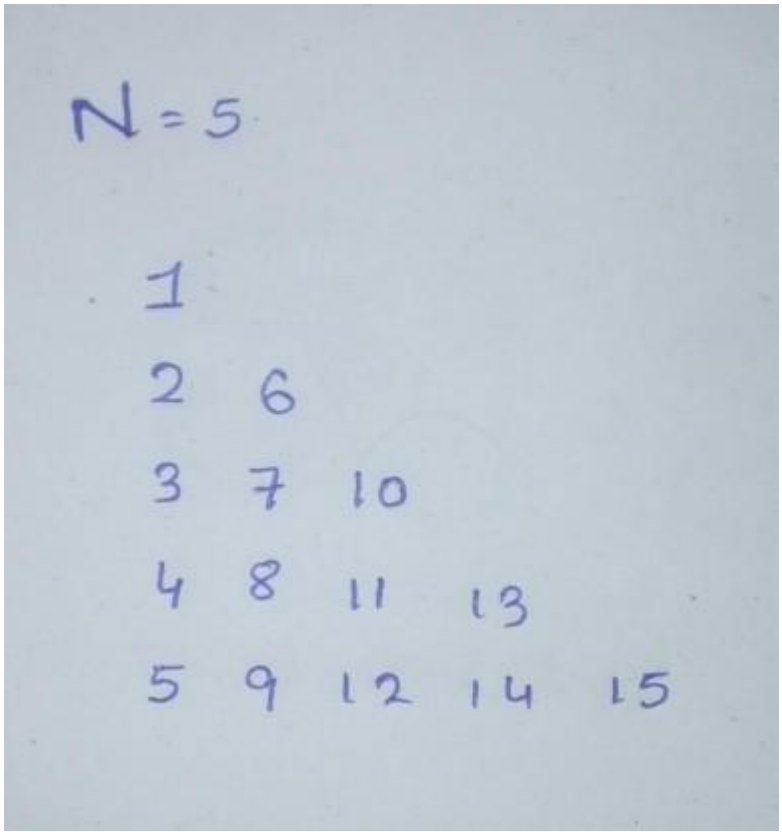
- You are Given an Integer **N** value you have to print the following pattern



Input Format

- First line of input contains **T** no of testcases
- First line of each testcase contains Integer **N**

Constraints

- **0 < T < 10$_6$**
- **1 <= N <= 40**

Output Format

- For each testcase output the pattern in a new line

Sample Input 0

```
2

3

5
```

Sample Output 0

```
1
 2 4
 3 5 6
 1
 2 6
 3 7 10
 4 8 11 13
 5 9 12 14 15
```

Solution in C

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main() {

   int testcases;
   scanf("%d",&testcases);
   while(testcases--){
      int n;
      scanf("%d",&n);
      int i,j;
      for(j=1;j<=n;j++){
```

```
            for(i=1;i<=j;i++){
                printf("%d ",j+ (i-1)*n - (i*(i-1))/2);
            }
            printf("\n");
        }
    }

    return 0;
}
```

Solution in Java only one formula

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {

    public static void main(String[] args) {
        Scanner scan= new Scanner(System.in);
        int t=scan.nextInt();
        while(t-- >0){
            int n=scan.nextInt();
            int i,j;
            for(j=1;j<=n;j++){
```

```
                    for(i=1;i<=j;i++){
                        System.out.print(j+ (i-1)*n - (i*(i-1))/2 +" ");
                    }
                    System.out.println();
                }
            }
        }
    }
```

Solution in C++

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;



int main() {
   int t,n;
   cin>>t;
   while(t--)
   {
      cin>>n;
      int k,sum;
```

```
    for(int i=1;i<=n;i++)
    {
       k=n-1;
       for(int j=0;j<i;j++)
       {
          if(j==0){
             cout<<i<<" ";
             sum=i;
          }
          else{
             sum=sum+k--;
             cout<<sum<<" ";
          }
       }
       cout<<endl;
    }
  }
}
```