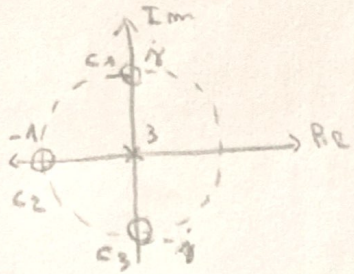
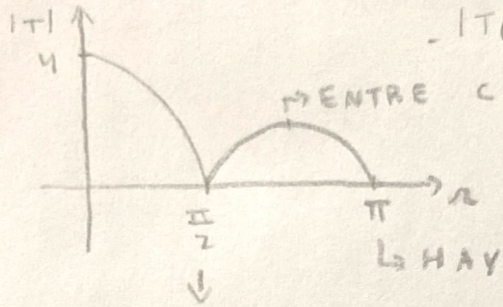
A - $T(j\Omega) = e^{-\frac{3}{2}j\Omega}\left(2\cos\left(\frac{3}{2}\Omega\right) + 2\cos\left(\frac{1}{2}\Omega\right)\right)$

$\measuredangle T = -\frac{3}{2}\Omega$ $\qquad |T| = 2\cos\left(\frac{3}{2}\Omega\right) + 2\cos\left(\frac{1}{2}\Omega\right)$





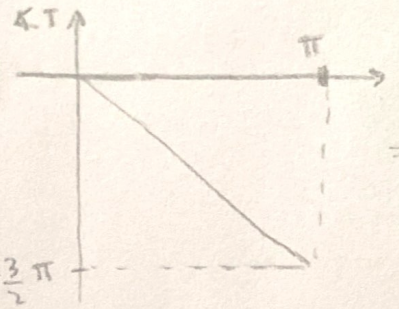
- $|T(0)| = 2\cos(0) + 2\cos(0$

↳ ENTRE c_1 Y c_2 CRECE

↳ HAY UN CERO EN $\Omega = \pi$

⇓

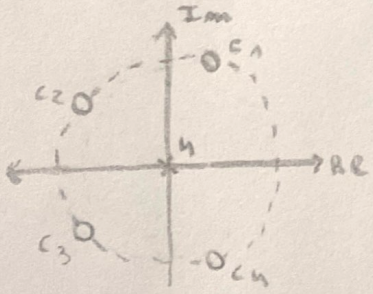
HAY UN CERO EN $\Omega = \frac{\pi}{2} \Rightarrow c_1$

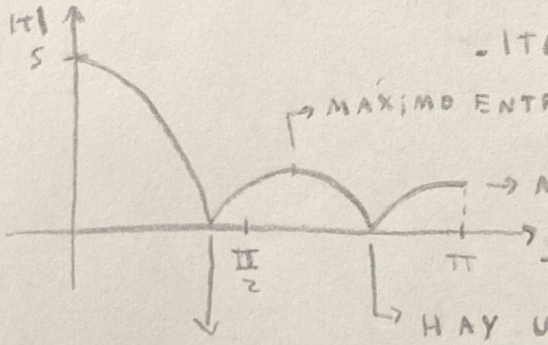


⇒ FASE LINEAL

B - $T(j\Omega) = e^{-2j\Omega}\left(2\cos(2\Omega) + 2\cos(\Omega) + 1\right)$

$\measuredangle T = -2\Omega$ $\qquad |T| = 2\cos(2\Omega) + 2\cos(\Omega) + 1$





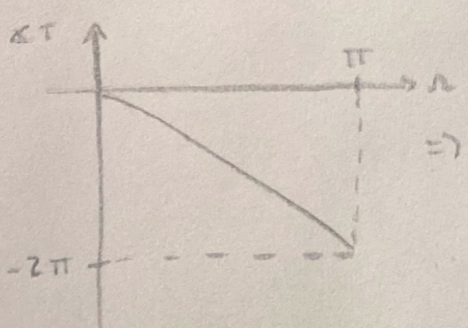
- $|T(0)| = 2\cos(0) + 2\cos(0) +$

↳ MÁXIMO ENTRE c_1 Y c_2, PASANDO

↳ MÁXIMO ENTRE c_2 Y

HAY UN CERO ANTES DE $\Omega = \frac{\pi}{2}$ (c_1)

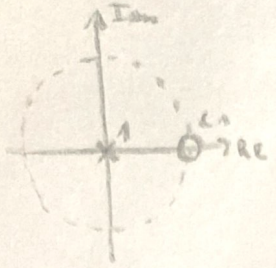
HAY UN CERO ANTES DE $\Omega = \pi$ (c_2)

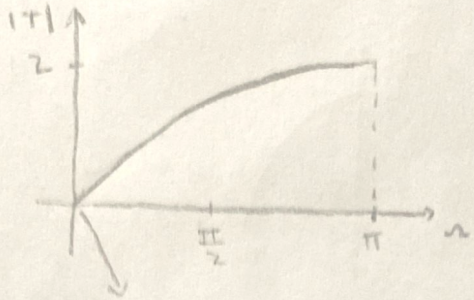


⇒ FASE LINEAL

C.- $T(j\Omega) = \underbrace{e^{-\frac{1}{2}j\Omega}}_{\text{fase}} \cdot \underbrace{2j \cdot \operatorname{sen}\left(\frac{1}{2}\Omega\right)}_{\text{módulo}}$

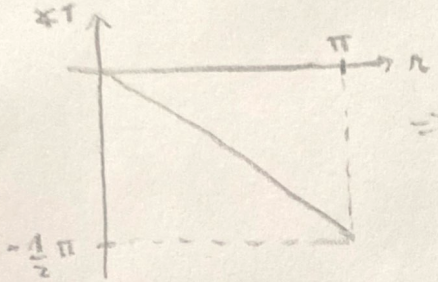
$\measuredangle T = -\frac{1}{2}\Omega \qquad |T| = 2 \cdot \operatorname{sen}\left(\frac{1}{2}\Omega\right)$





- $|T(0)| = 2 \cdot \operatorname{sen}(0) = 0$
- $|T(\pi)| = 2 \cdot \operatorname{sen}\left(\frac{1}{2}\pi\right) = 2$

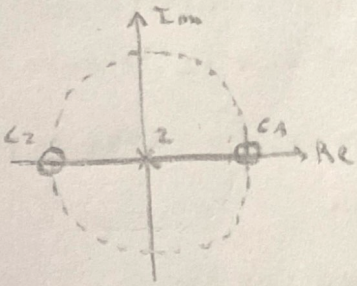
ARRANCA EN "0" POR EL ÚNICO CERO "C1"

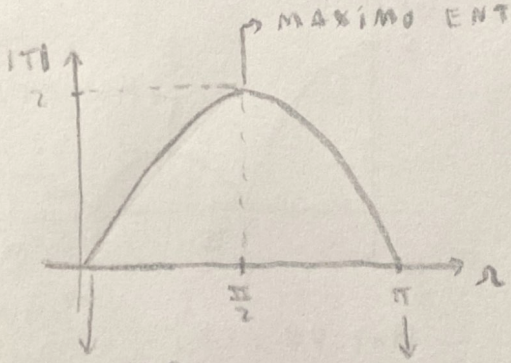


⇒ FASE LINEAL

D.- $T(j\Omega) = \underbrace{e^{-j\Omega}}_{\text{fase}} \cdot \underbrace{2j \operatorname{sen}(\Omega)}_{\text{módulo}}$

$\measuredangle T = -\Omega \qquad |T| = 2\operatorname{sen}(\Omega)$

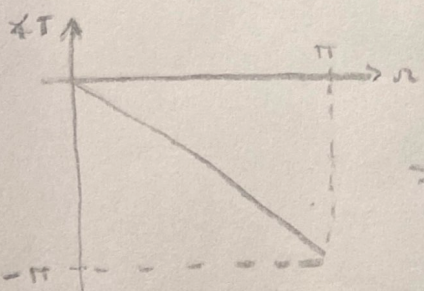




- $|T(0)| = 2\operatorname{sen}(0) = 0$
- $|T(\frac{\pi}{2})| = 2\operatorname{sen}(\frac{\pi}{2}) = 2$
- $|T(\pi)| = 2\operatorname{sen}(\pi) = 0$

HAY UN CERO EN $\Omega = 0 \Rightarrow C1$

HAY UN CERO EN $\Omega = \pi \Rightarrow C2$



⇒ FASE LINEAL