Homework: Math for Developers

Answers:

Problem 1:   
24th prime number – 89, 101st prime number - 547, 251th prime number - 1597.

Problem 2:

Fibonacci numbers: 0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,1597,2584...

Of the given prime numbers 89, 547 and 1597 only 547 isn‘t part of the Fibonacci number set. 89 is at the 12th position and 1597 is at the 18th place.

Problem 3:

100! = 93326215443944152681699238856266700490715968264381621468592963895217599993229915608941463976156518286253697920827223758251185210916864000000000000000000000000

171! = 1241018070217667823424840524103103992616605577501693185388951803611996075221691752992751978120487585576464959501670387052809889858690710767331242032218484364310473577889968548278290754541561964852153468318044293239598173696899657235903947616152278558180061176365108428800000000000000000000000000000000000000000

250! = 3232856260909107732320814552024368470994843717673780666747942427112823747555111209488817915371028199450928507353189432926730931712808990822791030279071281921676527240189264733218041186261006832925365133678939089569935713530175040513178760077247933065402339006164825552248819436572586057399222641254832982204849137721776650641276858807153128978777672951913990844377478702589172973255150283241787320658188482062478582659808848825548800000000000000000000000000000000000000000000000000000000000000

Problem 4:

1. Hypotenuses: 3^2 + 4^2 = C^2 -> C = 5
2. Hypotenuses: 10^2 + 12^2 = C^2 -> C= √244 = 2√61
3. Hypotenuses: 100^2 + 250^2 = C^2 -> C = √72500 = 10√725 = 50√29

Problem 5:

1. 1234d = 10011010010b
2. 1100101b = 101d

101d = 65hex

1. ABChex = 2748d

2748d = 101010111100b

Problem 6:

GCD = 2

LCM = (A\*B)/GCD(A,B) = (1234\*3456)/2 = 2132352