PROGRAMMING ASSIGNMENT #1 - REVIEW

```
using System;

namespace LWTech.ChipAnderson.AssignmentOne
{
    class Program
    {
        static public void Main(string[] args)
        {
            bool isGood;
            int usersInteger;
            int[] input = new int[3];

            Console.WriteLine("Assignment One (v1) \t\t\t\t Chip A
nderson");
            Console.WriteLine("================================
========================================");
            Console.WriteLine();

            Console.WriteLine("1.) Sum of three integers");

            for (int i = 0; i < 3; i++)
            {
                usersInteger = 0;

                Console.Write("Please enter integer #{0}: ", i+1);
                string s = Console.ReadLine();

                isGood = int.TryParse(s, out usersInteger);
                if (!isGood) {
                    Console.WriteLine("I'm sorry, but I didn't und
erstand what you typed.  Please try again.");
                    i--;
```

```
                } else {
                    input[i] = usersInteger;
                }
            }
            Console.WriteLine("Thank you. The sum of the three int
egers is: {0}", SumIntArray(input));
            Console.WriteLine();

            // ------------------------------------------------
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            Console.WriteLine("2.) Polynomial Calculation for 4x^3
 + 6x - 2");

            int x = 0;
            isGood = false;
            while (!isGood)
            {
                Console.Write("Please enter an integer value for x
: ");
                string s = Console.ReadLine();
                isGood = int.TryParse(s, out x);
                if (!isGood)
                {
                    Console.WriteLine("I'm sorry, but I didn't und
erstand what you typed.  Please try again.");
                }
                // TODO: See if large integers will overflow the P
olynomial calculation!
            }

            long result = Polynomial(x);
            Console.WriteLine($"The value of 4x^3 + 6x - 2 is {res
ult}");
            Console.WriteLine();

            // ------------------------------------------------
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```

```
            Console.WriteLine("3.) Seconds -> HMS Calculator");

            int numSeconds = 0;
            do
            {
                Console.Write("Please enter the number of seconds
you want to convert: ");
                string s = Console.ReadLine();
                isGood = int.TryParse(s, out numSeconds);
                if (!isGood)
                {
                    Console.WriteLine("I'm sorry, but I didn't und
erstand what you typed.  Please try again");
                }
            } while (!isGood);

            Console.WriteLine($"
{numSeconds} seconds is the same as {HoursMinutesSeconds(numSecond
s)}");
            Console.WriteLine();

            // ------------------------------------------------
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            Console.WriteLine("4.) Maximum/Minimum Calculator");

            int max = int.MinValue;
            int min = int.MaxValue;

            int numIntegers = 0;
            do
            {
                Console.Write("How many integers would you like to
 enter? ");
                string s = Console.ReadLine();

                isGood = int.TryParse(s, out numIntegers);
```

```
                if (!isGood)
                {
                    Console.WriteLine("I'm sorry, but I didn't und
erstand what you typed.  Please try again");
                }
                else if (numIntegers <= 0 || numIntegers >= 100)
                {
                    Console.WriteLine("I'm sorry. Please enter a n
umber between 0 and 100.");
                    isGood = false;
                }
            } while (!isGood);

            for (int i = 0; i < numIntegers; i++)
            {
                do
                {
                    Console.Write("Please enter integer #
{0}: ", (i + 1));
                    string s = Console.ReadLine();
                    isGood = int.TryParse(s, out usersInteger);

                    if (!isGood)
                    {
                        Console.WriteLine("I'm sorry, but I didn't
 understand what you typed.  Please try again");
                    }
                    else
                    {
                        if (usersInteger < min)
                            min = usersInteger;
                        if (usersInteger > max)
                            max = usersInteger;
                    }
                } while (!isGood);
            }
```

```
            Console.WriteLine($"The smallest value you entered was
: {min}");
            Console.WriteLine($"The largest value you entered was:
 {max}");
            Console.WriteLine();

            // ------------------------------------------------
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            Console.WriteLine("5.) Even Numbers between 150 and 20
0");

            {
                int i = 150;
                while (i <= 200)
                {
                    if (i % 2 == 0)
                    {
                        Console.Write(i + " ");
                    }
                    i++;
                }
            }
            Console.WriteLine("\n");

            // ------------------------------------------------
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            Console.WriteLine("6.) Even Numbers between 100 and 0"
);

            {
                int i = 100;
                do
                {
                    if (i % 2 == 0)
                    {
                        Console.Write(i + " ");
```

```
                    }
                    i--;
                } while (i >= 0);
            }
            Console.WriteLine("\n");

            // ------------------------------------------------
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            Console.WriteLine("7.) Test Score Converter");

            int score = 0;
            string t;

            do
            {
                Console.Write("Please enter a numeric test score b
etween 0 and 100 (or 'quit' to exit): ");
                t = Console.ReadLine();
                t = t.ToLower().Trim();

                if (t != "quit")
                {
                    if (!int.TryParse(t, out score))
                    {
                        Console.WriteLine("I'm sorry, but I didn't
 understand what you typed.  Please try again");
                    }
                    else if (score < 0 || score > 100)
                    {
                        Console.WriteLine("Invalid number entered.
  Please enter a score between 0 and 100");
                    }
                    else
                    {
                        Console.WriteLine($"The Letter Grade for {
score} is {ConvertScoreToGrade(score)}");
                    }
```

```
                }
            } while (t != "quit");

            Console.WriteLine("Done!");

        }

        //============================================================
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        static private long SumIntArray(int[] input) {
            long sum = 0L;
            foreach (int i in input) {
                sum += i;
            }
            return sum;
        }

        static private long Polynomial(int x)
        {
            return (long)((4 * Math.Pow(x, 3)) + (6 * x) - 2);
        }


        static private string HoursMinutesSeconds(int seconds)
        {
            int hours = 0;
            int minutes = 0;

            hours = seconds / 3600;
            seconds = seconds % 3600;
            minutes = seconds / 60;
            seconds = seconds % 60;

            return hours + " hours, " + minutes + " minutes, and "
 + seconds + " seconds";
        }
```

```
        static private string ConvertScoreToGrade(int score)
        {
            if (score < 0 || score > 100)
            {
                return "unknown";
            }

            string grade = "";
            int bucket = (score-1) / 10;
            switch (bucket)
            {
                case 9:
                    grade = "A";
                    break;
                case 8:
                    grade = "B";
                    break;
                case 7:
                    grade = "C";
                    break;
                case 6:
                    grade = "D";
                    break;
                default:
                    grade = "F";
                    break;

            }
            return grade;
        }

    }
}
```