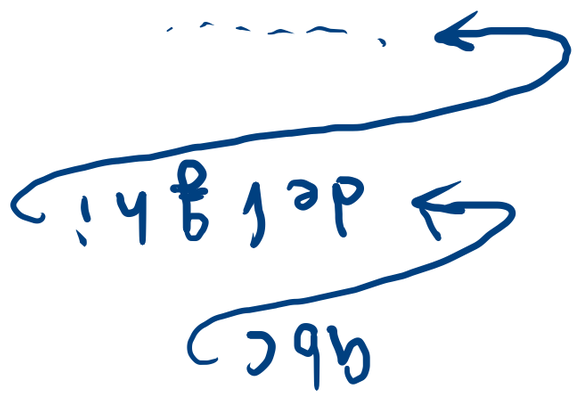
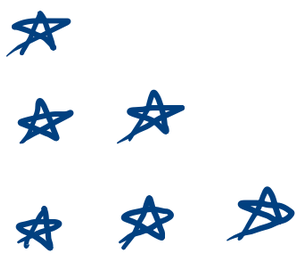
```
s.o.print(" abc ")
print (" def ")
print(" ghi ")
```



h = 3



h = 4

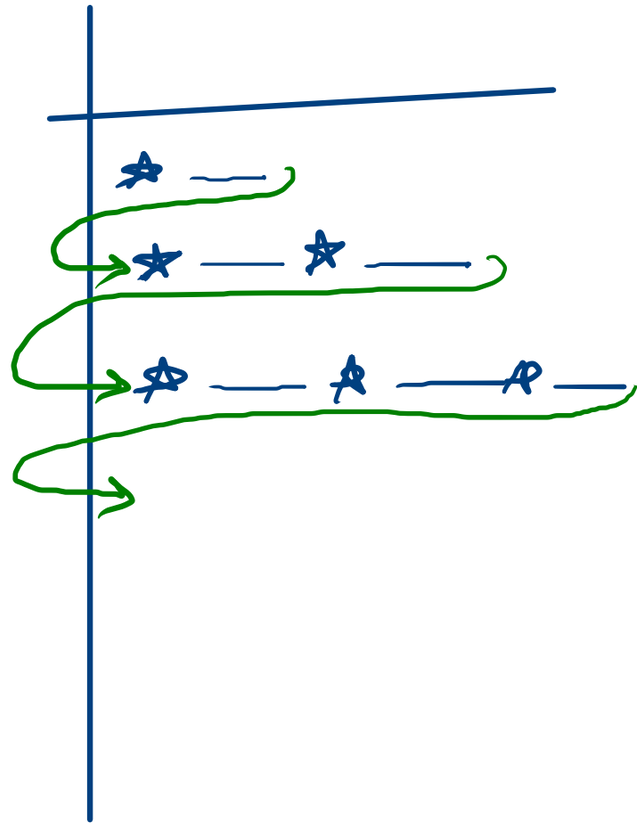
i	
1	★
2	★ ★
3	★ ★ ★
4	★ ★ ★ ★

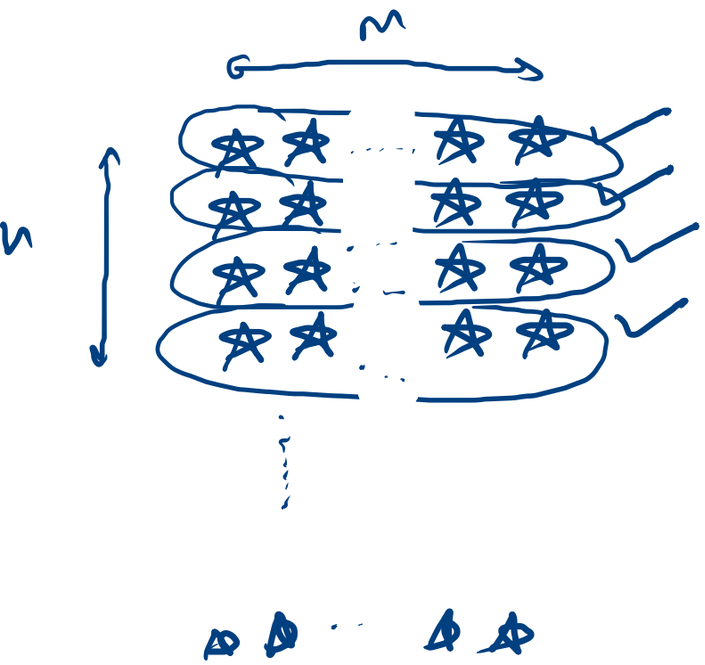
```
★ for( int i=1 ; i<= h ; i++){
    for( int j=1; j <= i ; j++){
        System.out.print("★")
    }
    System.out.println()
}
```

```java
int n = scn.nextInt();
for(int i=1;i<=n;i++){
    for(int j=1;j<=i;j++){
        System.out.print("*\t");
    }
    System.out.println();
}
```

n 3

i = ~~1 2 3 4~~

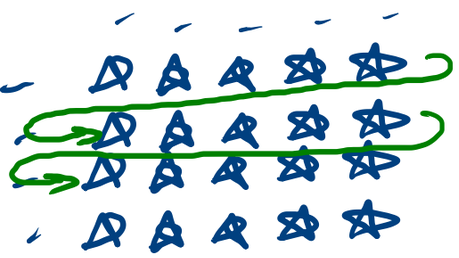




i
1
1
2
3
4
5

```
for( int i = 1 ; i <= n; i++) {
        System.out.println(" ★★★★★ ")
}
```

```
for( int i = 1 ; i <= n; i++) {
    for( int j = 1 ; j <= m ; j++) {
        System.out.println("★");
    }
    S.O.println();
}
```



println(" ★★★★★")
println(" ★★★★★")
println(" ★★★★★")
println(" ★★★★★")

→

```
for(int i=1; i<=4; i++){
    println(" ★★★★★");
}
for(int i=1; i<=4; i++){
    for(int j=1; j<=5; j++){
        print("★");
    }
    println();
}
```

}

n = 4

i

★ ★ ★ ★ → 4 ✓

★ ★ ★ → 3

★ ★ → 2

★ → 1

```
for(int i=n; i>=1; i--){
    for(int j=1; j<=i; j++){
        printf("*");
    }
    printf("\n");
}
```

i<1

i>=1

```java
for(int i=n;i>=1;i--){
    for(int j=1;j<=i;j++){
        System.out.print("*\t");
    }
    System.out.println();
}
```

n = 3

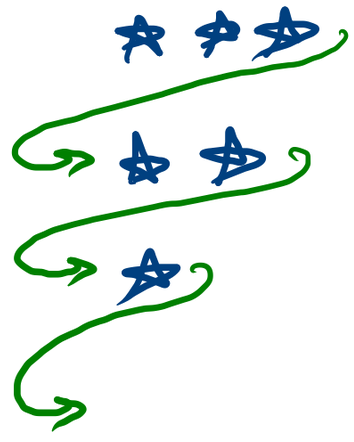
i

3

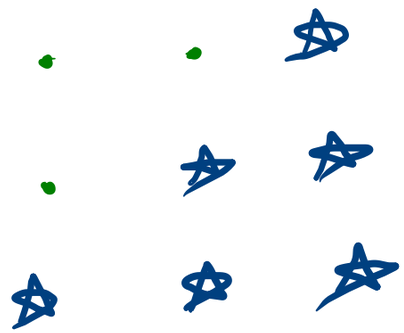
2

1

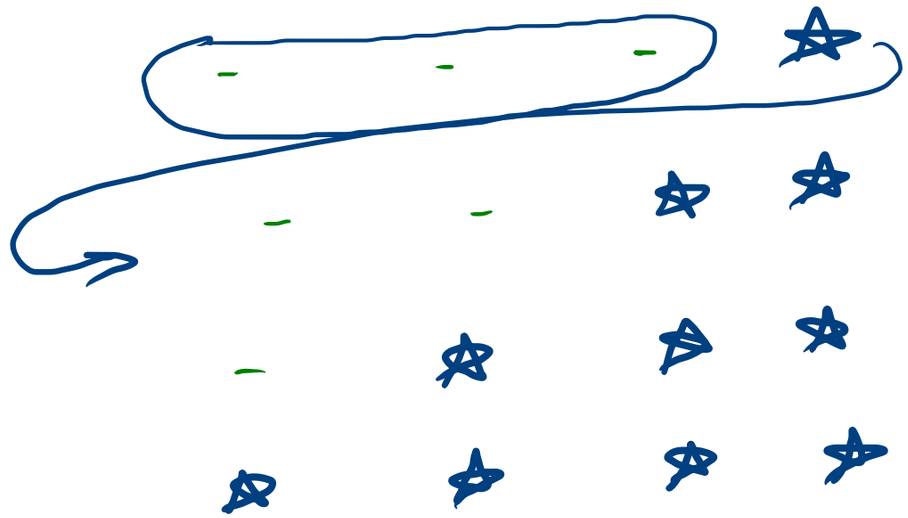
0



n = 3



n = 4



n-i	i
tab	star
n-1 → 3	1
n-2 → 2	2
n-3 → 1	3
n-4 → 0	4

```
int sp = n-1;
for(int i=1; i<=n; i++){
    for(sp); print(" ");
    for(int j=1; j<=i; j++)
        *
    print\n
    sp--;
}
```

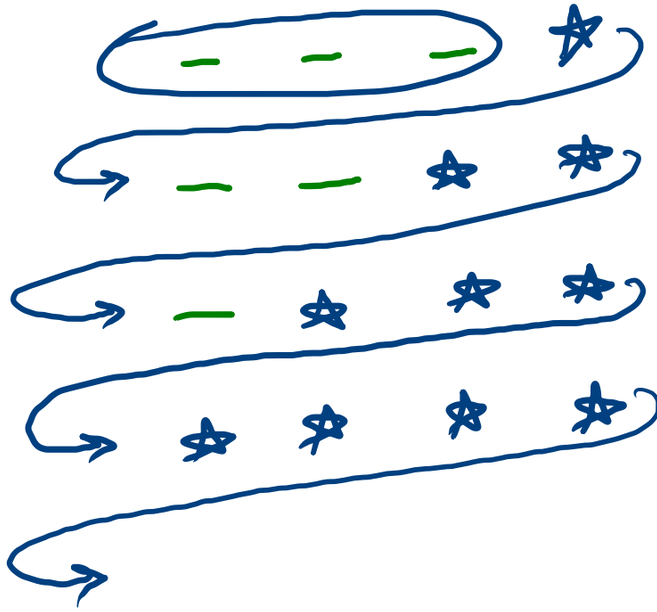
```java
int n = scn.nextInt();
int space = n-1;

for(int i=1;i<=n;i++){

    for(int j=1;j<=space;j++){
        System.out.print("\t");
    }
    for(int j=1;j<=i;j++){
        System.out.print("*\t");
    }
    System.out.println();
    space--;
}
```

n = 4

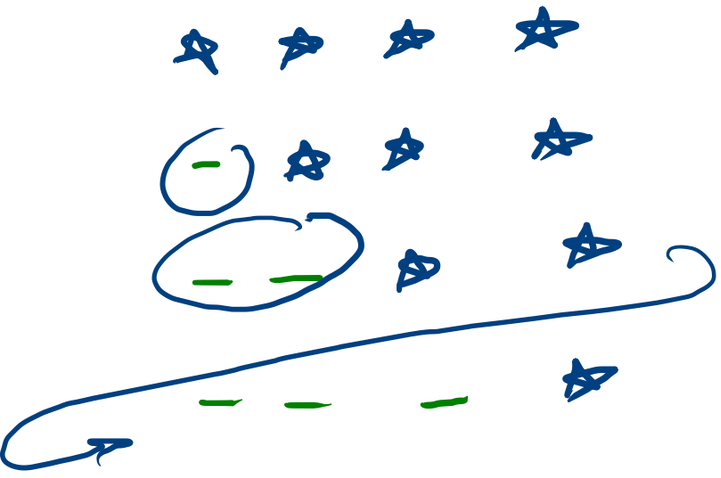
space = 3 2 1 0 -1

i = 1 2 3 4 5

space	i
3	1
2	2
1	3
0	٤



n = 4



space	star
0	4
1	3
2	2
3	1

0 n

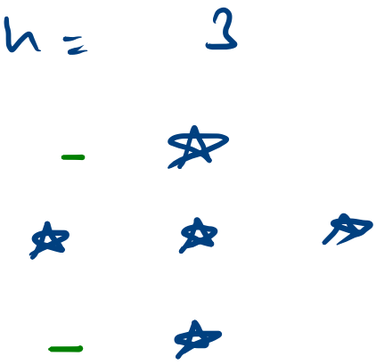
```
int space = 0;
int star = n;

for(int i = 1; i <= n; i++){
    [space time "/t"
    star time "*/t"
    println
    space++;
    star--;
}
```

$n \in \{1, 3, 5, 7, \ldots, 3\}$

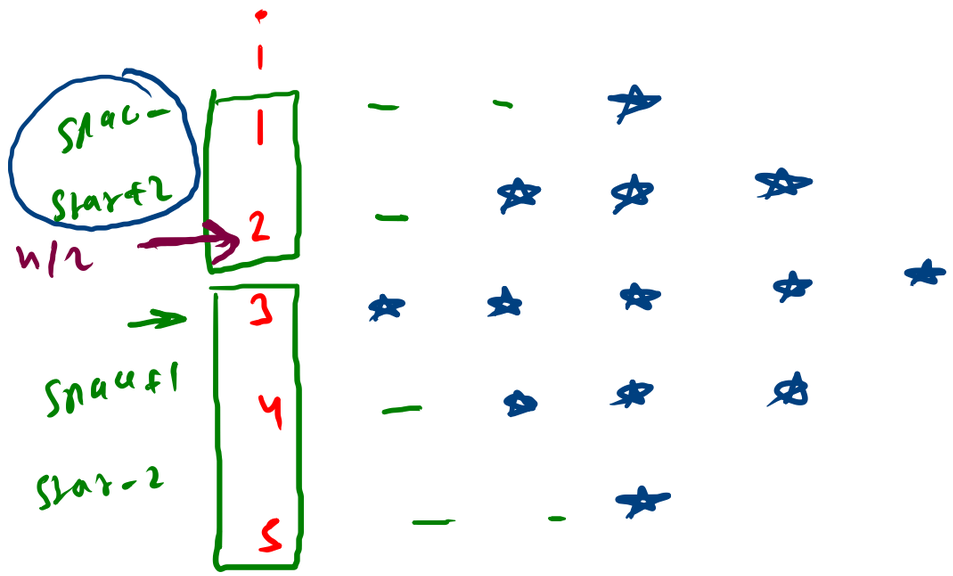
$n/2$

$5/2 = 2$

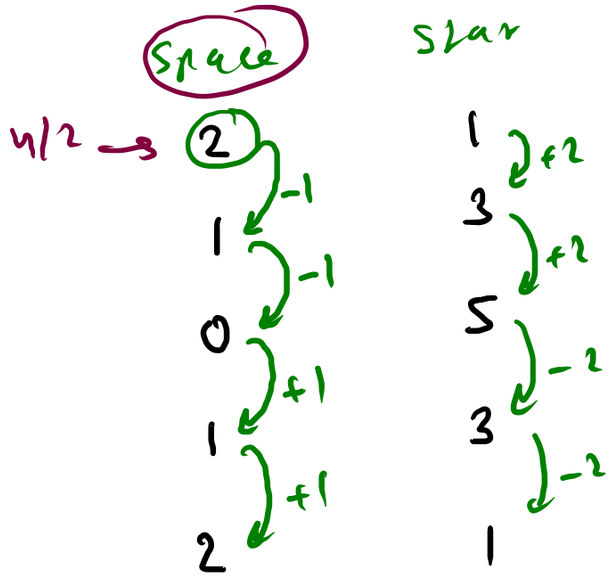
$n = 3$



$n = 5$

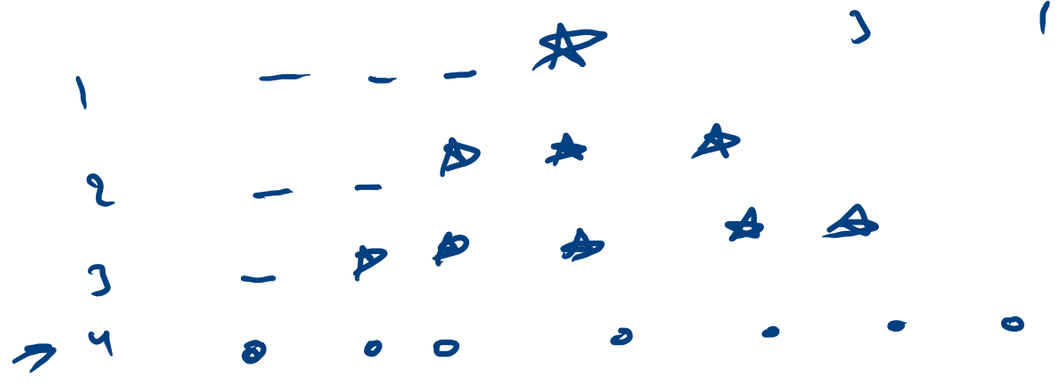



```
if( i <= n/2 )
else
}
```



$n = 7$

space	star
n/2 → 3	1
2	3
1	5
0	7
1	5
2	3



n =

```
int space = n/2;
int star = 1;

for(int i=1;i<=n;i++){
    for(int j=1;j<=space;j++){
        System.out.print("\t");
    }
    for(int j=1;j<=star;j++){
        System.out.print("*\t");
    }
    System.out.println();

    if(i<=n/2){
        space--;
        star = star+2;
    }else{
        space++;
        star = star-2;
    }
}
```

n = 7

space = 3 2 1 0 1 2 3

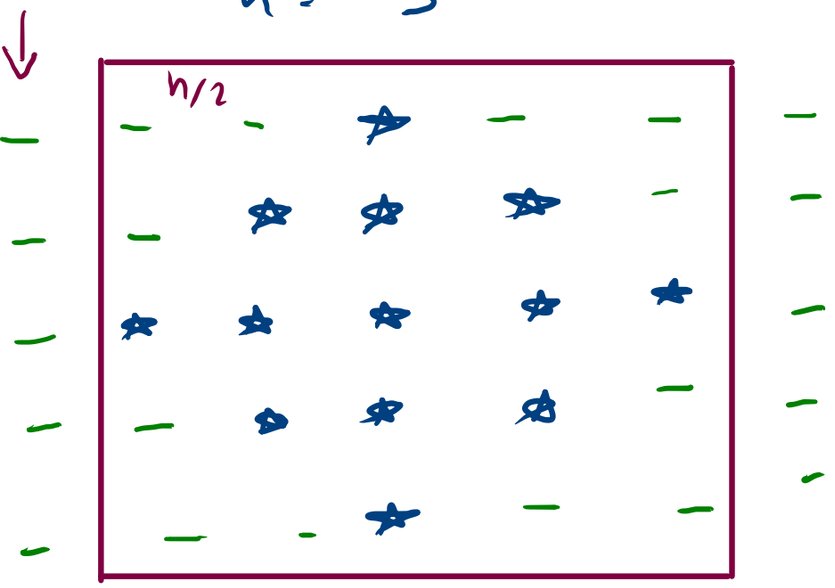
star = 1 3 5 7 5 3 1

i = 1 2 3 4 5 6 7 8

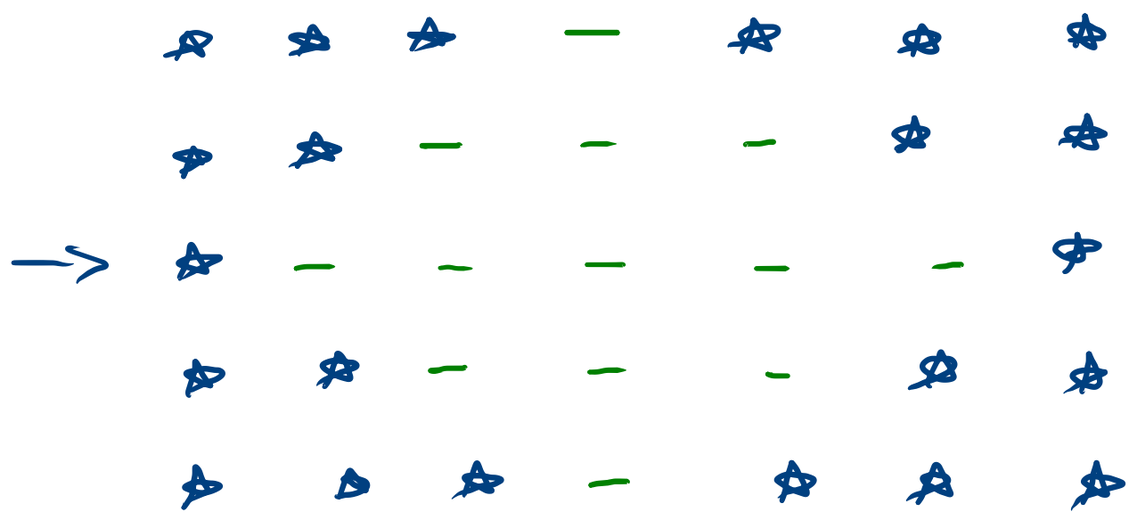
		space	star
1	- - - *	3	1
2 →	- - * * *	2	3
3 →	- * * * * *	1	5
4	* * * * * * *	0	7
5	- * * * * *	1	5
6	- - * * *	2	3
7	- - - *	3	1
8			

n/2+1

n = 5

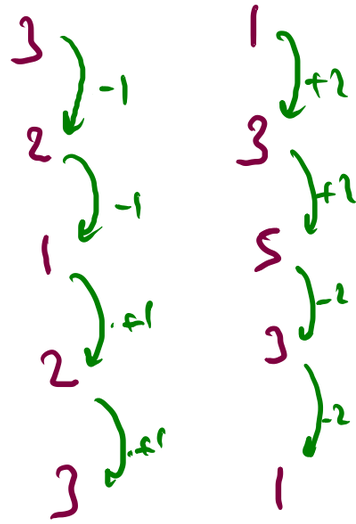


n = 5

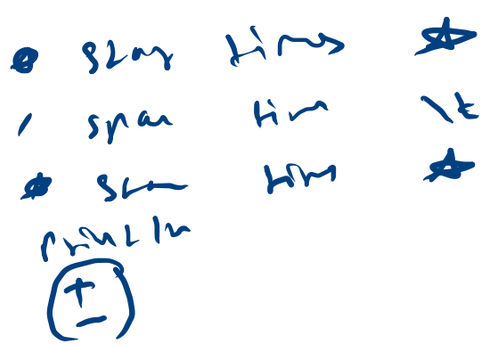


n/2+1 1

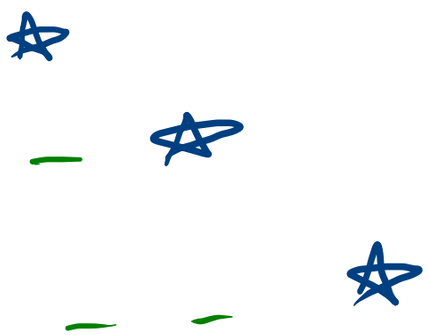
star space



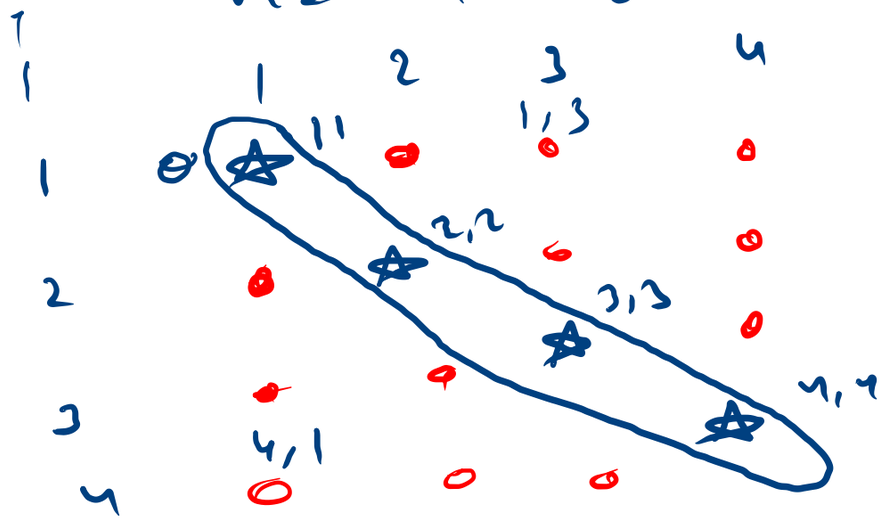
for((i 1 to n)



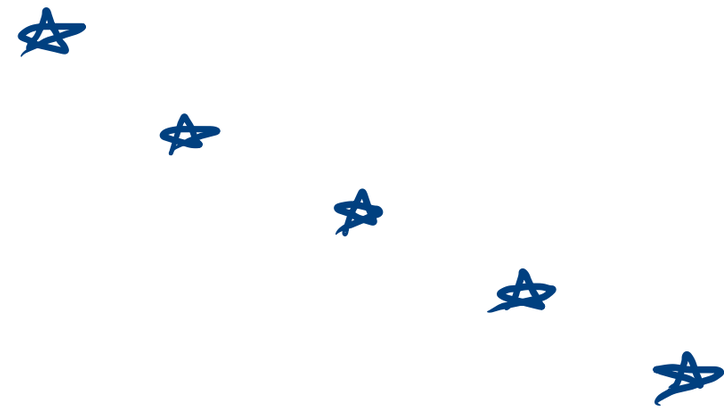
n = 3



n = 4



n = 5




```
for(int i=1 ; i<=n; i++){
    for(int j=1; j<=n; j++){
        if(i==j) System.out.print("*");
        else System.out.print(" ");
    }
    System.out.println();
}
```

n = 4

1 2 3 4

1 ★ ✓

2 ★ ✓

3 ★ ✓

4 ★ ✓

1+4 = n

2,3 = (+1) + 4(-1) = 1+4

3,2 1+2 4-2 = 1+4

4,1 = 1+4

1 to n

n = 5

1 2 3 4 5

1 ★ ✓

2 ★ ✓

3 ★ ✓

4 ★ ✓

5 ★ ✓

★ $i + j = h + 1$

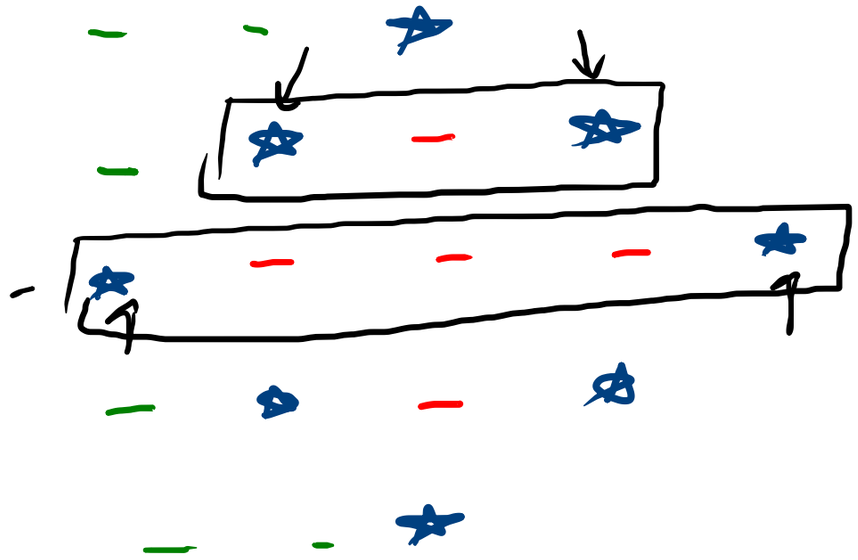
5

★ $i + j = h + 1$

6

1 3 5
2 9

h = 5



space	size
2	1
1	3
0	5
1	3
2	1