Title: Construction of the Golden Patterns.
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Subj-class: Theory number
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Abstract: This paper develops the construction of the Golden Patterns for different prime divisors, the discovery of patterns towards infinity. The discovery of infinite harmony represented in fractal numbers and patterns. The golden pattern works with the simple prime numbers that are known as rough numbers and simple composite number.

Keywords: Golden Pattern, rough number, divisibility, prime number, simple prime number, simple composite number.

Golden pattern construction
The golden pattern is composed of simple prime numbers and simple composite numbers. The product of the prime numbers, multiplied by 3, generates a result that indicates how many numbers there are in the Golden Pattern. All the patterns are triplets, they have 3 identical sectors, their only variable are the reductions, which together form the golden Pattern.

For more information about each Golden Pattern enter the reference link

The formula for calculating the size of the pattern works for all the prime numbers to infinity.

\[ Pt = 3 \times \prod \text{Prime number} \]

\[ Pt = 3 \times (P_1 \times P_2 \times P_3 \times P_4 \ldots \ldots \ldots \ldots \times P_\infty) \]

Pt = Size of the pattern
P = Prime number
P_1 (First prime number), P_2 (Second prime number), P_3 (third prime number), etc.
Demonstration

Example A
3-Golden Pattern
Pt = $3 \cdot \prod Prime$
Pt = $3 \cdot (2 \cdot 3) = 3 \cdot 6 = 18$ (size of the pattern)

Reference
5-rough number https://oeis.org/A007310
3-Golden Pattern http://vixra.org/abs/1803.0098

Example B
5-Golden Pattern
Pt = $3 \cdot \prod Prime$
Pt = $3 \cdot (2 \cdot 3 \cdot 5) = 3 \cdot 30 = 90$ (size of the pattern)

Reference
7-rough number https://oeis.org/A007775
5-Golden Pattern http://vixra.org/abs/1802.0201

Example C
7-Golden Pattern
Pt = $3 \cdot \prod Prime$
Pt = $3 \cdot (2 \cdot 3 \cdot 5 \cdot 7) = 3 \cdot 210 = 630$ (size of the pattern)

Reference
11-rough number https://oeis.org/A008364
7-Golden Pattern http://vixra.org/abs/1801.0064

Example D
11-Golden Pattern
Pt = $3 \cdot \prod Prime$
Pt = $3 \cdot (2 \cdot 3 \cdot 5 \cdot 7 \cdot 11) = 3 \cdot 2.310 = 6.930$ (size of the pattern)

Reference
13-rough number https://oeis.org/A008365
11-Golden Pattern http://vixra.org/abs/1802.0236

Example E
13-Golden Pattern
Pt = $3 \cdot \prod Prime$
Pt = $3 \cdot (2 \cdot 3 \cdot 5 \cdot 7 \cdot 11 \cdot 13) = 3 \cdot 30.030 = 90.090$ (size of the pattern)

Reference
17-rough number https://oeis.org/A008366

Example F
**17-Golden Pattern**

\[ Pt = 3 \times \prod \text{Prime} \]

\[ Pt = 3 \times (2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17) = 3 \times 510.510 = 1.531.530 \] (size of the pattern)

**Reference**

19-rough number [https://oeis.org/A166061](https://oeis.org/A166061)

**Example G**

**19-Golden Pattern**

\[ Pt = 3 \times \prod \text{Prime} \]

\[ Pt = 3 \times (2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17 \times 19) = 3 \times 9.699.690 = 29.099.070 \] (size of the pattern)

**Reference**

23-rough number [https://oeis.org/A166063](https://oeis.org/A166063)

**Example H**

**23-Golden Pattern**

\[ Pt = 3 \times \prod \text{Prime} \]

\[ Pt = 3 \times (2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17 \times 19 \times 23) = 3 \times 223.092.870 = 669.278.610 \] (size of the pattern)

**Example I**

**29-Golden Pattern**

\[ Pt = 3 \times \prod \text{Prime} \]

\[ Pt = 3 \times (2 \times 3 \times 5 \times 7 \times 11 \times 13 \times 17 \times 19 \times 23 \times 29) = 3 \times 223.092.870 = 19.409.079.690 \] (size of the pattern)

The examples continue to apply for all prime numbers to infinity.

**All the patterns are within the following pattern, so they are all interconnected.**

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<tr>
<th>Golden Pattern</th>
<th>Size of Pattern</th>
<th>18</th>
<th>90</th>
<th>630</th>
<th>6.930</th>
<th>90.090</th>
<th>1.531.530</th>
<th>29.099.070</th>
<th>669.278.610</th>
<th>19.409.079.690</th>
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</thead>
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</tbody>
</table>

**graphic table 1**

We can observe how all the Patterns relate to each other through multiplication and division among them.
We can observe in the graph how each divisor Prime disappears in its own Pattern.

We could continue infinitely.
Final conclusion
The Golden Pattern construction is the confirmation of an order to infinity in equilibrium.
All the patterns are formed by three identical sectors where their only variable are the reductions.
The formula works correctly for all patterns with different prime divisors.
All the patterns are within the expression $6 \times n \pm 1$
All the patterns are triplets.
All the patterns that are inside the sequence $6 \times n + 1$ its summed digits form the sequence 1,4,7
All the patterns that are inside the sequence $6 \times n - 1$ its summed digits form the sequence 2,5,8
I can affirm that there are infinite different patterns with different prime divisors, which maintain a great harmony, they are always in balance, they present infinite proportions, fractal symmetries, all patterns have the same procedure. They are all different and they are very linked.

This Paper is extracted from my book The Golden Pattern II

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