

While

#

Ques 1:

n = 5

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int i = 1;
    while (i <= n) {
        System.out.print("* ");
        i++;
    }
}
```

 $i = x$   $n = 5$   
 $x \times 3 \times 4 \times$ 

\* \* \* \* \*

Ques 1:

n = 5

5 \* \* \* \*

int star = n Row = 1

```
→ * * * * *
→ * * * * *
→ * * * * *
→ * * * * *
→ * * * * *
```

```
while (Row <= n) {
    // star
    int i = 1;
    while (i <= star) {
        System.out.print("* ");
        i++;
    }
    // next Row prep
    System.out.println();
    Row++;
}
```

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int row = 1;
    int star = n;
    while (row <= n) {
        // star
        int i = 1;
        while (i <= star) {
            System.out.print("* ");
            i++;
        }
        // next line prep
        System.out.println();
        row++;
    }
}
```

Row = 1 Star = 5

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
public class Pattern2 {
    public static void main(String[] args) {
        int n = 5;
        int row = 1;
        int star = 1;
        while (row <= n) {
            // star
            int i = 1;
            while (i <= star) {
                System.out.print("* ");
                i++;
            }
            // next line prep krna hai
            star++;
            row++;
            System.out.println();
        }
    }
}
```

N = 5

Star = 1 Row = 1

```
*
* *
* * *
* * * *
* * * * *
```

Ques 4:

n = 5

```
      *
     * *
    * * *
   * * * *
  * * * * *
```

Row = 1 Star = 1 Space = n-1

while (Row &lt;= n) {

// space

// star

next line ki prob

Space Row++ Star++ Space--

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int row = 1;
    int star = n;
    int space = 0;
    while (row <= n) {
        // space
        int i = 1;
        while (i <= space) {
            System.out.print(" ");
            i++;
        }
        // star
        int j = 1;
        while (j <= star) {
            System.out.print("* ");
            j++;
        }
        // next line ki prep
        System.out.println();
        row++;
        star--;
        space += 2;
    }
}
```

 $N = 5$  Row = 1 Star = 5 Space = 4  
 $2 \times 4$   $3 \times 3$   $4 \times 2$   $5 \times 1$ 

```
* * * * *
- - - - *
- - - - *
- - - - *
- - - - *
```

Ques 9:

n = 5

```
      *
     * *
    * * *
   * * * *
  * * * * *
```

Row = 1

Space = N-1 Star = 1

while (Row &lt;= n) {

// space

// star

// next

Row++

Star++

Space--

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int row = 1;
    int star = n;
    int space = n - 1;
    while (row <= n) {
        // space
        int i = 1;
        while (i <= space) {
            System.out.print(" ");
            i++;
        }
        // star
        int j = 1;
        while (j <= star) {
            System.out.print("* ");
            j++;
        }
        // next line ki prep
        System.out.println();
        row++;
        star -= 2;
        space--;
    }
}
```

N = 5

Row = 1

Star = 5

Space = 4

```
- - - - *
- - - * ! *
- - * ! * ! *
```

 $j = 1 \rightarrow *$   
 $j = 2 \rightarrow !$   
 $j = 3 \rightarrow *$   
 $j = 4 \rightarrow !$   
 $j = 5 \rightarrow *$ 

```
public class Pattern12 {
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int n = 5;
        int row = 1;
        int star = 1;
        int space = n - 1;
        while (row <= n) {
            int i = 1;
            while (i <= space) {
                System.out.print(" ");
                i++;
            }
            int j = 1;
            while (j <= star) {
                if (j % 2 == 0) {
                    System.out.print("! ");
                } else {
                    System.out.print("* ");
                }
                j++;
            }
            System.out.println();
            row++;
            star += 2;
            space--;
        }
    }
}
```

Row = 1 Star = 1 Space = 4

```
- - - - *
- - - * ! *
- - * ! * ! *
```

 $2 \times n - 1 - 2$   
 $= 2 \times n - 3$ 

Ques 21:

n = 5

```
      *
     * *
    * * *
   * * * *
  * * * * *
```

L = 5

W = 9

Row = 1

Star = 1

Space = 2 \* n

while (Row &lt;= n) {

// star

// space

// star

// next line prob

Star++

Space--

Point

1 + 0 = 1

```
public static void main(String[] args) {
    // TODO Auto-generated method stub
    int n = 5;
    int row = 1;
    int star = 1;
    int space = 2 * n - 3;
    while (row <= n) {
        // star
        int i = 1;
        while (i <= star) {
            System.out.print("* ");
            i++;
        }
        // space
        int j = 1;
        while (j <= space) {
            System.out.print(" ");
            j++;
        }
        // star
        int k = 1;
        while (k <= star) {
            System.out.print("* ");
            k++;
        }
        // next line ki prep
        System.out.println();
        space -= 2;
        star++;
        row++;
    }
}
```

Row = 1 Star = 1 Space = 2 \* n

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```