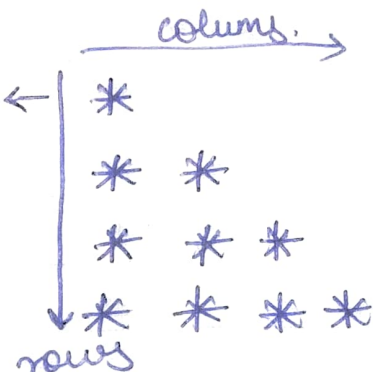


# ① Pattern Qs

## ⇒ Step 1

- No. of lines = No. of rows  
= no. of time outer loop will run.



## ⇒ Step 2

Identify no. of rows & columns,  
 for (int row = 1; row <= n; row++)  
 { for (int col = 1; col <= row; col++)

Date.....

Day.....

Try to write  
ent code  
first

## ⇒ Step 3

What do you need to print

cout << "\*" << endl;

Eg/ row 4

```

1 * * * *
2 * * *
3 * *
4 *

```

Parent's Sign. ....

n = 4

col will  
for this go  
from n to 1

OR  
put  
formula  
in col  
col = N - row + 1

Teacher Sign. ....

Life is a promise, fulfill it.

Date.....

Day.....

Eg 2

1  
1 2  
1 2 3  
1 2 3 4

Outer loop  $\rightarrow$  row: Same  
Inner loop  $\rightarrow$  Same  
Output  $\rightarrow$  put col instead of \*

Eg 3No. of  
star.

0	1	*
1	2	* *
2	3	* * *
3	2	* * -
4	1	* - -

 $col = 2n - row$ for  $n=3$ , we have 5 rows:  $2n-1$ if  $row > n$ : $col = 2n - row$ 

else:

 $col = row$  $\rightarrow$  Brainstorm  
 $exp^n$  for  
every  
col.

Date.....

Day.....

Eg 4

```

_ _ _ _ *
_ _ _ * *
_ _ * * *
_ * * * *
* * * * *
  * * * *
    * * *
      * *
        *

```

Space =  $n - col$ .  
Total col =  $2n - row$ .

Date.....

Eg 5

```

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

```

$n=5 \rightarrow \text{row}$

Day.....

```
for (int row=1; row<=n; row++)
{
  for (int col=row; col>=1; col--)
  {
    ①
  }

```

Space  $\Rightarrow$

```
for (int space=0; space<=n-row;
     space++)
{
  cout << " " << endl;
}

```

```
for (int col=2; col<=row; col++)
{
  cout << col << endl;
}

```