**Problem #1 (10 marks)**

**Series Sum**

Write a program that computes the sum of a series where each term except the first one is the square of the previous term. Take the number of terms N and the first term x as input. Both of the inputs will be integers. N is a non-negative integer and x is a real number. The general form of the series is given below.

|  |  |
| --- | --- |
| **Sample Input(s)** | **Corresponding Output(s)** |
| 10 1  3 2  4 2 | 10  22  278 |

**Problem #2 (10 marks)**

Write a program to determine and print the mode of a sorted sequence of numbers. The mode is the number or numbers that occur the maximum times in a sequence.

First, you will take the number of numbers in the sequence, N as input. Then, take as input N integers each of which is a member of the sequence. If more than one number that occur maximum amount of times, print the one that appears later in the sequence.

**Note: The sequence will be in sorted order.** **You won’t need array to solve this problem.**

|  |  |
| --- | --- |
| Sample Input(s) | Corresponding Output(s) |
| 7  30 30 50 50 50 60 70 | 50 |
| 8  30 50 50 50 60 60 60 70 | 60 |