```
/*
* Write a function to calculate and return the sum of the series, the value of n must be passed as a parameter
* i. 1 + 2 + 3 + ...n
* ii. 2^2 + 4^2 + 6^2 + 8^2 + ...n terms
* iii. fn(x) = 1 + x^2/3! + x^3/5! + x^4/7! + x^n/(2n - 1)!
*/
class seriesSum {
   int series1(int n) {
      int sum = 0;
      for (int i = 1; i <= n; i++) {
         sum += i;
      }
      return sum;
   }
   int series2(int n) {
      int sum = 0;
      for (int i = 2; i <= n; i += 2) {
         sum += Math.pow(i, 2);
      }
```

```
return sum;
 }

 double series3(int x, int n) {
    double sum = 0;
    int factorial = 1;

    for (int power = 2; power <= n; power++) {
       int noForFactorial = 2 * power - 1;
     for (int i = 1; i <= noForFactorial; i++) {
          factorial *= i;
       }
       sum += 1 + Math.pow(x, power) / factorial;
       factorial = 1;
    }
    return sum;
 }

 public static void main(String args[]) {
```

```
 seriesSum obj = new seriesSum();
      int sum = obj.series1(4);
      System.out.println("The sum of first series is " + sum);
  int sum2 = obj.series2(10);
      System.out.println("The sum of second series is " + sum2);
      double sum3 = obj.series3(6, 7);
      System.out.println("The sum of third series is " + sum3);
    }
}
```

Output:

1st Case:

Enter the number: 78

The entered number is not a pronic number

2nd Case:

Enter the number: 42

The entered number is a pronic number