`Problem 1` - Print the following pattern. Write a program to use for loop to print the following reverse number pattern.

```
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

# Code here
```

`Problem 2`: Print the following pattern.

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*

# Code here
```

`Problem 3`:Write a program to pring the following pattern

```
    *
  * * *
* * * * *
```

```
# Code here
```

`Problem 4`:Write a program to print the following pattern

1

2 1

3 2 1

4 3 2 1

5 4 3 2 1

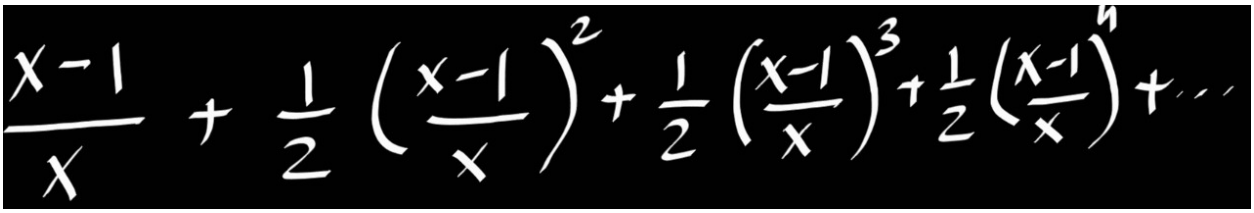
```
# Code here
```

`Problem 5`: Write a Python Program to Find the Sum of the Series till the nth term:

1 + x^2/2 + x^3/3 + … x^n/n n will be provided by the user

```
# Code here
```

`Problem 6`: The natural logarithm can be approximated by the following series.



If x is input through the keyboard, write a program to calculate the sum of the first seven terms of this series.

```
# Code here
```

`Problem 7` - Find the sum of the series upto n terms.

Write a program to calculate the sum of series up to n term. For example, if n =5 the series will become 2 + 22 + 222 + 2222 + 22222 = 24690. Take the user input and then calculate. And the output style should match which is given in the example.

Example 1:

`Input:`

```
5
```

`Output:`

```
2+22+222+2222+22222
Sum of above series is: 24690

# Code here
```

###`Problem 8`: Write a program to print all the unique combinations of 1,2,3 and 4

`Output`:

```
1 2 3 4
1 2 4 3
1 3 2 4
1 3 4 2
1 4 2 3
1 4 3 2
2 1 3 4
2 1 4 3
2 3 1 4
2 3 4 1
2 4 1 3
.
.
and so on

# Code here
```

###Problem 9: Write a program that will take a decimal number as input and prints out the binary equivalent of the number

```
# Code here
```

###Problem 10: Write a program that will take 2 numbers as input and prints the LCM and HCF of those 2 numbers

```
# Code here
```

Problem 11: Create Short Form from initial character

Given a string create short form ofthe string from Initial character. Short form should be capitalised.

Example:

Input:

```
Data science mentorship program
```

Output:

```
DSMP

# Code here
```

###Problem 12: Append second string in the middle of first string

Input:

```
campusx
data
```

`Output`:

```
camdatapusx

# Code here
```

`Problem 13`:Given string contains a combination of the lower and upper case letters. Write a program to arrange the characters of a string so that all lowercase letters should come first.

Given:

`str1 = PyNaTive`

Expected Output:

`yaivePNT`

```
# Code here
```

`Problem 14:`Take a alphanumeric string input and print the sum and average of the digits that appear in the string, ignoring all other characters.

Input:

`hel123O4every093`

Output:

```
Sum: 22
Avg: 2.75

# Code here
```

`Problem 15:` Removal of all characters from a string except integers

`Given:`

```
str1 = 'I am 25 years and 10 months old'
```

`Expected Output:`

```
2510
```

```
# Code here
```

`Problem 16`: Check whether the string is Symmetrical.

Statement: Given a string. the task is to check if the string is symmetrical or not. A string is said to be symmetrical if both the halves of the string are the same.

Example 1:

`Input`

```
khokho
```

`Output`

```
The entered string is symmetrical
# Code here
```

`Problem 17`: Reverse words in a given String

Statement: We are given a string and we need to reverse words of a given string.

Example 1:

`Input:`

```
geeks quiz practice code
```

`Output:`

```
code practice quiz geeks
```

Example 2:

`Input:`

```
my name is laxmi
```

`Output:`

```
laxmi is name my
# Code here
```

`Problem 18`: Find uncommon words from two Strings.

Statement: Given two sentences as strings **A** and **B**. The task is to return a list of all uncommon words. A word is uncommon if it appears exactly once in any one of the sentences, and does not

appear in the other sentence. Note: A sentence is a string of space-separated words. Each word consists only of lowercase letters.

Example 1:

`Input:`

```
A = "apple banana mango"
B = "banana fruits mango"
```

`Output:`

```
['apple', 'fruits']

# Code here
```

`Problem 19`: Word location in String.

Statement: Find a location of a word in a given sentence.

Example 1:

`Input:`

```
Sentence: We can learn data science through campusx mentorship
program.

word: campusx
```

`Output:`

```
Location of the word is 7.
```

Note- Don't use index/find functions

```
# Code here
```

`Problem 20`: Write a program that can remove all the duplicate characters from a string. User will provide the input.

```
# Code here
```