APÊNDICE A

Experiência 5 - Experimento 2.

LGR 1

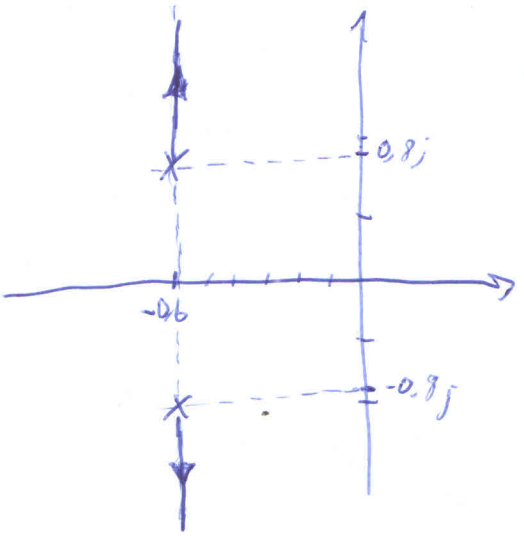
$$G(s) = \frac{1}{s^2 + 1{,}2s + 1}$$

$P_1 = -0{,}6 - 0{,}8j$

$P_2 = -0{,}6 + 0{,}8j$

$$\sigma_a = \frac{-0{,}6 - 0{,}6}{2 - 0} = -0{,}6$$

$$\theta_a = \frac{(2k+1)\pi}{2-0} \begin{cases} = \pi/2 \; ; k = 0 \\ = 3\pi/2 \; ; k = 1 \end{cases}$$



LGR 2

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

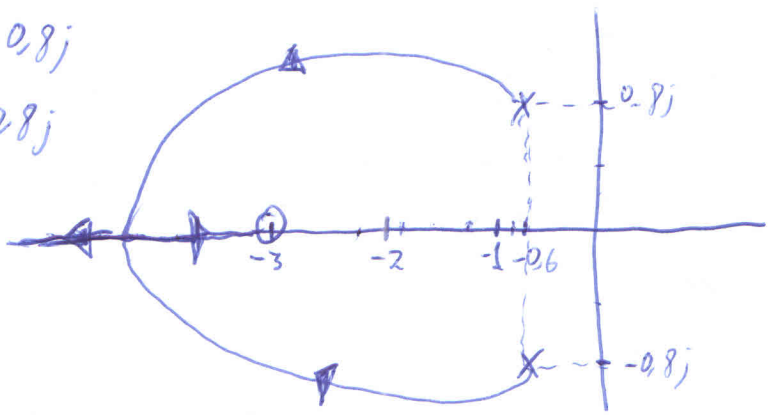
$P_1 = -0{,}6 - 0{,}8j$

$P_2 = -0{,}6 + 0{,}8j$

$Z = -3$

$$\sigma_a = \frac{-0{,}6 - 0{,}6 + 3}{2 - 1} = 1{,}8$$

$$\theta_a = \frac{(2k+1)\pi}{2-1} = \pi \; ; k = 0$$



LGR 3

$P_1 = -0{,}6 - 0{,}8j$

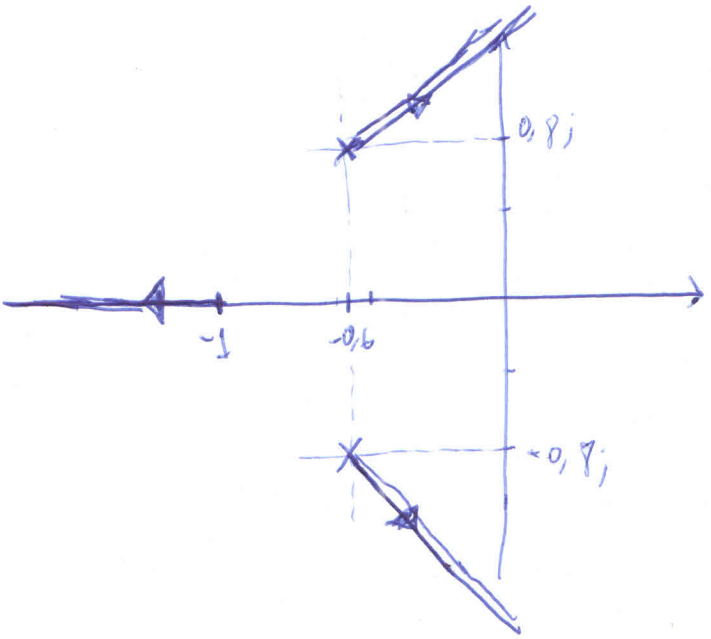
$P_2 = -0{,}6 + 0{,}8j$

$P_3 = -1$

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

$$\sigma_a = \frac{-0{,}6 - 0{,}6 - 1}{3} = 0{,}733$$

$$\theta_a = \frac{(2k+1)\pi}{3} = \begin{cases} \pi/3 \; ; k = 0 \\ \pi \; ; k = 1 \\ 5\pi/3 \; ; k = 2 \end{cases}$$

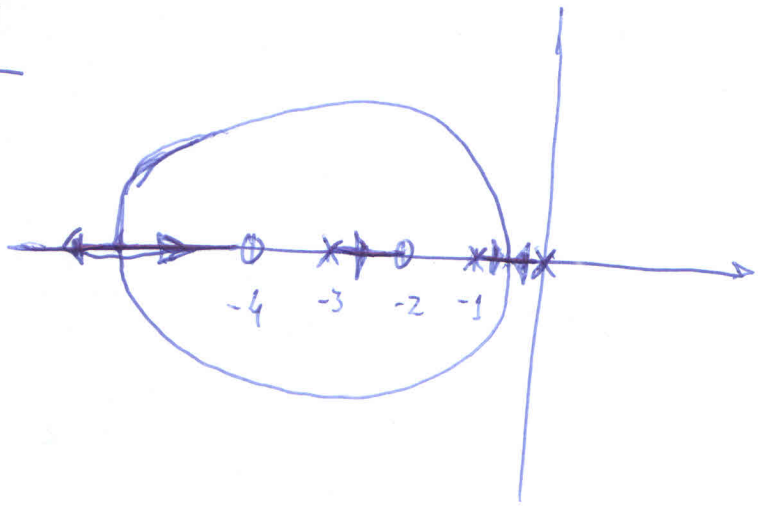


LGR 4

$$G(s) = \frac{(s+2)(s+4)}{s(s+1)(s+3)}$$

$$\sigma_a = \frac{-1-3+2+4}{3-2} = -2$$

$$\theta_a = \frac{(2K+1)\pi}{3-2} = \pi;\ K=0$$



LGR 5

$$G(s) = \frac{(s+2)(s+5)}{(s+4)(s+1)(s+3)}$$

$$\sigma_a = \frac{-4-1-3+2+5}{3-2} = -1$$

$$\theta_a = \pi;\ K=0$$