



Node B

$$i_1 + i_2 + i_3 = 0$$

$$\frac{12 - V_B}{1.8} + \frac{0 - V_B}{0.47} + \frac{V_C - V_B}{2.2} = 0$$

$$\frac{12 - V_B}{1.8} - \frac{V_B}{0.47} + \frac{V_C - V_B}{2.2} = 0 \quad (1)$$

Node C  $i_3 + i_4 + i_5 = 0$

$$\frac{V_B - V_C}{2.2} - \frac{V_C}{3.9} + \frac{8 - V_C}{1.5} = 0 \quad (2)$$

De la ecuación (1)

$$12.408 - 1.034 V_B - 3.96 V_B + 0.846 V_C - 0.846 V_B = 0$$

$$1.8612$$

$$-5.84 V_B + 0.846 V_C + 12.408 = 0$$

$$V_B = 0.145 V_C + 2.12 \quad (3)$$

③ en ②

$$\frac{2,12}{2,2} - \frac{0,855 V_C}{3,9} + \frac{8 - V_C}{1,5} = 0$$

$$-5V_C + 12,402 - \frac{3,3V_C}{12,87} + 68,64 - 8,58V_C = 0$$

$$-5V_C + 12,402 - 3,3V_C - 68,64 - 8,58V_C = 0$$

$$-16,88V_C = -81,04$$

$$V_C = 4,80 \text{ V}$$

Entonces.

$$V_B = 0,145(4,80) + 2,12$$

$$V_B = 2,81 \text{ V}$$