1. A robot moves in a plane starting from the original point (0,0). The robot can move toward UP, DOWN, LEFT, and RIGHT with a given steps. The trace of robot movement is shown as the following:
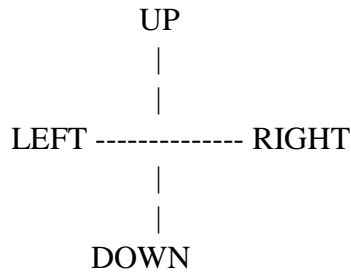
UP 7
DOWN 5
LEFT 2
RIGHT 9
X

The numbers after the direction are steps.

```
            UP
             |
             |
   LEFT -------------- RIGHT
             |
             |
          DOWN
```

Write a Python program to compute the distance from the current position after a sequence of movement and original point. If the distance is a float, then just print the nearest integer.

If the intended move of the robot takes it beyond the boundary, the robot will only go upto the boundary.

Example2: If the following movements obtained from the user input are given to the program:

UP 5
DOWN 3
LEFT 3
RIGHT 2
X

Then the output of the program should be: 2 Note: X means the end of movement.

Example3:
UP 5
DOWN 3
LEFT 5
RIGHT 7
X

Example4:
UP 15
DOWN 6
DOWN 3
LEFT 12
X

2. Given a sequence of moves for a robot, check if the sequence is circular or not. A sequence of moves is circular if first and last positions of robot are same.

3. Input an integer number n, write a program to generate a dictionary that contains (i, i*i) such that is an integral number between 1 and n (both included), and then the program should print the dictionary.
Suppose the following input is supplied to the program:
8
Then, the output should be:
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}

4. Given two strings, write a Python program to detect if they are anagrams of each other or not. In general, two words are called anagrams of each other if one word can be formed by rearranging letters of another. An anagram of a string is another string that contains same characters, only the order of characters can be different. For example 'eat', 'ate' and 'tea' are anagrams, similarly, 'heart' and 'earth' are anagrams, 'listen' and 'silent' are anagrams. Where as 'dad' and 'bad' aren't anagrams.

5. Given a string of size n, and an integer d(where d <= n). Write a Python program to perform following operations on string.
(a) Left (Or anticlockwise) rotate the given string by d elements.
(b) Right (Or clockwise) rotate the given string by d elements.
Example
a=university and d = 3, so rotating s right by 3 elements
Output : versityuni

6. Write a Python program to check if a substring is present in a given string
Test case 1:
Enter string : Hello world
Enter word : world
Substring is in string!
Test case 2:
Enter string : Hello world
Enter word : apple
Substring not found in string!

7. Given a string S. Write a program to generate and print all the possible rotated strings of the given string.
Input
abc
Output
abc
bca
cba

8. Write a Python program to count number of times each word comes up in a given string sentence and display them in the following dictionary pattern (order does not matter)
Input
'the quick brown fox jumps over the lazy dog'
Output
{'the': 2, 'jumps': 1, 'brown': 1, 'lazy': 1, 'fox': 1, 'over': 1, 'quick': 1, 'dog.': 1}
Input
I am what I am
Output
{'I': 2, 'am': 2, 'what': 1}

9. Write a Python program to count number of times each vowel comes up in a given string sentence and display them in the following dictionary pattern (order does not matter)
Input
'Welcome to the world of Python'
Output
{'a': 0, 'e': 3, 'i': 0, 'o': 5, 'u': 0}

10. Write a Python program to count number of times each character comes up in a given string sentence and display them in the following dictionary pattern (order does not matter)
Input
'google.com'
Output
{'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}

11. Write a Python program to remove punctuations from a string.
Input
str = "Hello!!!, Python --- is .. Programming ,,, language, not @ a ; snake ."
Output
Hello Python is Programming language not a snake

12. Write a Python program that ask user to enter any string/sentence, and then it sort and print all words of a string/sentence in alphabetic order(sorted lexicographically)
Input
"Some Goals are so Worthy its Glorious even to Fail"
Output
Fail
Glorious
Goals
Some
Worthy
are
even
its
so
to

13. Write a Python program which count and print the numbers of each character present in a string input by console.
Example: If the following string is given as input to the program:
abcdefgabc
Then, the output of the program should be:
a,2
c,2
b,2
e,1
d,1
g,1
f,1