**Methods – Tutorial Question**

**Q1**

Using pen and paper trace the execution of the code below, what will appear on the screen when run. .

## static void Main()

{

M1();

M2();

M3();

}

static void M1()

{

Console.WriteLine(“x”);

M2();

Console.WriteLine(“xx”);

}

static void M2()

{

Console.WriteLine(“y”);

M3();

Console.WriteLine(“yy”);

M3();

}

static void M3()

{

Console.WriteLine(“z”);

Console.WriteLine(“zz”);

}

**Q2**

Read the program below and determine what would be the output

**using** System;

**namespace** Param2

{

**class** MainClass

{

**static void** Proc1(ref int x, int y)

{

x += y;

y -= 10;

}

**static void** Proc2(int x, ref int y)

{

x += y;

y -= 10;

}

**static void** Proc3(ref int x, int y, int z)

{

x += y+z;

}

**public static void** Main(string[] args)

{

int a, b, c;

a = 10;

b = 20;

c = 30;

Proc1(**ref** a,b);

Proc2(a,**ref** b);

Proc3(**ref** a,b,c);

Console.WriteLine("a = {0}, b = {1}, c = {2}", a, b, c);}}}

Q3

Write the following methods

1. static int Smallest(int x, int y, int z), returning the smallest of the arguments
2. static int Average(int x, int y, int z), returning the average of the arguments
3. static bool Same(int x, int y, int z), returning true if all the arguments are the same
4. static bool Diff(int x, int y, int z), returning true if all the arguments are different
5. static bool Sorted(int x, int y, int z), returning true if all the arguments are sorted, with smallest coming first

Write code to test your methods

Q4

Write a method to double the values of two integer arguments that are passed to it. For example if the method is called with two arguments a and b where a equals 10 and b equals 30, then after calling the method a will equal 20 and b will equal = 60.

Q5

Consider these methods:

static double f(double x) {return g(x)+Math.Sqr(h(x));}

static double g(double x) {return 4 \* h(x);}

static double h(double x) {return x \* x + k(x) – 1;}

static double k(double x) {return 2 \* (x +1);}

Determine the results of the following method calls:

1. double x1 = k(2);
2. double x2 = h(2);
3. double x3 = g(2) + h(2));
4. double x4 = f(2);

Q6

Write a method:

static int Read\_Integer(string prompt)

That displays the prompt string, followed by a space, reads an integer, and returns it. Here is a typical usage

int salary = Read\_Integer(“please enter your salary : “)

Write methods for data of type double, and string