8. Take the length and width of a **rectangle** from the user and create the rectangle according to the output below. Your output should match the specified output.

Sample Input #1 4 6	**Sample Input #2** 3 5
Output 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4	**Output** 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3

9. Take the height of a **right-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3

Output
`   1`
`  1 2`
`1 2 3`
`1 2 3 4`
	Output
	`  1`
	`1 2`
	`1 2 3`

10. Take the height of an **isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1 4	**Sample Input #2** 3

Output
`   1`
`  1 2 3`
`1 2 3 4 5`
`1 2 3 4 5 6 7`
	Output
	`  1`
	`1 2 3`
	`1 2 3 4 5`

1)

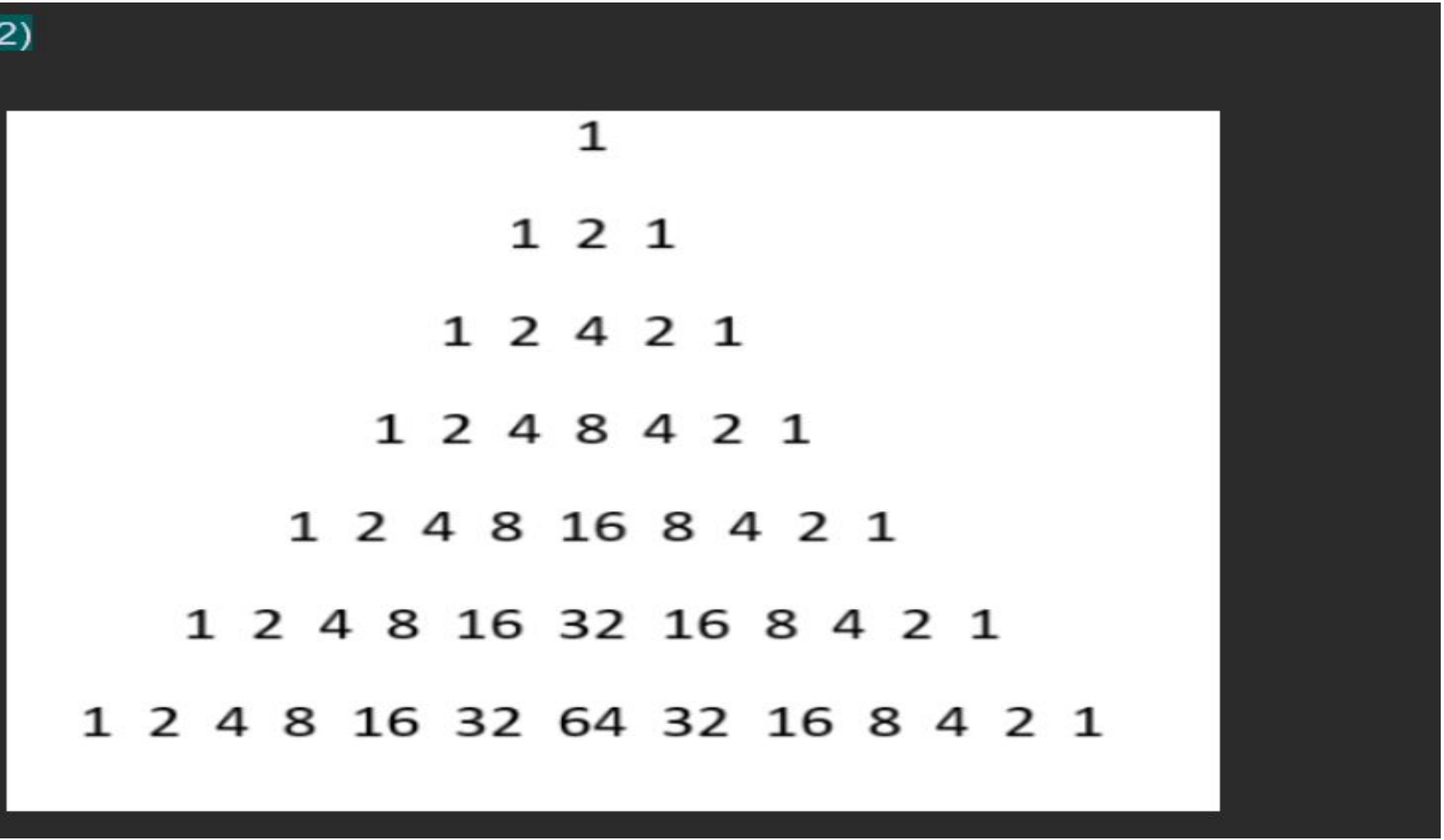
Write a program to get a user's integer input for the number of lines (ranging from 2 to 9), and then print a triangular pattern of numbers by a nested for loop. For example, if the user's input is 5, the pattern should look like:

```
5
45
345
2345
12345
```

If the user's input is 8, the pattern should look like:

```
8
78
678
5678
45678
345678
2345678
12345678
```

2)


1
1 2 1
1 2 4 2 1
1 2 4 8 4 2 1
1 2 4 8 16 8 4 2 1
1 2 4 8 16 32 16 8 4 2 1
1 2 4 8 16 32 64 32 16 8 4 2 1

```
3)n=4(no. Of rows)

       1

     1 3 1

   1 3 9 3 1

1 3 9 27 9 3 1
```

4) Question: Write a Java program Using a nested loop , that takes users' input and the number of students, and test scores. It should then average test scores and display them on the screen.
Example: This program averages, test scores.

For how many students do you have scores? 2 [Enter]

How many test scores does each student have? 3 [Enter]

Enter score 1 for

> Write a Java program Using a nested loop , that takes users' input and the number of students, and test scores. It should then average test scores and display them on the screen.
> Example:
> This program averages, test scores.

For how many students do you have scores? 2 [Enter]

How many test scores does each student have? 3 [Enter]

Enter score 1 for student 1: **84 [Enter]**

Enter score 2 for student 1: **79 [Enter]**

Enter score 3 for student 1: **97 [Enter]**

The average score for student 1 is 86.7.

Enter score 1 for student 2: **92 [Enter]**

Enter score 2 for student 2: **88 [Enter]**

Enter score 3 for student 2: **94 [Enter]**

The average score for student 2 is 91.3

B) Write a Java program that will ask the user to provide an integer, say n, and use nested-`for` loops to print a hollow square of size n with asterisks. Use a `do-while` loop to verify that n is in the range of 1 and 20.

For instance,
When n=1, print
*

When n=2, print
**
**

When n = 10, prin

****
*   *
*   *
*   *
*   *
*   *
*   *
*   *
*   *
****

Write a Java program using Nested Loops to print the factorials of all numbers between a range of two integers namely **first** and **second**. The **first/second** integers can be zero or any positive numbers and the **first** should be always less than or equal to **second**. Appropriate error message should be displayed in case of invalid inputs.

Note that a factorial of any integer can be calculated as follows:

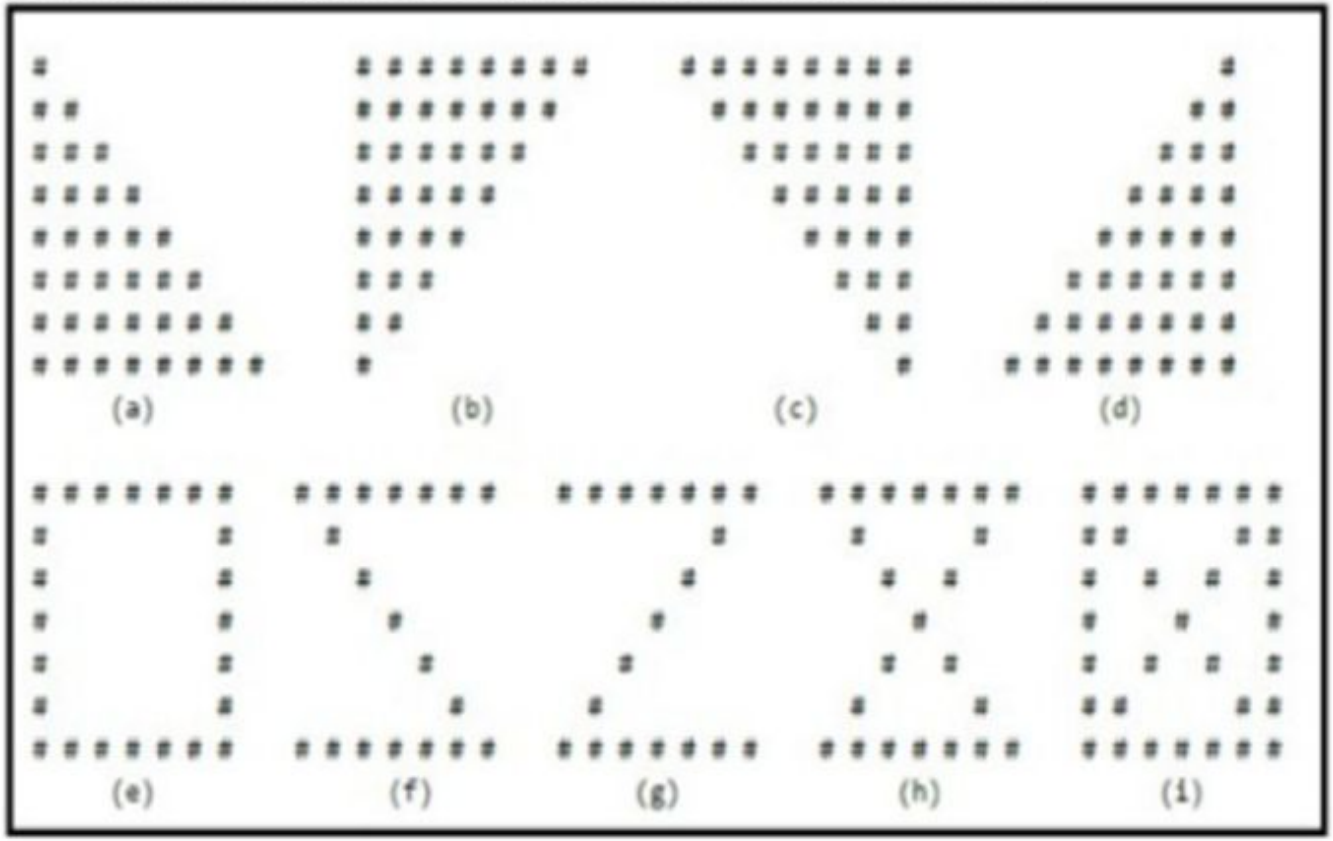
Factorial of 0 is 1
Factorial of 1 is 1
Factorial of 2 is 2 x 1 = 2
..
Factorial of 5 is 5 x 4 x 3 x 2 x 1 = 120
..
Factorial of N is N x (N-1) x (N-2) x .. x 1

Your program must follow the given Sample Input/Output.

Sample Input/Output:
Enter the first number: 4 Enter the second number: 7 Factorial of 4 is 24 Factorial of 5 is 120 Factorial of 6 is 720 Factorial of 7 is 5040

Exercise 1 of 3:

Using nested loops, create the following patterns and display them in the console:



EXTRA CREDIT: if you create all these patterns not underneath each other, and not with a

Lab Description : Use nested loops to print out the box pattern show below.

Sample Data :

```
3
4
5
2
1
```

Files Needed ::
Box.java
BoxRunner.java

Sample Output :

```
***#
**##
*###


****#
***##
**###
*####


*****#
****##
***###
**####
*#####


**#
*##


*#
```

algorithm help

```
output="";
loop i that runs num times
{
    loop j
    {
        output += "*"
    }

    loop k
    {
        output += "#"
    }
    output += "\n"
}
```

attern using loops) Write a nested for loop that prints
tput:

attern using loops) Write a nested for loop that prints
tput:

Standards


1
0 1
1 0 1
0 1 0 1
1 0 1 0 1

2. Take the height of a **left-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

1

1 2

1 2 3

1 2 3 4

Sample Input #2

3

Output

1

1 2

1 2 3

3. Take the height of a **right-justified right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

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

Sample Input #2

3

Output

```
  3
 2 3
1 2 3
```

Evaluation

1. Take the length of a **square** from the user and create the square according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

1 2 3 4

1 2 3 4

1 2 3 4

1 2 3 4

Sample Input #2

3

Output

1 2 3

1 2 3

1 2 3

1. Take the length and width of a **rectangle** from the user and create a rectangle according to the output below. Your output should match the specified output.

Sample Input #1

4

6

Output

4 3 2 1
4 3 2 1
4 3 2 1
4 3 2 1
4 3 2 1
4 3 2 1

Sample Input #2

3

5

Output

3 2 1
3 2 1
3 2 1
3 2 1
3 2 1

2. Take the height of a **palindromic isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

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

Sample Input #2

3

Output

```
  1
 1 2 1
1 2 3 2 1
```

3. Take the length and width of a **hollow rectangle** from the user and create the rectangle according to the output below. Your output should match the specified output.

Sample Input #1

6

4

Output

```
1 2 3 4 5 6
1         6
1         6
1 2 3 4 5 6
```

Sample Input #2

3

5

Output

```
1 2 3
1   3
1   3
1   3
1 2 3
```

4. Take the height of a **left-justified hollow right triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

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

Sample Input #2

5

Output

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

Sample Input #3

3

Output

```
1
1 2
1 2 3
```

5. Take the height of a **hollow isosceles triangle** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

```
   1
  1 3
 1   5
1 2 3 4 5 6 7
```

Sample Input #2

3

Output

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

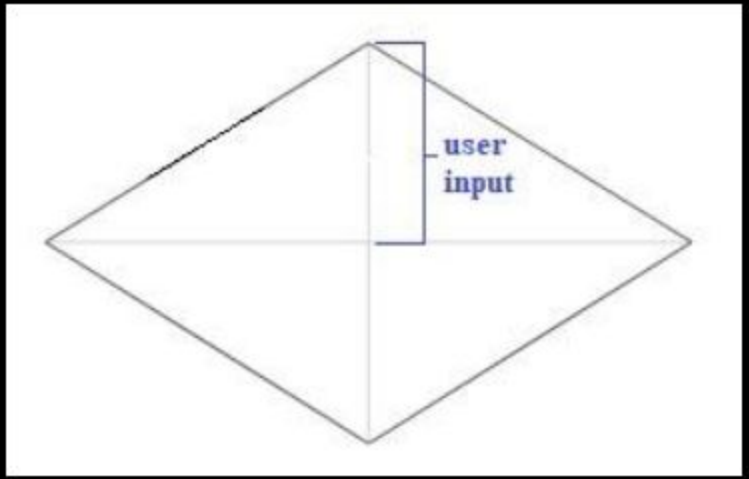
Sample Input #2

2

Output

```
 1
1 2 3
```

Follow the diagram of a rhombus below to answer questions 6 and 7. For these questions, you will be taking the length of the blue marked area (user input).



6. Take the vertical diagonal length of a **rhombus** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output

```
    1
  1 2 3
1 2 3 4 5
1 2 3 4 5 6 7
  1 2 3 4 5
    1 2 3
      1
```

Sample Input #2

3

Output

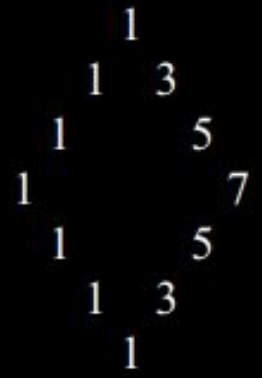
```
  1
1 2 3
1 2 3 4 5
  1 2 3
    1
```

7. Take the vertical diagonal length of a **hollow rhombus** from the user and create the triangle according to the output below. Your output should match the specified output.

Sample Input #1

4

Output



Sample Input #2

3

Output