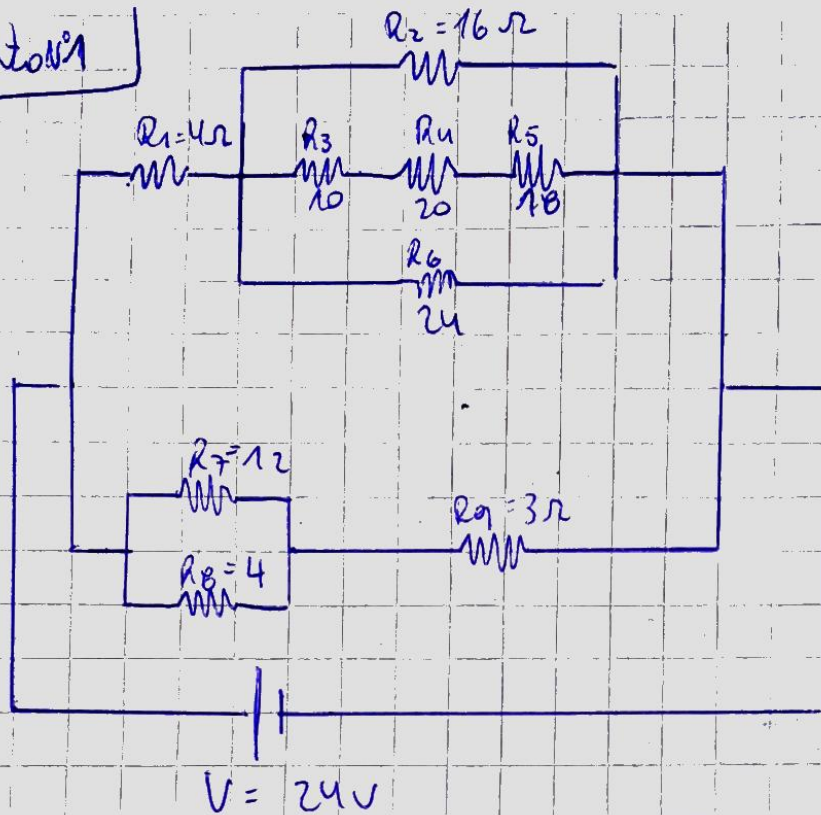
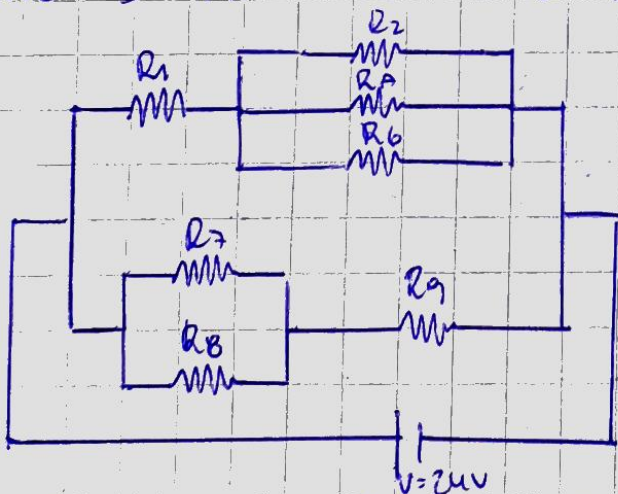


Prueba Col Lt Fuentesalm. 2º Lt.

Preguntón



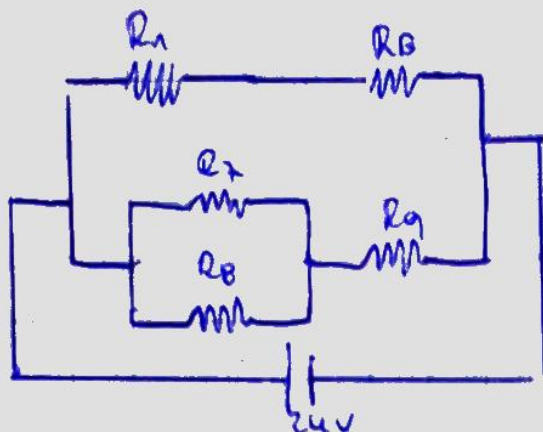
serie $\rightarrow R_A = R_3 + R_4 + R_5 = 10 + 20 + 18 = 48\Omega$



Paralelo $\rightarrow \frac{1}{R_B} = \frac{1}{R_2} + \frac{1}{R_A} + \frac{1}{R_6} \Rightarrow \frac{1}{R_B} = \frac{1 \cdot 3}{16 \cdot 3} + \frac{1}{48} + \frac{1 \cdot 2}{24 \cdot 2}$

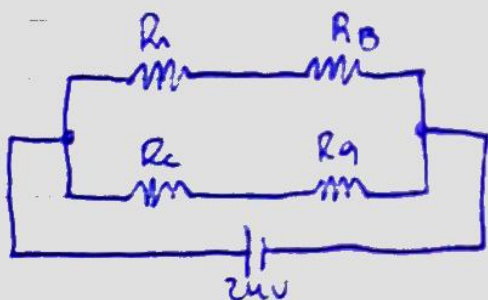
$$\frac{1}{R_B} = \frac{3 + 1 + 2}{48} = \frac{6}{48}$$

$$R_B = \frac{48}{6} = 8\Omega$$



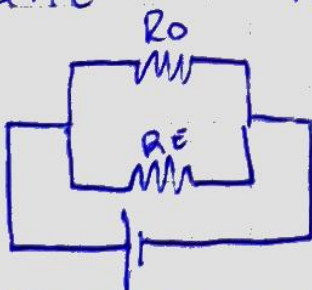
paralelo $\rightarrow \frac{1}{R_c} = \frac{1}{R_1} + \frac{1}{R_2} \Rightarrow \frac{1}{R_c} = \frac{1}{12} + \frac{1}{4}$

$$\frac{1}{R_c} = \frac{4}{12} \Rightarrow R_c = \frac{12}{4} = 3 \Omega$$



serie $\rightarrow R_0 = R_1 + R_2 = 4 + 8 = 12 \Omega$

serie $\rightarrow R_5 = R_3 + R_4 = 3 + 3 = 6 \Omega$



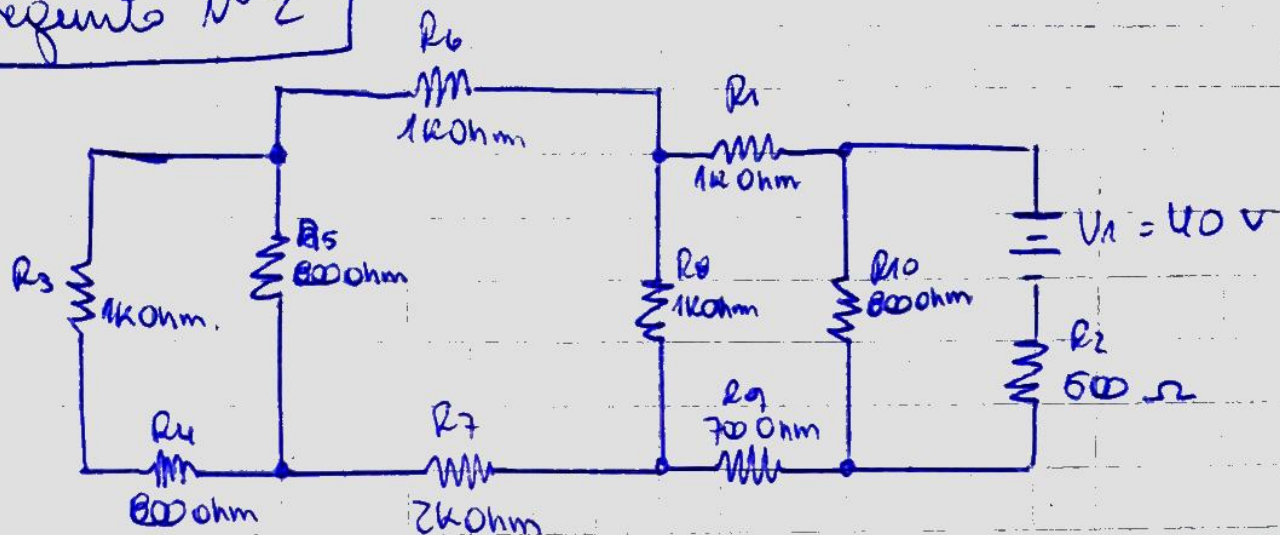
R: La Resistencia
equivalente es igual
a 4Ω

$$R_T = \frac{R_0 \cdot R_5}{R_0 + R_5} = \frac{12 \cdot 6}{12 + 6} = \frac{72}{18}$$

$$R_T = 4 \Omega$$

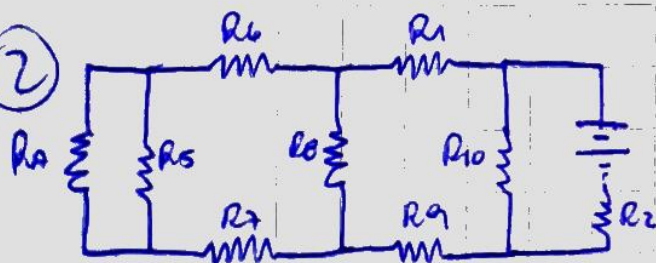
Problema N° 2

①



serie $\rightarrow R_A = R_3 + R_4 = 1000 + 800 = 1800 \text{ Ohm}$.

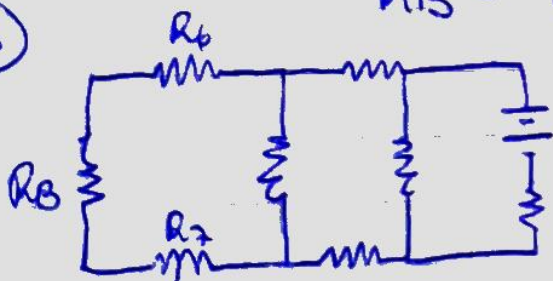
②



paralelo $\rightarrow R_B = \frac{R_A \cdot R_5}{R_A + R_5} = \frac{1800 \cdot 800}{1800 + 800} = \frac{1440000}{2600}$

$R_B = 553,85 \Omega$

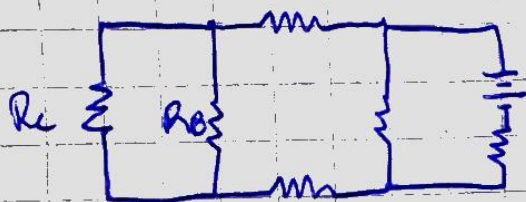
③



serie $\rightarrow R_C = R_B + R_7 + R_6 \Rightarrow R_C = 553,85 + 2000 + 1000$

$R_C = 3553,85 \Omega$

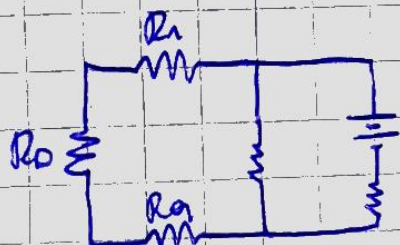
④



paralelo $\rightarrow R_0 = \frac{R_c \cdot R_b}{R_c + R_b} = \frac{3553,85 \cdot 1000}{3553,85 + 1000} = \frac{3553850}{4553,85}$

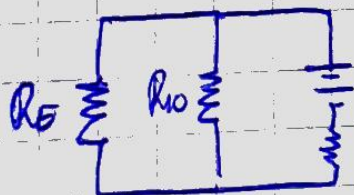
$R_0 = 780,4 \Omega$

⑤



serie $\rightarrow R_E = R_0 + R_1 + R_2 = 780,4 + 1000 + 700 = 2480,4 \Omega$

⑥



paralelo $\rightarrow R_F = \frac{R_E \cdot R_0}{R_E + R_0} = \frac{2480,4 \cdot 800}{2480,4 + 800} = \frac{1984320}{3280,4}$

$R_F = 604,9 \Omega$

⑦



serie $\rightarrow R_T = R_F + R_2$

$R_T = 1104,9 \Omega //$

$$R_T = 1104,9 \, \Omega$$

$$V_T = 40 \, \text{V}$$

$$I_T = 0,036 \, \text{A}$$

$$(7) \quad R_F = 604,9 \, \Omega$$

$$V_F = 21,8 \, \text{V}$$

$$I_F = 0,036 \, \text{A}$$

$$R_2 = 500 \, \Omega$$

$$V_2 = 18 \, \text{V}$$

$$I_2 = 0,036 \, \text{A}$$

$$(6) \quad R_E = 2480,4 \, \Omega$$

$$V_E = 21,8 \, \text{V}$$

$$I_E = 0,0087 \, \text{A}$$

$$R_{10} = 800 \, \Omega$$

$$V_{10} = 21,8 \, \text{V}$$

$$I_{10} = 0,027 \, \text{A}$$

$$(5) \quad R_D = 780,4 \, \Omega$$

$$V_D = 6,8 \, \text{V}$$

$$I_D = 0,0087 \, \text{A}$$

$$R_1 = 1000 \, \Omega$$

$$V_1 = 8,7 \, \text{V}$$

$$I_1 = 0,0087 \, \text{A}$$

$$R_9 = 700 \, \Omega$$

$$V_9 = 6,09 \, \text{V}$$

$$I_9 = 0,0087 \, \text{A}$$

$$(4) \quad R_C = 3553,85 \, \Omega$$

$$V_C = 6,8 \, \text{V}$$

$$I_C = 0,002 \, \text{A}$$

$$R_8 = 1000$$

$$V_8 = 6,8 \, \text{V}$$

$$I_8 = 0,0068 \, \text{A}$$

$$(3) \quad R_B = 553,85 \, \Omega$$

$$V_B = 1,1 \, \text{V}$$

$$I_B = 0,002 \, \text{A}$$

$$R_6 = 1000 \, \Omega$$

$$V_6 = 2 \, \text{V}$$

$$I_6 = 0,002 \, \text{A}$$

$$R_7 = 2000 \, \Omega$$

$$V_7 = 4 \, \text{V}$$

$$I_7 = 0,002 \, \text{A}$$

$$\begin{array}{ll}
 \textcircled{2} \quad R_A = 1000 \, \Omega & R_5 = 800 \, \Omega \\
 V_A = 1,1 \, \text{V} & V_5 = 1,1 \, \text{V} \\
 I_A = 0,0006 \, \text{A} & I_5 = 0,0013 \, \text{A}
 \end{array}$$

$$\begin{array}{ll}
 \textcircled{1} \quad R_3 = 1000 \, \Omega & R_4 = 800 \, \Omega \\
 V_3 = 0,6 \, \text{V} & V_4 = 0,48 \, \text{V} \\
 I_3 = 0,0006 \, \text{A} & I_4 = 0,0006 \, \text{A}
 \end{array}$$

R:

$$a) \quad R_T = 1104,9 \, \Omega.$$

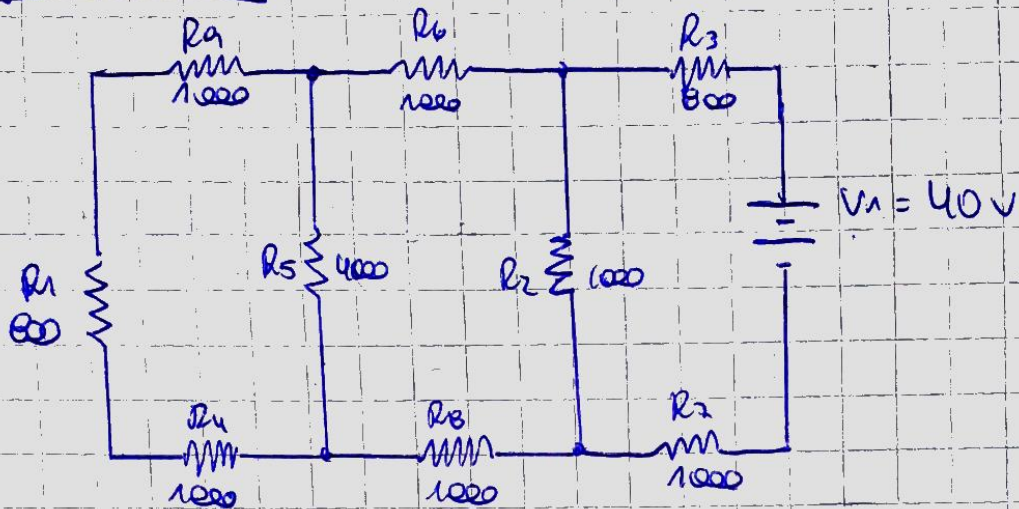
$$b) \quad V_{AB} = 6,8 \, \text{V}.$$

$$c) \quad V_{R4} = 0,48 \, \text{V}.$$

$$d) \quad I_{R3} = 0,0006 \, \text{A}.$$

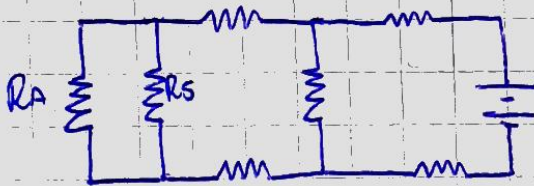
Pregunta N° 3

①



serie $\rightarrow R_A = R_1 + R_4 + R_3 = 800 + 1000 + 1000 =$
 $R_A = 2800 \Omega$

②



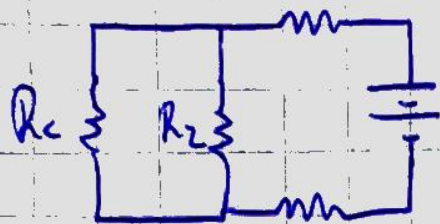
Paralelo $\rightarrow R_B = \frac{R_A \cdot R_5}{R_A + R_5} = \frac{2800 \cdot 4000}{2800 + 4000} = \frac{11200000}{6800}$
 $R_B = 1647,1 \Omega$

③



serie $\Rightarrow R_C = R_3 + R_4 + R_6 = 1647,1 + 1000 + 1000$
 $R_C = 3647,1 \Omega$

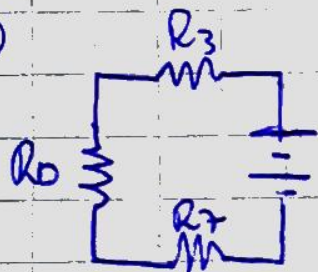
④



paralelo $\rightarrow R_0 = \frac{R_1 \cdot R_2}{R_1 + R_2} = \frac{3647,1 \cdot 1000}{3647,1 + 1000} = \frac{3647100}{4647,1}$

$R_0 = 784,8 \Omega$

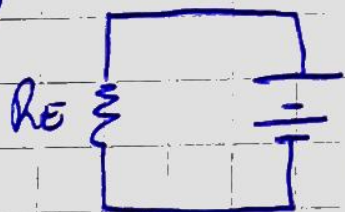
⑤



serie $\rightarrow R_E = R_0 + R_3 + R_7 = 784,8 + 800 + 1000$

$R_E = 2584,8 \Omega$

⑥



$R_T = 2584,8 \Omega$

$V_T = 40V$

$I_T = 0,015 A$

⑤

$$\begin{aligned} R_0 &= 784,8 \Omega \\ V_D &= 11,8 \text{ V} \\ I_D &= 0,015 \text{ A} \end{aligned}$$

$$\begin{aligned} R_3 &= 800 \Omega \\ V_3 &= 12 \text{ V} \\ I_3 &= 0,015 \text{ A} \end{aligned}$$

$$\begin{aligned} R_7 &= 1000 \Omega \\ V_7 &= 15 \text{ V} \\ I_2 &= 0,015 \text{ A} \end{aligned}$$

④

$$\begin{aligned} R_C &= 3647,1 \Omega \\ V_C &= 11,8 \text{ V} \\ I_C &= 0,0032 \text{ A} \end{aligned}$$

$$\begin{aligned} R_2 &= 1000 \Omega \\ V_2 &= 11,8 \text{ V} \\ I_2 &= 0,012 \text{ A} \end{aligned}$$

③

$$\begin{aligned} R_B &= 1647,1 \Omega \\ V_B &= 5,3 \text{ V} \\ I_B &= 0,0032 \text{ A} \end{aligned}$$

$$\begin{aligned} R_6 &= 1000 \Omega \\ V_6 &= 3,2 \text{ V} \\ I_6 &= 0,0032 \text{ A} \end{aligned}$$

$$\begin{aligned} R_8 &= 1000 \Omega \\ V_8 &= 3,2 \text{ V} \\ I_8 &= 0,0032 \text{ A} \end{aligned}$$

②

$$\begin{aligned} R_A &= 2800 \Omega \\ V_A &= 5,3 \text{ V} \\ I_A &= 0,002 \text{ A} \end{aligned}$$

$$\begin{aligned} R_5 &= 4000 \Omega \\ V_5 &= 5,3 \text{ V} \\ I_5 &= 0,0013 \text{ A} \end{aligned}$$

①

$$\begin{aligned} R_1 &= 800 \Omega \\ V_1 &= 1,6 \text{ V} \\ I_1 &= 0,002 \text{ A} \end{aligned}$$

$$\begin{aligned} R_4 &= 1000 \Omega \\ V_4 &= 2 \text{ V} \\ I_4 &= 0,002 \text{ A} \end{aligned}$$

$$\begin{aligned} R_4 &= 1000 \Omega \\ V_4 &= 2 \text{ V} \\ I_4 &= 0,002 \text{ A} \end{aligned}$$

R:

a) $R_T = 2584,8 \, \Omega$.

b) $V_{R3} = 12 \, \text{V}$.

c) $V_{R1} = 1,6 \, \text{V}$.

d) $I_{R5} = 0,0013 \, \text{A}$.