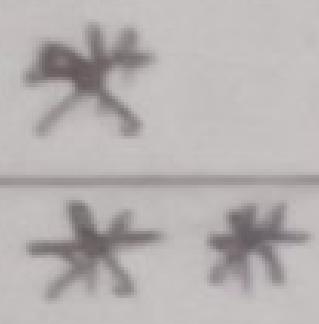
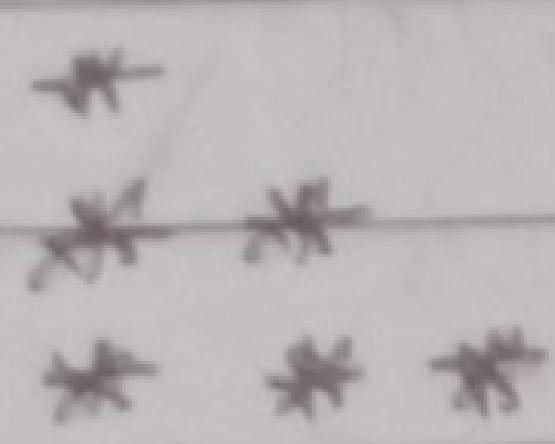


# \* pattern printing problems

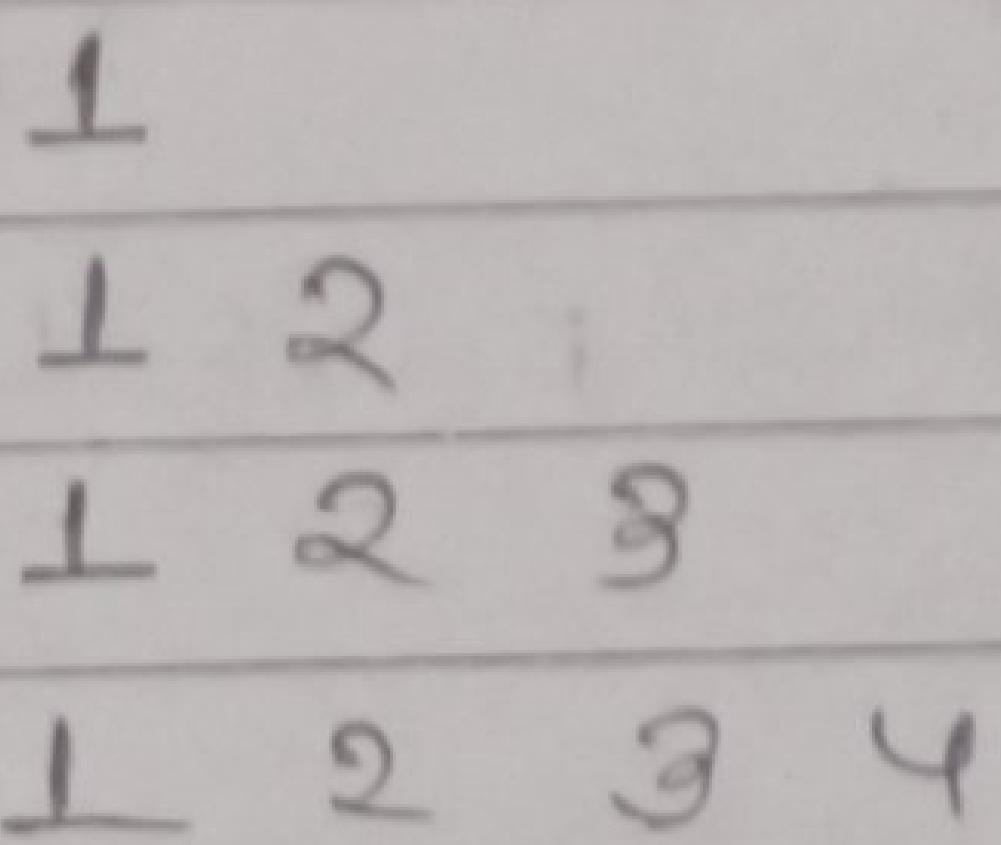
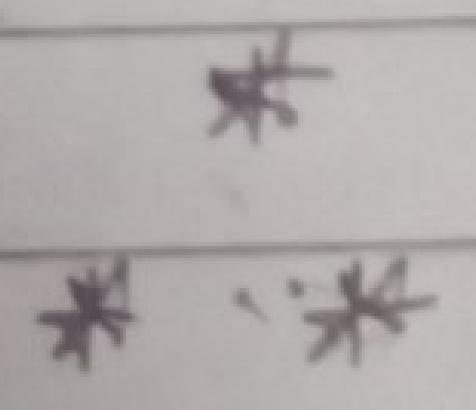
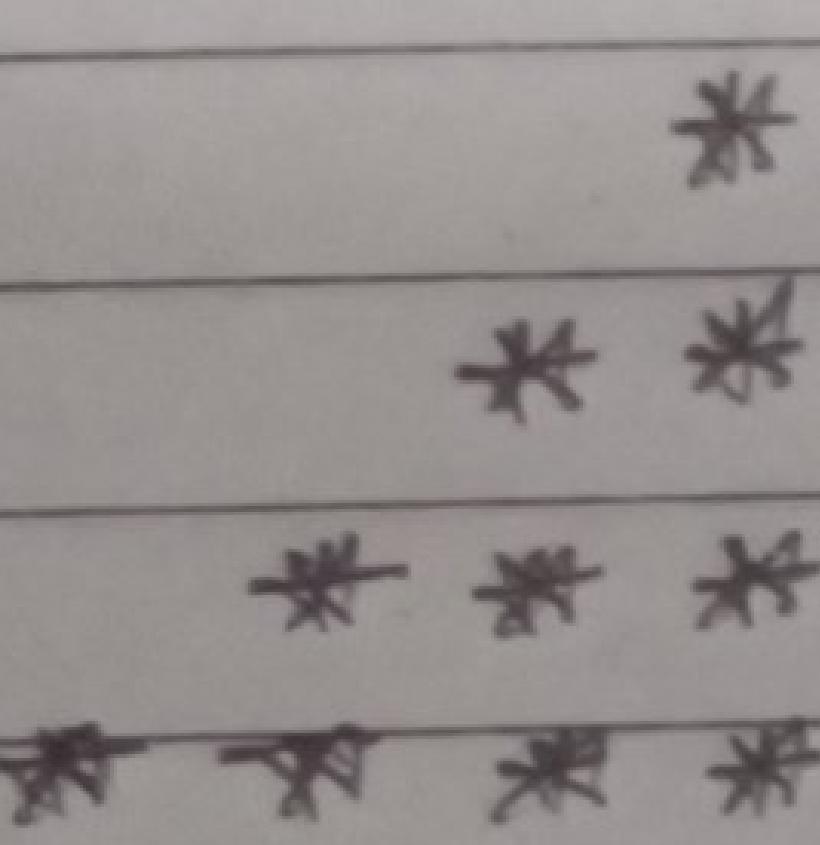
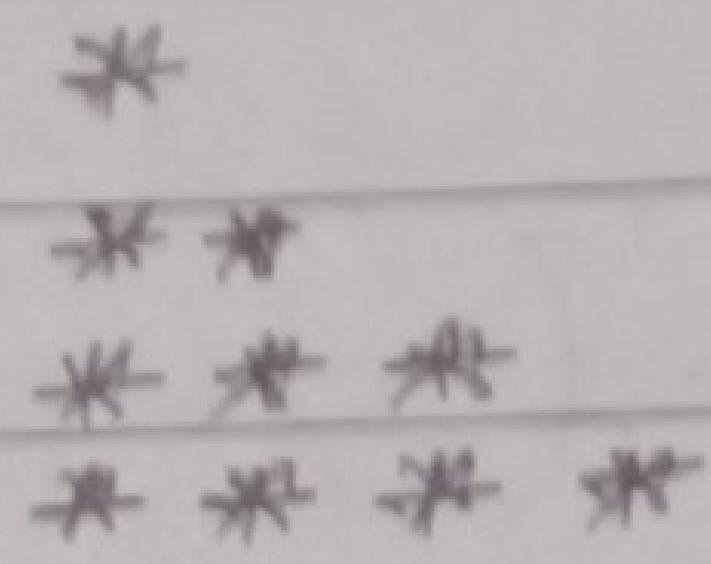
$$n = \text{rows} = 2$$



$$n = 3$$



$$n = 4$$



A

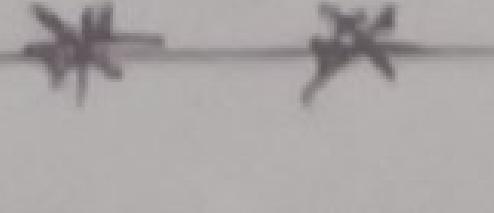
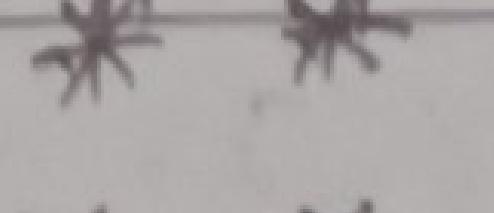
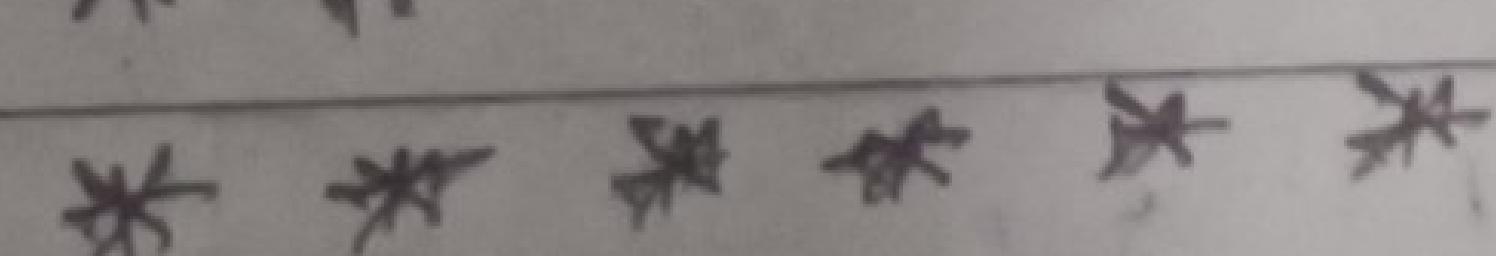
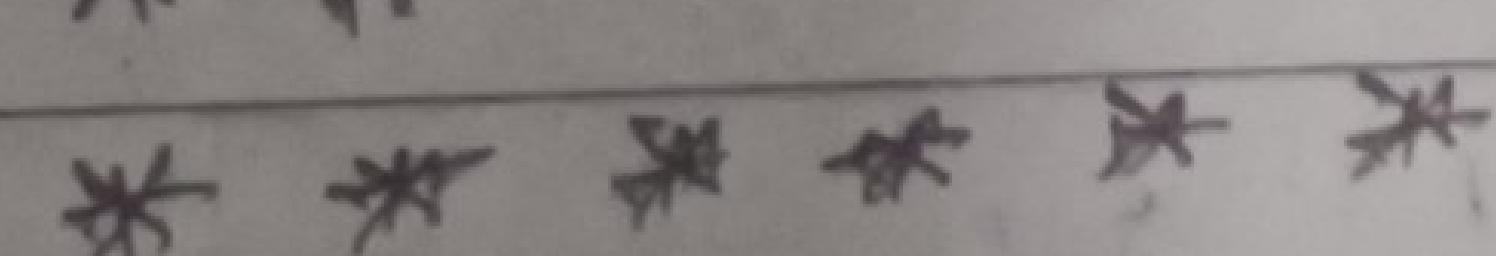
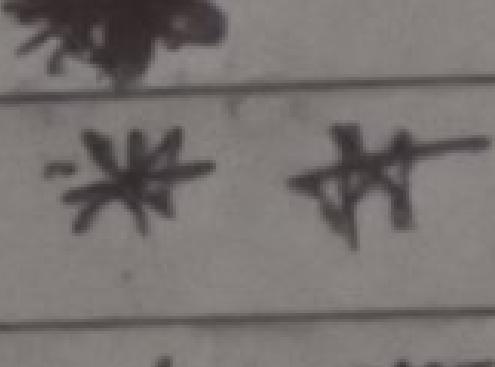
A D

A B C

A B C D

1  
2 3  
4 5 6

7 8 9 10



Question

\*  
\*\*  
\*\*\*  
\*\*\*\*  
\*\*\*\*\*

Solution

row	0	1	2	3	4
0	*				
1		*	*		
2			*	*	
3				*	
4	*	*	*	*	*

row = 1      column = 1

*
---

row = 2      column = 2

*	*
---	---

row = 3      column = 3

*		
	*	*
	*	*

$$row = column$$

$$n = row$$

$$n \times n$$

5      5

row = 4      column = 4

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

etc

Solution :- now ( $1^{st}$  way)

column  $n = 5$

```
for(var i=0; i<n; i++) {
```

```
    for(var j=0; j<n; j++) {
```

```
        if(j <= i) {
```

```
            console.log('*' + ' ');
```

```
}
```

```
}
```

```
}
```

\* ~~(2<sup>nd</sup> way)~~

~~$n = 5$~~

~~now~~ column

~~\* 2<sup>nd</sup> way~~

0	↓	1	↓	2	↓	3	↓	4
0	*	-	-	-	-	-	-	-
1	*	x	-	-	-	-	-	-
2	*	*	*	-	-	-	-	-
3	*	*	*	x	-	-	-	-
4	*	*	*	*	x	-	-	-

(Space left ( $\leftarrow$ ))  
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$n = 5;$   
row → column

for (var i=0; i<n; i++) {

    for (var j=0; j<n; j++) {

        for (var k=1; k<=i+1; k++) {

            console.log ("\*");

}

}  
row      column      (Star)  
i=0, j=0, k=\*

}

~~2<sup>nd</sup> way -~~

$n = 5;$

```
for(var i=0; i<n; i++) {
```

```
    for(var j=0; j<=i; j++) {
```

```
        console.log("*"); // process.stdout.write("*")
```

```
}
```

```
// (for next line)
```

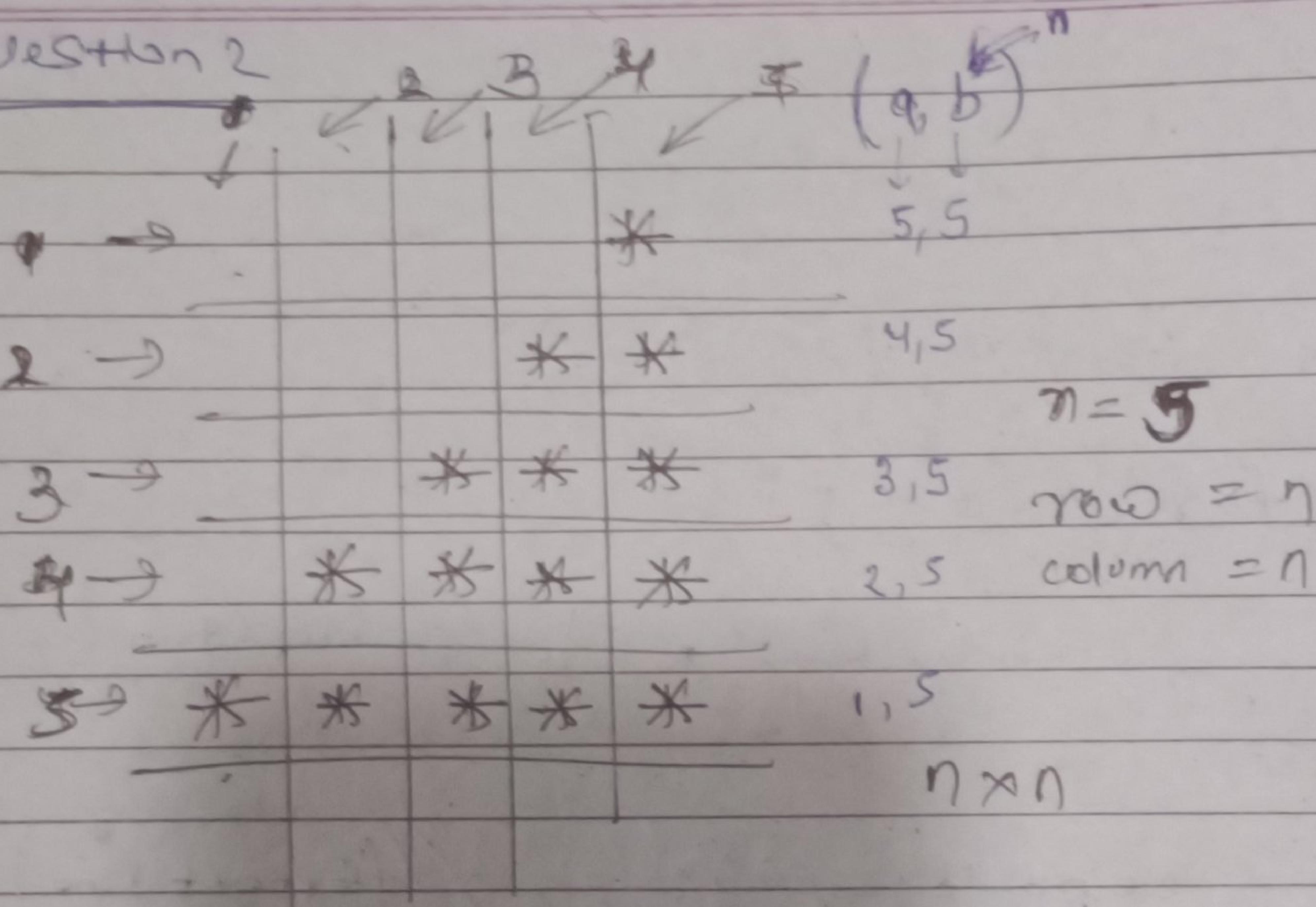
NOTE-

```
'process.stdout.write("*");'
```

→ It is used when we don't want to move (go to next line after printing something) in terminal or console.

```
console.log();
```

→ It is used when we want to move to the next line after printing something

Question 2

$$n = 5$$

```
for (var i = 0; i < n; i++) {
```

```
    for (var j = 0; j < n; j++) {
```

```
        if (j < n - i) {
```

```
            process.stdout.write('*');
            console.log('*');
```

```
        }
```

```
    }
}
```

```
    }  
    console.log();  
}
```

(OR)

```
if (j >= (n - i - 1)) {
```

n = 4

0	1	2	3
0			
1			
2			

```
    print("*");
```

```
} else {
```

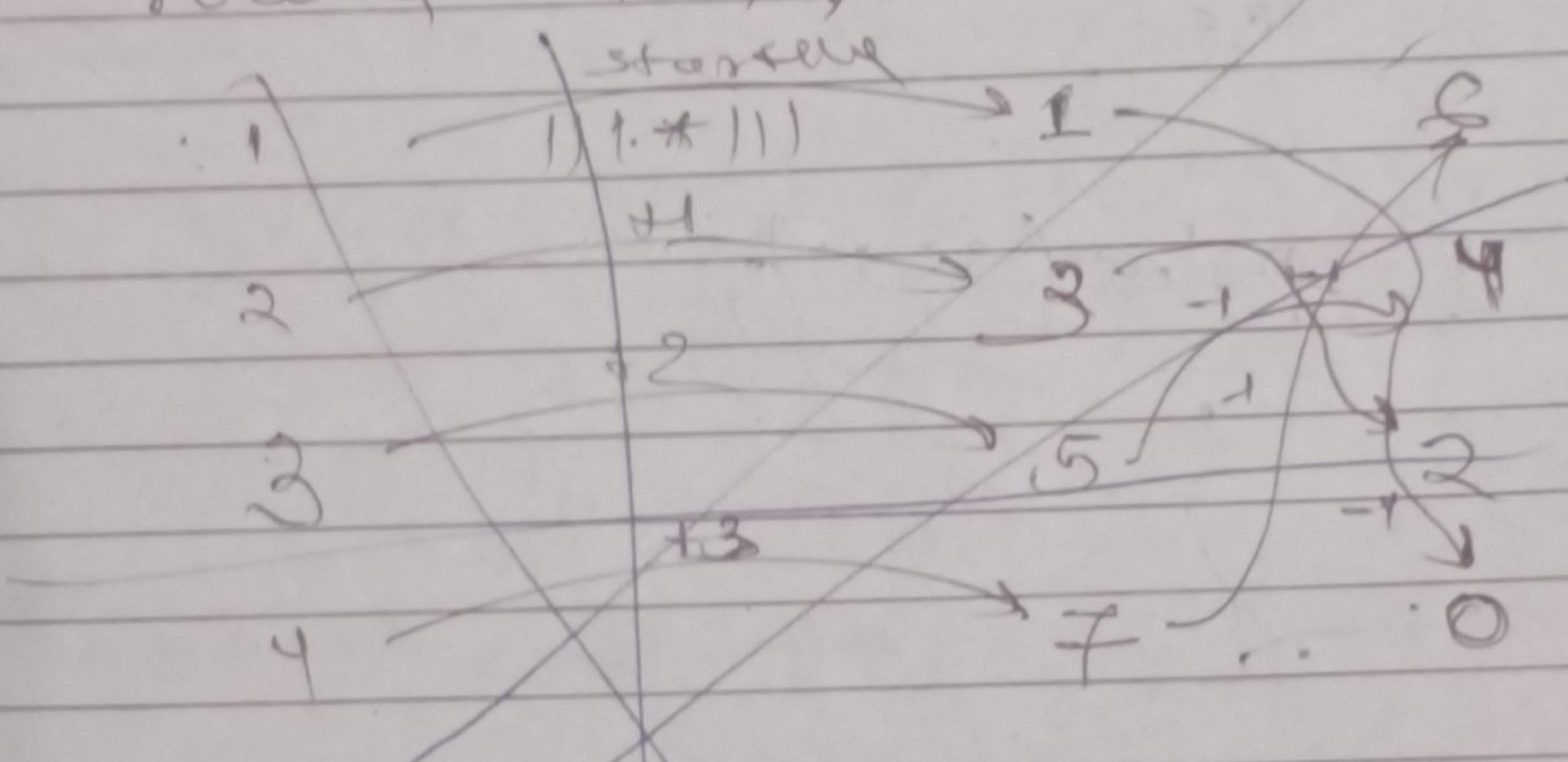
```
    print(" ");
```

}

Question 3

	0	1	2	3	4	5	6
0	*						
1		*	*	*	*		
2		*	*	*	*	*	
3	*	*	*	*	*	*	

$n = 4$      $col = 7$ , .. Star Spec

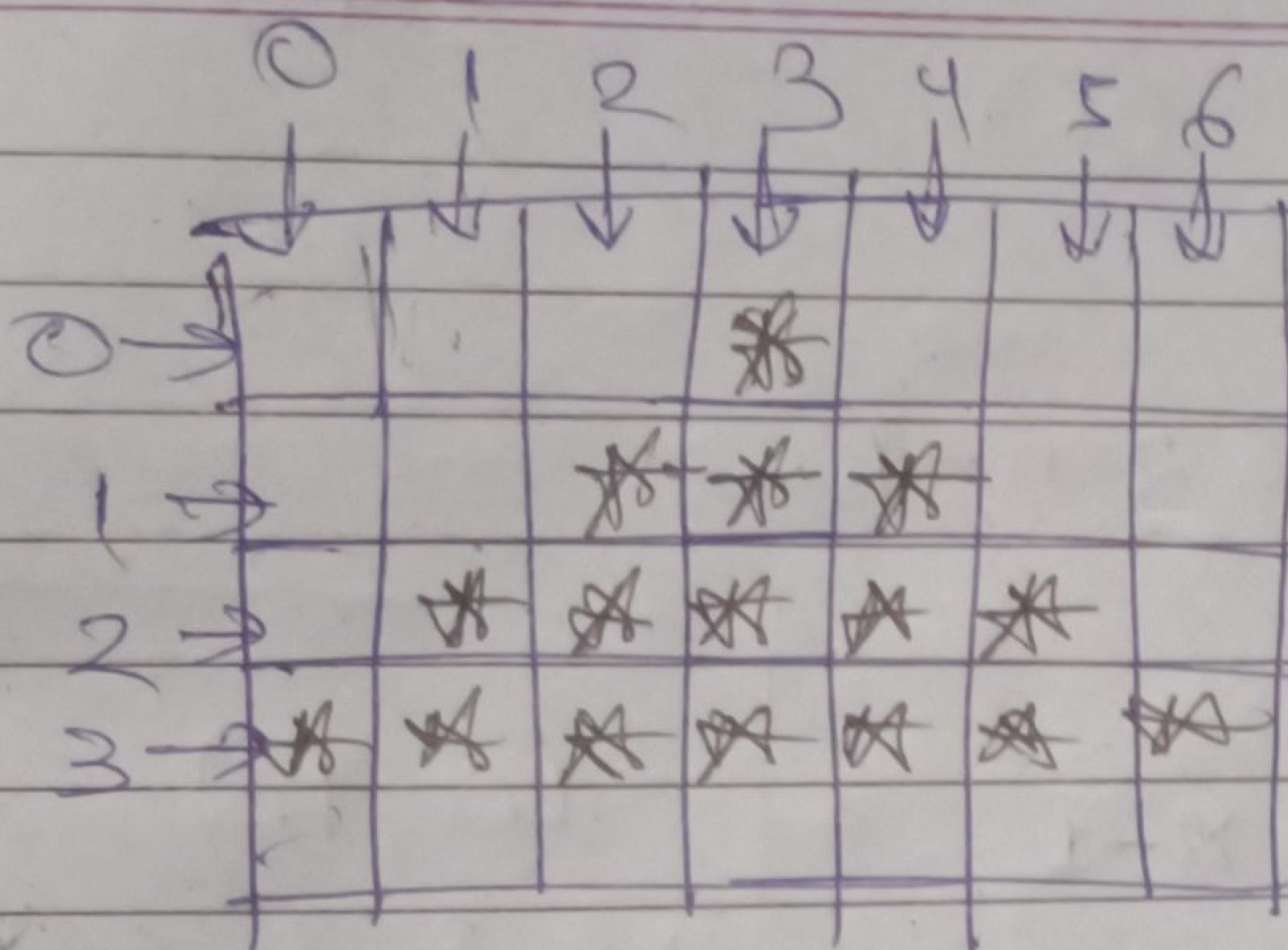


~~row = 0~~     $n = 4$

~~for (var i = 0; i < n; i++)~~

~~for (var j = 0;~~

~~j < col;~~



for star starting

(0, b)

(3, 3)

(2, 2)

(1, 1)

(0, 0)

row = 1

column = star  
= 1

row = 2

column = star  
= 2

row = 3

column = star  
= 3

row = 4

column = star  
= 4

row = 5

column = star  
= 5

row = 6

column = star  
= 6

~~row = 4, column = 7~~

~~for (var i = 0; i < row; i++) {~~

~~for (var j = 0; j < column; j++) {~~

~~if (j == 0) {~~

~~if (j <= (i \* 2 - 1)) {~~

~~process.stdout.write(" \* ")~~

~~} else {~~

~~process.stdout.write(" ")~~

~~}~~  
~~console.log();~~

~~1  
2  
3~~

~~0 \* 2 - 1 = 0~~

~~1 \* 2 - 1 = 1~~

~~2 \* 2 - 1 = 3~~

~~3 \* 2 - 1 = 5~~

b =

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4

~~Q = X \* Y~~

$$x = 4$$

row

$$\text{volume} = 2^{n-1}$$

(Y)

no -

$$a = x - 1, b = x - 1$$

-1

+1

for (var i = 0; i < x; i++) {

    for (var j = 0; j < y; j++) {

(a, b)

0 → 3, 3 ← (x-1)

1 → 2, 4

2 → 1, 5

3 → 0, 6

    if ((j >= a) && (j <= b)) {

11\*\*\*\*\*11

x0

x1

x2

x3

x2

x3

x4

x3

x4

x5

x4

x5

x6

i	1 2 3 4 5 6
j | 1 2 3 4 5 6

process.stdout.write ("\*\*");

} else {

process.stdout.write ("\*");

}

~~else { }~~

~~Q = 1;~~

~~b+ = 1;~~

~~console.log();~~

Question

Solution

$n = 5$

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

$\text{var num} = 1;$

1 2 3 4  
5 6 7 8 9  
10 11 12 13 14  
15 16 17 18 19 20

`for (var i=1; i<=n; i++) {`

`for (var j=1; j<=i; j++) {`

`process.stdout.write(num);`

$\text{num} += 1;$

~~console.log();~~

1 2  
3 4  
5 6  
7 8  
9 10  
11 12  
13 14  
15 16  
17 18  
19 20

Quest 5

(6)

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Page \_\_\_\_\_

\* \* \* \* \* \* \* \* \* \*

\* \* \* \* \* \* \* \* \* \*

(7)

A

A B

A B C

A B C D

(8)

\* \* \* \* \* \* \* \* \*

(9)

\* \* \* \* \* \* \* \* \*

7-0 ← 0 → 5  
6-1 → 2  
5-2 → 1  
4-1

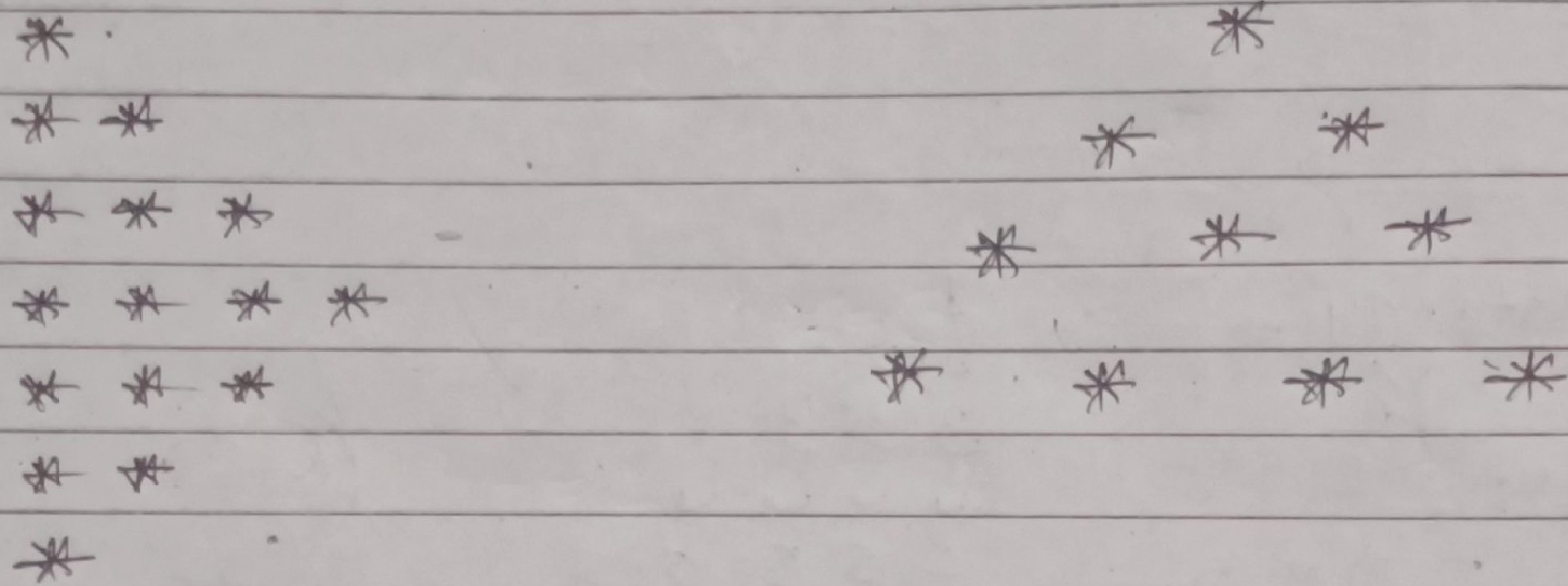
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Question 5

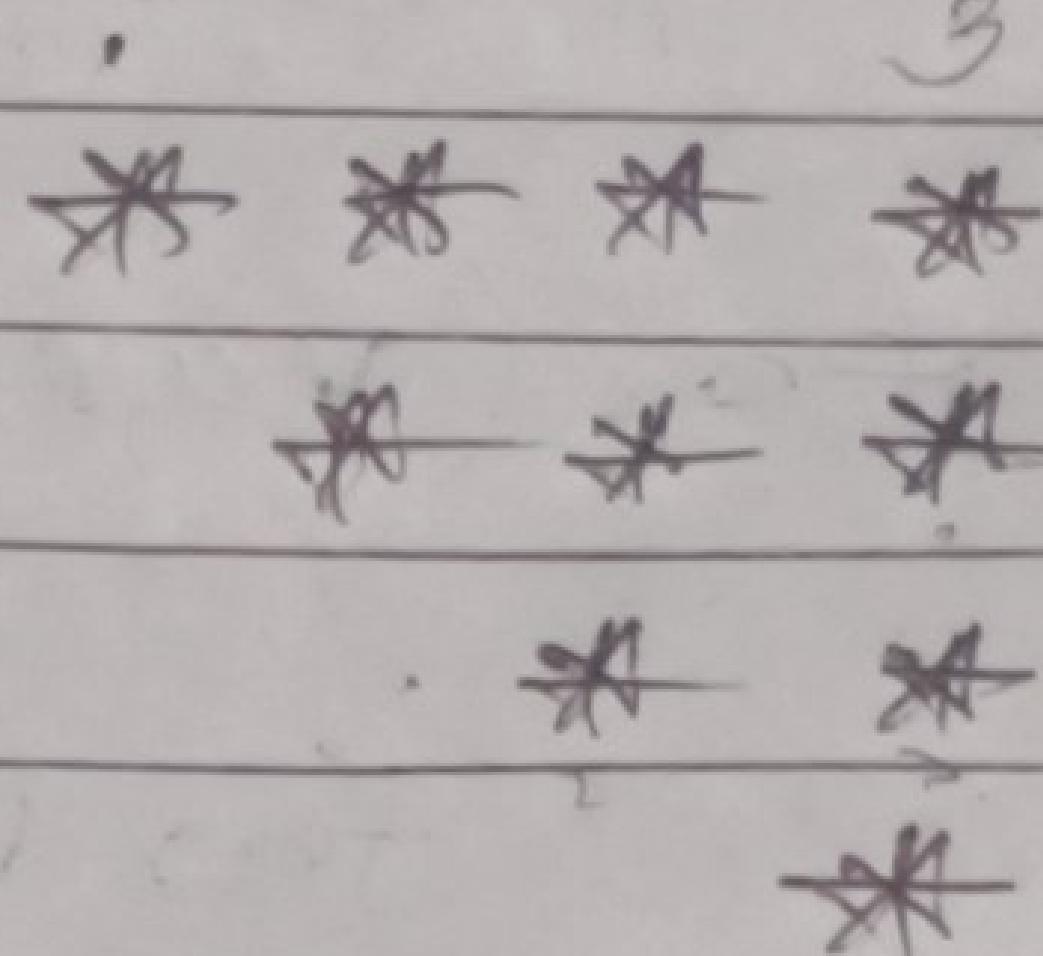
(6)



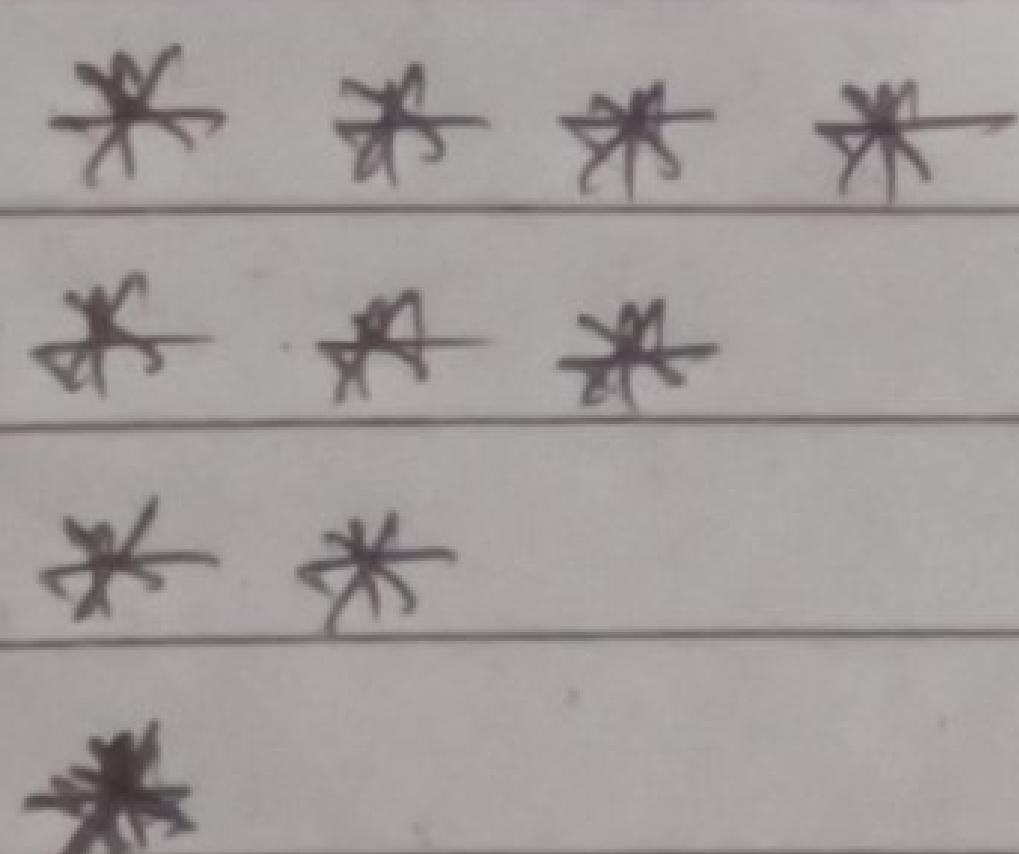
(7)

- A
- B
- C
- D

(8)



(9)



$$\begin{array}{l} 7-0 \leftarrow 0 \rightarrow 15 \\ 0-1 \rightarrow 2 \\ 0-2 \rightarrow 1 \\ 3-0 \end{array}$$