Instruction :

1. Write a python program to accept a number and check whether it is a "Spy Number"; or not.
   (**Hint** : A number is a spy if the sum of its digits equals the product of its digits.)
   Example:
   > **Sample Input** : 1124
   > **Sum of the digits** = 1 + 1 + 2 + 4 = 8
   > **Product of the digits** = 1*1*2*4 = 8

2. Write a python program to input a number. Check and display whether it is a Niven number or not.
   (**Hint** : A number is said to be Niven which is divisible by the sum of its digits).
   Example:
   > **Sample Input :** 126
   > **Sum of its digits** = 1 + 2 + 6 = 9 and 126 is divisible by 9.

3. A special two-digit number is such that when the sum of its digits is added to the product of its digits, the result is equal to the original two-digit number.
   Example:
   > **Consider the number** 59.
   > **Sum of digits** = 5 + 9 = 14
   > **Product of digits** = 5 * 9 = 45
   > **Sum of the sum of digits and product of digits** = 14 + 45 = 59

   Write a python program to accept a two-digit number. Add the sum of its digits to the product of its digits. If the value is equal to the number input, then display the message "Special 2 - digit number"; otherwise, display the message "Not a special two-digit number".

4. Write a python program to accept a number from the user and check whether it is a Prime number or an Automorphic number.
   Hint :
   (a) Prime number: (A number is said to be prime, if it is only divisible by 1 and itself)
   Example: 3,5,7,11
   (b) Automorphic number: (Automorphic number is the number which is contained

in the last digit(s) of its square.)

Example: 25 is an Automorphic number as its square is 625 and 25 is present as the last two digits.

5. Write a python program to find the sum of the given series:
   a. $S = 1 + 2^2 / a + 3^3 / a^2 + ...$ to **n** terms. **n** should be the user input.
   b. $S = 1- a + a^2 - a^3 + \ldots\ldots\ldots\ldots +a^{10}$

6. Two files are given, one containing **Roll No** and **Score** ("RollNo_Score.txt") and another containing **Roll No** and **Name** (RollNo_Name.txt). Write a python program to obtain a student list with corresponding **Score**. The format should be **Roll No**, **Name** and **Score.** The new list of students should follow the same order of name as in RollNo_Name.txt file.

7. Create a programme that counts the number of times each character appears in a string.
   Input : kndhffihfuifuichfhfehuchurhucghtuhieheichnnhhgjpmofojcewhgghjnnfjpqjrgndjhg

8. Write a python function passwordGen(), that will validate the string with following property
   a. The string should contain at least one Capital letter
   b. The string should contain at least one small letter
   c. The string should contain at least one special symbol
   d. The string should contain at least one digit
   e. The string should contain the user name as substring

   Input : username and password
   Output : Valid or invalid password

9. Write a python program that will remove all digits and special characters from a string except integers.

10. Write a menu driven program that will read a list and remove the element based on
    a. Element
    b. Element index
   It should prompt for both options. Based on selection the program should again prompt for either index or the element.