Homework 1:

Chapter 2.1-2.4;

1) For the following expression:
   \[ z(a, b) = a \cdot b \]
   a) Write a truth table.
   b) Draw a timing diagram.
   c) Draw the logic gate.

2) For the following expression:
   \[ z(a, b) = a + b \]
   a) Write a truth table.
   b) Draw a timing diagram.
   c) Draw the logic gate.

3) For the following expression:
   \[ z(a) = \overline{a} \]
   a) Write a truth table.
   b) Draw a timing diagram.
   c) Draw the logic gate.

4) For the following expression:
   \[ z(a, b) = \overline{a + b} \]
   a) Write a truth table.
   b) Draw a timing diagram.
   c) Draw a schematic.
5) For the following expression:

\[ z(a,b) = \overline{a \cdot \overline{b}} \]

a) Write a truth table.

b) Draw a timing diagram.

c) Draw a schematic.

6) For the following schematic:

![Schematic Diagram](image)

a) Provide the logical expression.

b) Write a truth table.

c) Draw a timing diagram.

7) For the following schematic:

![Schematic Diagram](image)

a) Provide the logical expression.

b) Write a truth table.

c) Draw a timing diagram.

8) For the following schematic:

![Schematic Diagram](image)

a) Provide the logical expression.

b) Write a truth table.

c) Draw a timing diagram.