



$$820 \text{ ohm} = 0.82 \text{ K}\Omega$$

$$390 \text{ ohm} = 0.39 \text{ K}\Omega$$

$$I = \frac{V}{R} \quad V = I \cdot R$$

- ① $-18 + 0.82 I_1 + 1(I_1 - I_2) = 0$
- ② $1.2 I_2 + 2.2(I_2 - I_3) + 1(I_2 - I_1) = 0$
- ③ $0.39 I_3 + 5 + 2.2(I_3 - I_2) = 0$

$$\begin{cases} 1.82 I_1 - I_2 = 18 \\ -I_1 + 4.4 I_2 - 2.2 I_3 = 0 \\ -2.2 I_2 + 2.59 I_3 = -5 \end{cases}$$

Corriente:

$$I_1 = 11.45 \text{ mA}$$

$$I_2 = 2.847 \text{ mA}$$

$$I_3 = 0.488 \text{ mA}$$

$$I_{R1} = I_1 = 11.45 \text{ mA}$$

$$I_{R3} = I_2 = 2.847 \text{ mA}$$

$$I_{R5} = I_3 = 0.488 \text{ mA}$$

$$I_{R2} = I_1 - I_2$$

$$I_{R2} = 11.45 \text{ mA} - 2.847 \text{ mA}$$

$$I_{R2} = 8.603 \text{ mA}$$

$$I_{R4} = I_2 - I_3$$

$$I_{R4} = 2.847 \text{ mA} - 0.488 \text{ mA}$$

$$I_{R4} = 2.359 \text{ mA}$$

$$I_{R1} = 11.45 \text{ mA}$$

$$I_{R2} = 8.603 \text{ mA}$$

$$I_{R3} = 2.847 \text{ mA}$$

$$I_{R4} = 2.359 \text{ mA}$$

$$I_{R5} = 0.488 \text{ mA}$$

Voltaje

$$V = I \cdot R$$

$$V_{R1} = 11.45 \text{ mA} \cdot 0.82 \text{ K}\Omega$$

$$V_{R1} = 9.389 \text{ mV}$$

$$V_{R2} = 8.603 \text{ mA} \cdot 1 \text{ K}\Omega$$

$$V_{R2} = 8.603 \text{ mV}$$

$$V_{R3} = 2.847 \text{ mA} \cdot 1.2 \text{ K}\Omega$$

$$V_{R3} = 3.4164 \text{ mV}$$

$$V_{R4} = 2.359 \text{ mA} \cdot 2.2 \text{ K}\Omega$$

$$V_{R4} = 5.1898 \text{ mV}$$

$$V_{R5} = 0.488 \text{ mA} \cdot 0.39 \text{ K}\Omega$$

$$V_{R5} = 0.19032 \text{ mV}$$

• Errors:

$$488 \mu A = 0.488 mA$$

I_1

$$\text{Error \%} = \frac{11.45 mA - 11.5 mA}{11.45 mA} \times 100 = 0.43\%$$

I_2

$$\text{Error \%} = \frac{2.847 mA - 2.85 mA}{2.847 mA} \times 100 = 0.105\%$$

I_3

$$\text{Error \%} = \frac{0.488 mA - 0.49 mA}{0.488 mA} \times 100 = 0.409\%$$