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The Relation of Fibonacci sequence with the Other Numbers

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Abstract: The Fibonacci sequence is famous because it's have amazing and great properties. In this study, we prove some of the interesting properties which include the relations between Fibonacci numbers and (9, 19, 29). And we found a lot of connections between them.

Keywords: Fibonacci sequence, golden ratio, Number 19

INTRODUCTION

The Fibonacci sequence was given its name in might of 1876 by the outstanding French scientist Franc¸ois Edouard Anatole screenwriter, United Nations agency had originally known as it"the series of Lam´e," [1] when the Frenchscientist archangel Lam´e [Dan Kalman& Robert Mena]

In arithmetic, the Fibonacci numbers [2, 3] are the numbers within the following whole number sequence, referred to as the sequence, and characterized by the actual fact that each range once the primary 2 is that the total of the 2 preceding ones.

The Fibonacci spiral: associate degree approximation of the golden spiral created by drawing circular arcs connecting the other corners of squares within the Fibonacci tiling; [4] this one uses squares of sizes one, 1, 2, 3, 5, 8, 13 and 21.

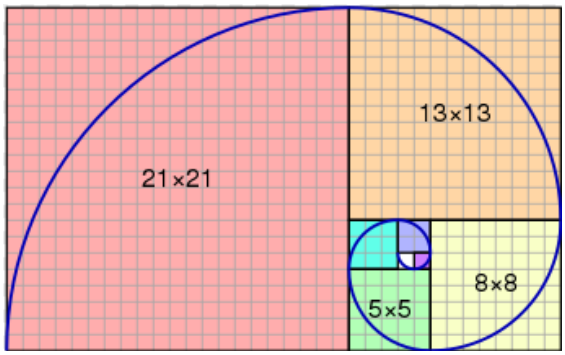

Fig-1:

There is a huge [5, 6] interest of modern science in the application of the Fibonacci numbers and Golden Section.

The Fibonacci numbers Fn are

1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, ….

Each Fibonacci number is the sum [7-15] of the previous two Fibonacci numbers!

Let n any positive integer. If Fn is what we use to describe the nth Fibonacci number, then

$$Fn = Fn-1 + Fn-2$$

[Sergio Falcon] where in every [18, 19] term the total of the 2 previous terms, starting with the values F0 = zero, and F1 = 1. On the opposite hand the quantitative relation of 2 consecutive Fibonacci [20, 21, 22] numbers converges to the Golden [23, 24] mean, or proportionality [25, 26] sin (2_/5)/ sin (1/5) = 1.618.The classical Fibonacci numbers [27,28] have been very used in as different sciences [29-34] as the biology, demography or economy. Recently they have been

applied even in the high-energy physics, but there exist generalizations of these numbers given by [35-38] researches as Horadam.

PROBLEM STATEMENT

The following table Fibonacci numbers, with dividing the output of each one of them with the number (19): sequence

Table 1: Fibonacci numbers dividing the output of each one (19)

Dividing by (19)	Fibonacci number	No
0.0	0	1
0.1	1	2
0.1	1	3
0.1	2	4
0.2	3	5
0.3	5	6
0.4	8	7
0.7	13	8
1.1	21	9
1.8	34	10
2.9	55	11
4.7	89	12
7.6	144	13
12.3	233	14
19.8	377	15
32.1	610	16
51.9	987	17
84.1	1597	18
136.0	2584	19
785808	14930352	37
4540398488	86267571272	55

Divided by 19	**result**	**Fibonacci inverse**	**Calculation**	**Fibonacci sequence**	**Period**
136	2584	2584	+	0	1
-84	-1596	1597	-	1	2
52	988	987	+	1	3
-32	-608	610	-	2	4
20	380	377	+	3	5
-12	-228	233	-	5	6
8	152	144	+	8	7
-4	-76	89	-	13	8
4	76	55	+	21	9
0	0	34	-	34	10
4	76	21	+	55	11
4	76	13	-	89	12
8	152	8	+	144	13
12	228	5	-	233	14
20	380	3	+	377	15
32	608	2	-	610	16
52	988	1	+	987	17
84	1596	1	-	1597	18
136	2584	0	+	2584	19

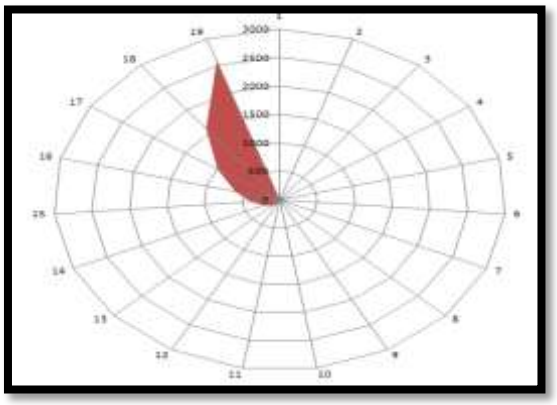

Fig-2: Fibonacci sequence

As in Fig.2 we can see the final general views of Fibonacci sequence. The sum of the first (19) a number in the Fibonacci sequence is to accept the other divisible by the number (19):

(0 + 1 + 1 + 2 + 3 + 5 + 8 + 13 + 21 + 34 + 55 + ... + 2584) = 6764

6764 / 19 = 356

That the resulting number (6764), a unique feature. It is equal to:

19 x 4 x 89 = 76 x 89

This number (89), is the number of Fibonacci His status (11)! It reversed the wonder that is equal to: 1/89 = 0.01123595 ... Webmasters and password in this inverted it is the only one that includes in breaking the ten-year consecutive Fibonacci itself:

0, 0 1
0, 0 0 1
0, 0 0 0 2
0, 0 0 0 0 3
0, 0 0 0 0 0 5
0, 0 0 0 0 0 0 8
0, 0 0 0 0 0 0 1 3
0, 0 0 0 0 0 0 0 2 1...

0, 0 1 1 2 3 5 9 5 ...

Reverse this process and our destination because we reverse the first (19) a number in the Fibonacci sequence, so that it becomes the first is the last and the last is first, here's the surprise [Loay bin Ghazi Tibi]. Table.2 Fibonacci sequence and the inverse of it and divided by 19 part 1.

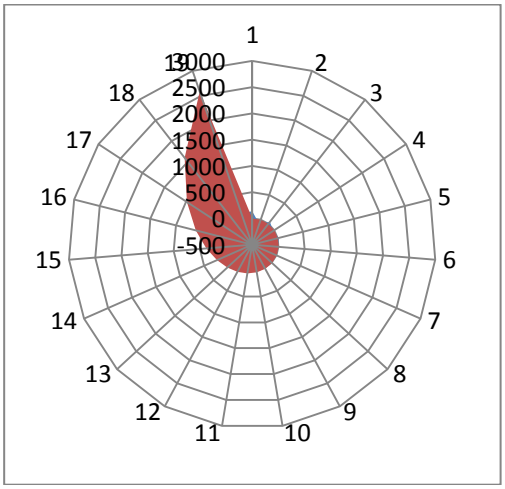

Fig-2: General views of Fibonacci sequence with its inverse

From the table above, as shown in table 2 part 2, if we add no. (1) of the Fibonacci sequence to the offset by in the inverse sequence, the came out number is divisible by (19), also if this number rose from the number (2) of corresponding Fibonacci sequence also the came out number is divisible by (19). Then, if we add to the third issue in the corresponding successive reverse, once again came out number is divisible by (19) ... and so on until we reach the Fibonacci number (19)! It calculations alternately: time to add and subtract time, which is never left behind, and achieved only with the number (19).

Also, if the process has all the numbers that follow ranked number holder (19), found that the calculation between each number in the Fibonacci sequence and the corresponding sequence in reverse, the process is always put:

Table 2: Fibonacci sequence and the inverse of it and divided by 19 part 2

Divided by 19	result	Fibonacci inverse	Calculation	Fibonacci sequence	Period
136	2584	0	+	2584	19
220	4180	1	-	4181	20
356	6764	1	-	6765	21
576	10944	2	-	10946	22
932	17708	3	-	17711	23
1508	28652	5	-	28657	24
2440	46360	8	-	46368	25
3948	75012	13	-	75025	26
6388	121372	21	-	121393	27
10336	196384	34	-	196418	28
16724	317756	55	-	317811	29
27060	514140	89	-	514229	30
43784	831896	144	-	832040	31
70844	1346036	233	-	1346269	32
114628	2177932	377	-	2178309	33
185472	3523968	610	-	3524578	34
300100	5701900	987	-	5702887	35
485572	9225868	1597	-	9227465	36
785672	14927768	2584	-	14930352	37
1271244	24153636	4181	-	24157817	38
2056916	39081404	6765	-	39088169	39
3328160	63235040	10946	-	63245986	40

Look at how successive changed body and set aside, to be the location of the number (19) directory location, and to suggest various images that the subject of this number (19) of which is destined recognition aesthetically surprising!

RESULTS AND DISCUSSION

If the first number is divided on the Fibonacci (19) is the owner of status (19), followed by the number that this feature is the number of Fibonacci His status (37), which is between him and the first (19) status exactly! Then the next is the owner of status (55), which is also the second (19) status.

1. The sum of the preparation for the first nine successive preparation of any number from zero to 21 is the number 54 and this number is divisible by 9, and without rest,
   54 ÷ 9 = 6
2. The sum of the preparation for the first 18 consecutive number from zero to the number 1597 is the number 4810 and this number is divisible by 19.
   4810 ÷ 19 = 220
   The number 18, which refers to the first number is 18 (9 * 2) It is here shown that there is a relationship between the number 9 and number 19.
3. The number 19 is the same in successive number is 2584divisible by 19
   2584 ÷ 9 = 136
4. The total number of successive 29 for the first number from zero to number 317 811 is a number 832 039 and that number is divisible by 29,
   832039 ÷ 29 = 28691
5. Total prepare for the first 36 consecutive any number from zero to number 9,227,465 is the number 24,157,816 and this number is divisible by 19,
   24157816 ÷ 19 = 1271464
   And the number 36, which refers to the first number is 36 (9 * 4) and this again shows the relationship between the number 9 and number 19.
6. Since there is a relationship between the number 18, which is twice the number 9 and number 19, now we have to prove a relationship between the number 19 and the next in the series after the 18 number that is
   18 +19 = 37,
   a number 14,930,352 and this number divisible by on 19 without rest.
   14930352 ÷ 19 = 785808
7. There is also a relationship between the number 37 and the next in the series after a number 18 or 18 +37 = 55, a number 86,267,571,272 and this number divisible by on without the rest of the 19 ..
   86267571272 ÷ 19 = 4540398488
8. It is known that the sum of the numbers 9 +19 +29 = 57 and this number is divisible by 19 without the rest of the 57 ÷ 19 = 3. Now if we take the corresponding numbers in the sequence of the No. 9 and the two numbers 19 and 29, a 21 and 2584 and 317 811 does wonder if the sum of these numbers are accepted multiple of 19 as the corresponding numbers
   21 +2584 + 317811 = 320416
   320416 ÷ 19 = 16864
   To see consistency between successive sequence and corresponding of how to prepare in harmony with the number 19 in tune bizarre.
9. The sum of the first 19, the result is divisible
   (136-84 + 52-32 + 20-12 + 8-4 +4 +0 +4 +4 +8 +12 +20 +32 +52 +84 +136 = 836)
   The number 836 is divisible by 19
   836 ÷ 19 = 44
10. The sum of the first 19, the result of dividing the number 17 in their own cascading is (-152 + 94-58 + 36-22 + 14-8 + 6-2 + 4 + 2 + 6 + 8 + 14 + 22 + 36 + 58 + 94 +152 = 304) and the number 304 is divisible by 19
    304 ÷ 19 = 16
11. When you multiply the following numbers among them
    9* 19 * 29 = 4959
    The last divided by the number 19 produces the following:
    4959 ÷ 19 = 261
    When collecting the numbers of the last one:
    1 +6 +2 = 9

This shows the relationship between the 9, 19 and 29

CONCLUSION

In this research we found that there is a lot of relations between the numbers 9,19,29, and Fibonacci sequence and if we search more may we will find more than this also means that there is a families in the numbers as well as in plants and animals.

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