International Journal of Mathematical Archive-6(9), 2015, 204-206
Available online through www.ijma.info ISSN 2229 – 5046

# P = NP, IN THE FACTORIZATION OF ALL ODD NUMBERS

ANDRI LOPEZ*

I. P. Leon (SPAIN).

*(Received On: 30-08-15; Revised & Accepted On: 23-09-15)*

*ABSTRACT*

*This article demonstrate that the problem P = NP in the factorization of odd numbers because it solves the primary problem. Having $\forall(N)$ in finite time. (ord(a) $\in$ Z).*

***Keywords and phrases:*** *prime number; multiplication between odd numbers; odd number power; equations, algorithm.*

## 1. INTRODUCTION

We know the existence of several algorithms for factoring odd numbers but none of them solves the problem in polynomial time when (N) is prime. This problem is both traditional computers and computers quantum although the latter reduced the time; especially with Shor's algorithm, the more it reduced by applying the equation of this work.

My contribution is referenced [see 1]; all prime number is in the interval between (30a + (p)) and (42a + ($p_1$)) with (p = (11, 17, 23, 29)) and ($p_1$ = (13, 19, 31, 37, 43)).

Therefore we have that:

(1) $[(30a+(p)] \times [42b + (p_1)] = \Big|_{42c + (p_1)}^{30c + (p)}$

$[30a + (p)] \times (p) = \Big|_{42c + (p_1)}^{30c + (p)}$

$[42c + (p_1)] \times (p_1) = \Big|_{42c + (p_1)}^{30c + (p)}$

and, for the powers:

$[30a + (p)]^n = [(30c + (p)); (42c + (p_1)]$

$[42a + (p_1)]^n = \dots\dots\dots\dots$

$[(30a + (p)) \times ((42c + (p_1)]^n = \dots\dots$

Developing these equations always has the following:

$$30a \times 42b + 30a \times p_1 + p \times 42b + p \times p_1 = \Big|_{42c + (p_1)}^{30c + (p)}$$

We note that in any them always have a last adding (right) the value of (p \times ($p_1$) and we can define if exist, applying the following.

**Theorem**: the difference of two odd numbers is always an even number (2c + 1) - (2b + 1) = 2(c + b). Where upon.

$$[p \times (p_1)] - \left|(p_1)^{(p)}\right| = (3n; 5n; 7n)$$

$\forall$(n = even); example (11 × 23) - 23 = 5 × 46; (11 × 17) - 13 = 3 × 58

*Corresponding Author: Andri Lopez*, I. P. Leon (SPAIN).*

Arrived at this point indicated the process to see if any of them there exist or not.

(i) $$\frac{N}{(3;5;7;11;17;23;29)} \neq Z$$

(ii) $$\frac{N}{(3;5;7;11;17;23;29;31;37;43)} \neq Z$$

$$\sqrt{N} = Z \rightarrow \sqrt{Z} \Big|_{\neq Z_1}^{= Z1} \rightarrow m^{2n} = N \rightarrow N = (Z^2; n^{2n})$$

(iii) $$\frac{N-(p)\times(p_1)}{(30,42)} \neq Z$$

$$\frac{N-(p_1)\times(p_1)}{(30,42)} \neq Z$$

$$\frac{N-(p)\times(p)}{(30,42)} \neq Z$$

(iiii) $$\frac{N-\left[p\times(p)-p\right]}{(30,42)} \neq Z$$

$$\frac{N-\left[p\times(p_1)-p\right]}{(30,42)} \neq Z$$

$$\frac{N-\left[p_1\times(p_1)-p_1\right]}{(30,42)} \neq Z$$

With this we can replace the three previous of (iiii); $\frac{N-\left[(p);(p_1)\right]}{(3;5;7)} \neq Z$

If none of the equations, (N) is number prime and for the computer and if it is not prime begins the process of factoring with the equation where the root is an integer. This can be applied in any known algorithms [3][4], therefore we ∀(N):

$$N = \Big|_{42a + (p_1)}^{30a + (p)} \Big|$$

In the start of the factorization we know by the value [(p); $(p_1)$] which is the origin of one of its factors, is to say [30a if is (p)] y [42a if is $(p_1)$].

## 2. CONCLUSION

The relevance of this work is in the equations which is defined in polynomial time the computer shutdown when (N) is prime number whatever the value of (N).

In equation (1) we have the product between odd numbers therefore the polynomial time is the same for two odd numbers that for two primes; if we apply the algorithm √N and dividing by the odd minor.

The algorithm for the factoring all odd, begins with equations (eq (i); (ii)):

$$((i), (ii)) \Big|_{\neq Z}^{= Z} \rightarrow (eq(iii);(iiii)) \Big|_{= Z}^{\neq Z} \rightarrow \sqrt{N} \Big|_{\neq Z}^{= Z} \rightarrow \sqrt{[N - [(p); (p_1)] / (30;42)]} \Big|$$

$$= Z\ a \rightarrow N / [(30; 42) \times Z\ a + [(p;(p1)]] = Z$$

$$\neq Z_a \rightarrow (\Delta Z_a) = m^2 \rightarrow \frac{N}{(30,42)\times(m^2-n)+\left[(p);(p_1)\right]} = Z$$

 

**REFERENCES**


1. Andri lopez, equation for all prime number, Universal J. of Computational Mathemaics vol 1 (3) 2013.
2. Lov Grover, and Jaikumar Radhahrishnam, quantum search for multiple items using oarallel queties, Arxiv: quant-ph/0407217}, 2004.
3. M. Gordon, discrete logarithms in GF(p) using the number field sieve, Journal Discrete Math 6 pag 124-139; 1993.
4. Peter W. Shor, polynomials-time algorithms for prime factorization and discrete logarithms on a quantum computer. Arxiv: quant-ph/ 9508027; 1996.
5. Hertmains and J, Simon, on the power of multiplication in randon access machines. IEEE Computer Society, (long beach, page 13-23) 1974.


**Source of support: Nil, Conflict of interest: None Declared**