LAB Quiz 12

[1] $I_a = 0$

Voltage Divider: $V_a = \frac{V_1 \times R_2}{R_1 + R_2} = \frac{10 \times 550k}{550k + 450k} = \boxed{5.5\,V}$

[2] $V_{DS} = V_D - V_S$

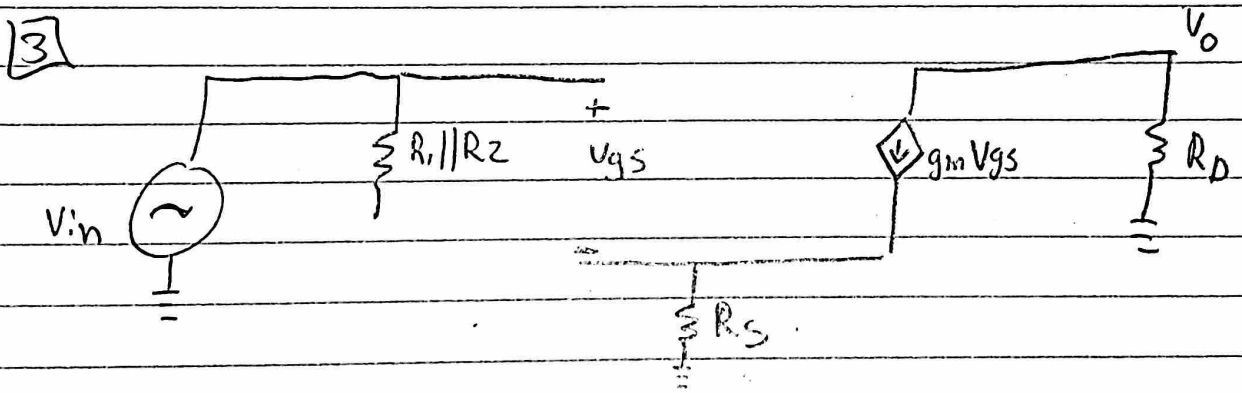
$= (V_{DD} - I_D R_D) - (I_D R_S)$

$= 10 - (0.5m)(6K) - (0.5m)(6K)$

$= 10 - 3 - 3$

$\boxed{V_{RS} = 4V}$ $\quad V_D = 7V \quad V_S = 3V$

[3]



$R_{In} = (R_1 \| R_2) \| (\infty) = (R_1 \| R_2)$

$R_{In} = \frac{450k \times 550k}{450k + 550k} = \boxed{247.5K}$