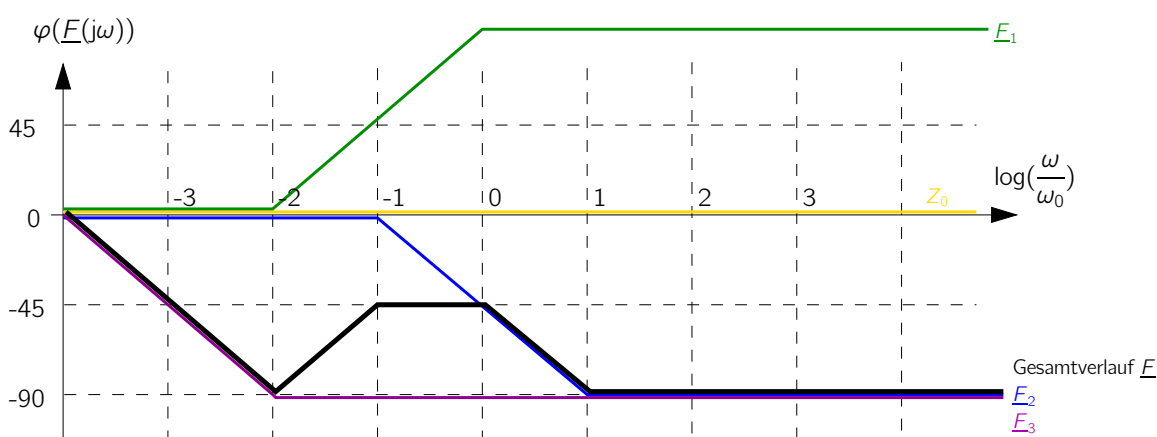
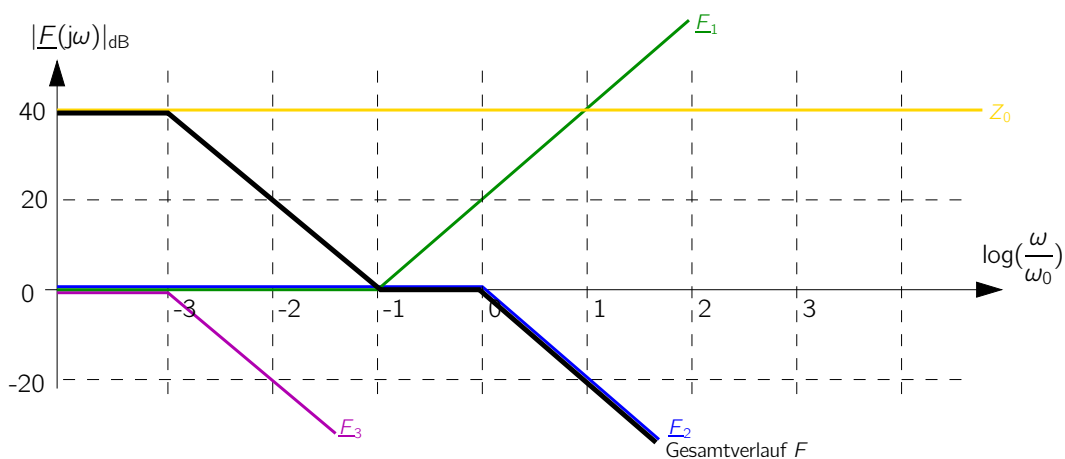




**Aufgabe 1) Lösung zum Bode-Diagramm.**

$$\underline{E}(j\omega) \approx 100 \Omega \frac{1 + 10 \frac{j\omega}{\omega_0}}{\left(1 + \frac{j\omega}{\omega_0}\right) \left(1 + 1000 \frac{j\omega}{\omega_0}\right)} = \underline{Z}_0 \underline{E}_1 \underline{E}_2 \underline{E}_3 \quad \text{mit}$$

$$\underline{Z}_0 = 100 \Omega, \quad \underline{E}_1 = 1 + \frac{j\omega}{10\omega_0}, \quad \underline{E}_2 = \frac{1}{1 + \frac{j\omega}{\omega_0}}, \quad \underline{E}_3 = \frac{1}{1 + \frac{j\omega}{1000\omega_0}}$$



## Aufgabe 2) Lösung zum Bode-Diagramm.

$$\underline{F}(j\omega) = \frac{-\frac{10\omega}{\omega_0} \cdot \left(1 - j\frac{\omega}{\omega_0}\right)}{\left(1 - j\frac{10\omega}{\omega_0}\right)^2 \left(1 + j\frac{\omega}{10\omega_0}\right)} = Z_0 F_1 F_2 F_3 F_4 F_5 \quad \text{mit}$$

$$Z_0 = -10, \quad F_1 = \frac{\omega}{\omega_0}, \quad F_2 = 1 - \frac{j\omega}{\omega_0}, \quad F_3 = F_4 = \frac{1}{1 - \frac{j\omega}{10\omega_0}},$$

$$F_5 = \frac{1}{1 + \frac{j\omega}{10\omega_0}}.$$

