Computational obtention of the n-th prime number

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0-Abstract:

In this short paper I enunce a computational method to obtain with any natural number n the n-th prime number without use Riemann Hypotesis.

1- Formula linked to Set Theory:

Being *n* a natural number and being *k* the *n-th* prime number, we have:

$$(1) \qquad g(n)=g\left(n=\left(c \underset{m=1}{\overset{2}{\Delta}} x_1\right)+\left(c \underset{m=2}{\overset{2}{\Delta}} x_2\right)+\ldots+\left(c \underset{m=k}{\overset{2}{\Delta}} x_k\right)\right)=g\left(n=\sum_{s=1}^{k}\left(c \underset{m=s}{\overset{2}{\Delta}} x_s\right)\right)=k$$

Where $\left(c \underset{m=s}{\overset{2}{\Delta}} x_s\right)$ defines the Division-Set-by-steps (DSbs):

$$(2) \qquad c \underset{m=s}{\overset{2}{\Delta}} s=\{\underbrace{s/(s-1)}_{a_1},\underbrace{s/(s-2)}_{a_2},\ldots,\underbrace{s/3}_{a_{(b-1)}},\underbrace{s/2}_{a_b}\}$$

And with the Indicator function we define $\left(c \underset{m=s}{\overset{2}{\Delta}} x_s\right)=0$ if any *a* in the inveral $(1,b)\in\mathbb{N}$ and $\left(c \underset{m=s}{\overset{2}{\Delta}} x_s\right)=1$ if none *a* in the interval $(1,b)\in\mathbb{N}$ or in other words all *a* in the interval belong to a Number Set $A>\mathbb{N}$. As in my previous paper by definition we set $\left(c \underset{m=1}{\overset{2}{\Delta}} x_1\right)=0$ and $\left(c \underset{m=2}{\overset{2}{\Delta}} x_2\right)=1$, higher numbers follow the logical rule.

2- Conclusions.

I am almost sure that it is able to being programed in a computer and knowing that the sieve method for primes is not effective and it will take a lot of process time even for a small n, this is an exact process to obtain the correct relation between Natural numbers and Prime numbers.