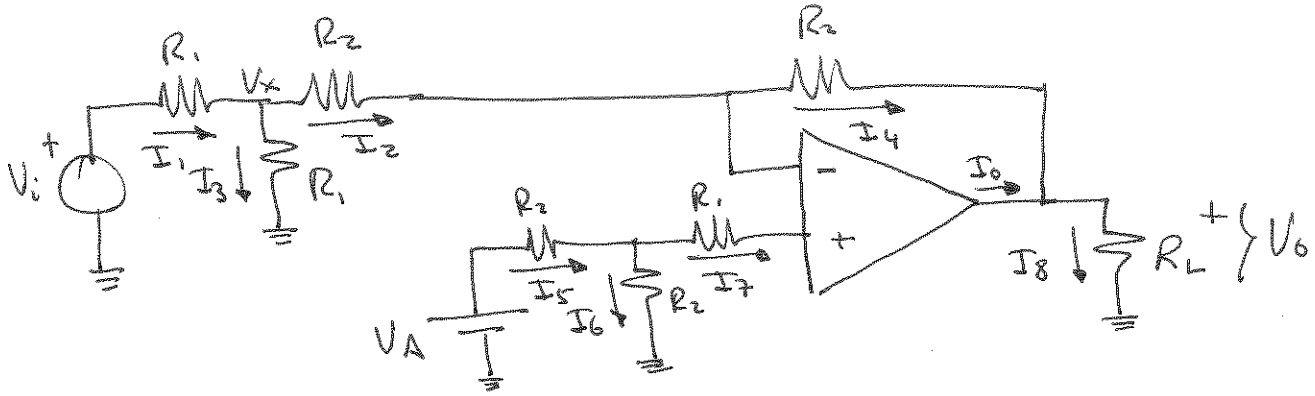
Solución Ejercicio Repaso 3 AO



a) $I_7 = 0 \Rightarrow I_5 = I_6 \longrightarrow \dfrac{V_A - V_P}{R_2} = \dfrac{V_P}{R_2} \Rightarrow V_A = 2V_P \Rightarrow V_P = 4V$

$I_1 = I_3 + I_2 \Rightarrow \dfrac{V_i - V_x}{R_1} = \dfrac{V_x}{R_1} + \dfrac{V_x - V_n}{R_2} \Rightarrow \dfrac{V_i}{R_1} = V_x\left(\dfrac{2}{R_1} + \dfrac{1}{R_2}\right) - \dfrac{V_n}{R_2}$

$I_2 = I_4 \Rightarrow \dfrac{V_x - V_n}{R_2} = \dfrac{V_n - V_o}{R_2} \Rightarrow V_o = 2V_n - V_x$

$V_n = V_p = 4V \longrightarrow V_o = 2V_n - \dfrac{\frac{V_i}{R_1} + \frac{V_n}{R_2}}{\frac{2}{R_1} + \frac{1}{R_2}} = 7'2 - \dfrac{V_i}{2'5}$

b) $I_o = I_8 - I_4 = \dfrac{V_o}{R_L} + \dfrac{V_o - V_n}{R_2} \Rightarrow V_o = \dfrac{I_{o_{max}} + \frac{V_n}{R_2}}{\frac{1}{R_L} + \frac{1}{R_2}} = 20'25\,V$

$\Rightarrow V_i = 2'5\,(7'2 - V_o) = -32'625\,V$