Pablo Cuesta Sierra. 120. Ejercicio 2.
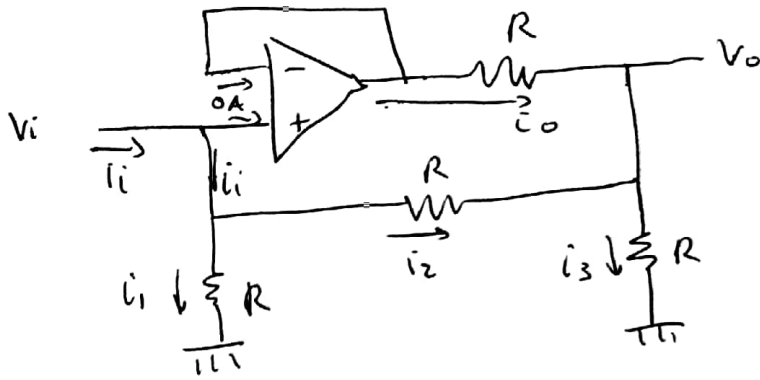

Al ser un AO ideal,
y está polimentado negativamente:

$$V^- = V^+ = V_i$$

$$i_i = i_1 + i_2 = \frac{V_i}{R} + \frac{V_i - V_o}{R} = \frac{2V_i - V_o}{R}$$

$$i_o + i_2 = i_3 = \frac{V_o}{R} = \frac{V^- - V^o}{R} + \frac{V_i - V_o}{R} \implies V_o = V^- + V_i - 2V_o$$

$$\overbrace{\underset{2V_i}{}}$$

$$\implies 3V_o = 2V_i \implies \boxed{\frac{V_o}{V_i} = A_v = \frac{2}{3}} \implies V_o = \frac{2}{3} V_i$$

$$i_i = \frac{2V_i - V_o}{R} = \frac{1}{R}\left(2V_i - \frac{2}{3}V_i\right) = \frac{V_i}{R} \cdot \frac{4}{3}$$

$$\implies \boxed{R_i = \frac{V_i}{i_i} = \frac{3R}{4}}$$