**Homework: Math for Developers**

This document defines homework assignments from the [“C# HYPERLINK "http://softuni.bg/courses/csharp-basics/"Basics HYPERLINK "http://softuni.bg/courses/csharp-basics/"“ Course @ Software University](http://softuni.bg/courses/csharp-basics/). Please submit as homework a single **txt/doc/docx** file holding the answers of all below described problems.

* **Some Primes**

Find the 24th, 101st and 251st prime number.

**Answer :** 24th - 89

101st - 547

251st - 1597

**Resources:**

<http://www.bigprimes.net/archive/prime/1/>

* **Some Fibonacci Primes**

Check if the 24th, 101st and 251st prime numbers are part of the base Fibonacci number set. What is their position?

**Answer :** 24th - 89 - is a Fibonacci number - 11 position

101st - 547 - is a not Fibonacci number

251st - 1597 - is a Fibonacci number - 17 position

* **Some Factorials**

Find 100!, 171! and 250! Give all digits.

**Answer:**

100! - 9.3326215443944152681699238856267e+157 =93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000

171! - 1.2410180702176678234248405241031e+309 = 1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000

250! - 3.2328562609091077323208145520244e+492 = 3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000

**Resources:**

<http://www.calculatorsoup.com/calculators/discretemathematics/factorials.php>

* **Calculate Hypotenuse**

You are given three right angled triangles. Find the length of their hypotenuses.

* Catheti: 3 and 4 **Answer: 5**
* Catheti: 10 and 12 **Answer: 15.6204993518133**
* Catheti 100 and 250 **Answer: 269.258240356725**
* **Numeral System Conversions**

Convert 1234d to binary and hexadecimal numeral systems.

Convert 1100101b to decimal and hexadecimal numeral systems.

Convert ABChex to decimal and binary numeral systems.

**Answer: 1234d = 10011010010b = 4D2hex**

**1100101b = 65hex = 101d**

**ABChex = 2748d = 101010111100b**

* **Least Common Multiple**

Find LCM(1234, 3456).

**Answer:**

**For the values: 3456, 1234**

**The LCM is: 2132352**

**Resources:**

<http://www.calculatorsoup.com/calculators/math/lcm.php>