Assignment 2

The equations have the correct terms of the nonlinear part in the above figure.

\[ a = \frac{(V_i - V_{th})^2}{2} \]

Threshold voltage \( V_{th} \) (independent parameters) \( V_I = 0 \). Active-operating region \( 0 < V_I < V_{th} \). Nonlinear and linear region \( V_{th} < V_I \). The operating point is \( V_{th} < V_I < V_{th} \).

\[ y = V_I \]

(The answer may be in millivolts or V.) Round off fractional answers to one decimal place.

(a) 

\[ V_{th} = \frac{W}{I_D} \sqrt{V_{th}} \] (The answer may be in millivolts or V.) Round off fractional answers to one decimal place.

(b) 

In the above problem, determine the drain current \( I_D \) of the MOS transistor.

The answer may be in milliamperes (mA). Round off fractional answers to one decimal place.

(c) 

In the above problem, determine the drain current \( I_D \) of the MOS transistor.

The answer may be in milliamperes (mA). Round off fractional answers to one decimal place.

(d) 

In the above problem, determine the drain current \( I_D \) of the MOS transistor.

The answer may be in milliamperes (mA). Round off fractional answers to one decimal place.