
Contents

1	Introduction	1
2	Integers Powers Fundamental Equations	1
3	Mathemaical Presentation-Getting Formula	2
3.1	Formula	3
4	Importance	5

**Humanity Science Thesaurus
By Ion Murgu - From Ohio, USA**

With a Contribution From:

Stephan Doru Murgu

and

Madalina Marin

this material was Edited via a FREE \LaTeX version

OBSERVATION:

**As you will see in further material I Had The Dare to name it so
because in relative mode SOLVED instantly
Fermat's Last Theorem**

**Under Humanity Natural Right Of Copyright
2015 September 24**

1 Introduction

When I was Student at Physics into 3-th Grade and I meet Quantum Mechanic Courses , I was impressed by the influence of Brachistochrone Problem for the future Of Quantum Theory . The problem in essence is how a elementary particle in a pure Field under its potentially effect and Interactions will proceed without to include any intermediates non conservatives forces, but only the pure interaction between a central force and its effect for. The History for Brachistochrone Problem is everywhere, for it I will resume what impressed myself , and for what I started my proper Analyze. The Experimental for, concluded in a sense, that Phenomena insert by nature also a rotation momentum for our particle, which late you will meet as induced Spin, in a simple explanation. But, into our non ideal experimentation, in fact the rotation momentum is induced by friction creating a couple responsive for rotation momentum, this time , because the movement is rotation , its effect is conservative, with a non conservative rate which can considered 0, and then is participating positive to effect hiding its until now know non conservative force.**What in reality isn't an absolute truth. ** This conducted us , to consider a elementary particle under a Central Force Effect will have a Cycloidal Movement into System, and I will not insist over all and how this in time was changed to ellipsoidal one. From here I will explain only in few words into Introduction this elliptical is included into a stupid Conservation Law : For an Inclined Plane(ABC), if by ideal convention, friction is null a object have 2 ways to reach in the same time 1. AB-BC and direct one AC, and it is Special case for any Pythagorean Triple's (3-4-5 as example) where also are excluding improper unfits between spatiality and dimensions. Seeing it, I started then to see what Quantitative Relations are including it, and are -Ion Murgu Integers Power Fundamental Equations (6) or, as named in first place - Ion Murgu Math Millennium Equations. And as will see in the future concluded it is also hidid into Fermat's Last Theorem by including Pythagorean Triples into Integers as Blessed Exceptions which confirm The Rule.

2 Integers Powers Fundamental Equations

Ion Murgu Integers Powers Triangles are the triangles which, for every $n \in \mathbb{Z}$, connect $(n + 1)$ consecutive Integers at power n with factorial of n . If analyze any $n+1$ consecutive Integers at power n using next method: make a table with $(2n+1)$ colons and n rows, In first row first colon write $(Z)^n$, next colon let free, third colon $(Z + 1)^n$, then free space, and so on the last colon will be $(Z + n)^n$. Now in second row under free spaces will be the differences between right and left terms of superior row, and so on for next .. After n differences you will obtain a single term which will be $(n!)$.

Table 1: Ion Murgu Integers Powers Triangle

(Z^n)	EMPTY	$(Z - 1^n)$	Emty	aaa	a	$(Z - n)^n$
....	$Z^n - (Z - 1)^n$	.....	.....	.....	$(Z - n + 1)^n - (Z - n)^n$	.....
....
....	....	Any1	...	Any 2	.....	.....
....	.....	....	$n!$	...	.....	.....

This is perfect valid also for its inverse , and is better then , because avoid the restriction of choosing $(Z > n)$, and then avoiding any mistakes.

$(Z+n)^n$	EMPTY	$(Z+n-1)^n$	Emty	...	.....	$(Z)^n$
....	$((Z+n)^n - (Z+n-1)^n)$.	.....	.....	.....	$((Z+1)^n - Z^n)$	....
.....
.....	....	Any1	...	Any2	.....	.....
.....	.....	.....	$(n!)$	...	.....	.....

Table 2: Ion Murgu Integers Powers Triangle 2

Sorry for inverse Mirroring ! This was my first approach of , and disarmed my then , because of any calculus errors. I was young , and trusted to much my calculus. This method is a method valid for easy test, because imply the work directly with the powers. And after the positive test, you can go to a formula. But after a long time , reprovoked by Brachistochrone problem , presented on internet in 2015, August, I returned to my old calculus and I get where I make mistakes, and observed I was right to luck in this direction. Thne I completed.

3 Mathemaical Presentation-Getting Formula

The same result can be obtained , but imply more work , by writing every (Z^n) , $(Z-I)^n$ as F(t) and making the calculus you will get $\{F(n) - K1nF(n-1) + \dots + F(0) = n!\}$ or $\{F(n) - K1nF(n-1) + \dots - F(0) = n!\}$. Trying it For Powers 2,3,4,5,6,7 I get The waited which isn't very heavy I get The same result and The Formula . After Calculus in this mode into formula the old connected to in a beautiful mode and will be stoned to see are included in directly powers Method also. So , making calculus for every power 3,4,5 6 and 7 separately and observing the redundancy, I make a program in Visual Basic and then in Java on Applet which to generalize, and to proof it, both worked , but on restricted areas . Lucking for performance I meet soon Perl with its Module BigIntegers and BigFloat , and started a new one which is working now at: www.lifeclimatic.com/mmc.pl for powers $(n < 51)$ and will be extended. A Software without limits of powers used can be made also , but because of generating every time the Coefficients table will be hard times responsible.

1	1
2	1, 2, 1
3	1, 3, 3, 1
4	1, 4, 6, 4, 1
5	1, 5, 10, 10, 5, 1
6	1, 6, 15, 20, 15, 6, 1
7	1, 7, 21, 35, 35, 21, 7, 1
8	1, 8, 28, 56, 70, 56, 28, 8, 1
9	1, 9, 36, 84, 126, 126, 84, 36, 9, 1
10	1, 10, 45, 120, 210, 252, 210, 120, 45, 10, 1
11	1, 11, 55, 165, 330, 462, 462, 330, 165, 55, 11, 1
12	1, 12, 66, 220, 495, 792, 924, 792, 495, 220, 66, 12, 1
13	1, 13, 78, 286, 715, 1287, 1716, 1716, 1287, 715, 286, 78, 13, 1
14	1, 14, 91, 364, 1001, 2002, 3003, 3432, 3003, 2002, 1001, 364, 91, 14, 1

Table 3: Integers Powers Triangle -Coefficients Table.

3.1 Formula

$$\sum_{I=n}^0 (-1)^m * (K_{nI}) * (T + I)^n = n! \quad \text{Ion Murgu - Integers}$$

Powers Fundamental Equations

Where $(m = I)$ for n even (par) and $(m = I + 1)$ for n odd and (K_{nI}) coefficients contained into Integers Powers Triangle -Coefficients Table and n isn't a power in , instead of $((Z - I)^n)$, where n is power.. At this time Formula same to be covering only \mathbb{N} but only about sign convention and about a double asymmetry introduced by unity, then this can be considered as having its proper image into \mathbb{Z} , excluding maybe, the area around ZERO where double unbalance from UNITY is speaking, but for further research I remind we meet it also in modern Math , and Riemann is there, in a sense, and it can be a non pertinent remark, because of a not totally analyze, the problem is the same. Anyway a easy way to get FORMULA (Ion Murgu - Integers Powers Fundamental Equations), I will describe with an example also . If will note for an Integer $(Z > n)$: with $f_0 = (Z - n)^n$, $f_1 = (Z - n + 1)^n$, $f_{n-1} = (Z - 1)^n$, $f_n = (Z)^n$ and will make a table : (the dimension is orientable)

f_0	...	f_1	....	f_{n-1}	....	f_n
....	$(f_1 - f_0)$	....	....	....	$(f_n - f_{n-1})$	....
....
....	...	any	....	any	....	....
....	...	....	FORMULA	....	....	....

Table 4: Getting Formula Orientable Table

$$\sum_{I=n}^0 (-1)^m * (K_{nI}) * (T + I)^n = n! \quad \text{Ion Murgu - Integers Powers Fundamental Equations}$$

Integers Powers Fundamental Equations

Integers Powers Fundamental Equations R Sided.

f_0	...	f_1	....	f_2	....	f_3
....	$(f_1 - f_0)$	....	$(f_2 - f_1)$	....	$(f_3 - f_2)$	....
....	...	$(f_2 - 2 * f_1 + f_0)$	....	$(f_3 - 2 * f_2 + f_1)$	....	....
....	...	....	$(f_3 - 3 * f_2 + 3 * f_1 - f_0)$	....	....	....

Table 5: Getting Formula for $(n = 3)$

When I get The formula, into 2015,I published this form , which will have first term negative , because then I didn't pay attention to sign but to work. For it I yet keep this

form as reminder of .

$$\sum_{I=n}^0 (-1)^m * (K_{nI}) * (T + I)^n = n!$$

Integers Powers Fundamental Equations R Sided.

when real is good to use

$$\sum_{I=0}^n (-1)^m * (K_{nI}) * (Z - I)^n = n!$$

Integers Powers Fundamental Equations R Sided.

ION MURGU INTEGERS POWERS FUNDAMENTAL EQUATIONS ARE identities - **IDENTITIES** and for every Z Integer , with $||Z| > |n|$ this is valid , but for all Z and n as power The Form is :

$\sum_{I=n}^0 (-1)^m * (K_{nI}) * (Z + I)^n = n!$ <p>Integers Powers Fundamental Equations L Sided.</p>

Table 6: Integers Powers Fundamental Equations

$$\sum_{I=n}^0 (-1)^m * (K_{nI}) * (Z + I)^n = n!$$

Integers Powers Fundamental Equations L Sided.

have property of addition and if will note , left side sum as S_Z is clear for same n :

-
1. $(S_Z + S_Z) = 2n!$
 2. $(S_Z + S_T) = 2n!$
 3. $(S_Z - S_R) = 0$
 4. $(S_Z - S_T) = 0$
 5. and so on all combinations

where Z,R,T are are positive Integers or negative in the same time. But also:

1.
$$\left| \frac{S_Z}{S_T} \right| = 1$$
2.
$$\left| \frac{S_Z}{S_R} \right| = 1$$
3.
$$\left| \frac{S_R}{S_T} \right| = 1$$

3,4 from first Items , and all for second have Equivalence but because of theirs relative assembly around of **0 and 1** , because of utility, and as a pertinent reply to Euler God Equation I named those ION MURGU - GOD EQUATIONS OF BALANCE.

4 Importance

The importance for ION MURGU - INTEGERS POWERS FUNDAMENTAL EQUATIONS or as named in first place into 2015 September 24 is crucially, and I had more motivations to say it, right for I said, also can be named - HUMANITY SCIENCE THESAURUS - .

1. THOSE Equations solved instantly , Fermat's Last Theorem via a Mathematically Method, named Fermat-Murgu Impossible Equation what have at base it. I hope not a Mathematician with skill will put the problem of old convention of sign because for n odd if X and Y negatives , then Z forced Negative into Fermat Equations

$$X^n + Y^n = Z^n$$

, and for one negative by symmetry the Equation became

$$X^n = Y^n + Z^n$$

or

$$Y^n = X^n + Z^n$$

- a rotation of terms. The old sign convention can't stop Fermat-Murgu Impossible Equations in Solving Fermat's Last Theorem into an accurate mode. For $(n < 0)$, we are into Rational Field and Fermat's Last Theorem Extension or Murgu Extension is simple to demonstrate: Fermat's Last Theorem Extension Or Murgu Extension . If Fermat's Last Theorem via Fermat's Equations

$$X^n + Y^n = Z^n$$

have any solutions into Integers Field then by definition have also into Rational Field and INVERSE . DEMONSTRATION: Supposing By Absurd Fermat Equations

$$X^n + Y^n = Z^n$$

have any solutions into Integers , Then

$$\left(\frac{X^n}{Z^n} + \frac{Y^n}{Z^n} \right) = 1$$

will reveal a Rational Solution , and Inverse.

- As you see Above via Ion Murgu God Equations Of Balance, we get a new tool in Numbers Theory and Algebra , and not only, via all connections possible which it brought, but also if we write left side as

$$(S_R^n)$$

where n, R are indices's for power and $|R|$,any integer, then :

(a)

$$\left| \frac{S_Z^n}{S_T^{n-1}} \right| = n$$

(b)

$$\left| \frac{S_Z^{n+1}}{S_R^n} \right| = (n + 1)$$

(c)

$$\left| \frac{S_R}{S(n-2)_T} \right| = n(n-1)$$

(d) and so on, and can include as T,Z,R and even n as Prime Numbers connected.

- via those Equation , we get Fermat-Murgu QUADRUPLETS , maybe with the same importance as Pythagorean Triples into Integers- Fermat-Murgu QUADRUPLETS are Integers Coupled into Equations

$$(X^3 + Y^3 - Z^3 = 1)$$

or

$$(X^3 + Y^3 - Z^3 = -1)$$

and theirs Infinity Images

$$(J(X^3 + Y^3 - Z^3) = J^3)$$

or

$$(J(X^3 + Y^3 - Z^3) = -J^3)$$

with J covering all Integers .

-
4. Via Fermat-Murgu Impossible Equations and Euler - Murgu Equation $1=1$, discovered Pythagorean Triples as Exceptions from Fermat's Last Theorem, but exceptions which confirm THE RULE.
 5. Observation: The role of **Ion Murgu Integers Powers Fundamental Equations**) into solving **Fermat's Last Theorem** in an ACCURATE Mode via a NEW Mathematically Method Fermat-Murgu Impossible Equations can't be excluded because of an also modern problem hidden in complex Numbers define, but not solved (I will say without to offend nobody),

Double asymmetry of powers relative to UNITY, and sign convention around of ZERO.

I do not have time right Now , to demonstrate • **Taniyama-Shimura Conjectre** • isn't proved yet, but as reflection I can sent you to **Fermat-Murgu Quadruplets** revealed by equations

$$X^3 + Y^3 - Z^3 = 1$$

or

$$X^3 + Y^3 - Z^3 = -1$$

which is the last concrete conjecture and by Definition a Complete Modular Method, then I consider impossible to Demonstrate this is valid for every n as power. Also I consider **semistable curves over rationals** an mistake in because Fermat Equations if have solutions into Integers then by Definition will have in rational , then can't be used even into an inverse logic. As I demonstrated up in this material the sign convention neither can be invoked for.

6. All those items, described in short terms here will be reloaded in its proper material, including four methods of certifying Fermat's Last Theorem and I hope I will can have a ISBN to put all in a BOOK, even if will be an electronic book, will need its proper ISBN.
7. About Bibliography I think Abel Institution and International Math Institutions , and Nobel Institution will have the right to add The Bibliography which match whit. If any errors of Language or SIGNS, I claim the right to be coming with any ERRATA's in times.

@ UNDER Human Natural Rights Of Copyright .