1. Write a python code that will print a diamond of height H, where H is taken from the user as input. Note that, N>=3 and add a check for the same in your code.

Example1: Input: 3

Output:

```
  *
 * *
  *
```

Example 2: Input: 4

Output:

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

2. Modify the above code so that the program keeps running forever and waits for the input from the user. If the user gives -1, then the program terminates.

Example: Input: -1

Output: # Break the loop for this input

3. Write a python code that will print C concentric circles, where C is taken as input from the user. The difference between the radius of 2 consecutive circles is R, which is another input from the user.

Example: Input: C=2, R=3

Output: Center of Concentric Circles: O(0,0)

Circle 1: radius = 3

Circle 2: radius = 6

4. Write a python code that will take two inputs from users U and L. Then your code will generate two lists of lengths U and L respectively, where the elements of the lists are randomly generated. Write appropriate variable names for the lists.

Example:

Input:

4 5

Output:

List1 = [1 2 3 4]

List2 = [5 6 7 8 9]

5. Write a python code that will compute distance between the two lists generated in the above question, where the distance will be defined as follows: for each element in the first list find the closest element in the second list, then compute distance (absolute difference) between each pair of elements, and then the average of these distances give the distance between 2 lists. How will you take care of the case if:

(i) U and L are not same and one element in the first list is allowed to pair up with only one

element in the second list.
(ii) One element in the first list is allowed to pair up with multiple elements in the second list and vice-versa.

Example:
Input:
[1 2 3] [3 4 1]
Output:
Distance = 2 (i.e. (|1-3| + |2-4| + |3-1|)/3)