



$$I_1 = 2,05 \text{ mA}$$

$$I_2 = 1,089 \text{ mA}$$

$$I_3 = 0,9659 \text{ mA}$$

2VK Trayectoria 1

$$\sum V_{T1} = 0 \Rightarrow +10V - V_{R1} - V_{R2} - V_{R5} = 0$$

$$10V - I_1 \cdot R_1 - I_2 \cdot R_2 - I_1 \cdot R_5$$

$$0 = 10 - (2,05 \text{ mA} \cdot 1K) - (1,089 \text{ mA} \cdot 3,9K) - (1,8K \cdot 2,05 \text{ mA})$$

$$\approx 0,0129 \approx 10 - 2,05 - 4,2471 - 3,69$$

2VK Trayectoria 2

$$\sum V_{T2} = 0 \Rightarrow V_{R2} - V_{R3} - V_{R4} = 0$$

$$\Rightarrow I_2 \cdot R_2 - I_3 \cdot R_3 - I_3 \cdot R_4 = 0$$

$$\approx 1,089 \text{ mA} \cdot 3,9K - 0,9659 \text{ mA} \cdot 2,2K - 0,9659 \text{ mA} \cdot 2,2K$$

$$\approx 0,0286V$$

2VK Trayectoria 3

$$\sum V_{T3} = 0 \Rightarrow +10 - V_{R1} - V_{R3} - V_{R4} - V_{R5} = 0$$

$$10 - I_1 \cdot R_1 - I_3 \cdot R_3 - I_3 \cdot R_4 - I_1 \cdot R_5 = 0$$

$$10 - 2,05 \text{ mA} \cdot 1K - 0,9659 \text{ mA} \cdot 2,2K - 0,9659 \text{ mA} \cdot 2,2K - 2,05 \cdot 1,8K$$

$$\approx 0,0100K \approx 10 - 2,05 - 2,12498 - 2,12498 - 3,69$$

$$\approx 0,0100K V$$

ley de corrientes de Kirchhoff

$$\text{Nodo (1)} \quad \sum C_{V1} = 0 \rightarrow I_1 - I_1 = 0 \rightarrow (2,05 - 2,05) \text{ mA} = 0 \checkmark$$

$$\text{Nodo (2)} \quad \sum C_{V2} = 0 \rightarrow I_1 - I_2 - I_3 = 0 \rightarrow 2,05 - 1,089 - 0,9659 = -4,9 \times 10^{-3}$$

$$\text{Nodo (3)} \quad \sum C_{V3} = 0 \quad I_3 - I_3 = (0,9659 - 0,9659) \text{ mA} = 0 \checkmark$$

$$\text{Nodo (4)} \quad \sum C_{V4} = 0 \quad I_2 + I_3 - I_1 = 0 \rightarrow (1,089 \text{ mA} + 0,9659 \text{ mA} - 2,05) = 4,9 \times 10^{-3}$$

$$\text{Nodo (5)} \quad \sum C_{V5} = 0 \quad I_1 - I_1 = 0 \rightarrow (2,05 - 2,05) \text{ mA} = 0 \checkmark$$