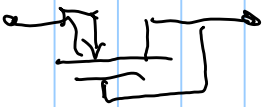
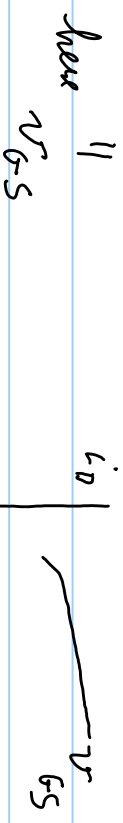


555 times in Spice is in the AmL mic library
for the MOS current mirror



→ as $V_{DS} = V_{GS} \Rightarrow V_{DS} > V_{GS} - V_{Th} \Rightarrow$ saturation

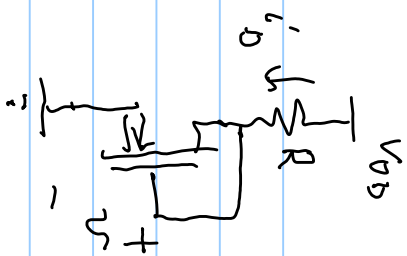


then if $V_{Th} > 0$
 $V_{GS} > V_{GS} - V_{Th}$

as this diode connected NMOS is in saturation if $V_{GS} > V_{Th}$

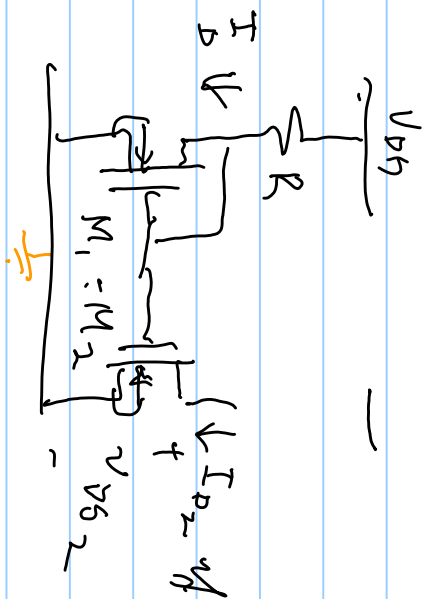
$$i_D = \frac{k_p \mu}{2} (v_{GS} - V_{th})^2$$

$$i_D = k_{pn} (v - V_{th})^2, \quad v > V_{th}$$



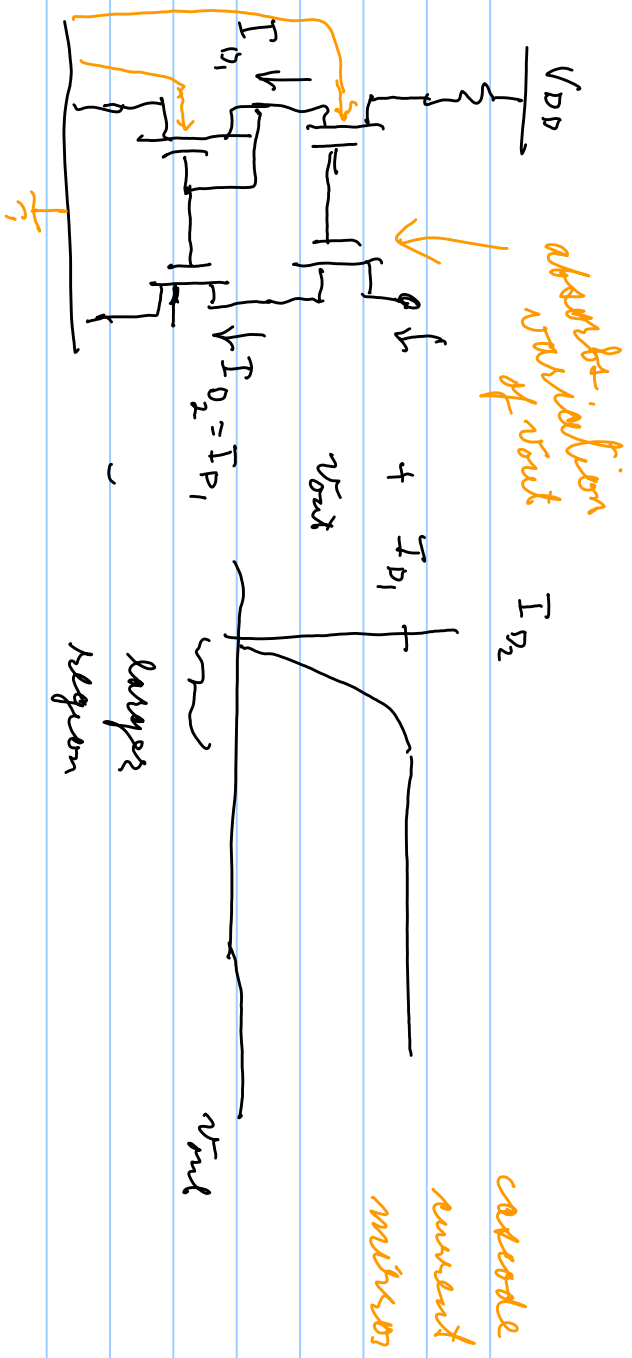
$$V_{DD} = R i'_D + v$$

$$\Rightarrow i'_D = \frac{(V_{DD} - v)}{R}$$



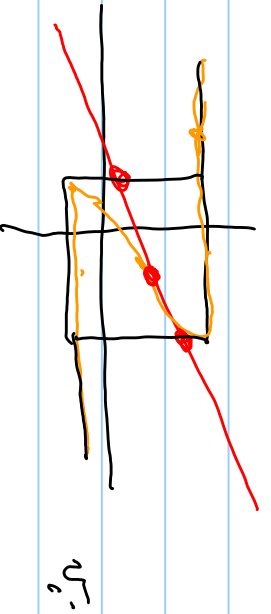
I_{D2} of M_2 is in saturation





v_o

Schmitt trigger



Previous last two finals are on the web under their semester's course page.