# Homework: Math for Developers

This document defines homework assignments from the [“C# 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.

24th = 89

101st = 547

251st = 1597

Източник: <https://primes.utm.edu/lists/small/1000.txt>

## Some Fibonacci Primes

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

24th = 89 = 11-та позиция

101st = 547 = не присъства в редицата на фибоначи

251st = 1597 = 17-та позиция

Източник: <http://www.maths.surrey.ac.uk/hosted-sites/R.Knott/Fibonacci/fibtable.html>

## Some Factorials

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

100! = 93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000

171! = 1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000

250! = 3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000

Източник: <http://www.numberempire.com/factorialcalculator.php> и <http://www.nitrxgen.net/factorialdb/>

## Calculate Hypotenuse

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

1. Catheti: 3 and 4 – hypotenuse = = = = 5
2. Catheti: 10 and 12 – hypotenuse = = = = 15.620499351813308
3. Catheti 100 and 250 – hypotenuse = = = = 269.2582403567252

Източник: <http://www.miniwebtool.com/hypotenuse-calculator/> и <http://www.math.com/students/calculators/source/square-root.htm>

## Numeral System Conversions

Convert 1234d to binary and hexadecimal numeral systems.

1234d = 4D2hex = 10011010010b

Convert 1100101b to decimal and hexadecimal numeral systems.

1100101b = 101d = 65hex

Convert ABChex to decimal and binary numeral systems.

ABChex = 2 748d = 101010111100b

Източник: Калкулаторът на Windows, <http://www.introprogramming.info/intro-java-book/read-online/glava8-broini-sistemi/> и <https://www.google.bg/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0CFkQFjAIahUKEwiPgPTLis_IAhXJBiwKHSbVDs4&url=http%3A%2F%2Fwww.iit.net-bg.info%2FPrezInf%2FPreobrazuvane.ppt&usg=AFQjCNH6cvLAjE9TZIAtT4dGK7vlBHXAzA&cad=rja>

## Least Common Multiple

Find LCM(1234, 3456).

LCM(1234, 3456) = 2 132 352

Източник: <http://www.mathportal.org/calculators/numbers-calculators/gcd-lcm-calculator.php>