Title: Construction of the Golden Patterns.
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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.

$$\boldsymbol{Pt} = 3 * \prod \textbf{\textit{Prime number}}$$
$$\boldsymbol{Pt} = 3 * (P_1 * P_2 * P_3 * P_4 \ldots\ldots\ldots\ldots\ldots\ldots\ldots .* P_\infty)$$

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= $3 * \prod Prime$
Pt=3*(2*3) = 3*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= $3 * \prod Prime$
Pt=3*(2*3*5) = 3*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= $3 * \prod Prime$
Pt=3*(2*3*5*7) = 3*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= $3 * \prod Prime$
Pt=3*(2*3*5*7*11) = 3*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= $3 * \prod Prime$
Pt=3*(2*3*5*7*11*13) = 3*30.030= **90.090** (size of the pattern)

Reference
17-rough number https://oeis.org/A008366
13-Golden Pattern http://vixra.org/abs/1802.0363

Example F

17-Golden Pattern

Pt= $3 * \prod Prime$

Pt=3*(2*3*5*7*11*13*17) = 3*510.510= **1.531.530** (size of the pattern)

Reference

19-rough number https://oeis.org/A166061

Example G

19-Golden Pattern

Pt= $3 * \prod Prime$

Pt=3*(2*3*5*7*11*13*17*19) = 3*9.699.690= **29.099.070** (size of the pattern)

Reference

23-rough number https://oeis.org/A166063

Example H

23-Golden Pattern

Pt= $3 * \prod Prime$

Pt=3*(2*3*5*7*11*13*17*19*23) = 3*223.092.870= **669.278.610** (size of the pattern)

Example I

29-Golden Pattern

Pt= $3 * \prod Prime$

Pt=3*(2*3*5*7*11*13*17*19*23*29) = 3*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.

Golden Pattern	Size of Pattern	18	90	630	6.930	90.090	1.531.530	29.099.070	669.278.610	19.409.079.690
3-Golden Pattern	18	1	5	35	385	5005	85085	1616615	37182145	1078282205
5-Golden Pattern	90		1	7	77	1001	17017	323323	7436429	215656441
7-Golden Pattern	630			1	11	143	2431	46189	1062347	30808063
11-Golden Pattern	6.930				1	13	221	4199	96577	2800733
13-Golden Pattern	90.090					1	17	323	7429	215441
17-Golden Pattern	1.531.530						1	19	437	12673
19-Golden Pattern	29.099.070							1	23	667
23-Golden Pattern	669.278.610								1	29
29-Golden Pattern	19.409.079.690									1
Continue										

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.

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	3-Golden Pattern
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	5-Golden Pattern
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	7-Golden Pattern
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	11-Golden Pattern
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	13-Golden Pattern
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	17-Golden Pattern
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	19-Golden Pattern

graphic table 2

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 $6 * n \pm 1$
All the patterns are triplets.
All the patterns that are inside the sequence $6 * n + 1$ its summed digits form the sequence 1,4,7
All the patterns that are inside the sequence$6 * n - 1$ 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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