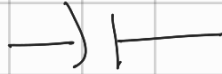


L



$$X_L = \omega L \uparrow = \omega L \angle 90^\circ$$

C



$$X_C = \frac{-j}{\omega C} \downarrow = \frac{1}{\omega C} \angle -90^\circ$$



$$I = \frac{V}{R} \rightarrow \frac{100}{20} = 5A$$

$$V_1 = I \cdot R_1 = 5A \cdot 10\Omega = 50V$$

$$V_2 = I \cdot R_2 = 5A \cdot 10\Omega = 50V$$



$$I = \frac{V}{R} \rightarrow \frac{100}{1010} = 0,09A$$

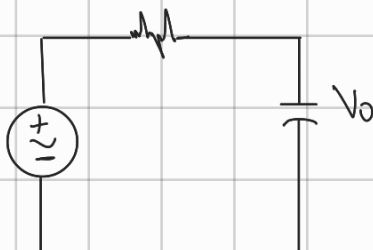
$$V_1 = I \cdot R_1 = 0,09 \cdot 10\Omega = 10V$$

$$V_2 = I \cdot R_2 = 0,09 \cdot 1000\Omega = 90V$$

$\omega_c \rightarrow$ frecuencia de corte $\frac{V_i}{V_2}$

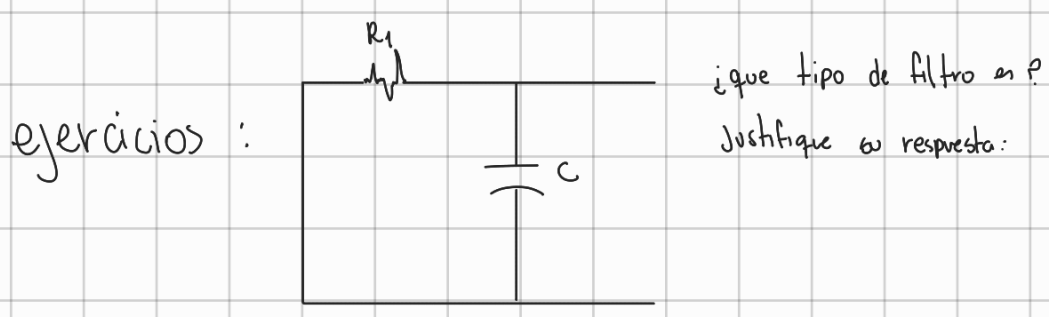
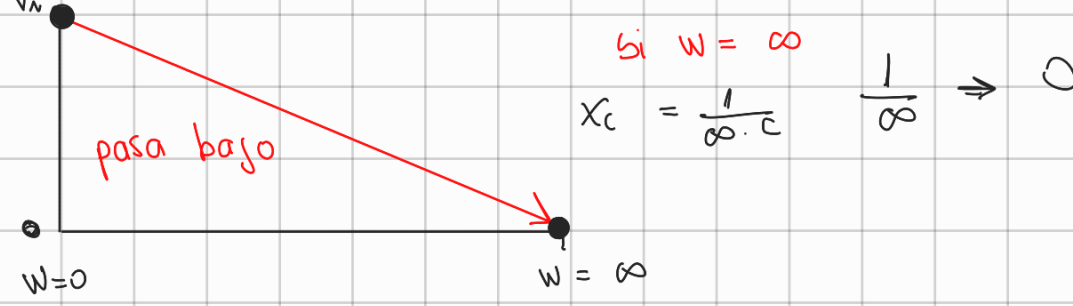
$\omega \rightarrow \infty : V_i = X_L$

ejemplo:



Si $\omega = 0$

$$X_C = \frac{-j}{\omega C} \quad \frac{1}{0} \rightarrow \infty$$

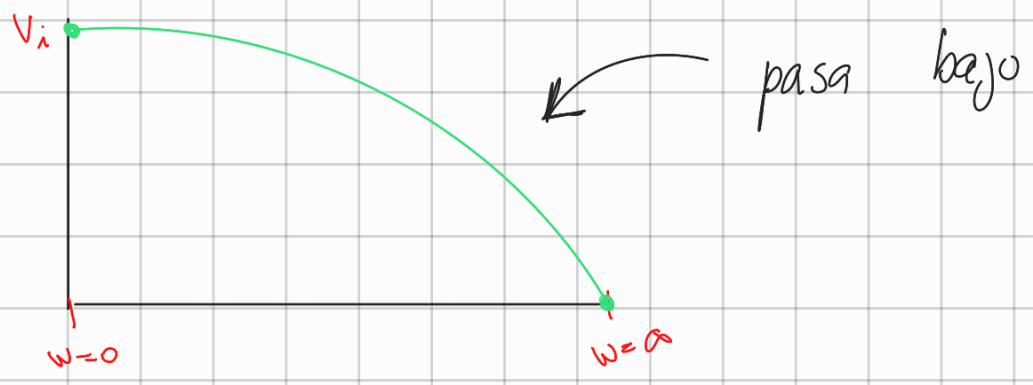


capacitor : $\frac{1}{WC} = \frac{1}{2\pi f C}$

↑ frecuencia

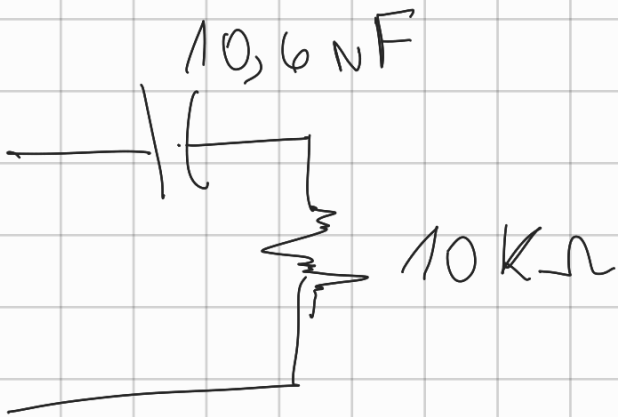
i) $W = 0$ $\rightarrow \frac{1}{0 \cdot C} = \frac{1}{0} \rightarrow \infty$ \rightarrow \leftarrow circuito abierto

ii) $W = \infty$ $\rightarrow \frac{1}{\infty \cdot C} = \frac{1}{\infty} \rightarrow 0 \rightarrow$



$$V_i = V_R + V_C$$

$$V_i = I \cdot R + I \cdot X_C$$



filtro
passa alto

1 KHz



$$2\pi \cdot 10000 \Omega \cdot 1,06 \cdot 10^{-8}$$

$$I = \frac{V_i}{R + X_C}$$

$$R + X_c$$

$$V_o = R \cdot \overline{I}$$

$$V_o = R \cdot \frac{V_i}{R + X_c}$$

$$V_o = \frac{V_i}{\sqrt{2}} \quad \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

$$X_c = \frac{-1}{2\pi \cdot f \cdot C} = \sqrt{2} - 10.000$$

$$= \frac{-1}{(\sqrt{2} - 10.000) 2\pi \cdot C} = 1$$

$$1501,6 \text{ Hz}$$



