**Homework: Math for Developers**

**Problem 1: Some Primes**

**24th prime number – 89**

**101st prime number – 547**

**251st prime number – 1597**

**Problem 2: Some Fibonacci Primes**

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

**Problem 3: Some Factorials**

**100! = 93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000**

**171! = 1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000**

**250! = 3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000**

**Problem 4: Calculate Hypotenuse**

**1.Catheti: 3 and 4**

**Pythagorean theorem**

**2.Catheti: 10 and 12**

**Pythagorean theorem**

**3.Catheti: 100 and 250**

**Pythagorean theorem**

**Problem 5: Numeral System Conversions**

**to binary 🡪 || to hexadecimal 🡪**

**1234/2 = 617 (0) 1234/16 = 77 (2)**

**617/2 = 308 (1) 77/16 = 4 (D)**

**308/2 = 154 (0) 4/16 = 0 (4)**

**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)**

**to decimal 🡪 1\* + 1\* + 0 + 0 + 1\* + 0 + 1\* =**

**to hexadecimal 🡪 0110|0110 = 65**

**to decimal 🡪 10\* + 11\* + 12\* = 2748**

**to binary 🡪 101010111100**

**Problem 6: Least Common Multiple**

**LCM(1234,3456) 🡪 2132352**