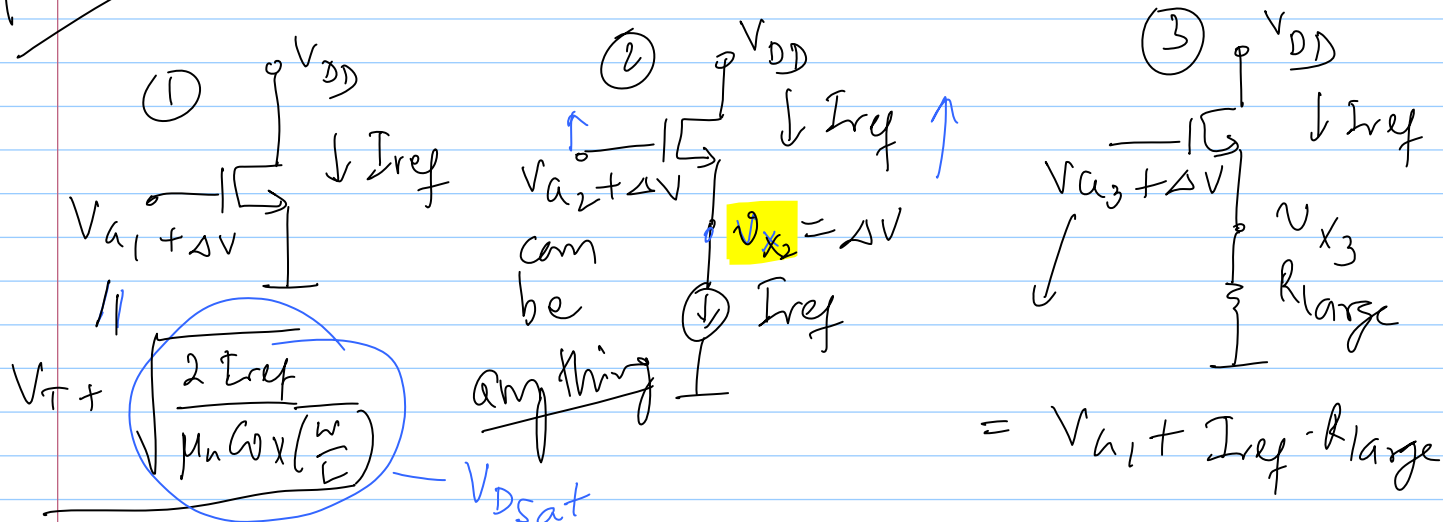


7-9-12

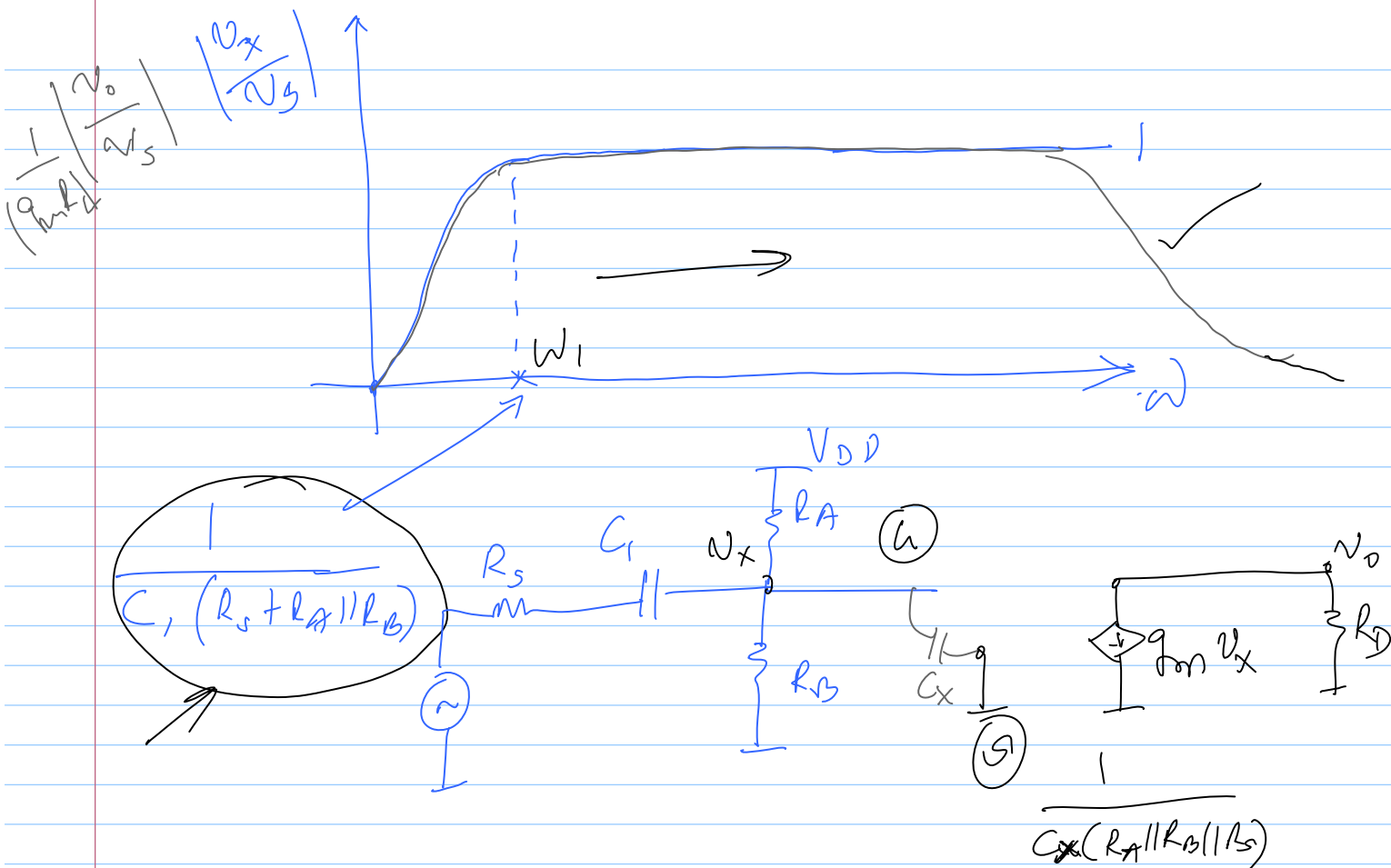
Lec 19

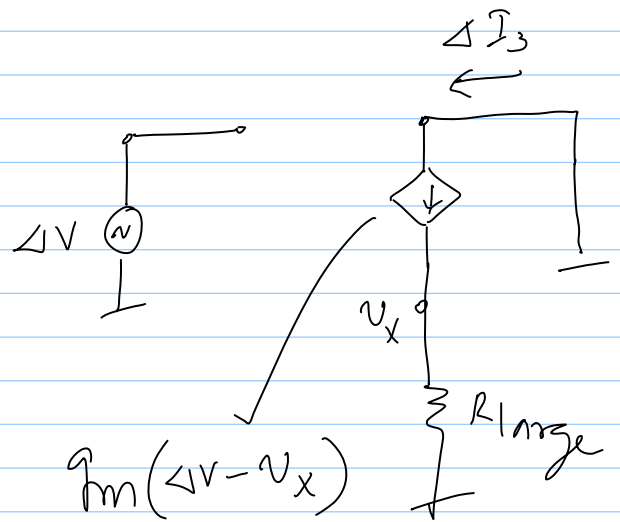
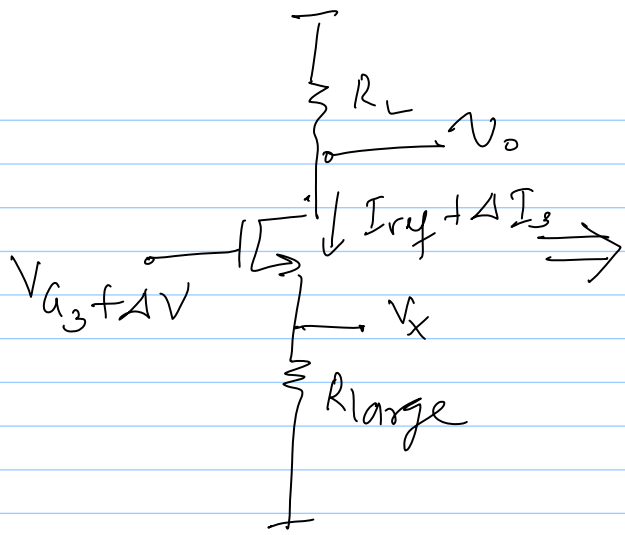


$$I_{D1} = I_{ref} + \Delta I_1 = I_{ref} + g_m \Delta V$$

$$I_{D2} = I_{ref} \Rightarrow \Delta I_2 = 0$$

$$I_{D3} = I_{ref} + \Delta I_3$$





$$\Delta I_3 = \frac{g_m \Delta V}{1 + g_m R_{large}} \quad \checkmark$$

ΔI_3 very small
 $\Rightarrow g_m R_{large} \gg 1$

$$v_{x3} = \Delta I_3 \cdot R_{large} =$$

$$\frac{g_m R_{large}}{1 + g_m R_{large}} \cdot \Delta V$$