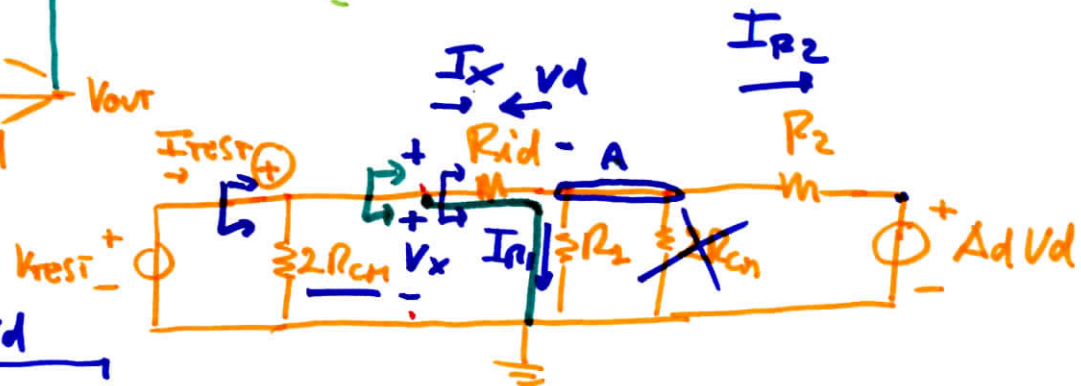
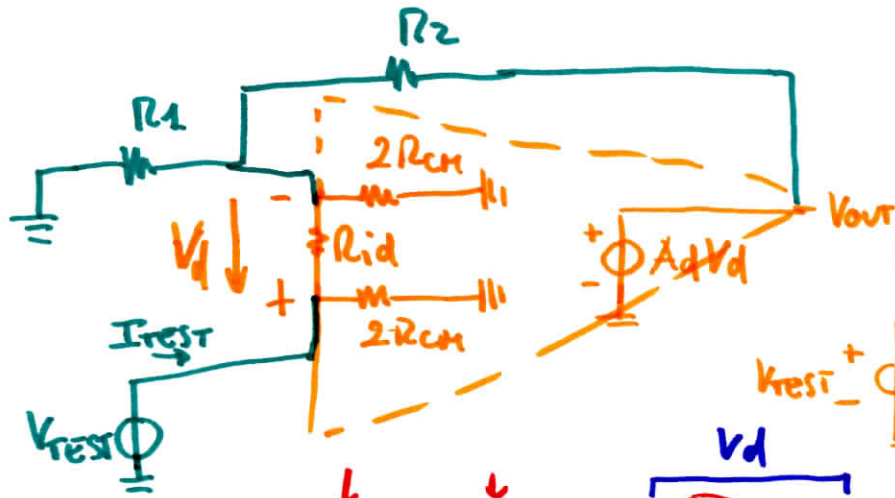
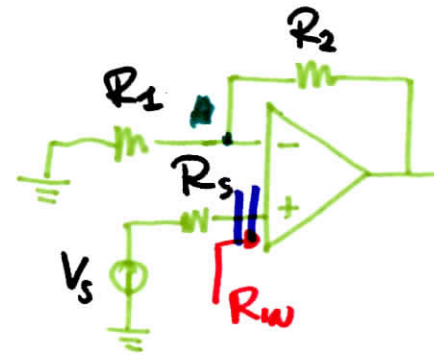


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$A_d = 10^5$   $R_{id} = 10k\Omega$   $R_{cn} = 10k\Omega$

$R_1 = 1k\Omega$   $R_2 = 30k\Omega$   $R_w = ?$



NODDA: 
$$\textcircled{I_x} - \frac{V_A}{R_1} - \frac{V_A - A_d \textcircled{I_x} R_{id}}{R_2} = 0 \Rightarrow V_A = f(I_x) = I_x \left( 1 + \frac{A_d R_{id}}{R_2} \right) (R_1 // R_2)$$

$$V_x = I_x \cdot R_{id} + I_x \left( 1 + \frac{A_d R_{id}}{R_2} \right) R_1 // R_2 \quad R_w = 2R_{cn} //$$

$$\frac{V_x}{I_x} = R_{id} + \left( R_1 // R_2 \right) + \frac{A_d R_{id}}{R_2} \frac{R_1 R_2}{R_1 + R_2}$$