## Exercício 4 — PD3

i) $R = 100\,\Omega$; $E = 200\,V$ e $L = 0$

a) igualar tensão com ratio $\div 100$ e subtrair os 200 V

$$\text{Pico} = \frac{230 \cdot \sqrt{2} \cdot \sqrt{3} - 100}{100}$$ no caso $V_{D1}$ mesmo que P3

$$\text{mínimo} = \frac{\frac{230\sqrt{2}\cdot\sqrt{3}}{2} - 200}{100}$$

b) $$V_{o\,méd} = 6 \times \frac{1}{\pi} \int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \sqrt{3}\sqrt{2} \cdot 230 \sin\left(\theta + \tfrac{\pi}{6}\right) d\theta \cong 537{,}99\ [V]$$

$$V_{o\,rms} = \sqrt{6 \times \frac{1}{\pi} \int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \left(\sqrt{3}\cdot\sqrt{2}\,230 \cdot \sin\left(\theta + \tfrac{\pi}{6}\right) d\theta\right)^2 d\theta} \cong 538{,}46$$

$$i_{o\,méd} = \frac{537{,}99 - 200}{100}$$ , pq puramente resistivo

$$\cong 3{,}3799$$

$$i_{o\,rms} = \frac{538{,}46 - 200}{100}$$ , pq puramente resistivo

$$\cong 3{,}3846$$

ii)
$$P_{carga} = \frac{1}{\pi} \int_0^{\pi} v_o(t)\, i_o(t)\, dt = I_o \frac{1}{\pi} \int_0^{\pi} v_o(t)\, dt = I_o V_{o\_méd}$$

$$= I_o \frac{2q}{\pi} \sqrt{2}\, V_{rms} \sin\left(\frac{\pi}{q}\right);\ q \rightarrow \text{quadrantes}$$

$$S = q \times V_{s\,rms} \times I_{s\,rms}\ ;\ V_{s\,rms} = \sqrt{3}\,230 = 398{,}4\ [V]$$

c) ? ; d) ?