Kodutöö nr 3

**Instructions**

**Nr 1. Compare two arrays.**

Write a method which takes two integer arrays of the same length. Method should return an array of integers which values are result of comparison of input arrays using the following rules:

* *a[i] > b[i]*, then *1*
* *a[i] == b[i]*, then *0*
* *a[i] < b[i]*, then *-1*

Possible method signature:

*static int[] CompareArrays(int[] a, int[] b) { ... }*

Sample input:

*a = [1, 3, 9]*

*b = [-2, 6, 9]*

Expected output:

*[1, -1, 0]*

Hints:

Use *for* loop to iterate both input arrays and assign values to output arrays.

<http://www.tutorialsteacher.com/csharp/csharp-for-loop>

<http://www.tutorialsteacher.com/csharp/array-csharp>

**Nr 2. Diagonal difference.**

Write a method that will sum matrix diagonal values and then calculate absolute difference.

Possible method signature:

*static int DiagonalDifference(int[,] matrix) { ... }*

Sample input:

*1, 2, 3*

*4, 5, 6*

*9, 8, 9*

Expected output:

*2*

Explanation:

First diagonal: 1 + 5 + 9 = 15

Second diagonal: 3 + 5 + 9 = 17

|15 - 17| = 2

Hints:

Use two-dimensional array for storing matrix. Write down indexes that you need to sum diagonal values and then create a *for* loop that will generate the needed indexes.

Use *Math class* for finding absolute difference.

<http://www.tutorialsteacher.com/csharp/csharp-multi-dimensional-array>

<https://docs.microsoft.com/en-us/dotnet/api/system.math?view=netframework-4.7.2>

**Nr 3.** **Staircase.**

Write a method that prints a staircase of size *n*. The staircase is right-aligned, composed of # symbols and spaces, and has a height and width of *n.*

Possible method signature:

*static void Staircase(int n) { ... }*

Sample input:

*5*

Expected output (each row must have 5 chars (space or #)):

*#*

*##*

*###*

*####*

*#####*

**Nr 4. Plus minus.**

Write a method that takes an array of integers and prints the fractions of its elements that are positive, negative, and are zeros.

Possible method signature:

*static void PlusMinus(int[] arr) { ... }*

Sample input:

*[-1, 3, -9, 5, 0]*

Expected output:

*Positive: 0.4*

*Negative: 0.4*

*Zero: 0.2*