



a)

$$\beta = \frac{-U_{ed}}{U_a}$$

$$U_e = 0$$

$$U_{ed} = U_a \frac{R_2 \parallel C}{R_1 \parallel C + R_2} = U_a \cdot \frac{R_1 \cdot \frac{1}{j\omega C}}{\frac{R_1 \cdot \frac{1}{j\omega C}}{R_1 + \frac{1}{j\omega C}} + R_2} \rightarrow$$

$$\rightarrow \frac{\frac{R_1}{j\omega R_1 C + 1}}{\frac{R_1}{j\omega R_1 C + 1} + R_2} = \frac{R_1}{R_1 + j\omega R_1 C R_2 + R_2}$$

→ können noch auf Standard Form bringen

$$\frac{R_1}{R_1 + R_2} \cdot \frac{1}{1 + j\omega C \underbrace{\frac{R_1 R_2}{R_1 + R_2}}_{\omega_g}}$$

b) Pol bei $\omega_g = \frac{R_1 + R_2}{R_1 \cdot R_2}$

$$f_{g1} = \frac{\omega_g}{2\pi} = \frac{R_1 + R_2}{2\pi R_1 \cdot R_2}$$