Title: 7-Golden Pattern, formula to get the sequence.
Author: Gabriel Martin Zeolla
Comments: 5 pages, 3 figures.
Subj-class: Theory number
gabrielzvirgo@hotmail.com

Abstract: This article develops a formula for calculating the simple prime numbers-7 and the simple composite numbers-7 of the Golden Pattern.

Keywords: 11-Rough number, divisibility, Simple prime number, Simple composite number, Golden Pattern.

## Introduccion

This work is the continuation of the **Golden Pattern** papers published in http://vixra.org/abs/1801.0064, in which the discovery of a pattern for simple prime numbers has been demonstrated (For a number to be considered Simple Prime number-7 by dividing it by 2, 3, 4, 5, 6, 7, 8, 9, must give a decimal result.). If it resulted in integers numbers, it would be simple composite number-7.

## Special cases

In the paper of the Golden Pattern (http://vixra.org/abs/1801.0064) explains how special are the Number. 2, 3, 5, 7, These are not simple prime numbers-7 The calculations and proportions prove it and its reductions also.
The number 1 is a Simple prime number-7. It is a number that generates balance and harmony, it is a necessary number, it is the first number of the pattern, but it is also the representative of the first number of each pattern to infinity.
Graph 3 and 4 of this paper demonstrate this.

## Formula to get Simple Prime numbers-7

This formula calculates all the simple prime numbers -7.
The formula for calculating the Simple Prime numbers-7 is based on Zeolla Gabriel's paper on how to obtain prime numbers. http://vixra.org/abs/1801.0093

## Demonstration 1

The formula is divided into 2 columns.

On the left we will calculate the simple prime number-7 located in $(A)$, on the right we will calculate the prime numbers located in $(B)$.

| | |
|---|---|
| $P_{7\ (A)} = S.Prime\ numbers - 7\ in\ column(A)$<br>$Z = numbers \geq 0$ | $P_{7\ (B)} = S.Prime\ numbers - 7\ in\ column\ (B)$<br>$Z = numbers \geq 0$ |
| $P_{7\ (A)} = (6 * n_{\substack{n\geq 0 \\ n\neq 4+5*Z \\ n\neq 1+7*Z}} + 1)$<br>$n \neq 1,4,8,9,14,15,19,22,24, \dots \dots ..$<br>**Using values correct for:**<br>$n = 0,2,3,5,6,7,10,11,12,13, \dots.$<br>**We get the following Simple prime numbers-7.**<br>$P_{7\ (A)} = 1,13,19,31,37,43,61,67,73,79,97, \dots.$ | $P_{7\ (B)}=(6*n_{\substack{n>1 \\ n\neq 6+5*Z \\ n\neq 6+7*Z}} -1)$<br>$n \neq 6,11,13,16,20,21,26,27, \dots \dots ..$<br>**Using correct values for**<br>$n = 2,3,4,5,7,8,9,10,12,14,15, \dots$<br>**We get the following Simple prime numbers-7.**<br>$P_{7\ (B)} = 11,17,23,29,41,47,53,59,71,83,89,101, \dots$ |

**Refrence** A008364 The On-Line Encyclopedia of Integer Sequences

## Formula to get Simple Composite numbers-7 (inside the sequence $6 * n \pm 1$ )

Composite numbers divisible by numbers greater than 3.

This formula calculates all the simple composite numbers -7.
The formula for calculating the Simple composite numbers-7 is based on Zeolla Gabriel's paper on how to obtain prime numbers. http://vixra.org/abs/1801.0093

## Demonstration 2

The formula is divided into 2 columns A and B.

On the left we will calculate the simple composite number-7 located in $(A)$, on the right we will calculate the composite numbers located in $(B)$.

$A = 6 * n + 1$
$B = 6 * n - 1$

| | |
|---|---|
| $Nc_{7\ (A)} = S.composite\ numbers - 7\ in\ column(A)$<br>$Z = numbers \geq 0$ | $Nc_{7\ (B)} = S.Composite\ numbers - 7\ in\ column\ (B)$<br>$Z = numbers \geq 0$ |
| $Nc_{7\ (A)} = (6 * n_{\substack{n=4+5*Z \\ n=1+7*Z}} + 1)$<br>$n = 1,4,8,9,14,15,19,22, \dots \dots ..$<br>**We get the following Simple Composite numbers-7.**<br>$Nc_{7\ (A)} = 7,25,49,55,85,91,115,133, \dots .$ | $Nc_{7\ (B)}=(6*n_{\substack{n=1+5*Z \\ n=6+7*Z}} -1)$<br>$n = 1,6,11,13,16,20,21, \dots \dots ..$<br>**We get the following Simple Composite numbers-7.**<br>$Nc_{7\ (B)} = 5,35,65,77,95,119,125,155,161, . \dots$ |

## Graphic 1

The Golden pattern is constructed by the product of the prime numbers less than or equal to 7. Then these are multiplied by 3. (Since each column has 3 variables in its reductions, the result will be the numbers that exist per pattern.

(2*3*5*7)*3=**630**

The pattern found is from 1 to 630. It repeats itself to infinity respecting that proportion every 630 numbers. The 7-Golden Pattern is formed by a rectangle of 6 columns x 105 rows.
The simple prime numbers-7 fall in only two columns in the one of the 1 (Column A) and the one of the 5 (column B) They are painted yellow. The rest of the columns are simple composite numbers-7. (In Columns A, B composite numbers divisible by numbers greater than 3).These are painted by red color. The rest of the columns are composite numbers divisible by 2 and 3 to infinity.

Graphical chart of the reduced 7-Golden pattern

Simple Prime Numbers-7 in yellow
Simple Composite number-7 in Red

| A | | | | B | |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 |
| 37 | 38 | 39 | 40 | 41 | 42 |
| 43 | 44 | 45 | 46 | 47 | 48 |
| 49 | 50 | 51 | 52 | 53 | 54 |
| 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 |
| 67 | 68 | 69 | 70 | 71 | 72 |
| 73 | 74 | 75 | 76 | 77 | 78 |
| 79 | 80 | 81 | 82 | 83 | 84 |
| 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 |
| 97 | 98 | 99 | 100 | 101 | 102 |
| 103 | 104 | 105 | 106 | 107 | 108 |

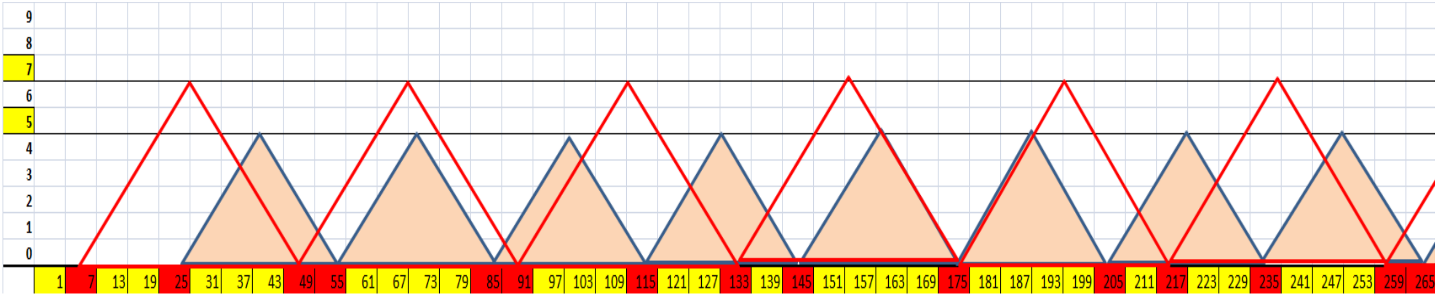
## Graphic 2

In the vertices of the triangles on the line are the composite numbers-7. The rest are Simple Prime numbers-7
The base triangles 5 form composite numbers multiples of 5.
The base triangles 7 form the numbers composite of multiples of 7.

Sequence $A = (6 * n + 1)$

$n \geq 0$

Reference A016921 (The On-line Enciclopedia of integers sequences)

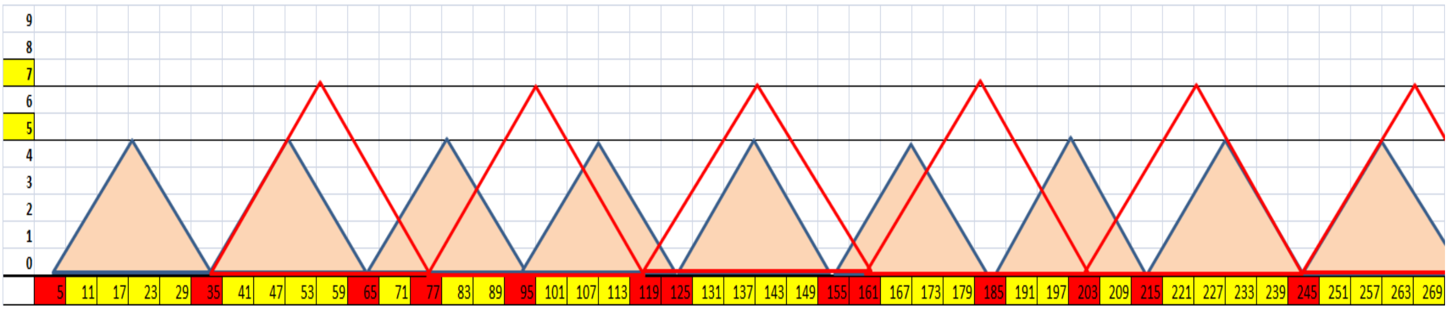



## Graphic 3

In the vertices of the triangles on the line are the composite numbers-7. The rest are Simple Prime numbers-7
The base triangles 5 form composite numbers multiples of 5.
The base triangles 7 form the numbers composite of multiples of 7.

Sequence $B = (6 * n - 1)$
$n \geq 1$

Reference A016969 (The On-line Enciclopedia of integers sequences)



## Conclusion

The 7-Golden Pattern is the confirmation of an order to infinity in equilibrium. This formula demonstrates how to calculate all simple prime numbers-7 and simple composite numbers-7. The graphics are a revealing scheme of how these numbers are distributed.

This Paper is extracted from my book El Patron Dorado II
ISBN 978-987-42-6105-2, Buenos Aires, Argentina.

**References**

Enzo R. Gentile, Elementary arithmetic (1985) OEA.
Burton W. Jones, Theory of numbers
Iván Vinográdov, Fundamentals of Number Theory
Niven y Zuckermann, Introduction to the theory of numbers
Dickson L. E., History of the Theory of Numbers, Vol. 1
Zeolla Gabriel Martin, Golden Pattern. http://vixra.org/abs/1801.0064
Zeolla Gabriel Martin, Expression to Get Prime Numbers and Twin Prime Numbers, http://vixra.org/abs/1801.0093

A008364 The On-Line Encyclopedia of Integer Sequences

Professor Zeolla Gabriel Martin
Buenos Aires, Argentina
01/2018
gabrielzvirgo@hotmail.com