1 Python – Level I

1. Create a program that:
    a. asks a user the radius of a cylinder;
    b. asks a user the height of a cylinder;
    c. Prints the volume of that cylinder;
    d. Prints the surface area of that cylinder;

2. Create a function that:
    a. Receives a string:
    b. print only the characters present at an even index number. (Eg.: 'My string' -> 'M', ' ', 't','i','g')

3. Create a function that:
    a. Receives an integer number
    b. Returns true if the given number is palindromic (eg.: 7, 77, 121,3443, 5341435).

4. Using print(), format a decimal number to be displayed:
    a. With 2 decimal places (eg.: 123.456 -> 123.46);
    b. With 2 decimal places in exponential format (eg.: 123.456 ->1.23e+02).

5. Create a list of float numbers:
    a. ask the user for the list size;
    b. ask the user for each of the elements, individually;
    c. return the list.

6. Create a program that:

a. reads a file (txt file) containing more than 10 rows;
b. creates a new file which excludes the 10^{th} row of the original one.

7. Given and integer number, use a loop to find its factorial.

8. Using numpy library, create an array with values from 100 to 1000 with step=50, having 6 rows and 3 columns.

9. Sum arrays [[1, 2, 3], [10 , 10, 10]] and [[4, 2, 3], [1 ,1, 10]] and, then, create a new array containing the square of each element.

10. Consider array [[1,2,3],[4,5,6],[7,8,9]], delete its second column and insert [[99,99,99]] on its place.

11. Check if a string contains a ‘x’ followed by one or more ‘y’.

12. Create a function that receives an IP address and returns a list with both: original IP, original IP without its leading zeros (eg.: ['128.005.055.190', '128.5.55.190']).

13. Create a program that:
    a. Asks the user to write a sequence of words split by commas;
    b. Prints that list sorted alphabetically. (Eg.: a,c,b -> [a,b,c])