# 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.

Answers: 89, 547 and 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?

Answers: The 24th prime number (89) is a part of the base Fibonacci number set and its position is F11. The 101st (547) prime number isn’t a part of the base Fibonacci number set. The 251st is a part of the base Fibonacci number set and its position is F17.

## Some Factorials

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

Answers: 100!=93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000

171!=1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000

250!=3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000

## Calculate Hypotenuse

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

1. Catheti: 3 and 4
2. Catheti: 10 and 12
3. Catheti 100 and 250

Answers:

1. The hypotenuses is 5.
2. The hypotenuses is √244=2√61.
3. The hypotenuses is √72500=50√29.

## Numeral System Conversions

Convert 1234d to binary and hexadecimal numeral systems.

Answers: 1234d=10011010010b=4D2hex

Convert 1100101b to decimal and hexadecimal numeral systems.

Answers: 1100101b=101d=65hex

Convert ABChex to decimal and binary numeral systems.

Answers: ABChex=2748d=101010111100b

## Least Common Multiple

Find LCM(1234, 3456).

Answer: 2132352