



$$2 * 4 - 1 = 7$$

$$\checkmark num = \checkmark 2 * n - 1 = 2 * 5 - 1 = 9$$

$n \rightarrow input$

num = $2 * n - 1$;

Star = 1

Space = $n - 1$

for ($i > 1$ - num) // row

for ($i \rightarrow space$) ✓

for ($i \rightarrow star$) ✓

if ($i < n$)

Space -- ✓ }

Star += 2 ✓ }

else } Space ++ ✓ ,

else } space + f ✓
 star -= 2 ✓
 }
 println()

```

Scanner scn = new Scanner(System.in);
int n = scn.nextInt();
int num = (2 * n) - 1;
int star = 1;
int space = n - 1;
for(int i = 1; i <= num; i++){
  for(int j = 1; j <= space; j++){
    System.out.print(" ");
  }
  for(int j = 1; j <= star; j++){
    System.out.print("*");
  }
  if(i < n){
    star += 2;
    space--;
  } else {
    star -= 2;
    space++;
  }
  System.out.println();
}
  
```

Memory
 n = 3
~~num = 2 * 3 - 1 = 5~~
~~star = 3 5 3 1 - 1~~
~~Space = 2 1 0 1 2 3~~
~~i = 1 2 3 4 5 6~~
~~j = 1 1 2 3 4 5 6~~

Output
 1. — — *
 2. — * * *
 3. * * * * *
 4. — * * *
 5. — — *

Introduction to Methods ()

- length() → inbuilt method
- charAt() → " " "
- size() → " " "
- concat() → " " "

- size()
- toLowerCase() → ?? ??
- toUpperCase() → ?? ??
- nextInt() → ??

- Method → a block of code that perform specific task.

↳ Dividing a bigger program into smaller chunks.

- tyres()
- engine()
- paint()
- body()

```
public class Main {
    void printNumber(){
        System.out.println(34);
    }
}

public static void main(String[] args) {
    System.out.println("Hello World!");
    printNumber();
}
```

factory

return type

void printNumber()

System.out.println(34);

not return anything

int x = 0;

method

data type

main method()

Car()

Call that method

```
public class Main {
    ...
}
```

factory

Krishna

method you define

Postman

Krishna

```

static void printNumber(){
    System.out.println(34);
}

```

method you define Postman

```

public static void main(String[] args) { //main method
    printNumber(); // main()
}

```

```

static void printNumber(int number){ // parameter
    System.out.println(number); // Output: 10
}

```

```

public static void main(String[] args) {
    int n = 10;
    printNumber(n); // Argument
}

```

Memory

- n = 10
- printNumber(10)

```

static void printNumber(int number1, int number2){ // parameter
    System.out.println(number1); // 10 School name
    System.out.println(number2); // 20
}

```

```

public static void main(String[] args) {
    int num1 = 10; // Ghar ka naam
    int num2 = 20; // Ghar ka naam
    printNumber(num1, num2); // argument
}

```

num2, num1

```

static void addNumber(int number1 , int number2){
    System.out.println(number1 + number2);
}

```

10 + 20 = 30

```

public static void main(String[] args) {
    int num1 = 10;
    int num2 = 20;
    addNumber(num1 , num2);
}

```

10 20

```

static int addNumber(int number1 , int number2){
    int sum = number1+number2;      5 + 10
    return sum;      15
}

```

int x = 15

```

public static void main(String[] args) {
    int result = addNumber(5 , 10);      result = 15
    System.out.println(result);
}

```

with (int, double, boolean) return type

you need throw your value

from that method to the main method
& this main() method has a catcher
with them that helps us to print
the output.

~~#~~ Code Reusability

```
static int addNumber(int number1 , int number2){  
    int sum = number1+number2;  
    return sum;  
}  
  
public static void main(String[] args) {  
    int result;  
    result = addNumber(5 , 10);  
  
    System.out.println(result);  
  
    result = addNumber(7 , 15);  
  
    System.out.println(result);  
  
    result = addNumber(4 , 17);  
  
    System.out.println(result);  
}
```

```
static int addIntNumber(int number1 , int number2){ //tyrec )  
    int sum = number1+number2;  
    return sum;  
}  
  
static double addDoubleNumber(double number1 , double number2){ // engine ()  
    double sum = number1+number2;  
    return sum;  
}  
  
public static void main(String[] args) { //cor main ()  
    |  
    int result = addIntNumber(5 , 10);  
  
    System.out.println(result);  
  
    double answer = addDoubleNumber(12.22 , 18.78);  
    System.out.println(answer);
```

- length ()
- size ()
- charAt ()

```
double answer = addDoubleNumber(12.22 , 18.78);
System.out.println(answer);
}

static int addIntNumber(int number1 , int number2){
    int sum = number1+number2;
    return sum;
}

static int addIntNumberwithThreeValue(int number1 , int number2 , int number3){
    int sum = number1+number2+number3;
    return sum;
}

static double addDoubleNumber(double number1 , double number2){
    double sum = number1+number2;
    return sum;
}

public static void main(String[] args) {
    int result = addIntNumber(5 , 10);
    System.out.println(result);
    double answer = addDoubleNumber(12.22 , 18.78);
    System.out.println(answer);
    int result1 = addIntNumberwithThreeValue(5 , 10 , 10);
    System.out.println(result1);
}
```