Programming 1: Lab 5 : Loops

Write the python code for the following questions. Handle all the valid and invalid test cases. Write down relevant comments in your code:

1. Take a positive integer N between 1 – 20 and display the tables of all the numbers from 1 to N as follows:

   1 x 1 = 1

   ......

   1 x 20 = 20

   2 x 1 = 2

   ....

   N x 20 = 20N

2. Take a positive number N as input and display all the numbers that are not divisible by N and lie in the range 1 – 1000. Use continue statement with while loop.

3. Display the following patterns for N lines (value of N taken from the user) using while loop:

a) *	b) *	c) *
* *	* *	* * *
* * *	* * *	* * * * *
* * * *	* * * *	* * * * * * *
(till N lines)	(till N lines)	(till N lines)

4. Take a positive integer N as input followed by repeatedly taking numbers from the user till the time user entered -999. At the end display the count of input numbers that are divisible by N and the count of input numbers that are not divisible by N.

5. Find the LCM of N positive numbers, where value of N is taken as input from the user.

6. Find the GCD of N positive numbers, where value of N is taken as input from the user.

7. Display the pattern using nested loops:

```
    *
   *   *
  *   *   *
 *   *   *   *
(till N lines)
```