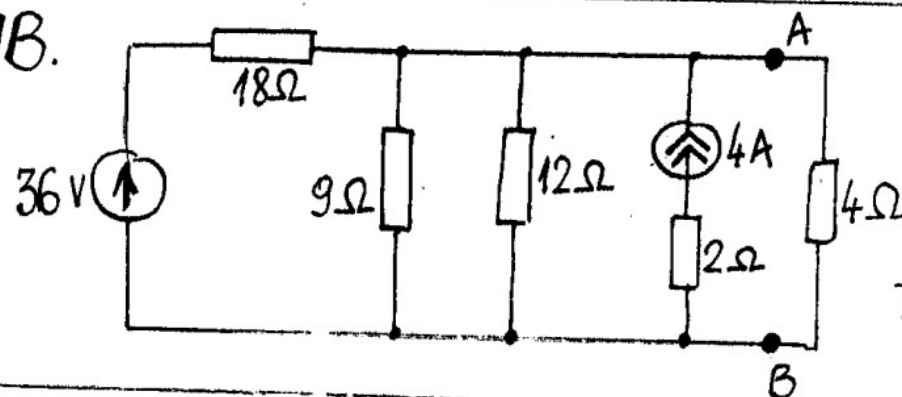
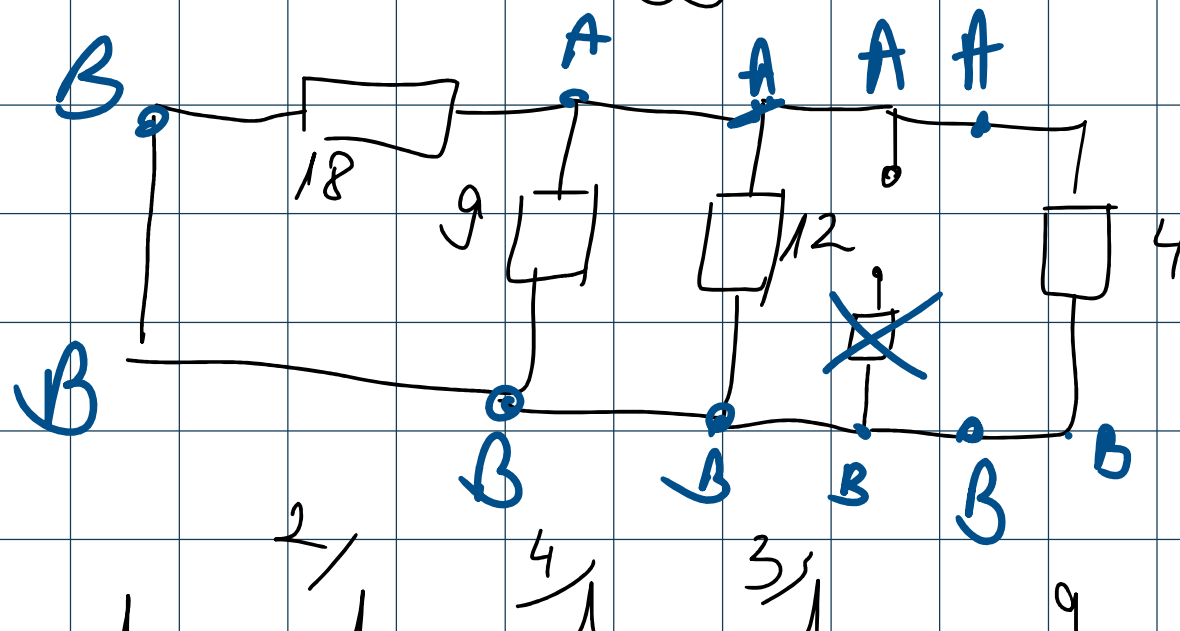


1B.



Pasivizati circuitul  
din figura.  
Calculati-i rezistenta  
fata de bornele  
'A' si 'B'.

sursa de tensiune  $\rightarrow$  linie

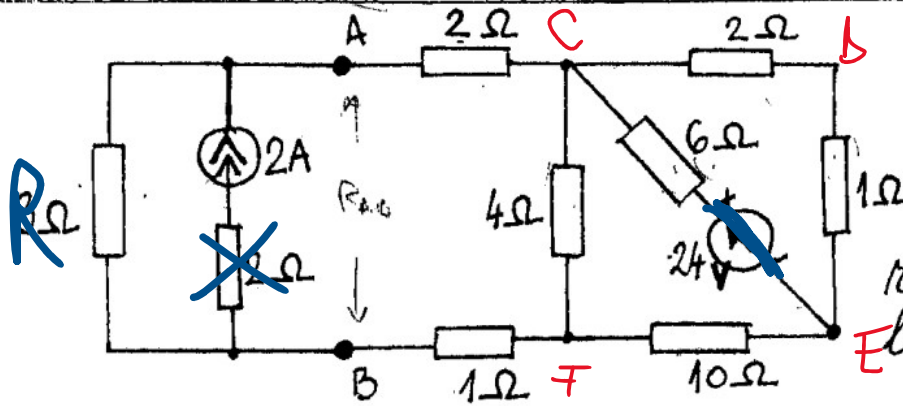


$$\frac{1}{R_p} = \frac{1}{18} + \frac{1}{9} + \frac{1}{12} = \frac{9}{36} = \frac{1}{4}$$

$$R_p = 4 \Omega$$

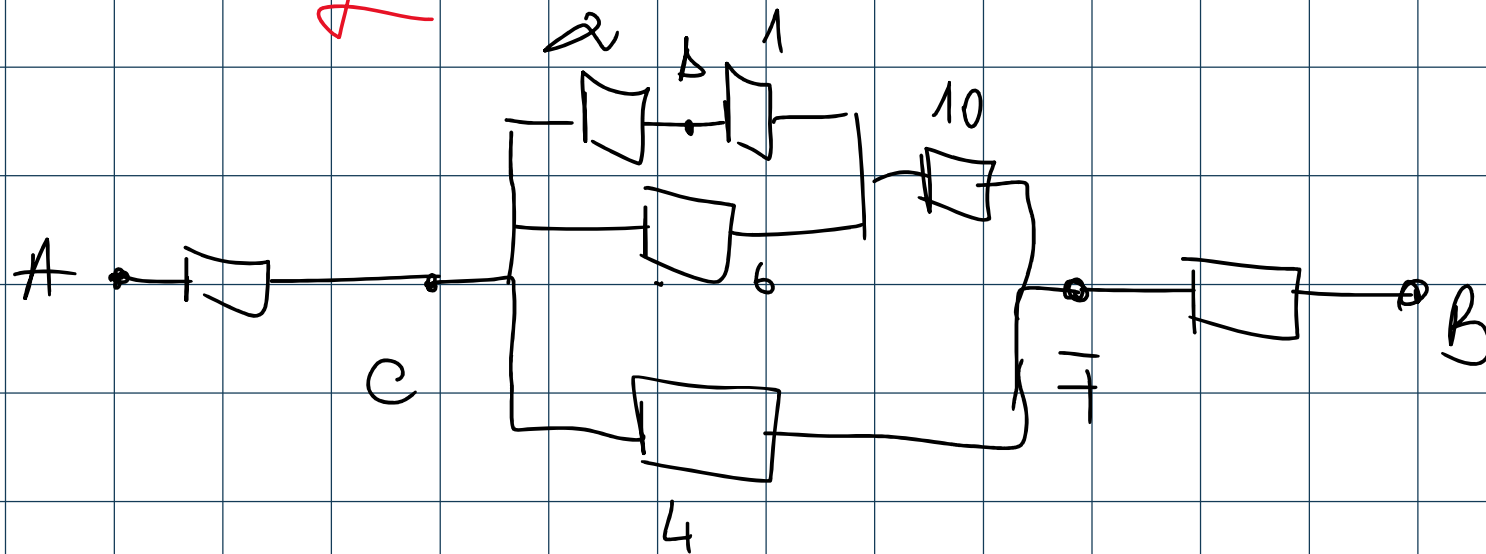
$$R_{eq} = \frac{4 \cdot 4}{4 + 4} = 2 \Omega$$

1B.



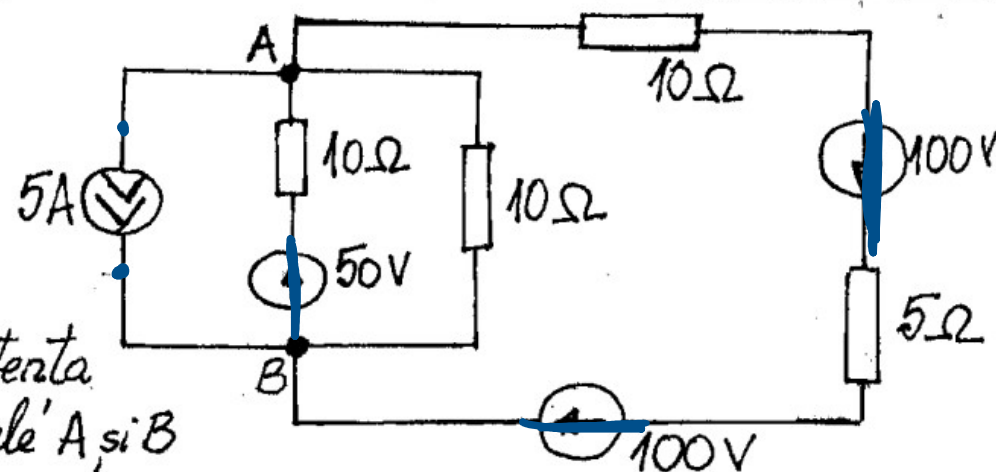
Passivizati  
circuitul cu schema  
din figura.  
Calculati-i  
rezistenta echiva-  
lenta fata de  
bornele A si B.

$R = R_{eq}$  (transfer maxim de putere)

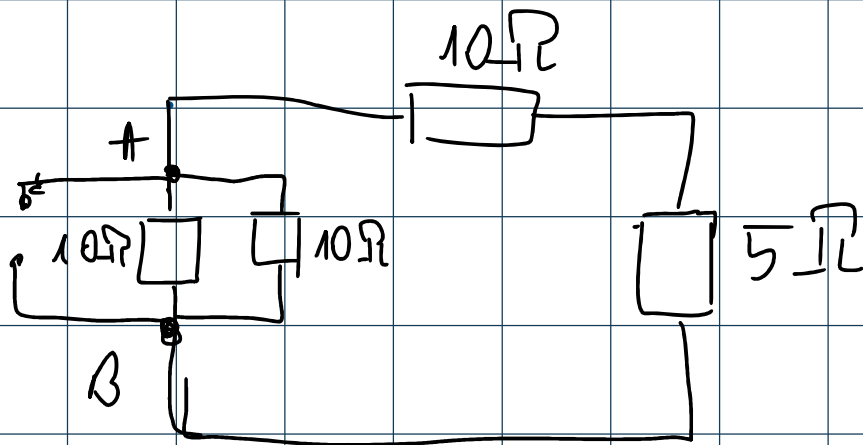


**1B.**

Passivizați  
circuitul din  
figură și  
calculați rezistența  
față de bornele A și B



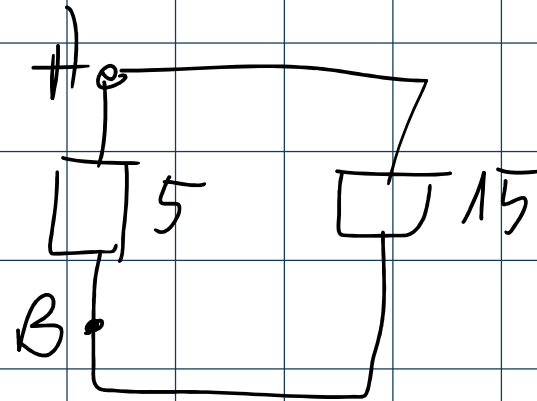
$10\Omega$



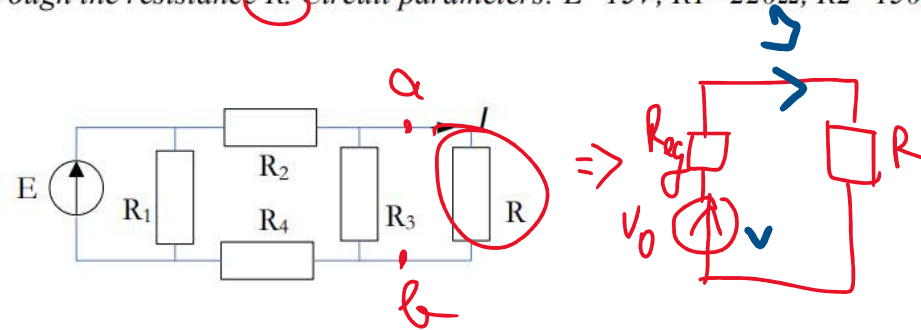
$$R_p = \frac{10 \cdot 10}{20} = 5\Omega$$

$$R_s = 15\Omega$$

$$R_{eq} = \frac{5 \cdot 15}{20} = \dots$$



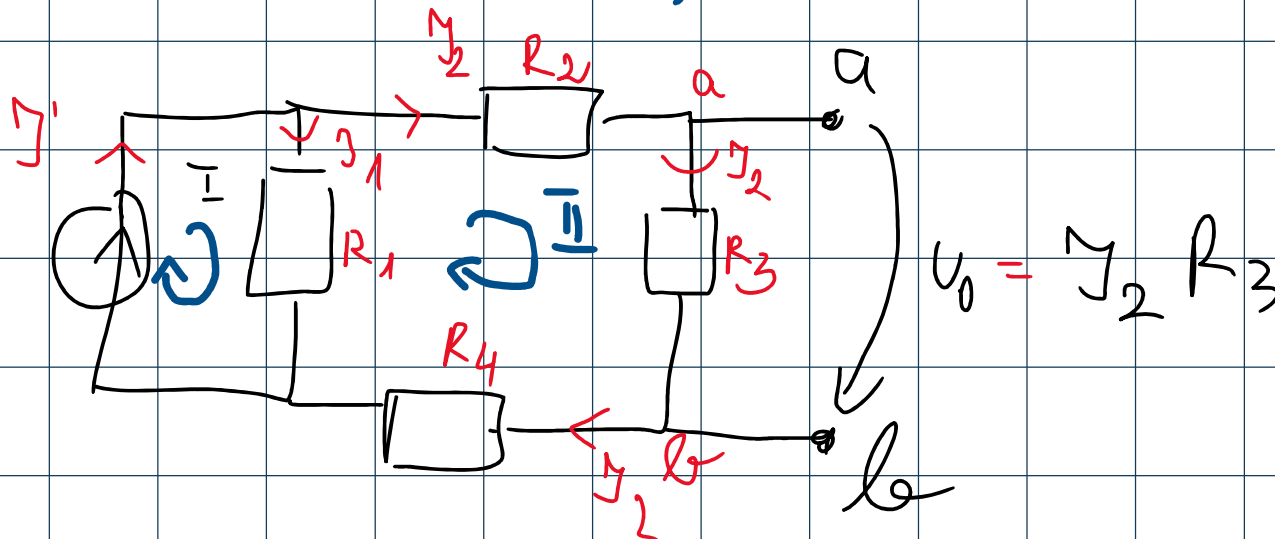
2-21 Determine the **Thevenin** equivalent circuit ( $R_{eq}$ ,  $U_0$ ), viewed by the resistance  $R$  for the circuit below. Find the current  $I$  through the resistance  $R$ . Circuit parameters:  $E=15V$ ,  $R_1=220\Omega$ ,  $R_2=150\Omega$ ,  $R_3=R_4=R=100\Omega$ .



Problem 2-21

$I$ ,  $U_0$  (+currenti)

$$U = I \cdot R$$



$$I' = I_1 + I_2$$

$$\text{I: } I_1 R_1 = E \Rightarrow I_1 = \frac{E}{R_1} = \frac{15}{220} = \frac{3}{44} \text{ A}$$

$$\text{II } I_2 R_2 + I_2 R_3 + I_2 R_4 - I_1 R_1 = 0$$

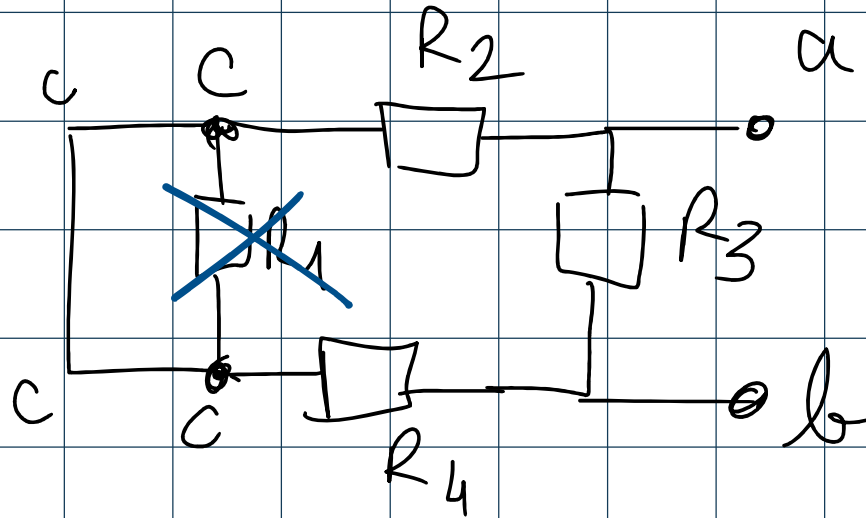
$$I_2 (R_2 + R_3 + R_4) = I_1 R_1 = E$$

$$I_2 = \frac{E}{R_2 + R_3 + R_4} = \frac{15}{350} = \frac{3}{70} \text{ A}$$

$$U_0 = I_2 R_3 = \frac{3}{70} \cdot 100 = \frac{30}{7} \text{ V}$$

II

$R_{eq}$



$R_2, R_4$  - serie  $R_{24} = 250 \Omega$

$R_{24}, R_3$  - paralel  $R_{eq} = \frac{250 \cdot 100}{250 + 100} = \frac{500}{7} \Omega$

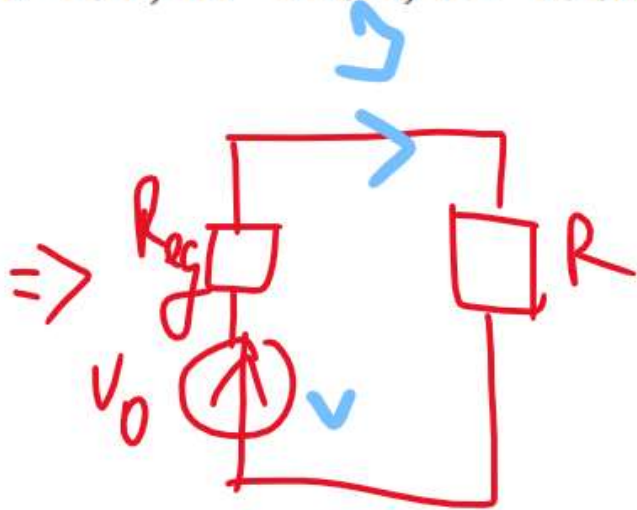
III

$Y = ?$

$Y = Y_D$

III  $V = ?$

$E = 15V, R_1 = 220\Omega, R_2 = 150\Omega,$



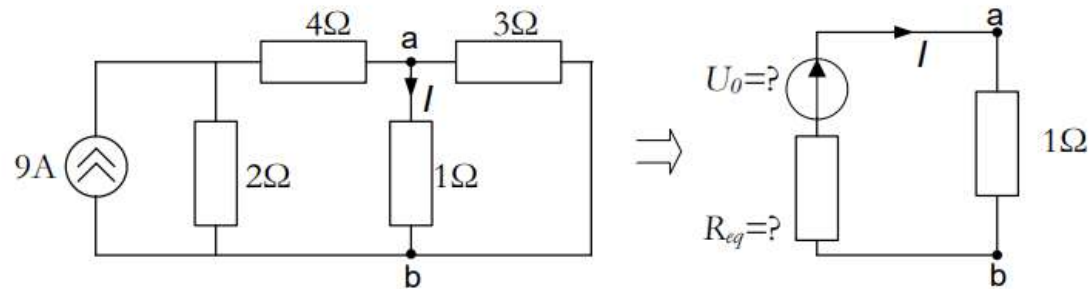
$$V = I R$$

$$V_0 = I R_{eq} + I R$$

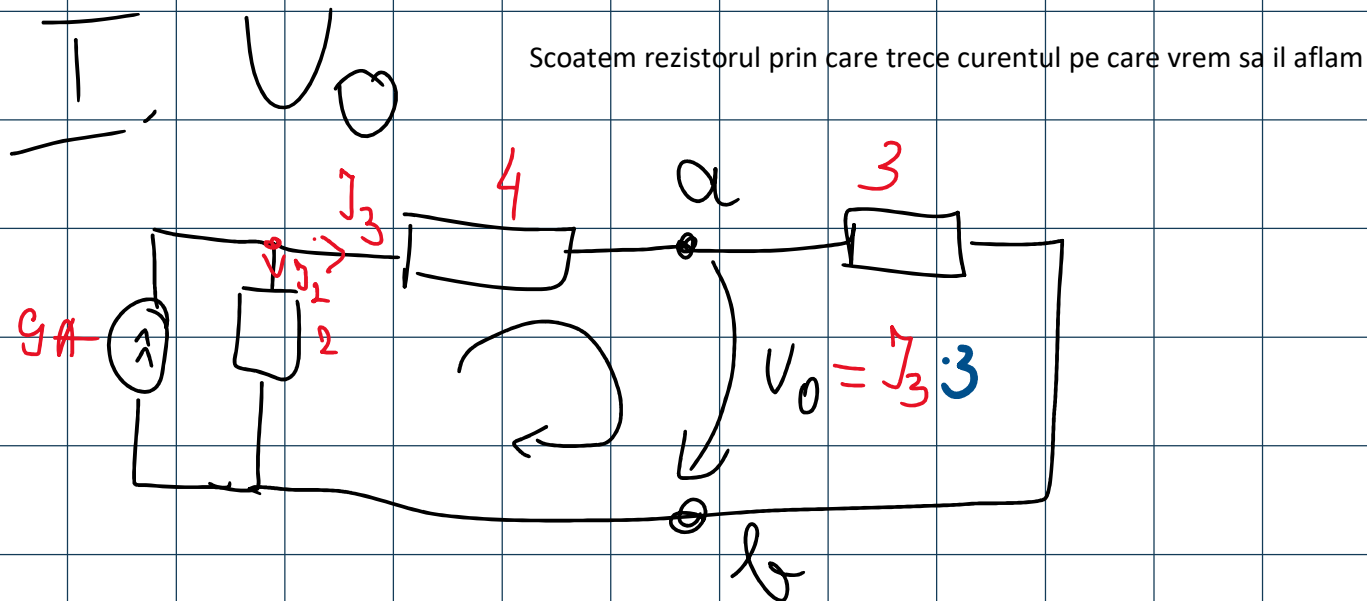
$$\Rightarrow I = \frac{V_0}{R_{eq} + R}$$



2-24 Determine the **Thevenin** equivalent circuit ( $R_{eq}$ ,  $U_0$ ), viewed by the  $1\Omega$ s resistance (terminals a and b) for the circuit below. Find the current  $I$  through the  $1\Omega$ s resistance.



Problem 2-24



$$9 = I_2 + I_3 \Rightarrow I_2 = 9 - I_3$$

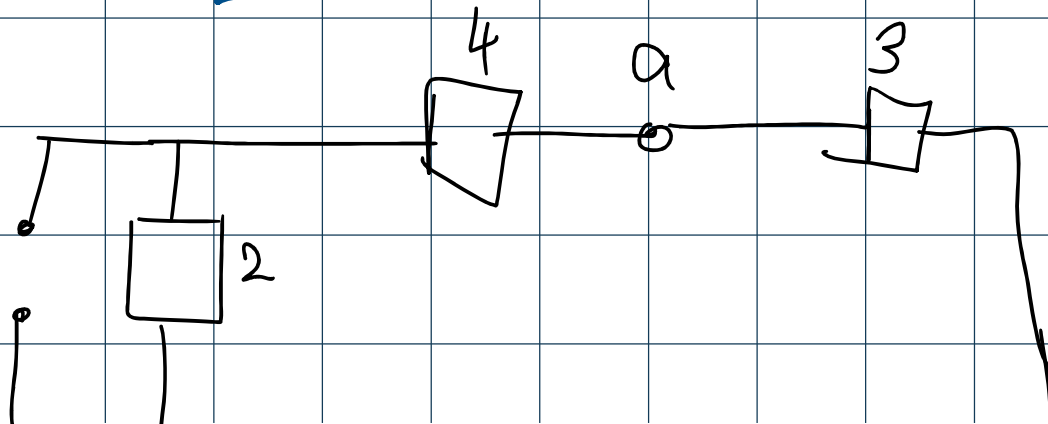
$$4I_3 + 3I_3 - 2I_2 = 0$$

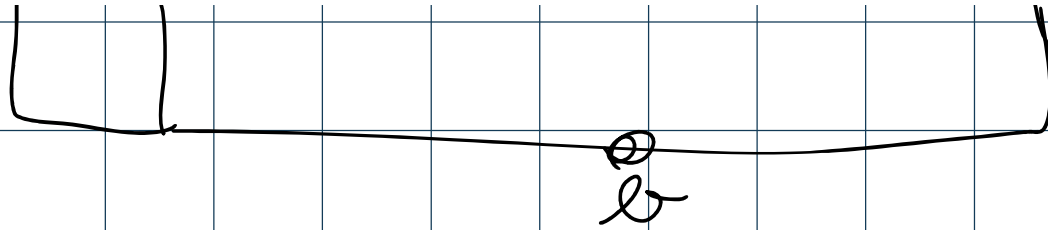
$$7I_3 - 18 + 2I_3 = 0$$

$$I_3 = 2A$$

$$U_0 = 6V$$

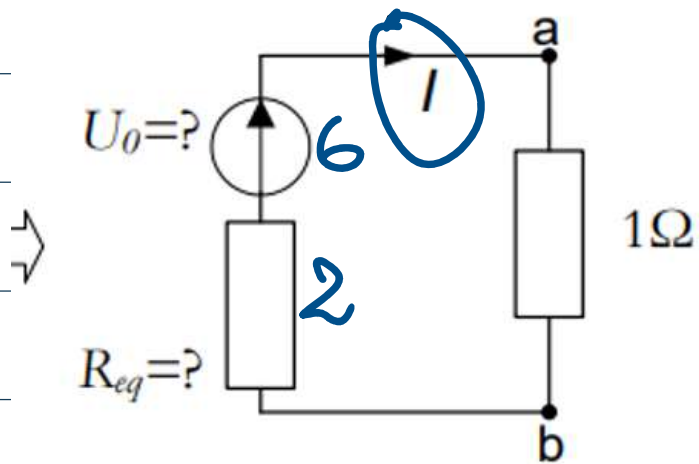
II  $R_{eq} = ?$





$$4 + 2 = 6$$

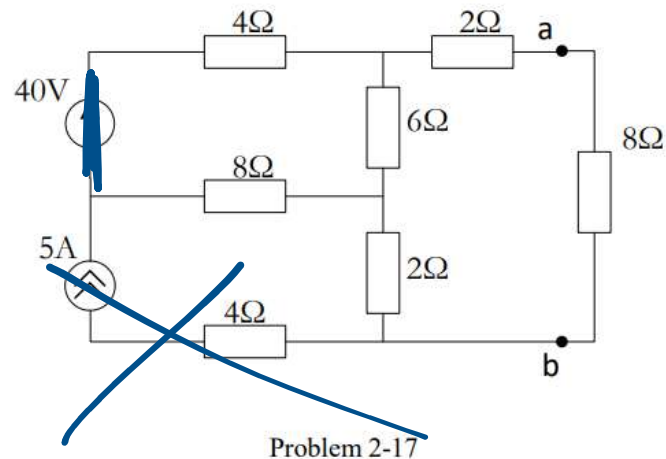
$$R_{eq} = \frac{6 \cdot 3}{9} = 2 \Omega$$



$$2 \Omega + 4 \Omega = 6$$

$$I = 2A$$

2-17 Suppress all the sources in the circuit below and calculate the equivalent resistance,  $R_{eq}$ , regarding to the terminals a and b.



$$4 + 8 = 12$$

12; 6 parallel

series w 2

series w 2

$$12 \parallel 6 = 4 \quad 4 + 2 = 6 \quad 6 + 2 = 8$$

paralel cu  $\delta$