belirleyiniz.

a) $K_V = \frac{-R_2}{R_1} = -1 \Rightarrow R_1 = R_2 \rightarrow \boxed{R_I = R_1 = R_2 = 10k\Omega}$ (10) (10) (10)

b) $h_1 = \frac{\pi}{2} \cdot \frac{R_1}{R_2} \cdot \frac{V_\gamma}{\beta . K_{VO} . V_{IP}}$, $V_\gamma = 0,7V$, $\beta = \frac{R_1}{R_1+R_2} = \frac{1}{2}$, $V_{sat} = 2V \Rightarrow \boxed{|V_{IP}| = \frac{|V_{CC} - V_{sat} - V_O|}{|K_V|} = 7,3V}$ (10)

$\Rightarrow h_1 = \frac{\pi}{2} \cdot 1 \cdot \frac{0,7}{\frac{1}{2} . K_{VO} . 7,3} \leq 10^{-4} \Rightarrow \boxed{K_{VO} \geq \frac{\pi . 0,7 . 10^4}{7,3} \cong 3012,5}$ (20)

$h_2 = -\frac{\pi}{2}\left(1 - \frac{R_1}{R_2} \cdot \frac{V_\gamma}{V_{IP}}\right)^2 \left(\frac{w}{\beta K_{VO} w_0}\right)^2 \Rightarrow h_2 = -\frac{\pi}{2} \cdot \left(1 + \frac{1}{1} \cdot \frac{0,7}{7,3}\right)^2 \left(\frac{2\pi . 20.10^3}{1/2 . K_{VO} . w_0}\right)^2 \leq 10^{-2}$

$K_{VO} . w_0 \geq \sqrt{\frac{\pi}{2.10^{-2}}} \cdot \left(1 + \frac{0,7}{7,3}\right)(4\pi . 20.10^3) \cong 3,45.10^6 \Rightarrow \boxed{K_{VO} . f_0 \geq 549\,kHz}$ (20)

$w_H = \frac{\pi . YE}{2V_\gamma \left(2 - \frac{R_2}{R_1} \cdot \frac{V_{IP}}{V_\gamma}\right)} \Rightarrow f_H = \frac{YE}{4V_\gamma \left(2 - \frac{R_2}{R_1} \cdot \frac{V_{IP}}{V_\gamma}\right)} = \frac{YE}{4 . 0,7 . \left(2 + 1 . \frac{7,3}{0,7}\right)} \geq 10\,kHz$

$\boxed{YE \geq 10^4 . 4 . 0,7 \left(2 + \frac{7,3}{0,7}\right) = 348\,V/mso}$ (20)