Patterns Questions:

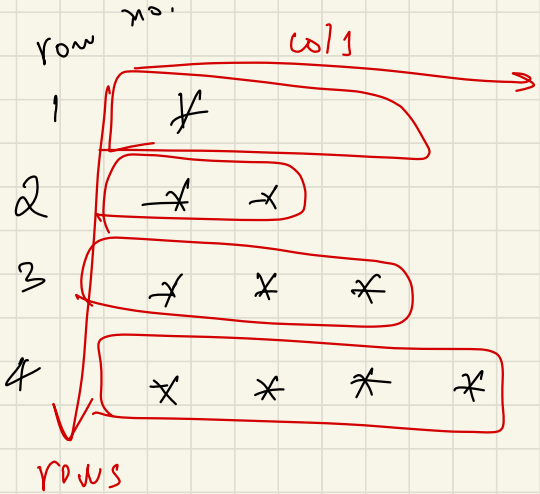
How to approach:

1. no. of lines = no. of rows
   = no. of times outer loop will run.

2. Identify for every row no.,
   - How many cols are there
   - Types of elements in col

3. What do you need to print

Note: Try to find the formula relating r & c



4 rows,

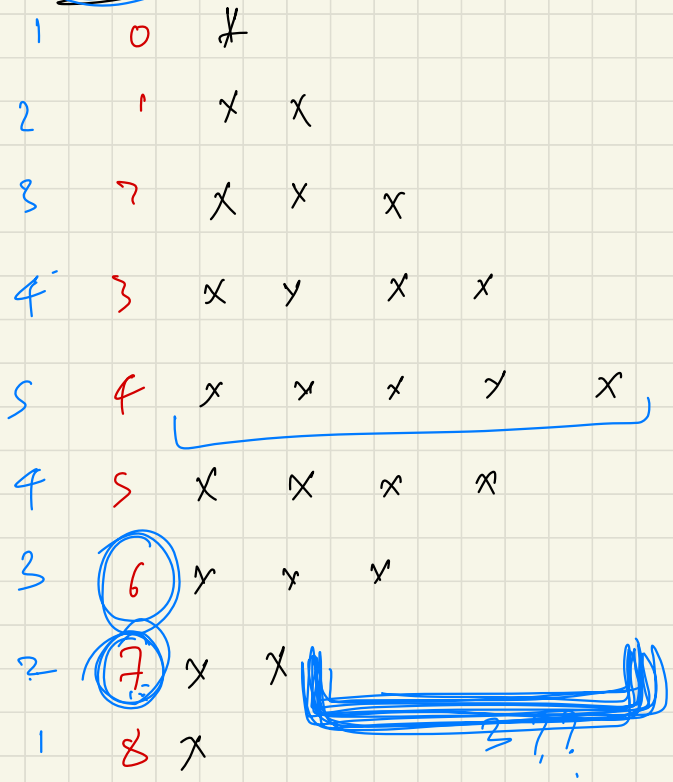
1st row → 1 col
2nd r → 2 cols
3rd r → 3 cols
4th row = 4 cols

r					
4	0	*	*	*	*
3	1	*	*	*	
2	2	*	*		
1	3	*			

$N = 4$

$C = N - r$

N = 5



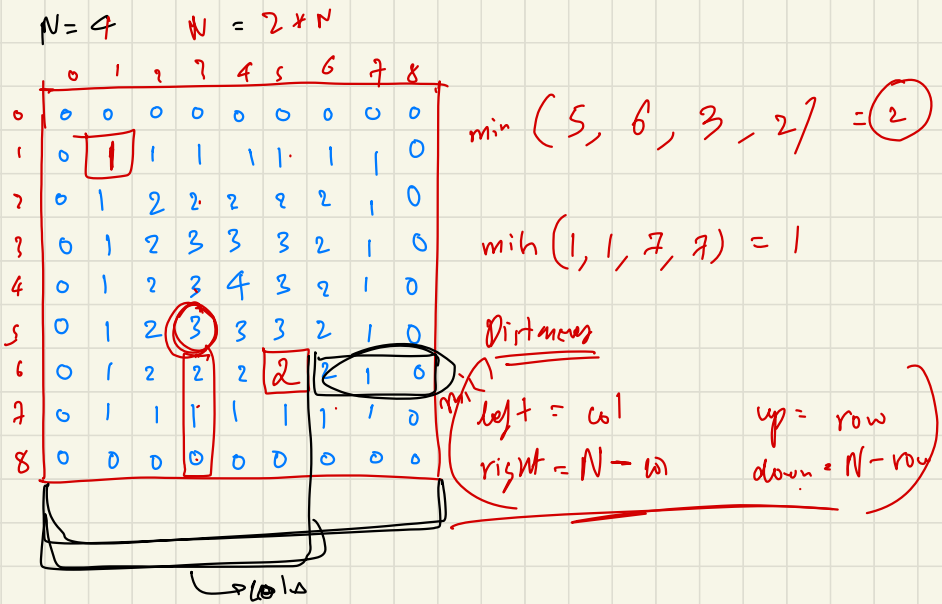
if row no. $\geq N$:

col = $N - (row - N + 1)$

else

= $2N - row - 1$

col = row


N = 4
N = 2 * N
0 1 2 3 4 5 6 7 8
0 0 0 0 0 0 0 0 0
1 0 1 1 1 1 1 1 0
2 0 1 2 2 2 2 2 1 0
3 0 1 2 3 3 3 2 1 0
4 0 1 2 3 4 3 2 1 0
5 0 1 2 3 3 3 2 1 0
6 0 1 2 2 2 2 2 1 0
7 0 1 1 1 1 1 1 1 0
8 0 0 0 0 0 0 0 0 0
min (5, 6, 3, 2) = 2
min (1, 1, 7, 7) = 1
Distances
left = col
right = N - col
up = row
down = N - row