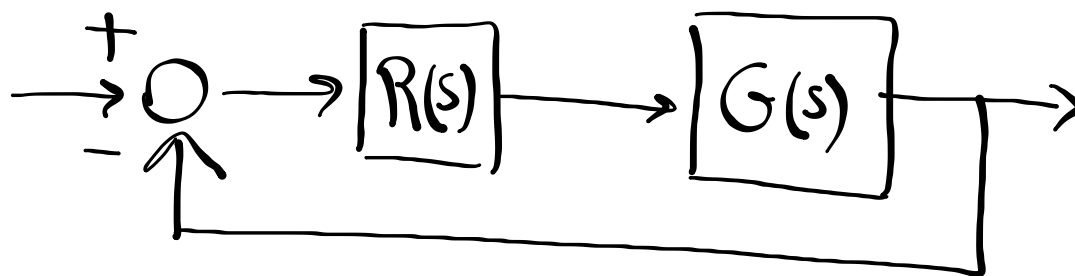


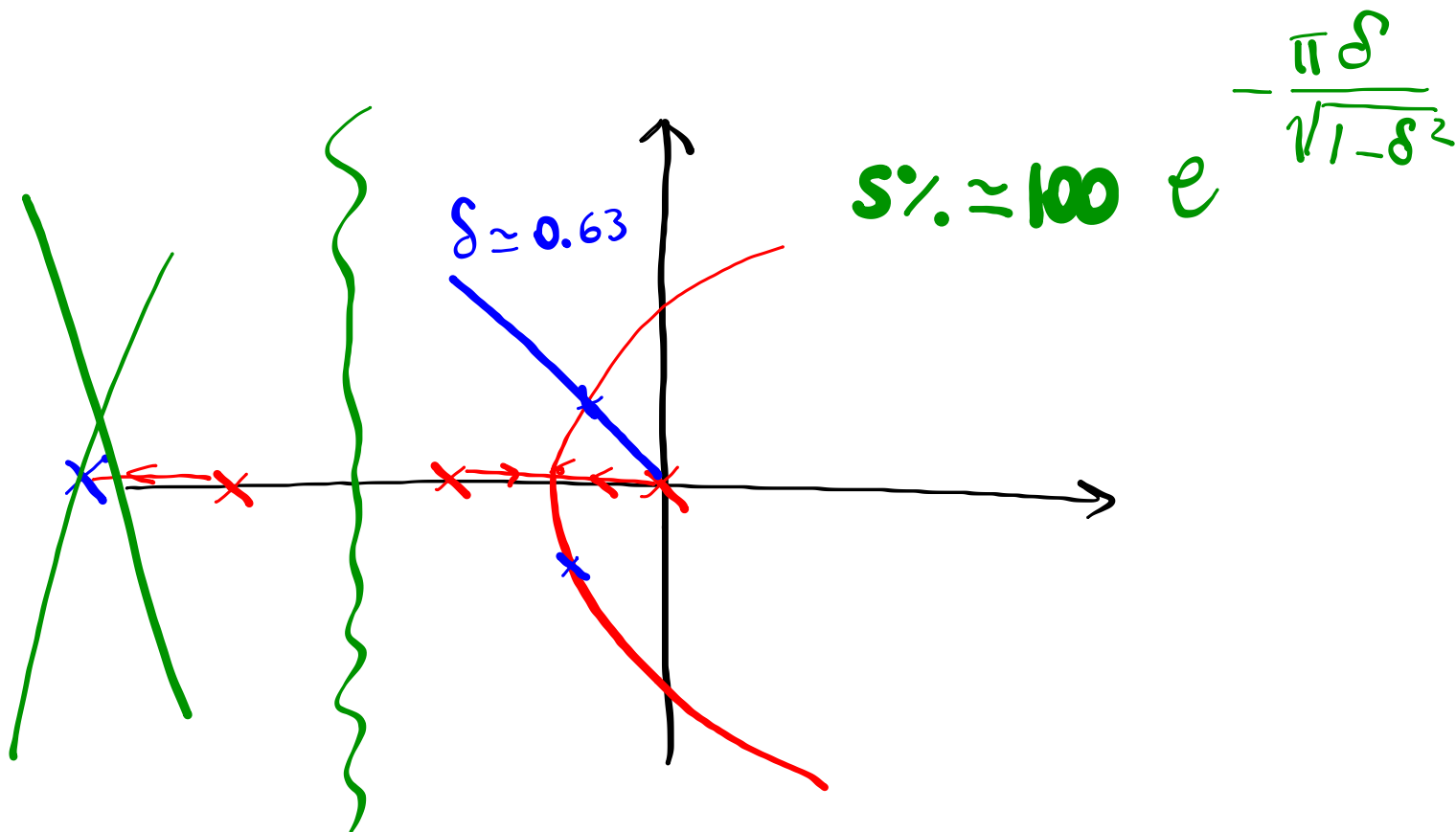
$$G(s) = \frac{1}{\boxed{s}(s+10)(s+50)}$$

$$\begin{cases} \zeta \leq 7.5\% \quad (\delta \approx 0.63) \\ T_a \leq 0.4 \text{ s} \end{cases}$$

1) Regolatore proporzionale

$$R(s) = K$$





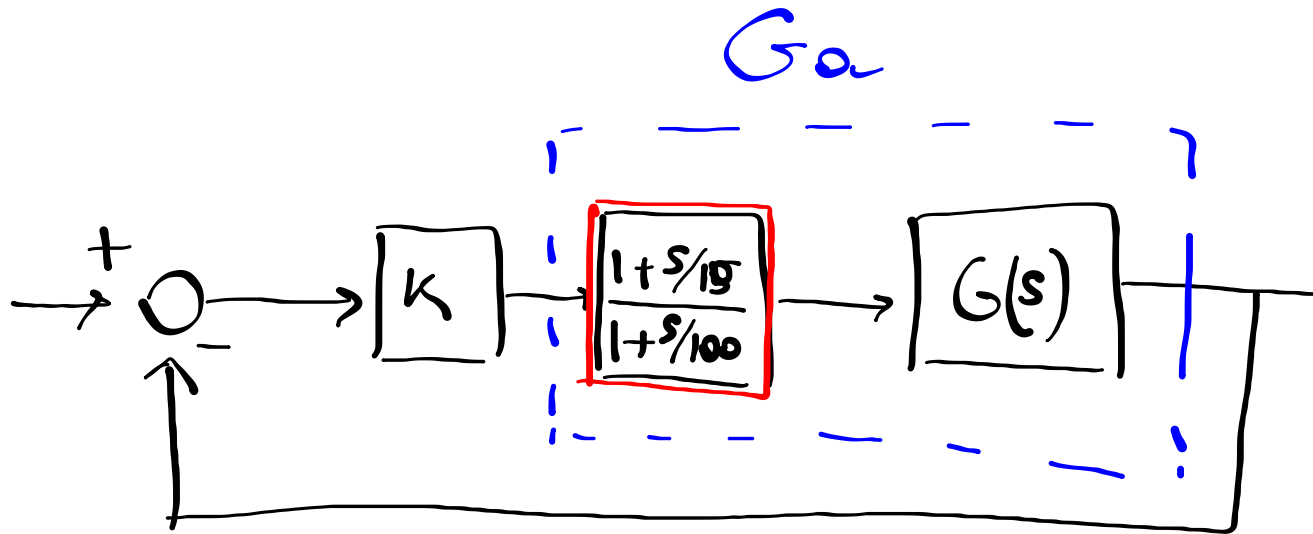
2) Regolatore dinamico

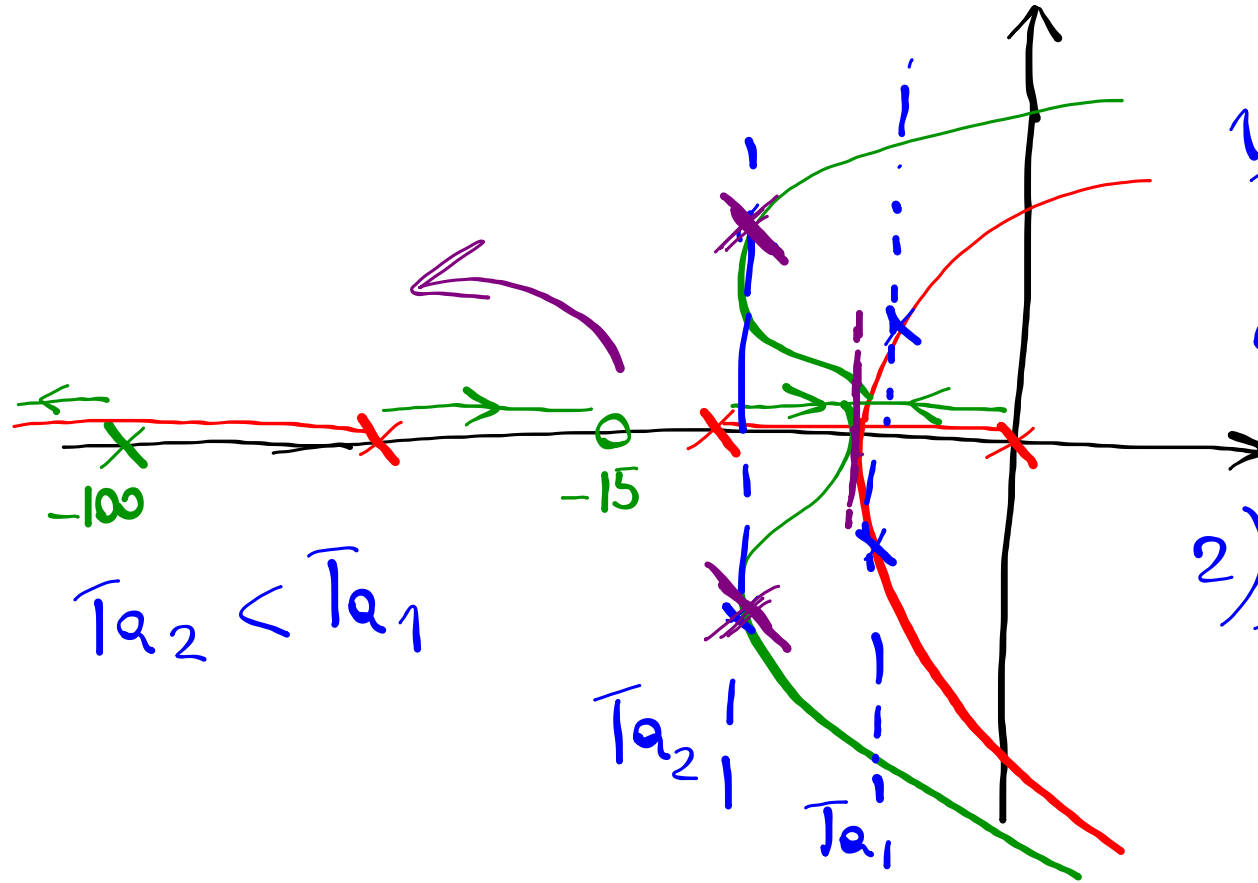
$$R(s) = \underbrace{K}_{\text{statico}} \underbrace{\frac{1 + s/15}{1 + s/100}}_{\text{dinamico}} = K \frac{1 + s \cdot \tilde{\tau}_z}{1 + s \cdot \tilde{\tau}_p}$$

$R(0) = K$

(Rete anticipatrice)

A circled '1' is connected to the top-right corner of the dynamic part of the transfer function by an arrow labeled $s=0$.





$\bar{T}a_2 < \bar{T}a_1$

1) effetto "attrattore" dello zero

2) migliore $\bar{T}a = \frac{3}{\delta \omega_n}$

$$k \uparrow \Rightarrow S\% \uparrow \quad T_a \downarrow$$

$$k \downarrow \Rightarrow S\% \downarrow \quad T_a \uparrow$$