Fill out information below and attach this cover sheet to the FRONT of your HW.
If you do not (or enter incorrect information) you WILL loose 10 points on the HW.

NAME:_____
SID #:_____
Circle One: EE42 / EE100
If EE100, Lab Day:_____**,Time:**_____

EE 100

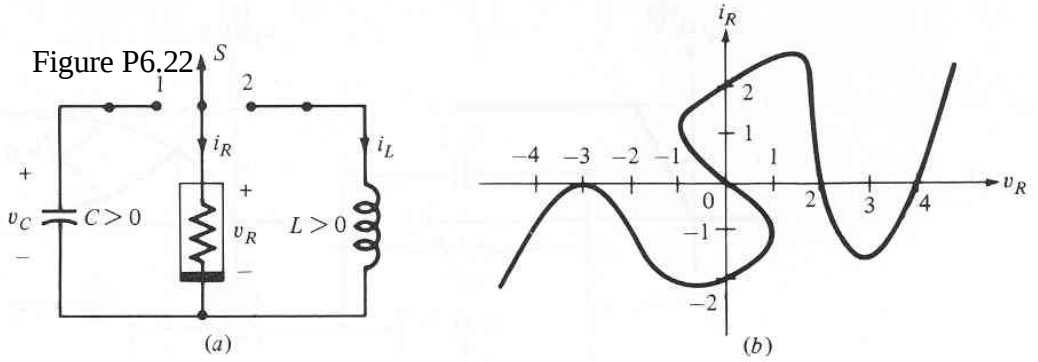
Homework # 12

L. Chua — Fall 2008

Issued : Nov. 14 — Due : Nov. 21

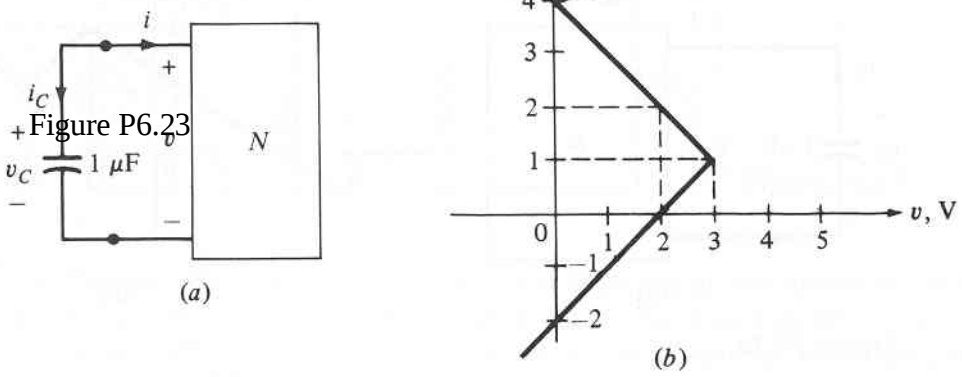
1. For the circuit shown in Fig. P6.22*a* with the nonlinear resistor as in Fig. P6.22*b*, find all equilibrium states and classify each as stable or unstable:
   (*a*) When switch *S* is in position 1.
   (*b*) When switch *S* is in position 2.

Figure P6.22



2. Consider the circuit and characteristic shown in Fig. P6.23*a* and *b*.
   (*a*) Sketch the dynamic route.
   (*b*) If $v_C(0) = 2$ V and $i_C(0) = -2$ mA, calculate and sketch $i(t)$ and $v(t)$ for $t \geq 0$.

Figure P6.23



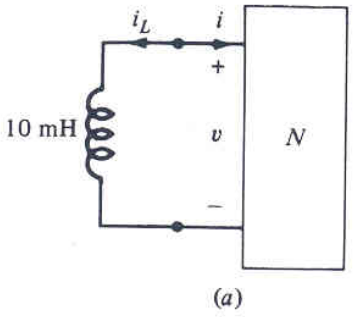
3. Consider the circuit shown in Fig. P6.25*a* where the one-port is described by the *v-i* characteristic in Fig. P6.25*b*.

(*a*) Sketch the dynamic route.

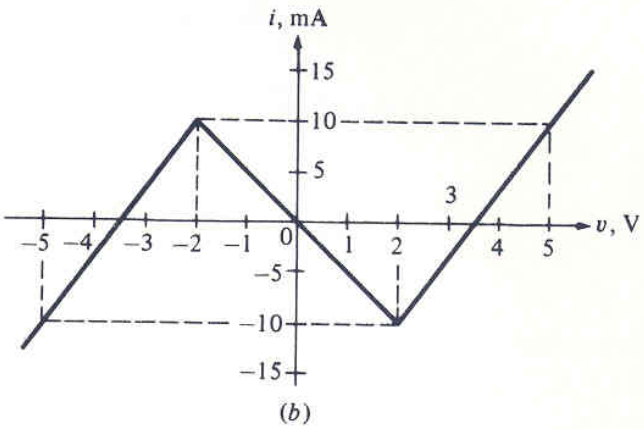
(*b*) If $i_L(0) = -15$ mA, find and sketch $i(t)$ and $v(t)$ for $t \geq 0$.

(*c*) Determine all switching times.

(*d*) Calculate the period of oscillation.



(*a*)



(*b*)

Figure P6.25

4. Do the assessment problem on page 342 of the textbook.