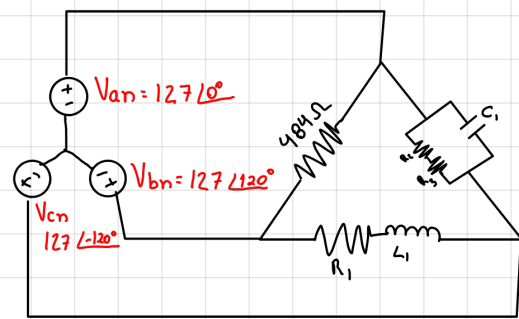


**CBA**

$$R_1 = 198,8 \Omega$$

$$R_2 = 212,8 \Omega$$

$$R_3 = 210,4 \Omega$$

$$C = 21,8 \mu F$$

$$L = 21,5 mH$$

$$Z_c = \frac{1}{j\omega C} = \frac{1}{j377 \cdot 21,8 \cdot 10^{-6}} = -j121,6 \Omega$$

$$Z_L = j\omega L \rightarrow j377 \cdot 21,5 \cdot 10^{-3} = j8,1 \Omega$$

$$Z_1 = 484 \Omega$$

$$Z_2 = 198,8 + j8,1 \Omega$$

$$Z_3 = 423,2 - j121,6 \Omega$$

## Potência

### na Carga

$$S_a = V_{ab} \cdot I_{ab}^*$$

$$S_a = 220 \angle -30^\circ \cdot 0,454 \angle 30^\circ$$

$$S_a = 99,88 \angle 0^\circ \text{ (VA)} \rightarrow S_a = 99,88 + j0 \text{ VA}$$

$P(W) \quad Q(VAR)$

$$S_b = V_{bc} \cdot I_{bc}^*$$

$$S_b = 220 \angle 90^\circ \cdot 1,105 \angle -87,67^\circ$$

$$S_b = 243,1 \angle 2,32^\circ \rightarrow 242,90 + j9,88 \text{ VA}$$

$P(W) \quad Q(VAR)$

$$S_c = V_{ca} \cdot I_{ca}^*$$

$$S_c = 220 \angle -150^\circ \cdot 0,489 \angle 134,28^\circ$$

$$S_c = 107,58 \angle -15,72^\circ \rightarrow 103,55 - j29,14 \text{ VA}$$

$P(W) \quad Q(VAR)$

$$S_T = (S_a + S_b + S_c)$$

$$S_T = 446,33 - j19,26 \text{ VA}$$

$P(W) \quad Q(VAR)$

### na fonte

tensão de Fase

$$V_{an} = 127 \angle 0^\circ$$

$$V_{bn} = 127 \angle 120^\circ$$

$$V_{cn} = 127 \angle -120^\circ$$

tensão Linha

$$V_{AB} = 220 \angle -30^\circ$$

$$V_{BC} = 220 \angle 90^\circ$$

$$V_{CA} = 220 \angle -150^\circ$$

### na carga

$$V_L = V_c$$

### Corrente Fase na carga

$$I_{ab} = \frac{220 \angle -30^\circ}{484 \angle 0^\circ} = 0,454 \angle -30^\circ \text{ A}$$

$$I_{bc} = \frac{220 \angle 90^\circ}{198,96 \angle 2,33^\circ} = 1,105 \angle 87,67^\circ \text{ A}$$

$$I_{ca} = \frac{220 \angle -150^\circ}{448,98 \angle -15,71^\circ} = 0,489 \angle -134,28^\circ \text{ A}$$

### Corrente de linha

$$I_a = I_{ab} - I_{ca}$$

$$I_a = 0,454 \angle -30^\circ - 0,489 \angle -134,28^\circ$$

$$I_a = 0,744 \angle 9,51^\circ \text{ A}$$

$$I_b = I_{bc} - I_{ab}$$

$$I_b = 1,105 \angle 87,67^\circ - 0,454 \angle -30^\circ$$

$$I_b = 1,375 \angle 104,6^\circ \text{ A}$$

$$I_c = I_{ca} - I_{bc}$$

$$I_c = 0,489 \angle -134,28^\circ - 1,105 \angle 87,67^\circ$$

$$I_c = 1,504 \angle -104,87^\circ \text{ A}$$