$$\lim_{s \to 0} G(s) = 11 = k$$

$$G(s) = \frac{11 \cdot 3{,}499^2}{s^2 + 2 \cdot 0{,}43995 \cdot 3{,}499 + 3{,}499^2}$$

$$= \frac{134.6730}{s^2 + 3{,}0784s + 12{,}24}$$

III) $$G(s) = \frac{k\omega_n^2}{s^2 + 2\zeta\omega_n s + \omega_n^2}$$

$$\%OS = \frac{1{,}4 - 1.0}{1{,}4} \cdot 100 = 0{,}2857$$

$$\zeta = \frac{-\ln(0{,}2857/100)}{\sqrt{\pi^2 + \ln^2(0{,}2857/100)}} = 0{,}8813$$

$$\omega_n = \frac{\pi}{\sqrt{1 - \zeta^2}} = 6{,}6472$$

$$\lim_{s \to 0} G(s) = 1 = k$$

$$G(s) = \frac{44.1856}{s^2 + 11.71645 + 44.1856}$$