

S.No: 19	Exp. Name: <b>Write a C program to compute the sum of this geometric progression: <math>1+x+x^2+x^3+\dots+x^n</math>.</b>	Date:2023-01-01
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### Aim:

Write a **C** program to read in two numbers, x and n, and then compute the sum of this geometric progression:  $1+x+x^2+x^3+\dots+x^n$ .

For example: if n is 3 and x is 5, then the program computes **1+5+25+125**.

At the time of execution, the program should print the message on the console as:

Enter x value :

For example,  
if the user gives the **input** as:

Enter x value : 3

Now, the program should print the message on the console as:

Enter n value :

For example, if the user gives the **input** as:

Enter n value : 5

then the program should **print** the result as:

Sum of the series 1 + x + .... + x ^ 5 = 364

### Source Code:

SumOfSeries.c

```
#include<stdio.h>
#include<math.h>
int main()
{
    int x,n,i,sum=0;
    printf("Enter x value : ");
    scanf("%d",&x);
    printf("Enter n value : ");
    scanf("%d",&n);
    for(i=0;i<=n;i++)
    {
        sum=sum+pow(x,i);
    }
    printf("Sum of the series 1 + x + .... + x ^ 5 = %d\n",sum);
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter x value : 3

Enter n value : 5
Sum of the series $1 + x + \dots + x^5 = 364$

Test Case - 2
User Output
Enter x value : 2
Enter n value : 5
Sum of the series $1 + x + \dots + x^5 = 63$