# 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.**

[*http://www.numberplanet.com/number/59/index.html*](http://www.numberplanet.com/number/59/index.html)

*the 24th = 89*

*the 101st =547*

*the 251st = 1597*

## Some Fibonacci Primes

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

*http://www.maths.surrey.ac.uk/hosted-sites/R.Knott/Fibonacci/fibmaths.html*

*The prime nubmer 24th is the Fibonacci number at position 7*

*The prime number 101st is no part of the base Fibonacci number set*

*The 251st is the Fibonacci number at position 17*

## Some Factorials

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

*http://www.calculatorsoup.com/calculators/discretemathematics/factorials.php*

*100! n=93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000*

*171! n=1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000*

*250! n=3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000*

## Calculate Hypotenuse

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

1. Catheti: 3 and 4 c=5
2. Catheti: 10 and 12 c =15,6
3. Catheti 100 and 250 c =269,3

## Numeral System Conversions

**Convert 1234d to binary and hexadecimal numeral systems.**

*http://www.mathsisfun.com/binary-decimal-hexadecimal-converter.html*

***Binary***

*The number 1234 can be expressed as:   
1024 + 128 + 64 + 16 + 2  
So, the answer is: 10011010010*

***Hexadecimal***

*1234d = 3034Hexadecimal*

*Convert 1100101b to decimal and hexadecimal numeral systems.*

***Demical***

*The number 1100101 represents:   
64 + 32 + 4 + 1  
So, the answer is: 101*

***Hexadecimal***

*1100101b = 65 hexadecimal*

**Convert ABChex to decimal and binary numeral systems.**

***Binary*** *101010111100*

***Demical*** *2748*

## Least Common Multiple

Find LCM(1234, 3456).

LCM(1234,;3456)=LCM(2.617;2.1728)=2.LCM(617;1728)=2.617.1728=2132352