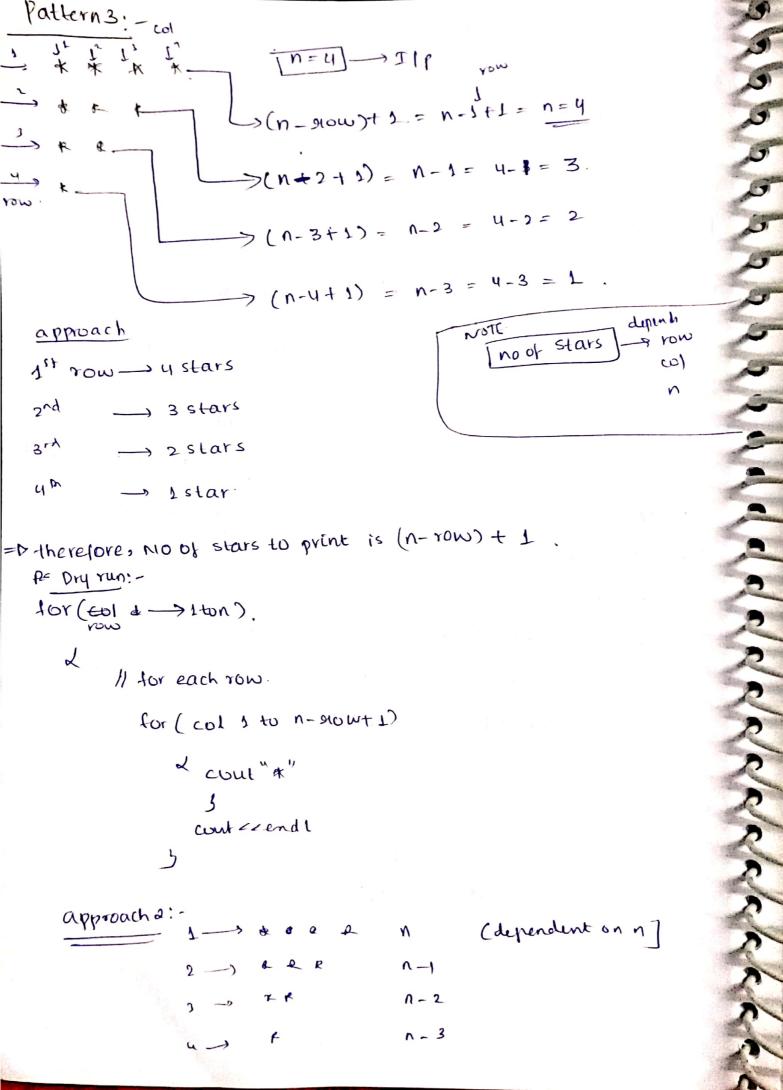
Days: Pattern Solving = Pattern solving -> 25 1 Ilp-> n=4 \_\_\_ wlumn. Olb 123 # 4 # 4 row 2<sup>rd</sup> > R & P & Print this squ | Ym > R & R & COUNTERED Print this square pattern courcendi; approach: - row = 4 jirroni = u columns given data --> row Dolumn Don ( 4 rows hai) - each now - 4 st-ars. so, cal = row code: Int main (1 1 int n=4; for (int row=1; rowz=n; row++) d. Mor each row, print n stars or we have n col for (int col=1; col=n; col++) 2. cout << " \* "; cout zeendi - Ufor new line. return 0)

19/1/2002

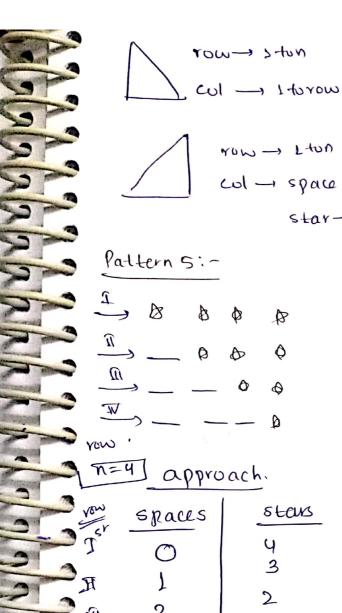
```
Pattern 21-
              10
 M \longrightarrow
Pattern 2: - Hall-pyramid
                     I
M
                                        approach :-
                  \omega
olp - x *
                                         for (row -1 to n)
     M
                                              1) for each son
                                               stars count = row no
                                              for (int col -> slow no)
  code:-
 int main () {
      int n=5;
      for (int row=1) row ==n; row++) 1.
               // for each row, print stars = row ka no =
               for (int col=1; col <= now; col++) L
                     cout << " *";
                   Mafter every row
                   cout «endli
```

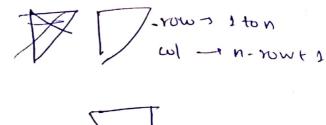


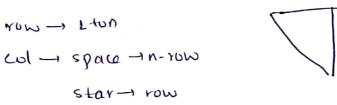
```
code:-
   int main() L
       int n=5;
       for (int row=1; rowz=n; row++) &
            111 or each row
            for (int col=1) col = n-rowt1; col++) d
                  cout << " *";
                l'after each row
                 cout 22 end 1;
               return 0)
  Pattern 4:
                                m-snow )- space.
                       HAT M=4
                                   4-1=3.
I
                                    4 - 2 = 2
M
                                    4-3=1.
   Approach
             n-80W
```

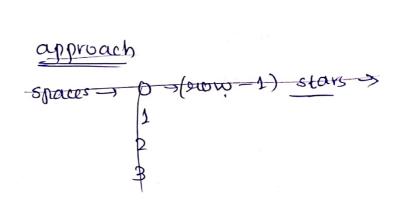
```
Dry run: -
  for (int row - 1 ton)
    1
       for (col 1 to n. row)
         1 cout << " ";
         for (col - 1 to row)
            L coutez " A"
            wutzzendi)
code: - int main (12.
                int n=5)
                for (int row=); row <=n; row++) L.
                   11 for each row
                   lispaces
                   for ( int col = 1 ; col z = n-row; col++) /
                          cout 26 ";
                    بج
                     1 Stars
                     for (int col=1; col == row; col++) {
                            cout << " ";
                    3
                   paster each row
                    cout < cendly
                 return o)
```

Scanned with CamScanner



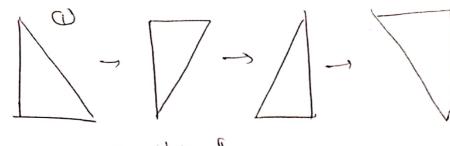


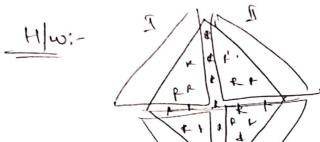




$$n=4$$
,  $row=1$ .  $\rightarrow [n-row+1]=n-1+1=n=4$   
 $n=4$ ,  $row=2$   $\rightarrow n=2+1=3$  (stars)  
 $n=4$ ,  $row=3$   $\rightarrow 2$   
 $\rightarrow row=4$   $\rightarrow 1$ 

```
code
 int main(12
     int n=5;
     for (int row=1) row Z=n; rowt+) &
          11 for each even
          11spaces
          lor (int col=1) col = row-1; col++) <
               coute < " ";
            3
            //stars
            for (int col = 1; col = n-rowt1; col+t) 1
                  cout << " * ";
               3
              Majter each row
              cout 22 endi;
           return o)
Note: (=) → assignment
        V= 23 -> [2]
      <= >compalision ~ (a <= b) -> T[F
```





M

Pattern 6:- 4/w

NOTE: j = 2 then and we want to obtain 3  $N - j = 3 \longrightarrow$  we obtained pattern

solid By Pramond

to obtain 7, > i+j=

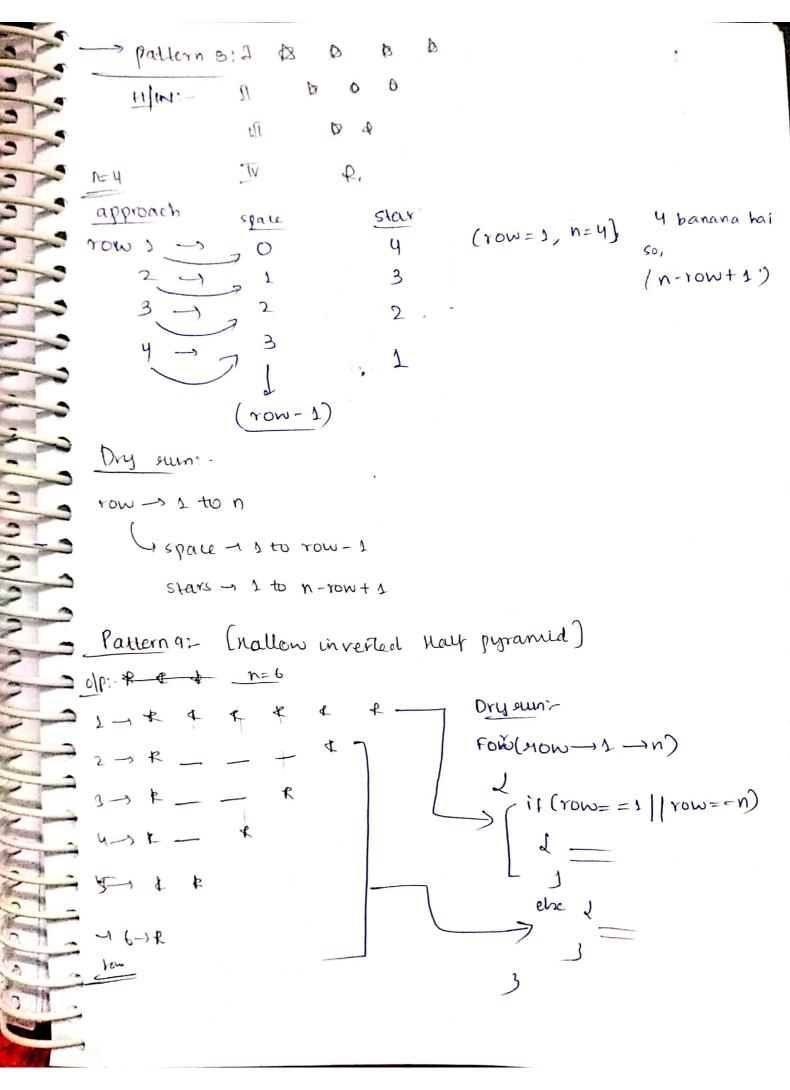
 $2^{rd} \longrightarrow 2^{slav}$   $2^{rd} \longrightarrow 2^{slav}$ 

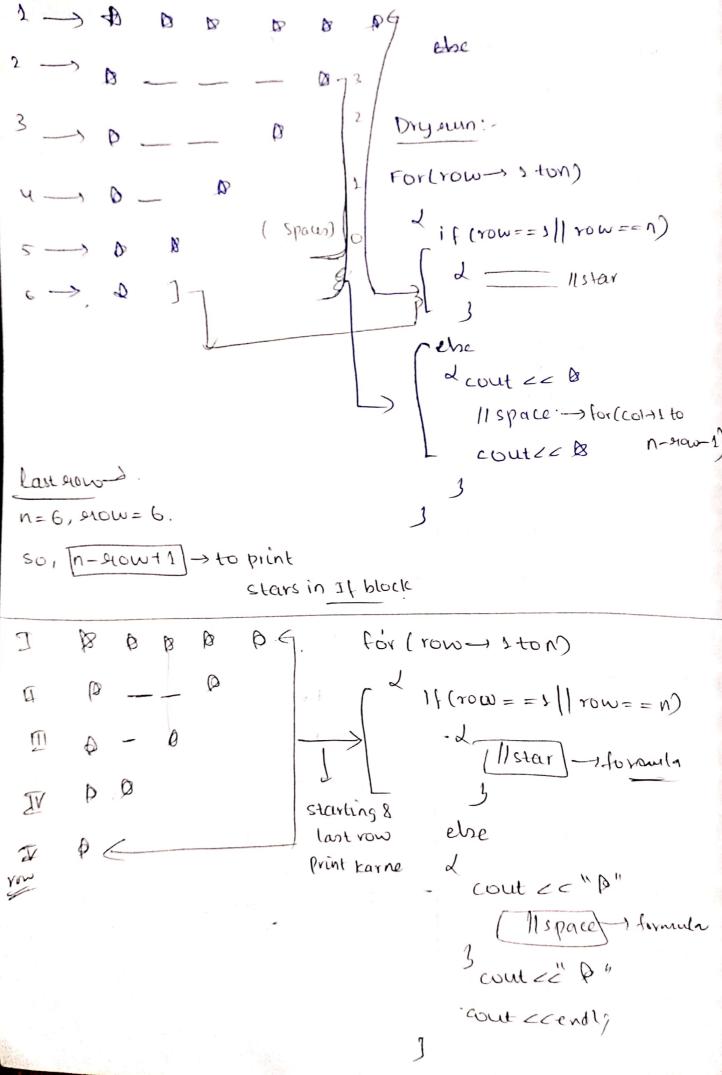
Um \_ 38tarts.

(y) 
$$row = 1$$
,  $n = 4$ ,  
 $n - 910w + 1 = n - x + k = n = 4 + 0$  obtained

```
Pattern 7: - Full pyramid! -
            0
                B
                      Φ,
  0
        B
                    slar [n=4]
         n=4
                               n=u, row=1 -> 1 star aana hai
            spale
1st (row) ->
                     1
                               N=4, row=2 -> 2 Star aana hai
                               n=4, row=3 ->
                     3
                                n=4, row=4 \rightarrow 4
                     4
                         -) row.
           N-YOW
 row=1
          code:-
         int main() &
code
               int n=5j
                for (int row=1) rowz=n; rowtt) L
                   1) for each row
                    llspaces
                    for (int col = 1; col = n-row; col ++)?
                         contec" ";
                    11 Stars
                    for (int icol=1; colc=row; col++) {
                  coat << endl)
```

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Scanned with CamScanner

```
5 banana hai
   5-1+1=5 -> n-how+1 = stars to print
                               in It block
           2 banana hai
50, n-910w-1 = 5→2-1=3 = spaces to print
                                 in [else block]
code 1-
int main () L.
     int n=6;
     for (int row=1; rowz=n; row++) 1
            if (row == 1 | row == n) d / for 1're last row.
                 11 stars
                 for (int col=1; colz=n-910w+1; col++)
                         cout < < " >";
                     cout << "P";
                       11 space
                       for (int col=1) col <= 200-1; col++) 2
                             cout << " ";
```

```
Cout 20"P";
             Master each now
             coutzzend1)
           FOW
           seller o'
           Hisull stallow pyramid]
Pattern 102
                               $
Pattern 11: - Half pyramid: -
                                Pattern 12
                                    Inverted Half
                                          Pyramid
       2
                                              3
                                                  45
        2 3
                                              3
                                                 Ч
                                        1 2
                Ч
                                       12
```

Hollow Half Pyramid  1 232 34543 12345 14456765 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 12345 112345 11246 1107 cach now, print star = Yow La no.  107 <= COl <= ""; olp:-  1234 123 1124 1234 1234 1234 1234 1234	Pattern 131-	Pattern 14
2 3 2  3 4 5 4 3  4 5 6 7 6 5 4  1 2 3 4 5  Pattern 15  Pattern 16  Mollow full pyramid  1 2 1 2 3 4 5  1 2 3 4 5  Pattern 11:- Half pyramid  int main () d  Int n=5;  for (int row=2; rowz=n; row++) d  If we each now, print stare = rowta no.  for <= col <= "";  J (4) 1 2 3  If when each row  Coul <= cond;  1 2 3  If when each row  Coul <= cond;  1 2 3  If when each row  Coul <= cond;  1 2 3  If when each row  Coul <= cond;  I 2 3  If when each row  Coul <= cond;  I 2 3  If when each row  Coul <= cond;  I 2 3  If when each row  Coul <= cond;  I 2 3  If when each row  Coul <= cond;  I 2 3  If when each row  Coul <= cond;  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3  I 2 3		
1 2 3 4 5 4 3 4 5 4 3 4 5 4 5 4 5 4 5 4 5 4	,	
1	1 2	
fattern 15  Pattern 15  Mollow full pyramid  Mallow Inverted Maly  Pyramid  1 2 3 4 5  1 2 3 4 5  Pattern 11:- Half pyramid  int n=5;  for (int row=2;rowz=n; row++7)  Mor each now prinir star = rowtano.  for z=col z="";  Juster each row  cout z=cond;  1 2 3	1 2	4562654
Pattern 15  Mollow full pyramid  Mallow Inverted Maly  Pyramid  1 2 3 4 5  1 2 3 4 5  Pattern 11:- Half pyramid  int main (1)d  Int n=5;  for (int row=2;rowz=n; row++)d  // (int row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;row=2;r	1 2 3 4 5	5 6 7 8 9 8 3 6 <u>7</u>
1 2 1 2 3 4 5  1 2 3 4 5  1 2 3 4 5  1 2 3 4 5  Pattern 11:- Healf pyranuid  int main (1)d  Int n=5;  for (int row=1;rowz=n;row++)d  // live each now, print starz = rowtano.  for <= col <= ""; olp:-  1 2 3 4  Luttar each row  Lutter each row  L		Pattern 16
1 2 1 2 3 4 5  1 2 3 4 5  1 2 3 4 5  Pattern 11:- Half pyramid  int main () d  Int n=5;  for (int row=2; rowz=n; row++7)  // ller each now, print stars = rowta no.  for <= col <= "";  Justa each row  Lut <= cond:  Lut <= cond:	Mollow full pyramid	Mallow Inverted Maly
Pattern 11:- Half pyramid  int main () d  int n=5;  for (int row=2; row c=n; row++) d  // live each now, print stare = row to no.  for ce col ce "";  // upter each row  cout ce end!  1 2 3.		Pyramio
Pattern 11:- Half pyramid  int main () d  Int n=5;  for (int row=2; row z=n; row++) d  Iller each now print stars = row to a no.  for z=col z="";  I wyther each row  count z=cend 1.	.1 2	1 2 3 4 5
Pattern 11:- Half pyramid  int main (1)d  Int n=5;  for (int row=2; rowz=n; row++)d  // for each now, print stars= row La no.  for ze col ze "";  Justa each row  Cout ze end!	<u>j</u> 3	-2 5
Pattern 11:- Half pyranuid  int main (1)d  Int n=5;  for (int row=1;rowz=n;row++)d  // or each now, print stars=row to no.  for <= col <= "";  // upter each row  (2)  (2)  (2)  (2)  (2)  (2)  (2)  (2	и	
int main ()d  Int n=5;  for (int row=2;rowz=n; row++)  // lifer each now, print stars = rowtano.  for <= col <= "";  Justa each row  1 2 1  Cout <= end 1.  1 2 2		,
Int n=5;  for (int row=2; rowz=n; row++)  // lor each now, print stars = rowtano.  for <pre> for <pre></pre></pre>	Pattern 11:- Half pyranud	[deive linte
for (int row=2)rowz=n; row++)/  // lor each now, print stars = row La no.  for z < col z < "";  Justus each row    2 1  cout z < end 1.	int main () d	
Hor each now, print stars = You kano.  for <pre> for <pre></pre></pre>	int n=5)	
for 2001 20 "";  Justu each row  1 2 3  west 20 end!	for (int row=2) row	$0 \leq n \leq row + t ) \leq$
1 Wyter each row 1 2 3 cout 20 end!	Il for each now, t	print stars = You kano.
1 With each row 1 2 3 cout 20 end!	for ze col ze	olp:-
Cout 20 end!	3	1 2
cout 20 end 1.	11 cepter each ro	w ( 2 3
	cout 2c end 1.	1 2 3 4
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