1. Given A= (11000101010101010101011), B= $(765436)_8$, C=$(ABEBE7)_{16}$, D=3476875, perform the following operations:
   A. Find the Octal equivalent of A.
   B. Find the Hexadecimal equivalent of B+C
   C. Binary equivalent of C
   D. The octal equivalent of A+B
   E. Binary equivalent of D
   F. Octal equivalent of D
2. Perform the following arithmetic operations:
   A. 67734-23489 [use 10`s complement]
   B. $(110000000)_2 - (1111111)_2$ [use 2`s complement]
   C. $(110000111100)_2 - (1111111)_2$ [use 2`s complement]
3. Drive a Boolean function for the outputs and draw a combinational circuit for the following truth table.

| Inputs | | | Outputs | | |
|---|---|---|---|---|---|
| A | B | C | X | Y | Z |
| 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 |

4. Write a simple x86 assembly program that takes two integers as input, adds them together, and then outputs the result. Include comments explaining each section of your code.
5. Explain the difference between the `MOV` and `ADD` instructions in x86 assembly language. Provide examples to illustrate the use of each instruction and discuss scenarios where one might be preferred over the other.