Conjecture Prime Numbers Series

author Alessandro Boatto

Abstract :

This algorithm:

$N_{n+1_{series}} + (p) * (p)$

Where:

(p) is a prime number and Nseries from 1 to infinity.The product of the N_{series}111 + (p) * (p) = 1117 *7 = 7819 (where (p) = 7 , and N = 111) , there are two prime factors or two prime numbers in this case 1117 and 7, the Nseries 111 taken as an example can produce hundreds or thousands of results having as result of the product , a number that has only two prime factors .

Introduction :

The problem is divided into two steps :

1. As a first step it must be shown that:

Given an arbitrary number c belonging to N written in the formula:

(1)

$\sum_{i=1}^{n} c_i \cdot 10^{i-1}$

where n and c_j belong to N and $c_1 \neq 0$, and took a prime number arbitrary p, written in the form

(2)

$\sum_{j=1}^{q} c_i \cdot 10^{i-1}$
where q and d_j belong to N and $d_1 \neq 0$, and took the infinite set of numbers B expressible in the form

(3)

$b = \sum_{i=1}^{n} c_i \cdot 10^{q+i-1} + \sum_{j=1}^{q} c_i \cdot 10^{i-1}$

necessarily exists at least on number b belonging to B , that b belongs to P.

To prove it , is sufficient to prove that

(4)

$B \cap P \neq \emptyset$

2.Managed to get this demonstration , the second step is to show that :

if exists a number b_1 of the type shown in eq. (3) that belongs to B and P , necessarily exists at least one other number $b_2 > b_1$ that belongs at the intersection of P and B .

Conclusions

The union of the two demonstrations would imply that the set $B \cap P$ is an infinite set , this would be a demonstration for recursion .

References

[1] Davenport,H. (2008). *The Higher Arithmetic: An Introduction to the Theory of Numbers.* Cambridge University Press.