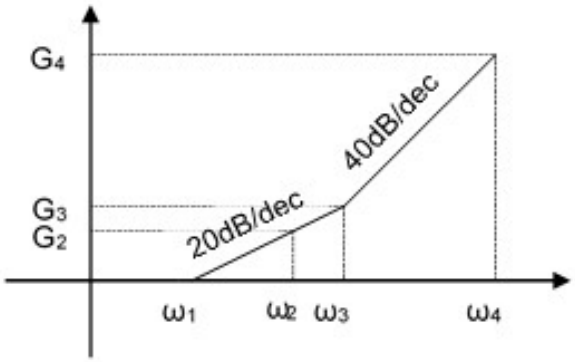

Dati:

$\omega_1 := 3300 \quad \frac{rad}{s}$

$\omega_3 := 8 \cdot 10^6 \quad \frac{rad}{s}$

Portare ω_1 e ω_3 in decadi:

$\omega_{1dec} := \log(\omega_1) = \log(3300) = 3.519$ dec

$\omega_{3dec} := \log(\omega_3) = \log(8 \cdot 10^6) = 6.903$ dec

Calcolare G_{3dB}:

Distanza tra ω_1 e ω_3: $\Delta\omega_{13} := \omega_{3dec} - \omega_{1dec} = 6.903 - 3.519 = 3.384$ dec

Pendenza tra ω_1 ed ω_3: $P_{13} := 20 \quad \frac{dB}{dec}$

$G_{3dB} := \Delta\omega_{13} \cdot P_{13} = 3.384 \cdot 20 = 67.68$ dB

$P = \frac{G}{\Delta\omega}$

Calcolare G_3 come numero adimensionale:

$G_3 := 10^{\frac{G_{3dB}}{20}} = 10^{\frac{67.68}{20}} = 2.421 \cdot 10^3$

ω_4 si trova 2 decadi dopo ω_3: calcolare ω_4 in rad/s

$\omega_{4dec} := \omega_{3dec} + 2 = 8.903$ dec $\quad \omega_4 := 10^{\omega_{4dec}} = 10^{8.903} = 7.998 \cdot 10^8 \quad \frac{rad}{s}$

Calcolare il guadagno in ω_4 (G_{4dB}):

Distanza tra ω_3 e ω_4: $\Delta\omega_{34} := \omega_{4dec} - \omega_{3dec} = 2 \quad dec$

Pendenza tra ω_3 ed ω_4: $P_{34} := 40 \quad \frac{dB}{dec}$

$G_{4dB} := G_{3dB} + \Delta\omega_{34} \cdot P_{34} = 67.7 + 2 \cdot 40 = 147.7$ dB

Calcolare G_4 come numero adimensionale:

$G_4 := 10^{\frac{G_{4dB}}{20}} = 10^{\frac{147.7}{20}} = 2.427 \cdot 10^7$

Se $G_{2dB} := 10$ dB, trovare ω_2 in dec: Pendenza tra ω_1 ed ω_2: $P_{12} := 20 \frac{dB}{dec}$

$\Delta\omega_{12} := \frac{P_{12}}{G_{2dB}} = \frac{20}{10} = 2$ dec

$\omega_{2dec} := \omega_{1dec} + \Delta\omega_{12} = 3.519 + 2 = 5.519$ dec $\quad \omega_2 := 10^{\omega_{2dec}} = 10^{5.519} = 3.304 \cdot 10^5 \quad \frac{rad}{s}$