# 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.

**ANSWER**

89, 547, 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?

**ANSWER**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 24th | | 101st | | 251st | | |
| Fibonacci number | Position | Fibonacci number | Position | | Fibonacci number | Position |
| 89 | 11 | - | - | | 1597 | 17 |

## Some Factorials

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

**ANSWER**

100! - 9332621544394415268169923885626670049071596826438162146859296389521759999

32299156089414639761565182862536979208272237582511852109168640000000000000000000

00000

171! - 1241018070217667823424840524103103992616605577501693185388951803611996075

22169175299275197812048758557646495950167038705280988985869071076733124203221848

43643104735778899685482782907545415619648521534683180442932395981736968996572359

03947616152278558180061176365108428800000000000000000000000000000000000000000

251! - 8114469214881860408125244525581164862197057731361189473537335492053187606

36332913581693296758128078062183055345650547664609463859915056696520548600046891

76234080833728750544803772833775151271506426664855341371148205386409607393516880

78687793892311994159870905473712136144536785797191004072048829549630785334171335

68165939310960491560595435373673195910930411701938747154349882416287042721093688

61748520530899768212424761202105521274880000000000000000000000000000000000000000

0000000000000000000000

## 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

**ANSWER**

1. Catheti: 3 and 4 hypotenuse is 5
2. Catethi: 10 and 12 hypotenuse is 15,62
3. Catethi: 100 and 250 hypotenuse is 269,26

## 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**

1234 – to Binary: 10011010010, to Hex: 4D2

1100101 – to Decimal: 101, to Hex: 65

ABC – to Decimal: 2748, to Binary: 101010111100

## Least Common Multiple

Find LCM(1234, 3456).

**ANSWER**

For the values: 3456, 1234  
The LCM is: 2132352