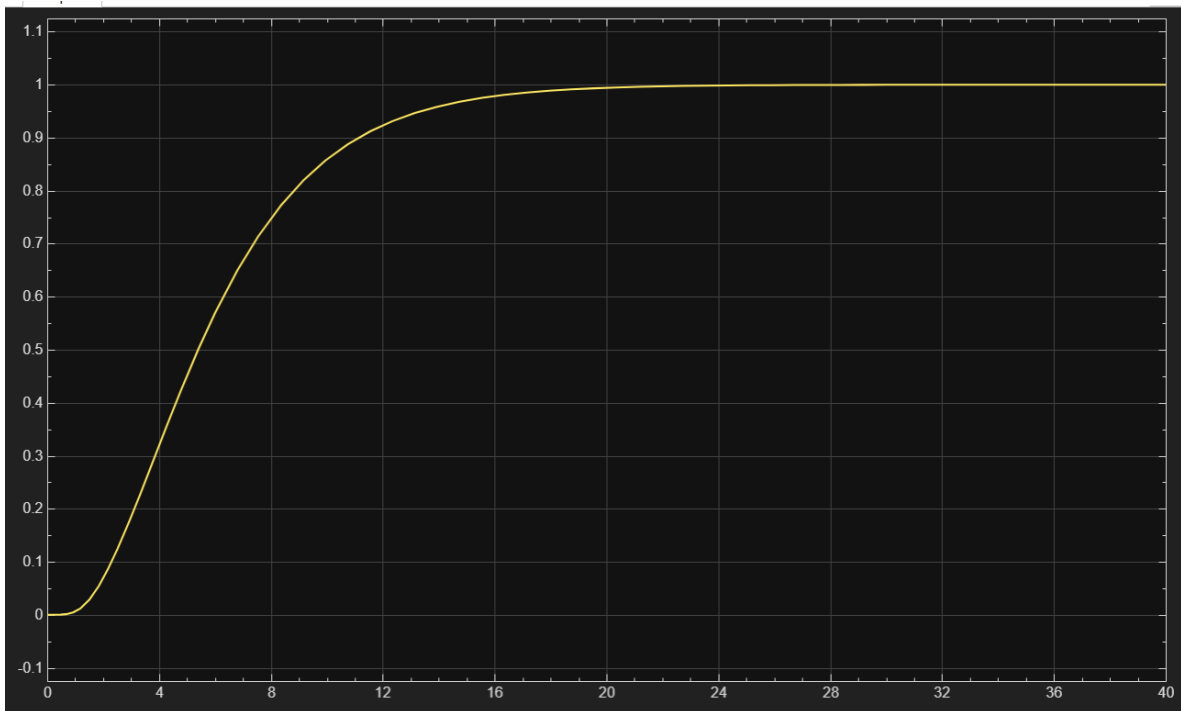
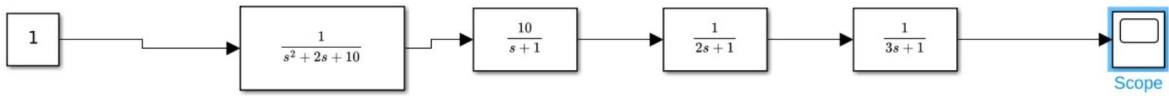
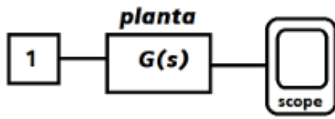


Ejercicio 6 (Orden 5 → PID)

$$G(s) = \frac{10}{(s^2 + 2s + 10)(s + 1)(2s + 1)(3s + 1)}$$



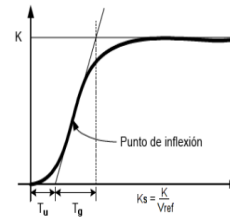


Figura 6.8. Determinación de T_u , T_g y K_s de la respuesta de la planta a lazo abierto.

$$t_u = \text{corte en } y=0 \quad t=1,8 \quad L=1,8$$

$$t_g = 63\% \text{ valor final} - t_u$$

$$t=6,8 \quad T=6,8-1,8 = 5$$

$$k_p = \frac{y_{ss}}{\text{entrada}} = 1/1 = 1$$

$$K_p = (1,2) T/L = 5/1,8 = 3,24$$

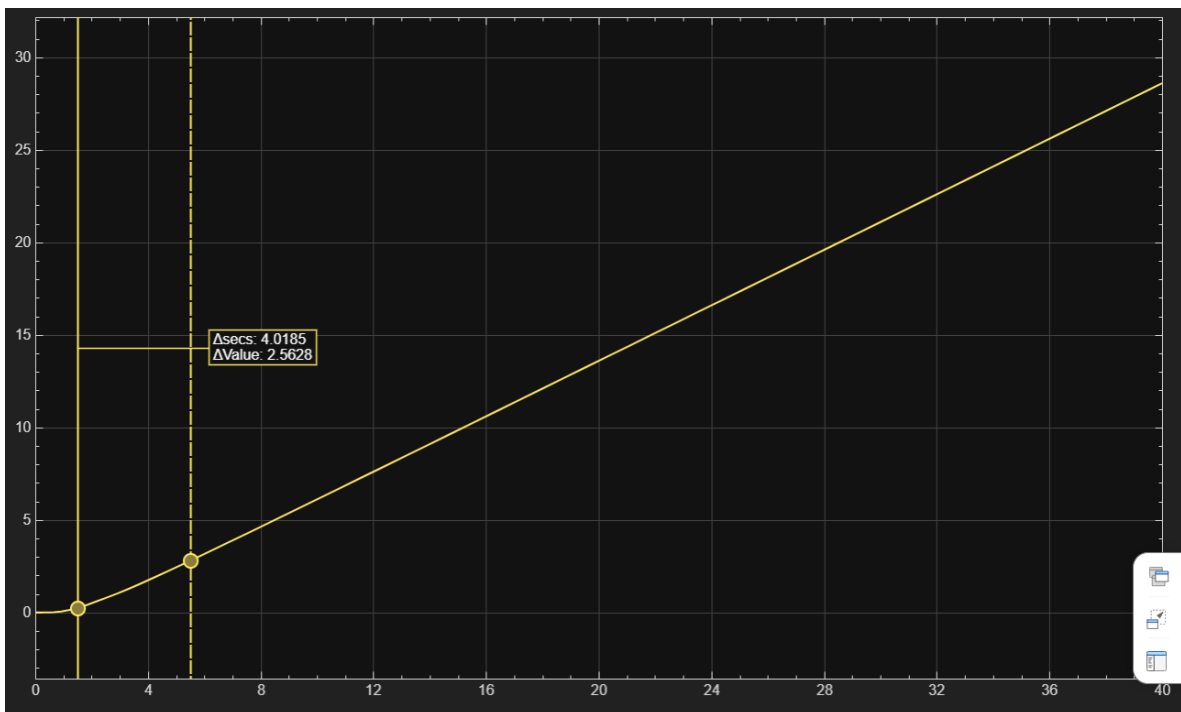
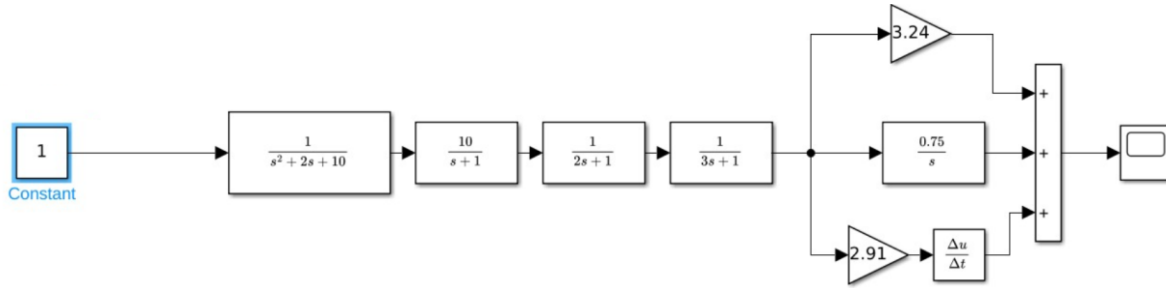
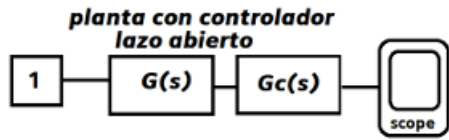
$$T_i = 2L = 2(1,8) = 3,6$$

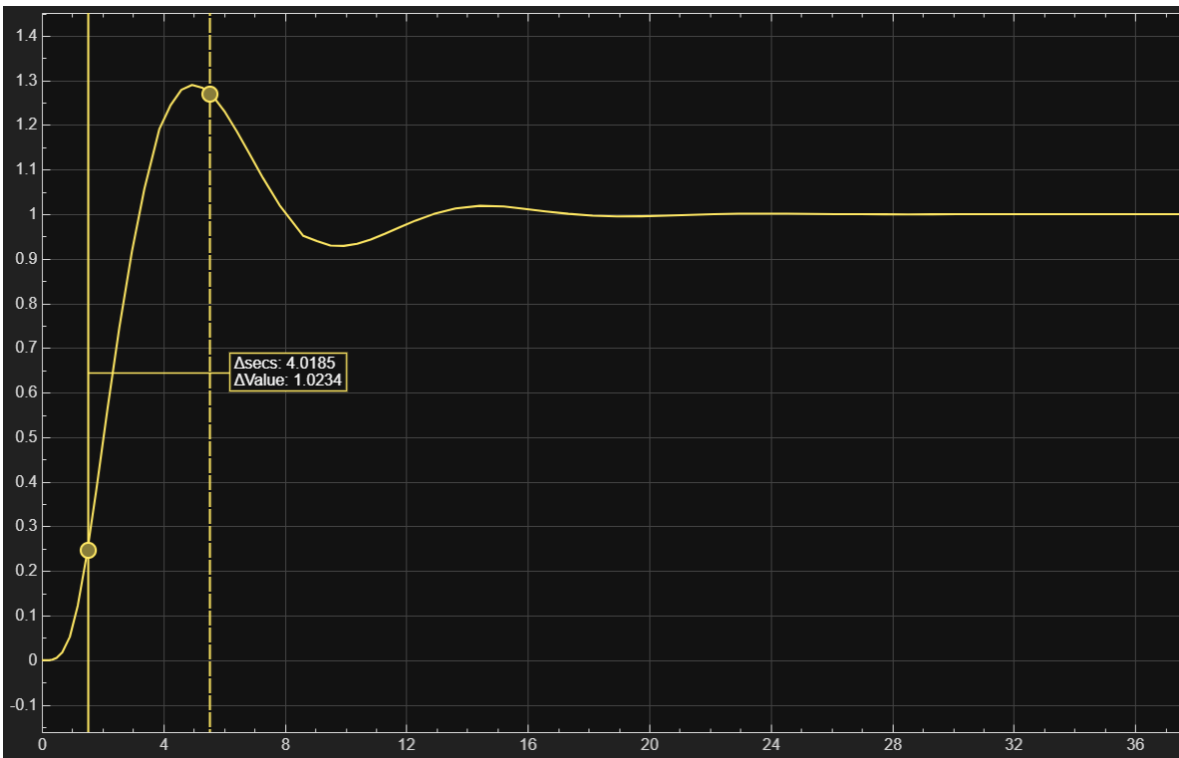
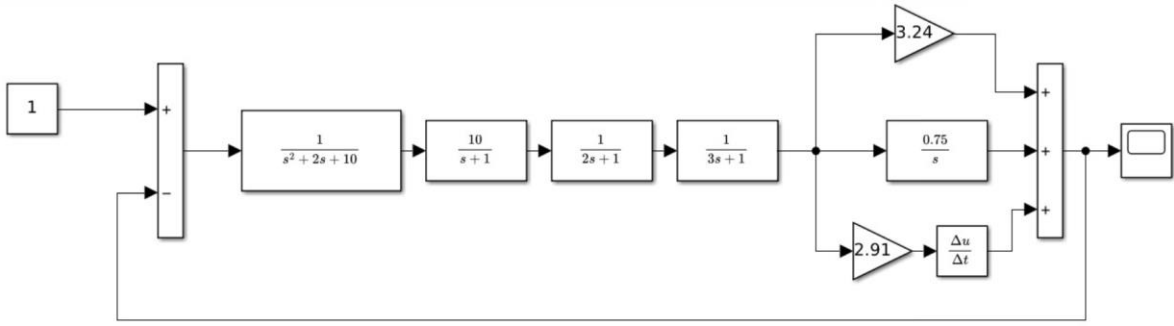
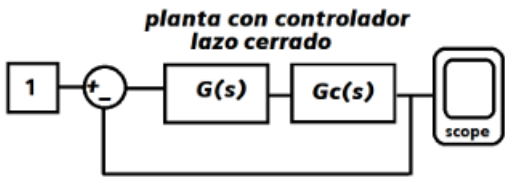
$$T_d = 0,5 L = 0,5(1,8) = 0,9$$

$$K_i = K_p/T_i = 3,24 / 3,6 = 0,9$$

$$K_d = K_p * T_d = 3,24 * 0,9 = 2,91$$

$$G_c(s) = K_p + \frac{K_i}{s} + K_d s$$





FIN

