/*1.Write a java application to print the sum of the series:-

1+x+x^2+x^3+x^4+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_1{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
int i=1,term=1,sum=0;
System.out.println();
System.out.print("Enter no. of terms for sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
sum=sum+term;
i++;
term=term*x;
}//Close of while
System.out.println("Sum of "+n+"term="+sum);
}//Close of if
else
System.out.println("Must enter a positive no, try again!");
```

}//Close of main

Pattern5 - WHILE LOOP

}**//Close of class**

//OUTPUT

Enter no. of terms for sum required ::10

Enter value for base ::2

Sum of 10term=1023

/*2.Write a java application to print the sum of the series:-

1+x^2+x^4+x^6+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_2{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
int i=1,term=1,sum=0;
System.out.println();
System.out.print("Enter no. of term for sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
sum=sum+term;
```

Pattern5 - WHILE LOOP

```
i++;
term=term*x*x;
}//Close of while
System.out.println("Sum of "+n+" terms="+sum);
}//close of if
else
System.out.println("Must enter positive no, try again!");
}//Close of main
}//Close of class
```

//OUTPUT

```
Enter no. of term for sum required ::-5
Must enter positive no, try again!

Enter no. of term for sum required ::5
Enter value for base ::3
Sum of 5 terms=7381
```

/*3.Write a java application to print the sum of the series:-

1+1/x+1/x^2+1/x^3+1/x^4+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_3{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
```

Pattern5 - WHILE LOOP

```
int i=1;
double nr=1,dr=1,term=0,sum=0;
System.out.println();
System.out.print("Enter count of term for sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
term=nr/dr;
sum=sum+term;
i++;
dr=dr*x;
}//Close of while
System.out.println("Sum of "+n+" terms ="+sum);
}
else
System.out.println("Must enter a positive no., try again!");
}//Close of main
}//Close of class
```

Pattern5 - WHILE LOOP

//OUTPUT

```
Enter count of term for sum required ::10
```

Enter value for base ::5

Sum of 10 terms =1.249999872

/*4.Write a java application to print the sum of the series:-

1+1/x^2+1/x^4+1/x^6+1/x^8+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_4{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
int i=1;
double nr=1,dr=1,term=0,sum=0;
System.out.println();
System.out.print("Enter no. of term for sum requierd ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
term=nr/dr;
sum=sum+term;
i++;
dr=dr*x*x;
}//Close of while
```

Pattern5 - WHILE LOOP

```
System.out.println("Sum of "+n+" terms="+sum);
}//Close of if
else
System.out.println("Must enter a positive no., try again!");
}//Close of main
}//Close of class
```

//OUTPUT

```
Enter no. of term for sum requierd ::-10
Must enter a positive no., try again!

Enter no. of term for sum requierd ::10
Enter value for base ::2
Sum of 10 terms=1.3333320617675781
```

/*5.Write a java application to print the sum of the series:-

x/1!+x^2/2!+x^3/3!+x^4/4!+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_5{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
int i=1;
double nr,dr=1,term=0,sum=0;
System.out.println();
```

Pattern5 - WHILE LOOP

```
System.out.print("Enter no. of terms for sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
nr=x;
while(i<=n){
term=nr/dr;
sum=sum+term;
i++;
nr=nr*x;
dr=dr*i;
}//Close of while
System.out.println("Sum of "+n+" terms="+sum);
}//Close of if
else
System.out.println("Must enter a postive no., try again!");
}//Close of main
}//Close of class
```

//OUTPUT

```
Enter no. of terms for sum required ::5
Enter value for base ::3
```

Pattern5 - WHILE LOOP

Sum of 5 terms=17.4

/*6.Write a java application to print the sum of the series:-

1-x^2/2!+x^4/4!-x^6/6!+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_6{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
int i=1;
double nr=1,dr=1,term=0,sum=0;
System.out.println();
System.out.print("Enter no. of terms for  sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
term=nr/dr;
if(i%2!=0)
sum=sum+term;
else
sum=sum-term;
nr=nr*x*x;
```

Pattern5 - WHILE LOOP

```
dr=dr*(2*i-1)*2*i;
i++;
}//close  of while
System.out.println("Sum of "+n+" terms="+sum);
}//Close of if
else
System.out.println("Must enter a positive no ., try again!");
```
}//Close of main

}//Close of class

//OUTPUT

```
Enter no. of terms for  sum required ::-5
Must enter a positive no ., try again!

Enter no. of terms for  sum required ::10
Enter value for base ::3
Sum of 10 terms=-0.9899924980061545
```

/*7.Write a java application to print the sum of the series:-

x-x^3/3!+x^5/5!-x^7/7!+.....upto n terms. */

```
import java.util.Scanner;
class SumSeries_7{
public static void main(String a[]){
Scanner s=new Scanner(System.in);
```

Pattern5 - WHILE LOOP

```
int i=1;
double nr=1,dr=1,term=0,sum=0;
System.out.println();
System.out.print("Enter no. of terms for sum required ::");
int n=s.nextInt();
//System.out.println(n);
if(n>0){
System.out.print("Enter value for base ::");
int x=s.nextInt();
//System.out.println(x);
while(i<=n){
term=nr/dr;
if(i%2!=0)
sum=sum+term;
else
sum=sum-term;
nr=nr*x*x;
dr=dr*2*i*(2*i+1);
i++;
}//Close of while
System.out.println("Sum of "+n+" terms=" +sum);
}//Close of if
else
System.out.println("Must enter a positive no., try again!");
```

}//Close of main

Pattern5 - WHILE LOOP

}**//Close of class**

//OUTPUT

Enter no. of terms for sum required ::5

Enter value for base ::2

Sum of 5 terms=0.454673721340388

Pattern5 - WHILE LOOP