**Homework : Math for Developers**

**Some Primes**

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

I found the first 500 prime numbers :

<http://en.wikipedia.org/wiki/List_of_prime_numbers#The_first_500_prime_numbers>

Prime numbers : 2,3,5,7,11,13,17,19,23,29,31,37,41,43,47,53,59,61,67,71,73,79,83,**89....**

**89 -** the 24th prime number

**547 -** the 101st prime number

**1597 -** the 251st prime number

**Some Fibonacci Primes**

Set of numbers, where each number is sum of first two.( 1+1=2; 1+2=3; 2+3=5; )

**0 , 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144 , 233, 377, 610 , 987, 1597, ….**

**89** is 24th Prime and 12th Fibonacci number

**547** is not Fibonacci number

**1597** is 251st Prime and 18th Fibbonaci number

**Some Factorials**

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

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

100! = 9.332621544 E+157

93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000

171! = 1.24101807 E+309

1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000

250! = 3.23285626 E+492

3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000

**Calculate Hypotenuse**

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

Catheti: 3 and 4

Catheti: 10 and 12

Catheti 100 and 250

Pitagor theoreme: a^2 + b^2 = c^2\!\,

1) C = 5

2) C = 15,62

3) C = 269,25

**Numeral System Conversions**

A) 1234d to Binary:

1234/2 = 617 (0)

617/2 = 308 (1)

308/2 = 154 (0)

154/2 = 77 (0)

77/2 = 38 (1)

38/2 = 19 (0)

19/2 = 9 (1)

9/2 = 4 (1)

4/2 = 2 (0)

2/2 = 1 (0)

1/2 = 0 (1)

*= >> 1234d = 10011010010b*

to Hexadecimal :

1234/16=77 ( 2 )

77/16 = 4 ( D)

4/16 = 0 ( 4 )

=>> 1234 = 4D2

B) 1100101b to Decimal :

=>> 1 + 0 + 4 + 0 + 0 +32 + 64 = 101d

to Hexadecimal :

101/16 = 6 (5)

6/16 = 0 ( 6 )

=>> 65

**Least Common Multiple**

Find LCM(1234, 3456)

Answer : The LCM is **2132352**