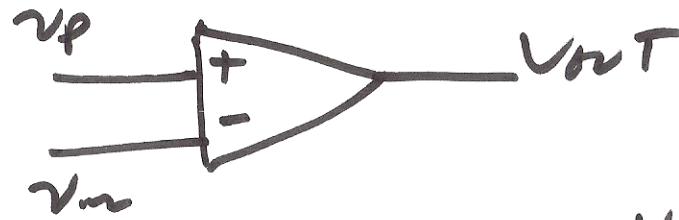
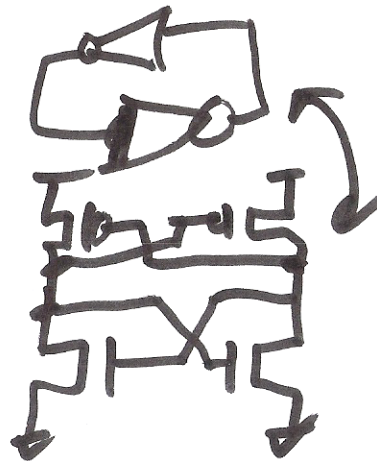
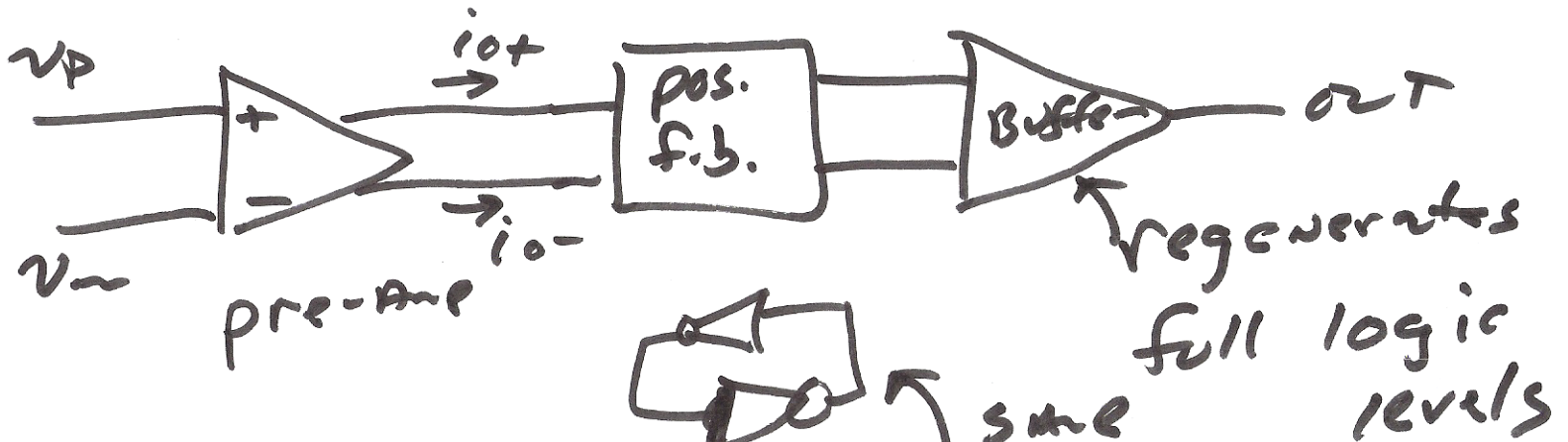


27.1 Basic Comparator design

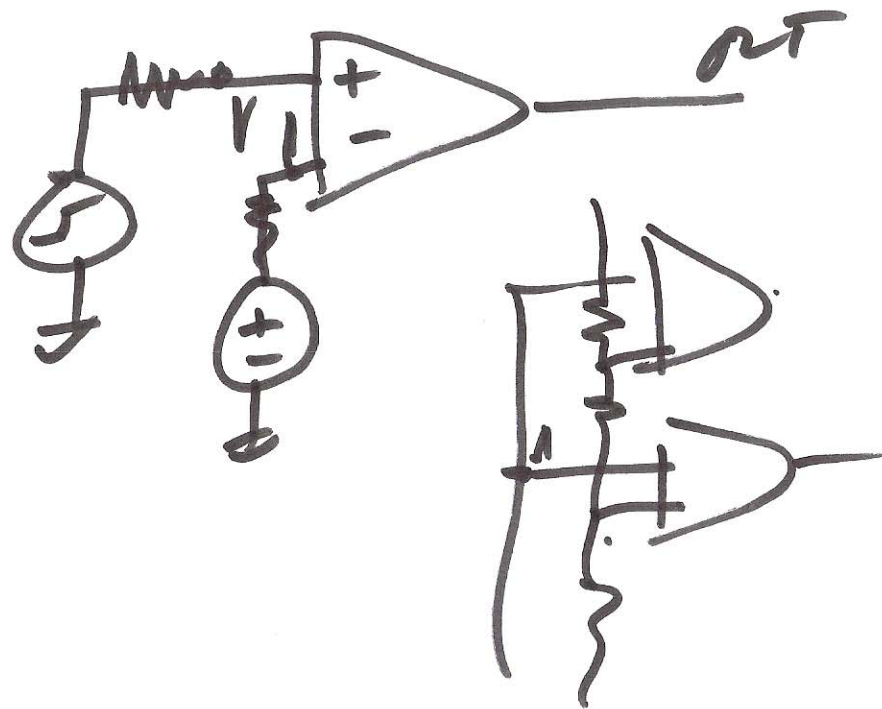
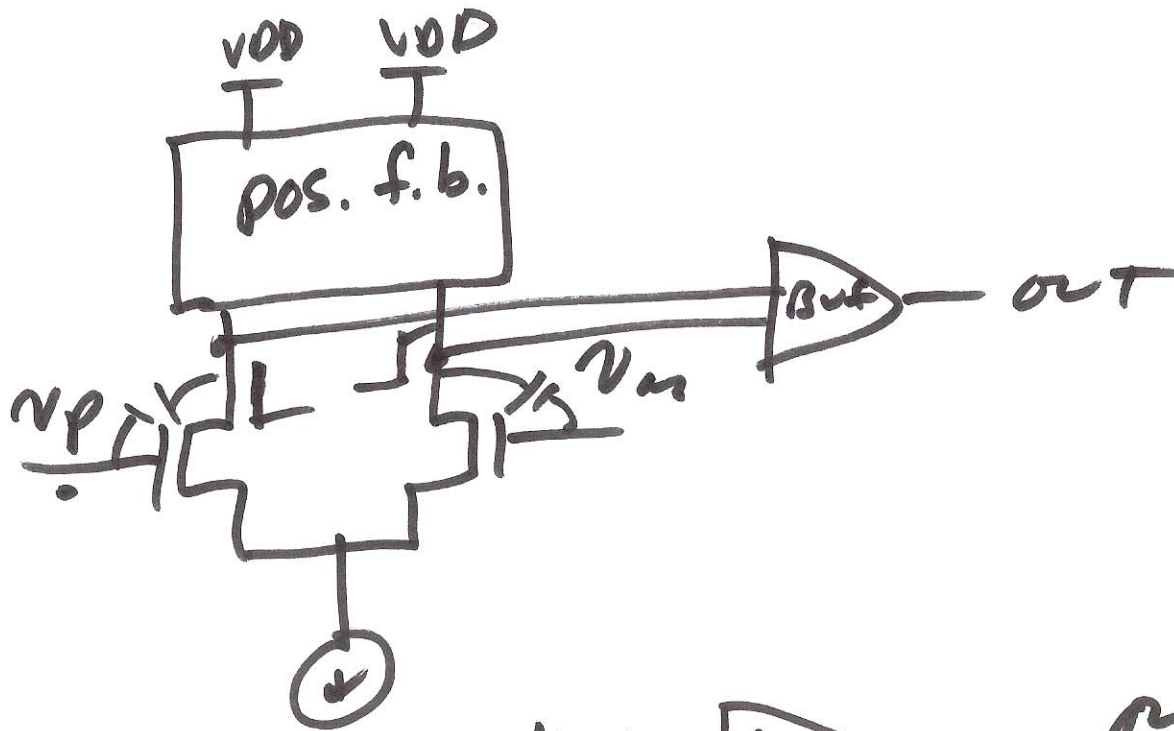


$$v_p > v_n, V_{OUT} = 1$$

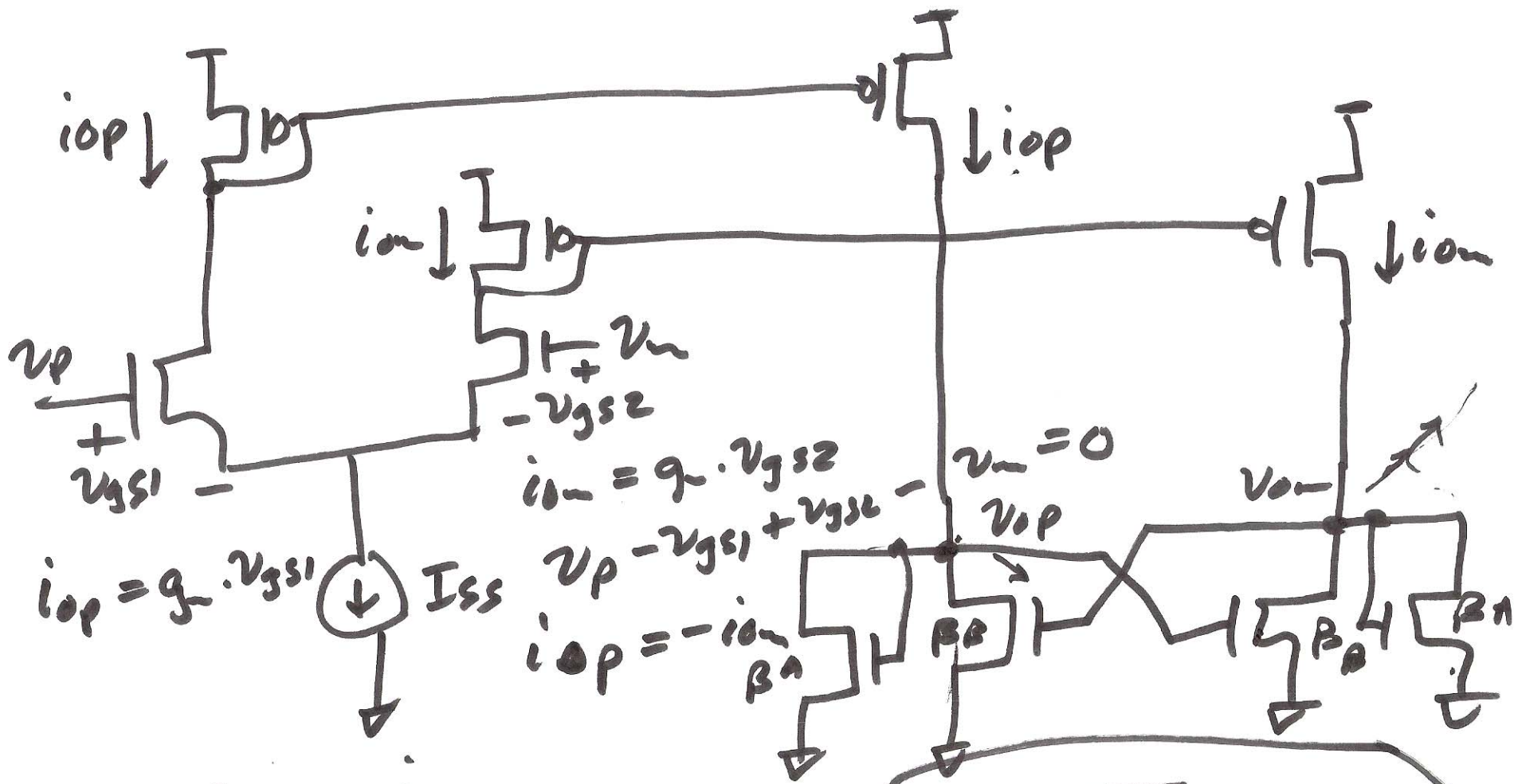
$$v_n > v_p, V_{OUT} = 0$$



1)



2)



$$i_{op} = -i_{on}$$

$$= \frac{g_m}{2} (v_p - v_m)$$

$$v_{op} = \sqrt{\frac{2i_{op}}{\beta_A}} + V_{THN} \quad i_{op} \gg i_{on}$$

$$i_{op} - i_{on} = g_m (v_p - v_m)$$

