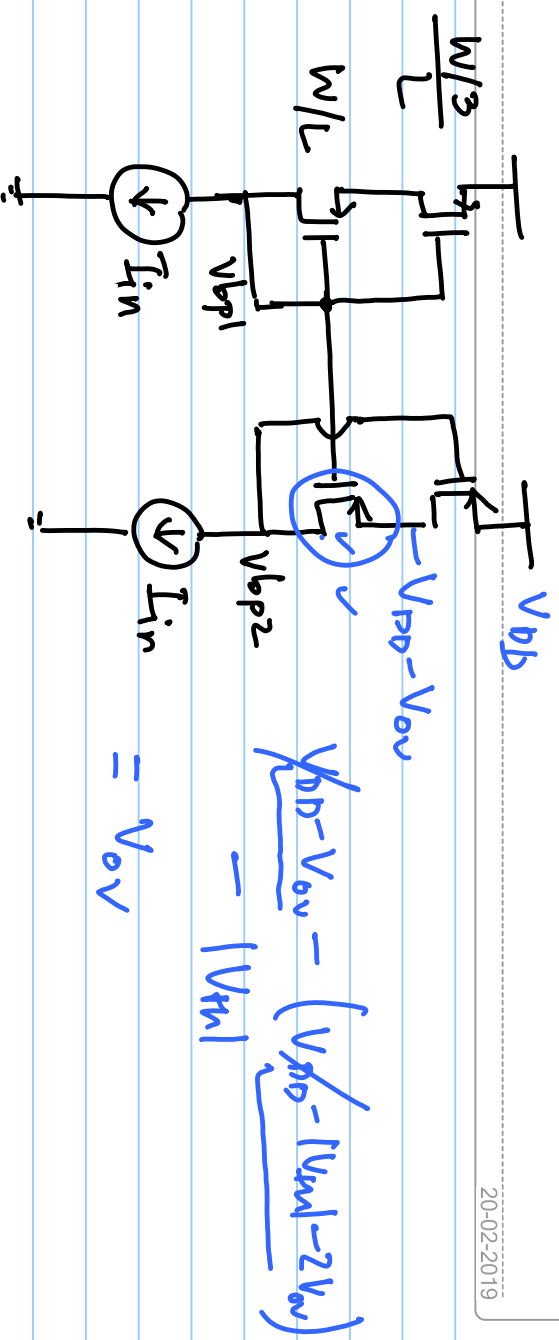
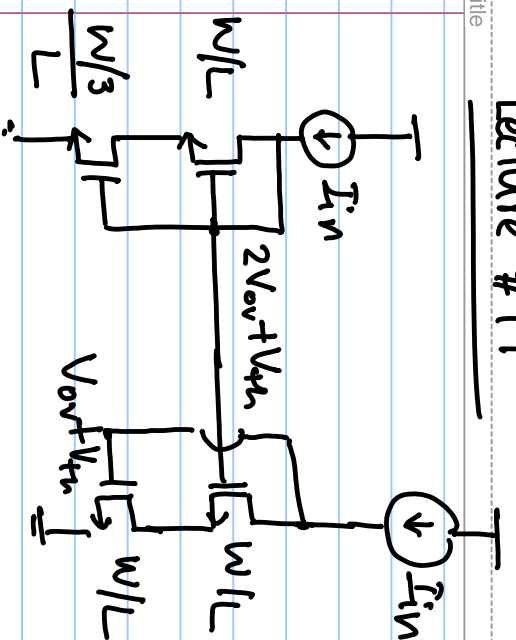


Lecture #19



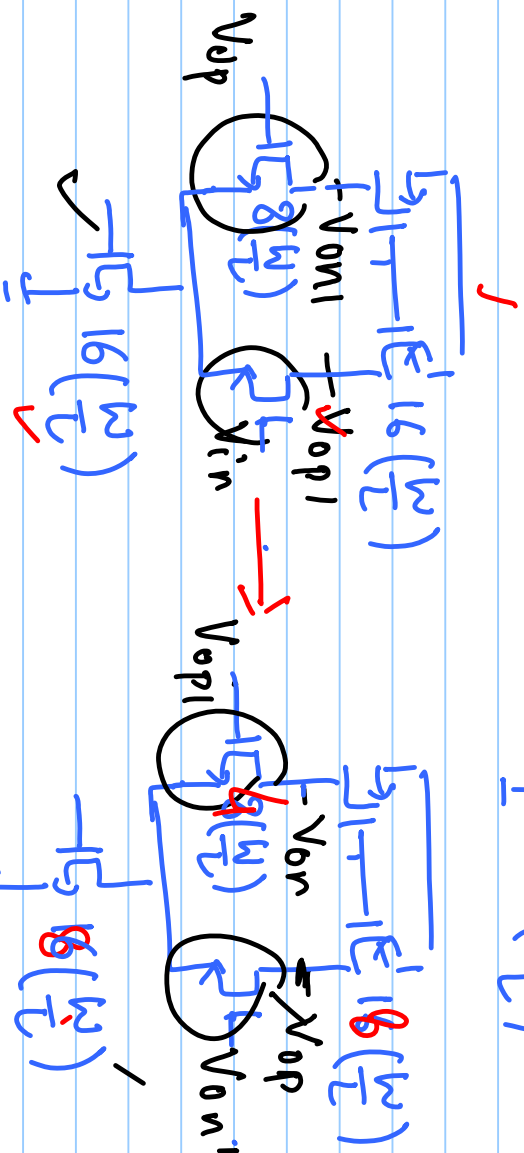
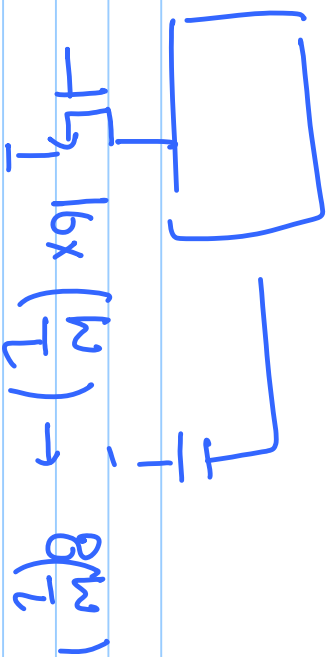
$$\frac{W}{4L} \downarrow$$

$$I_{in} = \mu_p C_{ox} \left(\frac{W}{2L} \right) (V_{DD} - V_a - |V_{tn}|)^2$$

$$\begin{aligned} V_{bp1} &= V_{DD} - |V_{tn}| - 2V_{ov} \\ V_{bp2} &= V_{DD} - |V_{tn}| - V_{ov} \end{aligned}$$

$$I_{in}, \left(\frac{W}{L} \right), V_{ov} \rightarrow V_{DD} - |V_{tn}| - V_{ov}$$

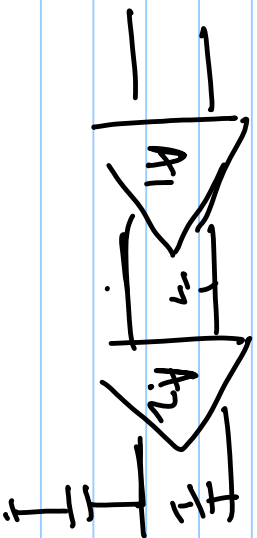
$$\frac{W}{4L}, 2V_{ov} \rightarrow V_{DD} - |V_{tn}| - 2V_{ov}$$



$$16 \left(\frac{0.5}{0.19} \right) \quad 32 \left(\frac{0.25}{0.19} \right)$$

$$8 \left(\frac{1.0}{0.19} \right)$$

$$+ \frac{+}{-} V_{DS} \\ + \frac{+}{-} V_{DS}$$



$$H(s) = A_1 \times A_2 =$$

$$= \frac{A_{10}}{(1+s/\omega_{p1})} \times \frac{A_{20}}{(1+s/\omega_{p2})}$$