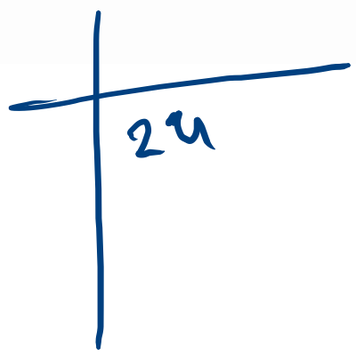
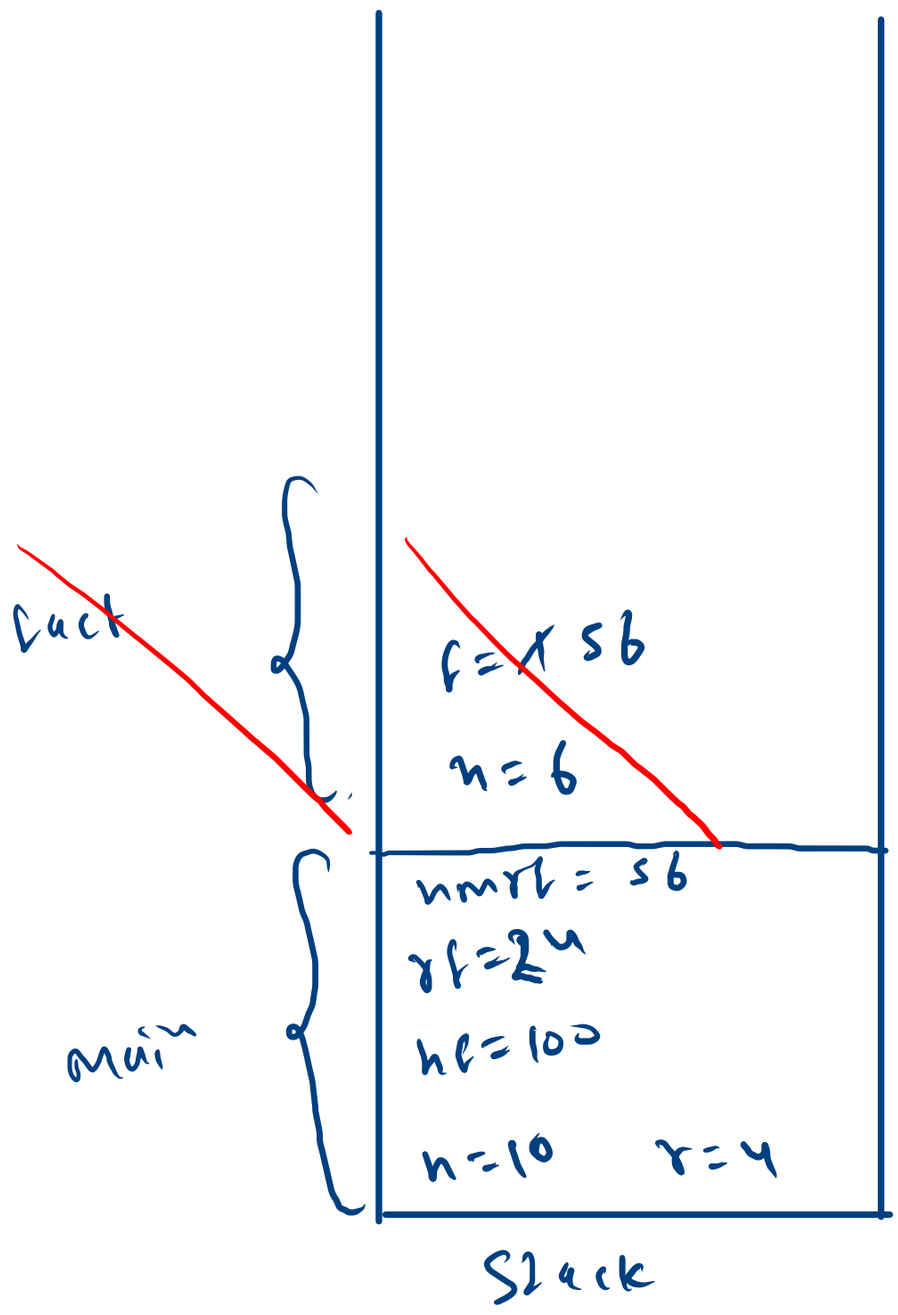
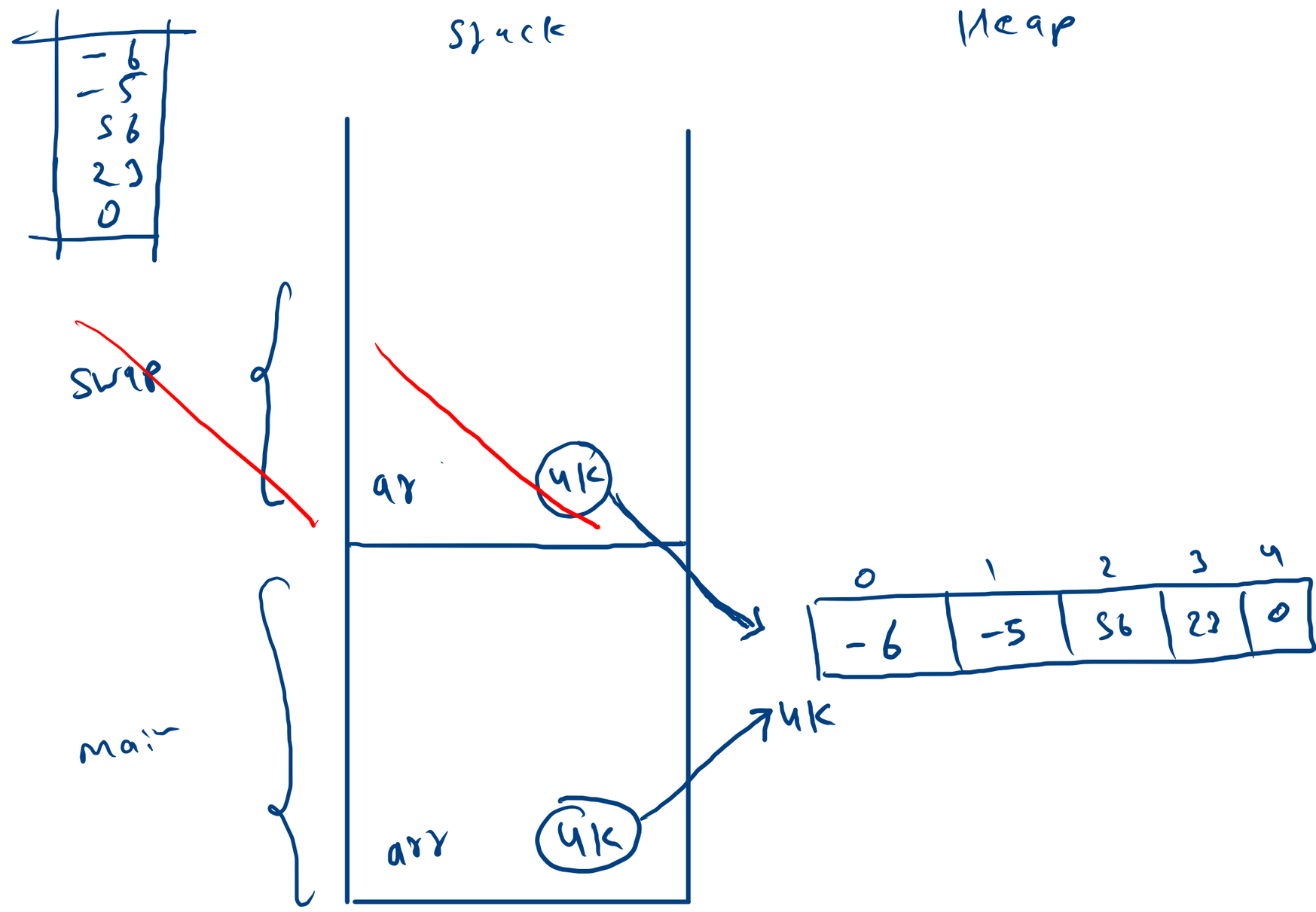
```java
public static void main(String[] args) {
    int n=10;
    int r=4;

    int nf = fact(n);
    int rf = fact(r);
    int nmrf = fact(n-r);

    System.out.println(nf/(rf*nmrf));
}

public static int fact(int x){
    int f = 1;
    for(int i=1;i<=x;i++){
        f = f*i;
    }
    return f;
}
```





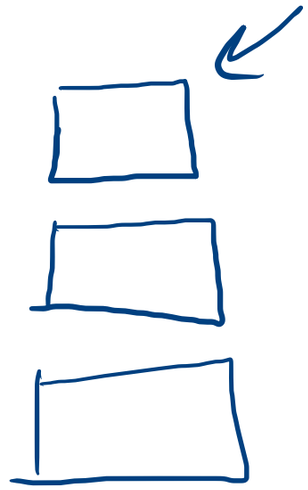
```java
public static void main(String[] arg
    //  int arr[];// declaration
    //  arr = new int[5];// initial

    int arr[] = new int[5];

    arr[0] = 9;
    arr[1] = 14;
    arr[2] = 56;
    arr[3] = arr[0]+arr[1];

    for(int i=0;i<=4;i++){
        System.out.println(arr[i]);
    }
    swap(arr);
    System.out.println(arr[0]);
    System.out.println(arr[1]);
    System.out.println(arr[2]);
    System.out.println(arr[3]);
    System.out.println(arr[4]);
}

public static void swap(int ar[]){
    ar[0] = -6;
    ar[1] = -5;
}
```



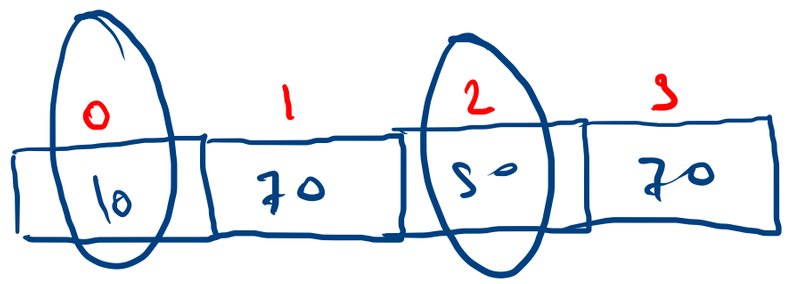
int marks1 = 70

marks2 = 80

marks3 = 75



0...3



int marks[] = new int[4];

marks[1] = 70

int y = marks[0] + marks[2];

60

fixed size

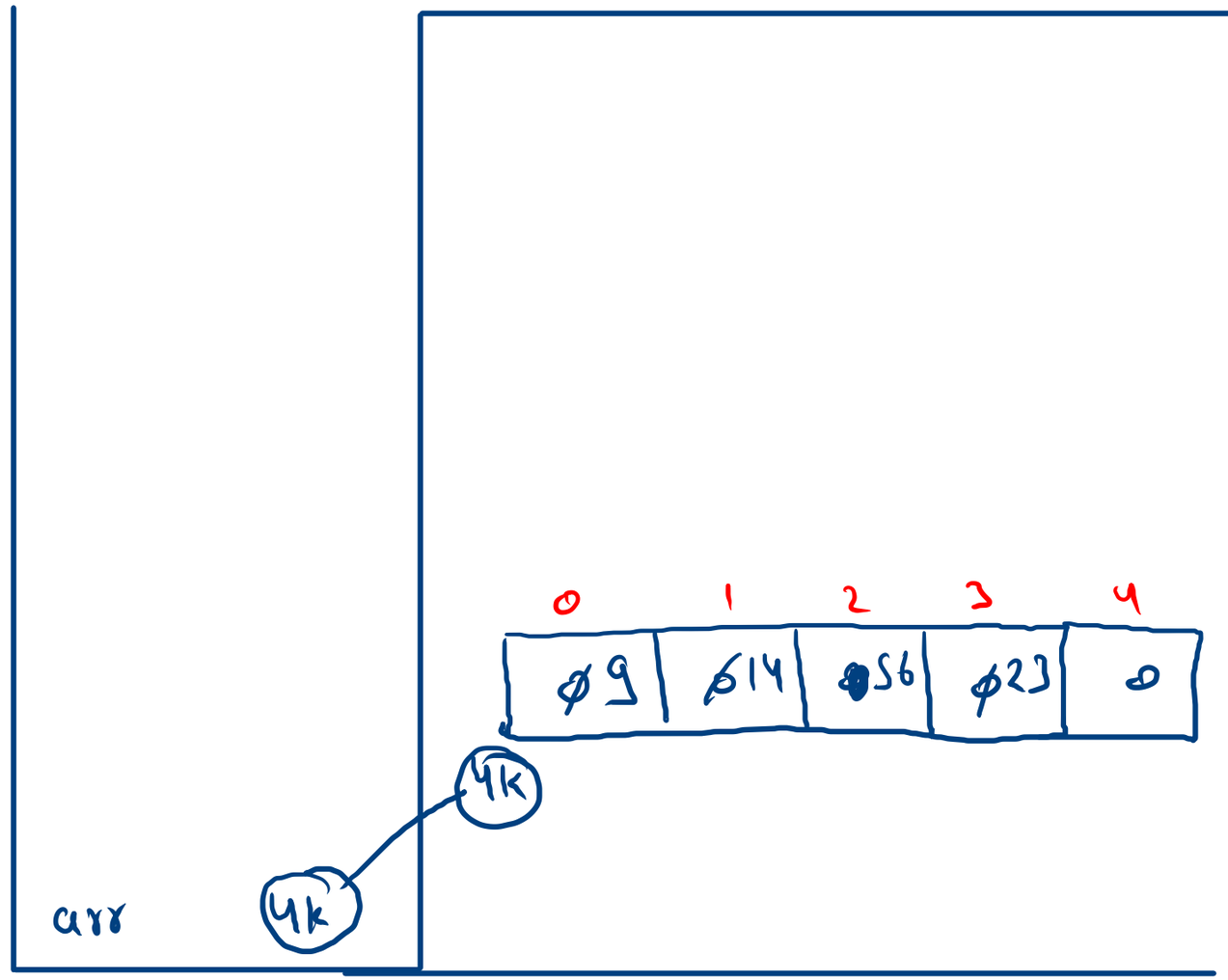
4 by

```java
public static void main(String[] args) {
    //  int arr[];// declaration
    //  arr = new int[5];// initializati

    int arr[] = new int[5];

    arr[0] = 9;
    arr[1] = 14;
    arr[2] = 56;
    arr[3] = arr[0]+arr[1];

    for(int i=0;i<=4;i++){
        System.out.println(arr[i]);
    }

    // System.out.println(arr[0]);
    // System.out.println(arr[1]);
    // System.out.println(arr[2]);
    // System.out.println(arr[3]);
    // System.out.println(arr[4]);

}
```

9
14
56
23
0

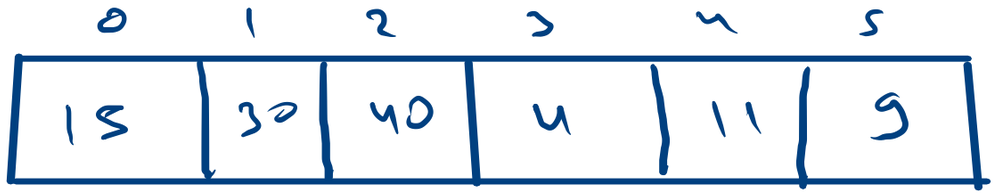
Stack

Heap



6 → n

n = 6



15
30
40
4
11
9

span = max - min

40 - 4

= 36 ⇐

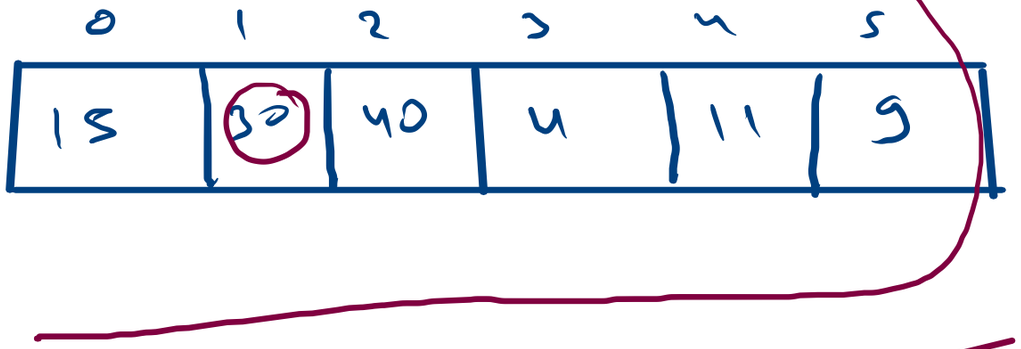
n
create arr
put inp in arr
find max, min
span = max-min
print (span);

h = 5

0 - - 4

h = 6

0 - - 5



1 . . . (h-1)

max ~~15~~ ~~30~~ 40

min ~~15~~ 4

```
max = arr[0]
min = arr[0]
for( int i = 1 ; i < 4 ; i++)
```

```java
int n = scn.nextInt();
int arr[] = new int[n];
// 0....(n-1)
for(int i=0;i<n;i++){
    arr[i] = scn.nextInt();
}

int min = arr[0];
int max = arr[0];

for(int i=1;i<n;i++){
    if(arr[i] > max){
        max = arr[i];
    }
    if(arr[i] < min){
        min = arr[i];
    }
}

int span = max-min;
System.out.println(span);
```

n = 6

arr =

0	1	2	3	4	5
15	30	40	4	11	9

min ~~15~~ 4

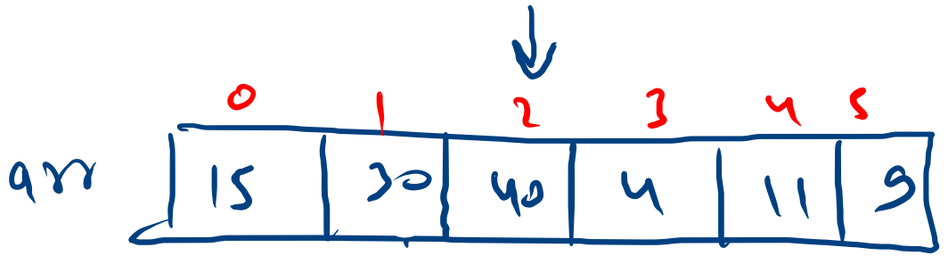
max ~~15~~ ~~30~~ 40

i = 1 2 3 4

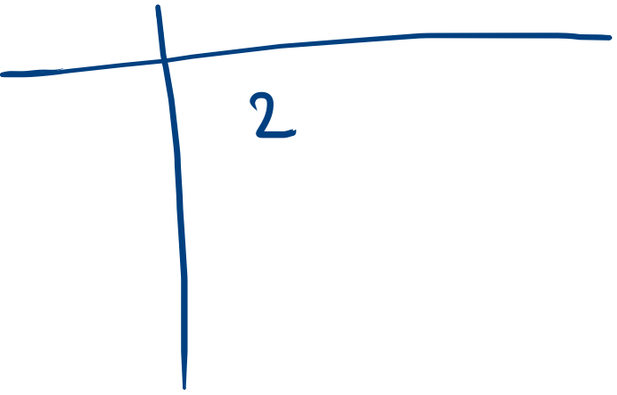
span = 36

```
6 15 30 40 4 11
9
```

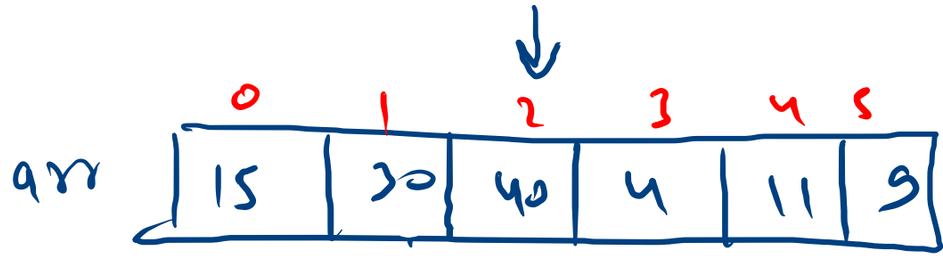
n = 6



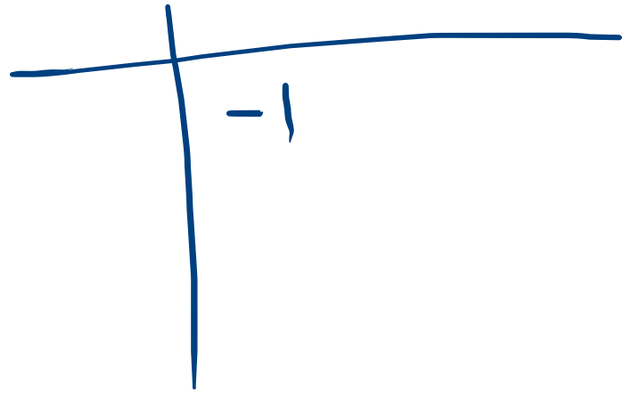
d = 40

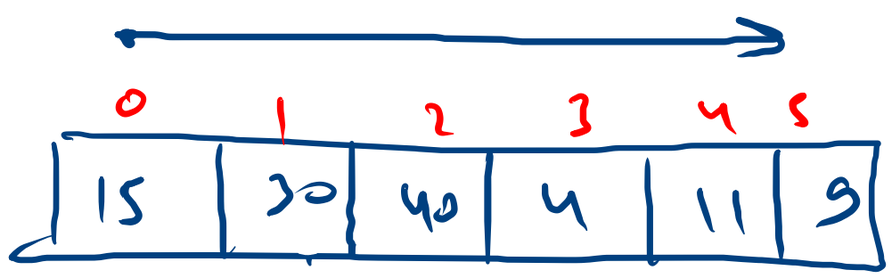


n = 6



d = 41





index = 1

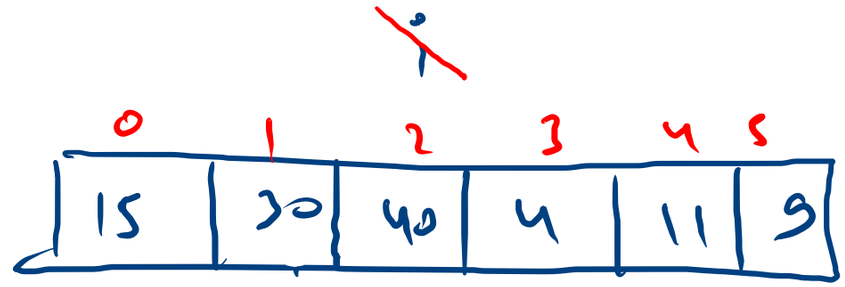
d = 40

d = 45

index = ~~2~~

index = -1

```java
Scanner scn = new Scanner(System.
int n = scn.nextInt();
int arr[] = new int[n];
for(int i=0;i<n;i++){
    arr[i] = scn.nextInt();
}
int d = scn.nextInt();

int index=-1;

for(int i=0;i<n;i++){
    if(arr[i] == d){
        index = i;
        break;
    }
}
System.out.println(index);
```



d = 40

index = 2

40 == 40

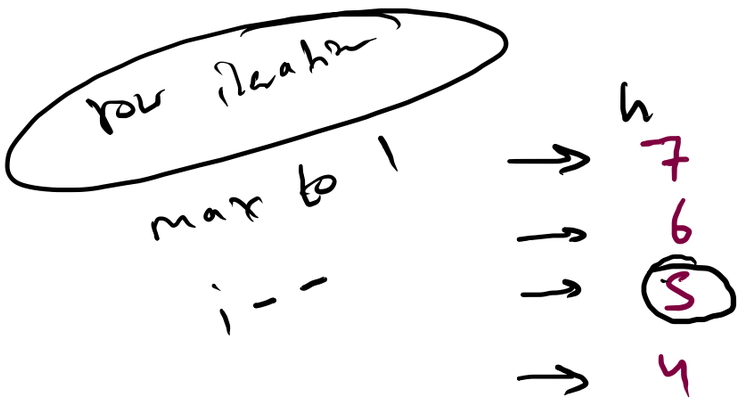
2

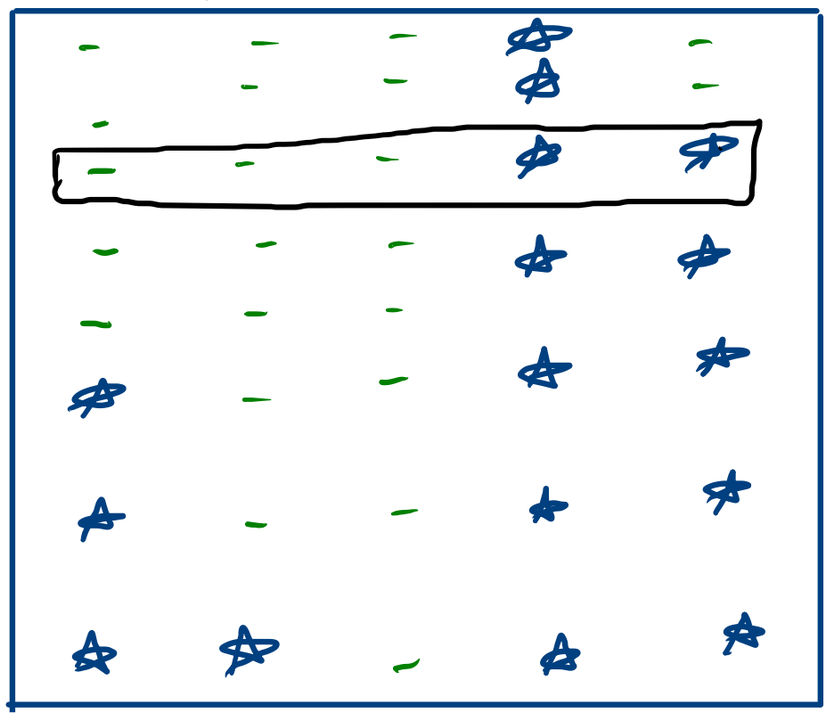
[3 1 0 7 5]

max = ?

h > arr[i] —

h ≤ arr[i] ★





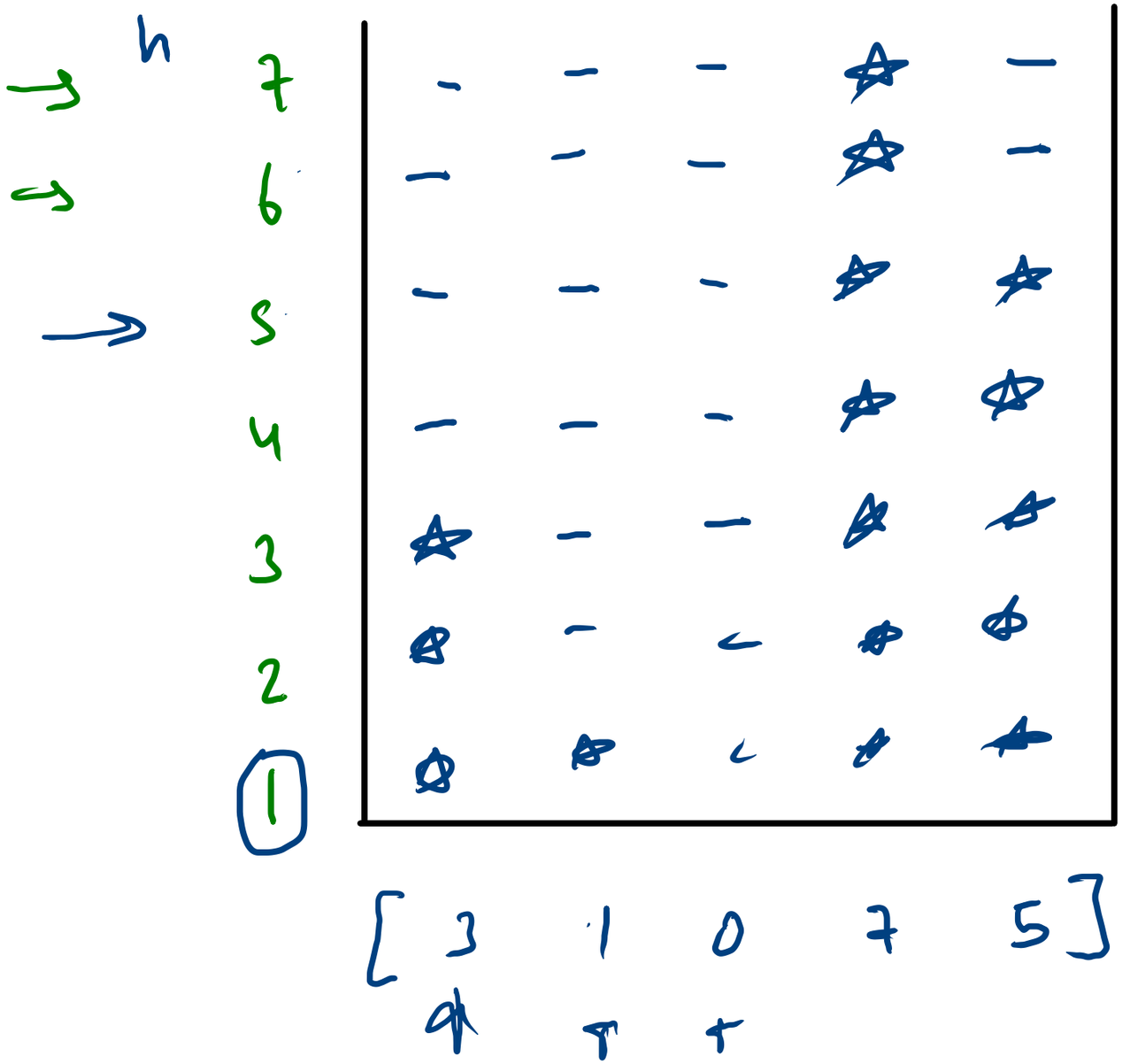

```
for( h=max; h>=1; h--)
{

}
```

5
3
1
0
7
5

h > arr[i] -

h <= arr(i) ★

b <= 7



cnt : max ?

row : h ← max to 1

```
for i ← 0 do n-1
    if h > arr(i)
        print( \t)
    else print(*\t)
println();
```

h1 = 5

arr1 = [3, 1, 0, 2, 5]

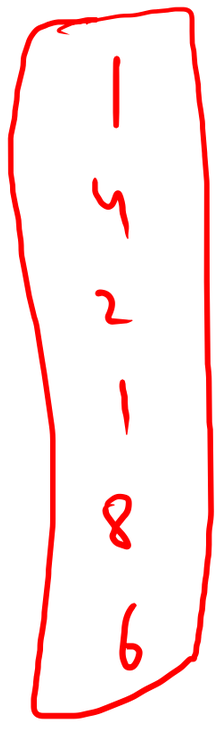
h2 = 6

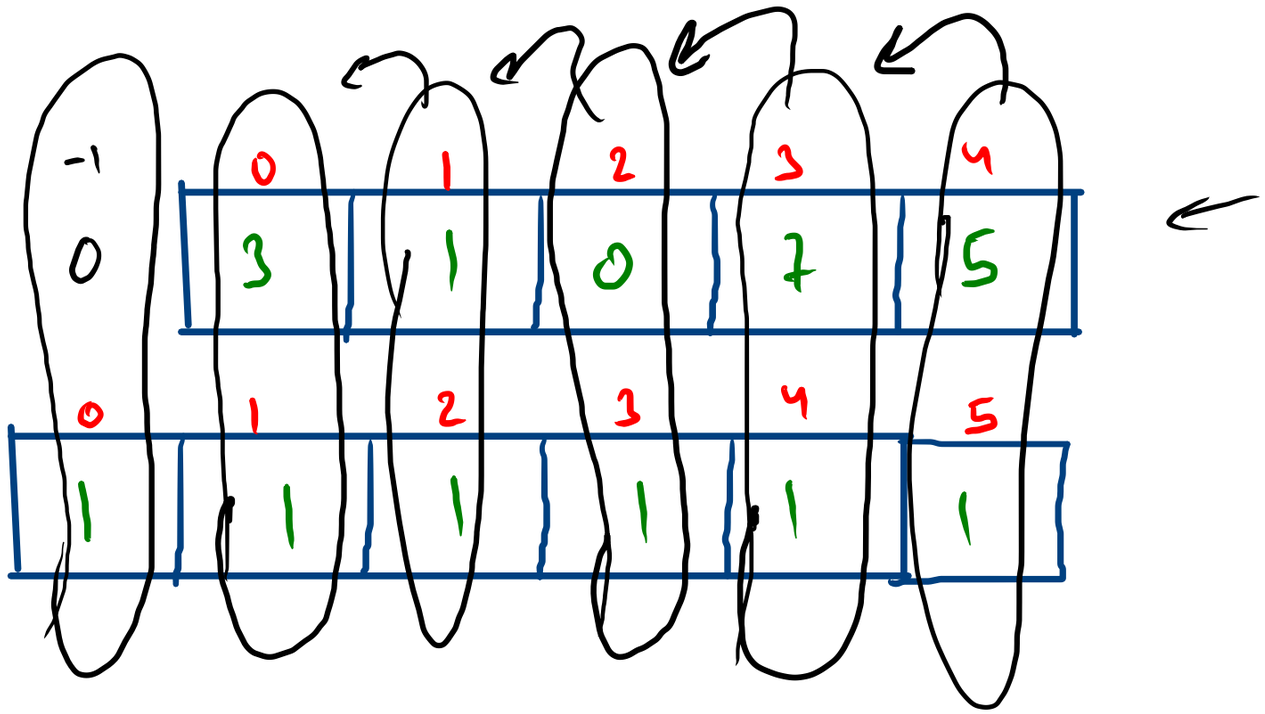
arr2 = [1, 1, 1, 1, 1, 1]

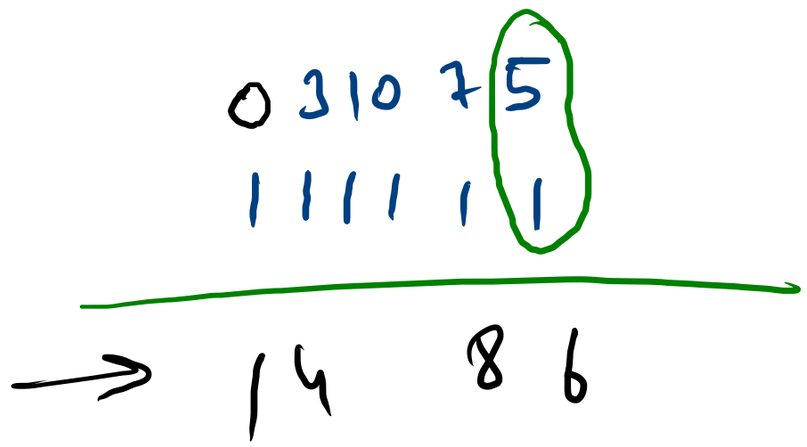
```
  31075
+ 111111
--------
 142186
```

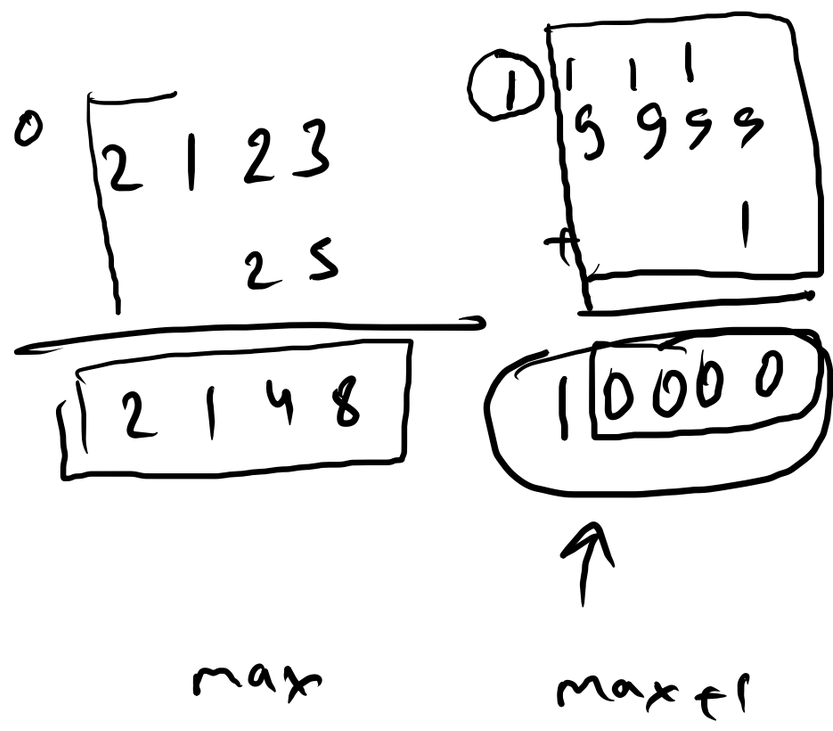
int 10 digit

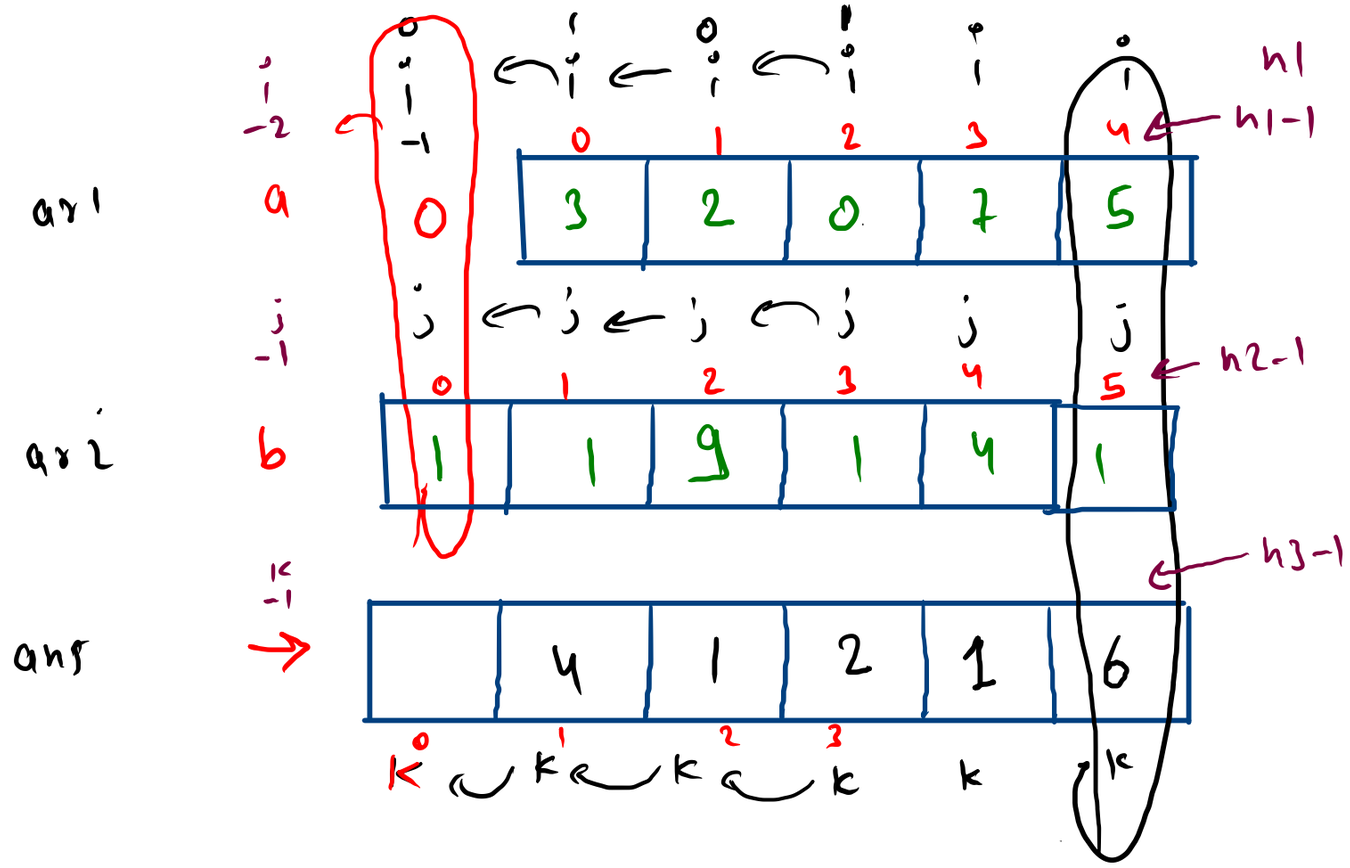
ans [1, 4, 2, 1, 8, 6]




-1
0
0
3
1
1
2
0
3
7
4
5
0
1
1
1
2
1
3
1
4
1
5
1


0 3 1 0 7 5
1 1 1 1 1 1
1 4 8 6


0
2 1 2 3
2 5
2 1 4 8
1
1 1 1
5 9 5 9
1
1 0 0 0 0
max
max+1




```
int a = 0
if (i >= 0)
    a = arr1[i]
```

sum = ~~arr1[i]~~ + ~~arr2[j]~~

+ carry

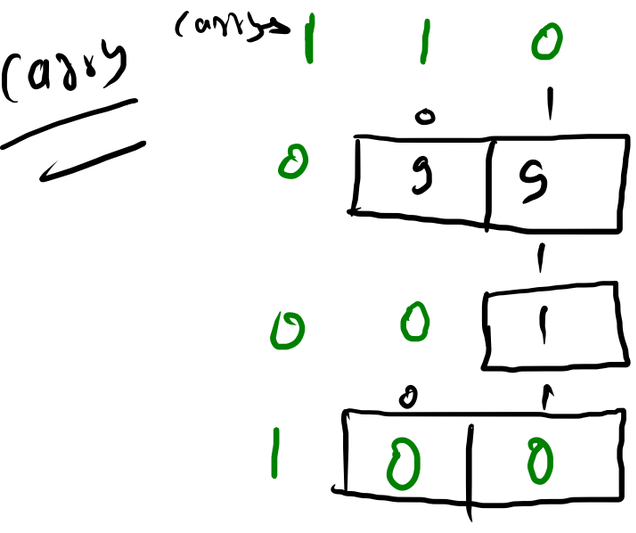
carry = sum / 10;

ans[k] = sum % 10;

i--

j--

k--



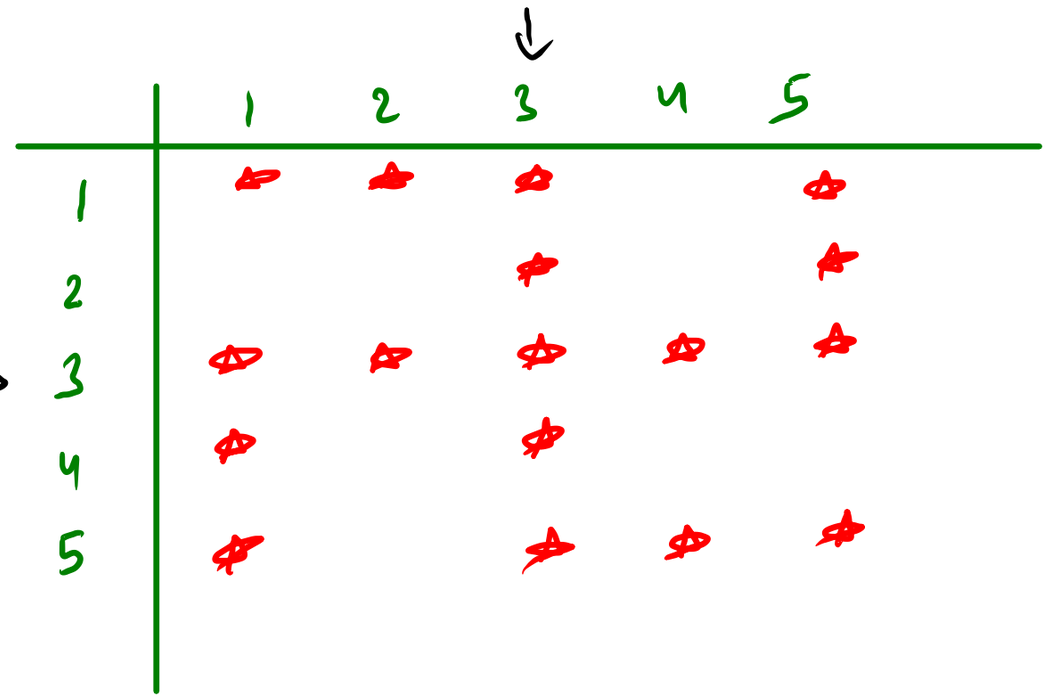
carry print

1
0
0

ans print

[0
0

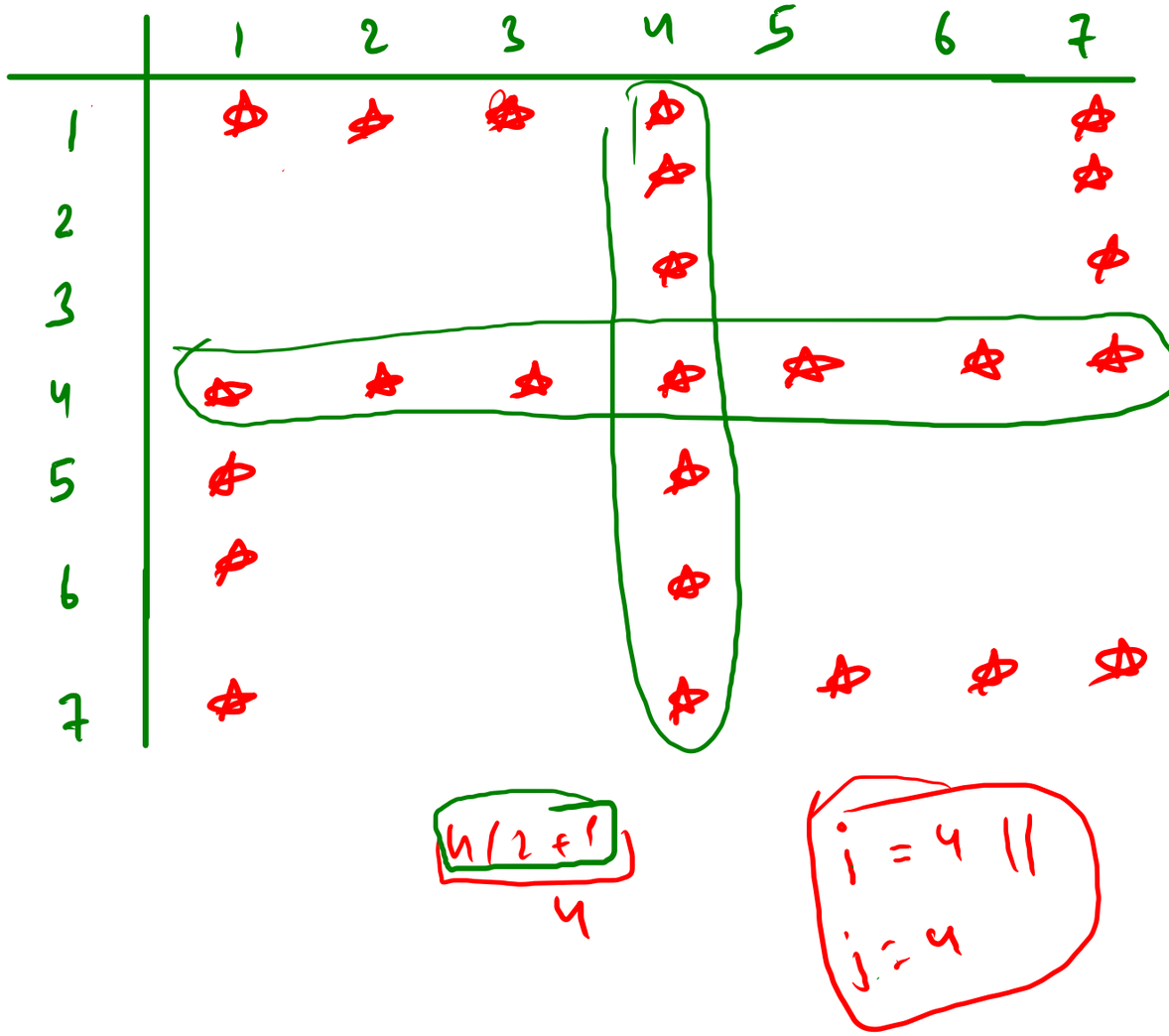
n = 5

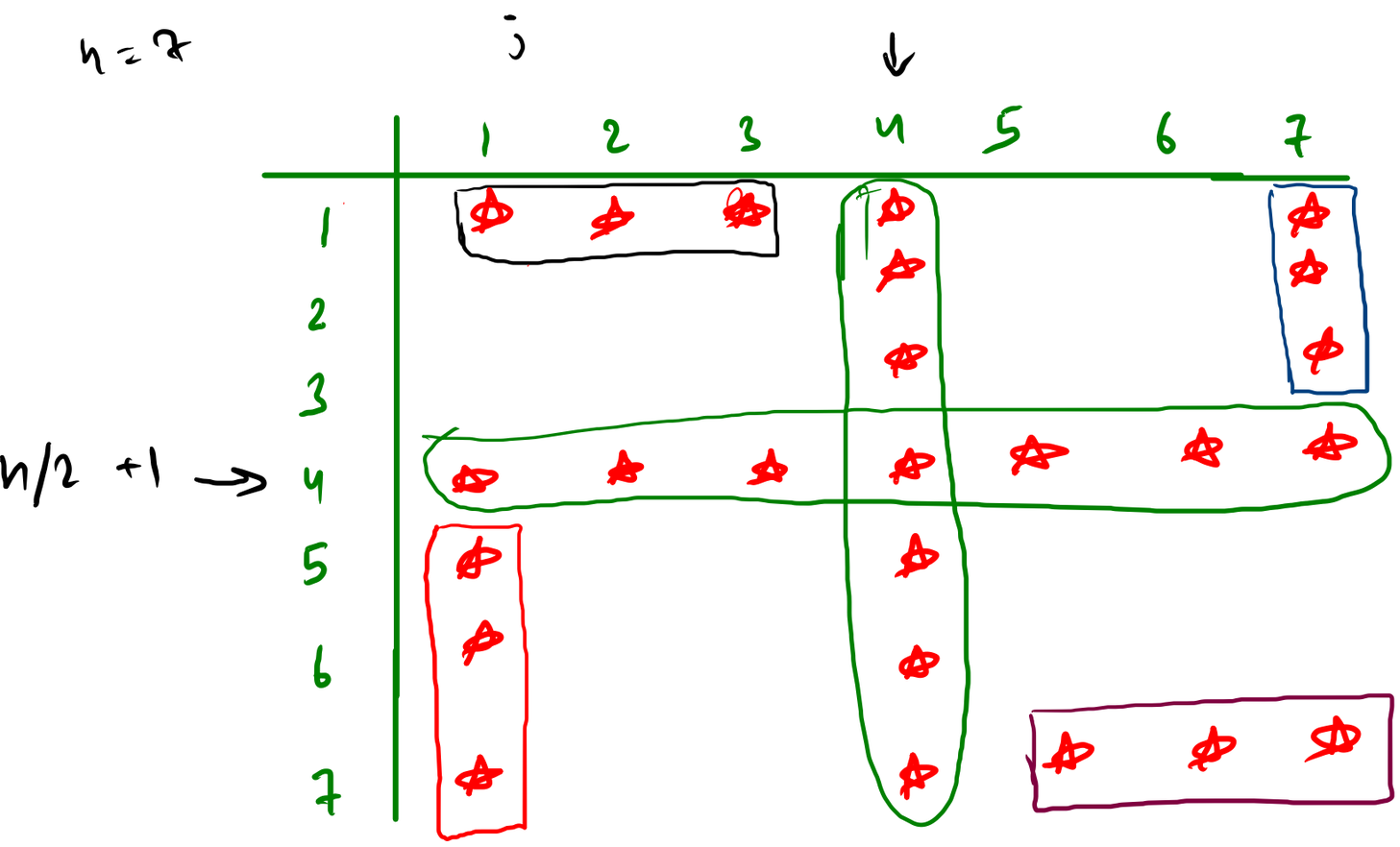


h = 5

h/2 + 1

n = 7





i==mid || j==mid

i==1 && j<mid

j==n && i<mid

i==n && j>mid

j==1 && i>mid

else "\t"