

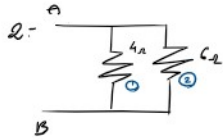
$$a) I = \frac{V}{R} = \frac{6}{11+1} = \frac{1}{2} = 0.5 \text{ A}$$

$$b) V_{AB} = 5.5 \text{ V}$$

$$c) P = V \cdot I = 5.5 \cdot 0.5 = 2.75 \text{ W}$$

$$d) P = V \cdot I = \frac{V^2}{R} = \frac{5.5^2}{11} = 2.75 \text{ W}$$

$$(V_{AB} = I \cdot R = 0.5 \cdot 11 = 5.5)$$



$$a) \frac{1}{R_T} = \frac{1}{4} + \frac{1}{6} = \frac{10}{24} \Rightarrow R_T = 2.4 \Omega$$

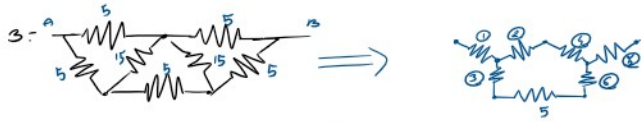
$$b) I = \frac{V}{R} = \frac{V_{AB}}{2.4} \text{ (A)}$$

$$c) \textcircled{1} I = \frac{V_{AB}}{4} \text{ (A)}$$

$$\textcircled{2} I = \frac{V_{AB}}{6} \text{ (A)}$$

$$d) \textcircled{1} P = V \cdot I = \frac{V_{AB}^2}{4} \text{ (W)}$$

$$P = V \cdot I = \frac{V_{AB}^2}{6} \text{ (W)}$$



$$\textcircled{1} R_1 = \frac{5 \cdot 5}{25} = 1 \text{ k}\Omega$$

$$\textcircled{2} R_2 = \frac{5 \cdot 15}{25} = 3 \text{ k}\Omega$$

$$\textcircled{3} R_3 = \frac{5 \cdot 15}{25} = 3 \text{ k}\Omega$$

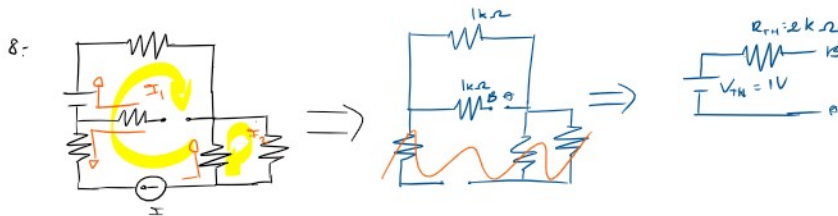
$$\textcircled{4} R_4 = \frac{5 \cdot 15}{25} = 3 \text{ k}\Omega$$

$$\textcircled{5} R_5 = 3 \text{ k}\Omega$$

$$\textcircled{6} R_6 = 1 \text{ k}\Omega$$



$$R_T = 1 \text{ k}\Omega + 1 \text{ k}\Omega + \frac{11 \cdot 6}{11+6} \text{ k}\Omega = 5.88 \text{ k}\Omega$$



$$I_1 = I = 1 \text{ mA}$$

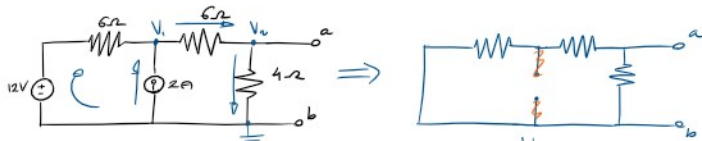
$$\begin{cases} I_1: 2V = I_1 \cdot 1 \text{ k}\Omega + I_1 \cdot 1 \text{ k}\Omega + (I_1 - I_2) \cdot 2 \text{ k}\Omega + V_x \Rightarrow 2 = 4I_1 - 2I_2 + V_x \\ I_2: 0V = I_2 \cdot 2 \text{ k}\Omega + (I_2 - I_1) \cdot 2 \text{ k}\Omega \Rightarrow 0 = 4I_2 - 2I_1 \end{cases} \Rightarrow \begin{cases} 2 = 4 \cdot 10^{-3} \cdot 1 \text{ mA} - 2 \cdot 10^{-3} I_2 + V_x \\ 0 = 4 \cdot 10^{-3} I_2 - 2 \cdot 10^{-3} \cdot 1 \text{ mA} \end{cases} \Rightarrow \begin{cases} 2 = 4 - 1 + V_x \\ 0 = 4I_2 - 2 \end{cases} \Rightarrow \begin{cases} V_x = -1 \text{ V} \\ I_2 = 0.5 \text{ mA} \end{cases}$$

$$V_{AB} = I_{AB} \cdot R = I_{AB_1} \cdot 2 \cdot 10^3 + I_{AB_2} \cdot 2 \cdot 10^3 = 1 \text{ V}$$

$$I_{AB_1} = \frac{V}{R} = \frac{2}{2 \cdot 10^3} = 1 \text{ mA}$$

$$I_{AB_2} = \frac{-1}{2 \cdot 10^3} = -0.5 \text{ mA}$$

Internet



$$\text{Malla 1: } \frac{12 - V_1}{6} + 2 = \frac{V_1 - V_2}{6} \Rightarrow 12 - V_1 + 12 = V_1 - V_2$$

$$\text{Malla 2: } \frac{V_1 - V_2}{6} = \frac{V_2 - 0}{4} \Rightarrow 2V_1 - 2V_2 = 3V_2$$

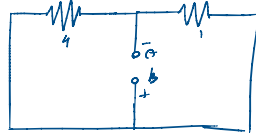
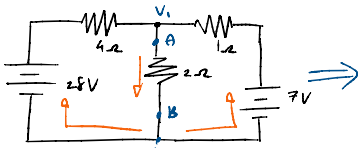


$$\frac{1}{R_T} = \frac{1}{12} + \frac{1}{4} = \frac{4}{12} \Rightarrow R_T = 3 \Omega = R_{TH}$$

$$\begin{cases} 2V_1 - V_2 = 24 \\ 5V_2 - 2V_1 = 0 \end{cases}$$

$$4V_2 = 24$$

$$\boxed{V_2 = 6V}$$



$$\frac{1}{R_T} = \frac{1}{4} + \frac{1}{7} \Rightarrow R_{TH} = \frac{4}{5} = 0.8\Omega$$

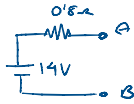
Malla 1:  $\frac{28 - V_1}{4} = \frac{V_1 - V_2}{2}$

Malla 2:  $\frac{7 - V_1}{1} = \frac{V_1 - V_2}{2}$

$$\begin{cases} 28 - V_1 = 2V_1 - 2V_2 \\ 14 - 2V_1 = V_1 - V_2 \end{cases} \Rightarrow \begin{cases} 3V_1 - 2V_2 = 28 \\ -3V_1 + V_2 = -14 \end{cases}$$

$$\begin{aligned} -V_2 &= 14 \\ V_2 &= -14V \end{aligned}$$

$$\begin{aligned} 3V_1 - 2V_2 &= 28 \\ 3V_1 + 28 &= 28 \\ \boxed{V_1 = 0} \end{aligned}$$

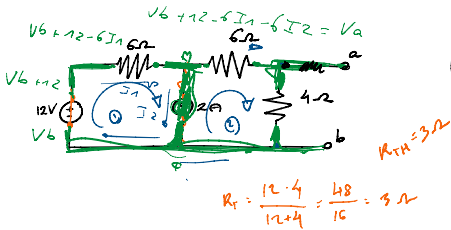


$$\underline{I_3 - I_2 = 4}$$



$$R_1 = \frac{R_2 R_3 + R_2 R_4 + R_3 R_4}{R_4}$$

$$R_0 = \frac{R_2 \cdot R_1}{R_1 + R_2 + R_3}$$



$$V_{ab} \Rightarrow V_c = V_a + 4$$

$$V_c - V_c - 8 = V_a - 4$$

$$V_f = V_c - 10 = V_a - 14$$

$$V_b = V_f - 4 = V_a - 18 \Rightarrow V_{ab} = 18V$$

$$10V - 40V = I_1 \cdot (5 + 20) - I_2 \cdot 20 \Rightarrow -30 = I_1 \cdot 25 - I_2 \cdot 20$$

$$40V = I_2 \cdot 20 - I_1 \cdot 20 \Rightarrow I_2 - I_1 = 2 \Rightarrow I_1 = I_2 - 2$$

$$V_{ab} = -I_2 \cdot 20 = -20I_2 = -80$$

$$\begin{aligned} 25I_2 - 50 - 20I_2 &= -30 \\ 5I_2 &= 20 \\ I_2 &= 4A \end{aligned}$$