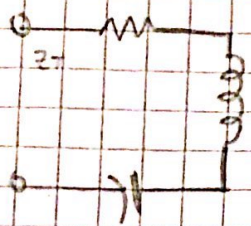
b) Trace el diagrama de impedancias

5) a-



$R = 3\Omega$
$X_L = 4\Omega$
$X_C = 5\Omega$

$Z_T = R + j(X_L - X_C)$

$Z_T = 3\Omega + j4\Omega - 5\Omega$

$Z_T = (3 - j)\,\Omega$

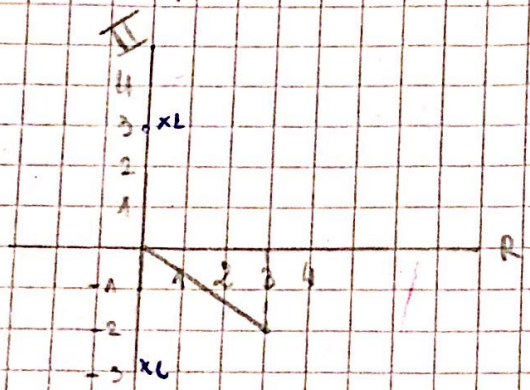
$\sqrt{10} \cdot e^{-0,1\pi}$

$|\bar{Z}| = \sqrt{3^2 + 1}$

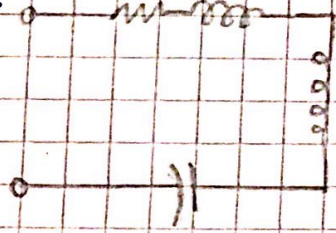
$|\bar{Z}| = \sqrt{10}$

$\varphi_T = \tan^{-1} \frac{-1}{3}$

$\varphi_T = -0,10\pi$



b-



$R = 1K\Omega$
$X_{L2} = 6K\Omega$
$X_{L1} = 2K\Omega$
$X_C = 4K\Omega$

$Z_T = 1K\Omega + j[(6K\Omega + 2K\Omega) - 4K\Omega]$

$Z_T = 1K\Omega + j(8K\Omega - 4K\Omega)$

$Z_T = 1K\Omega + j\,4K\Omega$

$Z_T = (1K + j4K)\,\Omega$

$|\bar{Z}| = \sqrt{1K^2 + 4K^2}$

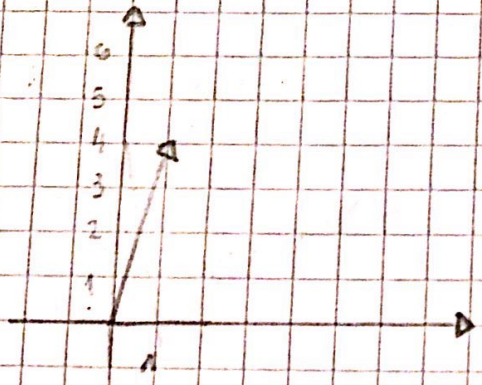
$|\bar{Z}| = 4,12$

$Z_T = 4,12\, e^{0,1\pi}$

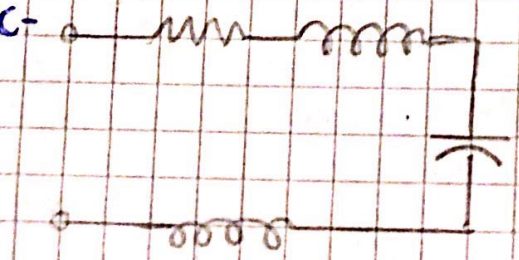
$\varphi_T = \tan^{-1} \frac{4K}{1K}$

$\varphi_T = 4$

$\varphi_T = 0,1\pi$



c-



$R = 470\Omega$
$X_{L1} = 47\,mH$
$X_C = 0.1\,NF$
$X_{L2} = 200\,mH$
$f = 1KHz$

$1K+Hz \cdot 2\pi = W$

$6,28 \cdot 10^3 = W$

$6,28 \cdot 10^3 \cdot 0,1NF = X_C$

$= X_C$