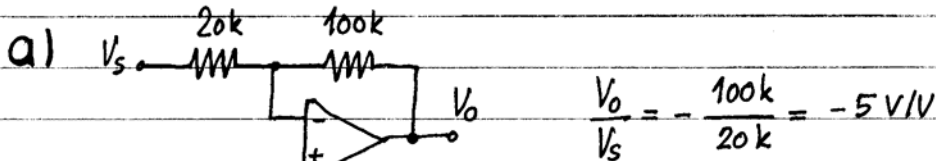


Resolução (compacta):

E1(A) - 1mt



$$\frac{V_o}{V_s} = - \frac{100k}{20k} = -5 \text{ V/V}$$

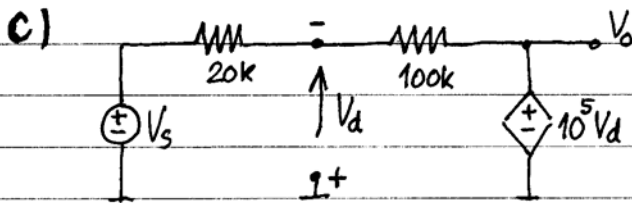
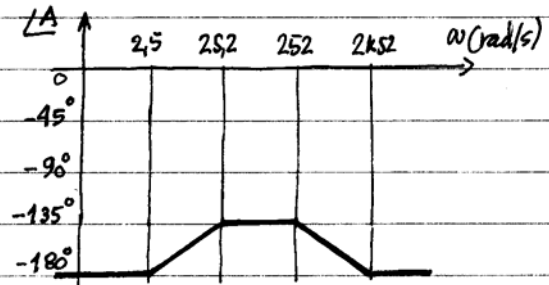
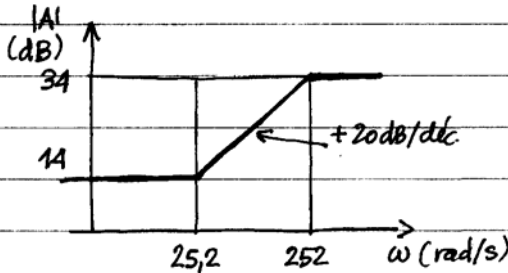
Como a entrada inversora é uma massa virtual:

$$R_i = 20 \text{ k}\Omega$$

b)

$$Z_1 = [2k + 18k // 2,2\mu] = 20k \frac{1 + s 3,96m}{1 + s 39,6m} \quad Z_2 = 100k\Omega$$

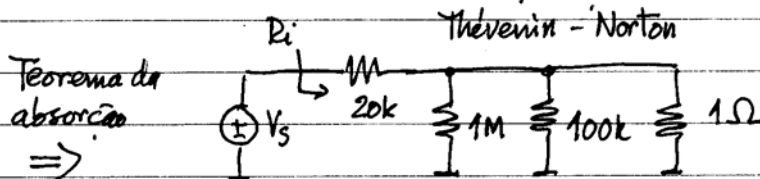
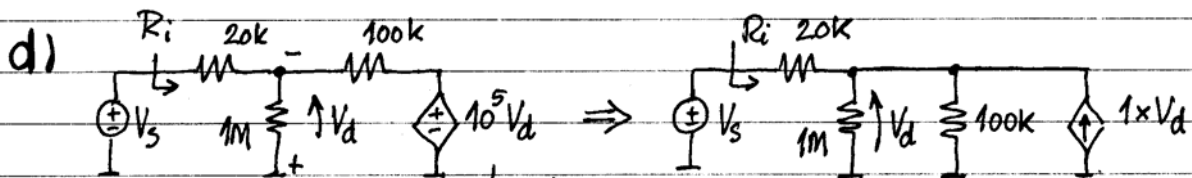
$$\frac{V_o}{V_s} = - \frac{Z_2}{Z_1} = - \frac{100k}{20k} \frac{1 + s 39,6m}{1 + s 3,96m} = -5 \frac{1 + s/25,2}{1 + s/252}$$



$$V_o = 10^5 V_d$$

$$V_s = 20k \frac{V_s - V_o}{120k} - V_d = \frac{V_s - V_o}{6} - \frac{V_o}{10^5}$$

donde $\frac{V_o}{V_s} = - \frac{5}{1 + \frac{6}{10^5}} \approx -5 \text{ V/V}$



$$R_i = 20k + 1M // 100k // 1 \approx 20k + 1 \approx 20k\Omega$$