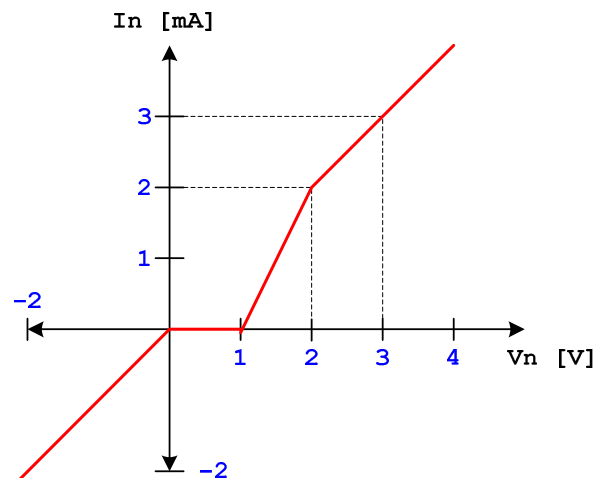
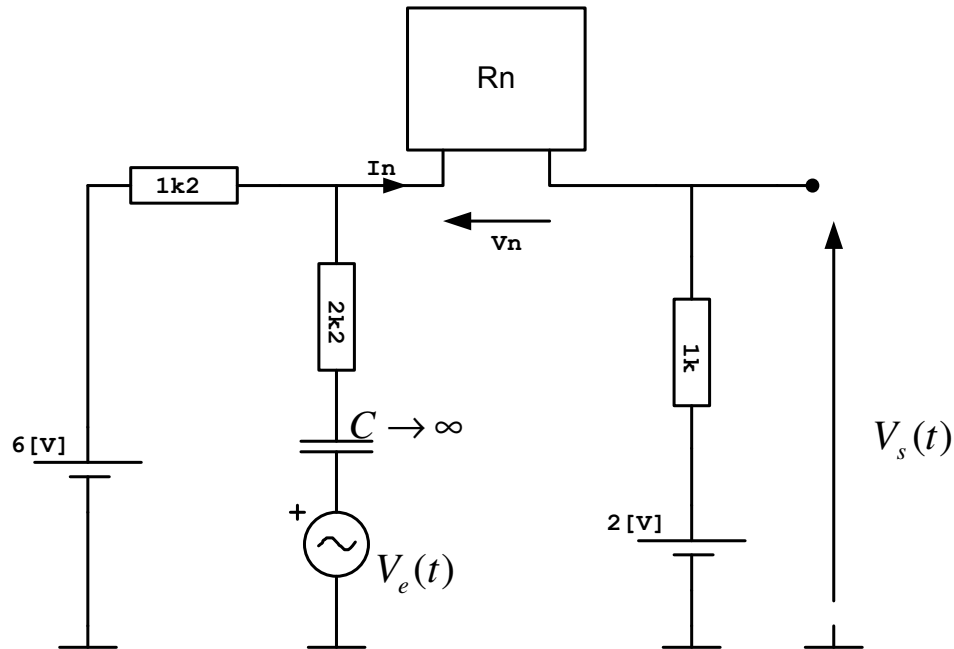


Solución Certamen 1-2007

Problema 1:

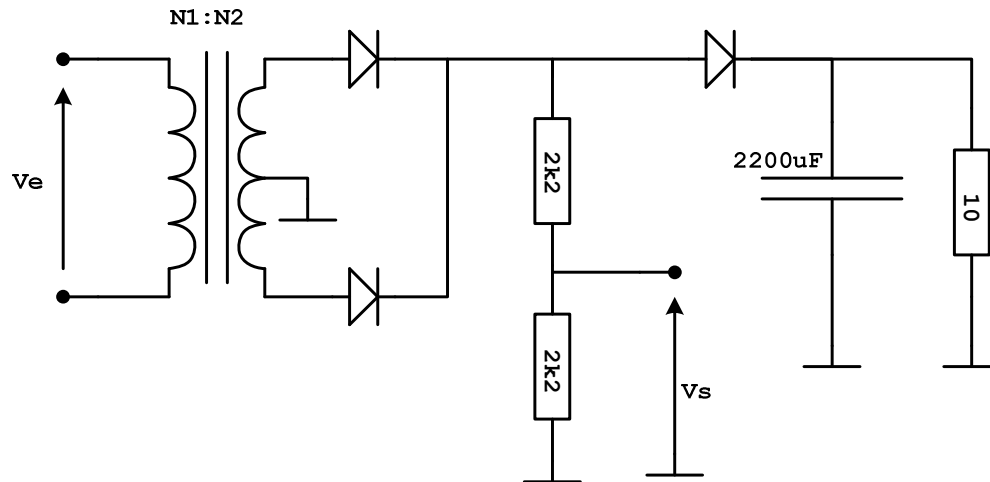


Determine $V_s(t)$, si $V_e(t) = 0,2 \cdot \text{Sen}(\omega \cdot t)$.

Solución:

$$V_s(t) \approx 3.3 + 0.038 \cdot \text{Sen}(\omega \cdot t)$$

Problema 2:

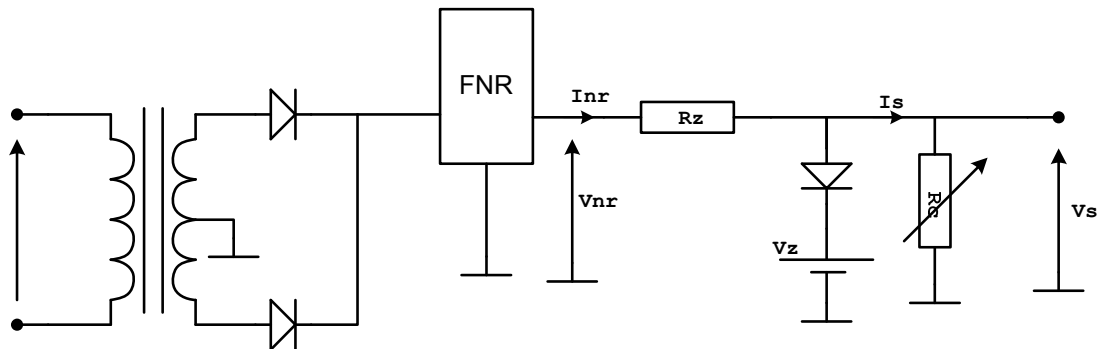


Si $V_e = 220[\text{V}]$ RMS y $\frac{N1}{N2} = 22$ por cada devanado del transformador, determinar el valor medio de V_s .

Solución:

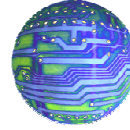
$$\bar{V}_s = \frac{2 \cdot \hat{V}_s}{\pi \cdot 2} = \frac{10 \cdot \sqrt{2}}{\pi}$$

Problema 3:



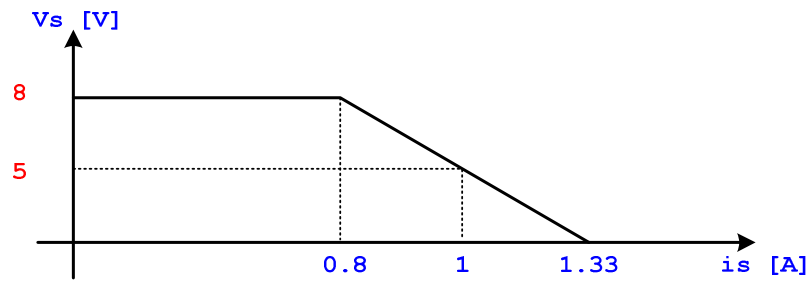
Para el circuito indicado se tiene que $V_{nr} = 20 - 10 \cdot I_{nr}$

- Si $R_z = 8\Omega$ y $V_z = 8[\text{V}]$, determinar la característica de $V_s = f(I_s)$ para $0 \leq I_s \leq 1[\text{A}]$.
- Determinar la potencia que disipa R_z para $I_s = 0.5[\text{A}]$ y $I_s = 1[\text{A}]$



Solución:

a)



b)

I_s	P_{RZ}
0.5 [A]	3.2 [W]
1.0 [A]	5.0 [W]