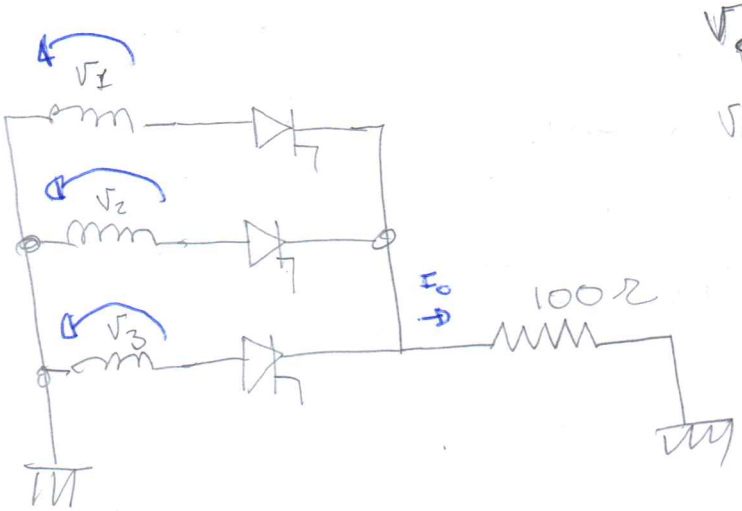
solução

3.)



$V_\epsilon = \sqrt{3}\,500$

$V_{rms} = 500$

$\alpha = \frac{\pi}{3}$

$i_{\frac{\pi}{3}} = 4{,}33$ Amp

Puramente resistivo

$I_o = \frac{V'_{o\,méd.}}{R}$ $\quad FP = 0{,}9837$

$\simeq 2{,}9323$ A

$I_{orms} = 2{,}97722$ A

d) $V_o(\theta) = 500 \sin(\theta)$

$$V_{o\,méd} = \frac{1\times 3}{2\pi}\int_{\frac{\pi}{2}}^{\pi} 500\sin(\theta) \quad \checkmark$$

$=$

e) { FP por fase x 3
FP pela carga

$FP = \frac{P}{S}$

$\boxed{S} = V_{1rms} \times I_{1rms} \times 3$

$V_{1rms} = \frac{500}{\sqrt{2}}$

$\boxed{I_{1rms} = I_{T3}}$

$I_{1rms} = \sqrt{\frac{1}{2\pi}\int_0^{2\pi}[I_1(\theta)]^2\,d\theta}$

$= \sqrt{\frac{1}{2\pi}\int_{\frac{\pi}{2}}^{\pi}\left(\frac{500\sin(\theta)}{R}\right)^2}$

{ P – numa fase x 3
ou
P – na carga

$P = R\,I_{orms}^2$ $\quad I_{orms} = \sqrt{\frac{3}{2\pi}\int_{\frac{\pi}{2}}^{\pi}\left(\frac{500\sin(\theta)}{R}\right)^2}$

$P_R = \frac{1}{2\pi}\int_0^{2\pi} V_o(\theta)\cdot I_o(\theta)\,d\theta$