

3 (33)

$$V_G = \frac{11}{11+91} \cdot 22 = 2.392 \text{ V}$$

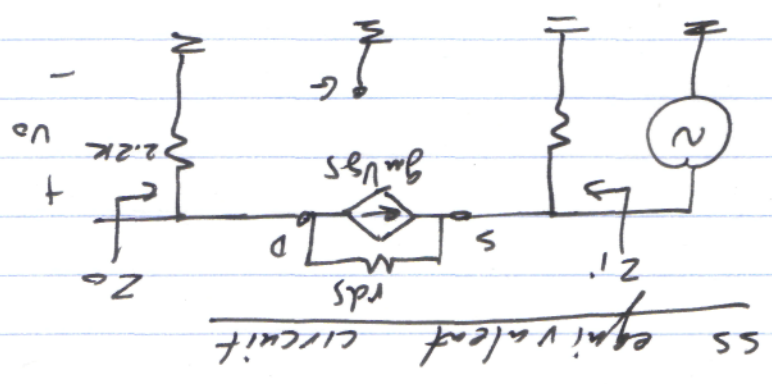
$$V_S = 1000 I_D$$

$$I_D = 7.5 \text{ mA} \left(\frac{1 - 2.392 - 1000 I_D}{-4} \right)^2$$

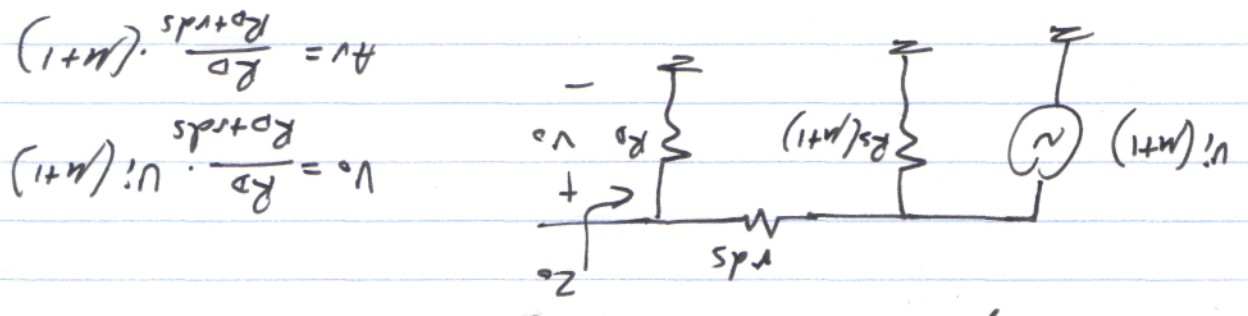
$$I_{D1,2} =$$

$$V_{GS1,2} =$$

$$g_m = \frac{2 I_{DSS}}{|V_P|} \left(1 - \frac{V_{GS}}{V_P} \right)^2 =$$



1) Drain equivalent circuit to find Z_o & V_o



$$V_o = R_D \cdot v_i (M+1)$$

$$A_v = \frac{R_D}{R_D + r_{ds}} \cdot (M+1)$$

$$Z_o = R_D \parallel r_{ds}$$

$$v_i = 0$$

$$Z_i = R_S \parallel r_{ds} + R_D \cdot (M+1)$$

from source equivalent circuit

