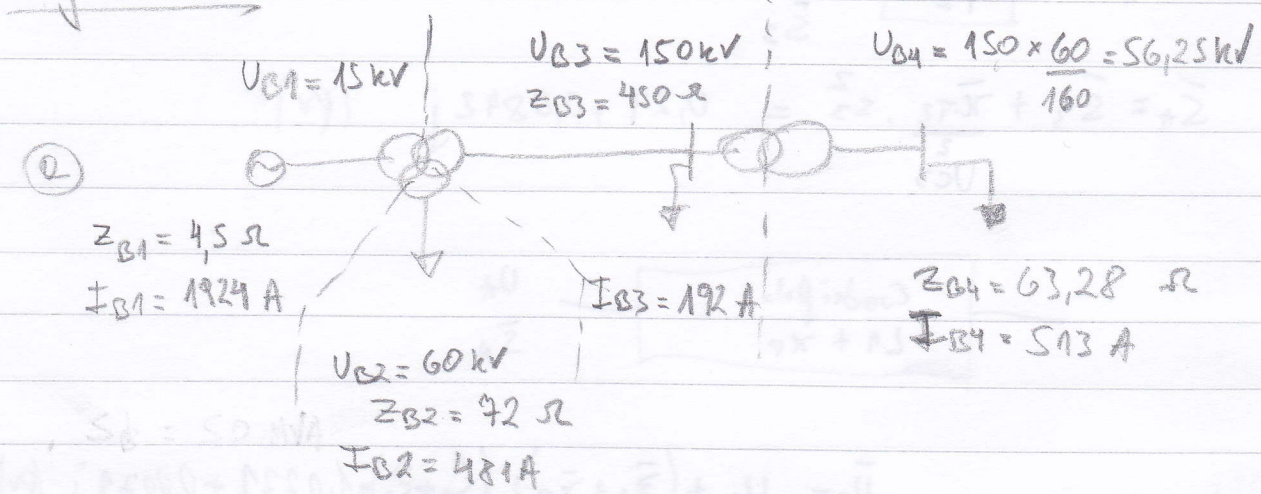
Ejercicio 1



(b) T1: $\bar{x}_p = 0{,}02j$ (pu) $\quad \bar{x}_s = 0{,}09j$ (pu) $\quad \bar{x}_t = 0{,}05j$ (pu)

T2: $x_{T2} = 0{,}06j \times \frac{160^2}{150^2} \times \frac{50}{15} = 0{,}2276$ (pu)

L: $\bar{Z}_L = 0{,}0011 + 0{,}0044j$ (pu)

C1: $\bar{Z}_{C1} = 11{,}11 + 19{,}44j$ (pu)

C2: $\bar{S}_2 = 0{,}06 - 0{,}02j$ (pu)

C3: $\bar{S}_3 = 0{,}24 + 0{,}08j$ (pu)

$U_A = 1{,}02$ (pu)

Corriente por C2: $\quad \bar{i}_{C2} = \frac{\hat{S}_2}{U_A} = 0{,}0588 + 0{,}0196j$ (pu)

$I_{C2} = i_{C2} \times I_{B3} = 11{,}93\,A$

Corriente por C3:

U_A — [ ] $= \bar{S}_3$

Acoplado con la impedancia de T2

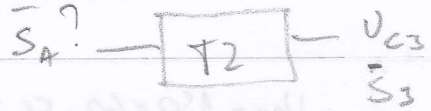
Utilizando Fórmula escalar

$U_{C3} = 1{,}00$ (pu)

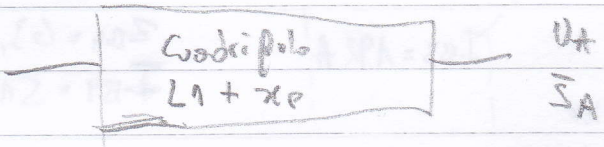
$\Rightarrow \bar{i}_{C3} = \frac{\hat{S}_3}{U_{C3}} = 0{,}24 - 0{,}08j$ (pu)

$I_{C3} = i_{C3} \times I_{B4} = 129{,}8\,A$

Corriente por C1:



$$\bar{S}_A = \bar{S}_3 + \frac{\bar{z}_{T2}}{U_{C3}^2} \cdot S_3^2 = 0{,}24 + 0{,}0842\,j \quad (pu)$$



$$\bar{U}_0 = U_A + \frac{(\bar{z}_L + \bar{z}_p)}{U_A} \cdot (\hat{S}_A + \hat{S}_2) = 1{,}0221 + 0{,}0071\,j \quad (pu)$$

$$\bar{i}_{C1} = \frac{U_0}{(\bar{z}_{C1} + \bar{z}_S)} = 0{,}0225 - 0{,}0396\,j \quad (pu)$$

$$I_{C1} = i_{C1} \times I_{B2} = 21{,}9\ A$$