



Rearranging into the clusters and Groups of the Decimal Values of π , φ , e and their specific Analysis

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Abstract- The significance of constants π {Circumference/diameter= $2\pi r/d(2r)$ }, $\varphi(F_n/F_{n-1}=\varphi)$, and e are well known, which have infinite decimal values. These infinite sequences might have some significant elements within them. It is considered in the study that these decimal values up-to 1000 digits. Rearranging these decimal values into the clusters of 3-3 digits, 5-5 digits, 7-7 digits and groups of 10-10. After that they were analyze over the Prime factorization of clusters of 3-3 digits and 5-5 digits. They were analyze over the Prime factorization and Prime Numbers. considering the numbers, which have 3 or 7 or 3×7 . In second group, the considered numbers, which have 2×5 in Prime factorization of those numbers.

In the present study analyses of the digital sum (digital root) of the clusters and multiplication of all digits of clusters and groups is performed. The numbers, which have digital sum of (root numbers) 1, 4, 7, 8 or 9 after adding and multiplying the digits of those numbers are being considered. The reason behind the specificity of these numbers are so specific numbers, is investigated and found that If the cube of any natural numbers is taken, then the resultant will get the numbers of only 3 digital sum, those are 1, 8 and 9. And If square is taken of any natural numbers, we get the numbers of only 4 digital sum, those are 1, 4, 7 and 9.

Key Words: The Constant π , φ , e , The decimal values, Clusters and Groups of decimal values, Prime Factorization, Specific Prime Numbers.

Introduction:

The high index limit of a sequence of n -dimensional Fibonacci vectors, the ratios of the components of a vector to its first (smallest) component are identical to the ratios of the lengths of the diagonals to the length of the sides of a regular polygon with an odd number $N = 2n + 1$ sides (1). In the present paper a consequence of amazing connection is been studied, a relationship between two mathematical constants, which are not generally considered to be



related. One of these constants, represented by the Greek letter π , was originally defined as the ratio of the perimeter (or circumference) to the diameter of a circle; I shall refer to it as the circular perimetric ratio. The other, the Golden Ratio, represented by ϕ , was originally defined as the ratio of two lengths that is equal to the ratio of their sum to the greater of the two lengths.

Consider the first 1000 decimal Numbers of π -

3.14 159 2	65 358 97	9 323 846	264 338 3	27 950 28	8 419 716
939 937 5	10 582 09	7 494 459	230 781 6	40 628 62	0 899 862
803 482 5	34 211 70	6 798 214	808 651 3	28 230 66	4 709 384
460 955 0	58 223 17	2 535 940	812 848 1	11 745 02	8 410 270
193 852 1	10 555 96	4 462 294	895 493 0	38 196 44	2 881 097
566 593 3	44 612 84	7 564 823	378 678 3	16 527 12	0 190 914
564 856 6	92 346 03	4 861 045	432 664 8	21 339 36	0 726 024
914 127 3	72 458 70	0 660 631	558 817 4	88 152 09	2 096 282
925 409 1	71 536 43	6 789 259	036 001 1	33 053 05	4 882 046
652 138 4	14 695 19	4 151 160	943 305 7	27 036 57	5 959 195
309 218 6	11 738 19	3 261 179	310 511 8	54 807 44	6 237 996
274 956 7	35 188 57	5 272 489	122 793 8	18 301 19	4 912 983
367 336 2	44 065 66	4 308 602	139 494 6	39 522 47	3 719 070
217 986 0	94 370 27	7 053 921	717 629 3	17 675 23	8 467 481
846 766 9	40 513 20	0 056 812	714 526 3	56 082 77	8 577 134
275 778 9	60 917 36	3 717 872	146 844 0	90 122 49	5 343 014
654 958 5	37 105 07	9 227 968	925 892 3	54 201 99	5 611 212



902 196 0	86 403 44	1 815 981	362 977 4	77 130 99	6 051 870
721 134 9	99 999 83	7 297 804	995 105 9	73 173 28	1 609 631
859 502 4	45 945 53	4 690 830	264 252 2	30 825 33	4 468 503
526 193 1	18 817 10	1 000 313	783 875 2	88 658 75	3 320 838
142 061 7	17 766 91	4 730 359	825 349 0	42 875 54	6 873 115
956 286 3	88 235 37	8 759 375	195 778 1	85 778 05	3 217 122
680 661 3	00 192 78	7 661 119	590 921 6	42 019 89	3 809 525

The Prime Factorization of Clusters of 3-3 decimal digits of π

Now consider the Prime Factorization of First sector (the above 10 rows) of Clusters of 3-3 decimal digits of π .

Table No. 1- Prime Factorization of First sector of Clusters of 3-3 decimal digits of π

314=2×157	159=3×53	265=5×53	358=2×179
979=11×89	323=17×19	846=2×3×3×47	264=2×2×2×3×11
338=2×13×13	327=3×109	950=2×5×5×19	288=2 ⁵ ×3×3
419=Prime	716=2×2×179	939=3×313	937=Prime
510=2×3×5×17	582=2×3×97	097=Prime	494=2×13×19
459=3×3×3×17	230=2×5×23	781=11×71	640=2 ⁷ ×5
628=2×2×157	620=2×2×5×31	899=29×31	862=2×431
803=11×73	482=2×241	534=2×3×89	211=Prime
706=2×353	798=2×3×7×19	214=2×107	808=2×2×2×101



651=3×7×31	328=2×2×2×41	230=2×5×23	664=2×2×2×83
709=Prime	384=2 ⁷ ×3	460=2×2×5×23	955=5×191
058=2×29	223=Prime	172=2×2×43	535=5×107
940=2×2×5×47	812=2×2×7×29	848=2×2×2×2×53	111=3×37
745=5×149	028=2×2×7	410=2×5×41	270=2×3×3×3×5
193=Prime	852=2×2×3×71	110=2×5×11	555=3×5×37
964=2×2×241	462=2×3×7×11	294=2×3×7×7	895=5×179
493=17×29	038=2×19	196=2×2×7×7	442=2×13×17
881=Prime	097=Prime	566=2×283	593=Prime
344=2×2×2×43	612=2×2×3×3×17	847=7×11×11	564=2×2×3×47
823=Prime	378=2×3×3×3×7	678=2×3×113	316=2×2×79
527=17×31	120=2×2×2×3×5	190=2×5×19	914=2×457
564=2×2×3×47	856=2×2×2×107	692=2×2×173	346=2×173
034=2×17	861=3×7×41	045=5×9	432=2 ⁴ ×3 ³
664=2×2×2×83	821=Prime	339=3×113	360=2×2×2×3×3×5
726=2×3×11×11	024=2×2×2×3	914=2×457	127=Prime
372=2×2×3×31	458=2×229	700=2×2×5×5×7	660=2×2×3×5×11
631=Prime	558=2×3×3×31	817=19×43	488=2×2×2×61
152=2×2×2×19	092=2×2×23	096=2×2×2×2×2×3	282=2×3×47



925=5×5×37	409=Prime	171=3×3×19	536=2×2×2×67
436=2×2×109	789=3×263	259=7×37	036=2×2×3×3
001=1	133=7×19	053=Prime	054=2×3×3×3
882=2×3×3×7×7	046=2×23	652=2×2×163	138=2×3×23
414=2×3×3×23	695=5×139	194=2×97	151=Prime
160=2×2×2×2×2×5	943=23×41	305=5×61	727=Prime
036=2×2×3×3	575=5×5×23	959=7×137	195=3×5×13

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 159, 846, 264, 327, 288, 939, 510, 582, 459, 534, 798, 651, 384, 111, 270, 852, 555, 462, 294, 612, 564, 378, 678, 120, 564, 861, 432, 339, 360, 372, 660, 558, 096, 282, 171, 789, 036, 054, 882, 138, 414, 036 and 195. There are some numbers in above sector, which have 7 as a Prime factor. Those are 798, 651, 812, 028, 462, 294, 196, 847, 378, 861, 259, 133, 882 and 959. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 798, 651, 462, 294, 378, 861 and 882. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 950, 510, 640, 620, 230, 460, 940, 410, 270, 110, 120, 190, 360, 700, 660 and 160.

In the above sector, there are some following Prime numbers, available in the decimal numbers of π . The digital sum and digital sum of multiplicative result of their digits are also given in the columns of the following table.

Analysis of Prime numbers available in the decimal digits of π

Table No. 2- Analysis of Prime numbers available in the decimal digits of π . Analyze the Prime Factorization of Reverse cycle number of Prime Numbers.

Sr. No.	Prime Numbers	Digital Sum	Digital Sum of multiplicative result of	Prime Factorization of Reverse cycle number
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			their digits	of Prime Numbers
1	419	$4+1+9=14$ (5)	$4 \times 9=36$ (9)	$914=2 \times 457$
2	937	$9+3+7=19$ (1)	$9 \times 3 \times 7=189$ (9)	$739=$ Prime
3	97	$9+7=16$ (7)	$9 \times 7=63$ (9)	$79=$ Prime
4	211	$2+1+1=4$ (4)	$2 \times 1=2$ (9)	$112=2 \times 2 \times 2 \times 2 \times 7$
5	709	$7+9=16$ (7)	$7 \times 9=63$ (9)	$907=$ Prime
6	223	$2+2+3=7$ (7)	$2 \times 2 \times 3=12$ (3)	$322=2 \times 7 \times 23$
7	193	$1+9+3=13$ (4)	$9 \times 3=27$ (9)	$391=17 \times 23$
8	881	$8+8+1=17$ (8)	$8 \times 8=64$ (1)	$188=2 \times 2 \times 47$
9	97	$9+7=16$ (7)	$9 \times 7=63$ (9)	$79=$ Prime
10	593	$5+9+3=17$ (8)	$5 \times 9 \times 3=135$ (9)	$395=5 \times 79$
11	823	$8+2+3=13$ (4)	$8 \times 2 \times 3=48$ (3)	$328=2 \times 2 \times 2 \times 41$
12	821	$8+2+1=11$ (2)	$8 \times 2=16$ (7)	$128=2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$
13	127	$1+2+7=10$ (1)	$2 \times 7=14$ (5)	$721=7 \times 103$
14	631	$6+3+1=10$ (1)	$6 \times 3=18$ (9)	$136=2 \times 2 \times 2 \times 17$
15	409	$4+9=13$ (4)	$4 \times 9=36$ (9)	$904=2 \times 2 \times 2 \times 113$
16	53	$5+3=8$ (8)	$5 \times 3=15$ (6)	$35=5 \times 7$
17	151	$1+5+1=7$ (7)	$5 \times 1=5$ (5)	$151=$ Prime
18	727	$7+2+7=16$ (7)	$7 \times 2 \times 7=84$ (3)	$727=$ Prime

Table No. 3- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.



937=Prime	709=Prime	97=Prime	151=Prime
739=Prime	907=Prime	79=Prime	727=Prime

Now consider the next second sector (the above 11th to 20th rows) of clusters of 3-3 decimal digits of π .

Table No. 4- Prime Factorization of second sector of Clusters of 3-3 decimal digits of π

309 = 3×103	218=2×109	611=13×47	738=2×3×3×41
193=Prime	261=3×3×29	179=Prime	310=2×5×31
511=7×73	854=2×7×61	807=3×269	446=2×223
237=3×79	996=2×2×3×83	274=2×137	956=2×2×239
735=3×5×7×7	188=2×2×47	575=5×5×23	272=2×2×2×17
489=3×163	122=2×61	793=13×61	818=2×409
301=7×43	194=2×97	912=2×2×2×2×3×19	983=Prime
367=Prime	336=2×2×2×2×3×7	244=2×2×61	065=5×13
664=2×2×2×83	308=2×2×7×11	602=2×7×43	139=Prime
494=2×13×19	639=3×3×71	522=2×3×3×29	473=11×43
719=Prime	070=2×5×7	217=7×31	986=2×17×29
094=2×47	370=2×5×37	277=Prime	053=Prime
921=3×307	717=3×239	629=17×37	317=Prime
675=3×3×3×5×5	238=2×7×17	467=Prime	481=13×37



$846=2 \times 3 \times 3 \times 47$	$766=2 \times 383$	$940=2 \times 2 \times 5 \times 47$	$513=3 \times 3 \times 3 \times 19$
$200=2 \times 2 \times 2 \times 5 \times 5$	$056=2 \times 2 \times 2 \times 7$	$812=2 \times 2 \times 7 \times 29$	$714=2 \times 3 \times 7 \times 17$
$526=2 \times 263$	$356=2 \times 2 \times 89$	$082=2 \times 41$	$778=2 \times 389$
$577=\text{Prime}$	$134=2 \times 67$	$275=5 \times 5 \times 11$	$778=2 \times 389$
$960=2^6 \times 3 \times 5$	$917=7 \times 131$	$363=3 \times 11 \times 11$	$717=3 \times 239$
$872=2 \times 2 \times 2 \times 109$	$146=2 \times 73$	$844=2 \times 2 \times 211$	$090=2 \times 3 \times 3 \times 5$
$122=2 \times 61$	$495=3 \times 3 \times 5 \times 11$	$343=7 \times 7 \times 7$	$014=2 \times 7$
$654=2 \times 3 \times 109$	$958=2 \times 479$	$537=3 \times 179$	$105=3 \times 5 \times 7$
$079=\text{Prime}$	$227=\text{Prime}$	$968=2 \times 2 \times 2 \times 11 \times 11$	$925=5 \times 5 \times 37$
$892=2 \times 2 \times 223$	$354=2 \times 3 \times 59$	$201=3 \times 67$	$995=5 \times 199$
$611=13 \times 47$	$212=2 \times 2 \times 53$	$902=2 \times 11 \times 41$	$196=2 \times 2 \times 7 \times 7$
$086=2 \times 43$	$403=13 \times 31$	$441=3 \times 3 \times 7 \times 7$	$815=5 \times 163$
$981=3 \times 3 \times 109$	$362=2 \times 181$	$977=\text{Prime}$	$477=3 \times 3 \times 53$
$130=2 \times 5 \times 13$	$996=2 \times 2 \times 3 \times 83$	$051=3 \times 17$	$870=2 \times 3 \times 5 \times 29$
$721=7 \times 103$	$134=2 \times 67$	$999=3 \times 3 \times 3 \times 37$	$999=3 \times 3 \times 3 \times 37$
$837=3 \times 3 \times 3 \times 31$	$297=3 \times 3 \times 3 \times 11$	$804=2 \times 2 \times 3 \times 67$	$995=5 \times 199$
$105=5 \times 21$	$973=7 \times 139$	$173=\text{Prime}$	$281=\text{Prime}$
$609=3 \times 7 \times 29$	$631=\text{Prime}$	$859=\text{Prime}$	$502=2 \times 251$
$445=5 \times 89$	$945=3 \times 3 \times 3 \times 5 \times 7$	$534=2 \times 3 \times 89$	$690=2 \times 3 \times 5 \times 23$
$830=2 \times 5 \times 83$	$264=2 \times 2 \times 2 \times 3 \times 11$	$252=2 \times 2 \times 3 \times 3 \times 7$	$230=2 \times 5 \times 23$



$825=3 \times 5 \times 5 \times 11$	$334=2 \times 167$	$468=2 \times 2 \times 3 \times 3 \times 13$	$503=Prime$
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In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 309, 738, 261, 807, 237, 996, 735, 489, 912, 336, 639, 522, 921, 717, 675, 846, 513, 714, 960, 363, 717, 090, 495, 654, 537, 105, 354, 201, 441, 981, 477, 996, 051, 870, 999, 999, 837, 297, 804, 609, 945, 534, 690, 264, 252 and 468. There are some numbers in above sector, which have 7 as a Prime factor. Those are 511, 854, 735, 301, 336, 602, 070, 217, 238, 056, 812, 714, 917, 343, 014, 105, 196, 441, 721, 973, 609, 945 and 252. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 735, 714, 105, 441, 609, 945 and 252. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 310, 070, 370, 200, 960, 090, 130, 870, 690, 830 and 230.

In the above sector, there are the following Prime numbers, available in the decimal numbers of π . The digital sum and digital sum of multiplicative result of their digits are also given in the columns of the following table.

Table No. 5- Analysis of Prime numbers available in the decimal digits of π . Analyze the Prime Factorization of Reverse cycle number of Prime Numbers.

Sr. No.	Prime Numbers	Digital Sum	Digital Sum of multiplicative result of their digits	Prime Factorization of Reverse cycle number of Prime Numbers
1	193	$1+9+3=13$ (4)	$9 \times 3=27$ (9)	$391=17 \times 23$
2	179	$1+7+9=17$ (8)	$7 \times 9=63$ (9)	$971=Prime$
3	983	$9+8+3=20$ (2)	$9 \times 8 \times 3=216$ (9)	$389=Prime$
4	367	$3+6+7=16$ (7)	$3 \times 6 \times 7=126$ (9)	$763=7 \times 109$
5	139	$1+3+9=13$ (4)	$3 \times 9=27$ (9)	$931=7 \times 7 \times 19$
6	719	$7+1+9=17$ (8)	$7 \times 9=63$ (9)	$917=7 \times 131$



7	277	$2+7+7=16$ (7)	$2 \times 7 \times 7=98$ (8)	$772=2 \times 2 \times 193$
8	53	$5+3=8$ (8)	$5 \times 3=15$ (6)	$35=5 \times 7$
9	317	$3+1+7=11$ (2)	$3 \times 7=21$ (3)	$713=23 \times 31$
10	467	$4+6+7=17$ (8)	$4 \times 6 \times 7=168$ (6)	$764=2 \times 2 \times 191$
11	577	$5+7+7=19$ (1)	$5 \times 7 \times 7=245$ (2)	$775=5 \times 5 \times 31$
12	79	$7+9=16$ (7)	$7 \times 9=63$ (9)	$97=Prime$
13	227	$2+2+7=11$ (2)	$2 \times 2 \times 7=28$ (1)	$722=2 \times 19 \times 19$
14	977	$9+7+7=23$ (5)	$9 \times 7 \times 7=441$ (9)	$779=19 \times 41$
15	173	$1+7+3=11$ (2)	$7 \times 3=21$ (3)	$371=7 \times 53$
16	281	$2+8+1=11$ (2)	$2 \times 8=16$ (7)	$182=2 \times 7 \times 13$
17	631	$6+3+1=10$ (1)	$6 \times 3=18$ (9)	$136=2 \times 2 \times 2 \times 17$
18	859	$8+5+9=22$ (4)	$8 \times 5 \times 9=360$ (9)	$958=2 \times 479$
19	503	$5+3=8$ (8)	$5 \times 3=15$ (6)	$305=5 \times 61$

Table No. 6- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

179=Prime	983=Prime	79=Prime	191=Prime
971=Prime	389=Prime	97=Prime	31=Prime

Now consider the next third sector (the above 21th to 24th rows) of clusters of 3-3 decimal digits of π .

Table No. 7- Prime Factorization of third sector of Clusters of 3-3 decimal digits of π

526=2×263	193=Prime	118=2×59	817=19×43
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101=Prime	000=0	313=Prime	783=3×3×3×29
875=5×5×5×7	288=2×2×2×2×2×3×3	658=2×7×47	753=3×251
320=2×2×2×2×2×2×5	838=2×419	142=2×71	061=Prime
717=3×239	766=2×383	914=2×457	730=2×5×73
359=Prime	825=3×5×5×11	349=Prime	042=2×3×7
875=5×5×5×7	546=2×3×7×13	873=3×3×97	115=5×23
956=2×2×239	286=2×11×13	388=2×2×97	235=5×47
378=2×3×3×3×7	759=3×11×23	375=3×5×5×5	195=3×5×13
778=2×389	185=5×37	778=2×389	053=Prime
217=7×31	122=2×61	680=2×2×2×5×17	661=Prime
300=2×2×3×5×5	192=2×2×2×2×2×3	787=Prime	661=Prime
119=7×17	590=2×5×59	921=3×307	642=2×3×107
019=Prime	893=Prime	803=11×73	525=3×5×5×7

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 783, 288, 753, 717, 825, 042, 546, 873, 378, 759, 375, 195, 300, 192, 921, 642 and 525. There are some numbers in above sector, which have 7 as a Prime factor. Those are 875, 658, 042, 875, 546, 378, 217, 119 and 525. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 046, 546, 378 and 525. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 320, 730, 680, 300 and 590.

Table No. 8- Analysis of the Prime Numbers of second sector of the above table and Prime Factorization of the reverse digits of Prime Numbers.

Sr.	Prime	Digital Sum of the	Digital Sum of the	Reverse digits of the
			multiplicative result of the	



No.	Number	Prime No.	digits of Prime No. (avoiding 0)	Prime Numbers
1	193	1+9+3=13 (4)	9×3=27 (9)	391=17×23
2	101	1+0+1=2 (2)	1×1=1 (1)	101=Prime
3	313	3+1+3=7 (7)	3×3=9 (9)	313=Prime
4	61	6+1=7 (7)	6×1=6 (6)	16=2×2×2×2
5	359	3+5+9=17 (8)	3×5×9=135 (9)	953=Prime
6	349	3+4+9=16 (7)	3×4×9=108 (9)	943=23×41
7	53	5+3=8 (8)	5×3=15 (6)	35=5×7
8	661	6+6+1=13 (4)	6×6=36 (9)	166=2×83
9	787	7+8+7=22 (4)	7×8×7=392 (5)	787=Prime
10	661	6+6+1=13 (4)	6×6=36 (9)	166=2×83
11	19	1+9=10 (1)	1×9=9 (9)	91=7×13
12	893	8+9+3=20 (2)	8×9×3=216 (9)	398=2×199

Table No. 9- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

359=Prime	101=Prime	787=Prime	83=Prime
953=Prime	313=Prime	199=Prime	41=Prime

Now consider the Prime Factorization of First sector (the above 10 rows) of Clusters of 7-7 decimal digits of π .

Prime Factorization of groups of 7-7 decimal digits of π

Table No. 10- Prime Factorization of First sector of groups of 7-7 decimal digits of π



$3141592=2 \times 2 \times 2 \times 392699$	$6535897=\text{Prime}$	$9323846=2 \times 7 \times 293 \times 2273$
$2643383=\text{Prime}$	$2795028=2 \times 2 \times 3 \times 232919$	$8419716=2 \times 2 \times 3 \times 3 \times 233881$
$9399375=3 \times 3 \times 3 \times 5^4 \times 557$	$1058209=229 \times 4621$	$7494459=3 \times 7 \times 167 \times 2137$
$2307816=2^3 \times 3^2 \times 7 \times 19 \times 241$	$4062862=2 \times 2031431$	$0899862=2 \times 3 \times 47 \times 3191$
$8034825=3 \times 5 \times 5 \times 149 \times 719$	$3421170=2 \times 3 \times 3 \times 3 \times 5 \times 12671$	$6798214=2 \times 43 \times 137 \times 577$
$8086513=\text{Prime}$	$2823066=2 \times 3 \times 3 \times 3 \times 23 \times 2273$	$4709384=2 \times 2 \times 2 \times 588673$
$4609550=2 \times 5^2 \times 11 \times 17^2 \times 29$	$5822317=\text{Prime}$	$2535940=2 \times 2 \times 5 \times 11 \times 11527$
$8128481=151 \times 53831$	$1174502=2 \times 7 \times 43 \times 1951$	$8410270=2 \times 5 \times 11 \times 101 \times 757$
$1938521=13 \times 41 \times 3637$	$1055596=2 \times 2 \times 263899$	$4462294=2 \times 229 \times 9743$
$8954930=2 \times 5 \times 313 \times 2861$	$3819644=2 \times 2 \times 954911$	$2881097=\text{Prime}$
$5665933=7 \times 13 \times 19 \times 29 \times 113$	$4461284=2 \times 2 \times 1115321$	$7564823=7 \times 751 \times 1439$
$3786783=3 \times 7 \times 11 \times 13^2 \times 97$	$1652712=2 \times 2 \times 2 \times 3 \times 68863$	$0190914=2 \times 3 \times 47 \times 677$
$5648566=2 \times 7 \times 11 \times 43 \times 853$	$9234603=3 \times 3 \times 7 \times 146581$	$4861045=5 \times 7 \times 7 \times 19841$
$4326648=2 \times 2 \times 2 \times 3 \times 41 \times 4397$	$2133936=24 \times 3 \times 3 \times 7 \times 29 \times 73$	$0726024=2^3 \times 3 \times 13 \times 13 \times 179$
$9141273=3 \times 3 \times 1015697$	$7245870=2 \times 3 \times 5 \times 149 \times 1621$	$0660631=281 \times 2351$
$5588174=2 \times 757 \times 3691$	$8815209=3 \times 13 \times 13 \times 17387$	$2096282=2 \times 31 \times 33811$
$9254091=3 \times 7 \times 7 \times 11 \times 59 \times 97$	$7153643=7 \times 541 \times 1889$	$6789259=773 \times 8783$
$0360011=521 \times 691$	$3305305=5 \times 661061$	$4882046=2 \times 13 \times 179 \times 1049$
$6521384=2 \times 2 \times 2 \times 815173$	$1469519=\text{Prime}$	$4151160=2^3 \times 3^2 \times 5 \times 13 \times 887$
$9433057=\text{Prime}$	$2703657=3 \times 11 \times 81929$	$5959195=5 \times 11 \times 97 \times 1117$



In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 2795028, 8419716, 9399375, 7494459, 2307816, 0899862, 8034825, 3421170, 2823066, 3786783, 1652712, 0190914, 9234603, 4326648, 2133936, 0726024, 9141273, 7245870, 8815209, 9254091, 4151160 and 2703657. There are some numbers in above sector, which have 7 as a Prime factor. Those are 9323846, 7494459, 2307816, 1174502, 5665933, 7564823, 3786783, 5648566, 9234603, 4861045, 2133936, 9254091 and 7153643. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 7494459, 2307816, 3786783, 9234603, 2133936 and 9254091. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 3421170, 4609550, 2535940, 8410270, 8954930, 7245870 and 4151160.

Analysis of Prime Numbers available in groups of 7-7 decimal digits of π

Table No. 11- Analysis of the Prime Numbers of second sector of the above table and Prime Factorization of the reverse digits of Prime Numbers.

Sr No.	Prime Number	Digital Sum of the Prime No.	Digital Sum of the multiplicative result of the digits of Prime No. (avoiding 0)	Numbers by Reversing digits of the Prime Numbers
1	6535897	$6+5+3+5+8+9+7=43(7)$	$6 \times 5 \times 3 \times 5 \times 8 \times 9 \times 7 = 226800(9)$	$7985356 = 2 \times 2 \times 277 \times 7207$
2	2643383	$2+6+4+3+3+8+3=29(2)$	$2 \times 6 \times 4 \times 3 \times 3 \times 8 \times 3 = 10368(9)$	$3833462 = 2 \times 3 \times 449 \times 1423$
3	8086513	$8+0+8+6+5+1+3=31(4)$	$8 \times 8 \times 6 \times 5 \times 1 \times 3 = 5760(9)$	$3156808 = 2 \times 2 \times 2 \times 394601$
4	5822317	$5+8+2+2+3+1+7=28(1)$	$5 \times 8 \times 2 \times 2 \times 3 \times 1 \times 7 = 3360(3)$	$7132285 = 5 \times 1426457$
5	2881097	$2+8+8+1+0+9+7=35(8)$	$2 \times 8 \times 8 \times 1 \times 9 \times 7 = 8064(9)$	$7901882 = 2 \times 3950941$



6	1469519	$1+4+6+9+5+1+9=35(8)$	$1 \times 4 \times 6 \times 9 \times 5 \times 1 \times 9=9720(9)$	9159641=Prime
7	9433057	$9+4+3+3+0+5+7=31(4)$	$9 \times 4 \times 3 \times 3 \times 5 \times 7=11340(9)$	7503349=7×1071907

In the above table, we would consider that the reverse digits of the Prime Number, is also one Prime Number. In Prime factorization of the reverse digits of the Prime Numbers, we are getting some Prime numbers, which reverse digits of the numbers are also Prime Numbers. Those are the following Numbers-

Table No. 12- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

1469519=Prime	7027=Prime	7546241=Prime
9159641=Prime	7207=Prime	1426457=Prime
		7091701=Prime
		1071907=Prime

Now consider the Prime Factorization of second sector (the above 11th to 20th rows) of groups of 7-7 decimal digits of π .

Table No. 13- Prime Factorization of second sector of groups of 7-7 decimal digits of π

3092186=2×1546093	1173819=3×391273	3261179=19×171641
3105118=2×17×271×337	5480744=2×2×2×685093	6237996=2×2×3×73×7121
2749567=Prime	3518857=19×167×1109	5272489=Prime
1227938=2×613969	1830119=Prime	4912983=3×3×17×163×197
3673362=2×3×7×11×7951	4406566=2×409×5387	4308602=2×127×16963



1394946=2×3×3×7×11071	3952247=13×19×16001	3719070 =2×3 ² ×5×31×31×43
2179860=2×2×3×5×47×773	9437027=Prime	7053921=3×3×7×19×71×83
7176293=1439×4987	1767523=Prime	8467481=11×157×4903
846 766 9=7×937×1291	40 513 20=2 ³ ×5×7 ² ×13×53	0 056 812=2×2×7×2029
714 526 3=1601×4463	56 082 77=Prime	8 577 134=2×139×30853
275 778 9=3×3×306421	60 917 36=2 ³ ×7×181×601	3 717 872=2×2×2×2×232367
146 844 0=2 ³ ×3 ² ×5×4079	90 122 49=3×3×3×333787	5 343 014=2×2671507
654 958 5=3×5×7 ³ ×19×67	37 105 07=Prime	9 227 968=2 ⁶ ×23×6269
925 892 3=Prime	54 201 99=3×1806733	5 611 212=2×2×3×3×79×1973
902 196 0=2 ³ ×3 ² ×5×19×1319	86 403 44=2×2×2×1080043	1 815 981=3×173×3499
362 977 4=2×37×181×271	77 130 99=3×3×857011	6 051 870=2×3×3×5×11×6113
7211349=3×3×3×3×17×5237	99 999 83=7×29×49261	7 297 804=2×2×1824451
995 105 9=Prime	73 173 28=2×2×2×2×457333	1 609 631=Prime
859 502 4=2 ⁴ ×3×241×743	45 945 53=Prime	4 690 830=2×3×5×156361
264 252 2=2×43×30727	30 825 33=3×53×19387	4 468 503=3×13×114577

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 1173819, 6237996, 4912983, 3673362, 1394946, 3719070, 2179860, 7053921, 2757789, 1468440, 9012249, 6549585, 5420199, 5611212, 9021960, 1815981, 7713099, 6051870, 7211349, 8595024, 4690830, 3082533 and 4468503. There are some numbers in above sector, which have 7 as a Prime factor. Those are 3673362, 1394946, 7053921, 8467669, 4051320, 0056812, 6091736, 6549585 and 9999983. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 3673362, 1394946, 7053921 and 6549585. There are some



numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 3719070, 2179860, 4051320, 1468440, 6051870 and 4690830.

In the above table, we would consider that the reverse digits of the Prime Number, is also one Prime Number. In Prime factorization of the reverse digits of the Prime Numbers, we are getting some Prime numbers, which reverse digits of the numbers are also Prime Numbers. Those are the following Numbers-

Now consider the Prime Factorization of third sector (the above 21th to 24th rows) of groups of 7-7 decimal digits of π .

Table No. 14- Prime Factorization of third sector of groups of 7-7 decimal digits of π .

526 193 1=3×3×584659	18 817 10=2×5×188171	1 000 313=Prime
783 875 2=2 ⁵ ×487×503	88 658 75=5×5×5×19×3733	3 320 838=2×3 ⁵ ×6833
142 061 7=3×11×43049	17 766 91=7×7×101×359	4 730 359=Prime
825 349 0=2×5×7×157×751	42 875 54=2×523×4099	6 873 115=5×337×4079
956 286 3=3×3187621	88 235 37=3×3×980393	8 759 375=5×5×5×5×5×2803
195 778 1=7×37×7559	85 778 05=5×1715561	3 217 122=2×3×3×367×487
6806613=3×11×11×17×1103	0019278=2×3×3×3×3×7×17	7661119=Prime
590 921 6=2 ⁵ ×47×3929	42 019 89=3×11×223×571	3 809 525=5×5×152381

Table No. 15- Analysis of the Prime Numbers of second and third sectors of the above table and Prime Factorization of the reverse digits of Prime Numbers.

Sr No.	Prime Number	Digital Sum of the Prime No.	Digital Sum of the multiplicative result of the digits of Prime No. (avoiding 0)	Numbers by Reversing digits of the Prime Numbers



1	2749567	$2+7+4+9+5+6+7=40(4)$	$2 \times 7 \times 4 \times 9 \times 5 \times 6 \times 7 = 105840(9)$	$7659472 = 2^4 \times 239 \times 2003$
2	5272489	$5+2+7+2+4+8+9=37(1)$	$5 \times 2 \times 7 \times 2 \times 4 \times 8 \times 9 = 40320(9)$	$9842725 = 5 \times 5 \times 393709$
3	1830119	$1+8+3+0+1+1+9=23(5)$	$1 \times 8 \times 3 \times 1 \times 1 \times 9 = 216(9)$	$9110381 = 7 \times 751 \times 1733$
4	9437027	$9+4+3+7+0+2+7=32(5)$	$9 \times 4 \times 3 \times 7 \times 2 \times 7 = 10584(9)$	$7207349 = 23 \times 41 \times 7643$
5	1767523	$1+7+6+7+5+2+3=31(4)$	$1 \times 7 \times 6 \times 7 \times 5 \times 2 \times 3 = 8820(9)$	$3257671 = \text{Prime}$
6	5608277	$5+6+0+8+2+7+7=35(8)$	$5 \times 6 \times 8 \times 2 \times 7 \times 7 = 23520(3)$	$7728065 = 5 \times 29 \times 223 \times 239$
7	3710507	$3+7+1+0+5+0+7=23(5)$	$3 \times 7 \times 1 \times 5 \times 7 = 735(6)$	$7050173 = 13 \times 13 \times 13 \times 3209$
8	9951059	$9+9+5+1+0+5+9=38(2)$	$9 \times 9 \times 5 \times 1 \times 5 \times 9 = 18225(9)$	$9501599 = 23 \times 413113$
9	1609631	$1+6+0+9+6+3+1=26(8)$	$1 \times 6 \times 9 \times 6 \times 3 \times 1 = 972(9)$	$1369061 = 17 \times 29 \times 2777$
10	4594553	$4+5+9+4+5+5+3=35(8)$	$4 \times 5 \times 9 \times 4 \times 5 \times 5 \times 3 = 54000(9)$	$3554954 = 2 \times 13 \times 73 \times 1873$
11	1000313	$1+0+0+0+3+1+3=8(8)$	$1 \times 3 \times 1 \times 3 = 9(9)$	$3130001 = 7 \times 23 \times 19441$
12	4730359	$4+7+3+0+3+5+9=31(4)$	$4 \times 7 \times 3 \times 3 \times 5 \times 9 = 11340(9)$	$9530374 = 2 \times 7 \times 181 \times 3761$
13	7661119	$7+6+6+1+1+1+9=31(4)$	$7 \times 6 \times 6 \times 1 \times 1 \times 1 \times 9 = 2268(9)$	$9111667 = \text{Prime}$



Table No. 16- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

1767523=Prime	393709=Prime	7643=Prime
3257671=Prime	907393=Prime	3467=Prime
1733=Prime	157=Prime	7661119=Prime
3371=Prime	751=Prime	9111667=Prime

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 5261931, 3320838, 1420617, 9562863, 8823537, 3217122, 6806613, 0019278 and 4201989. There are some numbers in above sector, which have 7 as a Prime factor. Those are 1776691, 8253490, 1957781 and 0019278. There is one number in the above sector, which have 3 and 7 as common Prime factor. This is 0019278. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 1881710 and 8253490.

The same above process may be applied making the clusters of 5-5 decimal digits and making a group of 10 digits.

The same above process may be applied making the clusters of 3-3, 5-5 and 7-7 decimal digits and making a group of 10 digits of ϕ (Phi) and Constant e.

Distributing the decimal values of π into clusters of 5-5 digits

Again we would distribute the decimal values of π into clusters of 5-5 digits. And analyze over the Prime factorization and Prime Numbers.

3.1415	92653	58979	32384	62643	38327	95028	84197
16939	93751	05820	97494	45923	07816	40628	62089
98628	03482	53421	17067	98214	80865	13282	30664
70938	44609	55058	22317	25359	40812	84811	17450



28410	27019	38521	10555	96446	22948	95493	03819
64428	81097	56659	33446	12847	56482	33786	78316
52712	01909	14564	85669	23460	34861	04543	26648
21339	36072	60249	14127	37245	87006	60631	55881
74881	52092	09628	29254	09171	53643	67892	59036
00113	30530	54882	04665	21384	14695	19415	11609
43305	72703	65759	59195	30921	86117	38193	26117
93105	11854	80744	62379	96274	95673	51885	75272
48912	27938	18301	19491	29833	67336	24406	56643
08602	13949	46395	22473	71907	02179	86094	37027
70539	21717	62931	76752	38467	48184	67669	40513
20005	68127	14526	35608	27785	77134	27577	89609
17363	71787	21468	44090	12249	53430	14654	95853
71050	79227	96892	58923	54201	99561	12129	02196
08640	34418	15981	36297	74771	30996	05187	07211
34999	99983	72978	04995	10597	31732	81609	63185
95024	45945	53469	08302	64252	23082	53344	68503
52619	31188	17101	00031	37838	75288	65875	33208
38142	06171	77669	14730	35982	53490	42875	54687
31159	56286	38823	53787	59375	19577	81857	78053
21712	26806	61300	19278	76611	19590	92164	20198



The Prime Factorization of groups of 5-5 decimal digits of π

Now consider the Prime Factorization of First sector (the above first 10 rows) of groups of 5-5 decimal digits of π .

Table No. 17- The Prime Factorization of First sector of groups of 5-5 decimal digits of π .

31415=5×61×103	92653=11×8423	58979= Prime	32384=2 ⁷ ×11×23
62643= 3×7×19×157	38327=Prime	95028= 2×2×3×7919	84197=269×313
16939=13×1303	93751=7×59×227	05820=2×2×3×5×97	97494=2×3×16249
45923=19×2417	07816=2×2×2×977	40628=2×2×7×1451	62089=29×2141
98628=2×2×3×8219	03482=2×1741	53412=2×2×3×4251	17067=3×5689
98214=2×3×16369	80865=3×5×599	13282=2×29×229	30664=2×2×2×3833
70938=2×3×3×7×563	44609=31×1439	55058=2×27529	22317=3×43×173
25359=3×79×107	40812=2×2×3×19×179	84811=Prime	17450=2×5×5×349
28410=2×3×5×947	27019=41×659	38521= 7×5503	10555=5×2111
96446=2×7×83×83	22948=2×2×5737	95493=3×139×229	03819=3×19×67
64428=2×2×3×7×13×59	81097=11×7369	56659=Prime	33446=2×7×2389
12847=29×443	56482=2×31×911	33786=2×3×3×1877	78316=2×2×7×2797
52712=2×2×2×11×599	01909=23×83	14564=2×2×11×331	85669=Prime
23460=2×2×3×5×17×23	34861=71×491	04543=7×11×59	26648=2×2×2×3331
21339=3×3×2371	36072=2 ³ ×3 ³ ×167	60249=3×7×19×151	14127=3×17×277



37245=3×5×13×191	87006=2×3×17×853	60631=Prime	55881=3×3×7×887
74881=103×727	52092=2×2×3×3×1447	09628=2×2×29×83	29254=2×14627
09171=3×3×1019	53643=3×17881	67892=2×2×11×1543	59036=2×2×14759
00113=Prime	30530=2×5×43×71	54882=2×3×3×3049	04665=3×5×311
21384=2 ³ ×3 ⁵ ×11	14695=5×2939	19415=5×11×353	11609=13×19×47

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 62643, 95028, 05820, 97494, 98628, 53412, 17067, 98214, 80865, 70938, 22317, 25368, 40812, 28410, 95493, 03819, 64428, 33786, 23460, 21339, 36072, 60249, 14127, 37245, 87006, 55881, 52092, 09171, 53643, 54882, 04665 and 21384. There are some numbers in above sector, which have 7 as a Prime factor. Those are 62643, 93751, 40628, 70938, 38521, 96446, 64428, 33446, 78316, 04543, 60249 and 55881. There is some numbers in the above sector, which have 3 and 7 as common Prime factor. This is 62643, 70938, 64428, 60249 and 55881. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 05820, 17450, 28410, 23460 and 30530.

The Analysis of Prime Numbers of groups of 5-5 decimal digits of π

Table No. 18- Analysis of the Prime Numbers of first sector of the above table and Prime Factorization of the reverse digits of Prime Numbers.

Sr No.	Prime Number	Digital Sum of the Prime No.	Digital Sum of the multiplicative result of the digits of Prime No. (avoiding 0)	Numbers by Reversing digits of the Prime Numbers
1	58979	5+8+9+7+9=38(2)	5×8×9×7×9=22680(9)	97985=5×19597
2	38327	3+8+3+2+7=23(5)	3×8×3×2×7=1008(9)	72383=Prime
3	84811	8+4+8+1+1=22 (4)	8×4×8×1×1=256 (4)	11848=2×2×2×1481



4	56659	$5+6+6+5+9=31$ (4)	$5 \times 6 \times 6 \times 5 \times 9=8100$ (9)	$95665=5 \times 19 \times 19 \times 53$
5	85669	$8+5+6+6+9= 24$ (6)	$8 \times 5 \times 6 \times 6 \times 9= 12960$ (9)	$96658=2 \times 31 \times 1559$
6	60631	$6+0+6+3+1=16$ (7)	$6 \times 6 \times 3 \times 1=108$ (9)	$13606=2 \times 6803$
7	00113	$0+0+1+1+3=5$ (5)	$1 \times 1 \times 3=3$ (3)	$311=Prime$

In the above table, it is consider that the reverse digits of the Prime Number, is also one Prime Number. In Prime factorization of the reverse digits of the Prime Numbers, results in getting some Prime numbers, which reverse digits of the numbers are also Prime Numbers. Those are the following Numbers-

Table No. 19- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

$38327=Prime$	$113=Prime$	$1559= Prime$	
$72383=Prime$	$311=Prime$	$9551=Prime$	

Now consider the Prime Factorization of second sector (the above 11th to 20th rows) of groups of 5-5 decimal digits of π .

Table No. 20- The Prime Factorization of second sector of groups of 5-5 decimal digits of π .

$43305=3 \times 5 \times 2887$	$72703=23 \times 29 \times 109$	$65759=19 \times 3461$	$59195=5 \times 11839$
$30921=3 \times 11 \times 937$	$86117=Prime$	$38193=3 \times 29 \times 439$	$26117=7 \times 7 \times 13 \times 41$
$93105=3 \times 3 \times 5 \times 2069$	$11854=2 \times 5927$	$80744=2 \times 2 \times 2 \times 10093$	$62379=3 \times 3 \times 29 \times 239$
$96274=2 \times 37 \times 1301$	$95673=3 \times 31891$	$51885=3 \times 3 \times 5 \times 1153$	$75272=2 \times 2 \times 2 \times 97 \times 97$
$48912=2^4 \times 3 \times 1019$	$27938=2 \times 61 \times 229$	$18301=Prime$	$19491=3 \times 73 \times 89$



29833=Prime	67336=2×2×2×19×443	24406=2×12203	56643=3×79×239
08602=2×11×17×23	13949=13×29×37	46395=3×3×5×1031	22473=3×3×11×227
71907=3×11×2179	02179=Prime	86094=2×3×3×4783	37027=61×607
70539=3×7×3359	21717=3×3×19×127	62931=3×11×1907	76752=2 ⁴ ×3 ² ×13×41
38467=11×13×269	48184=2×2×2×19×317	67669=7×7×1381	40513=11×29×127
20005=5×4001	68127=3×22709	14526=2×3×3×3×269	35608=2×2×2×4451
27785=5×5557	77134=2×38567	27577=11×23×109	89609=13×61×113
17363=97×179	71787=3×23929	21468=2×2×3×1789	44090=2×5×4409
12249=3×3×1361	53430=2×3×5×13×137	14654=2×17×431	95853=3×89×359
71050=2×5×5×7×7×29	79227=3×3×8803	96892=2×2×24223	58923=3×3×6547
54201=3×7×29×89	99561=3×7×11×481	12129=3×13×311	02196=2×2×3×3×61
08640=2 ⁶ ×3×3×3×5	34418=2×17209	15981=3×7×761	36297=3×3×37×109
74771=Prime	30996=2×2×3 ³ ×7×41	05187=3×7×13×19	07211=Prime
34999=31×1129	99983=13×7691	72978=2×3×12163	04995=3×3×3×5×37
10597=Prime	31732=2×2×7933	81609=3×11×2473	63185=5×12637

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 43305, 30921, 38193, 93105, 62379, 95673, 51885, 48912, 19491, 56643, 46395, 22473, 71907, 86094, 70539, 21717, 62931, 76752, 68127, 14526, 71787, 21468, 12249, 53430, 95853, 54201, 99561, 12129, 02196, 08640, 15981, 36297, 30996, 05187, 72978, 04995 and 81609. There are some numbers in above sector, which have 7 as a Prime factor. Those are 26117, 70539, 67669, 71050, 54201, 99561, 15981 and 05187. There is some numbers in the above sector, which have 3 and 7 as common Prime factor. This is 70539, 54201, 99561, 15981 and 05187. There are some



numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 44090, 71050 and 08640.

Now consider the Prime Factorization of third sector (the above 21th to 26th rows) of groups of 5-5 decimal digits of π .

Table No. 21- The Prime Factorization of third sector of groups of 5-5 decimal digits of π .

95024=2×2×2×2×5939	45945=3×3×5×1021	53469=3×3×13×457	08302=2×7×593
64252=2×2×16063	23082=2×3×3847	53344=2 ⁵ ×1667	68503=61×1123
52619=7×7517	31188=2×2×3×23×113	17101=7×7×349	00031=Prime
37838=2×18919	75288=2×2×2×3×3137	65875=5×5×5×17×31	33208=2×2×2×7×593
38142=2×3×3×13×163	06171=3×11×11×17	77669=101×769	14730=2×3×5×491
35982=2×3×3×1999	53490=2×3×5×1783	42875=5×5×5×7 ³	54687=3×18229
31159=Prime	56286=2×23143	38823=3×12941	53787=3×17929
59375=5 ⁵ ×19	19577=Prime	81857=23×3559	78053=89×877
21712=2 ⁴ ×23×59	26806=2×13×1031	61300=2×2×5×5×613	19278=2×3 ⁴ ×7×17
76611=3×25537	19590=2×3×5×653	92164=2×2×23041	20198=2×10099
93809=Prime	52572=2×2×3×13×337	01065=3×5×71	48586=2×17×1429
32788=2×2×7×1171	65936=2 ⁴ ×13×317	15338=2×7669	18279=3×3×3×677

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 45945, 53469, 23082, 31188, 75288, 38142, 06171, 14730, 35982, 53490, 54687, 38823, 53787, 19278, 76611, 19590, 52572, 01065 and 18279. There are some numbers in above sector, which have 7 as a Prime factor. Those are 08302, 52619, 17101, 33208, 42875, 19278 and 32788. There is not any number, which have 3 and 7 both as factors. There are some numbers in the



above sector, which have 2 and 5 as common Prime factors. Those are 14730, 53490, 61300 and 19590.

Table No. 22- Analysis of the Prime Numbers of second and third sectors of the above table and Prime Factorization of the reverse digits of Prime Numbers.

Sr No.	Prime Number	Digital Sum of the Prime No.	Digital Sum of the multiplicative result of the digits of Prime No. (avoiding 0)	Numbers by Reversing digits of the Prime Numbers
1	86117	$8+6+1+1+7=23$ (5)	$8 \times 6 \times 1 \times 1 \times 7=336$ (3)	$71168=2^9 \times 139$
2	18301	$1+8+3+0+1=13$ (4)	$1 \times 8 \times 3 \times 1=24$ (6)	$10381=7 \times 1483$
3	29833	$2+9+8+3+3=25$ (7)	$2 \times 9 \times 8 \times 3 \times 3=1296$ (9)	$33892=2 \times 2 \times 37 \times 229$
4	02179	$0+2+1+7+9=19$ (1)	$2 \times 1 \times 7 \times 9=126$ (9)	$9712=2 \times 2 \times 2 \times 2 \times 607$
5	74771	$7+4+7+7+1=26$ (8)	$7 \times 4 \times 7 \times 7 \times 1=1372$ (4)	$17747=$ Prime
6	07211	$0+7+2+1+1=11$ (2)	$7 \times 2 \times 1 \times 1=14$ (5)	$1127=7 \times 7 \times 23$
7	10597	$1+0+5+9+7=22$ (4)	$1 \times 5 \times 9 \times 7=315$ (9)	$79501=107 \times 743$
8	00031	$0+0+0+3+1=4$ (4)	$3 \times 1=3$ (3)	$13=$ Prime
9	31159	$3+1+1+5+9=19$ (1)	$3 \times 1 \times 1 \times 5 \times 9=135$ (9)	$95113=227 \times 419$
10	19577	$1+9+5+7+7=29$ (2)	$1 \times 9 \times 5 \times 7 \times 7=3465$ (9)	$77591=$ Prime
11	93809	$9+3+8+0+9=29$ (2)	$9 \times 3 \times 8 \times 9=1944$ (9)	$90839=7 \times 19 \times 683$

In the above table, it is consider that the reverse digits of the Prime Number, is also one Prime Number. In Prime factorization of the reverse digits of the Prime Numbers, we are getting some Prime numbers, which reverse digits of the numbers are also Prime Numbers. Those are the following Numbers-



Table No. 23- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

74771=Prime	743=Prime	107= Prime	37= Prime
17747=Prime	347=Prime	701= Prime	73= Prime
19577= Prime	19= Prime		
77591= Prime	91= Prime		

Now rearranging into the clusters and Groups of the Decimal Values of constant ϕ and constant e and their specific Analysis

The same above process from page 1 to till this as for π , may be applied for clusters of 3-3, 7-7 and 5-5 decimal digits of ϕ .

Consider the first 1000 decimal Numbers of “ ϕ ”-

1.61 803 3	98 874 98	9 484 820	458 683 4	36 563 81	1 772 030
917 980 5	76 286 21	3 544 862	270 526 0	46 281 89	0 244 970
720 720 4	18 939 11	3 748 475	408 807 5	38 689 17	5 212 663
386 222 3	53 693 17	9 318 006	076 672 6	35 443 33	8 908 659
593 958 2	90 563 83	2 266 131	992 829 0	26 788 06	7 520 876
689 250 1	71 169 62	0 703 222	104 321 6	26 954 86	2 629 631
361 443 8	14 975 87	0 122 034	080 588 7	95 445 47	4 924 618
569 536 4	86 444 92	4 104 432	077 134 4	94 704 95	6 584 678
850 987 4	33 944 22	1 254 487	706 647 8	09 158 84	6 074 998
871 240 0	76 521 70	5 751 797	883 416 6	25 624 94	0 758 906



970 400 0	28 121 04	2 762 177	111 777 8	05 315 31	7 141 011
704 666 5	99 146 69	7 987 317	613 560 0	67 087 48	0 710 131
795 236 8	94 275 21	9 484 353	056 783 0	02 287 85	6997829
778 347 8	45 878 22	8 911 097	625 003 0	26 961 56	1 700 250
464 338 2	43 776 48	6 102 838	312 683 3	03 724 29	2 675 263
116 533 9	24 731 67	1 112 115	881 863 8	51 331 62	0 384 005
222 165 7	91 286 67	5 294 654	906 811 3	17 159 93	4 323 597
349 498 5	09 040 94	7 621 322	298 101 7	26 107 05	9 611 645
629 909 8	16 290 55	5 208 524	790 352 4	06 020 17	2 799 747
175 342 7	77 592 77	8 625 619	432 082 7	50 513 12	1 815 628
551 222 4	80 939 47	1 234 145	170 223 7	35 805 77	2 786 160
086 883 8	29 523 04	5 926 478	780 178 8	99 219 90	2 707 769
038 953 2	19 681 98	6 151 437	803 149 9	74 110 69	2 608 867
429 622 6	75 756 05	2 317 277	752 035 3	61 393 621	0 767 389

Prime Factorization of First sector of Clusters of 3-3 decimal digits of ϕ

Now consider the Prime Factorization of First sector (the above 10 rows) of Clusters of 3-3 decimal digits of ϕ .

Table No. 24- Prime Factorization of First sector of Clusters of 3-3 decimal digits of ϕ

161=7×23	803=11×73	398=2×199	874=2×19×23
989=23×43	484=2×2×11×11	820=2×2×5×41	458=2×229
683=Prime	436=2×2×109	563=Prime	811=Prime



$772=2 \times 2 \times 193$	$030=2 \times 3 \times 5$	$917=7 \times 131$	$980=2 \times 2 \times 5 \times 7 \times 7$
$576=2^6 \times 3 \times 3$	$286=2 \times 11 \times 13$	$213=3 \times 71$	$544=2 \times 2 \times 2 \times 2 \times 2 \times 17$
$862=2 \times 431$	$270=2 \times 3 \times 3 \times 3 \times 5$	$526=2 \times 263$	$046=2 \times 23$
$281=\text{Prime}$	$890=2 \times 5 \times 89$	$246=2 \times 3 \times 41$	$970=2 \times 5 \times 97$
$720=2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5$	$720=2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5$	$418=2 \times 11 \times 19$	$939=3 \times 313$
$113=\text{Prime}$	$748=2 \times 2 \times 11 \times 17$	$475=5 \times 5 \times 19$	$408=2 \times 2 \times 2 \times 3 \times 17$
$807=3 \times 269$	$538=2 \times 269$	$689=13 \times 53$	$175=5 \times 5 \times 7$
$212=2 \times 2 \times 53$	$663=3 \times 13 \times 17$	$386=2 \times 193$	$222=2 \times 3 \times 37$
$353=\text{Prime}$	$693=3 \times 3 \times 7 \times 11$	$179=\text{Prime}$	$318=2 \times 3 \times 53$
$006=2 \times 3$	$076=2 \times 2 \times 19$	$672=2^5 \times 3 \times 7$	$635=5 \times 127$
$443=\text{Prime}$	$338=2 \times 13 \times 13$	$908=2 \times 2 \times 227$	$659=\text{Prime}$
$593=\text{Prime}$	$958=2 \times 479$	$290=2 \times 5 \times 29$	$563=\text{Prime}$
$832=2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 13$	$266=2 \times 7 \times 19$	$131=\text{Prime}$	$992=2 \times 2 \times 2 \times 2 \times 2 \times 31$
$829=\text{Prime}$	$026=2 \times 13$	$788=2 \times 2 \times 197$	$067=\text{Prime}$
$520=2 \times 2 \times 2 \times 5 \times 13$	$876=2 \times 2 \times 3 \times 73$	$689=13 \times 53$	$250=2 \times 5 \times 5 \times 5$
$171=\text{Prime}$	$169=13 \times 13$	$620=2 \times 2 \times 5 \times 31$	$703=19 \times 37$
$222=2 \times 3 \times 37$	$104=2 \times 2 \times 2 \times 13$	$321=3 \times 107$	$626=2 \times 313$
$954=2 \times 3 \times 3 \times 53$	$862=2 \times 431$	$629=17 \times 37$	$631=\text{Prime}$
$361=19 \times 19$	$443=\text{Prime}$	$814=2 \times 11 \times 37$	$975=3 \times 5 \times 5 \times 13$
$870=2 \times 3 \times 5 \times 29$	$122=2 \times 61$	$034=2 \times 17$	$080=2 \times 5 \times 8$



$588=2 \times 2 \times 3 \times 7 \times 7$	$795=3 \times 5 \times 53$	$445=5 \times 89$	$474=2 \times 3 \times 79$
$924=2 \times 2 \times 3 \times 7 \times 11$	$618=2 \times 3 \times 103$	569=Prime	$536=2 \times 2 \times 2 \times 67$
$486=2 \times 3 \times 3 \times 3 \times 3 \times 3$	$444=3 \times 4 \times 37$	$924=2 \times 2 \times 3 \times 7 \times 11$	$104=2 \times 2 \times 2 \times 13$
$432=2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3$	$077=7 \times 11$	$134=2 \times 67$	$494=2 \times 13 \times 19$
$704=2 \times 2 \times 2 \times 2 \times 2 \times 11$	$956=2 \times 2 \times 239$	$584=2 \times 2 \times 2 \times 73$	$678=2 \times 3 \times 113$
$850=2 \times 5 \times 5 \times 17$	$987=3 \times 7 \times 47$	433=Prime	$944=2 \times 2 \times 2 \times 2 \times 59$
$221=13 \times 17$	$254=2 \times 127$	487=Prime	$706=2 \times 353$
647=Prime	809=Prime	$158=2 \times 79$	$846=2 \times 3 \times 3 \times 47$
$074=2 \times 37$	$998=2 \times 499$	$871=13 \times 67$	$240=2 \times 2 \times 2 \times 2 \times 3 \times 5$
$076=2 \times 2 \times 19$	521=Prime	$705=3 \times 5 \times 47$	751=Prime
797=Prime	883=Prime	$416=2 \times 2 \times 2 \times 2 \times 2 \times 13$	$625=5 \times 5 \times 5 \times 5$
$624=2 \times 2 \times 2 \times 2 \times 3 \times 13$	$940=2 \times 2 \times 5 \times 47$	$758=2 \times 379$	$906=2 \times 3 \times 151$

In the above sector, there are some numbers, which have 3 as a Prime factor. Those are 030, 576, 213, 270, 246, 720, 939, 408, 807, 663, 222, 693, 318, 006, 672, 876, 321, 954, 975, 870, 588, 795, 474, 924, 618, 486, 444, 924, 432, 678, 987, 846, 240, 705, 624 and 906. There are some numbers in above sector, which have 7 as a Prime factor. Those are 161, 917, 980, 175, 693, 266, 588, 924, 077, and 987. There are some numbers in the above sector, which have 3 and 7 as common Prime factor. Those are 693, 672, 588, 924 and 987. There are some numbers in the above sector, which have 2 and 5 as common Prime factors. Those are 820, 030, 980, 270, 890, 970, 720, 290, 520, 250, 620, 870, 850, 240 and 940.

In the above sector, there are some following Prime numbers, available in the decimal numbers of ϕ . Those are in the following table.

Table No. 25- In the above Sector, we get some Prime Numbers there, those are as following-



683=Prime	563=Prime	811=Prime	281=Prime
113=Prime	353=Prime	179=Prime	443=Prime
659=Prime	593=Prime	563=Prime	131=Prime
829=Prime	067=Prime	171=Prime	631=Prime
443=Prime	659=Prime	593=Prime	563=Prime
569=Prime	433=Prime	487=Prime	647=Prime
809=Prime	521=Prime	751=Prime	797=Prime
883=Prime			

Table No. 26- Analysis of the Prime Numbers, which reverse digits of the numbers are also Prime Numbers.

113=Prime	311=Prime	353=Prime	131=Prime
179=Prime	971=Prime		

The same above process may be applied for the next second sector (the above 11th to 20th rows) and third sector (the above 21th to 24th rows) of clusters of 3-3 decimal digits of ϕ .

The same above process may be applied for the first sector (the above 1st to 10th rows), and the next second sector (the above 11th to 20th rows) and the third sector (the above 21th to 24th rows) of clusters of 7-7 decimal digits of ϕ .

The same above process may be applied for the first sector (the above 1st to 10th rows), and the next second sector (the above 11th to 20th rows) and third sector (the above 21th to 24th rows) of clusters of 5-5 decimal digits of ϕ .



In the decimal numbers of ϕ , we are getting some specific Prime Numbers. Some Prime numbers have reverse digits numbers as Prime Numbers. Consider those Prime Numbers in the table no. 9 and 10.

The same above process as in π and ϕ , may be applied for the first 1000 decimal Numbers of constant “e”=

2.71 828 1	82 845 90	4 523 536	028 747 1	35 266 24	9 775 724
709 369 9	95 957 49	6 696 762	772 407 6	63 035 35	4 759 457
138 217 8	52 516 64	2 742 746	639 193 2	00 305 99	2 181 741
359 662 9	04 357 29	0 033 429	526 059 5	63 073 81	3 232 862
794 349 0	76 323 38	2 988 075	319 525 1	01 901 15	7 383 418
793 070 2	15 408 91	4 993 488	416 750 9	24 476 14	6 066 808
226 480 0	16 847 74	1 185 374	234 544 2	43 710 75	3 907 774
499 206 9	55 170 27	6 183 860	626 133 1	38 458 30	0 075 204
493 382 6	56 029 76	0 673 711	320 070 9	32 870 91	2 744 374
704 723 0	69 697 72	0 931 014	169 283 6	81 902 55	1 510 865
746 377 2	11 125 23	8 978 442	505 695 3	69 677 07	8 544 996
996 794 6	86 445 49	0 598 793	163 6 88 9	23 009 87	9 312 773
617 821 5	42 499 92	2 957 635	148 220 8	26 989 51	9 366 803
318 252 8	86 939 84	9 646 510	582 093 9	23 982 94	8 879 332
036 250 9	44 311 73	0 123 819	706 841 6	14 039 70	1 983 767
932 068 3	28 237 64	6 480 429	531 180 2	32 878 25	0 981 945
581 530 1	75 671 73	6 133 206	981 125 0	99 618 18	8 159 304



169 035 1	59 888 85	1 934 580	727 386 6	73 858 94	2 287 922
849 989 2	08 680 58	2 574 927	961 048 4	19 844 43	6 346 324
496 848 7	56 023 36	2 482 704	197 862 3	20 900 21	6 099 023
530 436 9	94 184 91	4 631 409	343 173 8	14 364 05	4 625 315
209 618 3	69 088 87	0 701 676	839 642 4	37 814 05	9 271 456
354 906 1	30 310 72	0 851 038	375 051 0	11 574 77	0 417 189
861 068 7	39 696 55	2 126 715	468 895 7	03 503 54	

Conclusions-

The Fibonacci Golden Ratio $\phi \approx 1.618034$ and the circular perimetric ratio $\pi \approx 3.141593$ arise in very different mathematical contexts, so it would be surprising to discover that they are in fact related. The decimal places of π , ϕ and e has given in infinite numbers, but in chaotic ordered. Through this paper, we have considered it in a new altitude in some arranged manner. We have considered here, some specific Prime numbers and its Prime factorization in decimal places of π . We have considered here some Prime Numbers such that it's reverse digit order are also Primes. Some specific proceeding researches may be performed in future in the direction mentioned above. In the decimal numbers of π , we are getting some specific Prime Numbers. Some Prime numbers have reverse digits numbers as Prime Numbers. Consider those Prime Numbers in the table no. 2, 3, 6 and 7. The decimal places of π , ϕ and e has given in infinite numbers, but in chaotic ordered. Through this paper, we have considered it in a new altitude in some arranged manner. We have considered here, some specific Prime numbers and its Prime factorization in decimal places of π , ϕ and e . We considered here some Prime Numbers such that it's reverse digit order are also Primes. Some specific proceeding researches may be performed in future in the direction mentioned above.

Reference



1. Anderson, Stuart. (2019). A relationship between the ratios ϕ and π .