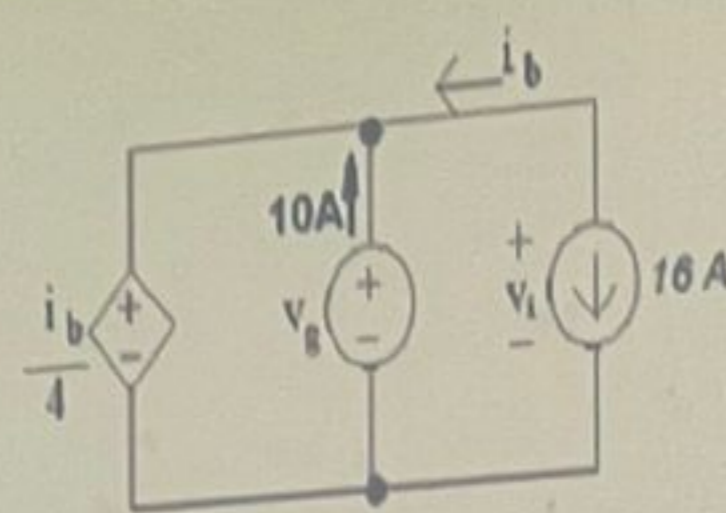
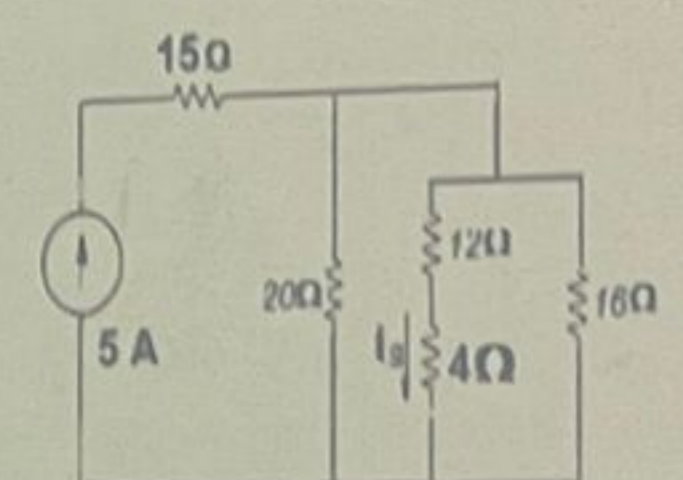
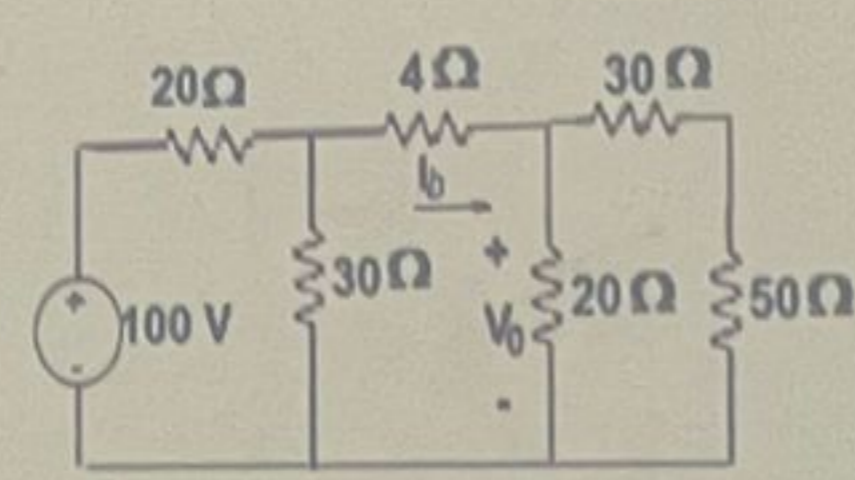


Figure Q.1

Question 2 : (3 pts) Find the currents  $i_a$  and the voltage  $V_0$  in the circuit of the Fig. Q2 by using current divider and voltage divider respectively.



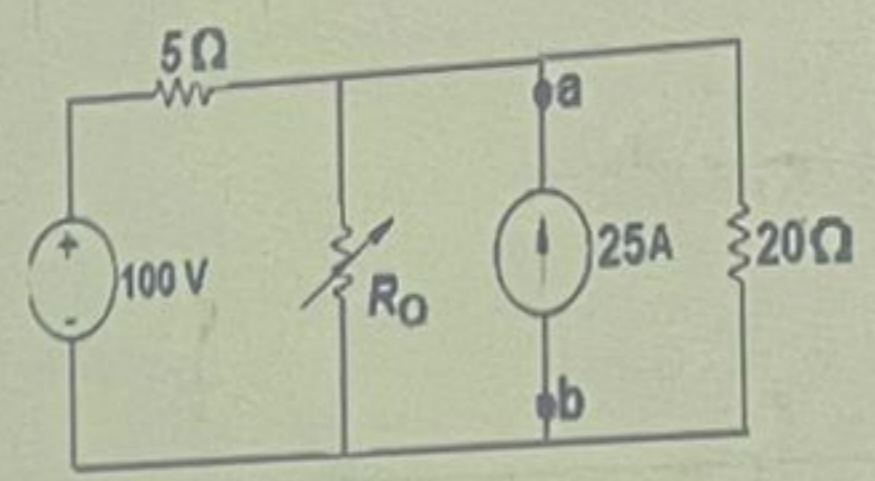
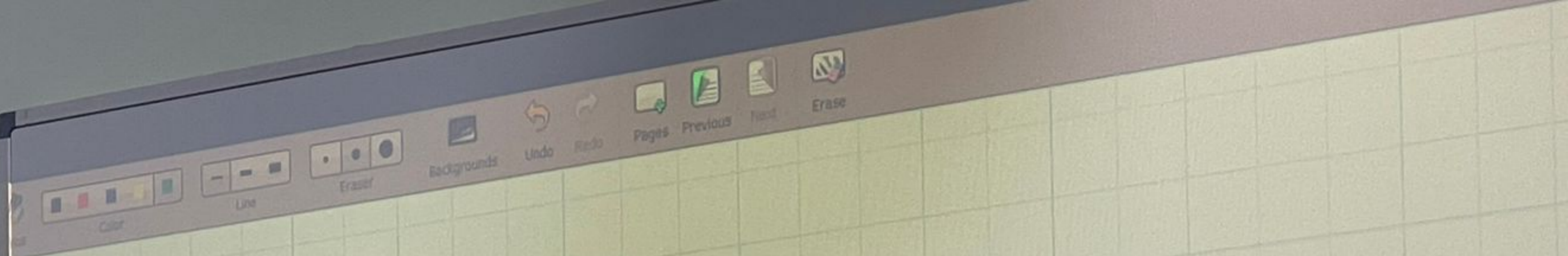
(a)



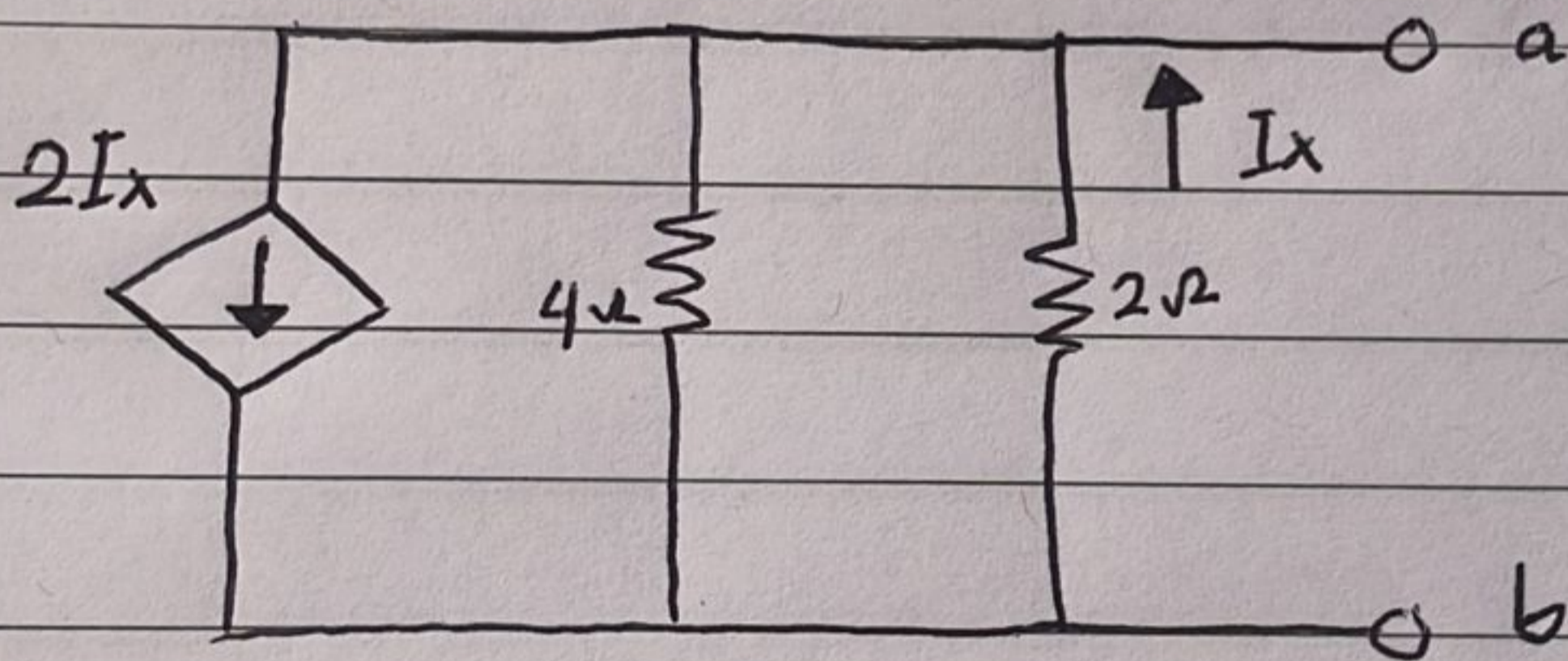
(b)

Figure Q2





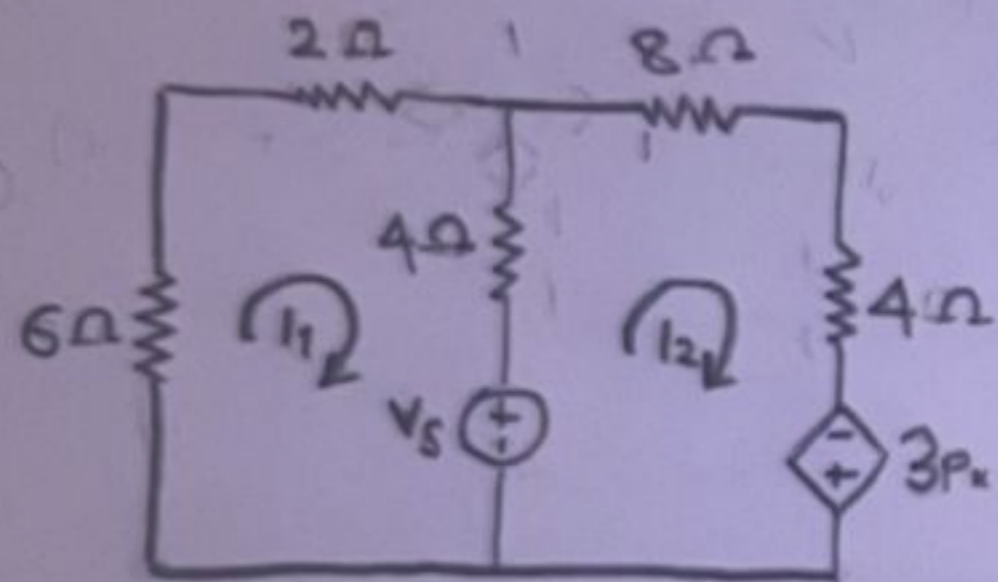




Find  $I_x$



1. (5 points) The circuit shown in Fig. below uses the mesh analysis method to find the power generated/absorbed by the voltage sources.



5V  
5 volt

hcl Node  
KVL loop

N = 2

l = 2

4 - 2 = 2

$I_1 = 0.45 A$

P = 1.5



3. (10 points) Find  $R_L$  to transfer the maximum power and the power in this case as shown in Fig. 3.

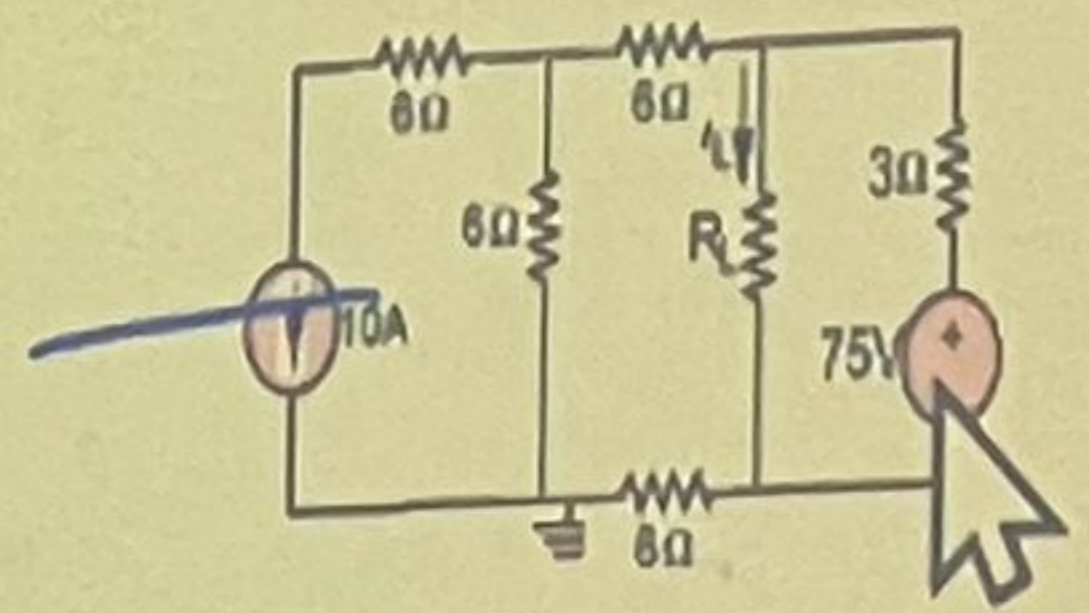


Figure 3: Circuit diagram for Question 3