Chapter 2: Problem 1 (10 points): Determine noise margins for the inverter with characteristics shown:

Chapter 2: Problem 2 (10 points): Fill in the name of the region that corresponds to the given transistor current expression:

\[ I_{ds} = \begin{cases} 0 & \text{region} = \, \, \, \text{region} = \\ \beta (V_{gs} - V_t) V_{ds} - \frac{V_{ds}}{2} & \text{region} = \\ \frac{\beta}{2} (V_{gs} - V_t)^2 & \text{region} = \end{cases} \]

Chapter 2: Problem 2 (10 points): Do the reverse engineering on those two layouts (a) and (b). Draw the schematic diagram for each circuit: