1. Write a Simple console Application Calculator with the help of Visual Studio .NET IDE which will perform following operations on two numbers

a. Addition.

b. Subtraction.

c. Multiplication.

d. Division

```
using System;
class HelloWorld {
  static void Main()
 {
        Console.WriteLine("Enter the action to be performed");
          Console.WriteLine("1 for Addition");
          Console.WriteLine("2 for Subtraction");
          Console.WriteLine("3 for Multiplication");
          Console.WriteLine("4 for Division \n");
          int action = Convert.ToInt32(Console.ReadLine());
          Console.WriteLine("Enter 1st number");
          int input1 = Convert.ToInt32(Console.ReadLine());
          Console.WriteLine("Enter 2nd number");
          int input2 = Convert.ToInt32(Console.ReadLine());
          int result = 0;
          switch (action) {
             case 1: {
                result = input1 + input2;
                Console.WriteLine("addition of 2 numbers:" +result);
                break;
                   }
             case 2: {
                result = input1 - input2;
                Console.WriteLine("subtraction of 2 numbers:" +result);
```

```
            break;
               }
          case 3: {
            result = input1 * input2;
            Console.WriteLine("multiplication of 2 numbers:" +result);
            break;
               }
          case 4: {
            result = input1 / input2;
            Console.WriteLine("division of 2 numbers:" +result);
            break;
               }
          default:
            Console.WriteLine("Wrong action!! try again");
            break;
        }
     }
 }
```

2. Accept average marks of five students. Display the highest marks obtained.

```
using System;
class average
{
   static void Main()
   {
      Console.WriteLine("Please enter 5 students average marks:");
      decimal a = decimal.Parse(Console.ReadLine());
      decimal b = decimal.Parse(Console.ReadLine());
      decimal c = decimal.Parse(Console.ReadLine());
      decimal d = decimal.Parse(Console.ReadLine());
```

```
        decimal e = decimal.Parse(Console.ReadLine());

        if ((a >= b) && (a >= c) && (a >= d) && (a >= e))
        {
            Console.WriteLine("The highest marks is: {0}", a);
            return;
        }
        if ((b >= a) && (b >= c) && (b >= d) && (b >= c))
        {
            Console.WriteLine("The highest marks is: {0}", b);
            return;
        }
        if ((c >= a) && (c >= b) && (c >= d) && (c >= e))
        {
            Console.WriteLine("The highest marks is: {0}", c);
            return;
        }
        if ((d >= a) && (d >= b) && (d >= c) && (d >= e))
        {
            Console.WriteLine("The highest marks is: {0}", d);
            return;
        }
        if ((e >= a) && (e >= b) && (e >= c) && (e >= d))
        {
            Console.WriteLine("The highest marks is: {0}", e);
            return;
        }
    }
}
```

3. Write a static method to accept param array of integers. The method should find the sum of all the integers passed and display the result. Write a client program to call the method.

```
using System;
class SumArray
{
  public static void SumCal (int[] arr)
  {
    int sum = 0;
    for (int i = 0; i < 5; i++)
      {
        sum = sum + arr[i];
      }
    Console.WriteLine ("Sum of array elements:" + sum);
  }
  public static void Main ()
  {

    int[] arr = new int[5];

    Console.WriteLine ("Enter the array elements");
    for (int i = 0; i < 5; i++)
      {
       arr[i] = int.Parse (Console.ReadLine ());
      }
    SumCal (arr);
  }
}
```

4. Write a method to swap two integers. The client code should call the method and print the swapped value.

```
using System;
class HelloWorld {
     public static void SwapNum(ref int x, ref int y)
          {
             int temp = x;
             x = y;
             y = temp;
          }
    public static void Main() {
          int a,b;
          Console.Write("\nenter 'a' value : ");
          a = int.Parse(Console.ReadLine());

          Console.Write("\nenter 'b' value : ");
          b = int.Parse(Console.ReadLine());
          SwapNum(ref a, ref b);
          Console.WriteLine();
          Console.WriteLine("Value of a and b after sawapping");
          Console.WriteLine();
          Console.WriteLine("a=" + " " + a);
          Console.WriteLine("b=" + " " + b);
          Console.ReadLine();

  }
}
```

5. Write a single method that calculates the area and circumference of the circle. The area and circumference should be displayed through the client code

```
using System;
public class Program
  {
     static void Main(string[] args)
     {
        float r;
        Console.Write("\nenter radius : ");
        r = float.Parse(Console.ReadLine());
        Program p = new Program();
         (float a, float c)= p.AreaAndCircumference(r);
        Console.WriteLine("Area = " + a + " Circumference = " + c);

     }
     public (float ,float) AreaAndCircumference(float radius)
     {
        float area= (float)(3.14 * radius*radius);
        float circumference =(float) (2 * 3.14 * radius);

        return (area, circumference);
     }
  }
```

6. Create a structure Book which contains the following members:

bookId, title, price, bookType Type of the book should an enumerated data type with values as Magazine, Novel, ReferenceBook, Miscellaneous. Write a console based application to do the following tasks.

a. Accept the details of the book

b. Display the details of the book. The type of book should be displayed as a string e.g.:

Magazine

```
using System;

struct book

{

  public int id;

  public string title;

  public int price;

  public string type;

};

public class BookClass

{

    public static void Main(String[] args)

    {

    int n = 1;



    book[] b = new book[n];

    for(int i=0;i<n;i++)

    {

        Console.WriteLine("Enter the details of book:");
```

```
        b[i].id = i+1;
        Console.WriteLine("Enter the title:");
        b[i].title = Console.ReadLine();
        Console.WriteLine("Enter the price:");
        b[i].price = int.Parse(Console.ReadLine());
        Console.WriteLine("Enter the type of book(Magazine, Novel, ReferenceBook, Miscellaneous):");
        b[i].type = Console.ReadLine();


    }
    for(int i=0;i<n;i++)
    {
        Console.WriteLine("\nThe details of book:");

Console.WriteLine("\n\nbookId:{0},\ntitle:{1},\nprice:{2},\nbooktype:{3}",b[i].id,b[i].title,b[i].price,b[
i].type);
        Console.ReadLine();
    }
    }
}
```