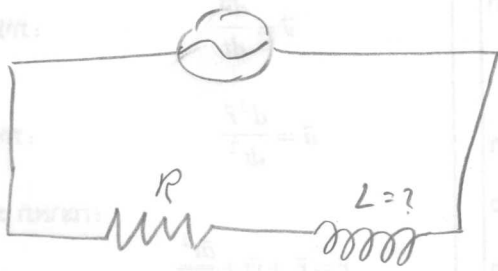


e-51-4-115



$$V_{eff} = 220 [V] \Rightarrow V_0 = 311 [V]$$

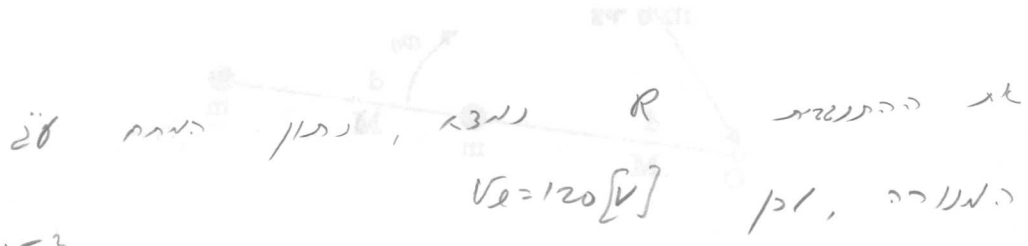
$$\omega = 2\pi \cdot 50 [Hz] = 314 \left[ \frac{rad}{s} \right]$$

$$V(t) = V_0 \cos(\omega t)$$

$$I_0 = \frac{V_0}{Z} = \frac{V_0}{\sqrt{R^2 + L^2 \omega^2}}$$

$$P = I_{eff}^2 R = \frac{V_0^2 R \cdot 1/2}{\sqrt{R^2 + L^2 \omega^2}}$$

$$L = \frac{1}{\omega} \sqrt{\frac{V_0^2 R}{2P} - R^2}$$



$$P = \frac{V_e^2}{R} \Rightarrow R = \frac{V_e^2}{P}$$

$$L = \frac{V_e^2}{\omega P} \sqrt{\frac{V_0^2}{2V_e^2} - 1} = 1.18 [H]$$

$$P = 60 W$$

