# Homework: Math for Developers

## Some Primes

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

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| *Answer:* | *The 24th prime number is 89,*  *The 101st prime number is 547,*  *The 251st prime number is 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?

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| *Answer:* | *The 24th = 89 – 11th position of Fibonacci numbers,*  *The 101st = 547 – this is no Fibonacci number,*  *The 251st = 1597 – 17th position of Fibonacci numbers.* |

## Some Factorials

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

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| *Answer:* | *100! = 100 x 99 x 98 x 97 … 3 x 2 x 1 = 9332622e+157*  *171! = 171 x 170 x 169 x 168 … 3 x 2 x 1 = 1241018070217667823424840524103103992616605577501693…*  *250! = 250 x 249 x 248 x 247 … 3 x 2 x 1 = 3232856260909107732320814552024368470994843717673780…* |

## 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

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| *Answer:* |  |

## Numeral System Conversions

1. Convert 1234d to binary and hexadecimal numeral systems.
2. Convert 1100101b to decimal and hexadecimal numeral systems.
3. Convert ABChex to decimal and binary numeral systems.

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| *Answer:* | 1. *1234d = 10011010010b and 4D2hex* 2. *1100101b = 101d and 65hex* 3. *ABChex = 2748d and 101010111100b* |

## Least Common Multiple

Find LCM(1234, 3456).

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| *Answer:* | *LCM(1234, 3456) = 27****.*** *6171****.*** *33 = 2132352* |