Write a program to solve the following problems:
Note that, your programs must include adequate user interactive messages.

1. To Display n number of natural numbers and their sum.

2. i) To print the following pattern till n number of user input:

    1
    22
    333
    4444
    …….

   ii) To print the Floyd's Triangle till n number of user input:

    1
    01
    101
    0101
    10101

   iii) To print out the following pattern till n number of user input:

    *****
    *
    **
    ***
    ****
    *****

3. i) To read a matrix of size m*n from the keyboard and display the same on the screen using the function.

   ii) Rewrite the previous problem to make the row parameter of the matrix as a default argument.

4. Given two matrices A (Dimension m*n) and B (Dimension n*p), perform matrix multiplication and return the resulting matrix.

5. Given an array of integers nums and a target value target, return the indices of the two numbers that add up to the target.
   Example: nums = [2, 7, 11, 15], target = 9
                                 Output: [0, 1] (because nums[0] + nums[1] == 9)

6. i) Given an array, move all 0s to the end of the array without changing the order of the other elements.
   Example:
   nums = [0, 1, 0, 3, 12]
   Output: [1, 3, 12, 0, 0]

   ii) Given an array of n + 1 integers where each integer is between 1 and n (inclusive), find the duplicate number.
   Example:
   nums = [1, 3, 4, 2, 2]
   Output: 2