A Mnemonic System for the First 33 Digits of π

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Abstract

π value with 33 digits is: 3.1415926**535**8**979323**84**626**4338327950... A mnemonic system for memorizing of those digits is made here by help of the numeric keypad, which can help at memorizing because of surface distribution of digits, and because of motoric memory of those who often use it. There are used also some symmetries of digits, for instance, with four symmetric triplets of digits, and with other specialties.

1 A new mnemonic system for the first 33 digits of π

π value with 33 digits is:

$$\pi = 3.1415926\mathbf{535}8\mathbf{979323}84\mathbf{626}4338327950... \tag{1}$$

Why some digits are bold, it will be explained in the paper.

The mnemonic system for memorizing of these digits will be created here with the help of the numeric keypad, which can help at memorizing because of surface distribution of digits. Here some symmetries of digits will be used. This system is upgrade of the system in Ref. [1, Sec. 8].

The starting digits from π, 314, are known almost to everyone, but let us write them with the help of the numeric keypad.

7	8	9
$\mathbf{4}_3$	5	6
$\mathbf{1}_2$	2	$\mathbf{3}_1$
0		

Table 1: Consecutive digits 314 are used in the numeric keypad. Te digits are in bold, and

On the surface represented by the numeric keypad, this is easier to remember than just a sequence of numbers, at least for someone who uses the numeric keypad a lot. Indexes mean in which sequence these numbers go.

Let us look the following numbers 15926 and present them on the numeric keypad.

7	8	$\mathbf{9}_3$
4	$\mathbf{5}_2$	$\mathbf{6}_5$
$\mathbf{1}_1$	$\mathbf{2}_4$	3
0		

Table 2: Consecutive digits are 15926.

The numbers are consecutive on two diagonals, so they are easy to remember.
Let us look at the next 18 digits and mark the symmetric triplets with bold:

$$...\mathbf{535}8\mathbf{979}|\mathbf{323}84\mathbf{626}433... \tag{2}$$

We can see that the first and last digits of each triplet are the same. The vertical bar is used only to make it more clear that there are two triplets there.

The first digits of the triplets are described on the numeric keypad with

7	8	$\mathbf{9}_2$
4	$\mathbf{5}_1$	$\mathbf{6}_4$
1	2	$\mathbf{3}_3$
0		

Table 3: Consecutive digits are 5936.

These digits form a symmetric triangle.

The middle digits of the triplets are described on the numeric keypad with

$\mathbf{7}_2$	8	9
4	5	6
1	$\mathbf{2}_{3,4}$	$\mathbf{3}_1$
0		

Table 4: Consecutive digits are 3722.

But, they are easier to remember as 5-**2**, 9-**2**, **2**, **2**, so the first two triplets are 5,5-**2**, 5, and 9,9-**2**,9 and the other two are 3,**2**,3 and 6,**2**,6. So the number 2 in two forms is essential.

The rest (non-bold) digits in Eq. (2) are 884433, or $\{\underline{8}\}\{84\}\{\underline{\mathbf{4\ 3\ 3}}\}$ according to how they are grouped. They are one, two, and three in the groups. The first digit, 8, is after the first triplet, 84 is after the middle two triplets, and 433 is after the last triplet in Eq.(2). With or without underline and with or without bold, we marked each group differently, and we will use these marks slightly differently in Table 5.

This sequence can be represented on the numeric keypad as

7	$\mathbf{8}_{\underline{1},2}$	9
$\mathbf{4}_{3,\underline{4}}$	5	6
1	2	$\mathbf{3}_{\underline{\mathbf{5,6}}}$
0		

Table 5: Consecutive digits are 8 84 433. We used underline and bold in the indices to separate digits of each group.

The digit 3 is connected with 8 and 4 with a jump of the knight on chess board. But we can also say that they form an isosceles triangle. These groups are located after the 1st, 3rd, and 4th symmetrical triplets. It is useful to display this sequence on the numeric keypad, so 134 is expressed with numeric keypad as

7	8	9
$\mathbf{4}_3$	5	6
$\mathbf{1}_1$	2	$\mathbf{3}_2$
0		

Table 6: Consecutive digits 134 as a sequence of the groups of the numbers between triplets.

So Table 6 is similar to Table 1, only the sequence of digits is different.

These intermediate numbers are after the first, the third and the fourth triplets.

The second place is missing, i.e. 2 again, as 2 is typical for middle numbers in 4 triplets in Eq. (2). The fact that the second place is missing also applies to Table 1.

Now let us look at the following digits, i.e. 8327.

$\mathbf{7}_4$	$\mathbf{8}_1$	9
4	5	6
1	$\mathbf{2}_3$	$\mathbf{3}_2$
0		

Table 7: Consecutive digits are 8327.

We can notice the rhomboid pattern, which is easy to remember. Or we notice two jumps of a chess knight.

Let us look at the remaining digits, i.e. 950.

7	8	$\mathbf{9}_1$
4	$\mathbf{5}_2$	6
1	2	3
$\mathbf{0}_3$		

Table 8: Consecutive digits are 950.

Thus, the first digit of zero is only in the 33rd place.

We can write down the first 5 digits of the string we investigated, 15926 and the last 5 digits, and write the last one in reverse order, 05972. If we reverse the last two digits again, we get 05927, and we find that these two strings are similar.

There are two symmetric triples available, one starting after the 2nd place and the other at the 26th place, 141 and 383. Memorizing them can help with the parallel secondary, but not with this system above. There is also one symmetric set of 5 digits available, which is in the 20th place, 46264.

The table for 46264 is:

7	8	9
$\mathbf{4}_{1,5}$	5	$\mathbf{6}_{2,4}$
1	$\mathbf{2}_3$	3
0		

Table 9: Consecutive digits are 46264.

Before the 33th digit, 0, we can also alternatively form a 795 triangle.

$\mathbf{7}_1$	8	$\mathbf{9}_2$
4	$\mathbf{5}_3$	6
1	2	3
$\mathbf{0}_4$		

Table 10: Consecutive digits are 7950.

2 Conclusions and comparisons

We now have 10 tables, but not all of them are necessarily necessary to remember if we know some of them by heart before this paper. Everyone knows digits from Table 1, but the message from Tables 4 and 6 can be remembered in other ways, and Tables 9 and 10 are alternative. Tables that are more important are written also in blue, and so some key numbers. At the same time, these tables can also be compiled into a three-dimensional structure, and the numbers can then be remembered even from the side projections. Spatial memorization is an aid to memorization. At the same time, we can help ourself with some peculiarities of these digits.

This mnemonic system could also help at other sequences of numbers. Due to its three-dimensional structure, it is even possible to make it a real material structure, which would additionally help memorization. It would even be some new Braille. The number of digits is only 10, so it would be easier to read than the letters in Braille.

The following is a different example of a mnemonic technique for memorizing a few digits of π. »*May I have a large container of coffee.*« [2] Numbers of letters in words are consecutively 31415926. However, in my opinion the above method with numeric keypads is easier to remember, but it is useful to know more methods.

The question is also, are there any better methods?

3 Author's other references

The author wrote some papers about π in viXra, [1, 3–5]. He also wrote papers on formulas for the mass of the electron and other masses of elementary particles and on the quantization of gravity, e.g. Ref. [6, 7]. He also deals with the research of consciousness, i.e. panpsychism and quantum consciousness, Ref. [7, 8].

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