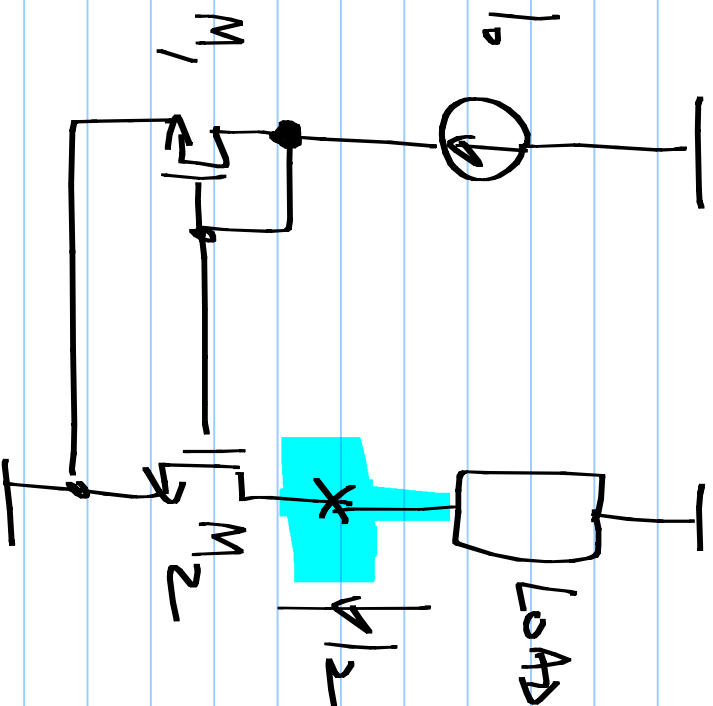


Lecture 18

25/2/2016

Cascode opamp's

Current mirror:



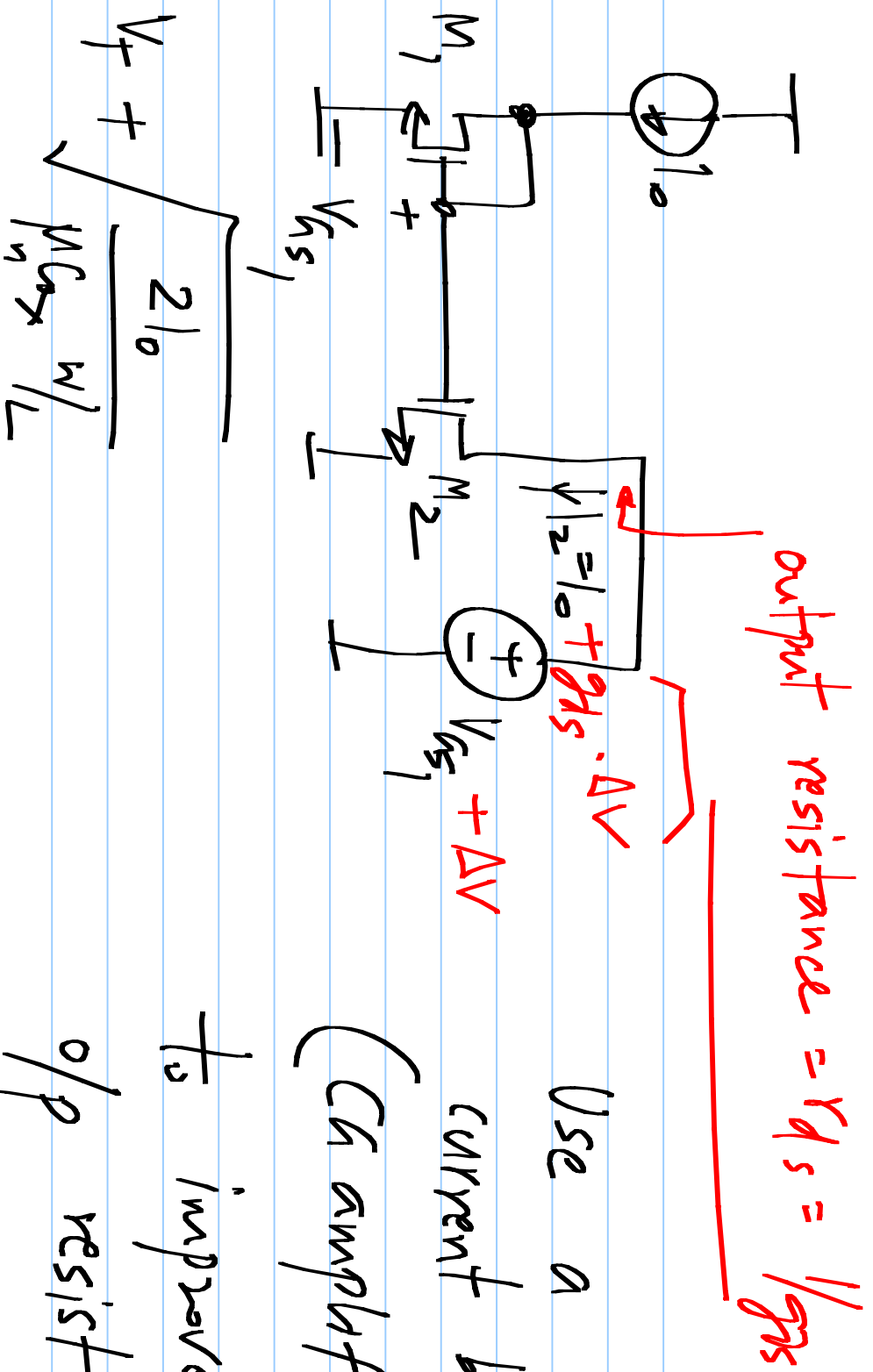
$M_{1/2}$: matched

M_2 : in saturation

$I_2 = I_o$

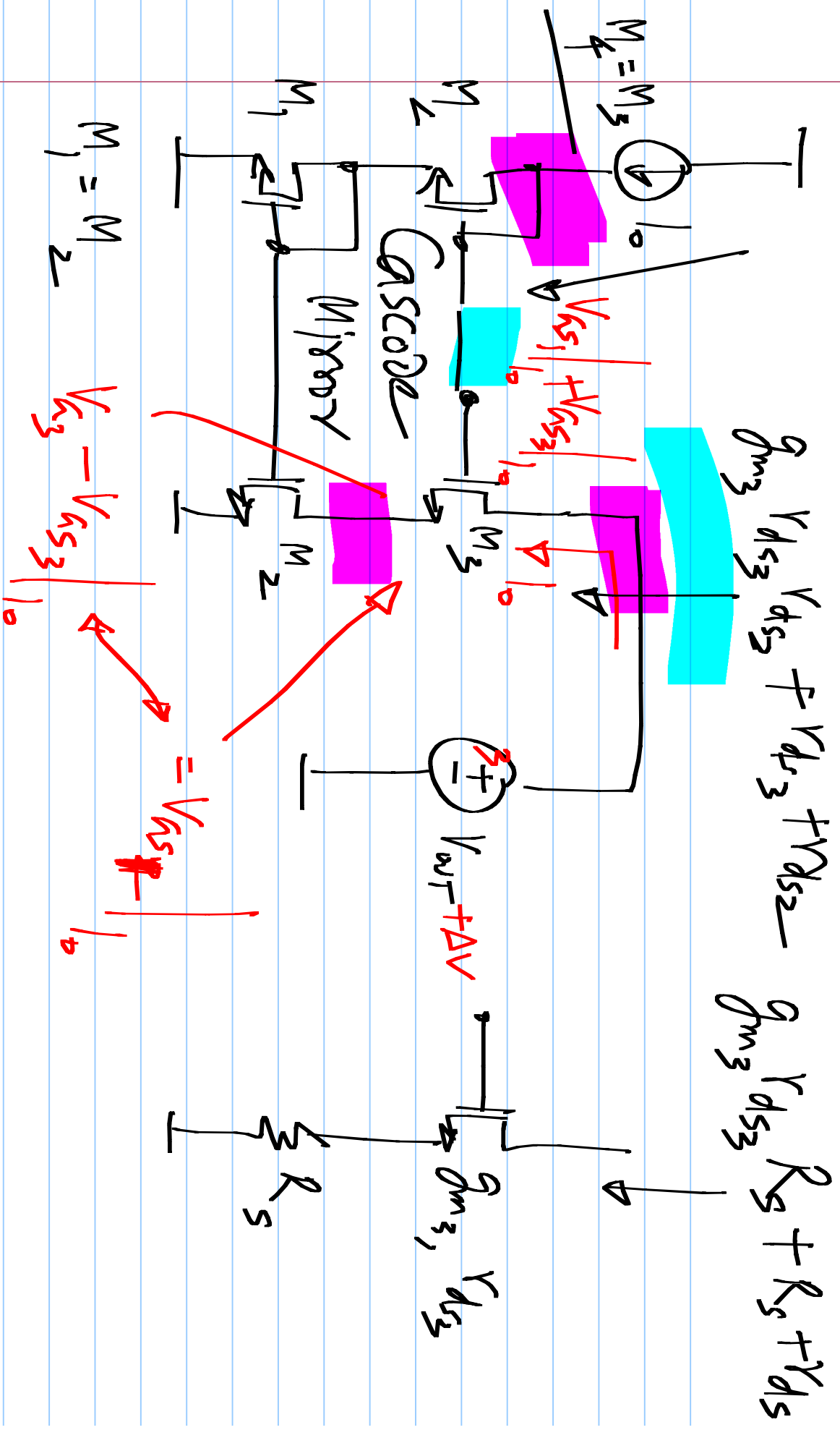
— g_{ds} —
will make

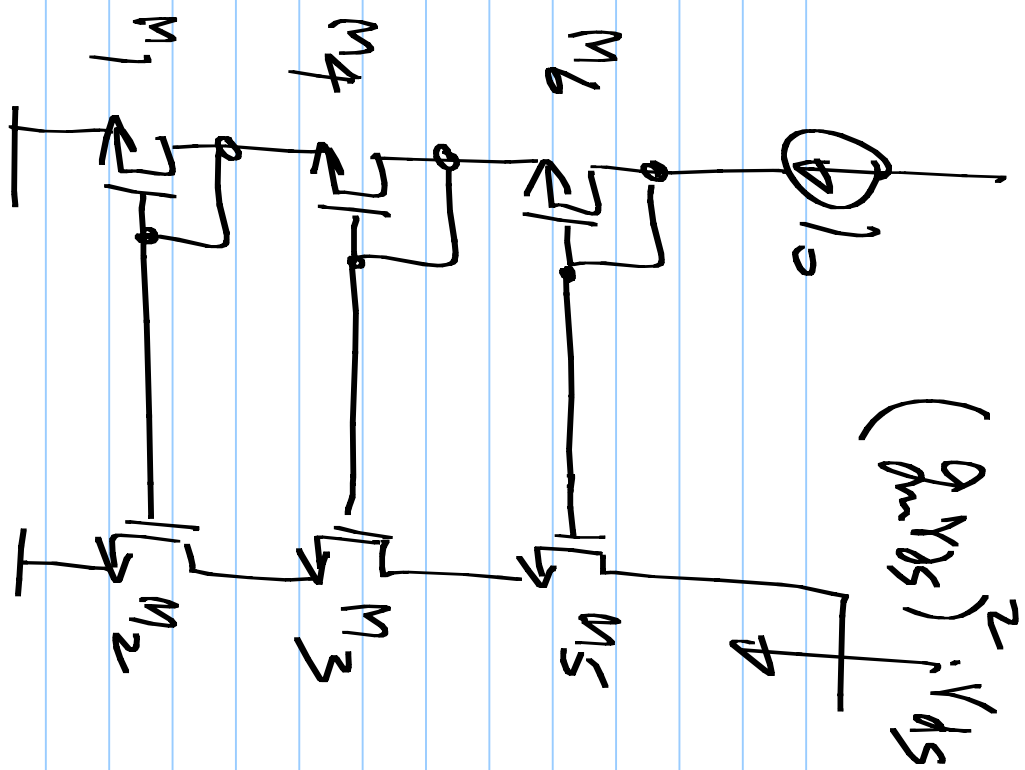
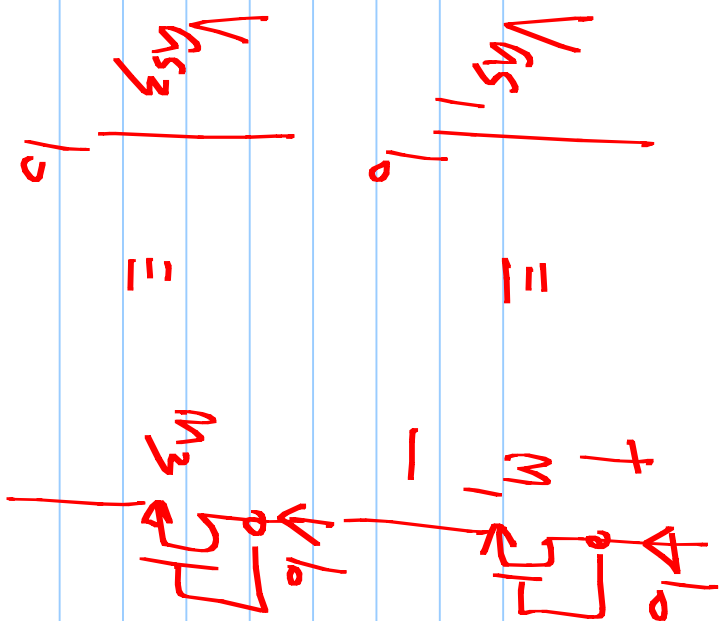
$I_2 \neq I_o$

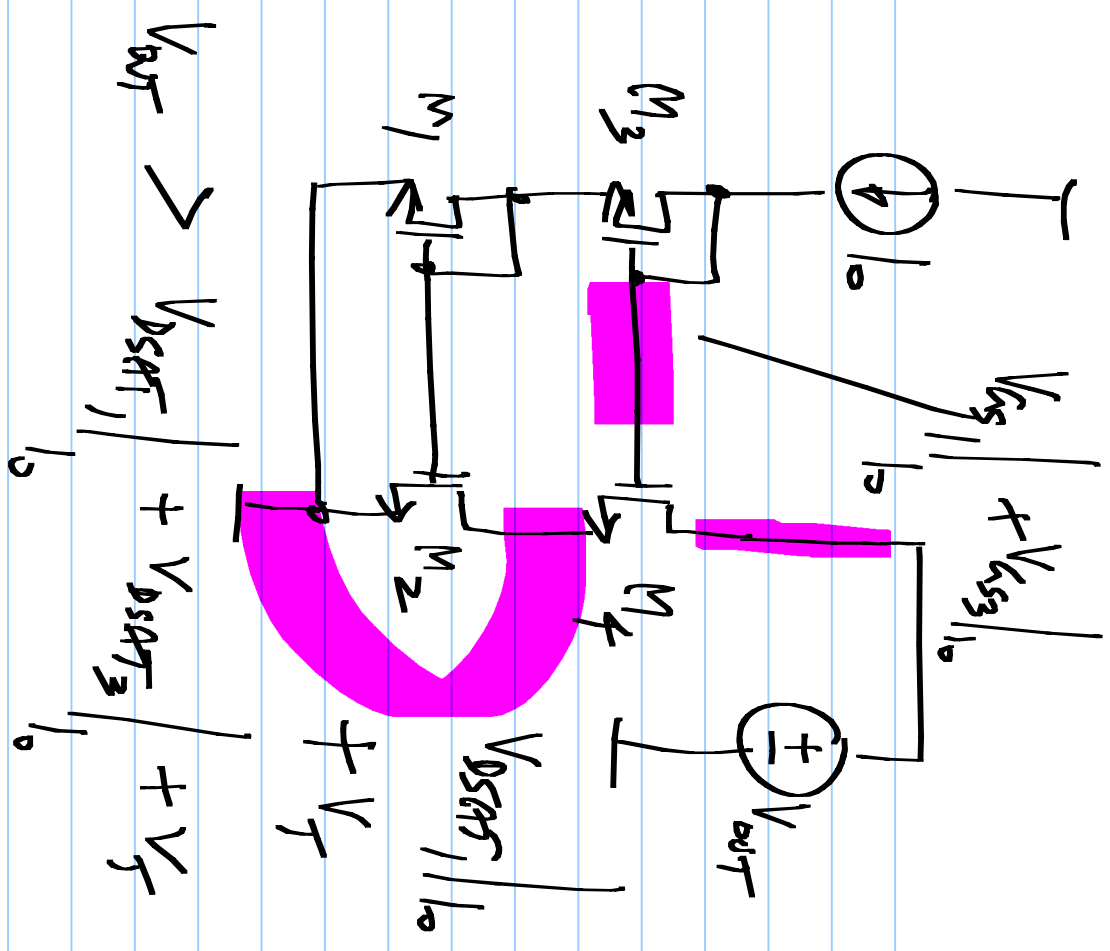
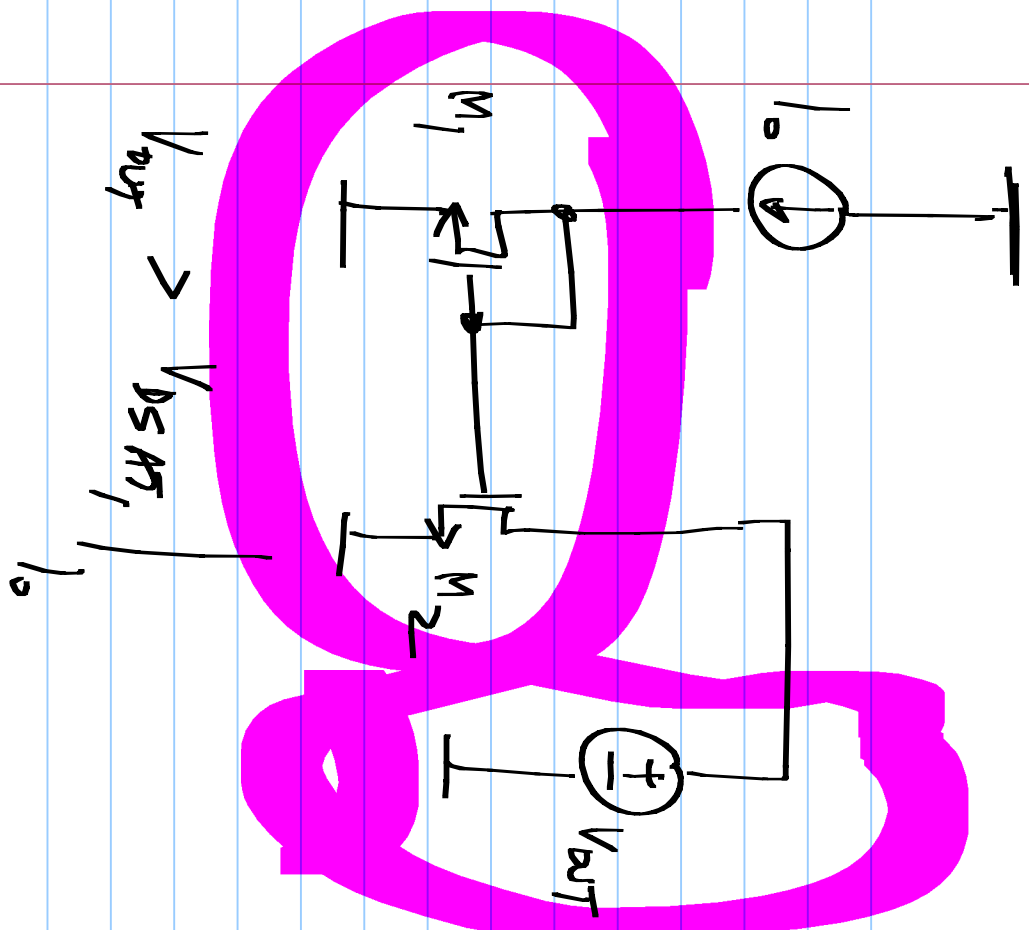


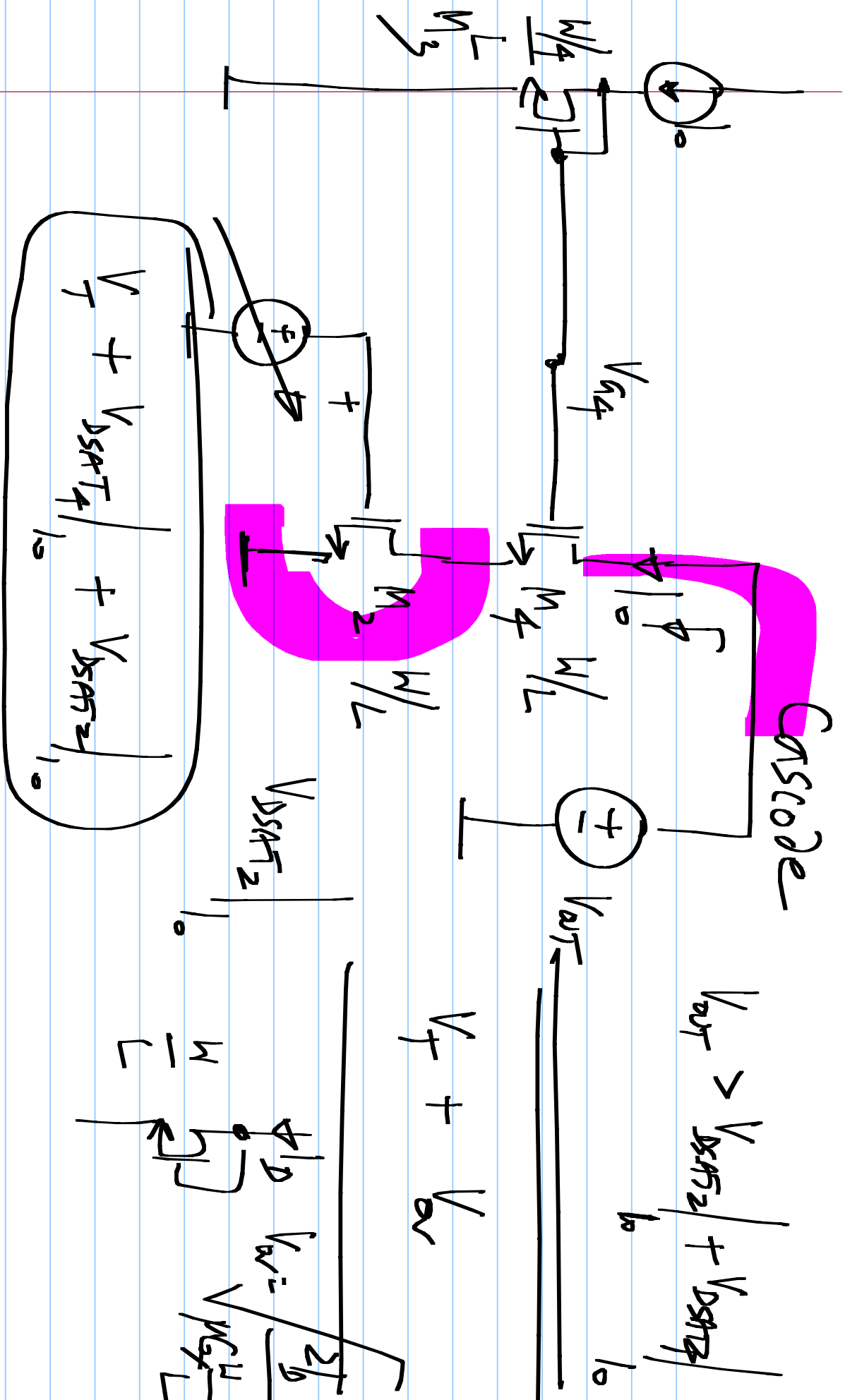
Use a
current buffer
(C_n amplifier)

to improve
o/p resistance









$$V_{out} > V_{DS452} + V_{DS473}$$

$$\sqrt{t} + \sqrt{t}$$

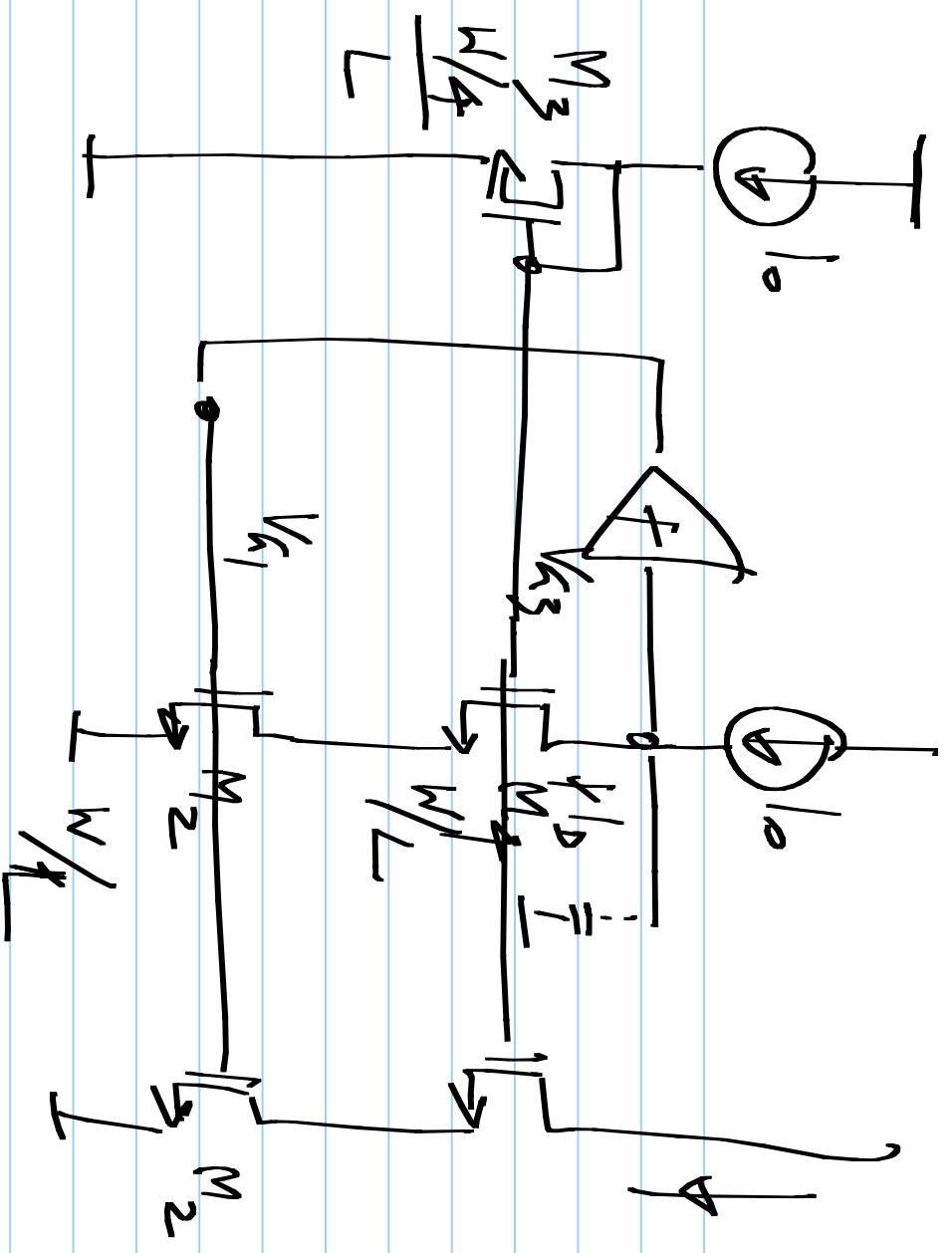
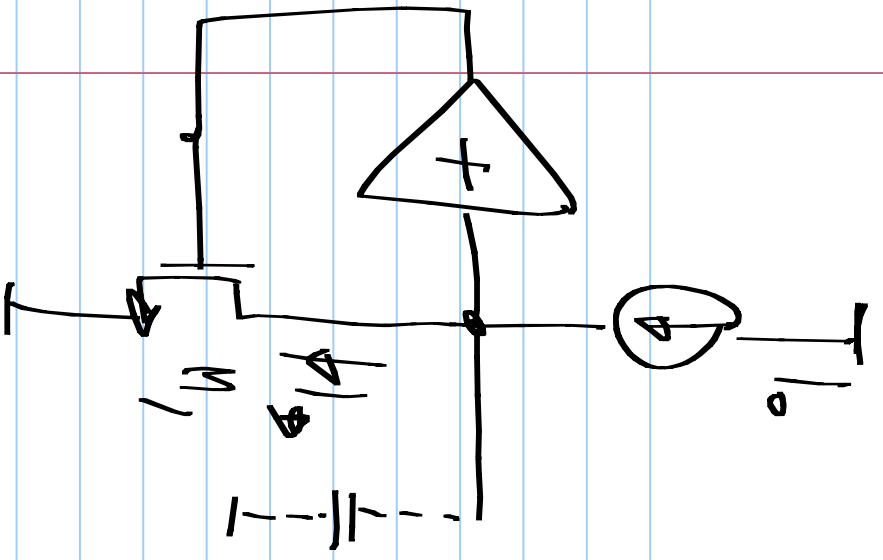
$$V_{av} = \sqrt{\frac{2}{\rho g}} \sqrt{\frac{1}{2} \rho g H}$$

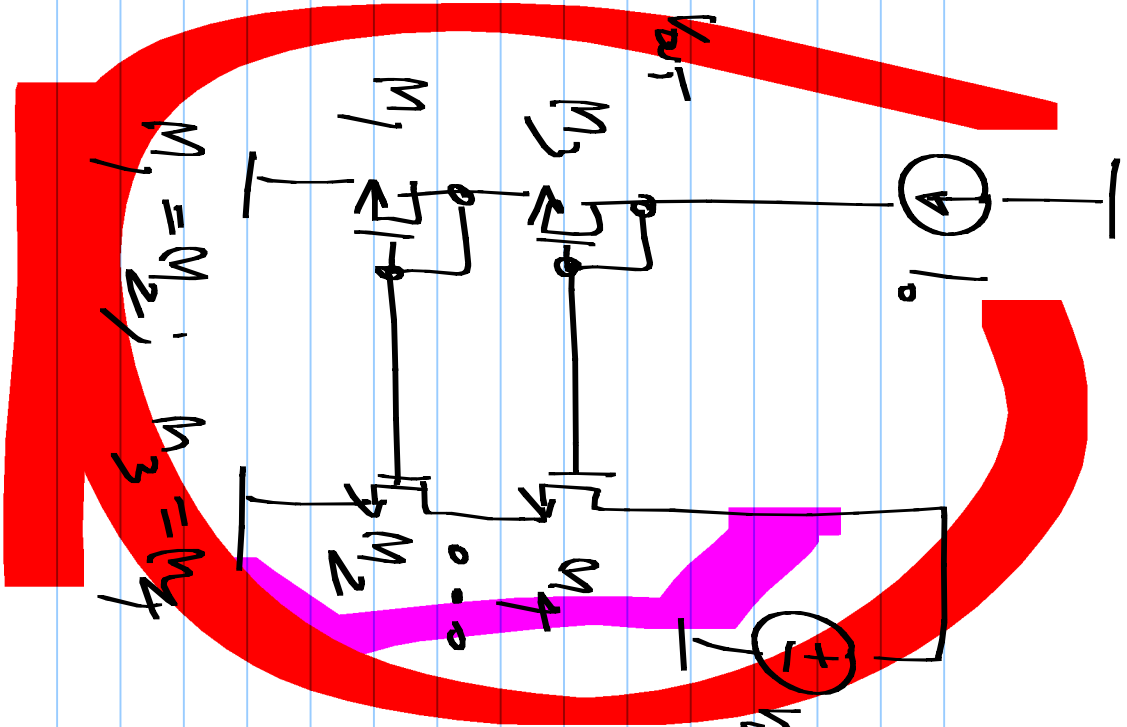
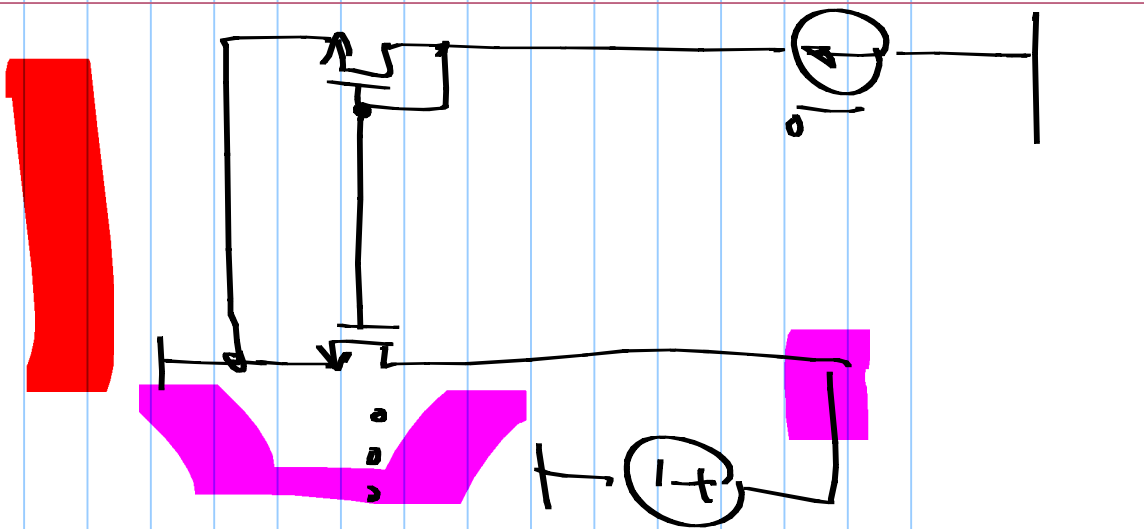
$$V_f +$$

$$\sqrt{\frac{2I_0}{m_G \times \frac{W/4}{L}}}$$

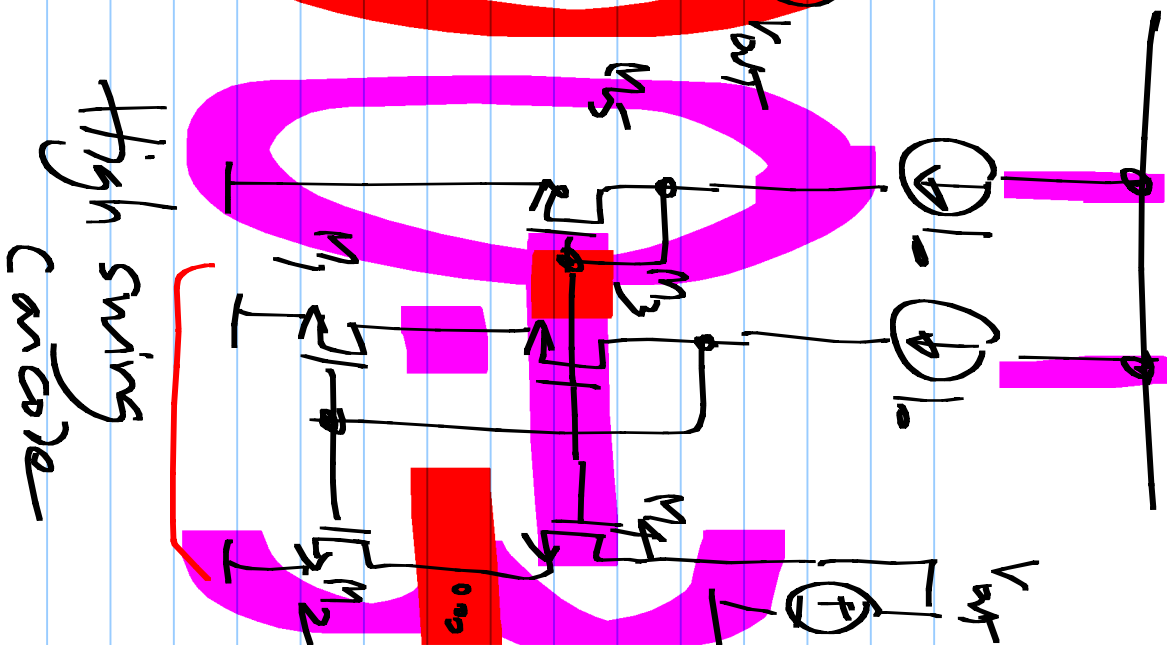
$$I_0 = I_0$$

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





$$M_1 = M_2, M_3 = M_4$$



High swing
cancels

Can

