(13.52) $\bar{P} = 65\,W = I_{eff} \cdot U_{eff} \cdot \cos\varphi$

- $I_{eff} = 0{,}53\,A$
- $\omega = \omega_0 = \frac{1}{\sqrt{LC}}$ et $\cos\varphi = 1$ (Conditions de résonance)

$\Rightarrow 65 = 0{,}53 \cdot U_{eff} \Rightarrow U_{eff} = \frac{65}{0{,}53} \Rightarrow \hat{U} = \sqrt{2}\, U_{eff} = \sqrt{2} \cdot \frac{65}{0{,}53} \simeq \underline{\underline{173{,}4\,V}}$

(13.54) $f_0 = 13 \cdot 10^6\,Hz$; $L = 18 \cdot 10^{-6}\,H$; $C = \varepsilon \frac{S}{d}$

$d = \frac{1{,}5}{1000}\,m$; $\varepsilon_0 = 8{,}85 \cdot 10^{-12}$

a).

résonance : $2\pi f_0 = \frac{1}{\sqrt{LC}} = \frac{1}{\sqrt{L \varepsilon \frac{S}{d}}} \Rightarrow 4\pi^2 f_0^2 L \varepsilon \frac{S}{d} = 1 \Rightarrow S = \frac{d}{4\pi^2 f_0^2 L \varepsilon} = \frac{1{,}5 \cdot 10^{-3} \cdot \frac{1}{4\pi^2}}{(13 \cdot 10^6)^2 \cdot 18 \cdot 10^{-6} \cdot 8{,}85 \cdot 10^{-12}}$

$\simeq \underline{\underline{1{,}41 \cdot 10^{-3}\,m^2}}$

b). $f = \frac{1}{\sqrt{L \cdot \varepsilon_r \varepsilon \cdot \frac{S}{d} \cdot 4\pi^2}} = \frac{1}{\sqrt{18 \cdot 10^{-6} \cdot 5{,}2 \cdot 8{,}85 \cdot 10^{-12} \cdot \frac{S}{d} \cdot 4\pi^2}} \simeq \underline{\underline{5{,}7\,MHz}}$