

```

using System;
namespace Loop
{
    class WhileLoop
    {
        public static void Main(string[] args)
        {
            int i=1, sum=0;
            string answer = "The sum of ";
            Console.WriteLine("This Program calculates the sum of
natural numbers sequentially: 1, 2, 3 ... x");
            Console.WriteLine(" Enter a value for the length of
numbers: ");
            int x = Convert.ToInt32(Console.ReadLine());
            while (i<=x)
            {
                string n = Convert.ToString(i); // Keeping track of the
individual number
                if (i == x){
                    answer = answer + n; //Controlling the last iteration
                }
                else
                {answer = answer + n + " + ";} //normal result as expected
                sum += i;
                i++;
            }
            Console.WriteLine(answer + " is " + sum);
        } } }

```

An Arithmetic Sequence Generator and Summation

```
public static void Main(string[] args)
{
    int a, d, sum;
    int i = 1;
    string answer = "The Arithmetic Sequence is: ";
    Console.WriteLine("This Program calculates the sum of an arithmetic
series: a, a + d, a + 2d, ..., a + (n-1)d");
    Console.WriteLine(" Enter a value for the first term the series: ");
    a = Convert.ToInt32(Console.ReadLine());
    Console.WriteLine(" Enter a value for the increment for the series: ");
    d = Convert.ToInt32(Console.ReadLine());
    Console.WriteLine(" Enter a value for the length of the series: ");
    int x = Convert.ToInt32(Console.ReadLine());
    sum = a;
    while (i<=x)
    {
        // string n = Convert.ToString(i); // Keeping track of the individual
number
        if (i == x){
            answer = answer + (a + (i-1)*d); //Controlling the last iteration
        }
        else
        {answer = answer + (a + (i-1)*d) + ", "}; //normal result as expected
        sum = sum + (a + (i-1)*d);
        i++;
    }
    sum = sum - a;
    Console.WriteLine(answer); // displays the sequence
    Console.WriteLine("The Sum for these terms is: " + sum);

}
```