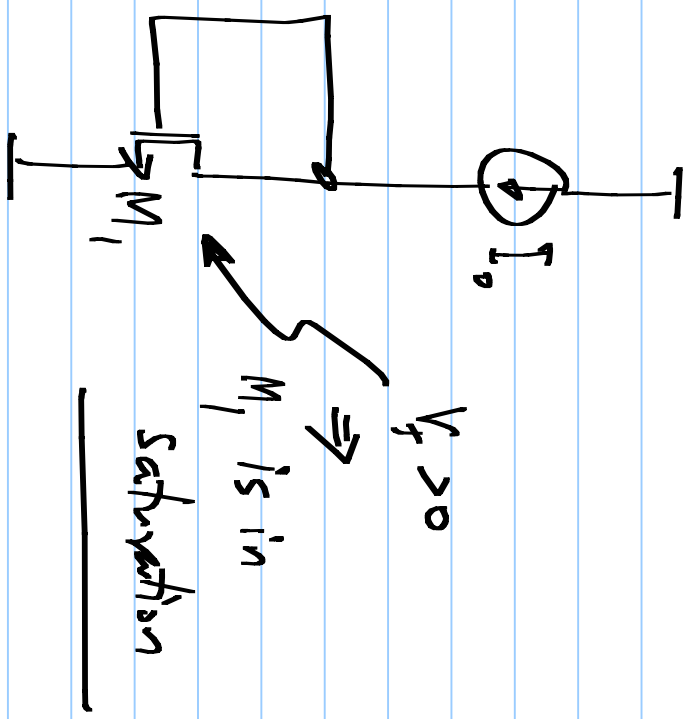
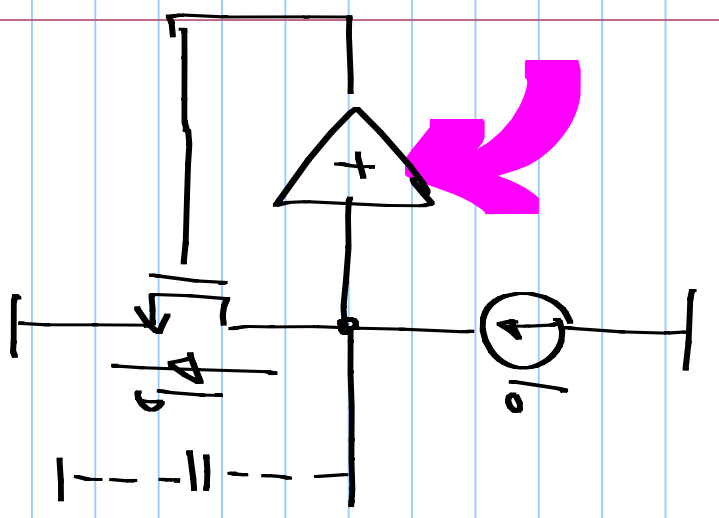
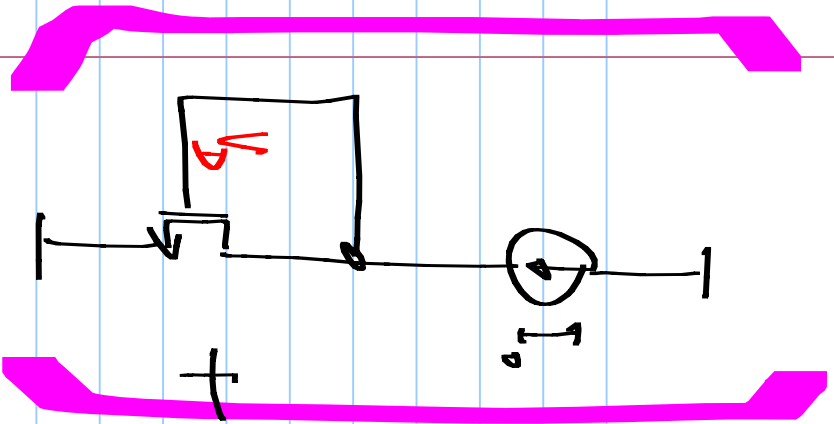


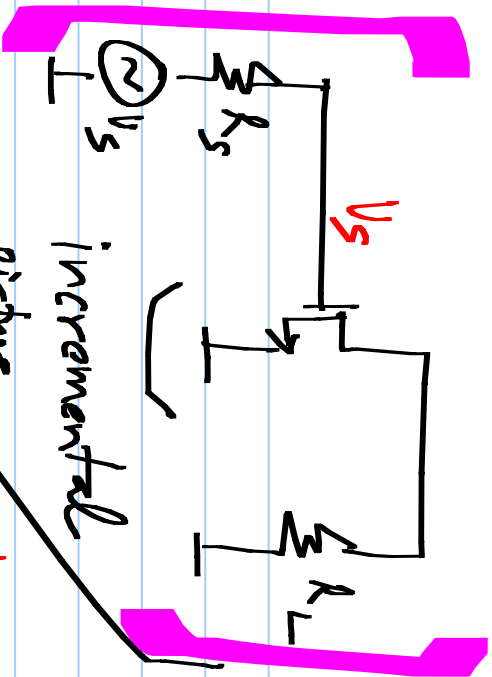
# Lecture 15

## Main feedback bin:



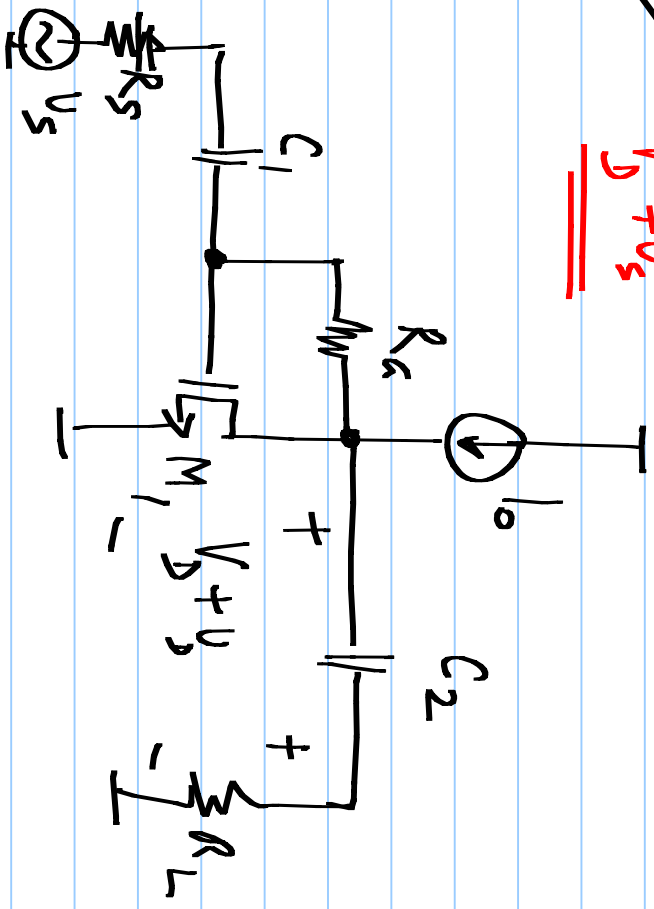
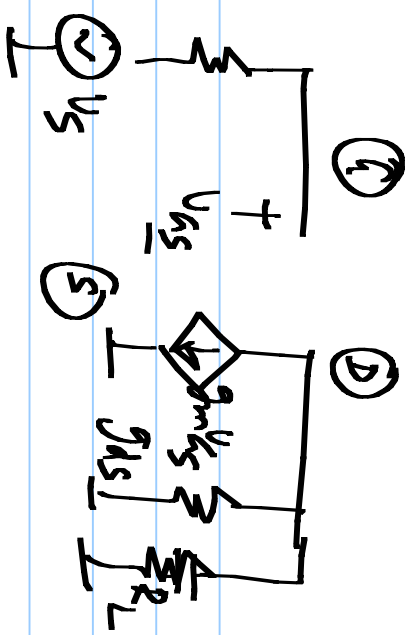


biasing

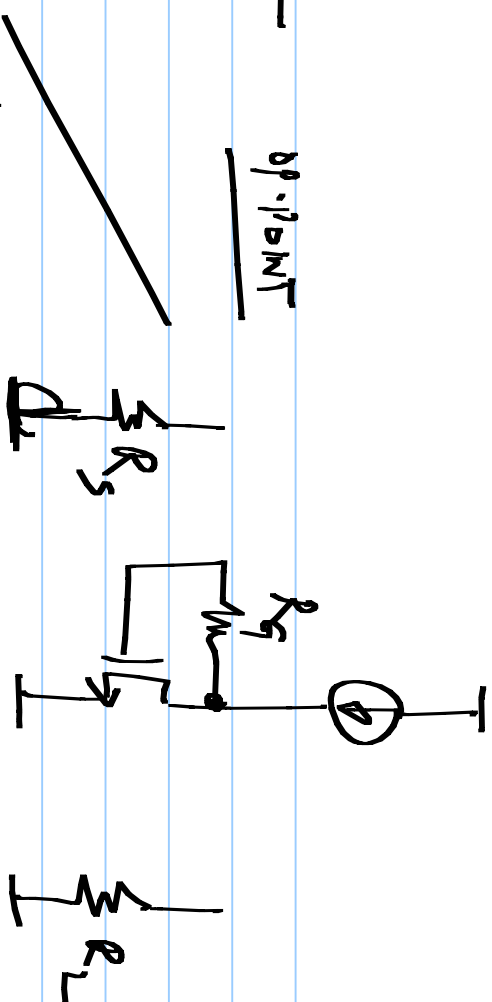
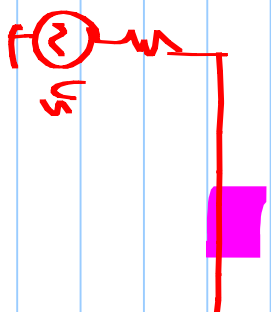
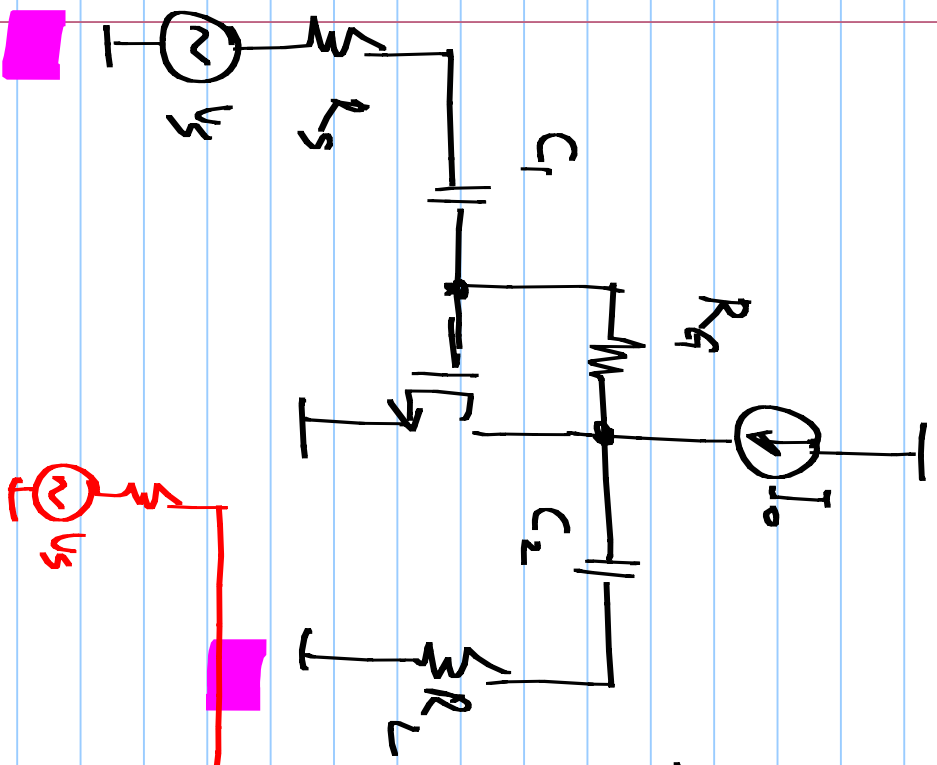


incremental picture

$v_D + v_s$

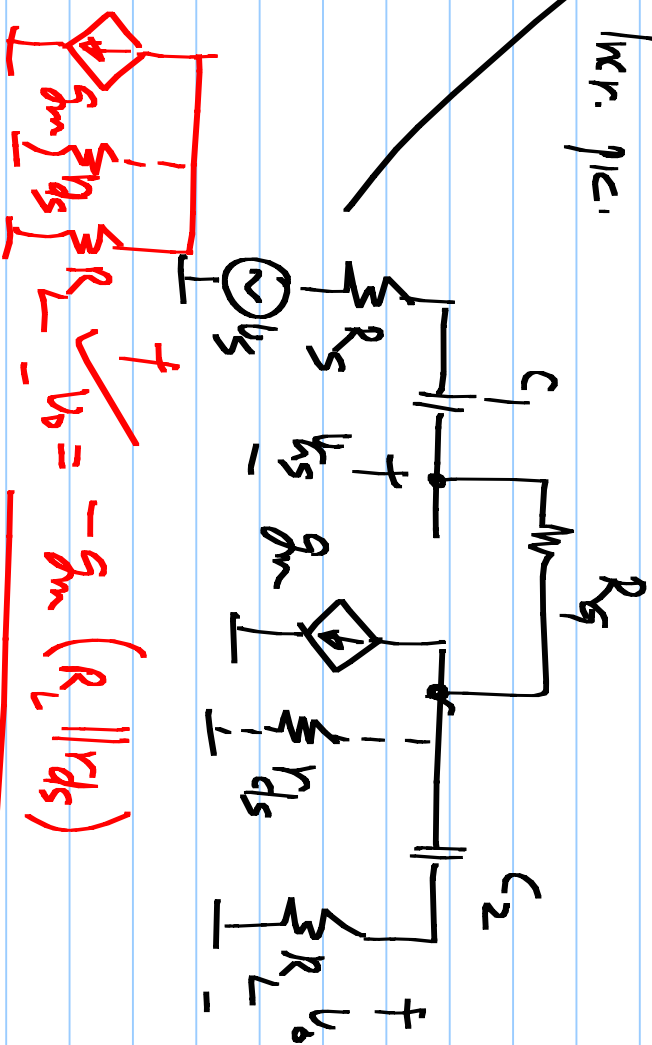


# Common-source amplifier with drain-feedback bias



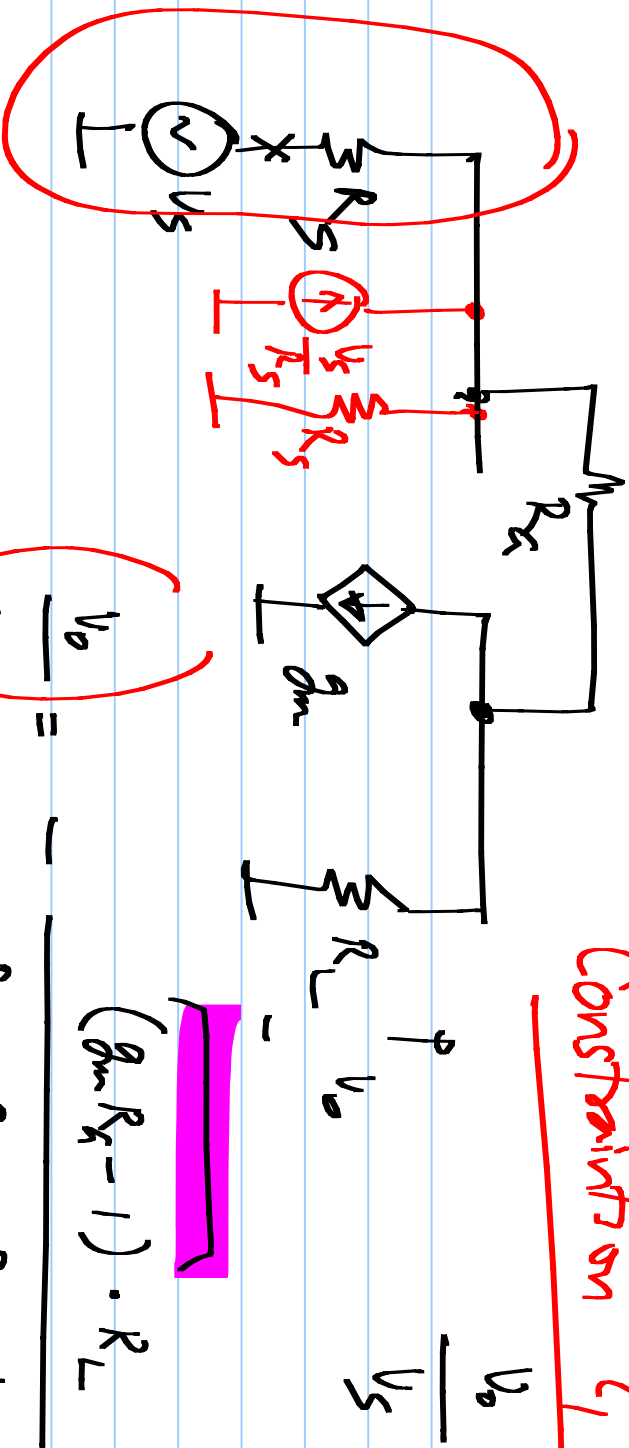
OP-POINT

lin. pic.



$$v_o = -g_m (R_L \parallel r_{ds}) v_{gs}$$

Constraints on  $C_1$  &  $C_2$



$$\frac{v_o}{v_s} = \frac{\beta R_L}{(\beta R_E - 1) \cdot R_L + R_B + R_L + R_S + g_m R_L R_S}$$

$$R_E \gg \frac{1}{g_m} \quad | \quad R_L, R_S, g_m R_L R_S$$

Most likely constraints

$$1 + \frac{R_L + R_S + g_m R_L R_S}{R_E}$$

# Common-source amplifier

