Half Pyramid

Inverted Half Pyramid

Hollow Inverted Half Pyramid

Full Pyramid

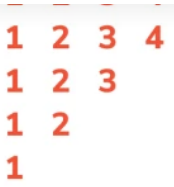
Inverted Full Pyramid

Hollow Full Pyramid

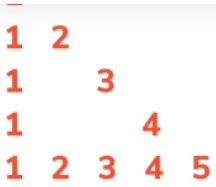
#3 - Pyramid Pattern Programs in C, C++, and Java using numbers

Click here to see the program to print the Pyramid Patterns below using numbers.

Half Pyramid

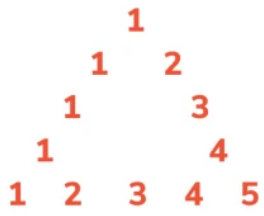


Inverted Half Pyramid



Hollow Half Pyramid

Full Pyramid

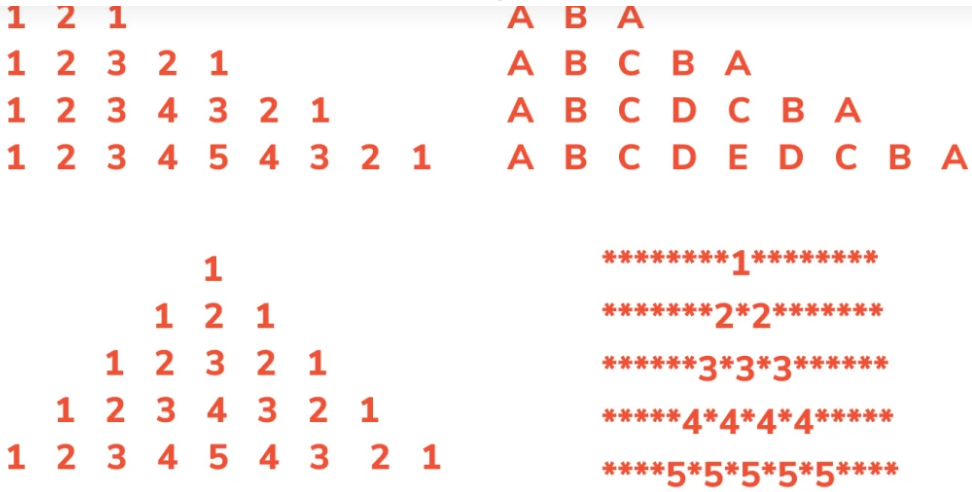


Hollow Full Pyramid

Hollow Inverted Half Pyramid

#4 - Palindrome Pyramid Pattern Programs in C, C++, and Java using numbers & Alphabets

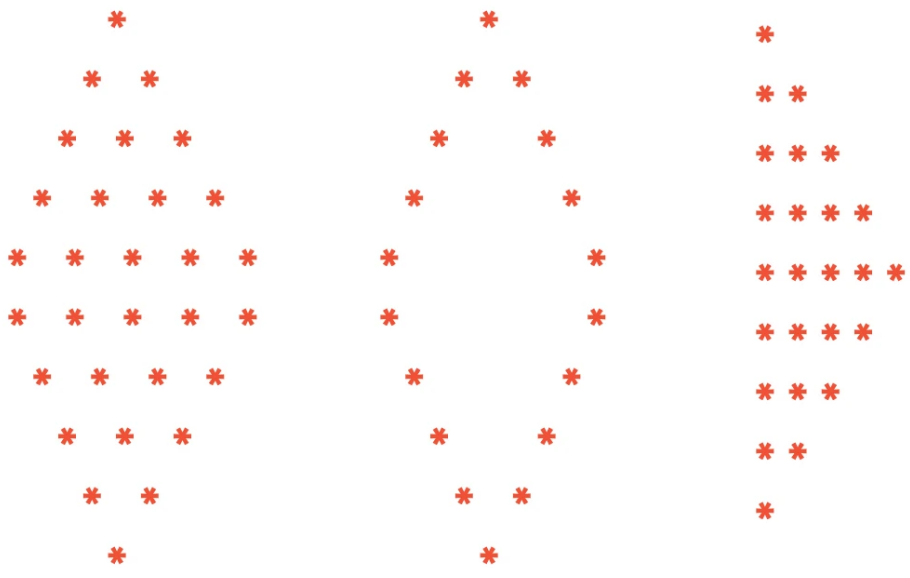
Click here to see the program to print the pattern shown below using numbers and alphabets.



Different types of Palindrome Pyramid Patterns

#5 - Diamond Pattern Programs in C, C++, and Java using stars

Click here to get the program to print the Diamond pattern programs using stars.



Solid Diamond | Hollow Diamond | Solid Half Diamond

Program to print the patterns below using numbers and stars:

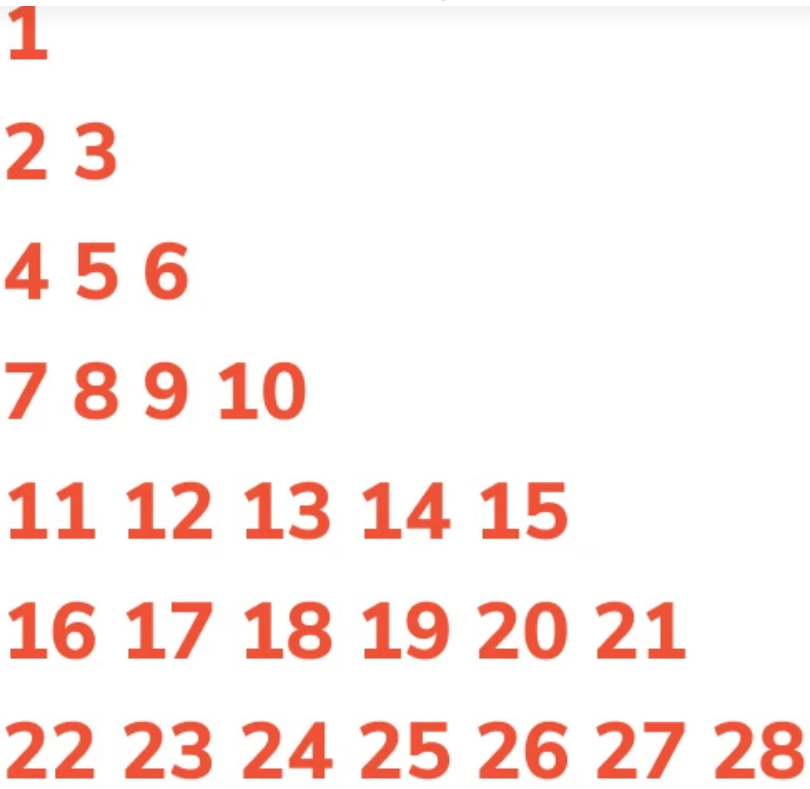
- **Click here to view the solution of the first 3 problems.**
- **Click here to view the solution of the 4th problem.**

```
3          1          1          *
44         2*2        2*3        * 1 *
555        3*3*3      4*5*6      * 1 2 1 *
6666       4*4*4*4    7*8*9*10   * 1 2 3 2 1 *
555        4*4*4*4    7*8*9*10   * 1 2 1 *
44         3*3*3      4*5*6      * 1 *
3          2*2        2*3        *
           1          1
```

Different types of Solid Half Diamonds

#7 - Floyd's Triangle Pattern Program in C, C++, Java, Python

To know the solution to print Floyd's triangle below, click here.



#8 - Pascal's Triangle Pattern Program in C, C++, Java, Python

Click here to know the detailed solution of the below shown Pascal's triangle.

row 0 =1

row 1 = (0+1), (1+0) = 1, 1

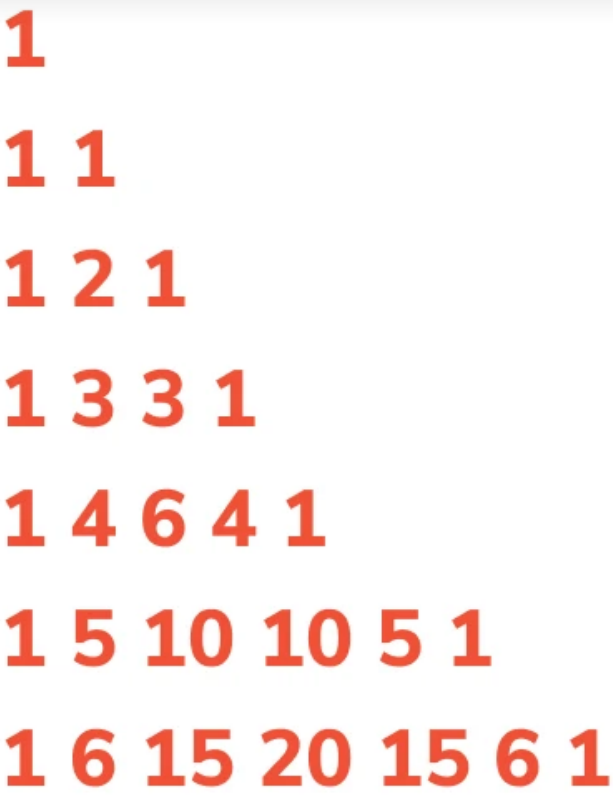
row 2 = (0+1), (1+1), (1+0) = 1, 2, 1

row 3 = (0+1), (1+2), (2+1), (1+0) = 1, 3, 3, 1

row 4 = (0+1), (1+3), (3+3), (3+1), (1+0) = 1, 4, 6, 4, 1

row 5 = (0+1), (1+4), (4+6), (6+4), (4+1),(1+0) = 1, 5, 10, 10, 5, 1

row 6 = (0+1), (1+5), (5+10), (10+10), (10+5), (5+1), (1+0) = 1, 6, 15, 20, 15, 6, 1



#9 - Hollow Diamond Inscribed in a Rectangle

Input: 5

Output:

Solution for diamond inscribed inside rectangle:

C

```
#include <stdio.h>
int main()
{
   int i, j, n;
   scanf("%d", &n);
   // upper half of the pattern
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < (2 * n); j++)
      {
         if(i + j <= n - 1)  // upper left triangle
            printf("*");
```

```
            printf("*");
         else
            printf(" ");
      }
      printf("\n");
   }
   // bottom half of the pattern
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < (2 * n); j++)
      {
         if(i >= j)  //bottom left triangle
            printf("*");
         else
            printf(" ");
         if(i >= (2 * n - 1) - j)  // bottom right triangle
            printf("*");
         else
            printf(" ");
      }
      printf("\n");
   }
   return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
   int i, j, n;
   cin >> n;
   // upper half of the pattern
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < (2 * n); j++)
      {
         if(i + j <= n - 1)  // upper left triangle
            cout << "*";
         else
            cout << " ";
         if((i + n) <= j)  // upper right triangle
            cout << "*";
         else
            cout << " ";
      }
      cout << "\n";
   }
   // bottom half of the pattern
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < (2 * n); j++)
      {
         if(i >= j)  // bottom left triangle
```

```
            if(i >= (2 * n - 1) - j)  // bottom right triangle
               cout << "*";
            else
               cout << " ";
         }
         cout << "\n";
      }
      return 0;
}
```

Java

```
import java.util.Scanner;
public class Main{
   public static void main(String args[])
   {
      Scanner sc = new Scanner(System.in);
      int i, j;
      int n = sc.nextInt();
      // upper half of the patternfor(i = 0; i < n; i++)
      {
         for(j = 0; j < (2 * n); j++)
         {
            if(i + j <= n - 1)  // upper left triangle
               System.out.print("*");
            else
               System.out.print(" ");
            if((i + n) <= j) // upper right triangle
               System.out.print("*");
            else
               System.out.print(" ");
         }
         System.out.println();
      }
      // bottom half of the patternfor(i = 0; i < n; i++)
      {
         for(j = 0; j < (2 * n); j++)
         {
            if(i >= j)  // bottom left triangle
               System.out.print("*");
            else
               System.out.print(" ");
            if(i >= (2 * n - 1) - j)  // bottom right triangle
               System.out.print("*");
            else
               System.out.print(" ");
         }
         System.out.println();
      }
   }
}
```

#10 - Butterfly Pattern Printing

Input: 5

Output:

Solution for Butterfly Pattern:

C

```
#include <stdio.h>
int main()
{
   int i, j, n;
   scanf("%d", &n);
   // upper half of the pattern
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < (2 * n); j++)
      {
         if(i >= j)  // upper left triangle
            printf("*");
```

```
            printf("*");
        else
            printf(" ");
    }
    printf("\n");
  }
  // bottom half of the pattern
  for(i = 0; i < n; i++)
  {
    for(j = 0; j < (2 * n); j++)
    {
      if(i + j <= n - 1) // bottom left triangle
        printf("*");
      else
        printf(" ");
      if((i + n) <= j) // bottom right triangle
        printf("*");
      else
        printf(" ");
    }
    printf("\n");
  }
  return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
  int i, j, n;
  cin >> n;
  // upper half of the pattern
  for(i = 0; i < n; i++)
  {
    for(j = 0; j < (2 * n); j++)
    {
      if(i >= j) // upper left triangle
        cout << "*";
      else
        cout << " ";
      if(i >= (2 * n - 1) - j)  // upper right triangle
        cout << "*";
      else
        cout << " ";
    }
    cout << "\n";
  }
  // bottom half of the pattern
  for(i = 0; i < n; i++)
  {
    for(j = 0; j < (2 * n); j++)
    {
      if(i + j <= n - 1)  // bottom left triangle
```

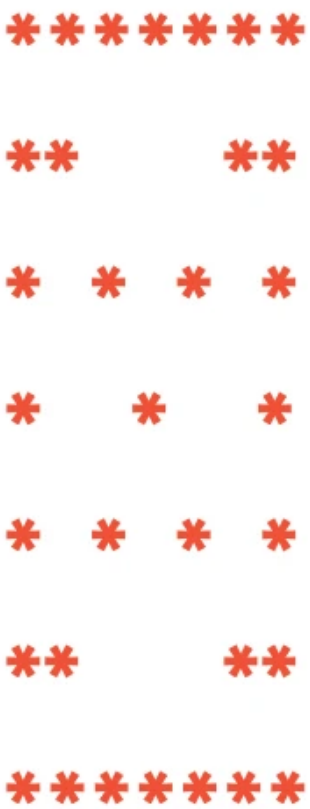
```
            if((i + n) <= j)  // bottom right triangle
               cout << "*";
            else
               cout << " ";
         }
         cout << "\n";
      }
      return 0;
}
```

Java

```
import java.util.Scanner;
public class Main{
   public static void main(String args[])
   {
      Scanner sc = new Scanner(System.in);
      int i, j;
      int n = sc.nextInt();
      // upper half of the patternfor(i = 0; i < n; i++)
      {
         for(j = 0; j < (2 * n); j++)
         {
            if(i >= j)  // upper left triangle
               System.out.print("*");
            else
               System.out.print(" ");
            if(i >= (2 * n - 1) - j)  // upper right triangle
               System.out.print("*");
            else
               System.out.print(" ");
         }
         System.out.println();
      }
      // bottom half of the patternfor(i = 0; i < n; i++)
      {
         for(j = 0; j < (2 * n); j++)
         {
            if(i + j <= n - 1)  // bottom left triangle
               System.out.print("*");
            else
               System.out.print(" ");
            if((i + n) <= j)  // bottom right triangle
               System.out.print("*");
            else
               System.out.print(" ");
         }
         System.out.println();
      }
   }
}
```


#11 - Diagonal & Sides of a Rectangle

Output:



Solution for Printing the diagonal and sides of a rectangle:

C

```
#include <stdio.h>
int main()
{
   int i, j, n;
   scanf("%d", &n);  // 'n' must be odd
   for(i = 0; i < n; i++)
   {
      for(j = 0; j < n; j++)
      {
         // left diagonal, right diagonal, top horizontal, bottom horizontal, left vertical, right ve
         if(i == j || i + j == n - 1 || i == 0 || i == n - 1 || j == 0 || j == n - 1)
            printf("*");
         else
            printf(" ");
```

```
    return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
int i, j, n;
cin >> n;  // 'n' must be odd
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// left diagonal, right diagonal, top horizontal, bottom horizontal, left vertical, right vertical
if(i == j || i + j == n - 1 || i == 0 || i == n - 1 || j == 0 || j == n - 1)
cout << "*";
else
cout << " ";
}
cout << "\n";
}
return 0;
}
```

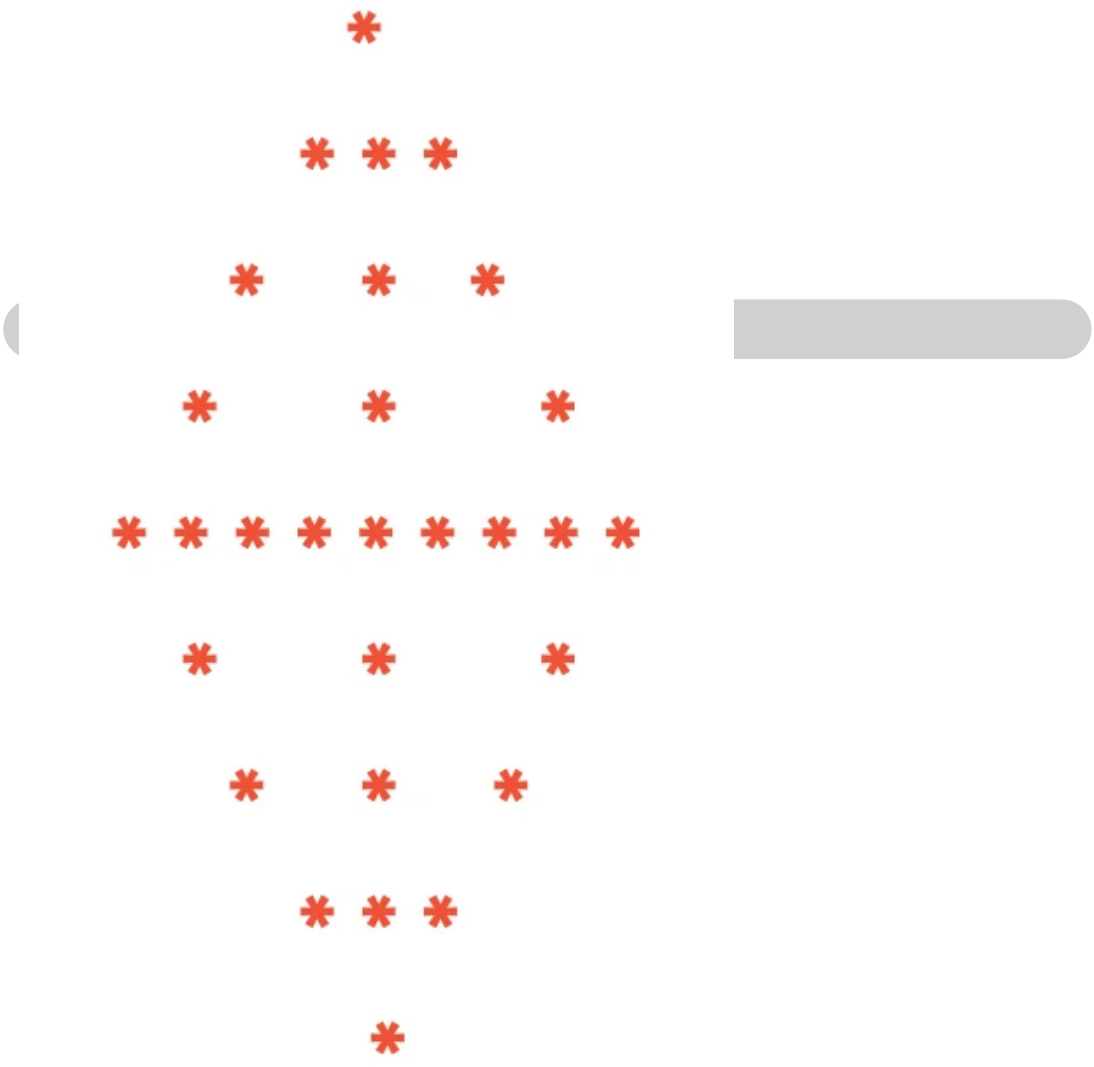
Java

```
import java.util.Scanner;
public class Main
{
public static void main(String args[])
{
Scanner sc = new Scanner(System.in);
int i, j;
int n = sc.nextInt();  // 'n' must be odd
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// left diagonal, right diagonal, top horizontal, bottom horizontal, left vertical, right vertical
if(i == j || i + j == n - 1 || i == 0 || i == n - 1 || j == 0 || j == n - 1)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}
```

#12 - Diagonal & Sides of a Rhombus/Diamond

Input: 9 (input should be an odd number only, else the desired output will not be obtained)

Output:



Solution for Printing the diagonal and sides of a Rhombus/Diamond:

C

```
#include <stdio.h>
int main()
```

```
int num1 = n / 2 * 3;
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, center vertical, upper left diagonal, bottom left diagonal, upper right di
if(i == n / 2 || j == n / 2 || i + j == n / 2 || i - j == n / 2 || j - i == n / 2 || i + j == num1)
printf("*");
else
printf(" ");
}
printf("\n");
}
return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
int i, j, n;
cin >> n;  // 'n' must be odd
int num1 = n / 2 * 3;
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, center vertical, upper left diagonal, bottom left diagonal, upper right di
if(i == n / 2 || j == n / 2 || i + j == n / 2 || i - j == n / 2 || j - i == n / 2 || i + j == num1)
cout << "*";
else
cout << " ";
}
cout << "\n";
}
return 0;
}
```

Java

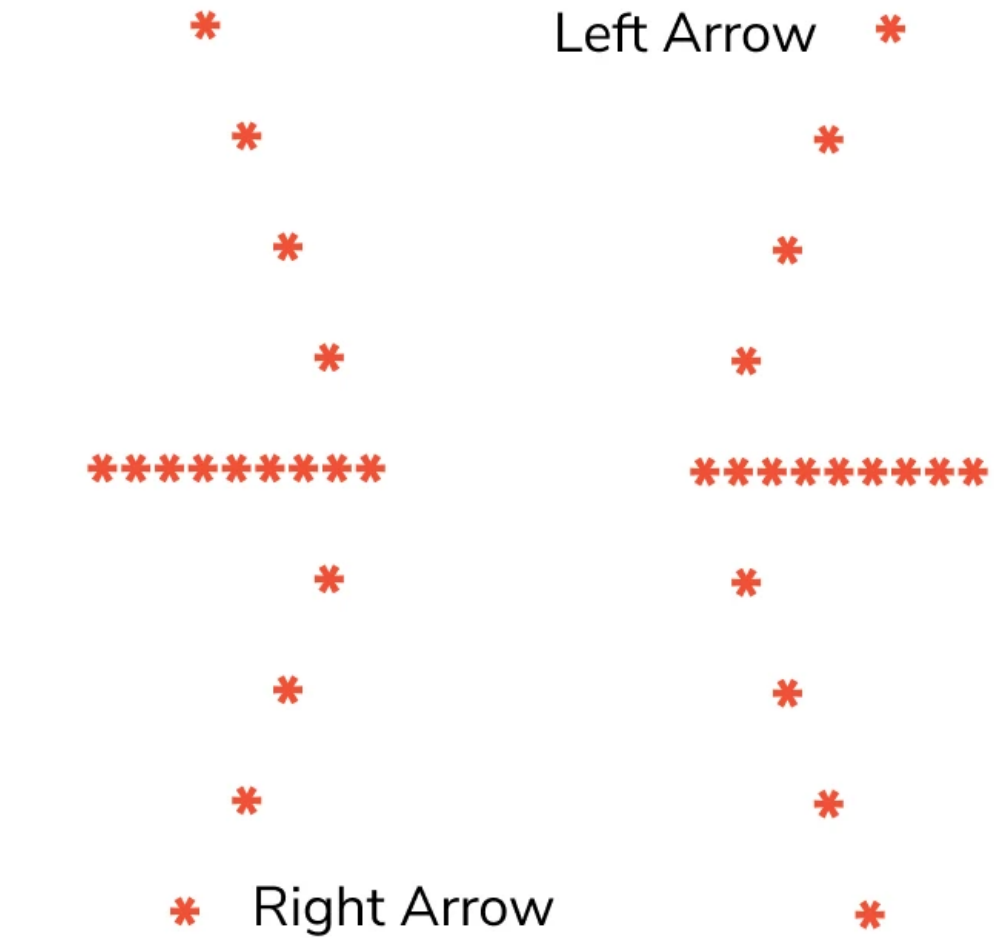
```
import java.util.Scanner;
public class Main
{
public static void main(String args[])
{
Scanner sc = new Scanner(System.in);
int i, j;
int n = sc.nextInt();  // 'n' must be odd
int num1 = n / 2 * 3;
```

```
{
// center horizontal, center vertical, upper left diagonal, bottom left diagonal, upper right di
if(i == n / 2 || j == n / 2 || i + j == n / 2 || i - j == n / 2 || j - i == n / 2 || i + j == num1)
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}
}
}
```

#13 - Left and Right Arrows

Input: 7 (Here n is the height and width of the pattern to be printed)

Output:



```
#include <stdio.h>
int main()
{
int i, j, n;
scanf("%d", &n);  // ‘n’ must be odd
int num1 = n / 2 * 3;
// right arrow
printf("Right Arrow\n");
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, upper right diagonal, bottom right diagonal
if(i == n / 2 || j - i == n / 2 || i + j == num1)
printf("*");
else
printf(" ");
}
printf("\n");
}
// left arrow
printf("Left Arrow\n");
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, bottom left diagonal, upper left diagonal
if(i == n / 2 || i - j == n / 2 || i + j == n / 2)
printf("*");
else
printf(" ");
}
printf("\n");
}
return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
int i, j, n;
cin >> n;  // ‘n’ must be odd
int num1 = n / 2 * 3;
// right arrow
cout << "Right Arrow" << endl;
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, upper right diagonal, bottom right diagonal
```

```
cout << " ";
}
cout << "\n";
}
// left arrow
cout << "Left Arrow" << endl;
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, bottom left diagonal, upper left diagonal
if(i == n / 2 || i - j == n / 2 || i + j == n / 2)
cout << "*";
else
cout << " ";
}
cout << "\n";
}
return 0;
}
```

Java

```
import java.util.Scanner;
public class Main{
public static void main(String args[])
{
Scanner sc = new Scanner(System.in);
int i, j;
int n = sc.nextInt();  // 'n' must be odd
int num1 = n / 2 * 3;
// right arrow
System.out.println("Right Arrow");
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, upper right diagonal, bottom right diagonalif(i == n / 2 || j - i == n / 2 ||
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}
// left arrow
System.out.println("Left Arrow");
for(i = 0; i < n; i++)
{
for(j = 0; j < n; j++)
{
// center horizontal, bottom left diagonal, upper left diagonalif(i == n / 2 || i - j == n / 2 || i +
System.out.print("*");
else
System.out.print(" ");
}
```

```
}
```

#14 - Rhombus Pattern Program in C, C++, Java

Input: 4

Output:

Solid Rhombus Hollow Rhombus

Solution for Printing a solid and hollow Rhombus:

C

```
#include <stdio.h>
int main()
{
int i, j, n;
scanf("%d", &n);
// solid rhombus
printf("Solid Rhombus\n");
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
```

```
for(j = 0; j < n; j++)
{
printf("*");
}
printf("\n");
}
// hollow rhombus
printf("Hollow Rhombus\n");
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
{
printf(" ");  // leading spaces
}
for(j = 0; j < n; j++)
{
// upper horizontal, bottom horizontal, left diagonal, right diagonal
if(i == 0 || i == n - 1 || j == 0 || j == n - 1)
printf("*");
else
printf(" ");
}
printf("\n");
}
return 0;
}
```

C++

```
#include <iostream>
using namespace std;
int main()
{
int i, j, n;
cin >> n;
// solid rhombus
cout << "Solid Rhombus" << endl;
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
{
cout << " ";  // leading spaces
}
for(j = 0; j < n; j++)
{
cout << "*";
}
cout << "\n";
}
// hollow rhombus
cout << "Hollow Rhombus" << endl;
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
{
```

```
{
// upper horizontal, bottom horizontal, left diagonal, right diagonal
if(i == 0 || i == n - 1 || j == 0 || j == n - 1)
cout << "*";
else
cout << " ";
}
cout << "\n";
}
return 0;
}
```

Java

```
import java.util.Scanner;
public class Main{
public static void main(String args[])
{
Scanner sc = new Scanner(System.in);
int i, j;
int n = sc.nextInt();
// solid rhombus
System.out.println("Solid Rhombus");
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
{
System.out.print(" ");  // leading spaces
}
for(j = 0; j < n; j++)
{
System.out.print("*");
}
System.out.println();
}
// hollow rhombus
System.out.println("Hollow Rhombus");
for(i = 0; i < n; i++)
{
for(j = 0; j < n - i; j++)
{
System.out.print(" ");  // leading spacesfor(j = 0; j < n; j++)
{
// upper horizontal, bottom horizontal, left diagonal, right diagonalif(i == 0 || i == n - 1 || j =
System.out.print("*");
else
System.out.print(" ");
}
System.out.println();
}
}
}
```