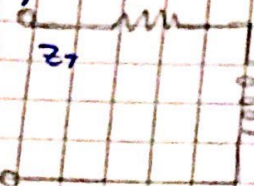


## Practica

Calcular la impedancia total. Expresar respuesta en forma rectangular y polar, y trace el diagrama de impedancia

a)



$$R = 6.8 \Omega$$

$$X_L = 8.2 \Omega$$

$$\text{Forma polar} = Z = 10.65 e^{50.2^\circ}$$

Forma rectangular =

$$Z_T = R + j\omega L$$

$$Z_T = 6.8 \Omega + j8.2 \Omega$$

$$|Z| = \sqrt{6.8^2 + 8.2^2}$$

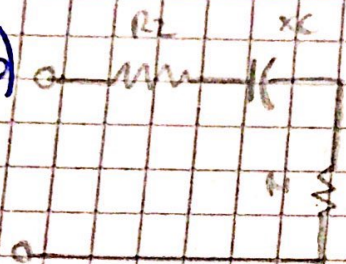
$$|Z| = \sqrt{16.24 + 67.24}$$

$$|Z| = 10.65$$

$$\phi_Z = \tan^{-1} \frac{8.2}{6.8}$$

$$\phi_Z = 50.23^\circ$$

b)



$$R_1 = 2 \Omega$$

$$R_2 = 10 \Omega$$

$$X_C = -6$$

$$R_T = 10 \Omega + 2 \Omega$$

$$R_T = 12 \Omega$$

$$\text{Forma polar} = Z = 13.41 e^{-26.1^\circ}$$

$$Z_T = 12 \Omega + j6 \Omega$$

$$|Z| = \sqrt{12^2 + 6^2}$$

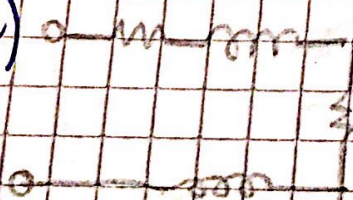
$$|Z| = \sqrt{180}$$

$$|Z| = 13.41$$

$$\phi_Z = \tan^{-1} \frac{6}{12}$$

$$\phi_Z = 26.11^\circ$$

c)



$$R_1 = 1 k\Omega$$

$$R_2 = 5.6 k\Omega$$

$$X_{L1} = 3.2 k\Omega$$

$$X_{L2} = 6.8 k\Omega$$

$$R_T = 1 k\Omega + 5.6 k\Omega$$

$$R_T = 6.6 k\Omega$$

$$\text{Forma polar} = 11.981 e^{-3.6^\circ}$$

$$Z_T = 6.6 k\Omega + j10 k\Omega$$

$$Z_T = (3.2 k\Omega + 6.8 k\Omega) + j10 k\Omega$$

$$Z_T = j10 k\Omega$$

$$|Z| = \sqrt{6.6^2 + 10^2}$$

$$|Z| = 11.981,65$$

$$\phi_Z = \tan^{-1} \frac{10 k\Omega}{6.6 k\Omega}$$

$$\phi_Z = 13.63^\circ$$