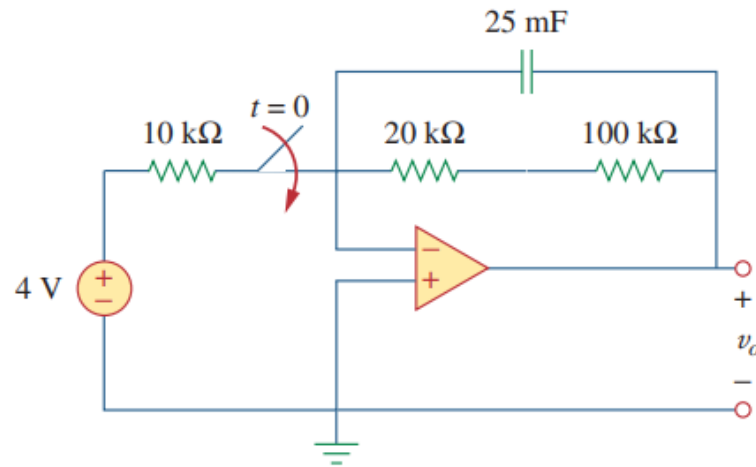
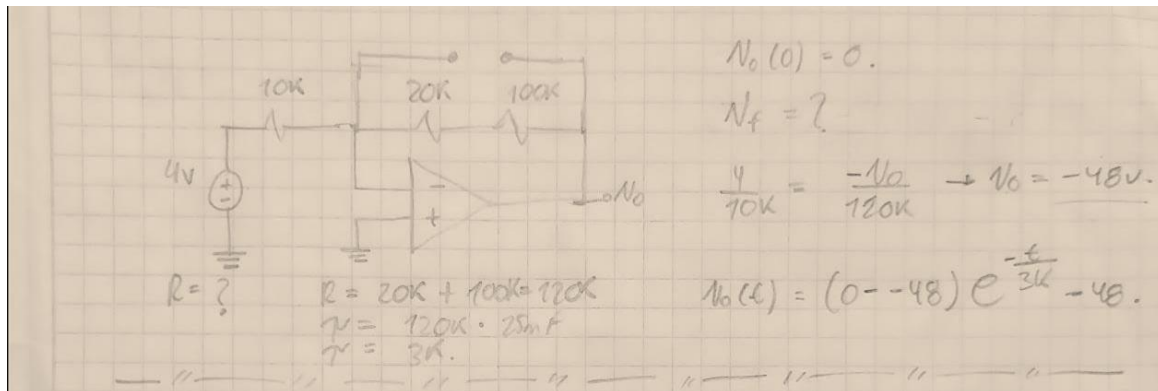


## EJERCICIO CLASE DEL MIERCOLES

**7.69** For the op amp circuit in Fig. 7.134, find  $v_o(t)$  for  $t > 0$ .

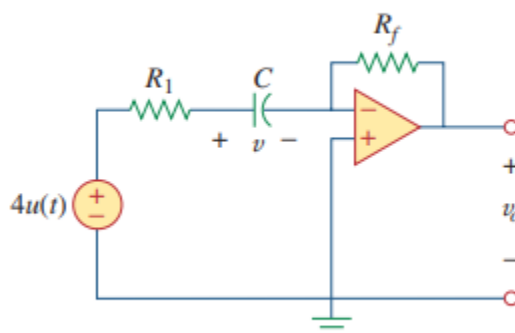


**Figure 7.134**  
For Prob. 7.69.



## EJERCICIO CLASE DEL MIERCOLES

**7.73** For the op amp circuit of Fig. 7.138, let  $R_1 = 10\text{ k}\Omega$ ,  $R_f = 20\text{ k}\Omega$ ,  $C = 20\text{ }\mu\text{F}$ , and  $v(0) = 1\text{ V}$ . Find  $v_o$ .



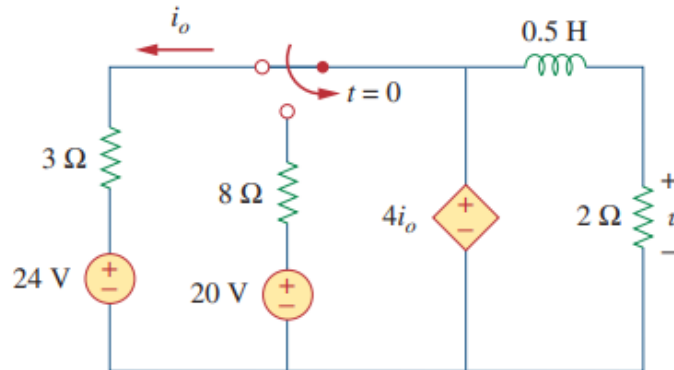
**Figure 7.138**  
For Prob. 7.73.

$N_C(0) = 1$   
 $N_{CE} = 4$   
 $N_C = (1-4)e^{-5t} + 4$   
 $N_C = -3e^{-5t} + 4$   
 $N_O = 2V_C - 8 = -6e^{-5t}$

$\tau = 10\text{K} \cdot 20\mu = 200\text{ms}$   
 $\frac{4 - 1\text{V}}{10\text{K}} = -\frac{V_O}{20\text{K}}$

## EJERCICIO CLASE DEL MIERCOLES

**7.55** Find  $v(t)$  for  $t < 0$  and  $t > 0$  in the circuit of Fig. 7.121.



**Figure 7.121**

For Prob. 7.55.

$i_o$   
 $0.5 \text{ H}$   
 $3 \Omega$   
 $24 \text{ V}$   
 $8 \Omega$   
 $20 \text{ V}$   
 $4i_o$   
 $2 \Omega$   
 $v$

$t = 0$

$i_o$   
 $0.5 \text{ H}$   
 $3 \Omega$   
 $24 \text{ V}$   
 $4i_o$   
 $2 \Omega$   
 $v$

$i_o$   
 $8 \Omega$   
 $20 \text{ V}$   
 $4i_o$   
 $2 \Omega$

$i_L = ?$   
 $\frac{4i_o - 24}{3} = i_o \quad i_o = 24$   
 $i_L = \frac{4i_o}{2} = 48 \text{ A} \quad I_{ic} = 48 \text{ A}$   
 $i_o = 0$   
 $4i_o = 0$   
 $i_{Lt} = 0$   
 $R = 2$   
 $\tau = \frac{L}{R} = \frac{1}{4} = 0.25$   
 $i_L(t) = (48 - 0)e^{-4t} + 0$   
 $V_L(t) = \frac{1}{2} \cdot 48 \cdot 4 e^{-4t} + 0$   
 $V_L(t) = 96 e^{-4t}$

$V_L = L \frac{di_L}{dt}$