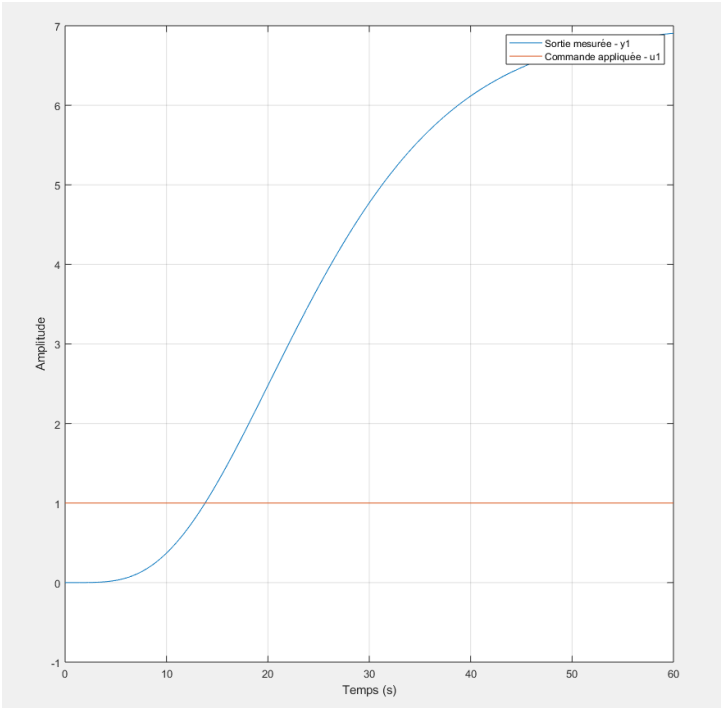
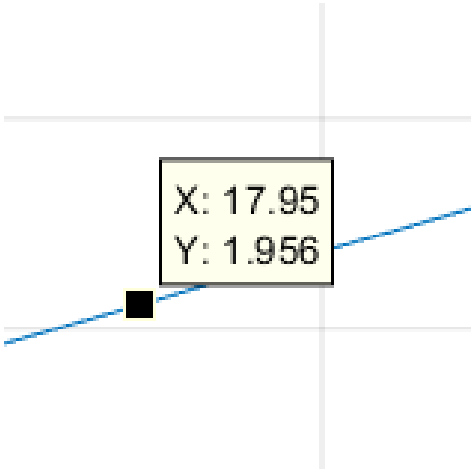
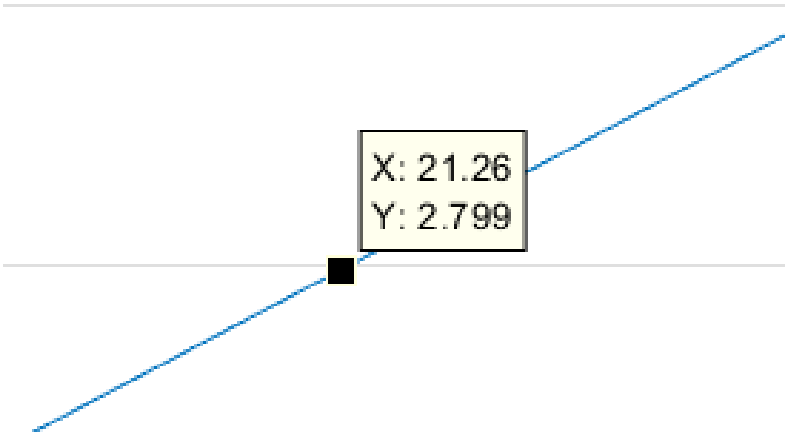
Exercice 1 : Correcteur PID

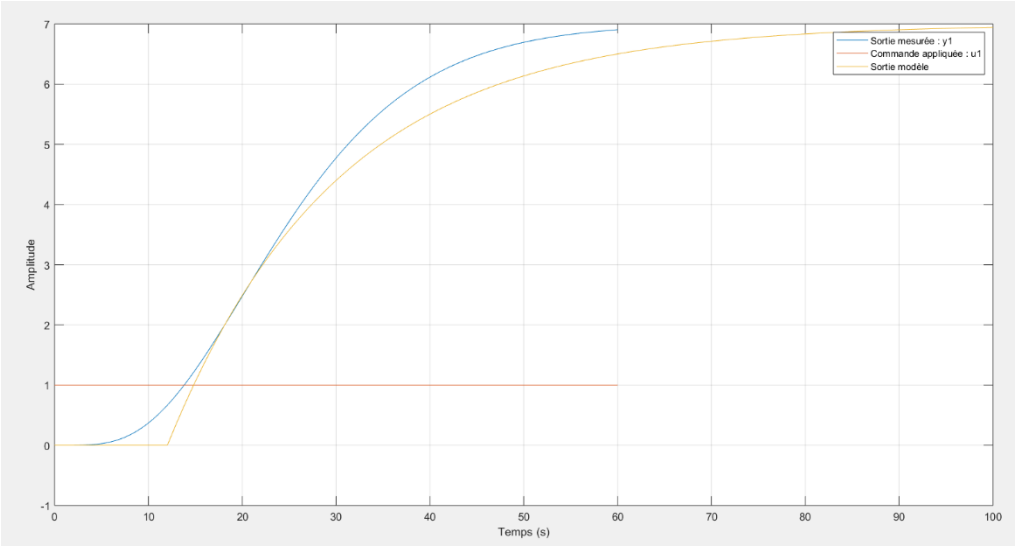
A- Comportement en BO



B- Conception d'un correcteur continu







Kb = 7/1 = 7

<u>Méthode de Broida :</u>

0.28kb = 0.28*7 = 1.96 => t1 = 17.96 s

0.4 * kb = 0.4 *7= 2.8 => t2= 21.26 s

Tb=5.5(21.26-17.96) = 18.15 s

Taub = 2.8*17.96-21.26*1.8 = 12.02

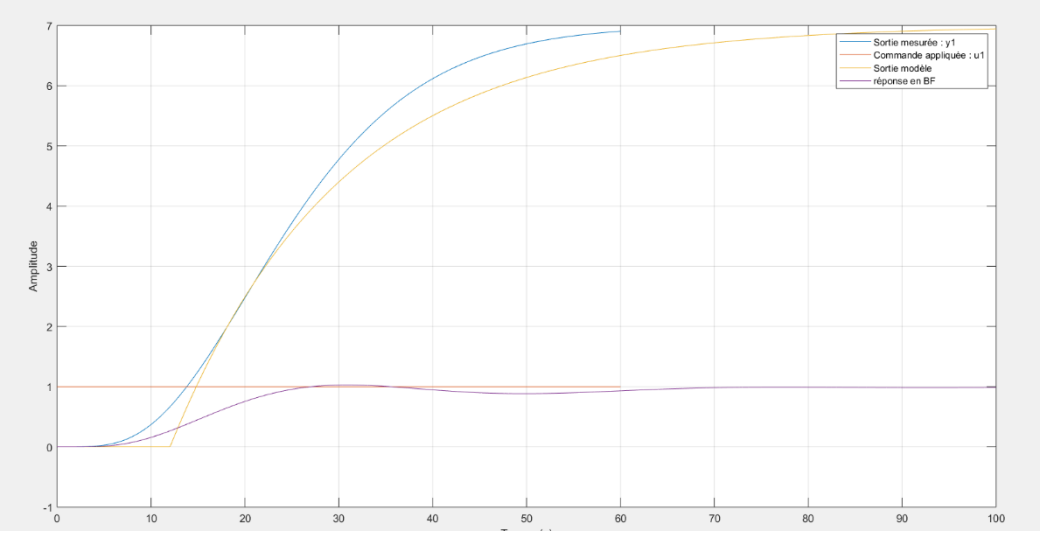
<u>Méthodes PID Tableau de Chiens, Hrones et Reswick :</u>

Kp = 0.95*Tb / kb*Taub = 0.205

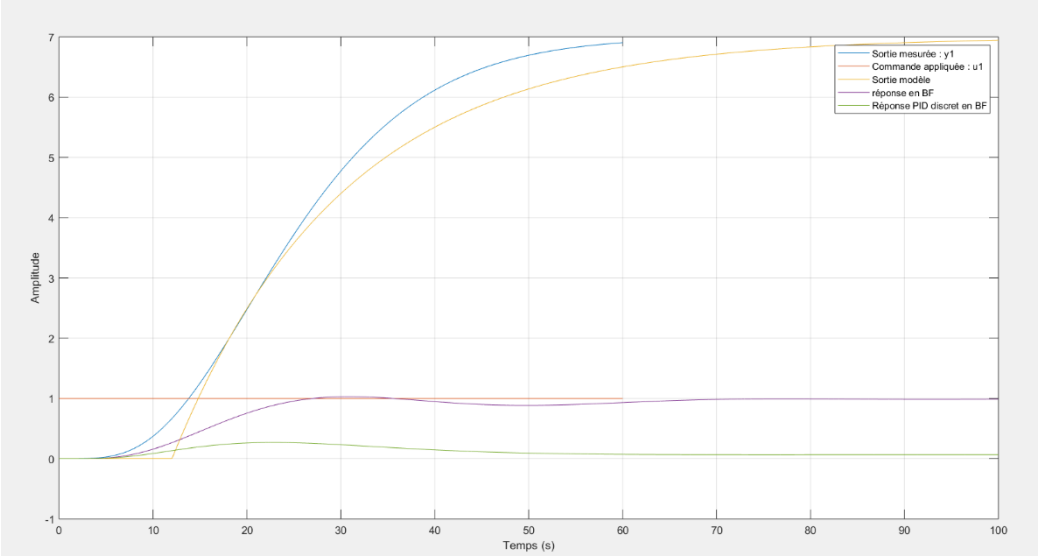
Ti=1.4Tb=25.41

Tb=0.47*Taub=5.64

G(s) = (7 * exp(-12.02 s)) / (18.15 + 1)



C- Correcteur PID en discret obtenu par transformation du correcteur PID continu



D- Correcteur PID discret obtenu directement par la méthode de Takahashi