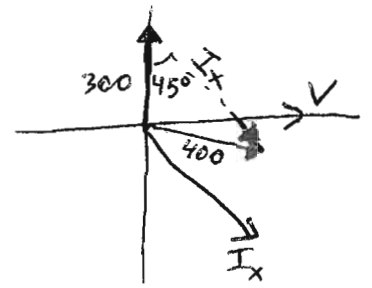
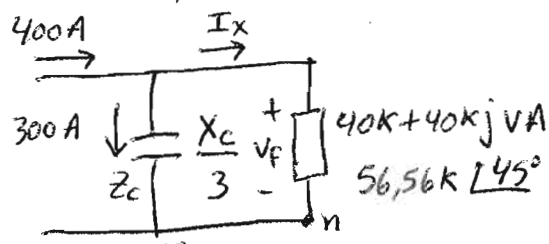


Hallar I_x, V y X_c
 corregir el FP total a 0,98 en adelante.

Equivalente monofásico:



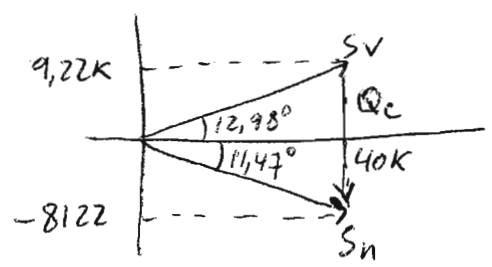
$$I_x = 551,24 \angle -45^\circ \text{ A} = 389,78 \angle -45^\circ \text{ Arms}$$

$$S = VI^* \Rightarrow |V_f| = \frac{|S|}{|I_x|} = \frac{56,56K}{389,78} = 145,1 \text{ Vrms}$$

$$|Z_c| = \frac{|V_f|}{300} = \frac{145,1 \cdot \sqrt{3}}{300} = 0,684 \Omega \quad \frac{X_c}{3} = -0,684 \Rightarrow X_c = -2,05 \Omega$$

$$S_v = |I_a|^2 Z_c + 40K + 40Kj = \left(\frac{300}{\sqrt{3}}\right)^2 (-0,684j) + 40K + 40Kj = -30,78Kj + 40K + 40Kj = 40K + 9,22Kj = 41,049K \angle 12,98^\circ \text{ VA}$$

$\theta = 45^\circ$
 $a = 300, b = I_x, c = 400$
 $c^2 = a^2 + b^2 - 2ab \cos \theta$
 $b^2 = 16 \cdot 10^4 - 9 \cdot 10^4 + 600 \frac{\sqrt{3}}{2} b$
 $b^2 - 300\sqrt{3}b - 7 \cdot 10^4 = 0$
 $b = 551,24 \leftarrow I_x$
 $-126,98$



FP = 0,98 $\Rightarrow \theta_n = -11,47^\circ$
 adelante

$$S_n = 40K - \frac{40K}{0,98} \sin(11,47^\circ) j = 40K - 8122Kj$$

$$Q_c = -(9220 + 8122) = -17342 \text{ Var}$$

$$Q_c = \frac{|V_f|^2}{X_{comp}} \Rightarrow X_{com} = \frac{(145,1)^2}{-17342} = -1,214 \Omega$$

$$-\frac{1}{2\pi 60 C} = -1,214 \Rightarrow C = 2,2 \text{ mF}$$

Para corregir FP:

