

```

import java.util.*;
import java.io.*;

public class task4
{
    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num=sc.nextInt();
        int sum=1;

        if(num!=0&&num!=1){
            for(int i=num;i>=1;i--){
                sum=sum*i;
            }
        }
        else{
            System.out.println("Enter numbers from 2");
        }

        System.out.println("Factorial value: "+sum);

    }
}

```

//1. Use nested loop to print square pattern

```

public class patterntask1
{
    public static void main(String[] args) {
        for(int i=1;i<=4;i++){
            for(int j=1;j<=4;j++){
                System.out.print("* ");
            }
        }
    }
}

```

```

        System.out.println();
    }

}

}

//2. Right-Angled Triangle
public class patterntask2
{
    public static void main(String[] args) {
        for(int i=1;i<=4;i++){
            for(int j=1;j<=i;j++){
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

```

//3. Inverted Triangle
public class patterntask3
{
    public static void main(String[] args) {
        for(int i=5;i>=1;i--){
            for(int j=1;j<=i;j++){
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

```

    }
}

//4. Number Pyramid
public class patterntask4
{
    public static void main(String[] args) {
        for(int i=1;i<=5;i++){
            for(int j=1;j<=i;j++){
                System.out.print(j+" ");
            }
            System.out.println();
        }
    }
}

```

```

//5. Pyramid Pattern
public class patterntask5
{
    public static void main(String[] args) {

        for(int i=1;i<=5;i++){
            for(int j=i;j<5;j++){
                System.out.print(" ");
            }
            for(int k=1;k<=((2*i)-1);k++){
                System.out.print("*");
            }
            System.out.println();
        }
    }
}

```

```
}
```

```
}}
```

```
//Diamond Shapes
```

```
public class patterntask6
```

```
{
```

```
    public static void main(String[] args) {
```

```
        int i,j,k;
```

```
        for(i=1;i<=5;i++){
```

```
            for(j=i;j<5;j++){
```

```
                System.out.print(" ");
```

```
            }
```

```
            for(k=1;k<=((2*i)-1);k++){
```

```
                System.out.print("*");
```

```
            }
```

```
            System.out.println();
```

```
        }
```

```
        for(i=4;i>=1;i--){
```

```
            for(j=5;j>i;j--){
```

```
                System.out.print(" ");
```

```
            }
```

```
            for(k=1;k<=((2*i)-1);k++){
```

```
                System.out.print("*");
```

```
            }
```

```
        System.out.println();
    }
    }}
}
```

//7.Diamond Shapes

```
public class patterntask7
{
    public static void main(String[] args) {
        int i,j;
        for(i=1;i<=5;i++){
            for(j=1;j<=i;j++){
                System.out.print(" ");
                if(j==1 || j==i || i==5){
                    System.out.print("*");
                }
            }
            else{
                System.out.print(" ");
            }
        }
        System.out.println();
    }
}
```

//8.Floyd's Triangle

```
public class patterntask8
{
    public static void main(String[] args) {
        int n=1;
        for(int i=1;i<=5;i++){
            for(int j=1;j<=i;j++){

                System.out.print(n+" ");
                n++;
            }
        }
    }
}
```

```
}
```

```
System.out.println();
```

```
}
```

```
}
```

```
}
```