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MATH 5370: Homework -I

1. Write a program that computes the Nth sum of a geometric series
   $$S(N)=\sum_{i=0}^{N} ar^i$$ where :
   1. N, a and r are the user defined input.
   2. The number r is the ratio and for convergence of the series is typically chosen to be strictly between -1 and 1. [**10 points**]

2. Find the maximum and minimum entry in an array of length 10 whose entries are read from an input file array.in. The input file consists of a single coloumn of length 10. [**10 points**]

   Now, use the above routine to construct a function which takes an array and arranges the entries in increasing and decreasing order. [**10 points**]

3. Rewrite the following loops as for loops: [**20 points**]

   I.
   ```
   int i = 1;
       while (  i <= 12)
             {
             if (  i < 9 &&  i  !=3)
             cout << 'X';
             i++;
             }
   ```

   II.
   ```
   long m = 100;
       do{
             cout << 'X' ;
             m +=100 ;
           } while (m < 1100)
   ```