

```

1  -  -  x  x
2  -  -  x  x  x
3  -  x  x  x  x  x
4  x  x  x  x  x  x
5  -  x  x  x  x
6  -  -  x  x  x
7  -  -  -  x

```

```

public static void pattern5_diamond(int n) {
    int nsp = n / 2, nst = 1;
    for (int r = 1; r <= n; r++) {
        for (int csp = 1; csp <= nsp; csp++)
            System.out.print(" ");

        for (int cst = 1; cst <= nst; cst++)
            System.out.print("*");

        if (r == (n/2+1))
            nsp--;
            nst += 2;
        else {
            nsp++;
            nst -= 2;
        }
        System.out.println();
    }
}

```

```

x x x - x x x
x x - - x x
x - - - x
x x - - x x
x x - - x x
x x x - x x x

```

```

1 * * * - * *
2 * * - - - *
3 * - - - - *
4 * - - - - *
5 * * * - * *

```

```

public static void pattern6_HollowDiamond(int n) {
    if (n % 2 == 0)
        n++; // convert into odd number.
    int nsp = 1, nst = (n / 2 + 1);
    for (int r = 1; r <= n; r++) {
        // stars
        for (int cst = 1; cst <= nst; cst++)
            System.out.print("*");

        // spaces
        for (int csp = 1; csp <= nsp; csp++)
            System.out.print(" ");

        // stars
        for (int cst = 1; cst <= nst; cst++)
            System.out.print("*");

        if (r <= n / 2) {
            nst--;
            nsp += 2;
        } else {
            nst++;
            nsp -= 2;
        }
        System.out.println();
    }
}

```

```

h  nst  nsp
7  1    3
9  1    4
11 1    5
m  1    m/2

```

r	nsp	nst
1	3	1
2	2	2
3	1	3
4	0	4
5	1	5
6	2	4
7	3	1

r	nst	nsp
5	3	1
6	4	1
7	5	1
8	4	1
9	3	1
m	(m+1)/2	1

r	nst	nsp
1	3	1
2	2	2
3	1	3
4	2	2
5	3	1

ap

h=5

	1	2	3	4	5
1	11	12	13	14	15
2	21	22	23	24	25
3	31	32	33	34	35
4	41	42	43	44	45
5	51	52	53	54	55

1	x				
2		x			
3			x		
4				x	
5					x

8=20

0	0	0
0	1	1
1	0	1
1	1	1
+		f
+		T
T		T
T		T

(8+6=14)

1					x
2				x	
3			x		
4		x			
5	x				

??

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

```

ap 1 x - - - x
2 - x - - x
3 - - x
4 - x - - x
5 x - - - x

```

h	nsp1	nsp2
5	0	3
7	0	5
9	0	7
m	0	m-2

x - - - x

(8n)/2

```

public static void pattern7_diamond(int n) {
    int nsp1 = 0, nsp2 = n - 2;
    for (int r = 1; r <= n; r++) {
        for (int csp1 = 1; csp1 <= nsp1; csp1++)
            System.out.print(" ");

        System.out.print("*");

        for (int csp2 = 1; csp2 <= nsp2; csp2++)
            System.out.print(" ");

        System.out.print("*");
    }
}

```