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$$\textcircled{1} \quad G_1 = \frac{s^2 + 5s + 25}{s(s^3 + 7,4s^2 + 76s + 320)}$$

$$G(j\omega) = \frac{25 \left(1 - \left(\frac{\omega}{5}\right)^2 + \frac{\omega}{5} \cdot j\right)}{5 \cdot 5 \cdot \left(\frac{\omega}{5} + 1\right) \cdot 64 \cdot \left(1 - \left(\frac{\omega}{8}\right)^2 + 0,0375 \omega j\right)} \quad ; K_b = \frac{5}{64}$$

$$20 \log \left(\frac{5}{64}\right) = -22,14 \text{ dB} \quad ; \omega_n = 5 \text{ rad/s}$$

$$\omega_r = \omega_n \cdot \sqrt{1 - 2\zeta} = 3,5 \text{ rad/s (pico)}$$

$$\eta_{r2} = \frac{1}{2\zeta \sqrt{1 - 2\zeta}} = 1,25 \text{ dB}$$