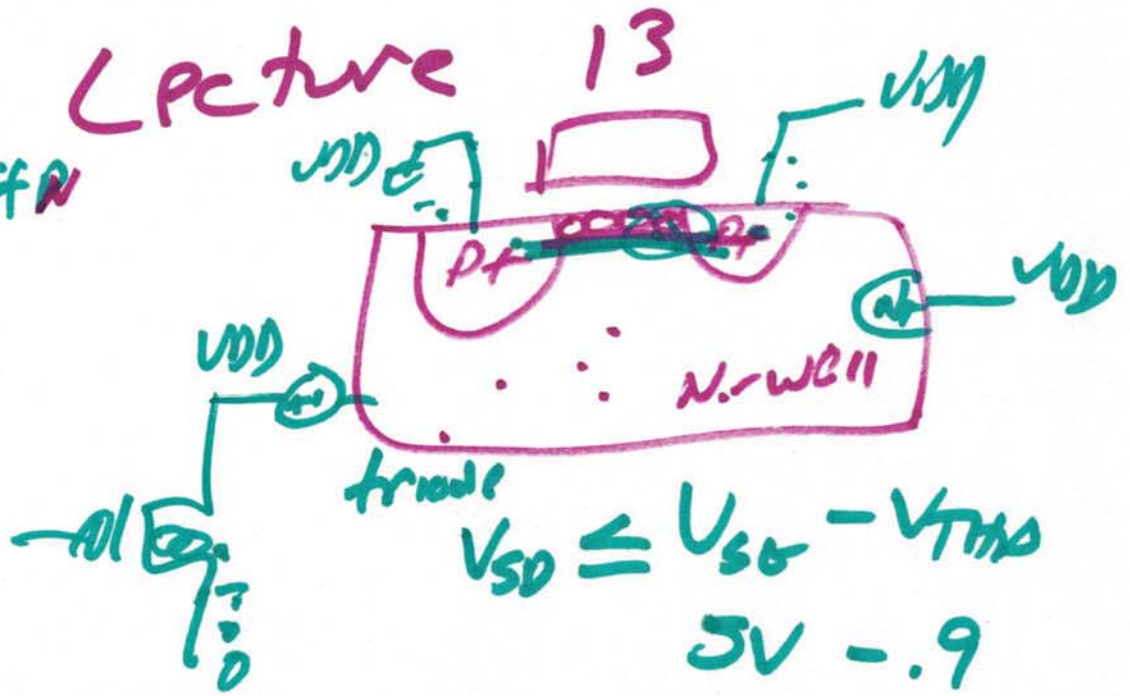
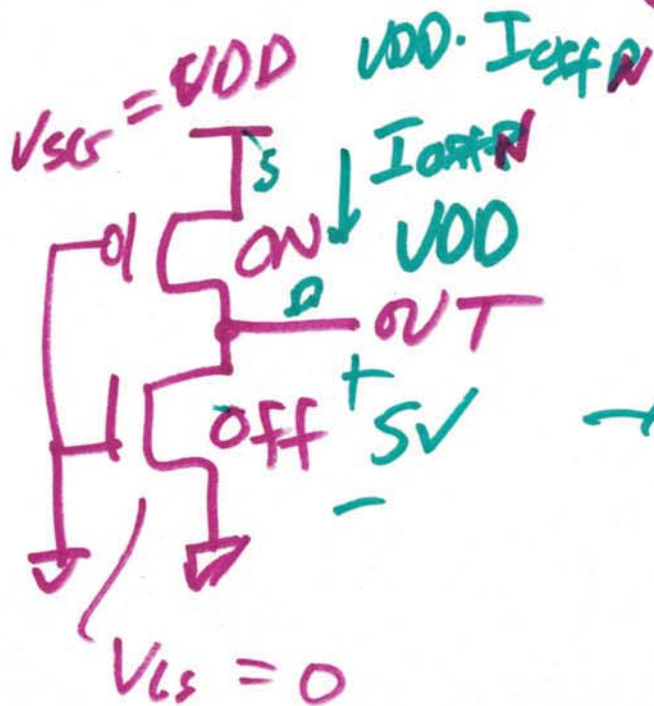


EE 421/ELG 621

Digital IC Design

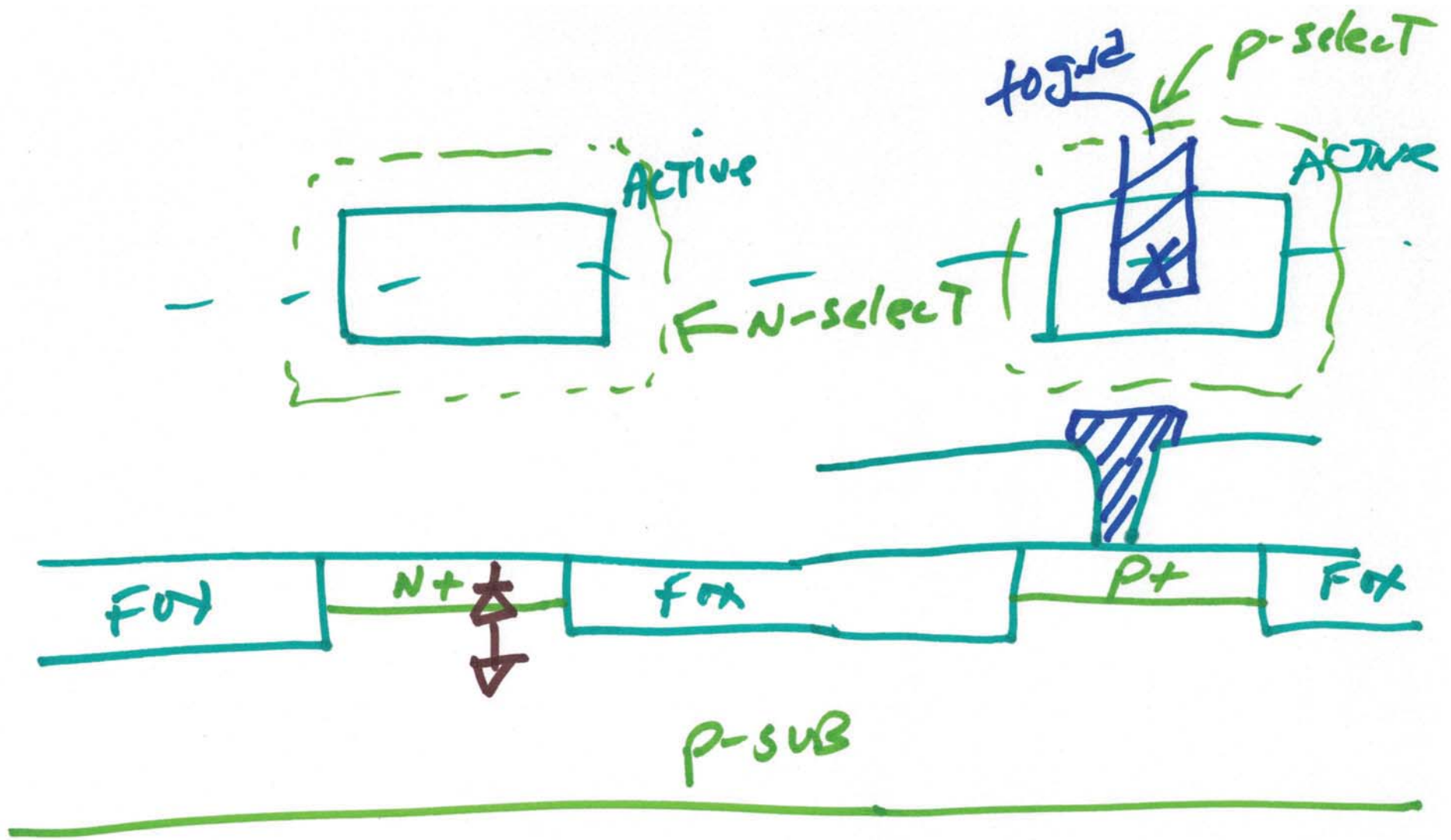
OCT. 9, 2019

Lecture 13

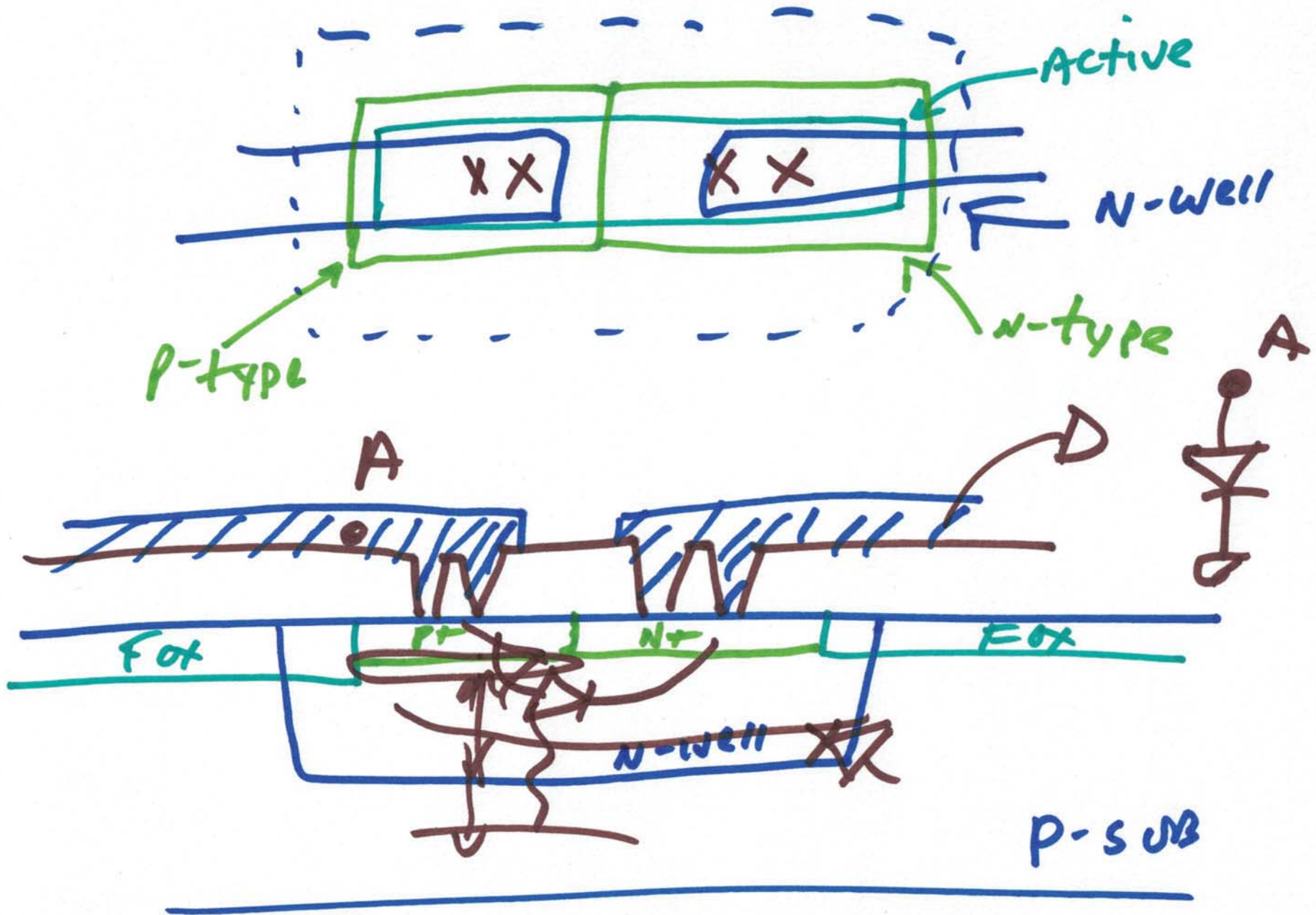


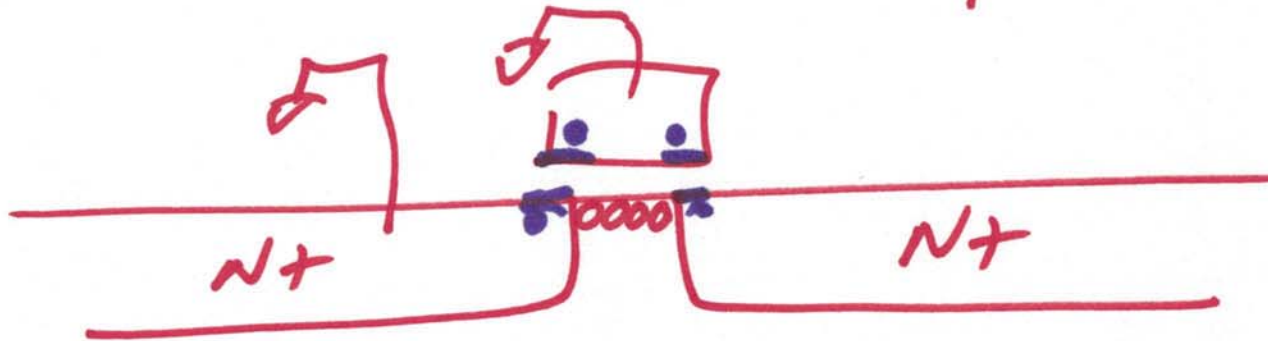
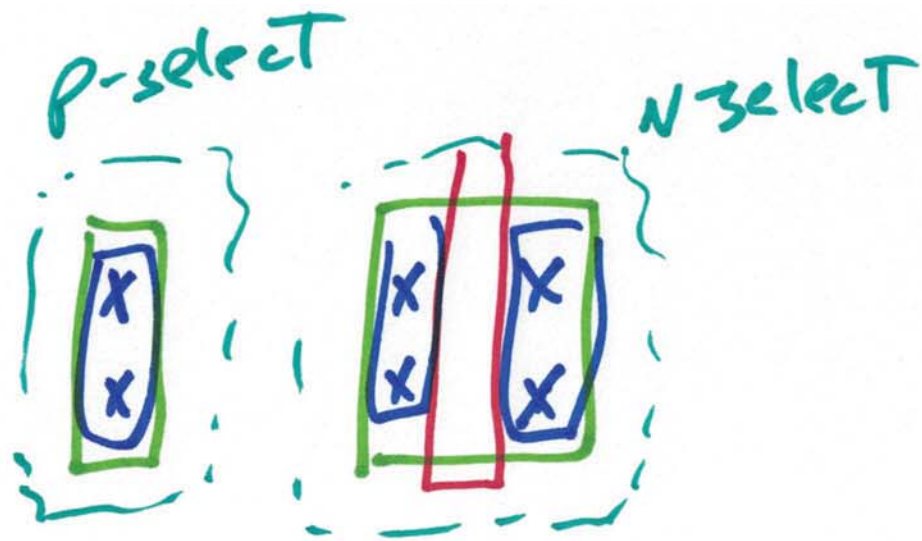
$$V_{SD} \leq V_{GS} - V_{THP}$$
$$5V - .9$$
$$V_{SD} \leq 4.1V$$

11

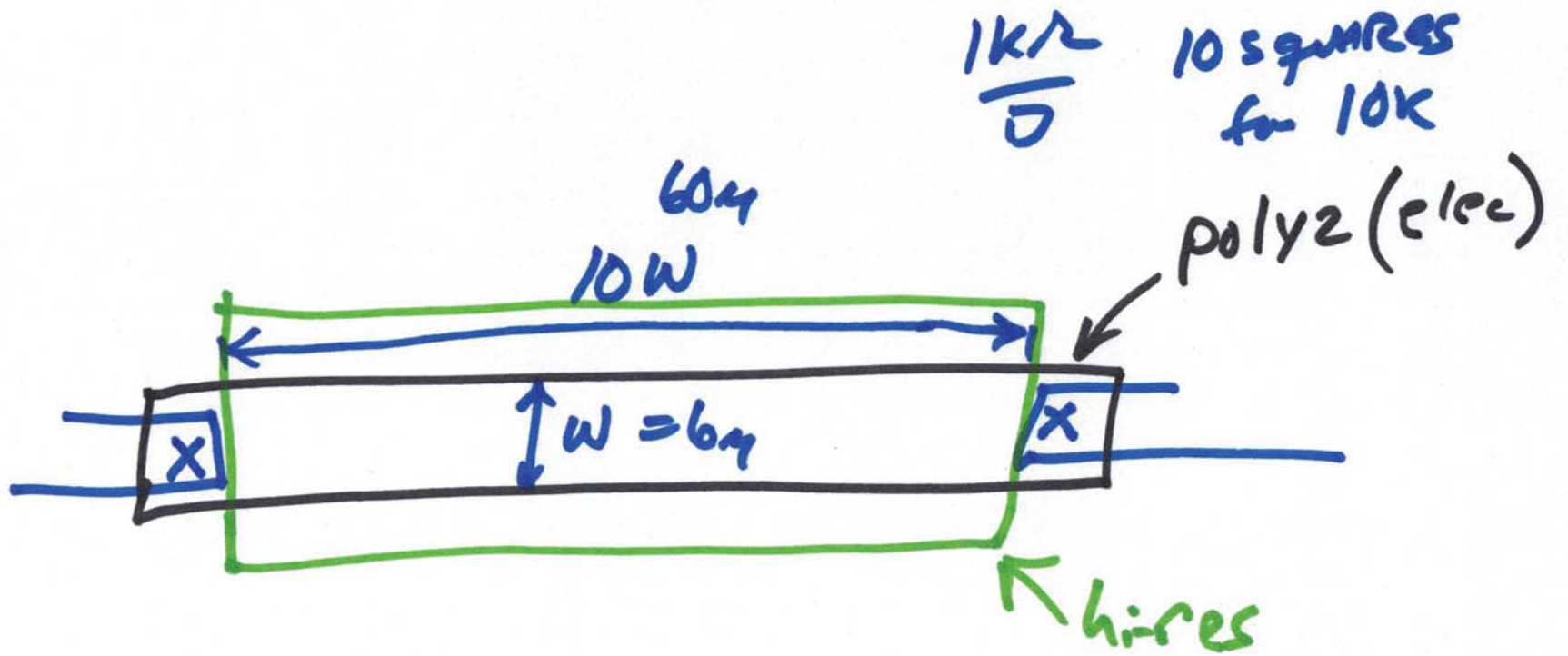


2)

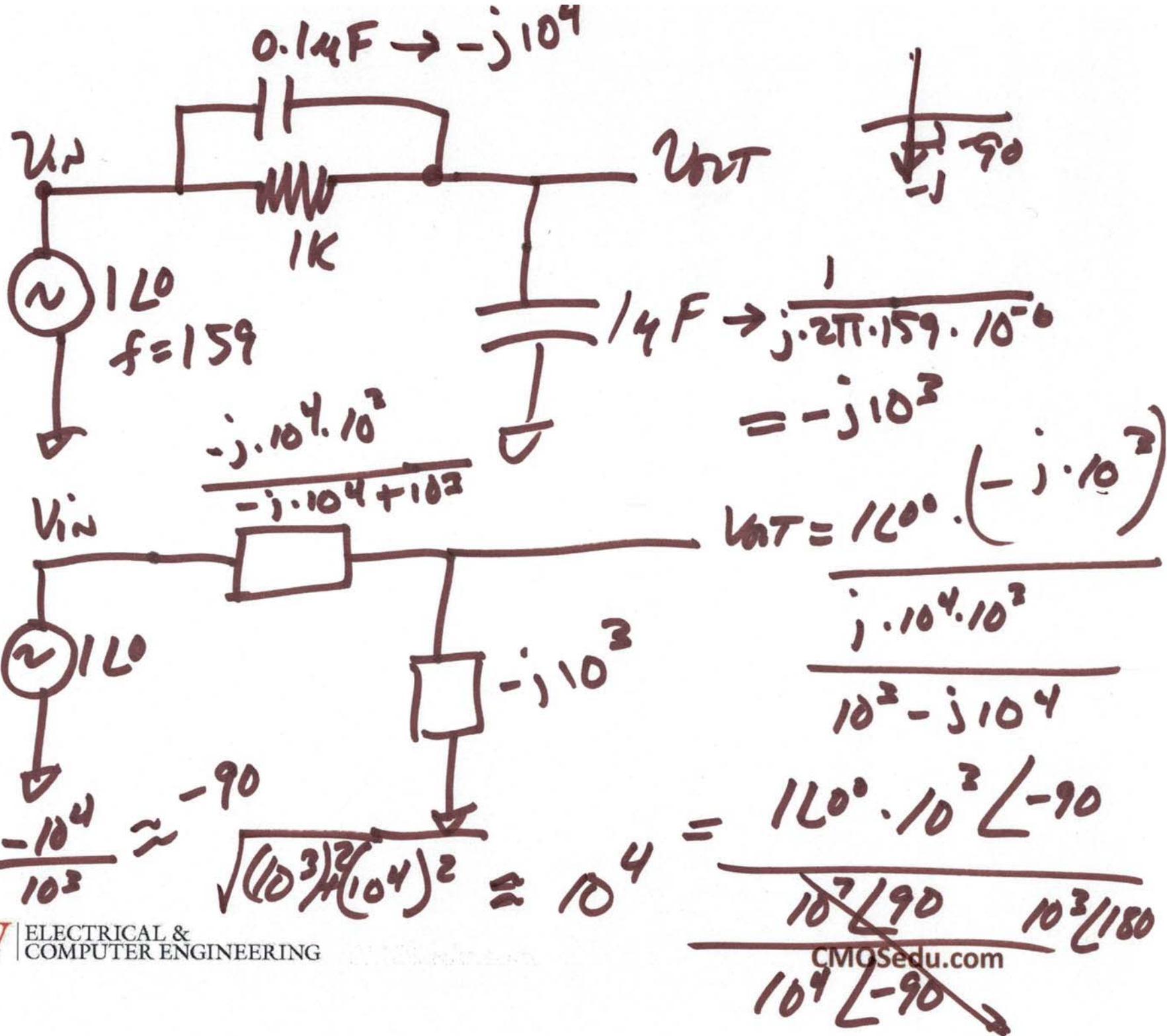




4)



5)



$$\tan^{-1} \frac{-10^4}{10^2} \approx -90$$

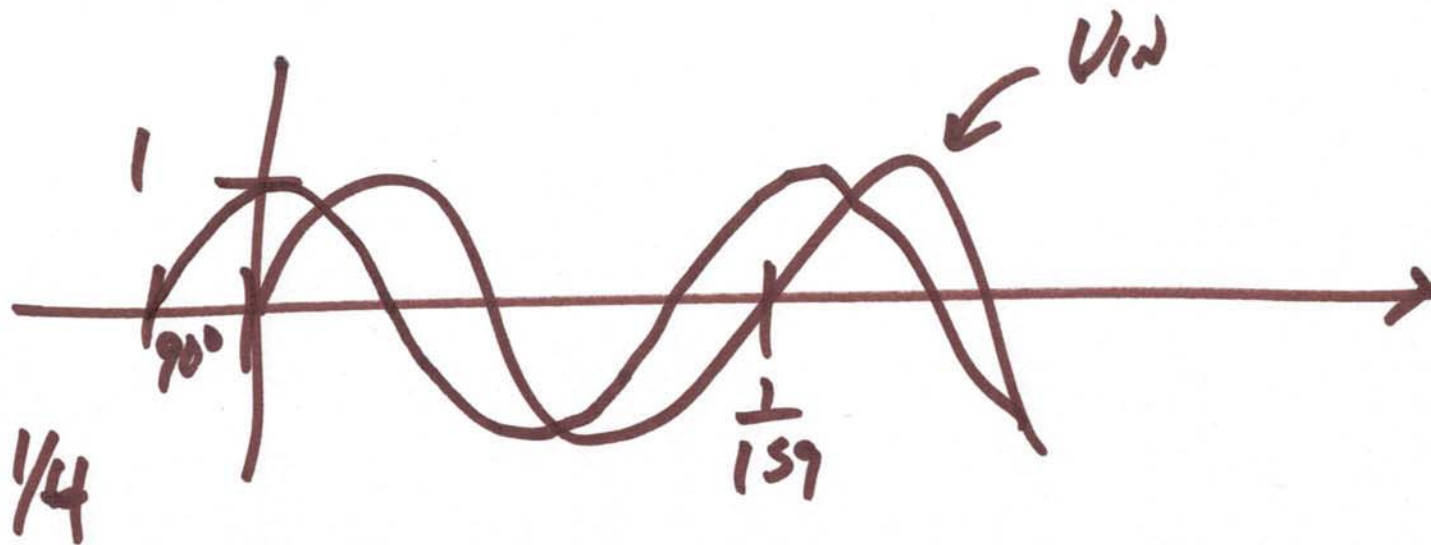
$$\sqrt{\frac{(10^3)^2}{(10^4)^2}} \approx 10^4$$

$$= \frac{10^3 \angle -90}{10^4 \angle -90}$$

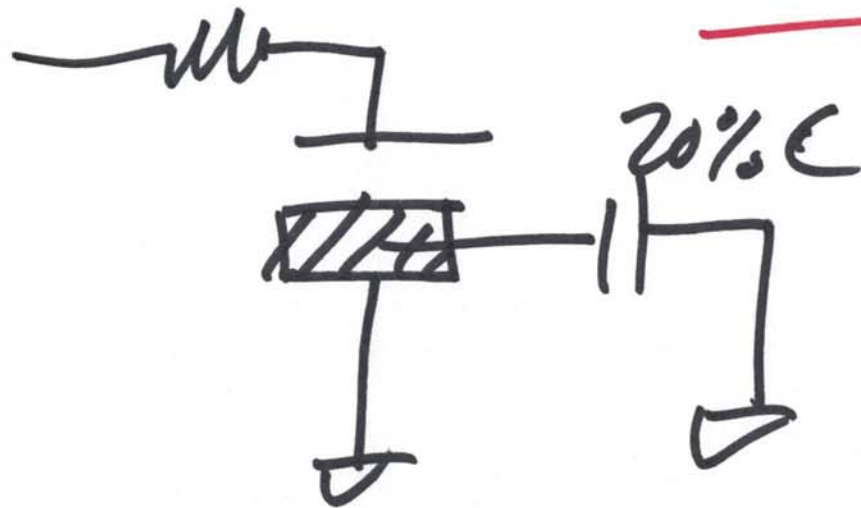
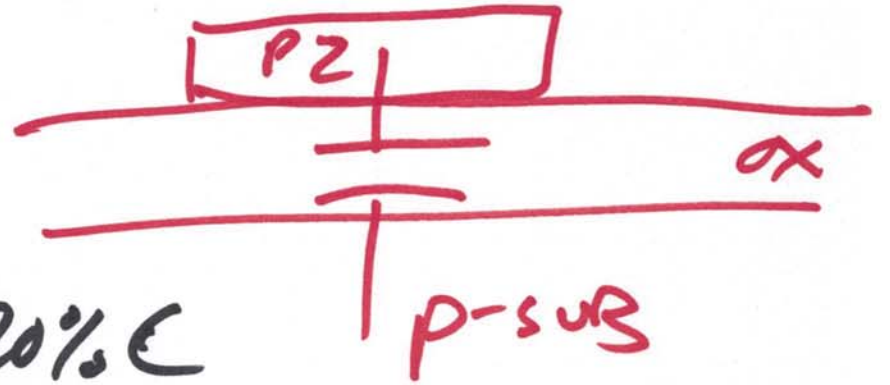
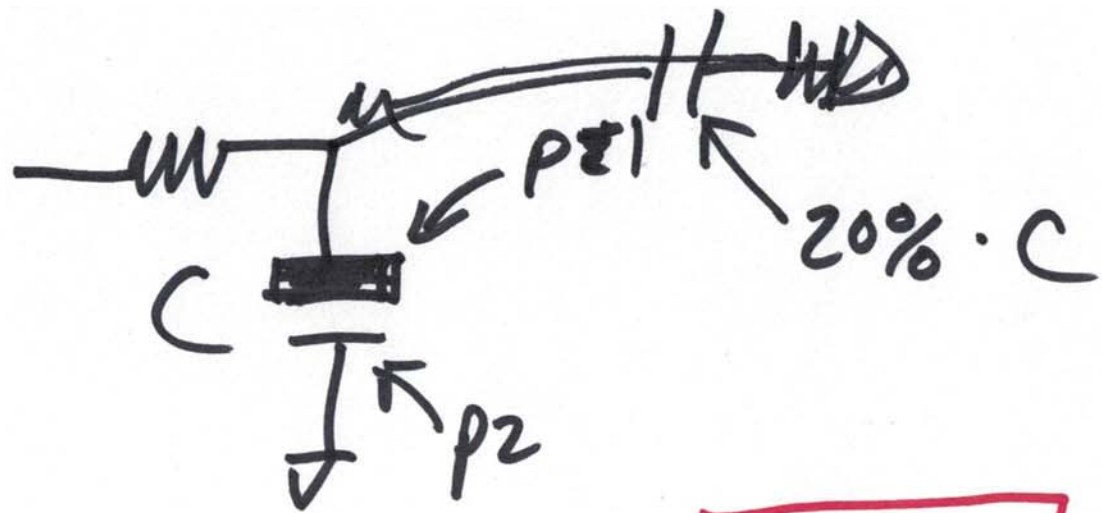
b)

$$V_{out} = \frac{1 \angle 0^\circ \cdot 10^3 \angle -90^\circ}{10^3 \angle 180^\circ}$$

$$V_{out} \approx 1 \angle 90^\circ$$



7)



8)