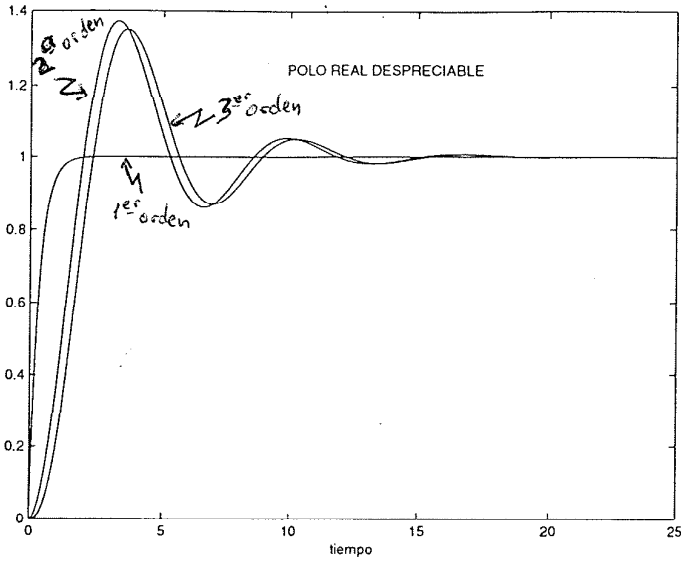


# SISTEMA DE TERCER ORDEN

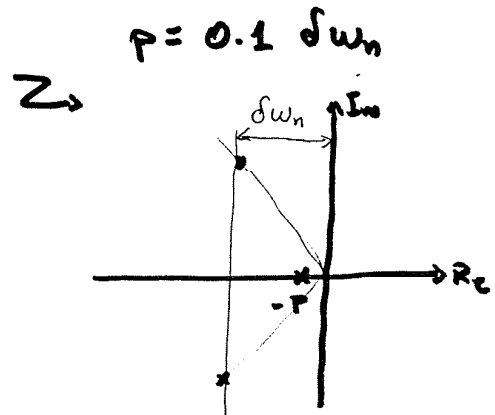
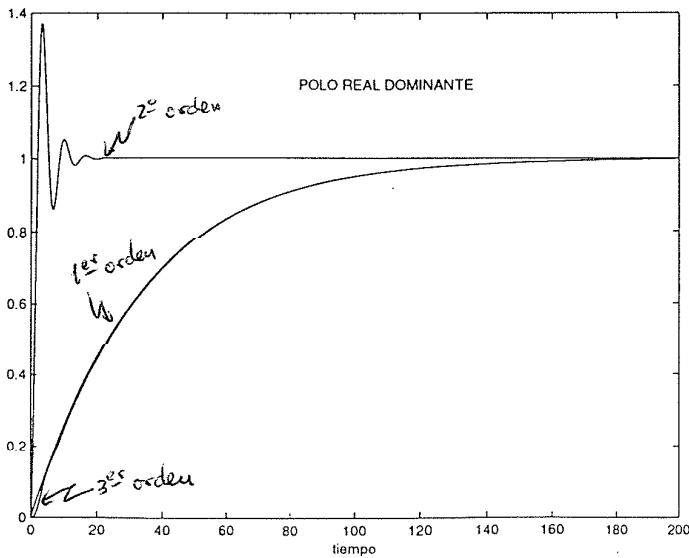
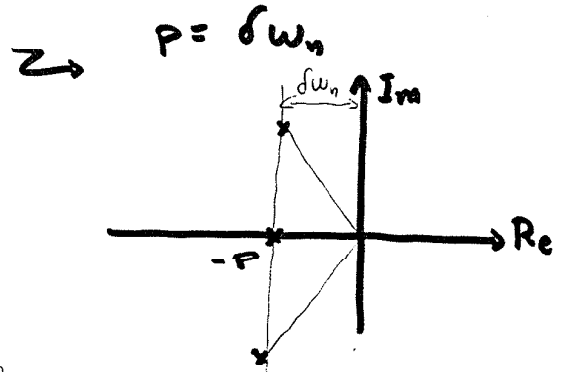
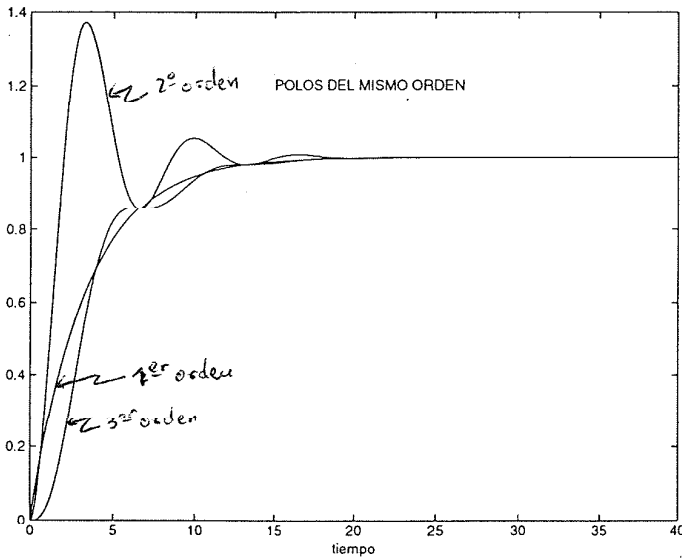
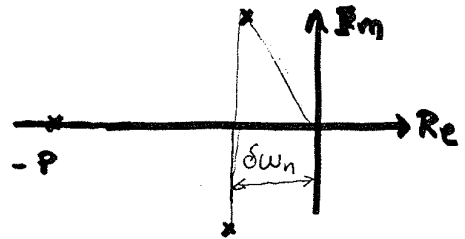
- ADICIÓN DE POLO A SISTEMA DE SEGUNDO ORDEN SUBAMORTIGUADO



$$G(s) = \frac{\omega_n^2}{s^2 + 2\delta\omega_n s + \omega_n^2} \frac{P}{s+P}$$

•  $\delta = 0.3$   
 $\omega_n = 1$

→  $P = 10\delta\omega_n$



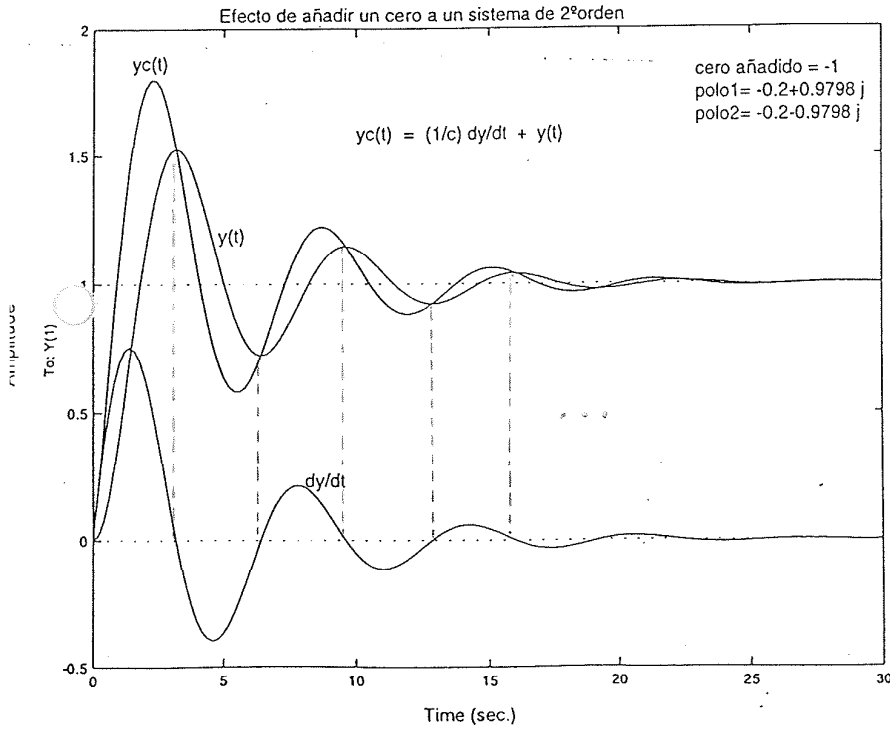
# SISTEMA DE SEGUNDO ORDEN SUBAMORTIGUADO

ADICIÓN DE UN CERO:

$$G(s) = \frac{\omega_n^2}{s^2 + 2\delta\omega_n s + \omega_n^2} \frac{s+c}{c}$$

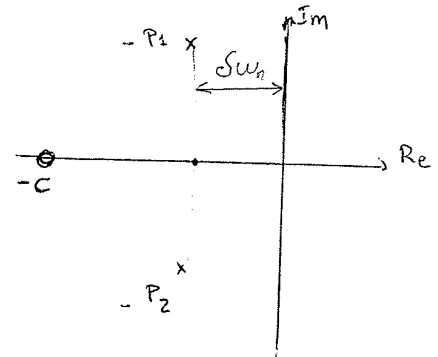
$$\omega_n = 1 \text{ rad/s}$$

$$\delta = 0.2$$

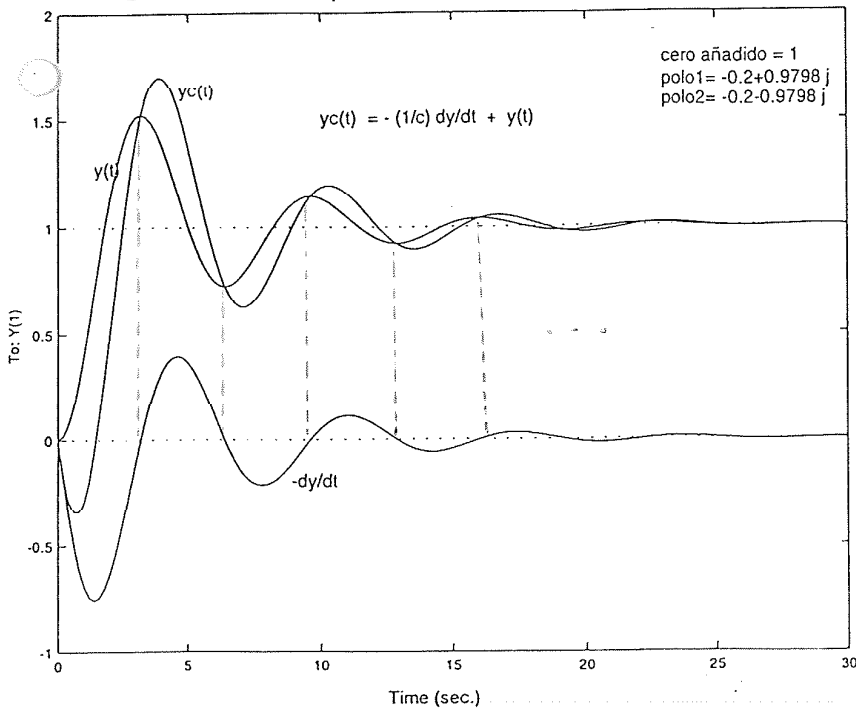


**CERO DE FASE MÍNIMA**

$$C = +1$$

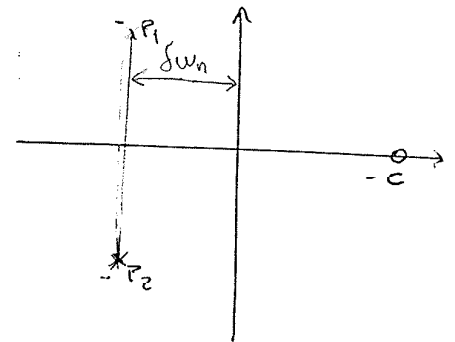


Efecto de añadir un cero positivo a un sistema de 2ºorden: Sistema de fase no-mínima



**CERO DE FASE NO MÍNIMA**

$$C = -1$$



# SISTEMA DE SEGUNDO ORDEN SOBREAMORTIGUADO

ADICIÓN DE UN CERO:

