

Concatenation-Type Selfie Numbers With Factorial and Square-Root

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Abstract

*Numbers represented by their own digits by certain operations are considered as **selfie numbers**. Some times they are called as **wild narcissistic numbers**. There are many ways of representing **selfie numbers**. They can be represented in digit's order, reverse order of digits, increasing and/or decreasing order of digits, etc. These can be obtained by use of basis operations along with **factorial, square-root, Fibonacci sequence, Triangular numbers, binomial coefficients, s-gonal values, centered polygonal numbers**, etc. In this work, we have written **selfie numbers** by use of **concatenation**, along with **factorial** and **square-root**. The concatenation idea is used in a very simple way. The work is limited up to 5 digits. Work on higher digits shall be dealt elsewhere.*

*Based on Matt Parker's [10, 11] idea of
Concatenation to solve "The 10,958 Problem" [17].*

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1 Crazy Representations

In [17], author wrote number from 1 to 11111 in increasing and decreasing orders of 1 to 9 and 9 to 1. By use of basic operation, we got all numbers except 10958 in the increasing case. We can write it by use of factorial and/or square-root. See below:

$$10958 := 1 + 2 + 3!! + (-4 + 5! + 6 - 7) \times 89$$

$$10958 := 1 \times 2 \times (3!! - 4! \times (5 + 6) + 7! - 8 - 9)$$

For more solutions refer [5, 6, 7] Moreover, this work appeared as improbable research [1, 2, 3, 4].

Recently, Matt Parker [10, 11, 12] gave a new idea of finding this number by using **concatenation** among numbers. See below:

$$10958 := 1 \times 23 + ((4 \times 5 \times 6) || 7 + 8) \times 9,$$

where

$$a || b := 10 \times a + b, a \in \mathbf{Z}, b \in \{0, 1, 2, 3, 4, 6, 7, 8, 9\}. \tag{1}$$

The notation " || " is known as **concatenation**. More on it can be seen in [9]. The number 23 can also be written as 2 || 3, but it don't make any effect on the representation.

From *mathematical point of view* the study of concatenation as operator is very deep. For details see [9]. Some general idea can be see at [13, 15]. Some times it is called as **Triangles of the Gods** [16] given below:

1
12
123
1234
12345
123456
1234567
12345678
... ..

Remark 1.1. *Our aim here is not to go much deep. Only to work with basic idea, i.e., $10 \times a + b$, where a and b are integers, with condition that b is only of single digit. Let us see below some examples,*

$$2 || 3 := 2 \times 10 + 3 = 23$$

$$(2 + 3) || 5 := (2 + 3) \times 10 + 5 = 55$$

$$(5 \times 4 + 7) || (2 + 3) := 27 \times 10 + 5 = 275.$$

Here we should observe that, in case of real concatenation, when the second component of the pair is of two digits, then the first one is automatically of two digits, i.e., it become as $5 || (7 + 8) = 5 || 15 = 5 \times 100 + 15 = 515$. Another example, $1 || 23 := 100 + 23 = 123$. In this case we can say that $5 || 15 = 51 || 5$ $1 || 23 = 12 || 3$. This type os situation is still not under study. In another opportunity, we shall work with general case of concatenation.

Based on above details we shall bring selfie numbers. First, below is an idea of **selfie numbers** with examples.

1.1 Selfie Numbers

Numbers represented by their own digits by certain operations are considered as "**selfie numbers**". Some times they are called as **wild narcissistic numbers**. There are many ways of representing "**selfie numbers**". They can be represented in digit's order, reverse order of digits, increasing and/or decreasing order of digits, etc. These can be obtained by use of basis operations along with **factorial, square-root, Fibonacci sequence, Triangular numbers, binomial coefficients, s-gonal values, centered polygonal numbers**, etc. Below are some examples with **factorial** and **square-root** written in both ways, i.e., in digit's order and its reverse:

$$\begin{aligned}
 936 &:= (\sqrt{9})!^3 + 6! &= 6! + (3!)^{\sqrt{9}} \\
 1296 &:= \sqrt{(1+2)!^9/6} &= 6^{(\sqrt{9}+2-1)} \\
 2896 &:= 2 \times (8 + (\sqrt{9})!! + 6!) &= (6! + (\sqrt{9})!! + 8) \times 2 \\
 331779 &:= 3 + (31 - 7)^{\sqrt{7+9}} &= \sqrt{9} + (7 \times 7 - 1)^3 \times 3 \\
 342995 &:= (3^4 - 2 - 9)^{\sqrt{9}} - 5 &= -5 + (-9 + 9^2 - \sqrt{4})^3 \\
 759375 &:= (-7 + 59 - 37)^5 &= (5 + 7 + 3)^{\sqrt{9}-5+7} \\
 759381 &:= 7 + (5 \times \sqrt{9})^{-3+8} - 1 &= -1 + (8 \times 3 - 9)^5 + 7
 \end{aligned}$$

More examples of **selfie numbers** in different situations are given as summary in last section 4.

In this work our aim is to bring **selfie numbers** by use of **concatenation**, along with **factorial** and **square-root**. The work is limited up to 5 digits. Study for higher digits shall be dealt elsewhere.

2 Concatenation-Type Selfie Numbers

This section brings the selfie numbers by use of formula (1) with factorial and square-root. It has been divided in small subsections according to each type of situation. Before starting there are few numbers those can be written without use of factorial and square-root. See below:

- **Digit's Order**

$$\begin{aligned}
 15129 &:= \langle (-1 + 5) \parallel 1 \rangle^2 \times 9 \\
 33124 &:= \langle (3 \times 3) \parallel 1 \rangle^2 \times 4
 \end{aligned}$$

- **Reverse Order of Digits**

$$\begin{aligned}
 1255 &:= 5 \times \langle 5^2 \parallel 1 \rangle & 15477 &:= 77 \times \langle (4 \times 5) \parallel 1 \rangle \\
 1288 &:= 8 \times \langle (8 \times 2) \parallel 1 \rangle & 24964 &:= (4 + \langle (6 + 9) \parallel 4 \rangle)^2 \\
 1359 &:= 9 \times \langle (5 \times 3) \parallel 1 \rangle & 26896 &:= (\langle (6 + 9) \parallel 8 \rangle + 6)^2 \\
 1449 &:= 9 \times \langle (4 \times 4) \parallel 1 \rangle & 39304 &:= (\langle 4 \parallel 03 \rangle - 9)^3
 \end{aligned}$$

2.1 Sequential Representations

There are many numbers those can be written in sequential way, i.e., from 0 to 9 they have symmetric consecutive representations. Again we have divided it in three part. First one both ways, second one in digit's order and third one in reverse order of digits.

2.1.1 Both Ways

$$30960 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 0 = 0 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30961 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 1 = 1 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30962 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 2 = 2 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30963 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 3 = 3 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30964 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 4 = 4 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30965 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 5 = 5 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30966 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 6 = 6 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30967 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 7 = 7 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30968 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 8 = 8 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

$$30969 := \langle (3 + 0!) \parallel \sqrt{9} \rangle \times 6! + 9 = 9 + 6! \times \langle (\sqrt{9} + 0!) \parallel 3 \rangle$$

2.1.2 Digit's Order

$$37440 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 0$$

$$37441 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 1$$

$$37442 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 2$$

$$37443 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 3$$

$$37444 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 4$$

$$37445 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 5$$

$$37446 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 6$$

$$37447 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 7$$

$$37448 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 8$$

$$37449 := 3!! \times \langle (7 - \sqrt{4}) \parallel \sqrt{4} \rangle + 9$$

$$39840 := -(-3 + 9)! + 8! + \langle 4! \parallel 0 \rangle$$

$$39841 := -(-3 + 9)! + 8! + \langle 4! \parallel 1 \rangle$$

$$39842 := -(-3 + 9)! + 8! + \langle 4! \parallel 2 \rangle$$

$$39843 := -(-3 + 9)! + 8! + \langle 4! \parallel 3 \rangle$$

$$39844 := -(-3 + 9)! + 8! + \langle 4! \parallel 4 \rangle$$

$$39845 := -(-3 + 9)! + 8! + \langle 4! \parallel 5 \rangle$$

$$39846 := -(-3 + 9)! + 8! + \langle 4! \parallel 6 \rangle$$

$$39847 := -(-3 + 9)! + 8! + \langle 4! \parallel 7 \rangle$$

$$39848 := -(-3 + 9)! + 8! + \langle 4! \parallel 8 \rangle$$

$$39849 := -(-3 + 9)! + 8! + \langle 4! \parallel 9 \rangle$$

$$\begin{aligned}
 40080 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 0 \\
 40081 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 1 \\
 40082 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 2 \\
 40083 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 3 \\
 40084 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 4 \\
 40085 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 5 \\
 40086 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 6 \\
 40087 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 7 \\
 40088 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 8 \\
 40089 &:= -\langle 4! \parallel 0! \rangle + 0! + 8! + 9
 \end{aligned}$$

$$\begin{aligned}
 44640 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 0 \\
 44641 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 1 \\
 44642 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 2 \\
 44643 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 3 \\
 44644 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 4 \\
 44645 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 5 \\
 44646 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 6 \\
 44647 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 7 \\
 44648 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 8 \\
 44649 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 9
 \end{aligned}$$

$$\begin{aligned}
 46690 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 0 \rangle \\
 46691 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 1 \rangle \\
 46692 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 2 \rangle \\
 46693 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 3 \rangle \\
 46694 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 4 \rangle
 \end{aligned}$$

$$\begin{aligned}
 46695 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 5 \rangle \\
 46696 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 6 \rangle \\
 46697 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 7 \rangle \\
 46698 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 8 \rangle \\
 46699 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 9 \rangle
 \end{aligned}$$

$$\begin{aligned}
 69120 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 0 \\
 69121 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 1 \\
 69122 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 2 \\
 69123 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 3 \\
 69124 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 4 \\
 69125 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 5 \\
 69126 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 6 \\
 69127 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 7 \\
 69128 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 8 \\
 69129 &:= 6! \times \langle 9 \parallel (1+2)! \rangle + 9
 \end{aligned}$$

$$\begin{aligned}
 75840 &:= 7! \times 5!/8 + \langle 4! \parallel 0 \rangle \\
 75841 &:= 7! \times 5!/8 + \langle 4! \parallel 1 \rangle \\
 75842 &:= 7! \times 5!/8 + \langle 4! \parallel 2 \rangle \\
 75843 &:= 7! \times 5!/8 + \langle 4! \parallel 3 \rangle \\
 75844 &:= 7! \times 5!/8 + \langle 4! \parallel 4 \rangle \\
 75845 &:= 7! \times 5!/8 + \langle 4! \parallel 5 \rangle \\
 75846 &:= 7! \times 5!/8 + \langle 4! \parallel 6 \rangle \\
 75847 &:= 7! \times 5!/8 + \langle 4! \parallel 7 \rangle \\
 75848 &:= 7! \times 5!/8 + \langle 4! \parallel 8 \rangle \\
 75849 &:= 7! \times 5!/8 + \langle 4! \parallel 9 \rangle
 \end{aligned}$$

2.1.3 Reverse Order of Digits

$$\begin{aligned}
 01320 &:= 0 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01321 &:= 1 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01322 &:= 2 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01323 &:= 3 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01324 &:= 4 + (2+3)! \times \langle 1 \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 01325 &:= 5 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01326 &:= 6 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01327 &:= 7 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01328 &:= 8 + (2+3)! \times \langle 1 \parallel 0! \rangle \\
 01329 &:= 9 + (2+3)! \times \langle 1 \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 03050 &:= 0 + 50 \times \langle 3! \parallel 0! \rangle \\
 03051 &:= 1 + 50 \times \langle 3! \parallel 0! \rangle \\
 03052 &:= 2 + 50 \times \langle 3! \parallel 0! \rangle \\
 03053 &:= 3 + 50 \times \langle 3! \parallel 0! \rangle \\
 03054 &:= 4 + 50 \times \langle 3! \parallel 0! \rangle \\
 03055 &:= 5 + 50 \times \langle 3! \parallel 0! \rangle \\
 03056 &:= 6 + 50 \times \langle 3! \parallel 0! \rangle \\
 03057 &:= 7 + 50 \times \langle 3! \parallel 0! \rangle \\
 03058 &:= 8 + 50 \times \langle 3! \parallel 0! \rangle \\
 03059 &:= 9 + 50 \times \langle 3! \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 03720 &:= 0 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03721 &:= 1 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03722 &:= 2 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03723 &:= 3 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03724 &:= 4 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03725 &:= 5 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03726 &:= 6 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03727 &:= 7 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03728 &:= 8 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle \\
 03729 &:= 9 + (-2 + 7)! \times \langle 3 \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 04790 &:= 0 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04791 &:= 1 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04792 &:= 2 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04793 &:= 3 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04794 &:= 4 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04795 &:= 5 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04796 &:= 6 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04797 &:= 7 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04798 &:= 8 - 9 + 7! - \langle 4! \parallel 0! \rangle \\
 04799 &:= 9 - 9 + 7! - \langle 4! \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 21960 &:= 0 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21961 &:= 1 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21962 &:= 2 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21963 &:= 3 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21964 &:= 4 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2
 \end{aligned}$$

$$\begin{aligned}
 21965 &:= 5 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21966 &:= 6 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21967 &:= 7 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21968 &:= 8 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2 \\
 21969 &:= 9 + 6! \times \langle (\sqrt{9})! \parallel 1 \rangle / 2
 \end{aligned}$$

$$\begin{aligned}
 45360 &:= 0 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45361 &:= 1 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45362 &:= 2 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45363 &:= 3 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45364 &:= 4 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45365 &:= 5 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45366 &:= 6 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45367 &:= 7 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45368 &:= 8 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle \\
 45369 &:= 9 + 6! \times \langle 3! \parallel \sqrt{5+4} \rangle
 \end{aligned}$$

$$\begin{aligned}
 84960 &:= 0 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84961 &:= 1 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84962 &:= 2 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84963 &:= 3 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84964 &:= 4 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84965 &:= 5 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84966 &:= 6 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84967 &:= 7 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84968 &:= 8 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle \\
 84969 &:= 9 + 6! \times \langle (9 + \sqrt{4}) \parallel 8 \rangle
 \end{aligned}$$

2.2 Non Sequential Representations

In this subsection, there are numbers those are not in a sequential way as of subsection above. Again, we have divided it in three subsections. One on both ways. Second on digit's order and third on reverse order of digits.

2.2.1 Both Ways

Below are selfie numbers those can be written in both ways, i.e., in digit's order and its reverse. The first three numbers are written in one way as they are palindromes.

$$15851 := (1 + 5!) \times \langle (8 + 5) \parallel 1 \rangle$$

$$44644 := (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 4$$

$$74347 := 7 \times 43 \times \langle 4! \parallel 7 \rangle$$

$$396 := \langle 3! \parallel (\sqrt{9})! \rangle \times 6 = \langle 6 \parallel (\sqrt{9})! \rangle \times 3!$$

$$10582 := \langle 1 \parallel 0! \rangle \times (5! \times 8 + 2) = (2 + 8 \times 5!) \times \langle 0! \parallel 1 \rangle$$

$$10584 := \langle 1 \parallel 0! \rangle \times 5! \times 8 + 4! = 4! + 8 \times 5! \times \langle 0! \parallel 1 \rangle$$

$$10635 := (-\langle 1 \parallel 0! \rangle + 6!) \times 3 \times 5 = 5 \times 3 \times (6! - \langle 0! \parallel 1 \rangle)$$

$$14379 := (-1 - \langle 4! \parallel 3! \rangle + 7!) \times \sqrt{9} = \sqrt{9} \times (7! - 3! - \langle 4! \parallel 1 \rangle)$$

$$15079 := -\langle (-1 + 5) \parallel 0! \rangle + 7! \times \sqrt{9} = \sqrt{9} \times 7! - \langle (-0! + 5) \parallel 1 \rangle$$

$$15162 := \langle \sqrt{-1 + 5} \parallel 1 \rangle \times (6! + 2) = (2 + 6!) \times \langle \sqrt{-1 + 5} \parallel 1 \rangle$$

$$15696 := (-1 + 5)! \times (6! - \langle (\sqrt{9})! \parallel 6 \rangle) = (-\langle 6 \parallel (\sqrt{9})! \rangle + 6!) \times (5 - 1)!$$

$$17324 := \langle 4! \parallel (-2 + 3!) \rangle \times 71 = \sqrt{1 + 7!} \times \langle (3! - 2)! \parallel 4 \rangle$$

$$17346 := \langle (-1 + 7) \parallel 3! \rangle + 4! \times 6! = 6! \times 4! + \langle 3! \parallel (7 - 1) \rangle$$

$$19844 := \langle 4! \parallel \sqrt{4} \rangle \times (\langle 8 \parallel \sqrt{9} \rangle - 1) = (1 + \sqrt{\sqrt{9^8}}) \times \langle 4! \parallel \sqrt{4} \rangle$$

$$20147 := 7! \times 4 - \langle 1 \parallel 0! \rangle - 2 = -2 - \langle 0! \parallel 1 \rangle + 4 \times 7!$$

$$23593 := \langle 3 \parallel \sqrt{9} \rangle \times (-5 + 3!!) - 2 = -2 + (3!! - 5) \times \langle \sqrt{9} \parallel 3 \rangle$$

$$24964 := (4 + \langle (6 + 9) \parallel 4 \rangle)^2 = (2 + \langle (4! - 9) \parallel 6 \rangle)^{\sqrt{4}}$$

$$29789 := \langle \sqrt{9} \parallel (8 - 7) \rangle^{\sqrt{9}} - 2 = -2 + \langle \sqrt{9} \parallel (-7 + 8) \rangle^{\sqrt{9}}$$

$$29793 := \langle 3 \parallel (-\langle (\sqrt{9})! \rangle + 7) \rangle^{\sqrt{9}} + 2 = 2 + \langle \sqrt{9} \parallel (7 - \langle (\sqrt{9})! \rangle) \rangle^3$$

$$30172 := -2 + (7! - \langle 1 \parallel 0! \rangle) \times 3! = 3! \times (-\langle 0! \parallel 1 \rangle + 7!) - 2$$

$$30174 := \sqrt{4} \times (7! - \langle 1 \parallel 0! \rangle) \times 3 = -3 \times (\langle 0! \parallel 1 \rangle - 7!) \times \sqrt{4}$$

$$30282 := \langle \sqrt{2 \times 8} \parallel 2 \rangle \times (0! + 3!!) = (3!! + 0!) \times \langle \sqrt{2 \times 8} \parallel 2 \rangle$$

$$30606 := ((6 + 0!)! + \langle 6 \parallel 0! \rangle) \times 3! = ((3! + 0!)! + \langle 6 \parallel 0! \rangle) \times 6$$

$$30636 := (\langle 6 \parallel 3! \rangle + (6 + 0!)!) \times 3! = ((3! + 0!)! + \langle 6 \parallel 3! \rangle) \times 6$$

$$30897 := \langle 3 \parallel \sqrt{0! + 8} \rangle^{\sqrt{9}} - 7! = -7! + \langle \sqrt{9} \parallel \sqrt{8 + 0!} \rangle^3$$

$$34398 := (\langle 3! \parallel \sqrt{4} \rangle - 3!!) \times 9 + 8! = 8! + 9 \times (\langle 3! \parallel \sqrt{4} \rangle - 3!!)$$

$$34704 := 3! \times \langle 4! \parallel (7 \times 0)! \rangle \times 4! = \langle 4! \parallel (0 \times 7)! \rangle \times 4! \times 3!$$

$$39105 := (3!! - 9) \times \langle 1 \parallel 0! \rangle \times 5 = 5 \times \langle 0! \parallel 1 \rangle \times (-9 + 3!!)$$

$$39304 := (3^9 - \langle 3 \parallel 0! \rangle) \times \sqrt{4} = (\langle 4 \parallel 03 \rangle - 9)^3$$

$$39498 := -\langle 3 \times 9 \parallel 4 \rangle \times \sqrt{9} + 8! = 8! - \langle 9 \parallel \sqrt{4} \rangle \times 9 + 3!$$

$$39658 := \langle 3! \parallel \sqrt{9} \rangle - 6! - 5 + 8! = 8! - 5 + \langle 6 \parallel \sqrt{9} \rangle - 3!!$$

$$39786 := (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times 8 - 6 = -6 + 8 \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39789 := (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times 8 - \sqrt{9} = -\sqrt{9} + 8 \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39792 := (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times ((\sqrt{9})! + 2) = 2^{\sqrt{9}} \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39879 := \langle 3! \parallel \sqrt{9} \rangle \times (-87 + (\sqrt{9})!!) = (\sqrt{9} + 7!/8) \times \langle (\sqrt{9})! \parallel 3 \rangle$$

$$39918 := -3! \times (\langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle + 1) + 8! = 8! - (1 + \langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle) \times 3!$$

$$39942 := -\langle 3! \parallel \sqrt{9} \rangle \times (\sqrt{9})! + (4 \times 2)! = (2 \times 4)! - \langle (\sqrt{9})! \parallel \sqrt{9} \rangle \times 3!$$

$$39948 := -\langle (3 \times \sqrt{9}) \parallel \sqrt{9} \rangle \times 4 + 8! = 8! - 4 \times \langle 9 \parallel (9/3) \rangle$$

$$40058 := -\sqrt{4} \times (\langle 0! \parallel 0! \rangle + 5!) + 8! = 8! - (5! + \langle 0! \parallel 0! \rangle) \times \sqrt{4}$$

$$40078 := -\langle 4! \parallel 0! \rangle - (0 \times 7)! + 8! = 8! - \langle (-7 + \langle 0! \parallel 0! \rangle)! \parallel \sqrt{4} \rangle$$

$$40108 := -\langle \langle \sqrt{4} \parallel 0! \rangle \parallel 1 \rangle - 0! + 8! = 8! - \langle \langle (0! + 1) \parallel 0! \rangle \parallel \sqrt{4} \rangle$$

$$40158 := -\langle 4 \parallel 0! \rangle - 1 - 5! + 8! = 8! - \langle (5 + \langle 1 \parallel 0! \rangle) \parallel \sqrt{4} \rangle$$

$$40238 := -\langle 4 \parallel 0! \rangle \times \sqrt{-2 + 3!} + 8! = 8! - \langle (3! + 2) \parallel \sqrt{04} \rangle$$

$$40353 := \langle (\sqrt{4} + 0!) \parallel 3 \rangle + (5 + 3)! = (3 + 5)! + \langle 3 \parallel 0! \rangle + \sqrt{4}$$

$$40362 := \langle 4 \parallel \sqrt{0! + 3} \rangle + (6 + 2)! = (2 + 6)! + \langle (3 + 0!) \parallel \sqrt{4} \rangle$$

$$40364 := \langle 4 \parallel 0! \rangle + 3 + (\sqrt{64})! = (\sqrt{4} + 6)! + \langle (3 + 0!) \parallel 4 \rangle$$

$$40378 := \langle \sqrt{4} \parallel 0! \rangle + 37 + 8! = 8! - 7 + \langle 3! \parallel 0! \rangle + 4$$

$$40479 := \langle 4! \parallel 0! \rangle \times 4! \times 7 - 9 = -9 + 7 \times \langle 4! \parallel 0! \rangle \times 4!$$

$$\begin{aligned}
 40698 &:= \langle \sqrt{4} \parallel 0! \rangle \times 6 \times \sqrt{9} + 8! &= 8! + (\sqrt{9})! \times (\langle 6 \parallel 0! \rangle + \sqrt{4}) \\
 40998 &:= - \left\langle 4 \parallel \left(\sqrt{0! + \sqrt{9}} \right) \right\rangle + (\sqrt{9})!! + 8! = 8! + (\sqrt{9})!! - \left\langle (\sqrt{9} + 0!) \parallel \sqrt{4} \right\rangle \\
 43533 &:= (-4! + 3!! - 5) \times \langle 3! \parallel 3 \rangle &= \langle 3! \parallel 3 \rangle \times (-5 + 3!! - 4!) \\
 43913 &:= -4 - 3 + \left\langle (\sqrt{9})! \parallel 1 \right\rangle \times 3!! &= \langle 3! \parallel 1 \rangle \times (\sqrt{9})!! - 3 - 4 \\
 43919 &:= \sqrt{4} + 3!! \times \left\langle (\sqrt{9})! \parallel 1 \right\rangle - \sqrt{9} &= \left\langle (\sqrt{9})! \parallel 1 \right\rangle \times (\sqrt{9})!! + 3 - 4 \\
 \\
 44164 &:= \langle (4!/4) \parallel 1 \rangle \times (6! + 4) &= \langle (4! - 6) \parallel 1 \rangle \times \langle 4! \parallel 4 \rangle \\
 44398 &:= - \langle 4! \parallel \sqrt{4} \rangle - 3!! + 9!/8 = 8! + (\sqrt{9})! \times 3!! - \langle 4! \parallel \sqrt{4} \rangle \\
 44469 &:= \langle 4! \parallel 4 \rangle / 4 \times (6! + 9) &= \sqrt{9^6} \times \langle 4! \parallel 4 \rangle / 4 \\
 44634 &:= -4!/4 + 6! \times \langle 3! \parallel \sqrt{4} \rangle &= -4 + 3!! \times \langle 6 \parallel \sqrt{4} \rangle - \sqrt{4} \\
 44636 &:= -4 + (-4 + \langle 6 \parallel 3! \rangle) \times 6! = 6! \times \langle 3! \parallel (6 - 4) \rangle - 4 \\
 \\
 44642 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 2 &= (2 + 4)! \times \langle 6 \parallel \sqrt{4} \rangle + \sqrt{4} \\
 44646 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 6 &= \langle 6 \parallel \sqrt{4} \rangle \times 6! + \sqrt{4} + 4 \\
 45699 &:= 4! + (5 + 6!) \times \left\langle (\sqrt{9})! \parallel \sqrt{9} \right\rangle = \left\langle (\sqrt{9})! \parallel \sqrt{9} \right\rangle \times (6! + 5) + 4! \\
 46344 &:= \sqrt{4^6} \times 3!! + \langle 4! \parallel 4! \rangle &= \langle 4! \parallel 4! \rangle + 3!! \times 64 \\
 \\
 46693 &:= 4 + 6^6 + \langle \sqrt{9} \parallel 3 \rangle &= \langle 3 \parallel \sqrt{9} \rangle + 6^6 + 4 \\
 46944 &:= 4! + 6^{(\sqrt{9})!} + \langle 4! \parallel 4! \rangle &= \langle 4! \parallel 4! \rangle + (\sqrt{9})!^6 + 4! \\
 46968 &:= -4! + \langle 6 \parallel (\sqrt{9})! \rangle \times (6! - 8) = (-8 + 6!) \times \left\langle (\sqrt{9})! \parallel 6 \right\rangle - 4! \\
 47424 &:= \langle 4! \parallel 7 \rangle \times 4! \times 2 \times 4 &= 4 \times 2 \times \langle 4! \parallel 7 \rangle \times 4! \\
 49236 &:= \left(4! + (\sqrt{9})!! + 2 \right) \times \langle 3! \parallel 6 \rangle = \langle 6 \parallel 3! \rangle \times \left(2 + (\sqrt{9})!! + 4! \right) \\
 \\
 49923 &:= \left\langle \left(4 \times \sqrt{9} \right) \parallel 9 \right\rangle^2 \times 3 &= 3 \times \left\langle \left(2 \times (\sqrt{9})! \right) \parallel 9 \right\rangle^{\sqrt{4}} \\
 58444 &:= -5! + \left\langle (8 - 4)! \parallel \sqrt{4} \right\rangle^{\sqrt{4}} &= \langle 4! \parallel \sqrt{4} \rangle^{\sqrt{-4+8}} - 5! \\
 64944 &:= \left\langle (6 \times 4) \parallel (\sqrt{9})! \right\rangle \times \langle 4! \parallel 4! \rangle = 4! \times (\sqrt{4} + 9) \times \langle 4! \parallel 6 \rangle \\
 66954 &:= -6 + 6! \times \left\langle 9 \parallel \sqrt{5 + 4} \right\rangle &= \left\langle (4 + 5) \parallel \sqrt{9} \right\rangle \times 6! - 6 \\
 \\
 66996 &:= 6 \times 6 + \langle 9 \parallel \sqrt{9} \rangle \times 6! &= 6! \times \langle 9 \parallel \sqrt{9} \rangle + 6 \times 6 \\
 71999 &:= 7! - 1 + (\sqrt{9})!! \times \langle 9 \parallel \sqrt{9} \rangle = (\sqrt{9})!! \times \langle 9 \parallel \sqrt{9} \rangle - 1 + 7! \\
 77448 &:= 7 \times (7! + \langle 4! \parallel 4! \rangle) + 8! &= 8! + (\langle 4! \parallel 4! \rangle + 7!) \times 7 \\
 79989 &:= -7 \times \left(\langle 9 \parallel \sqrt{9} \rangle + 8! \right) + 9! = 9! - \left(8! + \langle 9 \parallel \sqrt{9} \rangle \right) \times 7
 \end{aligned}$$

$$\begin{aligned}
 80728 &:= \langle 8 \parallel 0! \rangle + 7 + 2 \times 8! &= 8! \times 2 + \langle 7 + 0! \parallel 8 \rangle \\
 80804 &:= (\langle 8 \parallel 0! \rangle + 8! + 0!) \times \sqrt{4} &= \sqrt{4} \times (0! + \langle 8 \parallel 0! \rangle + 8!) \\
 85344 &:= \left(\langle 4 \parallel \sqrt{4} \rangle + 3!! \right) \times (5! - 8) &= (-8 + 5!) \times \left(3!! + \langle 4 \parallel \sqrt{4} \rangle \right) \\
 93955 &:= \left((\sqrt{9})!! + \langle 3! \parallel \sqrt{9} \rangle \right) \times 5! - 5 &= -5 + 5! \times \left((\sqrt{9})!! + \langle 3! \parallel \sqrt{9} \rangle \right) \\
 96624 &:= \left\langle (\sqrt{9})! \parallel 6 \right\rangle \times (6! \times 2 + 4!) &= (4! + 2 \times 6!) \times \left\langle 6 \parallel (\sqrt{9})! \right\rangle \\
 98404 &:= \sqrt{9} + 8! + \langle 4! \parallel 0! \rangle^{\sqrt{4}} &= \langle 4! \parallel 0! \rangle^{\sqrt{4}} + 8! + \sqrt{9}
 \end{aligned}$$

2.2.2 Digit's Order

Below are selfie numbers written in digit's order. The numbers appearing in subsection 2.2.1 are written again except those given in section on sequential representations 2.1.

$$\begin{aligned}
 305 &:= \langle 3! \parallel 0! \rangle \times 5 & 3969 &:= \left\langle 3! \parallel \sqrt{9} \right\rangle^{6/\sqrt{9}} \\
 396 &:= \left\langle 3! \parallel (\sqrt{9})! \right\rangle \times 6 & 4079 &:= -\langle 4! \parallel 0! \rangle + 7! - (\sqrt{9})!! \\
 473 &:= -\langle 4! \parallel 7 \rangle + 3!! & 4332 &:= -4! + \langle 3! \parallel 3! \rangle^2 \\
 492 &:= \left\langle 4! \parallel (\sqrt{9})! \right\rangle \times 2 & 4920 &:= \left\langle 4! \parallel (\sqrt{9})! \right\rangle \times 20 \\
 793 &:= \left\langle 7 \parallel \sqrt{9} \right\rangle + 3!! & 4937 &:= -\left\langle 4 + (\sqrt{9})! \parallel 3 \right\rangle + 7! \\
 796 &:= \left\langle 7 \parallel (\sqrt{9})! \right\rangle + 6! & 4997 &:= -\left\langle 4 \parallel (9/\sqrt{9}) \right\rangle + 7! \\
 1446 &:= \left(-1 + \left\langle 4! \parallel \sqrt{4} \right\rangle \right) \times 6 & 5040 &:= 5! \times (0! + \langle 4 \parallel 0! \rangle) \\
 1476 &:= (-1 + \langle 4! \parallel 7 \rangle) \times 6 & 5091 &:= \langle 5 \parallel 0! \rangle + \left((\sqrt{9})! + 1 \right)! \\
 1489 &:= 1 + \langle 4! \parallel 8 \rangle \times (\sqrt{9})! & 5097 &:= \langle 5 \parallel 0! \rangle + (\sqrt{9})! + 7! \\
 1493 &:= -1 + \langle 4! \parallel 9 \rangle \times 3! & 5640 &:= 5! \times (6 + \langle 4 \parallel 0! \rangle) \\
 1495 &:= (-1 + 4!) \times \left\langle (\sqrt{9})! \parallel 5 \right\rangle & 9984 &:= -\left\langle 9 \parallel (\sqrt{9})! \right\rangle + 8!/4 \\
 1920 &:= (-1 + 9)! / \langle 2 \parallel 0! \rangle & 10285 &:= \langle 1 \parallel 0! \rangle^2 \times 85 \\
 1968 &:= \left\langle (1 + \sqrt{9})! \parallel 6 \right\rangle \times 8 & 10404 &:= \left\langle 10 \parallel \sqrt{4} \right\rangle^{\sqrt{04}} \\
 2904 &:= \left\langle 2 \times (\sqrt{9})! \parallel 0! \right\rangle \times 4! & 10582 &:= \langle 1 \parallel 0! \rangle \times (5! \times 8 + 2) \\
 3050 &:= \langle 3! \parallel 0! \rangle \times 50 & 10584 &:= \langle 1 \parallel 0! \rangle \times 5! \times 8 + 4! \\
 3535 &:= 3!! \times 5 - \langle 3! \parallel 5 \rangle & 10635 &:= (-\langle 1 \parallel 0! \rangle + 6!) \times 3 \times 5 \\
 3844 &:= \langle 3! \parallel (8/4) \rangle^{\sqrt{4}} & 10648 &:= \langle 1 \parallel 0! \rangle^{6/\sqrt{4}} \times 8 \\
 3905 &:= \left(3!! + \left\langle (\sqrt{9})! \parallel 0! \right\rangle \right) \times 5 & 10789 &:= -\langle 1 \parallel 0! \rangle + (7 + 8) \times (\sqrt{9})!! \\
 3955 &:= \left\langle 3 \parallel \sqrt{9} \right\rangle \times 5! - 5 & 12544 &:= \left\langle (1 + 2 \times 5) \parallel \sqrt{4} \right\rangle^{\sqrt{4}} \\
 3960 &:= \left\langle 3 \parallel \sqrt{9} \right\rangle \times (6 - 0!)! & 14056 &:= \langle (1 + 4!) \parallel 0! \rangle \times 56
 \end{aligned}$$

$$\begin{aligned}
 14091 &:= \langle (-1 + 4!) \parallel 0! \rangle \times \langle (\sqrt{9})! \parallel 1 \rangle \\
 14379 &:= (-1 - \langle 4! \parallel 3! \rangle + 7!) \times \sqrt{9} \\
 14632 &:= \langle (-1 + 4!) \parallel 6 \rangle \times \langle 3! \parallel 2 \rangle \\
 14760 &:= (-1 + \langle 4! \parallel 7 \rangle) \times 60 \\
 14873 &:= 1 - \langle 4! \parallel 8 \rangle + 7! \times 3 \\
 15079 &:= -\langle (-1 + 5) \parallel 0! \rangle + 7! \times \sqrt{9} \\
 15129 &:= \langle (-1 + 5) \parallel 1 \rangle^2 \times 9 \\
 15141 &:= (1 + (5 + 1)!) \times \langle \sqrt{4} \parallel 1 \rangle \\
 15162 &:= \langle \sqrt{-1 + 5} \parallel 1 \rangle \times (6! + 2) \\
 15367 &:= (1 + 5!) \times \langle (3! + 6) \parallel 7 \rangle \\
 15488 &:= (1 + 5!) \times \langle (4 + 8) \parallel 8 \rangle \\
 15535 &:= (-1 + 5! + 5!) \times \langle 3! \parallel 5 \rangle \\
 15696 &:= (-1 + 5)! \times (6! - \langle (\sqrt{9})! \parallel 6 \rangle) \\
 15851 &:= (1 + 5!) \times \langle (8 + 5) \parallel 1 \rangle \\
 15972 &:= (1 + 5!) \times \langle ((\sqrt{9})! + 7) \parallel 2 \rangle \\
 16896 &:= \sqrt{\sqrt{16^8}} \times \langle (\sqrt{9})! \parallel 6 \rangle \\
 17039 &:= -1 + \langle 7 \parallel 0! \rangle \times 3! / \sqrt{9} \\
 17040 &:= \sqrt{1 + 7!} \times (-0! + \langle 4! \parallel 0! \rangle) \\
 17324 &:= \sqrt{1 + 7!} \times \langle (3! - 2)! \parallel 4 \rangle \\
 17329 &:= 1 + \langle 7 \parallel 3! \rangle^2 \times \sqrt{9} \\
 17343 &:= \langle (-1 + 7) \parallel 3 \rangle + 4! \times 3! \\
 17346 &:= \langle (-1 + 7) \parallel 3! \rangle + 4! \times 6! \\
 17424 &:= \langle (17 - 4) \parallel 2 \rangle^{\sqrt{4}} \\
 17463 &:= \sqrt{1 + 7!} \times \langle 4! \parallel 6 \rangle - 3 \\
 17464 &:= \sqrt{1 + 7!} \times \langle 4! \parallel 6 \rangle - \sqrt{4} \\
 17466 &:= \sqrt{1 + 7!} \times \langle (4 \times 6) \parallel 6 \rangle \\
 17469 &:= \sqrt{1 + 7!} \times \langle 4! \parallel 6 \rangle + \sqrt{9} \\
 17495 &:= -1 + \langle 7 \parallel \sqrt{4} \rangle \times \sqrt{9^5} \\
 17640 &:= 1 \times 7! / 6 \times \langle \sqrt{4} \parallel 0! \rangle \\
 17641 &:= 1 + 7! / 6 \times \langle \sqrt{4} \parallel 1 \rangle \\
 18504 &:= \left((\sqrt{1 + 8})!! + \langle 5 \parallel 0! \rangle \right) \times 4!
 \end{aligned}$$

$$\begin{aligned}
 18744 &:= \sqrt{1^8 + 7!} \times \langle 4! \parallel 4! \rangle \\
 19225 &:= \left(1 + \langle (\sqrt{9})! \parallel 2 \rangle^2 \right) \times 5 \\
 19680 &:= \langle (1 + \sqrt{9})! \parallel 6 \rangle \times 80 \\
 19844 &:= \left(1 + \sqrt{\sqrt{9^8}} \right) \times \langle 4! \parallel \sqrt{4} \rangle \\
 19845 &:= 1 \times \sqrt{\sqrt{9^8}} \times \langle 4! \parallel 5 \rangle \\
 20147 &:= -2 - \langle 0! \parallel 1 \rangle + 4 \times 7! \\
 20182 &:= \langle 2 \parallel 0! \rangle + 1 + 8! / 2 \\
 20349 &:= \langle 2 \parallel 0! \rangle \times (3! + \langle 4! \parallel 9 \rangle) \\
 20880 &:= (\langle 2 \parallel 0! \rangle + 8) \times (\sqrt{8 + 0!})!! \\
 20979 &:= -\langle 2 \parallel 0! \rangle^{\sqrt{9}} + 7! \times (\sqrt{9})! \\
 23042 &:= 2 + 3!! \times \langle (0! + \sqrt{4}) \parallel 2 \rangle \\
 23392 &:= (2 + 3^3!) \times \langle \sqrt{9} \parallel 2 \rangle \\
 23593 &:= -2 + (3! - 5) \times \langle \sqrt{9} \parallel 3 \rangle \\
 24288 &:= 2 \times 4!! / \langle 2 \parallel (8/8) \rangle! \\
 24957 &:= -\langle 24 \parallel \sqrt{9} \rangle + 5 \times 7! \\
 24964 &:= (2 + \langle (4! - 9) \parallel 6 \rangle)^{\sqrt{4}} \\
 25048 &:= \langle 2 \times 5 \parallel 0! \rangle \times \langle 4! \parallel 8 \rangle \\
 25149 &:= \langle 2 \times 5 \parallel 1 \rangle \times \langle 4! \parallel 9 \rangle \\
 25344 &:= 2^5 \times 3 \times \langle 4! \parallel 4! \rangle \\
 25405 &:= ((2 + 5)! + \langle 4 \parallel 0! \rangle) \times 5 \\
 25407 &:= 2 + 5 \times (\langle 4 \parallel 0! \rangle + 7!) \\
 25575 &:= (\langle (2 + 5) \parallel 5 \rangle + 7!) \times 5 \\
 26136 &:= \langle (2 \times 6) \parallel 1 \rangle \times \sqrt{3!^6} \\
 27362 &:= 2 + \langle 7 \parallel 3! \rangle \times 6! / 2 \\
 29040 &:= (2 + \sqrt{9})! \times (0! + \langle 4! \parallel 0! \rangle)
 \end{aligned}$$

$$29042 := 2 + \left((\sqrt{9})! - 0! \right)! \times \langle 4! \parallel 2 \rangle$$

$$29440 := 2 + \left((\sqrt{9})!! - \sqrt{4} \right) \times \langle 4 \parallel 0! \rangle$$

$$29549 := 29 + 5! \times \langle 4! \parallel (\sqrt{9})! \rangle$$

$$29640 := (2 + \sqrt{9})! \times (6 + \langle 4! \parallel 0! \rangle)$$

$$29789 := -2 + \langle \sqrt{9} \parallel (-7 + 8) \rangle^{\sqrt{9}}$$

$$29793 := 2 + \langle \sqrt{9} \parallel (7 - (\sqrt{9})!) \rangle^3$$

$$29997 := - \langle (-2 + (\sqrt{9})!)! \parallel \sqrt{9} \rangle + (\sqrt{9})! \times 7!$$

$$30172 := 3! \times (- \langle 0! \parallel 1 \rangle + 7!) - 2$$

$$30173 := - \langle 3! \parallel 0! \rangle + (-1 + 7!) \times 3!$$

$$30174 := -3 \times (\langle 0! \parallel 1 \rangle - 7!) \times \sqrt{4}$$

$$30179 := - \langle 3! \parallel 0! \rangle + 1 \times 7! \times (\sqrt{9})!$$

$$30264 := \langle (3 + 0!) \parallel 2 \rangle \times 6! + 4!$$

$$30273 := \langle 3 \parallel 0! \rangle + 2 + 7! \times 3!$$

$$30282 := (3!! + 0!) \times \langle \sqrt{2 \times 8} \parallel 2 \rangle$$

$$30307 := \langle 3! \parallel 0! \rangle + 3! \times (0! + 7!)$$

$$30337 := \langle 3! \parallel 0! \rangle + 3! \times (3! + 7!)$$

$$30500 := \langle 3! \parallel 0! \rangle \times 500$$

$$30576 := (\langle 3! \parallel 0! \rangle - 5 + 7!) \times 6$$

$$30606 := ((3! + 0!)! + \langle 6 \parallel 0! \rangle) \times 6$$

$$30636 := ((3! + 0!)! + \langle 6 \parallel 3! \rangle) \times 6$$

$$30667 := (\langle 3! \parallel 0! \rangle + 6! \times 6) \times 7$$

$$30866 := \langle 3! \parallel 0! \rangle \times (\sqrt{8^6} - 6)$$

$$30897 := \langle 3 \parallel \sqrt{0! + 8} \rangle^{\sqrt{9}} - 7!$$

$$31232 := \langle 3! \parallel 1 \rangle \times 2^{3^2}$$

$$32830 := \langle 3! \parallel 2 \rangle + 8^{(3! - 0!)}$$

$$32854 := \langle 3! \parallel 2 \rangle + 8^5 + 4!$$

$$33044 := (3!! + \langle 3 \parallel 0! \rangle) \times 44$$

$$33124 := \langle (3 \times 3) \parallel 1 \rangle^2 \times 4$$

$$33327 := (\langle 3! \parallel 3 \rangle + 3!)^2 \times 7$$

$$33492 := 3 + \langle (-3! + 4!) \parallel \sqrt{9} \rangle^2$$

$$33589 := (- \langle 3! \parallel 3! \rangle + 5 \times 8!) / (\sqrt{9})!$$

$$33597 := 3^{3!} \times \langle 5 \parallel \sqrt{9} \rangle - 7!$$

$$33696 := 3!^3 \times \langle (6 + 9) \parallel 6 \rangle$$

$$34398 := (\langle 3! \parallel \sqrt{4} \rangle - 3!!) \times 9 + 8!$$

$$34495 := 3!! \times (4! + 4!) - \langle (\sqrt{9})! \parallel 5 \rangle$$

$$34496 := - \langle 3! \parallel 4 \rangle + 4! \times ((\sqrt{9})!! + 6!)$$

$$34624 := \langle 3! \parallel 4 \rangle + 6! \times 2 \times 4!$$

$$34702 := (3!! \times 4! + \langle 7 \parallel 0! \rangle) \times 2$$

$$34704 := 3! \times \langle 4! \parallel (7 \times 0!) \rangle \times 4!$$

$$34937 := (3! + \langle 4 \parallel \sqrt{9} \rangle) \times (3!! - 7)$$

$$34944 := (3! \times \langle 4! \parallel \sqrt{9} \rangle - \sqrt{4}) \times 4!$$

$$34972 := 3 + \langle (\sqrt{4} \times 9) \parallel 7 \rangle^2$$

$$35939 := -3 + 5 + \langle \sqrt{9} \parallel 3 \rangle^{\sqrt{9}}$$

$$35964 := (3 + 5)! - \left(\langle (\sqrt{9})! \parallel 6 \rangle^{\sqrt{4}} \right)$$

$$36567 := (-3 + 6!) \times \langle 5 \parallel (-6 + 7) \rangle$$

$$37560 := 3! \times 7! + 5! \times \langle 6 \parallel 0! \rangle$$

$$38073 := \langle (3 + 8) \parallel 0! \rangle \times 7^3$$

$$38520 := 3!! + 8! - 5! \times \langle 2 \parallel 0! \rangle$$

$$39050 := (3!! + \langle (\sqrt{9})! \parallel 0! \rangle) \times 50$$

$$39052 := (3!! + \langle \sqrt{9} \parallel 0! \rangle) \times 52$$

$$39105 := (3!! - 9) \times \langle 1 \parallel 0! \rangle \times 5$$

$$39204 := (3! \times (\langle \sqrt{9} \parallel 2 \rangle + 0!)) \sqrt{4}$$

$$39228 := -3! \times \langle (9 \times 2) \parallel 2 \rangle + 8!$$

$$39284 := 3^9 \times 2 - \langle 8 \parallel \sqrt{4} \rangle$$

$$39304 := (3^9 - \langle 3 \parallel 0! \rangle) \times \sqrt{4}$$

$$\begin{aligned}
 39328 &:= -3!! - \langle (9 \times 3) \parallel 2 \rangle + 8! \\
 39378 &:= -3! \times \langle (9 + 3!) \parallel 7 \rangle + 8! \\
 39435 &:= (3!! - \sqrt{9}) \times \langle (\sqrt{4} + 3) \parallel 5 \rangle \\
 39438 &:= -\langle (3 \times 9) \parallel 4! \rangle \times 3 + 8! \\
 39468 &:= -\langle 3 \parallel \sqrt{9} \rangle \times 4 - 6! + 8! \\
 \\
 39484 &:= -3!! - \langle 9 \parallel \sqrt{4} \rangle + 8! - 4! \\
 39498 &:= -\langle (3 \times 9) \parallel 4 \rangle \times \sqrt{9} + 8! \\
 39508 &:= -3!! - \langle 9 \parallel \sqrt{5 - 0!} \rangle + 8! \\
 39535 &:= -3!! + (\sqrt{9} + 5)! - \langle 3! \parallel 5 \rangle \\
 39538 &:= -\langle 3! \parallel \sqrt{9 - 5} \rangle - 3!! + 8! \\
 \\
 39658 &:= \langle 3! \parallel \sqrt{9} \rangle - 6! - 5 + 8! \\
 39690 &:= \langle 3! \parallel \sqrt{9} \rangle \times (6! - 90) \\
 39738 &:= -\langle (3 \times \sqrt{9}) \parallel 7 \rangle \times 3! + 8! \\
 39768 &:= (-\langle 3! \parallel \sqrt{9} \rangle + 7! - 6) \times 8 \\
 39786 &:= (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times 8 - 6 \\
 39789 &:= (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times 8 - \sqrt{9} \\
 \\
 39792 &:= (-\langle 3! \parallel (\sqrt{9})! \rangle + 7!) \times ((\sqrt{9})! + 2) \\
 \\
 39879 &:= \langle 3! \parallel \sqrt{9} \rangle \times (-87 + (\sqrt{9})!!) \\
 39894 &:= -\langle 3! \parallel (\sqrt{9})! \rangle + 8! - (\sqrt{9})!! / \sqrt{4} \\
 39918 &:= -3! \times (\langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle + 1) + 8! \\
 \\
 39942 &:= -\langle 3! \parallel \sqrt{9} \rangle \times (\sqrt{9})! + (4 \times 2)! \\
 39948 &:= -\langle (3 \times \sqrt{9}) \parallel \sqrt{9} \rangle \times 4 + 8! \\
 40058 &:= -\sqrt{4} \times (\langle 0! \parallel 0! \rangle + 5!) + 8! \\
 40068 &:= -(\langle 4 \parallel 0! \rangle + 0!) \times 6 + 8! \\
 40073 &:= -\langle 4! \parallel 0! \rangle + (0! + 7)! - 3!
 \end{aligned}$$

$$\begin{aligned}
 40078 &:= -\langle 4! \parallel 0! \rangle - (0 \times 7)! + 8! \\
 40079 &:= -\langle 4! \parallel 0! \rangle + (\sqrt{0! + 7 \times 9})! \\
 40098 &:= -\langle (4! - 0!) \parallel 0! \rangle + 9 + 8! \\
 40108 &:= -\langle \langle \sqrt{4} \parallel 0! \rangle \parallel 1 \rangle - 0! + 8! \\
 40109 &:= -\langle \langle \sqrt{4} \parallel 0! \rangle \parallel 1 \rangle + (-0! + 9)! \\
 \\
 40158 &:= -\langle 4 \parallel 0! \rangle - 1 - 5! + 8! \\
 40185 &:= -4 - \langle 0! \parallel 1 \rangle + 8! + 5! \\
 40238 &:= -\langle 4 \parallel 0! \rangle \times \sqrt{-2 + 3!} + 8! \\
 40247 &:= \langle 4! \parallel 0! \rangle \times \langle 2^4 \parallel 7 \rangle \\
 40279 &:= -\langle 4 \parallel 0! \rangle + (2 + 7)! / 9 \\
 40281 &:= -\langle 4 \parallel 0! \rangle + 2 + 8! \times 1 \\
 40299 &:= -\langle \sqrt{4} \parallel (0 \times 2)! \rangle + 9! / 9 \\
 40340 &:= \langle \sqrt{4} \parallel 0! \rangle + (3! + \sqrt{4})! - 0! \\
 40341 &:= \langle \sqrt{4} \parallel 0! \rangle + (3 + 4 + 1)! \\
 40353 &:= \langle (\sqrt{4} + 0!) \parallel 3 \rangle + (5 + 3)! \\
 40358 &:= \langle 4 \parallel 03 \rangle - 5 + 8! \\
 40361 &:= \langle 4 \parallel 0! \rangle + (3 + 6 - 1)! \\
 40362 &:= \langle 4 \parallel \sqrt{0! + 3} \rangle + (6 + 2)! \\
 40364 &:= \langle 4 \parallel 0! \rangle + 3 + (\sqrt{64})! \\
 40368 &:= \langle \sqrt{4} \parallel 0! \rangle + \sqrt{3^6} + 8! \\
 \\
 40378 &:= \langle \sqrt{4} \parallel 0! \rangle + 37 + 8! \\
 40428 &:= \langle (4 + 0!) \parallel 4 \rangle \times 2 + 8! \\
 40448 &:= \langle (\sqrt{4} + 0!) \parallel \sqrt{4} \rangle \times 4 + 8! \\
 40479 &:= \langle 4! \parallel 0! \rangle \times 4! \times 7 - 9 \\
 40482 &:= \langle 4 \parallel 0! \rangle \times 4 + 8! - 2 \\
 \\
 40485 &:= \langle 4 \parallel 0! \rangle + 4 + 8! + 5! \\
 40535 &:= \langle \langle \sqrt{4} \parallel 0! \rangle \parallel 5 \rangle + (3 + 5)! \\
 40538 &:= \langle \langle \sqrt{4} \parallel 0! \rangle \parallel 5 + 3 \rangle + 8! \\
 40564 &:= \langle 4! \parallel (-0! + 5) \rangle + (\sqrt{64})! \\
 40571 &:= \langle 4! \parallel \sqrt{0! + 5!} \rangle + (7 + 1)!
 \end{aligned}$$

$$40578 := \langle 4! \parallel \sqrt{0! + 5!} \rangle + 7 + 8!$$

$$40588 := \langle \langle \sqrt{4} \parallel 0! \rangle + 5 \parallel 8 \rangle + 8!$$

$$40648 := \langle 4 \parallel 0! \rangle \times \sqrt{64} + 8!$$

$$40685 := \langle 4! \parallel (-0! + 6) \rangle + 8! + 5!$$

$$40698 := \langle \sqrt{4} \parallel 0! \rangle \times 6 \times \sqrt{9} + 8!$$

$$40783 := - \langle (4! + 0!) \parallel 7 \rangle + 8! + 3!!$$

$$40948 := (\sqrt{4} + 0!)!! - \langle 9 \parallel \sqrt{4} \rangle + 8!$$

$$40959 := \langle 4 \parallel 0! \rangle \times (-9 + 5!) \times 9$$

$$40998 := - \langle 4 \parallel \sqrt{0! + \sqrt{9}} \rangle + (\sqrt{9})!! + 8!$$

$$40999 := - \langle 4 \parallel 0! \rangle + (\sqrt{9})!! + 9!/9$$

$$41248 := \langle (4! - 1) \parallel 2 \rangle \times 4 + 8!$$

$$41283 := \langle 4! \parallel (1 + 2) \rangle + 8! + 3!!$$

$$41286 := \langle 4! \parallel (1 + 2)! \rangle + 8! + 6!$$

$$41328 := 4! \times \langle (1 + 3) \parallel 2 \rangle + 8!$$

$$41493 := \langle \sqrt{4} \parallel 1 \rangle + 4!^{\sqrt{9}} \times 3$$

$$41637 := \langle \sqrt{4} \parallel 1 \rangle + 6^{3!} - 7!$$

$$41868 := \langle 4! \parallel 18 \rangle \times 6 + 8!$$

$$41934 := \langle 4! \parallel 1 \rangle \times (- (\sqrt{9})! + 3!!/4)$$

$$41984 := \sqrt{(4 \times 1)^9} \times \langle 8 \parallel \sqrt{4} \rangle$$

$$42088 := \langle (4! - 2) \parallel 0! \rangle \times 8 + 8!$$

$$42498 := \langle 4! \parallel (-2 + 4) \rangle \times 9 + 8!$$

$$43152 := (-4! + 3!!) \times \langle (1 + 5) \parallel 2 \rangle$$

$$43248 := \langle (4 \times 3) \parallel 2 \rangle \times 4! + 8!$$

$$43404 := 4! + 3!! \times \langle 4! \parallel 0! \rangle / 4$$

$$43533 := (-4! + 3!! - 5) \times \langle 3! \parallel 3 \rangle$$

$$43555 := (\langle 4! \parallel 3 \rangle + 5!) \times 5! - 5$$

$$43560 := (\langle 4! \parallel 3 \rangle + 5!) \times (6 - 0)!$$

$$43591 := -4! + (3!! - 5) \times \langle (\sqrt{9})! \parallel 1 \rangle$$

$$43896 := -4! + \langle 3! \parallel (-8 + 9) \rangle \times 6!$$

$$43908 := -4 + 3!! \times \langle (\sqrt{9})! \parallel 0! \rangle - 8$$

$$43909 := -\sqrt{4} + 3!! \times \langle (\sqrt{9})! \parallel 0! \rangle - 9$$

$$43913 := -4 - 3 + \langle (\sqrt{9})! \parallel 1 \rangle \times 3!!$$

$$43914 := -4 + 3!! \times \langle (\sqrt{9})! \parallel 1 \rangle - \sqrt{4}$$

$$43915 := (\sqrt{4} \times 3)! \times \langle (\sqrt{9})! \parallel 1 \rangle - 5$$

$$43916 := -4 + \langle (-3 + 9) \parallel 1 \rangle \times 6!$$

$$43917 := 4 + 3!! \times \langle \sqrt{9}! \parallel 1 \rangle - 7$$

$$43918 := -\sqrt{4} + 3!! \times \langle (\sqrt{9})! \parallel 1^8 \rangle$$

$$43919 := \sqrt{4} + 3!! \times \langle (\sqrt{9})! \parallel 1 \rangle - \sqrt{9}$$

$$43920 := (\sqrt{4} \times 3)! \times \langle (\sqrt{9} \times 2) \parallel 0! \rangle$$

$$43922 := \sqrt{4} + 3!! \times \langle (\sqrt{9})! \parallel (2/2) \rangle$$

$$43924 := 4 + 3!! \times \langle (\sqrt{9})! \parallel (2/\sqrt{4}) \rangle$$

$$43930 := 4 + 3! + (\sqrt{9})!! \times \langle 3! \parallel 0! \rangle$$

$$43944 := 4! + 3!! \times \langle (\sqrt{9})! \parallel (4/4) \rangle$$

$$44164 := \langle (4!/4) \parallel 1 \rangle \times (6! + 4)$$

$$44392 := (-4 + (\sqrt{4} \times 3)!) \times \langle (\sqrt{9})! \parallel 2 \rangle$$

$$44394 := \sqrt{4} + (-4 + 3!!) \times \langle (\sqrt{9})! \parallel \sqrt{4} \rangle$$

$$44398 := - \langle 4! \parallel \sqrt{4} \rangle - 3!! + 9!/8$$

$$44469 := \langle 4! \parallel 4 \rangle / 4 \times (6! + 9)$$

$$44590 := \sqrt{4} \times \langle 4! \parallel 5 \rangle \times \langle 9 \parallel 0! \rangle$$

$$44632 := -4 - 4 + 6! \times \langle 3! \parallel 2 \rangle$$

$$44634 := -4!/4 + 6! \times \langle 3! \parallel \sqrt{4} \rangle$$

$$44636 := -4 + (-4 + \langle 6 \parallel 3! \rangle) \times 6!$$

$$45336 := (-4 + 5! \times \langle 3! \parallel 3 \rangle) \times 6$$

$$45479 := (-\sqrt{4} + 5^4) \times \langle 7 \parallel \sqrt{9} \rangle$$

$$45664 := 4^5 + 6! \times \langle 6 \parallel \sqrt{4} \rangle$$

$$45699 := 4! + (5 + 6!) \times \langle (\sqrt{9})! \parallel \sqrt{9} \rangle$$

$$45835 := -\langle 4! \parallel 5 \rangle - 8! + 3!! \times 5!$$

$$45909 := \left((\sqrt{4} + 5)! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 9$$

$$46056 := -4! + \langle 6 \parallel (-0! + 5) \rangle \times 6!$$

$$46326 := \langle 4! \parallel 6 \rangle + 3!! \times 2^6$$

$$46344 := \sqrt{4^6} \times 3!! + \langle 4! \parallel 4! \rangle$$

$$46670 := (\sqrt{4} - 6!) \times (6 - \langle 7 \parallel 0! \rangle)$$

$$46763 := \langle (4 + 6) \parallel 7 \rangle + 6^{3!}$$

$$46902 := \langle 4! \parallel 6 \rangle + (\sqrt{9})!^{(0!+2)!}$$

$$46930 := (\sqrt{4} + 6!) \times \langle (\sqrt{9})! \parallel (3! - 0!) \rangle$$

$$46944 := 4! + 6^{(\sqrt{9})!} + \langle 4! \parallel 4! \rangle$$

$$46954 := (\sqrt{4} + 6!) \times \langle (\sqrt{9})! \parallel 5 \rangle + 4!$$

$$46968 := -4! + \langle 6 \parallel (\sqrt{9})! \rangle \times (6! - 8)$$

$$47424 := \langle 4! \parallel 7 \rangle \times 4! \times 2 \times 4$$

$$47488 := (\langle 4! \parallel 7 \rangle \times 4! + 8) \times 8$$

$$47496 := -4! + \langle (7 - 4)! \parallel (\sqrt{9})! \rangle \times 6!$$

$$49200 := \langle 4! \parallel (\sqrt{9})! \rangle \times 200$$

$$49236 := (4! + (\sqrt{9})!! + 2) \times \langle 3! \parallel 6 \rangle$$

$$49248 := 4! \times 9 \times \langle \langle 2 \parallel \sqrt{4} \rangle \parallel 8 \rangle$$

$$49704 := 4! - (\sqrt{9})!! \times (-\langle 7 \parallel 0! \rangle + \sqrt{4})$$

$$49790 := (4 + (\sqrt{9})!) \times (7! - \langle (\sqrt{9})! \parallel 0! \rangle)$$

$$49923 := \langle (4 \times \sqrt{9}) \parallel 9 \rangle^2 \times 3$$

$$49933 := (4 + \langle \sqrt{9} \parallel \sqrt{9} \rangle)^3 - 3!!$$

$$51984 := (5! + \langle (1 + 9) \parallel 8 \rangle)^{\sqrt{4}}$$

$$53347 := -5 + 3!^3 \times \langle 4! \parallel 7 \rangle$$

$$53824 := \langle (5 \times 3 + 8) \parallel 2 \rangle^{\sqrt{4}}$$

$$54294 := 5 + (\langle 4! \parallel 2 \rangle - 9)^{\sqrt{4}}$$

$$54590 := -5 \times (\sqrt{4} - 5! \times \langle 9 \parallel 0! \rangle)$$

$$54739 := -5 + 4! + \langle 7 \parallel 3! \rangle \times (\sqrt{9})!!$$

$$55080 := 5! \times \langle 5 \parallel 0! \rangle \times (8 + 0!)$$

$$58035 := 5! + \langle 8 \parallel 0! \rangle \times (3!! - 5)$$

$$58320 := (-5 + 8)!! \times \langle (3! + 2) \parallel 0! \rangle$$

$$58444 := -5! + \langle (8 - 4)! \parallel \sqrt{4} \rangle^{\sqrt{4}}$$

$$58920 := 5! \times (8^{\sqrt{9}} - \langle 2 \parallel 0! \rangle)$$

$$58968 := (-5 + \langle 8 \parallel (\sqrt{9})! \rangle) \times (6! + 8)$$

$$59009 := (-5! + \sqrt{9^{(0! \parallel 0!)}}) / \sqrt{9}$$

$$59045 := \langle (-5 + 9)! \parallel 0! \rangle \times \langle 4! \parallel 5 \rangle$$

$$59880 := 5! + (\sqrt{9})!! \times \langle 8 \parallel \sqrt{8 + 0!} \rangle$$

$$59926 := \langle (5 + \sqrt{9}) \parallel \sqrt{9} \rangle \times (2 + 6!)$$

$$60846 := (\langle 6 \parallel 0! \rangle + 8! / 4) \times 6$$

$$61832 := (6! - 1) \times \langle 8 \parallel 3! \rangle - 2$$

$$61834 := (6! - 1) \times \langle 8 \parallel (3 \times \sqrt{4}) \rangle$$

$$61920 := 6! \times \langle (-1 + 9) \parallel (2 + 0!)! \rangle$$

$$62496 := \langle 6 \times 2 \parallel 4 \rangle \times 9! / 6!$$

$$63084 := (6! + \langle 3 \parallel 0! \rangle) \times 84$$

$$63360 := 6! \times (-3 + \langle (3 + 6) \parallel 0! \rangle)$$

$$63888 := (6! + 3!) \times \langle 8 \parallel \sqrt{8 \times 8} \rangle$$

$$64080 := 6! \times (-\sqrt{4} + \langle (0! + 8) \parallel 0! \rangle)$$

$$64729 := (6 + \langle 4! \parallel 7 \rangle)^2 + (\sqrt{9})!!$$

$$64944 := \langle 6 \times 4 \parallel (\sqrt{9})! \rangle \times \langle 4! \parallel 4! \rangle$$

$$64980 := (6! + \sqrt{4}) \times (9 + \langle 8 \parallel 0! \rangle)$$

$$66954 := -6 + 6! \times \langle 9 \parallel \sqrt{5 + 4} \rangle$$

$$66996 := 6 \times 6 + \langle 9 \parallel \sqrt{9} \rangle \times 6!$$

$$68085 := (6! + \langle 8 \parallel 0! \rangle) \times 85$$

$$68400 := 6! \times (84 + \langle 0! \parallel 0! \rangle)$$

$$\begin{aligned}
 69092 &:= (6! + \langle \sqrt{9} \parallel 0! \rangle) \times 92 \\
 69336 &:= 6! \times \langle 9 \parallel 3! \rangle + \sqrt{3!}^6 \\
 69408 &:= 6 \times (\sqrt{9})! \times \langle 4! \parallel 0! \rangle \times 8 \\
 69435 &:= (\langle 6 \parallel \sqrt{9} \rangle + 4!^3) \times 5 \\
 69792 &:= (-6 + \sqrt{9^7}) \times \langle \sqrt{9} \parallel 2 \rangle \\
 71999 &:= 7! - 1 + (\sqrt{9})!! \times \langle 9 \parallel \sqrt{9} \rangle \\
 72595 &:= (\langle (7+2) \parallel 5 \rangle + 9!) / 5 \\
 73435 &:= \langle (7+3) \parallel \sqrt{4} \rangle \times 3!! - 5 \\
 73439 &:= (-7 + 3!!) \times \langle (4+3!) \parallel \sqrt{9} \rangle \\
 73464 &:= \langle (7+3) \parallel \sqrt{4} \rangle \times 6! + 4! \\
 74347 &:= 7 \times 43 \times \langle 4! \parallel 7 \rangle \\
 74949 &:= 7 \times \langle 4 \parallel \sqrt{9} \rangle \times \langle 4! \parallel 9 \rangle \\
 77448 &:= 7 \times (7! + \langle 4! \parallel 4! \rangle) + 8! \\
 79345 &:= 7 \times 9! / \langle 3 \parallel \sqrt{4} \rangle - 5 \\
 79524 &:= \langle 7 \times (9-5) \parallel 2 \rangle^{\sqrt{4}} \\
 79989 &:= -7 \times (\langle 9 \parallel \sqrt{9} \rangle + 8!) + 9! \\
 80482 &:= (-\langle 8 \parallel 0! \rangle + \sqrt{4} + 8!) \times 2 \\
 80728 &:= \langle 8 \parallel 0! \rangle + 7 + 2 \times 8! \\
 80802 &:= (\langle 8 \parallel 0! \rangle + 8!) \times 02 \\
 80804 &:= (\langle 8 \parallel 0! \rangle + 8! + 0!) \times \sqrt{4} \\
 80832 &:= (8! + \langle (0! + 8) \parallel 3! \rangle) \times 2 \\
 85344 &:= (-8 + 5!) \times (3!! + \langle 4 \parallel \sqrt{4} \rangle) \\
 86400 &:= (8! - 6!) \times 4! / \langle 0! \parallel 0! \rangle \\
 89264 &:= (-8 + \langle (\sqrt{9})! \parallel 2 \rangle \times 6!) \times \sqrt{4} \\
 89304 &:= 8 \times \sqrt{9} \times \langle 3! \parallel 0! \rangle^{\sqrt{4}} \\
 90659 &:= -\langle (\sqrt{9})! \parallel 0! \rangle + 6! \times (5! + (\sqrt{9})!) \\
 90741 &:= (-\langle \sqrt{9} \rangle!! + 0! + 7!) \times \langle \sqrt{4} \parallel 1 \rangle \\
 90782 &:= (\langle \sqrt{9} \parallel 0! \rangle + 7! + 8!) \times 2 \\
 90846 &:= ((\sqrt{9})!! + 0!) \times \langle (8+4) \parallel 6 \rangle \\
 91295 &:= \langle \sqrt{9} \parallel 1 \rangle^2 \times 95 \\
 92248 &:= \langle (\sqrt{9})! \parallel 2 \rangle^2 \times 4! - 8 \\
 93259 &:= (\sqrt{9})!^{3!} \times 2 - \langle 5 \parallel \sqrt{9} \rangle \\
 93584 &:= ((\sqrt{9})!! \times \langle 3! \parallel 5 \rangle - 8) \times \sqrt{4} \\
 93852 &:= (-9 + 3!!) \times \langle (8+5) \parallel 2 \rangle \\
 93955 &:= ((\sqrt{9})!! + \langle 3! \parallel \sqrt{9} \rangle) \times 5! - 5 \\
 93960 &:= ((\sqrt{9})!! + \langle 3! \parallel \sqrt{9} \rangle) \times (6 - 0!)! \\
 93984 &:= \langle \sqrt{9} \parallel 3 \rangle \times ((\sqrt{9})!! - 8) \times 4 \\
 94080 &:= 9! \times \langle \sqrt{4} \parallel 0! \rangle / \langle 8 \parallel 0! \rangle \\
 94089 &:= 9 + \langle \sqrt{4} \parallel 0! \rangle \times 8! / 9 \\
 94320 &:= (\sqrt{9})!! \times \langle (4+3^2) \parallel 0! \rangle \\
 96624 &:= \langle (\sqrt{9})! \parallel 6 \rangle \times (6! \times 2 + 4!) \\
 96795 &:= (-\sqrt{9} + 6!) \times \langle 7 + (\sqrt{9})! \parallel 5 \rangle \\
 97344 &:= (\sqrt{9} \times \langle (7+3) \parallel 4 \rangle)^{\sqrt{4}} \\
 97920 &:= (\sqrt{9})!! \times \langle 7 + (\sqrt{9})! \parallel (2+0!)! \rangle \\
 98404 &:= \sqrt{9} + 8! + \langle 4! \parallel 0! \rangle^{\sqrt{4}} \\
 99225 &:= \langle (\sqrt{9})! \parallel \sqrt{9} \rangle^2 \times 25 \\
 99360 &:= 9! - (\sqrt{9})! \times 3!! \times \langle 6 \parallel 0! \rangle
 \end{aligned}$$

2.2.3 Reverse Order of Digits

Below are selfie numbers written in reverse order of digits. The numbers appearing in subsection [?] are written again except those given in subsection on sequential representations 2.1.

$$147 := 7 \times \langle \sqrt{4} \parallel 1 \rangle$$

$$241 := -1 + \langle 4! \parallel 2 \rangle$$

$$244 := \langle 4! \parallel \sqrt{4^2} \rangle$$

$$264 := \langle 4! \parallel (6 - 2)! \rangle$$

$$396 := \langle 6 \parallel (\sqrt{9})! \rangle \times 3!$$

$$0328 := 8 \times \langle (-2 + 3!) \parallel 0! \rangle$$

$$0329 := (\sqrt{9})!!/2 - \langle 3 \parallel 0! \rangle$$

$$0357 := 7 \times \langle 5 \parallel (3 \times 0)! \rangle$$

$$0362 := 2 \times \langle (6 \times 3) \parallel 0! \rangle$$

$$0364 := 4 \times \langle (6 + 3) \parallel 0! \rangle$$

$$0105 := 5 \times \langle (0! + 1) \parallel 0! \rangle$$

$$0109 := \left((\sqrt{9})! - 0! \right)! - \langle 1 \parallel 0! \rangle$$

$$0122 := 2 \times \langle (2 + 1)! \parallel 0! \rangle$$

$$0124 := 4 \times \langle (2 + 1) \parallel 0! \rangle$$

$$0132 := 2 \times 3! \times \langle 1 \parallel 0! \rangle$$

$$0366 := 6 \times \langle 6 \parallel (3 \times 0)! \rangle$$

$$0375 := 5 \times \langle (7 \parallel 3!) - 0! \rangle$$

$$0408 := 8 \times \langle (0! + 4) \parallel 0! \rangle$$

$$0427 := 7 \times \langle (2 + 4) \parallel 0! \rangle$$

$$0182 := 2 \times \langle (8 + 1) \parallel 0! \rangle$$

$$0183 := 3 \times \langle (\sqrt{8+1})! \parallel 0! \rangle$$

$$0186 := 6 \times \langle \sqrt{8+1} \parallel 0! \rangle$$

$$0201 := \langle 10 \times 2 \parallel 0! \rangle$$

$$0451 := \sqrt{1+5!} \times \langle 4 \parallel 0! \rangle$$

$$0455 := 5 \times \langle (5 + 4) \parallel 0! \rangle$$

$$0459 := 9 \times \langle 5 \parallel (4 \times 0)! \rangle$$

$$0482 := 2 \times \langle (8 - 4)! \parallel 0! \rangle$$

$$0483 := 3 \times \langle (8 \times \sqrt{4}) \parallel 0! \rangle$$

$$0217 := 7 \times \langle (1 + 2) \parallel 0! \rangle$$

$$0231 := \langle (-1 + (3! - 2)!) \parallel 0! \rangle$$

$$0241 := \langle 1 \times 4! \parallel (2 \times 0)! \rangle$$

$$0243 := \langle (3! \times 4) \parallel 2 \rangle + 0!$$

$$0486 := 6 \times \langle 8 \parallel (4 \times 0)! \rangle$$

$$0488 := 8 \times \langle (8 - \sqrt{4}) \parallel 0! \rangle$$

$$0492 := 2 \times (\sqrt{9})! \times \langle 4 \parallel 0! \rangle$$

$$0497 := 7 \times \langle (9 - \sqrt{4}) \parallel 0! \rangle$$

$$0498 := \langle 8 \parallel \sqrt{9} \rangle \times (\sqrt{4} + 0)!!$$

$$0249 := (\sqrt{9})! + \langle 4! \parallel 2 \rangle + 0!$$

$$0251 := \langle (1 \times 5^2) \parallel 0! \rangle$$

$$0261 := \langle (\sqrt{16})! \parallel \langle 2 \parallel 0! \rangle \rangle$$

$$0273 := 3 \times \langle (7 + 2) \parallel 0! \rangle$$

$$0279 := 9 \times \langle \sqrt{7+2} \parallel 0! \rangle$$

$$0287 := 7 \times \langle (8/2) \parallel 0! \rangle$$

$$0305 := \langle 5 \parallel 0! \rangle \times 3! - 0!$$

$$0306 := 6 \times \langle (-0! + 3!) \parallel 0! \rangle$$

$$0324 := 4 \times \langle 2^3 \parallel 0! \rangle$$

$$0504 := \langle \sqrt{4} \parallel 0! \rangle \times (5 - 0)!!$$

$$0546 := 6 \times \langle (4 + 5) \parallel 0! \rangle$$

$$0549 := 9 \times \langle (\sqrt{4+5})! \parallel 0! \rangle$$

$$0589 := (\sqrt{9})!! - \langle (8 + 5) \parallel 0! \rangle$$

$$0637 := 7 \times \langle (3 + 6) \parallel 0! \rangle$$

$$0648 := 8 \times \langle (\sqrt{4} + 6) \parallel 0! \rangle$$

$$0659 := (\sqrt{9})! \times 5! - \langle 6 \parallel 0! \rangle$$

$$0709 := (\sqrt{9})!! - \langle 0! \parallel (7 \times 0)! \rangle$$

$$0742 := \langle 2 \parallel \sqrt{4} \rangle + (7 - 0)!$$

$$0783 := 3!! - 8 + \langle 7 \parallel 0! \rangle$$

$$0791 := (\sqrt{1 \times 9})!! + \langle 7 \parallel 0! \rangle$$

$$0819 := 9 \times \langle (1 + 8) \parallel 0! \rangle$$

$$0847 := 7 \times \langle (4 + 8) \parallel 0! \rangle$$

$$0968 := 8 \times \langle (6 + (\sqrt{9})!) \parallel 0! \rangle$$

$$0987 := 7 \times \langle (8 + (\sqrt{9})!) \parallel 0! \rangle$$

$$1255 := 5 \times \langle 5^2 \parallel 1 \rangle$$

$$1288 := 8 \times \langle (8 \times 2) \parallel 1 \rangle$$

$$1342 := \langle 2 \parallel \sqrt{4} \rangle \times \langle 3! \parallel 1 \rangle$$

$$1359 := 9 \times \langle (5 \times 3) \parallel 1 \rangle$$

$$1403 := \langle 3! \parallel 0! \rangle \times (4! - 1)$$

$$1438 := -8 + 3! \times \langle 4! \parallel 1 \rangle$$

$$1449 := 9 \times \langle (4 \times 4) \parallel 1 \rangle$$

$$1455 := 5 \times \langle (5 + 4!) \parallel 1 \rangle$$

$$1494 := \langle 4! \parallel 9 \rangle \times (4 - 1)!$$

$$1928 := 8 \times \langle (-2 + (\sqrt{9})!) \parallel 1 \rangle$$

$$1944 := 4! \times \langle (4!/\sqrt{9}) \parallel 1 \rangle$$

$$1952 := 2^5 \times \langle (\sqrt{9})! \parallel 1 \rangle$$

$$1984 := \langle 4! \parallel 8 \rangle \times (9 - 1)$$

$$2809 := (\langle (\sqrt{9})! \parallel 0! \rangle - 8)^2$$

$$3024 := 4! \times \langle 2 \parallel 0! \rangle \times 3!$$

$$3044 := 4 \times (\langle 4 \parallel 0! \rangle + 3!!)$$

$$3509 := -\langle 9 \parallel 0! \rangle + 5 \times 3!!$$

$$3955 := -5 + 5! \times \langle \sqrt{9} \parallel 3 \rangle$$

$$4356 := \langle (6!/5!) \parallel 3! \rangle^{\sqrt{4}}$$

$$4392 := \langle (2 \times 9) \parallel 3 \rangle \times 4!$$

$$4794 := -\langle 4! \parallel (\sqrt{9})! \rangle + (\sqrt{\sqrt{74}})!$$

$$4973 := -3 + 7! - \langle (\sqrt{9})! \parallel 4 \rangle$$

$$4974 := -\sqrt{4} + 7! - \langle (\sqrt{9})! \parallel 4 \rangle$$

$$4976 := 6! \times 7 - \langle (\sqrt{9})! \parallel 4 \rangle$$

$$4979 := \sqrt{9} + 7! - \langle (\sqrt{9})! \parallel 4 \rangle$$

$$5904 := \langle 4 \parallel 0! \rangle \times (\sqrt{9})!!/5$$

$$00123 := \langle (3! \times 2) \parallel 1 \rangle + 0! + 0!$$

$$00124 := \sqrt{4} \times (\langle (2 + 1)! \parallel 0! \rangle + 0!)$$

$$00129 := 9 \times 2 + \langle \langle 1 \parallel 0! \rangle \parallel 0! \rangle$$

$$00132 := \langle (2 \times 3! + 1) \parallel 0! \rangle + 0!$$

$$00138 := (8 + \langle 3! \parallel 1 \rangle) \times (0! + 0!)$$

$$00142 := 2 \times \langle ((4 - 1)! + 0!) \parallel 0! \rangle$$

$$00157 := 7 \times (5 - 1)! - \langle 0! \parallel 0! \rangle$$

$$00159 := \langle (\sqrt{9} \times 5) \parallel 10 \rangle - 0!$$

$$00162 := 2 \times \langle (6 + 1 + 0!) \parallel 0! \rangle$$

$$00168 := (8 + 6) \times (\langle 1 \parallel 0! \rangle + 0!)$$

$$00179 := (\sqrt{9})!! / (-7 + \langle 1 \parallel 0! \rangle) - 0!$$

$$00182 := \langle 2 \times (8 + 1) \parallel 0! \rangle + 0!$$

$$00183 := 3 \times \langle (8 - 1 - 0!) \parallel 0! \rangle$$

$$00189 := 9 \times \langle (-8 + 10) \parallel 0! \rangle$$

$$00192 := \langle *2 \times 9 + 1 \parallel 0! \rangle + 0!$$

$$00193 := 3! \times (\langle \sqrt{9} \parallel 1 \rangle + 0!) + 0!$$

$$00198 := (8 + 9 + 1) \times \langle 0! \parallel 0! \rangle$$

$$00213 := 3 \times \langle (1 + 2)! + 0! \parallel 0! \rangle$$

$$00214 := \langle \langle \sqrt{4} \parallel 1 \rangle \parallel 2 \rangle + 0! + 0!$$

$$00215 := 5 - 1 + \langle \langle 2 \parallel 0! \rangle \parallel 0! \rangle$$

$$00218 := 8 - 1 + \langle \langle 2 \parallel 0! \rangle \parallel 0! \rangle$$

$$00219 := 9 - 1 + \langle \langle 2 \parallel 0! \rangle \parallel 0! \rangle$$

$$00231 := \langle (1 \times 3 + 20) \parallel 0! \rangle$$

$$\begin{aligned}
 00234 &:= \langle 4! \parallel (3 + 2) \rangle - \langle 0! \parallel 0! \rangle \\
 00247 &:= 7 + \langle 4! \parallel (2 \times 0)! \rangle - 0! \\
 00248 &:= 8 \times \langle (\sqrt{4} + (2 \times 0)!) \parallel 0! \rangle \\
 00249 &:= 9 + \langle 4! \parallel ((2 \times 0)! - 0!) \rangle \\
 00256 &:= 6 + \langle 5^2 \parallel 0! \rangle - 0! \\
 00261 &:= \langle (1 \times 6 + 20) \parallel 0! \rangle \\
 00271 &:= \langle (1 \times 7 + 20) \parallel 0! \rangle \\
 00275 &:= 5 \times (7 - 2) \times \langle 0! \parallel 0! \rangle \\
 00281 &:= \langle (1 \times 8 + 20) \parallel 0! \rangle \\
 00284 &:= 4 \times \langle (8 - (2 \times 0)!) \parallel 0! \rangle \\
 00291 &:= \langle (1 \times 9 + 20) \parallel 0! \rangle \\
 00297 &:= \sqrt{7 + (\sqrt{9})!!} + 2 \times \langle 0! \parallel 0! \rangle \\
 00312 &:= 2 \times 13! / \langle 0! \parallel 0! \rangle! \\
 00315 &:= 5 \times (1 + \langle 3! \parallel (0! + 0!) \rangle) \\
 00341 &:= (1 + 4! + 3!) \times \langle 0! \parallel 0! \rangle \\
 00342 &:= 2 \times \langle (4! - 3! - 0!) \parallel 0! \rangle \\
 00346 &:= 6! / \sqrt{4} - 3 - \langle 0! \parallel 0! \rangle \\
 00349 &:= (9 - 4)! \times 3 - \langle 0! \parallel 0! \rangle \\
 00369 &:= 9 \times \langle (6 - 3 + 0!) \parallel 0! \rangle \\
 00372 &:= (\sqrt{2 + 7})! \times (\langle 3! \parallel 0! \rangle + 0!) \\
 00374 &:= (4! + 7 + 3) \times \langle 0! \parallel 0! \rangle \\
 00394 &:= -\sqrt{4} + (\sqrt{9})! \times 3! \times \langle 0! \parallel 0! \rangle \\
 00395 &:= -5! + 9! / 3!! + \langle 0! \parallel 0! \rangle \\
 00396 &:= 6 \times (9 - 3) \times \langle 0! \parallel 0! \rangle \\
 00421 &:= -1 + 2 \times \langle \langle \sqrt{4} \parallel 0! \rangle \parallel 0! \rangle \\
 00426 &:= 6 \times \langle (2 + 4 + 0!) \parallel 0! \rangle \\
 00437 &:= 7 \times \langle 3! \parallel 4 \rangle - \langle 0! \parallel 0! \rangle \\
 00452 &:= 2 \times (-5 + \langle (4! - 0!) \parallel 0! \rangle) \\
 00453 &:= 3 \times (5! + \langle (\sqrt{4} + 0!) \parallel 0! \rangle) \\
 00462 &:= 2 \times \langle (6 \times 4 - 0!) \parallel 0! \rangle \\
 00463 &:= -3! + 6! - \langle (4! + 0!) \parallel 0! \rangle \\
 00468 &:= \sqrt{8^6} - 4 \times \langle 0! \parallel 0! \rangle \\
 00469 &:= -9 + 6! - \langle 4! \parallel 0! \rangle - 0! \\
 00473 &:= (-3! + \sqrt{7^4}) \times \langle 0! \parallel 0! \rangle \\
 00476 &:= 6! + 7 - \langle (4! + 0!) \parallel 0! \rangle \\
 00491 &:= (-1 + (\sqrt{9})!)! \times 4 + \langle 0! \parallel 0! \rangle \\
 00495 &:= 5 \times 9 \times \langle (4 \times 0!) \parallel 0! \rangle \\
 00498 &:= \langle 8 \parallel \sqrt{9} \rangle \times (4 + 0! + 0!) \\
 00524 &:= 4!^2 - \langle 5 \parallel 0! \rangle - 0! \\
 00528 &:= 8 \times (-2 + 5)! \times \langle 0! \parallel 0! \rangle \\
 00539 &:= (9 \times 3! - 5) \times \langle 0! \parallel 0! \rangle \\
 00542 &:= 2 \times \langle (-4! + \langle 5 \parallel 0! \rangle) \parallel 0! \rangle \\
 00543 &:= 3 \times \langle (4! - 5 - 0!) \parallel 0! \rangle \\
 00567 &:= 7 \times \langle \sqrt{65 - 0!} \parallel 0! \rangle \\
 00568 &:= 8 \times \langle (6 + (5 \times 0)!) \parallel 0! \rangle \\
 00573 &:= 3!! - 7 \times \langle \sqrt{5 - 0!} \parallel 0! \rangle \\
 00579 &:= (\sqrt{9})!! - \langle (7 \times \sqrt{5 - 0!}) \parallel 0! \rangle \\
 00583 &:= (3! \times 8 + 5) \times \langle 0! \parallel 0! \rangle \\
 00594 &:= (49 + 5) \times \langle 0! \parallel 0! \rangle \\
 00627 &:= (-7 + 2^6) \times \langle 0! \parallel 0! \rangle \\
 00634 &:= -4! + 3!! - \langle 6 \parallel 0! \rangle - 0! \\
 00639 &:= 9 \times \langle (3! + (6 \times 0)!) \parallel 0! \rangle \\
 00653 &:= -\langle 3! \parallel 5 \rangle + 6! - 0! - 0! \\
 00654 &:= (\sqrt{4 + 5})!! - 6 \times \langle 0! \parallel 0! \rangle \\
 00658 &:= (8 - 5)!! - \langle 6 \parallel 0! \rangle - 0! \\
 00684 &:= 4! + \sqrt{(8! - 6!) \times \langle 0! \parallel 0! \rangle} \\
 00689 &:= (\sqrt{9})!! - \langle (8 - 6 + 0!) \parallel 0! \rangle \\
 00695 &:= -5 - 9 + 6! - \langle 0! \parallel 0! \rangle \\
 00724 &:= (4 + 2)! - 7 + \langle 0! \parallel 0! \rangle \\
 00731 &:= (13 - 7)! + \langle 0! \parallel 0! \rangle \\
 00732 &:= 2 \times 3! \times \langle 7 - 0! \parallel 0! \rangle \\
 00743 &:= 3 \times \langle 4! \parallel 7 \rangle + 0! + 0!
 \end{aligned}$$

$$\begin{aligned}
 00781 &:= \sqrt{1^8 + 7!} \times \langle 0! \parallel 0! \rangle \\
 00789 &:= (\sqrt{9})!! + 8 + \langle (7 - 0!) \parallel 0! \rangle \\
 00791 &:= -1 + 9!/7! \times \langle 0! \parallel 0! \rangle \\
 00792 &:= (2 + 9) \times (\langle 7 \parallel 0! \rangle + 0!) \\
 00794 &:= \sqrt{4} + 9!/7! \times \langle 0! \parallel 0! \rangle \\
 00837 &:= 7!/3! + 8 - \langle 0! \parallel 0! \rangle \\
 00843 &:= 3 \times \langle (4 \times (8 - 0!)) \parallel 0! \rangle \\
 00846 &:= 6 \times \langle (\sqrt{4} \times (8 - 0!)) \parallel 0! \rangle \\
 00859 &:= (\sqrt{9})!! + 5! + 8 + \langle 0! \parallel 0! \rangle \\
 00891 &:= 1 \times \sqrt{\sqrt{9^8}} \times \langle 0! \parallel 0! \rangle \\
 00892 &:= (2 + 9) \times \langle 8 \parallel 0! \rangle + 0! \\
 00917 &:= 7 \times \langle (-1 + (\sqrt{9})!)! + \langle 0! \parallel 0! \rangle \rangle \\
 00946 &:= \langle \sqrt{64} \parallel (\sqrt{9})! \rangle \times \langle 0! \parallel 0! \rangle \\
 00956 &:= 6! - 5 + \langle (\sqrt{9} + 0!)! \parallel 0! \rangle \\
 00957 &:= 7!/5 - \langle ((\sqrt{9})! - 0!) \parallel 0! \rangle \\
 00968 &:= (8 + 6!/9) \times \langle 0! \parallel 0! \rangle \\
 00984 &:= 4! \times \langle 8 - \sqrt{9} - 0! \parallel 0! \rangle \\
 01044 &:= 4 \times \langle (4! + 0! + 1) \parallel 0! \rangle \\
 01045 &:= (5! - 4! - 0!) \times \langle 1 \parallel 0! \rangle \\
 01048 &:= 8 \times \langle (4! - \langle 0! \parallel 1 \rangle) \parallel 0! \rangle \\
 01055 &:= 5 \times \langle \langle \sqrt{5 - 0!} \parallel 1 \rangle \parallel 0! \rangle \\
 01059 &:= 9 \times 5! - \langle (0! + 1) \parallel 0! \rangle \\
 01069 &:= 9 \times (6 - 0!)! - \langle 1 \parallel 0! \rangle \\
 01089 &:= (98 + 0!) \times \langle 1 \parallel 0! \rangle \\
 01155 &:= 5 \times \langle ((5 - 1)! - 1) \parallel 0! \rangle \\
 01197 &:= 7 \times \langle ((\sqrt{9})! + 11) \parallel 0! \rangle \\
 01205 &:= 5 \times \langle (0! + 2 + 1)! \parallel 0! \rangle \\
 01206 &:= 6 \times \langle (-0! + 21) \parallel 0! \rangle \\
 01224 &:= 4! \times \langle (2 + 2 + 1) \parallel 0! \rangle \\
 01229 &:= (\sqrt{9})!! \times 2 - \langle 21 \parallel 0! \rangle \\
 01245 &:= 5 \times \langle 4! \parallel (-2 + \langle 1 \parallel 0! \rangle) \rangle \\
 01247 &:= 7!/4 - 2 - \langle 1 \parallel 0! \rangle \\
 01254 &:= (-4 + 5! - 2) \times \langle 1 \parallel 0! \rangle \\
 01298 &:= \langle (8 - \sqrt{9})! - 2 \rangle \times \langle 1 \parallel 0! \rangle \\
 01302 &:= \langle 2 \parallel 0! \rangle \times (\langle 3! \parallel 1 \rangle + 0!) \\
 01337 &:= 7 \times \langle (3 \times 3! + 1) \parallel 0! \rangle \\
 01345 &:= -5! + 4! \times \langle 3! \parallel 1 \rangle + 0! \\
 01353 &:= (-3 + 5! + 3!) \times \langle 1 \parallel 0! \rangle \\
 01364 &:= (4! + 6!)/3! \times \langle 1 \parallel 0! \rangle \\
 01369 &:= (\sqrt{9})!! + 6! - \langle (3! + 1) \parallel 0! \rangle \\
 01375 &:= (5 + 7! \times 3) / \langle 1 \parallel 0! \rangle \\
 01386 &:= 6 \times \langle (8 \times 3 - 1) \parallel 0! \rangle \\
 01397 &:= (7 + (\sqrt{9})!!/3!) \times \langle 1 \parallel 0! \rangle \\
 01399 &:= (\sqrt{9})!! + (\sqrt{9})!! - \langle (3 + 1) \parallel 0! \rangle \\
 01407 &:= 7 \times \langle (-0! + \langle \sqrt{4} \parallel 1 \rangle) \parallel 0! \rangle \\
 01408 &:= (8 + (0! + 4)!) \times \langle 1 \parallel 0! \rangle \\
 01429 &:= (\sqrt{9} \times 2)! \times \sqrt{4} - \langle 1 \parallel 0! \rangle \\
 01431 &:= (1 + 3!!) \times \sqrt{4} - \langle 1 \parallel 0! \rangle \\
 01437 &:= (-7 + 3!!) \times \sqrt{4} + \langle 1 \parallel 0! \rangle \\
 01444 &:= (\langle 4 \parallel \sqrt{4} \rangle - 4)^{1+0!} \\
 01445 &:= (\sqrt{5 + 4})! \times \langle 4! \parallel 1 \rangle - 0! \\
 01447 &:= (7 - 4)! \times \langle 4! \parallel 1 \rangle + 0! \\
 01448 &:= 8 \times \langle (4! - (4 - 1)!) \parallel 0! \rangle \\
 01451 &:= (1 + 5)! \times \sqrt{4} + \langle 1 \parallel 0! \rangle \\
 01452 &:= (-2 + 5)! \times (\langle 4! \parallel 1 \rangle + 0!) \\
 01463 &:= (3! + 6!) \times \sqrt{4} + \langle 1 \parallel 0! \rangle \\
 01469 &:= \sqrt{9^6 \times 4} + \langle 1 \parallel 0! \rangle \\
 01498 &:= -8 + (\sqrt{9})! \times \langle (4! + 1) \parallel 0! \rangle
 \end{aligned}$$

$$01499 := (\sqrt{9})! \times (9 + \langle 4! \parallel 1 \rangle) - 0!$$

$$01506 := 6 \times \langle (0! + (5 - 1)!) \parallel 0! \rangle$$

$$01525 := 5^2 \times \langle (5 + 1) \parallel 0! \rangle$$

$$01547 := 7 \times \langle (4! - \sqrt{5-1}) \parallel 0! \rangle$$

$$01549 := (9 + 4) \times 5! - \langle 1 \parallel 0! \rangle$$

$$01559 := \langle (\sqrt{9})! \parallel 5 \rangle \times (5 - 1)! - 0!$$

$$01575 := 5 \times 7! / (5 + \langle 1 \parallel 0! \rangle)$$

$$01584 := 4! \times (8 - 5)! \times \langle 1 \parallel 0! \rangle$$

$$01595 := \langle 5 + 9 \parallel 5 \rangle \times \langle 1 \parallel 0! \rangle$$

$$01626 := 6 \times \langle (26 + 1) \parallel 0! \rangle$$

$$01669 := 9! / \sqrt{6^6} - \langle 1 \parallel 0! \rangle$$

$$01672 := 2 \times 76 \times \langle 1 \parallel 0! \rangle$$

$$01688 := 8 \times \langle \langle (8 - 6) \parallel 1 \rangle \parallel 0! \rangle$$

$$01697 := 7! / \sqrt{9} + 6 + \langle 1 \parallel 0! \rangle$$

$$01746 := 6 \times \langle (4 \times 7 + 1) \parallel 0! \rangle$$

$$01749 := (-9 + 4! \times 7) \times \langle 1 \parallel 0! \rangle$$

$$01757 := 7 \times \left\langle \sqrt{\sqrt{5^{(7+1)}}} \parallel 0! \right\rangle$$

$$01848 := \langle (8 \times \sqrt{4}) \parallel 8 \rangle \times \langle 1 \parallel 0! \rangle$$

$$01879 := \sqrt{9} \times 7! / 8 - \langle 1 \parallel 0! \rangle$$

$$01897 := 7 \times \langle \sqrt{9 \times 81} \parallel 0! \rangle$$

$$01899 := 9 \times \langle (\sqrt{9} \times (8 - 1)) \parallel 0! \rangle$$

$$01923 := \langle 3! \parallel 2 \rangle \times \langle \sqrt{9} \parallel 1 \rangle + 0!$$

$$01924 := \langle 4! \parallel 2 \rangle + (\sqrt{9})!! \times (1 + 0!)$$

$$01933 := 3!^3 \times 9 - \langle 1 \parallel 0! \rangle$$

$$01942 := -2 + 4! \times \langle (9 - 1) \parallel 0! \rangle$$

$$01947 := (7 \times 4! + 9) \times \langle 1 \parallel 0! \rangle$$

$$01955 := (5! - 5) \times \left((\sqrt{9})! + \langle 1 \parallel 0! \rangle \right)$$

$$01967 := 7 \times \langle \sqrt{6! + 9} \parallel \langle 1 \parallel 0! \rangle \rangle$$

$$01968 := 8 \times 6 \times \langle (\sqrt{9} + 1) \parallel 0! \rangle$$

$$02037 := 7 \times \langle \langle \langle 3 \parallel 0! \rangle - 2 \rangle \parallel 0! \rangle$$

$$02044 := -4 + \sqrt{4^{(0! \parallel (2 \times 0)!)}}$$

$$02099 := \sqrt{9} \times (\sqrt{9})!! - \langle (0! + 2)! \parallel 0! \rangle$$

$$02149 := 9 \times \langle 4! \parallel 1 \rangle - 20$$

$$02184 := 4! \times \langle (8 + 1) \parallel (2 \times 0)! \rangle$$

$$02196 := 6 \times (\sqrt{9})! \times \langle (1 + 2)! \parallel 0! \rangle$$

$$02248 := 8 \times \langle (4! + 2 + 2) \parallel 0! \rangle$$

$$02255 := 55 \times \langle (2 + 2) \parallel 0! \rangle$$

$$02259 := 9 \times \langle 5^2 \parallel (2 \times 0)! \rangle$$

$$02283 := (3! \times 8)^2 - \langle 2 \parallel 0! \rangle$$

$$02305 := (\langle 5 \parallel 0! \rangle - 3)^2 + 0!$$

$$02346 := (\langle 6 \parallel \sqrt{4} \rangle + 3!!) \times (2 + 0!)$$

$$02349 := 9 \times \langle (4 \times 3! + 2) \parallel 0! \rangle$$

$$02352 := (-2 + 5! - 3!) \times \langle 2 \parallel 0! \rangle$$

$$02379 := (\sqrt{9})!! + 7! / 3 - \langle 2 \parallel 0! \rangle$$

$$02394 := ((-4 + 9)! - 3!) \times \langle 2 \parallel 0! \rangle$$

$$02415 := (5! - 1 - 4) \times \langle 2 \parallel 0! \rangle$$

$$02419 := (9 + 1) \times \langle 4! \parallel 2 \rangle - 0!$$

$$02436 := (6! / 3! - 4) \times \langle 2 \parallel 0! \rangle$$

$$02439 := 9 \times \langle (3 + 4!) \parallel (2 \times 0)! \rangle$$

$$02445 := 5 \times (\langle 4! \parallel 4 \rangle \times 2 + 0!)$$

$$02454 := -4! + (5! - \sqrt{4}) \times \langle 2 \parallel 0! \rangle$$

$$02495 := 5 \times \left((\sqrt{9})!! - \langle (4! - 2) \parallel 0! \rangle \right)$$

$$02499 := 9! / \left((\sqrt{9})! \times 4! \right) - \langle 2 \parallel 0! \rangle$$

$$02513 := -3! - 1 + 5! \times \langle 2 \parallel 0! \rangle$$

$$02514 := - (4 - 1)! + 5! \times \langle 2 \parallel 0! \rangle$$

$$02515 := -5 + 1 \times 5! \times \langle 2 \parallel 0! \rangle$$

$$02532 := 2 \times 3! + 5! \times \langle 2 \parallel 0! \rangle$$

$$02535 := 5 \times 3 + 5! \times \langle 2 \parallel 0! \rangle$$

$$02541 := (1^4 + 5!) \times \langle 2 \parallel 0! \rangle$$

$$02542 := \langle 2 \parallel \sqrt{4} \rangle + 5! \times \langle 2 \parallel 0! \rangle$$

$$\begin{aligned}
 02545 &:= \sqrt{5^4} + 5! \times \langle 2 \parallel 0! \rangle \\
 02562 &:= \left(\sqrt{-2+6} + 5! \right) \times \langle 2 \parallel 0! \rangle \\
 02568 &:= 8 \times 6 + 5! \times \langle 2 \parallel 0! \rangle \\
 02583 &:= \left(\sqrt{\sqrt{\sqrt{3^8}} + 5!} \right) \times \langle 2 \parallel 0! \rangle \\
 02604 &:= (4 + (-0! + 6)!) \times \langle 2 \parallel 0! \rangle \\
 \\
 02646 &:= \left\langle (6 \times \sqrt{4}) \parallel 6 \right\rangle \times \langle 2 \parallel 0! \rangle \\
 02651 &:= \sqrt{1+5!} \times \langle (6-2)! \parallel 0! \rangle \\
 02667 &:= (7 + 6!/6) \times \langle 2 \parallel 0! \rangle \\
 02684 &:= -4 + 8! / (-6 + \langle 2 \parallel 0! \rangle) \\
 02859 &:= \left(\sqrt{9} \times 5! \right) \times 8 - \langle 2 \parallel 0! \rangle \\
 \\
 02892 &:= 2 \times \left(\sqrt{9} \right)! \times \langle (8/2)! \parallel 0! \rangle \\
 02904 &:= 4! \times \langle (0! + 9 + 2) \parallel 0! \rangle \\
 02943 &:= \left\langle 3 \parallel \sqrt{4} \right\rangle \times 92 - 0! \\
 02964 &:= 4 \times ((-6+9)!! + \langle 2 \parallel 0! \rangle) \\
 02968 &:= 8 \times \left(6 \times \left\langle (\sqrt{9})! \parallel 2 \right\rangle - 0! \right) \\
 \\
 02995 &:= 5 \times \left((\sqrt{9})!! - \left\langle ((\sqrt{9})! \times 2) \parallel 0! \right\rangle \right) \\
 03124 &:= 4 \times ((2+1)!! + \langle 3! \parallel 0! \rangle) \\
 03142 &:= -2 + 4! \times \langle 13 \parallel 0! \rangle \\
 \\
 03164 &:= 4 \times (6! + \langle (1+3!) \parallel 0! \rangle) \\
 03195 &:= 5 \times 9 \times \langle (1+3!) \parallel 0! \rangle \\
 03264 &:= \sqrt{4^6} \times \langle (2+3) \parallel 0! \rangle \\
 03294 &:= (4! + \sqrt{9}) \times 2 \times \langle 3! \parallel 0! \rangle \\
 03295 &:= 5 \times \left(- \left\langle (\sqrt{9})! \parallel 2 \right\rangle + 3!! + 0! \right) \\
 \\
 03315 &:= 51 \times (\langle 3! \parallel 3! \rangle - 0!) \\
 03343 &:= 3!! + 43 \times \langle 3! \parallel 0! \rangle \\
 03355 &:= 55 \times \langle 3! \parallel (3 \times 0!) \rangle \\
 03384 &:= 4! \times \langle (8+3!) \parallel (3 \times 0!) \rangle \\
 03386 &:= 6! + \langle 8 \parallel 3! \rangle \times \langle 3 \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 03396 &:= 6 \times (9 \times \langle 3! \parallel 3 \rangle - 0!) \\
 03445 &:= 5 \times ((4!/4)! - \langle 3 \parallel 0! \rangle) \\
 03482 &:= 2 \times (8!/4! + \langle 3! \parallel 0! \rangle) \\
 03503 &:= \langle 3 \parallel 0! \rangle \times (5! - 3! - 0!) \\
 03509 &:= - \langle 9 \parallel 0! \rangle + 5! \times 30 \\
 \\
 03552 &:= 2^5 \times \langle (5+3!) \parallel 0! \rangle \\
 03559 &:= - \left(\sqrt{9} \right)! + (5! - 5) \times \langle 3 \parallel 0! \rangle \\
 03595 &:= -5^{\sqrt{9}} + 5! \times \langle 3 \parallel 0! \rangle \\
 03624 &:= 4! \times \langle (2 \times 6 + 3) \parallel 0! \rangle \\
 03658 &:= (-8 + 5! + 6) \times \langle 3 \parallel 0! \rangle \\
 \\
 03661 &:= (-1 + 6) \times 6! + \langle 3! \parallel 0! \rangle \\
 03696 &:= 6! + 96 \times \langle 3 \parallel 0! \rangle \\
 03843 &:= \langle 3! \parallel (4!/8) \rangle \times \langle 3! \parallel 0! \rangle \\
 03864 &:= 4! \times \langle (6 \times 8/3) \parallel 0! \rangle \\
 03865 &:= 5 \times (6! - 8 + \langle 3! \parallel 0! \rangle) \\
 \\
 03904 &:= 4^{\sqrt{09}} \times \langle 3! \parallel 0! \rangle \\
 03905 &:= 5 \times \left((\sqrt{09})!! + \langle 3! \parallel 0! \rangle \right) \\
 03906 &:= \left((6-0!)! + (\sqrt{9})! \right) \times \langle 3 \parallel 0! \rangle \\
 03945 &:= -5! + 4^{(\sqrt{9})!} - \langle 3 \parallel 0! \rangle \\
 03949 &:= (\sqrt{9})!^4 \times \sqrt{9} + \langle 3! \parallel 0! \rangle \\
 \\
 03953 &:= -3! + 5! \times \left\langle \sqrt{9} \parallel 3 \right\rangle - 0! \\
 03954 &:= \left(\sqrt{4+5} \right)! \times \left((\sqrt{9})!! - \langle 3! \parallel 0! \rangle \right) \\
 03961 &:= (-1 + 6)! \times \left\langle \sqrt{9} \parallel 3 \right\rangle + 0! \\
 03963 &:= -3! + \left\langle 6 \parallel \sqrt{9} \right\rangle^{3-0!} \\
 03964 &:= 4 \times (6! + \langle (9 \times 3) \parallel 0! \rangle) \\
 \\
 03965 &:= (56 + 9) \times \langle 3! \parallel 0! \rangle \\
 03966 &:= -6! + 6 \times \left((\sqrt{9})!! + \langle 3! \parallel 0! \rangle \right) \\
 03968 &:= \left(8 + 6! / (\sqrt{9})! \right) \times \langle 3 \parallel 0! \rangle \\
 03984 &:= 4! \times \left\langle 8 \parallel \sqrt{9} \right\rangle \times (3 - 0!) \\
 03999 &:= \left\langle (9 + \sqrt{9}) \parallel 9 \right\rangle \times \langle 3 \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 04059 &:= 9 \times \sqrt{5! + 0!} \times \langle 4 \parallel 0! \rangle \\
 04069 &:= (\sqrt{9})! \times 6! - \langle (0! + 4!) \parallel 0! \rangle \\
 04079 &:= (\sqrt{9})! \times (7 - 0!)! - \langle 4! \parallel 0! \rangle \\
 04159 &:= -(\sqrt{9})!! + (5! - 1) \times \langle 4 \parallel 0! \rangle \\
 04163 &:= \langle (3 \times 6) \parallel 1 \rangle \times (4! - 0!) \\
 \\
 04179 &:= -(\sqrt{9})!! + 7! - \langle 14 \parallel 0! \rangle \\
 04236 &:= \langle 6 \parallel 3! \rangle^2 - (4 + 0!)! \\
 04239 &:= (\sqrt{9})! \times 3!! - \langle (2 \times 4) \parallel 0! \rangle \\
 04299 &:= (\sqrt{9})! \times (\sqrt{9} \times 2)! - \langle \sqrt{4} \parallel 0! \rangle \\
 04333 &:= 3^{3!} \times 3! - \langle 4 \parallel 0! \rangle \\
 \\
 04337 &:= (7 - 3)^{3!} + \langle 4! \parallel 0! \rangle \\
 04338 &:= (8 \times 3 - 3!) \times \langle 4! \parallel 0! \rangle \\
 04353 &:= 3 \times (5 + 3! \times \langle 4! \parallel 0! \rangle) \\
 04373 &:= 3!^7 / \langle 3! \parallel 4 \rangle - 0! \\
 04386 &:= 6 \times (8 + 3 \times \langle 4! \parallel 0! \rangle) \\
 \\
 04389 &:= (\sqrt{9})! \times (8 + 3!!) + \langle \sqrt{4} \parallel 0! \rangle \\
 04393 &:= \langle 3! \times \sqrt{9} \parallel 3 \rangle \times 4! + 0! \\
 04422 &:= 22 \times \langle (4! - 4) \parallel 0! \rangle \\
 04437 &:= 7! - 3 \times \langle (4! - 4) \parallel 0! \rangle \\
 04439 &:= 9! / 3^4 - \langle 4 \parallel 0! \rangle \\
 \\
 04455 &:= 55 \times \langle (4 + 4) \parallel 0! \rangle \\
 04471 &:= 17 \times (\langle 4! \parallel 4! \rangle - 0!) \\
 04473 &:= (3 + 7! / 4!) \times \langle \sqrt{4} \parallel 0! \rangle \\
 04494 &:= \langle 4! - \sqrt{9} \parallel 4 \rangle \times \langle \sqrt{4} \parallel 0! \rangle \\
 04579 &:= \left((\sqrt{9 + 7})! - 5 \right) \times \langle 4! \parallel 0! \rangle \\
 \\
 04584 &:= (-4 + 8)! \times \langle (-5 + 4!) \parallel 0! \rangle \\
 04586 &:= -6 + (-8 + 5!) \times \langle 4 \parallel 0! \rangle \\
 04589 &:= -\sqrt{9} + (-8 + 5!) \times \langle 4 \parallel 0! \rangle \\
 04592 &:= (-2^{\sqrt{9}} + 5!) \times \langle 4 \parallel 0! \rangle \\
 04596 &:= 6 \times \left((\sqrt{9})!! + 5 + \langle 4 \parallel 0! \rangle \right) \\
 \\
 04599 &:= (99 + 5!) \times \langle \sqrt{4} \parallel 0! \rangle \\
 04623 &:= (\langle 3! \parallel 2 \rangle + 6)^{\sqrt{4}} - 0! \\
 04674 &:= \left((-\sqrt{4} + 7)! - 6 \right) \times \langle 4 \parallel 0! \rangle \\
 04693 &:= 3! \times \left((\sqrt{9})!! + \langle 6 \parallel \sqrt{4} \rangle \right) + 0! \\
 04709 &:= -90 + 7! - \langle 4! \parallel 0! \rangle \\
 \\
 04718 &:= -81 + 7! - \langle 4! \parallel 0! \rangle \\
 04727 &:= -72 + 7! - \langle 4! \parallel 0! \rangle \\
 04733 &:= (-\langle 3! \parallel 3! \rangle + 7! - \langle 4! \parallel 0! \rangle) \\
 04736 &:= -63 + 7! - \langle 4! \parallel 0! \rangle \\
 04754 &:= -45 + 7! - \langle 4! \parallel 0! \rangle \\
 \\
 04757 &:= -7! / 5! + 7! - \langle 4! \parallel 0! \rangle \\
 04763 &:= -36 + 7! - \langle 4! \parallel 0! \rangle \\
 04767 &:= 7! - (6 + 7) \times \langle \sqrt{4} \parallel 0! \rangle \\
 04772 &:= -27 + 7! - \langle 4! \parallel 0! \rangle \\
 04781 &:= -18 + 7! - \langle 4! \parallel 0! \rangle \\
 \\
 04807 &:= 7! + 08 - \langle 4! \parallel 0! \rangle \\
 04824 &:= 4! \times \langle (2 \times 8 + 4) \parallel 0! \rangle \\
 04827 &:= 7! + 28 - \langle 4! \parallel 0! \rangle \\
 04836 &:= 6 \times \left(3!! + \langle 8 \parallel (\sqrt{4} + 0!)! \rangle \right) \\
 04837 &:= 7! + 38 - \langle 4! \parallel 0! \rangle \\
 \\
 04838 &:= \langle (8 + 3) \parallel 8 \rangle \times \langle 4 \parallel 0! \rangle \\
 04867 &:= 7! + 68 - \langle 4! \parallel 0! \rangle \\
 04871 &:= -1 + 7! - 8 \times \langle \sqrt{4} \parallel 0! \rangle \\
 04873 &:= -3! + 7! - \langle 8 \times \sqrt{4} \parallel 0! \rangle \\
 04874 &:= \sqrt{4} + 7! - 8 \times \langle \sqrt{4} \parallel 0! \rangle \\
 \\
 04877 &:= 7! + 78 - \langle 4! \parallel 0! \rangle \\
 04879 &:= (\sqrt{9})!! \times 7 - \langle (8 \times \sqrt{4}) \parallel 0! \rangle \\
 04887 &:= 7! + 8 - \langle (8 \times \sqrt{4}) \parallel 0! \rangle \\
 04889 &:= \left((\sqrt{9})!! + 8! \right) / 8 - \langle 4! \parallel 0! \rangle \\
 04909 &:= \left((\sqrt{9})! + 0! \right)! - \langle (9 + 4) \parallel 0! \rangle
 \end{aligned}$$

$$\begin{aligned}
 04917 &:= 7! - 1 \times \sqrt{9} \times \langle 4 \parallel 0! \rangle \\
 04919 &:= \left((\sqrt{9})! + 1 \right)! - \langle \sqrt{9} \times 4 \parallel 0! \rangle \\
 04927 &:= 7! - \langle (2 + 9) \parallel 4 \rangle + 0! \\
 04929 &:= (9 - 2)! - \langle (9 + \sqrt{4}) \parallel 0! \rangle \\
 04935 &:= \left(-5 + 3!! / \sqrt{9} \right) \times \langle \sqrt{4} \parallel 0! \rangle \\
 04937 &:= 7! - \langle 3! \parallel \sqrt{9} \rangle - 40 \\
 04961 &:= \left(1 + 6! / (\sqrt{9})! \right) \times \langle 4 \parallel 0! \rangle \\
 04972 &:= -2 + 7! - \langle (\sqrt{9})! \parallel (\sqrt{4} + 0!)! \rangle \\
 04987 &:= 7! - \langle (8 - \sqrt{9}) \parallel \sqrt{4} \rangle - 0! \\
 04995 &:= 5 \times 9 \times \langle (9 + \sqrt{4}) \parallel 0! \rangle \\
 04999 &:= \left((\sqrt{9})! + 9/9 \right)! - \langle 4 \parallel 0! \rangle \\
 05009 &:= -\langle \sqrt{9} \parallel 0! \rangle + (0! + 5 + 0!)! \\
 05019 &:= \left((\sqrt{9})! + 1 \right)! - \langle \sqrt{-0! + 5} \parallel 0! \rangle \\
 05027 &:= 7! - 2 - \langle 0! \parallel (5 \times 0!) \rangle \\
 05029 &:= (9 - 2)! - \langle 0! \parallel (5 \times 0!) \rangle \\
 05041 &:= (1 + \langle 4 \parallel 0! \rangle) \times 5! + 0! \\
 05042 &:= 2 \times \left(\langle \sqrt{4} \parallel 0! \rangle \times 5! + 0! \right) \\
 05061 &:= (1 + 6)! + \langle \sqrt{-0! + 5} \parallel 0! \rangle \\
 05081 &:= (-1 + 8)! + \langle (-0! + 5) \parallel 0! \rangle \\
 05091 &:= (-1 + 9 - 0!)! + \langle 5 \parallel 0! \rangle \\
 05092 &:= (-2 + 9)! + 0! + \langle 5 \parallel 0! \rangle \\
 05147 &:= 7! - 4 + \langle \sqrt{1 + 5!} \parallel 0! \rangle \\
 05191 &:= \left(1 + (\sqrt{9})! \right)! + \langle 15 \parallel 0! \rangle \\
 05197 &:= \left(7! + (\sqrt{9})! \right) + \langle 15 \parallel 0! \rangle \\
 05248 &:= \langle 8 \parallel \sqrt{4} \rangle \times 2^{5+0!} \\
 05291 &:= \left(1 + (\sqrt{9})! \right)! + \langle 25 \parallel 0! \rangle \\
 05297 &:= 7! + (\sqrt{9})! + \langle 25 \parallel 0! \rangle \\
 05329 &:= \langle 9 - 2 \parallel 3 \rangle^{\sqrt{5-0!}} \\
 05424 &:= 4! \times \left(\langle \langle 2 \parallel \sqrt{4} \rangle \parallel 5 \rangle + 0! \right) \\
 05466 &:= 6 \times (6! + \langle (4! - 5) \parallel 0! \rangle) \\
 05467 &:= 7 \times \left(6! + \langle (\sqrt{4 + 5})! \parallel 0! \rangle \right) \\
 05522 &:= 22 \times \langle (5 \times 5) \parallel 0! \rangle \\
 05544 &:= 4! \times \langle (4! - 5/5) \parallel 0! \rangle \\
 05589 &:= \sqrt{\sqrt{9^8}} \times (5! - \langle 5 \parallel 0! \rangle) \\
 05709 &:= (9 - 0!)! / 7 - \langle 5 \parallel 0! \rangle \\
 05784 &:= 4! \times \langle (8 / (7 - 5))! \parallel 0! \rangle \\
 05793 &:= \langle 3 \parallel \sqrt{9} \rangle + 7! + (5 + 0!)! \\
 05803 &:= (3!! - 0!) \times 8 + \langle 5 \parallel 0! \rangle \\
 05819 &:= \left((\sqrt{9})!! + 1 \right) \times 8 + \langle 5 \parallel 0! \rangle \\
 05843 &:= (3!! + 4) \times 8 + \langle 5 \parallel 0! \rangle \\
 05867 &:= (7 + 6!) \times 8 + \langle 5 \parallel 0! \rangle \\
 05895 &:= 5 \times 9 \times \langle (8 + 5) \parallel 0! \rangle \\
 05904 &:= \langle 4! \parallel (\sqrt{09})! \rangle \times (5 - 0!)! \\
 05964 &:= 4 \times \left(6! + (\sqrt{9})!! + \langle 5 \parallel 0! \rangle \right) \\
 05967 &:= (7 + 6) \times 9 \times \langle 5 \parallel 0! \rangle \\
 06239 &:= 9 \times 3!! - \langle (-2 + 6)! \parallel 0! \rangle \\
 06344 &:= \langle 4! \parallel 4 \rangle \times \left(\sqrt{3^6} - 0! \right) \\
 06393 &:= 3!! + 93 \times \langle 6 \parallel 0! \rangle \\
 06419 &:= 9 \times (-1 + 4)!! - \langle 6 \parallel 0! \rangle \\
 06439 &:= 9 \times 3!! - \langle 4 \parallel (6 \times 0!) \rangle \\
 06495 &:= -5 + 9^4 - \langle 6 \parallel 0! \rangle \\
 06497 &:= \langle 7 \parallel (\sqrt{9})! \rangle^{\sqrt{4}} + 6! + 0! \\
 06539 &:= 9 \times 3!! + 5! - \langle 6 \parallel 0! \rangle \\
 06655 &:= 55 \times \langle (6 + 6) \parallel 0! \rangle \\
 06744 &:= 4! \times \langle (4 \times 7) \parallel (6 \times 0!) \rangle \\
 06832 &:= ((2 + 3)! - 8) \times \langle 6 \parallel 0! \rangle \\
 06952 &:= -2 + \left(5! - (\sqrt{9})! \right) \times \langle 6 \parallel 0! \rangle \\
 06955 &:= -5 + 5! \times \left(-\sqrt{9} + \langle 6 \parallel 0! \rangle \right) \\
 06993 &:= \langle 3! \parallel \sqrt{9} \rangle \times (-9 + (6 - 0!)!)
 \end{aligned}$$

$$07299 := 9 \times \left(\left(\sqrt{9} \right)!! + \langle (2+7) \parallel 0! \rangle \right)$$

$$07597 := \left(-7 - \left(\sqrt{9} \right)! + 5! \right) \times \langle 7 \parallel 0! \rangle$$

$$07755 := 55 \times \langle (7+7) \parallel 0! \rangle$$

$$07839 := 9 \times (3!! + \langle (8+7) \parallel 0! \rangle)$$

$$07865 := (-5 + 6!) \times \langle (8-7) \parallel 0! \rangle$$

$$07952 := \left(-2 + 5! - \left(\sqrt{9} \right)! \right) \times \langle 7 \parallel 0! \rangle$$

$$07995 := - \left(5! + \sqrt{9} \right) \times \left(\left(\sqrt{9} \right)! - \langle 7 \parallel 0! \rangle \right)$$

$$08019 := 9 \times \langle 1 \parallel 0! \rangle \times \langle 8 \parallel 0! \rangle$$

$$08343 := \langle 3! + 4 \parallel 3 \rangle \times \langle 8 \parallel 0! \rangle$$

$$08424 := (4! + 2) \times 4 \times \langle 8 \parallel 0! \rangle$$

$$08439 := (9! - 3) / \langle 4 \parallel \sqrt{8+0!} \rangle$$

$$08444 := 4 \times (\langle 4! \parallel 4! \rangle \times 8 - 0!)$$

$$08694 := \left(\langle 4! \parallel \left(\sqrt{9} \right)! \rangle + 6! \right) \times (8 + 0!)$$

$$08844 := 44 \times \sqrt{8! + \langle 8 \parallel 0! \rangle}$$

$$08855 := 55 \times \langle (8+8) \parallel 0! \rangle$$

$$08964 := 4 \times \left(6! \times \sqrt{9} + \langle 8 \parallel 0! \rangle \right)$$

$$08974 := \sqrt{4} \times (7 + 9! / \langle 8 \parallel 0! \rangle)$$

$$08991 := \left(\left(-1 + \left(\sqrt{9} \right)! \right)! - 9 \right) \times \langle 8 \parallel 0! \rangle$$

$$09159 := (9 + 5!) \times \langle 1 + \left(\sqrt{9} \right)! \parallel 0! \rangle$$

$$09168 := 8 \times 6 \times \langle 19 \parallel 0! \rangle$$

$$09282 := \langle (2+8) \parallel 2 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09348 := - \langle 8 \parallel \sqrt{4} \rangle \times \left(3! - \left(\left(\sqrt{9} \right)! - 0! \right)! \right)$$

$$09373 := \langle (3+7) \parallel 3 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09456 := 6! + (5! - 4!) \times \langle 9 \parallel 0! \rangle$$

$$09464 := \langle (4+6) \parallel 4 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09555 := \langle (5+5) \parallel 5 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09646 := \langle (6+4) \parallel 6 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09664 := \sqrt{4^6} \times \langle (6+9) \parallel 0! \rangle$$

$$09737 := \langle (7+3) \parallel 7 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09828 := \langle (8+2) \parallel 8 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09834 := - \langle 4! \parallel 3! \rangle + 8! / \left(\sqrt{9} + 0! \right)$$

$$09919 := \langle (9+1) \parallel 9 \rangle \times \langle 9 \parallel 0! \rangle$$

$$09955 := 55 \times \langle (9+9) \parallel 0! \rangle$$

$$09966 := 66 \times \left\langle \left(\left(\sqrt{9} \right)! + 9 \right) \parallel 0! \right\rangle$$

$$09984 := 4! \times 8 \times \left(-9 + \left\langle \left(\sqrt{9} \right)! \parallel 0! \right\rangle \right)$$

$$09989 := \left(\sqrt{9} \right)!! \times \left(8 + \left(\sqrt{9} \right)! \right) - \langle 9 \parallel 0! \rangle$$

$$10275 := 5 \times \left(7 + 2^{\langle 0! \parallel 1 \rangle} \right)$$

$$10582 := (2 + 8 \times 5!) \times \langle 0! \parallel 1 \rangle$$

$$10584 := 4! + 8 \times 5! \times \langle 0! \parallel 1 \rangle$$

$$10593 := \left(3!! + \sqrt{9^5} \right) \times \langle 0! \parallel 1 \rangle$$

$$10635 := 5 \times 3 \times (6! - \langle 0! \parallel 1 \rangle)$$

$$10789 := \left(\sqrt{9} \right)!! \times 8 + (7! - \langle 0! \parallel 1 \rangle)$$

$$10919 := \left(\left(\sqrt{9} \right)! - 1 \right)! \times \langle 9 \parallel 0! \rangle - 1$$

$$10997 := \left(7 + 9! / \sqrt{9} \right) / \langle 0! \parallel 1 \rangle$$

$$10998 := \left(8! + \left(\sqrt{9} \right)! \right) \times \sqrt{9} / \langle 0! \parallel 1 \rangle$$

$$11025 := \left(5 \times \langle 2 \parallel 0! \rangle \right)^{1+1}$$

$$11568 := 8 \times 6 \times \langle (5-1)! \parallel 1 \rangle$$

$$12144 := 4!! / \langle (4 \times 1 - 2) \parallel 1 \rangle!$$

$$12384 := 4! \times \langle 8 \parallel 3! \rangle \times (2+1)!$$

$$13176 := \sqrt{6^{7-1}} \times \langle 3! \parallel 1 \rangle$$

$$13255 := 55 \times \langle (-2+3)! \parallel 1 \rangle$$

$$13448 := \left\langle 8 \parallel \sqrt{4} \right\rangle^{\sqrt{4}} \times (3-1)$$

$$14219 := \left(\left\langle \left(\sqrt{9} \right)! \parallel 1 \right\rangle - 2 \right) \times \langle 4! \parallel 1 \rangle$$

$$14379 := \sqrt{9} \times (7! - 3! - \langle 4! \parallel 1 \rangle)$$

$$14397 := 7! \times \sqrt{9} - 3 \times \langle 4! \parallel 1 \rangle$$

$$14455 := -5 + 5! / \sqrt{4} \times \langle 4! \parallel 1 \rangle$$

$$14616 := \left(6! - \left(\sqrt{16} \right)! \right) \times \left\langle \sqrt{4} \parallel 1 \right\rangle$$

$$14647 := 7^4 \times 6 + \langle 4! \parallel 1 \rangle$$

$$14679 := \left(-\sqrt{9} \times 7 + 6! \right) \times \left\langle \sqrt{4} \parallel 1 \right\rangle$$

$$14873 := 3 \times \left(7! - \left\langle 8 \parallel \sqrt{4} \right\rangle \right) - 1$$

$$14879 := \sqrt{9} \times 7! - \langle (8-4)! \parallel 1 \rangle$$

$$14931 := (1 \times 3!! - 9) \times \langle \sqrt{4} \parallel 1 \rangle$$

$$14942 := (-2 + 4^{\sqrt{9}}) \times \langle 4! \parallel 1 \rangle$$

$$14992 := -2 + \left((\sqrt{9})!! - (\sqrt{9})! \right) \times \langle \sqrt{4} \parallel 1 \rangle$$

$$14994 := \left((\sqrt{4 \times 9})! - (\sqrt{9})! \right) \times \langle \sqrt{4} \parallel 1 \rangle$$

$$19375 := 5^{7-3} \times \langle \sqrt{9} \parallel 1 \rangle$$

$$19592 := (2^9 + 5!) \times \langle \sqrt{9} \parallel 1 \rangle$$

$$19844 := \langle 4! \parallel \sqrt{4} \rangle \times \left(\langle 8 \parallel \sqrt{9} \rangle - 1 \right)$$

$$19924 := \langle 4! \parallel 2 \rangle + (\sqrt{9^9} - 1)$$

$$19974 := 4 \times 7! - (\sqrt{9})! \times \langle \sqrt{9} \parallel 1 \rangle$$

$$15079 := \sqrt{9} \times 7! - \langle (-0! + 5) \parallel 1 \rangle$$

$$15096 := (6! - \langle 9 \parallel 0! \rangle) \times (5 - 1)!$$

$$15144 := 4! + \langle \sqrt{4} \parallel 1 \rangle \times (5 + 1)!$$

$$15162 := (2 + 6!) \times \langle \sqrt{-1+5} \parallel 1 \rangle$$

$$15273 := 3 \times \left(7! + \langle \sqrt{25} \parallel 1 \rangle \right)$$

$$20048 := 8! / \sqrt{4} - \langle \langle 0! \parallel 0! \rangle \parallel 2 \rangle$$

$$20147 := 7! \times 4 - \langle 1 \parallel 0! \rangle - 2$$

$$20909 := \left((\sqrt{9})!! + 0! \right) \times \left(\langle \sqrt{9} \parallel 0! \rangle - 2 \right)$$

$$22319 := \langle \sqrt{9} \parallel 1 \rangle \times 3!! - 2/2$$

$$22338 := \left(8! + \langle 3! \parallel 3! \rangle^2 \right) / 2$$

$$15436 := 63 \times \langle 4! \parallel 5 \rangle + 1$$

$$15477 := 77 \times \langle (4 \times 5) \parallel 1 \rangle$$

$$15696 := \left(-\langle 6 \parallel (\sqrt{9})! \rangle + 6! \right) \times (5 - 1)!$$

$$15851 := (1 + 5!) \times \langle (8 + 5 \parallel 1) \rangle$$

$$16104 := 4! \times \langle 0! \parallel 1 \rangle \times 61$$

$$23266 := 6^6 / 2 - \langle 3! \parallel 2 \rangle$$

$$23409 := \langle (-9 + (04)!) \parallel 3 \rangle^2$$

$$23496 := \langle 6 \parallel (\sqrt{9})! \rangle \times (-4 + 3!! / 2)$$

$$23593 := \langle 3 \parallel \sqrt{9} \rangle \times (-5 + 3!!) - 2$$

$$23874 := -4^7 + 8! - \langle 3! \parallel 2 \rangle.$$

$$16446 := \langle 6 \parallel \sqrt{4} \rangle + 4^{6+1}$$

$$16742 := \langle 2 \parallel \sqrt{4} \rangle \times 761$$

$$16743 := -\langle 3! \parallel 4 \rangle + 7^{6+1}$$

$$17249 := (\sqrt{9})!! \times 4! - \langle \sqrt{2+7} \parallel 1 \rangle$$

$$17324 := \langle 4! \parallel (-2 + 3!) \rangle \times 71$$

$$23994 := \langle 4 \parallel \sqrt{9} \rangle \times 9 \times \langle 3! \parallel 2 \rangle$$

$$24334 := 4^{3!} \times 3! - \langle 4! \parallel 2 \rangle$$

$$24649 := \left(\left(\langle 9 \parallel \sqrt{4} \rangle - 6! \right) / 4 \right)^2$$

$$24964 := (4 + \langle (6+9) \parallel 4 \rangle)^2$$

$$26896 := (\langle (6+9) \parallel 8 \rangle + 6)^2$$

$$17346 := 6! \times 4! + \langle 3! \parallel (7-1) \rangle$$

$$18244 := \langle 4! \parallel \sqrt{4} \rangle^2 - 8! \times 1$$

$$18264 := 4! \times \left(6! + \langle \sqrt{2 \times 8} \parallel 1 \rangle \right)$$

$$18544 := \langle 4! \parallel 4 \rangle \times (-5 + 81)$$

$$19344 := (-4! \times 4 + 3!!) \times \langle \sqrt{9} \parallel 1 \rangle$$

$$27883 := -3! + \langle (8+8) \parallel 7 \rangle^2$$

$$27889 := \langle (\sqrt{9} \times 8 - 8) \parallel 7 \rangle^2$$

$$28644 := \langle 4 \parallel \sqrt{4} \rangle \times 682$$

$$28764 := (-\langle 4! \parallel 6 \rangle + 7!) \times (8 - 2)$$

$$29405 := (5! + 0!) \times \langle 4! \parallel \sqrt{9} \rangle + 2$$

$$29524 := \langle 4! \parallel 2 \rangle \times \left(5! + \sqrt{(\sqrt{9})! - 2} \right)$$

$$29748 := \left(-\langle 8 \parallel \sqrt{4} \rangle + 7! \right) \times \sqrt{9} \times 2$$

$$29789 := \langle \sqrt{9} \parallel (8 - 7) \rangle^{\sqrt{9}} - 2$$

$$29793 := \langle 3 \parallel -(\sqrt{9})! + 7 \rangle^{\sqrt{9}} + 2$$

$$29808 := \langle 8 \parallel 0! \rangle \times \left(8 + (\sqrt{9})!!/2 \right)$$

$$29848 := \langle 8 \parallel \sqrt{4} \rangle \times \left(8 + (\sqrt{9})!! \right) / 2$$

$$29994 := -\langle 4! \parallel (\sqrt{9})! \rangle + (\sqrt{9})! \times (9 - 2)!$$

$$30172 := -2 + (7! - \langle 1 \parallel 0! \rangle) \times 3!$$

$$30174 := \sqrt{4} \times (7! - \langle 1 \parallel 0! \rangle) \times 3$$

$$30282 := \langle \sqrt{2 \times 8} \parallel 2 \rangle \times (0! + 3!!)$$

$$30378 := (-8 + 7! + \langle 3 \parallel 0! \rangle) \times 3!$$

$$30473 := 3! \times 7! + \langle (4! - 0!) \parallel 3 \rangle$$

$$30474 := \left(-\sqrt{4} + 7! + \langle 4 \parallel 0! \rangle \right) \times 3!$$

$$30476 := 6 \times 7! + \langle (4! - 0!) \parallel 3! \rangle$$

$$30478 := -8 + (7! + \langle 4 \parallel 0! \rangle) \times 3!$$

$$30504 := \langle 4 \parallel 0! \rangle \times ((5 - 0!)! + 3!!)$$

$$30606 := ((6 + 0!)! + \langle 6 \parallel 0! \rangle) \times 3!$$

$$30636 := (\langle 6 \parallel 3! \rangle + (6 + 0!)!) \times 3!$$

$$30879 := (\sqrt{9})! \times 7! - \langle 8 \parallel 0! \rangle + 3!!$$

$$30897 := -7! + \langle \sqrt{9} \parallel \sqrt{8 + 0!} \rangle^3$$

$$31899 := \langle 9 \parallel \sqrt{9} \rangle \times (8 - 1)^3$$

$$32085 := 5 \times \langle 8 \parallel 0! \rangle^2 - 3!!$$

$$32448 := \langle (8 + \sqrt{4}) \parallel 4 \rangle^2 \times 3$$

$$32452 := (2 + 5!) \times \langle (4! + 2) \parallel 3! \rangle$$

$$33534 := \langle 4! \parallel 3 \rangle \times (5! + 3 \times 3!)$$

$$33768 := 8 \times 67 \times \langle 3! \parallel 3 \rangle$$

$$33924 := (\sqrt{4} + 2^9) \times \langle 3! \parallel 3! \rangle$$

$$34398 := 8! + 9 \times (\langle 3! \parallel \sqrt{4} \rangle - 3!!)$$

$$34484 := -4 + 8! - 4! \times \langle 4! \parallel 3 \rangle$$

$$34486 := (6! + \langle 8 \parallel \sqrt{4} \rangle) \times 43$$

$$34593 := (\langle 3! \parallel (\sqrt{9})! \rangle + 5!)^{\sqrt{4}} - 3$$

$$34599 := (\langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle + 5!)^{\sqrt{4}} + 3$$

$$34704 := \langle 4! \parallel (0 \times 7)! \rangle \times 4! \times 3!$$

$$35448 := 8! - 4! \times \langle (4 \times 5) \parallel 3 \rangle$$

$$35777 := 7 \times (7! + \langle 7 \parallel (-5 + 3!) \rangle)$$

$$35939 := \langle \sqrt{9} \parallel 3 \rangle^{\sqrt{9}} + 5 - 3$$

$$36432 := 23 \times 4! \times \langle 6 \parallel 3! \rangle$$

$$37044 := 4 \times \langle \sqrt{4} \parallel (0 \times 7)! \rangle^3$$

$$37297 := \langle 7 \parallel \sqrt{9} \rangle^2 \times 7 - 3!$$

$$37453 := 3!! \times \langle 5 \parallel \sqrt{4} \rangle + 7 + 3!$$

$$37536 := 6^3! - 5! \times \langle 7 \parallel 3! \rangle$$

$$37596 := (6! + \sqrt{9}) \times \langle 5 \parallel \sqrt{7 - 3} \rangle$$

$$38155 := -5 + \langle 5 \parallel \sqrt{1 + 8} \rangle \times 3!!$$

$$38428 := 8! - \langle 2 \parallel \sqrt{4} \rangle \times \langle 8 \parallel 3! \rangle$$

$$38634 := -\langle 4! \parallel 3! \rangle - 6! + 8! - 3!!$$

$$38966 := 6! \times 6 \times 9 + \langle 8 \parallel 3! \rangle$$

$$39105 := 5 \times \langle 0! \parallel 1 \rangle \times (-9 + 3!!)$$

$$39302 := -2 + \left(0! + \langle 3 \parallel \sqrt{9} \rangle \right)^3$$

$$39304 := (\langle 4 \parallel 03 \rangle - 9)^3$$

$$39375 := 5^{7-3} \times \langle (\sqrt{9})! \parallel 3 \rangle$$

$$39468 := 8! - 6! - 4 \times \langle \sqrt{9} \parallel 3 \rangle$$

$$39498 := 8! - \langle 9 \parallel \sqrt{4} \rangle \times 9 + 3!$$

$$39509 := -\langle 9 \parallel 0! \rangle + (5 + \sqrt{9})! - 3!!$$

$$39658 := 8! - 5 + \langle 6 \parallel \sqrt{9} \rangle - 3!!$$

$$39687 := 7!/8 \times \langle 6 \parallel \sqrt{9} \rangle - 3$$

$$39688 := -8 + 8! - 6! + \langle 9 \parallel 3! \rangle$$

$$39786 := -6 + 8 \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39789 := -\sqrt{9} + 8 \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39792 := 2^{\sqrt{9}} \times (7! - \langle (\sqrt{9})! \parallel 3! \rangle)$$

$$39828 := 8! - 2 \times \langle (8 \times \sqrt{9}) \parallel 3! \rangle$$

$$39834 := \langle 4! \parallel 3 \rangle + 8! - 9^3$$

$$39844 := \langle 4! \parallel 4 \rangle + 8! - (9 - 3)!$$

$$39848 := 8! + \langle 4! \parallel 8 \rangle - (9 - 3)!$$

$$39854 := \langle 4! \parallel 5 \rangle + 8! + 9 - 3!!$$

$$39879 := (\sqrt{9} + 7!/8) \times \langle (\sqrt{9})! \parallel 3 \rangle$$

$$39918 := 8! - (1 + \langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle) \times 3!$$

$$39924 := (4 \times 2)! - \langle (\sqrt{9})! \parallel (\sqrt{9})! \rangle \times 3!$$

$$39942 := (2 \times 4)! - \langle (\sqrt{9})! \parallel \sqrt{9} \rangle \times 3!$$

$$39948 := 8! - 4 \times \langle 9 \parallel (9/3) \rangle$$

$$40058 := 8! - (5! + \langle 0! \parallel 0! \rangle) \times \sqrt{4}$$

$$40078 := 8! - \langle (-7 + \langle 0! \parallel 0! \rangle)! \parallel \sqrt{4} \rangle$$

$$40108 := 8! - \langle \langle (0! + 1) \parallel 0! \rangle \parallel \sqrt{4} \rangle$$

$$40158 := 8! - \langle 5 + \langle 1 \parallel 0! \rangle \parallel \sqrt{4} \rangle$$

$$40184 := -4! + 8! - \langle \langle 1 \parallel 0! \rangle \parallel \sqrt{4} \rangle$$

$$40185 := -5! + 8! + \langle 1 \parallel 0! \rangle + 4$$

$$40199 := 9!/9 - \langle 1 \parallel 0! \rangle^{\sqrt{4}}$$

$$40208 := 8! - \langle \langle 0! \parallel (2 \times 0)! \rangle \parallel \sqrt{4} \rangle$$

$$40238 := 8! - \langle (3! + 2) \parallel \sqrt{04} \rangle$$

$$40258 := 8! - \langle (5 - 2)! \parallel \sqrt{04} \rangle$$

$$40268 := 8! - \langle (6 - (2 \times 0)!) \parallel \sqrt{4} \rangle$$

$$40353 := (3 + 5)! + \langle 3 \parallel 0! \rangle + \sqrt{4}$$

$$40362 := (2 + 6)! + \langle (3 + 0!) \parallel \sqrt{4} \rangle$$

$$40364 := (\sqrt{4} + 6)! + \langle (3 + 0!) \parallel 4 \rangle$$

$$40378 := 8! - 7 + \langle 3! \parallel 0! \rangle + 4$$

$$40381 := 1 \times 8! + \langle 3! \parallel (0 \times 4)! \rangle$$

$$40384 := \sqrt{4} + 8! + \langle 3! \parallel \sqrt{04} \rangle$$

$$40394 := (4!/\sqrt{9})! + \langle (3! + 0!) \parallel 4 \rangle$$

$$40401 := \langle (10 \times \sqrt{4}) \parallel 0! \rangle^{\sqrt{4}}$$

$$40479 := -9 + 7 \times \langle 4! \parallel 0! \rangle \times 4!$$

$$40524 := (4 \times 2)! + \langle 5 \parallel 0! \rangle \times 4$$

$$40548 := 8! + 4! + \langle 5 \parallel 0! \rangle \times 4$$

$$40564 := (\sqrt{4} + 6)! + \langle (5 - 0!)! \parallel 4 \rangle$$

$$40698 := 8! + (\sqrt{9})! \times (\langle 6 \parallel 0! \rangle + \sqrt{4})$$

$$40869 := (-\sqrt{9} + 6!) \times (\langle 8 \parallel 0! \rangle - 4!)$$

$$40926 := (6! - 2) \times (\langle (\sqrt{9})! \parallel 0! \rangle - 4)$$

$$40938 := 8! + 3!! - \langle (9 + 0!) \parallel \sqrt{4} \rangle$$

$$40978 := 8! + 7 \times \langle 9 \parallel 04 \rangle$$

$$40983 := 3!! + 8! - \langle (\sqrt{9})! \parallel 0! \rangle + 4$$

$$40998 := 8! + (\sqrt{9})!! - \langle (\sqrt{9} + 0!) \parallel \sqrt{4} \rangle$$

$$42384 := 4! \times \langle 8 \parallel 3! \rangle + (2 \times 4)!$$

$$\begin{aligned}
 43533 &:= \langle 3! \parallel 3 \rangle \times (-5 + 3!! - 4!) \\
 43648 &:= (8 - 4! + 6!) \times \langle 3! \parallel \sqrt{4} \rangle \\
 43856 &:= 6! \times 5 + 8! - \langle 3! \parallel 4 \rangle \\
 43913 &:= \langle 3! \parallel 1 \rangle \times (\sqrt{9})!! - 3 - 4 \\
 43919 &:= \langle (\sqrt{9})! \parallel 1 \rangle \times (\sqrt{9})!! + 3 - 4
 \end{aligned}$$

$$\begin{aligned}
 44164 &:= \langle (4! - 6) \parallel 1 \rangle \times \langle 4! \parallel 4 \rangle \\
 44394 &:= (-4 + (\sqrt{9})!!) \times \langle 3! \parallel \sqrt{4} \rangle + \sqrt{4} \\
 44398 &:= 8! + (\sqrt{9})! \times 3!! - \langle 4! \parallel \sqrt{4} \rangle \\
 44469 &:= \sqrt{9^6} \times \langle 4! \parallel 4 \rangle / 4 \\
 44528 &:= (8^2 + 5!) \times \langle 4! \parallel \sqrt{4} \rangle
 \end{aligned}$$

$$\begin{aligned}
 44616 &:= 6! \times \langle (1 \times 6) \parallel \sqrt{4} \rangle - 4! \\
 44633 &:= -3 + 3!! \times \langle 6 \parallel \sqrt{4} \rangle - 4 \\
 44634 &:= -4 + 3!! \times \langle 6 \parallel \sqrt{4} \rangle - \sqrt{4} \\
 44636 &:= 6! \times \langle 3! \parallel (6 - 4) \rangle - 4 \\
 44639 &:= \sqrt{9} + 3!! \times \langle 6 \parallel \sqrt{4} \rangle - 4
 \end{aligned}$$

$$\begin{aligned}
 44642 &:= (2 + 4)! \times \langle 6 \parallel \sqrt{4} \rangle + \sqrt{4} \\
 44644 &:= (4!/4)! \times \langle 6 \parallel \sqrt{4} \rangle + 4 \\
 44646 &:= \langle 6 \parallel \sqrt{4} \rangle \times 6! + \sqrt{4} + 4 \\
 44662 &:= -2 + 6! \times \langle 6 \parallel \sqrt{4} \rangle + 4! \\
 44764 &:= (\sqrt{4} + 6!) \times \langle (7 - 4)! \parallel \sqrt{4} \rangle
 \end{aligned}$$

$$\begin{aligned}
 44918 &:= 8! + 19 \times \langle 4! \parallel \sqrt{4} \rangle \\
 44942 &:= -2 + \langle (4! - \sqrt{9}) \parallel \sqrt{4} \rangle^{\sqrt{4}} \\
 45308 &:= 8! + (0! + 3!)! - \langle 5 \parallel \sqrt{4} \rangle \\
 45696 &:= (6! - (\sqrt{9})!) \times \langle (6!/5!) \parallel 4 \rangle \\
 45699 &:= \langle (\sqrt{9})! \parallel \sqrt{9} \rangle \times (6! + 5) + 4!
 \end{aligned}$$

$$\begin{aligned}
 46344 &:= \langle 4! \parallel 4! \rangle + 3!! \times 64 \\
 46384 &:= -\langle 4! \parallel 8 \rangle + 3!^6 - 4! \\
 46535 &:= -5 + \langle 3! \parallel 5 \rangle \times (6! - 4) \\
 46605 &:= -\langle 5 \parallel 0! \rangle + \sqrt{6^{(6 \times \sqrt{4})}} \\
 46619 &:= -\langle (\sqrt{9})! \parallel 1 \rangle + 6^6 + 4!
 \end{aligned}$$

$$\begin{aligned}
 46693 &:= \langle 3 \parallel \sqrt{9} \rangle + 6^6 + 4 \\
 46944 &:= \langle 4! \parallel 4! \rangle + (\sqrt{9})!^6 + 4! \\
 46968 &:= (-8 + 6!) \times \langle (\sqrt{9})! \parallel 6 \rangle - 4! \\
 46978 &:= 8! \times 7 / (\sqrt{9})! - \langle 6 \parallel \sqrt{4} \rangle \\
 47089 &:= (\langle \sqrt{9} \parallel (8 \times 0)! \rangle \times 7)^{\sqrt{4}}
 \end{aligned}$$

$$\begin{aligned}
 47334 &:= (\langle 4! \parallel 3! \rangle + 3!!) \times \sqrt{7^4} \\
 47424 &:= 4 \times 2 \times \langle 4! \parallel 7 \rangle \times 4! \\
 47448 &:= 8 \times 4! \times \langle 4! \parallel 7 \rangle + 4! \\
 47524 &:= (\langle (4! - 2) \parallel 5 \rangle - 7)^{\sqrt{4}} \\
 49005 &:= 5 \times (\langle 0! \parallel 0! \rangle \times 9)^{\sqrt{4}}
 \end{aligned}$$

$$\begin{aligned}
 49236 &:= \langle 6 \parallel 3! \rangle \times (2 + (\sqrt{9})!! + 4!) \\
 49675 &:= -5 + 7! + 6! \times \langle (\sqrt{9})! \parallel \sqrt{4} \rangle \\
 49923 &:= 3 \times \langle (2 \times (\sqrt{9})!) \parallel 9 \rangle^{\sqrt{4}} \\
 50765 &:= (-5 + 6!) \times \langle 7 \parallel (0 \times 5)! \rangle \\
 50907 &:= \langle 7 \parallel 0! \rangle \times (-\sqrt{9} + (0! + 5)!)
 \end{aligned}$$

$$\begin{aligned}
 51479 &:= 9!/7 - \langle 4! \parallel 1 \rangle - 5! \\
 53694 &:= (\langle 4! \parallel 9 \rangle - 6!) \times (3! - 5!) \\
 54336 &:= 6^3! + \langle 3! \parallel 4 \rangle \times 5! \\
 57148 &:= 8! + \langle \sqrt{4} \parallel 1 \rangle + 7^5 \\
 58444 &:= \langle 4! \parallel \sqrt{4} \rangle^{\sqrt{-4+8}} - 5!
 \end{aligned}$$

$$59014 := -4! - \langle 1 \parallel 0! \rangle + 9^5$$

$$59018 := -\langle \sqrt{8+1} \parallel 0! \rangle + 9^5$$

$$59024 := -4 - \langle 2 \parallel 0! \rangle + 9^5$$

$$59028 := -\langle \sqrt{8/2} \parallel 0! \rangle + 9^5$$

$$59109 := \langle (\sqrt{9})! \parallel 0! \rangle - 1 + 9^5$$

$$59134 := 4! + \langle 3! \parallel 1 \rangle + 9^5$$

$$59291 := \langle (1 + \sqrt{9})! \parallel 2 \rangle + 9^5$$

$$59294 := \langle 4! \parallel \sqrt{9} \rangle + 2 + 9^5$$

$$59345 := \langle (5 + 4!) \parallel 3! \rangle + 9^5$$

$$59433 := 3! \times \langle 3! \parallel 4 \rangle + 9^5$$

$$59497 := 7 \times \langle (\sqrt{9})! \parallel 4 \rangle + 9^5$$

$$59938 := 8! + 3^9 - \langle (\sqrt{9})! \parallel 5 \rangle$$

$$60439 := 9!/3! - \langle 4 \parallel (0 \times 6)! \rangle$$

$$62436 := (6! + 3!) \times \langle 4 \times 2 \parallel 6 \rangle$$

$$62494 := \left(\langle 4! \parallel (\sqrt{9})! \rangle + 4 \right)^2 - 6$$

$$62638 := \langle 8 \parallel 3! \rangle \times 6! - 2 + 6!$$

$$63888 := \langle 8 \parallel \sqrt{8 \times 8} \rangle \times (3! + 6!)$$

$$64728 := \langle \sqrt{8^2} \parallel 7 \rangle \times (4! + 6!)$$

$$64944 := 4! \times (\sqrt{4} + 9) \times \langle 4! \parallel 6 \rangle$$

$$64984 := 4^8 - \langle 9 \parallel \sqrt{4} \rangle \times 6$$

$$66898 := \langle 8 \parallel \sqrt{9} \rangle \times (86 + 6!)$$

$$66954 := \langle 4 + 5 \parallel \sqrt{9} \rangle \times 6! - 6$$

$$66996 := 6! \times \langle 9 \parallel \sqrt{9} \rangle + 6 \times 6$$

$$68395 := -5 + \langle 9 \parallel (-3 + 8) \rangle \times 6!$$

$$69399 := -9 + \langle 9 \parallel 3! \rangle \times (\sqrt{9} + 6!)$$

$$69549 := \left(\langle 9 \parallel (\sqrt{4}) + 5 \rangle \right) \times (-\sqrt{9} + 6!)$$

$$70682 := 2 \times (8! + \langle 6 \parallel 0! \rangle - 7!)$$

$$71065 := 5^6 + \langle 0! \parallel 1 \rangle \times 7!$$

$$71999 := (\sqrt{9})!! \times \langle 9 \parallel \sqrt{9} \rangle - 1 + 7!$$

$$73444 := \langle 4! \parallel 4 \rangle \times 43 \times 7$$

$$74347 := 7 \times 43 \times \langle 4! \parallel 7 \rangle$$

$$77448 := 8! + (\langle 4! \parallel 4! \rangle + 7!) \times 7$$

$$79989 := 9! - (8! + \langle 9 \parallel \sqrt{9} \rangle) \times 7$$

$$80472 := (2 \times 7! - \langle \sqrt{4} \parallel 0! \rangle) \times 8$$

$$80529 := -9 + 2 \times (-\langle 5 \parallel 0! \rangle + 8!)$$

$$80532 := 2 \times (-3 - \langle 5 \parallel 0! \rangle + 8!)$$

$$80538 := (-8 + 3!) \times (\langle 5 \parallel 0! \rangle - 8!)$$

$$80583 := -3! + 8! - \langle 5 \parallel 0! \rangle + 8!$$

$$80589 := \sqrt{9} \times 8! - \langle 5 \parallel 0! \rangle - 8!$$

$$80598 := 8! + 9 - \langle 5 \parallel 0! \rangle + 8!$$

$$80662 := 2 \times (\langle (6/6) \parallel 0! \rangle + 8!)$$

$$80682 := 2 \times (\langle (8-6) \parallel 0! \rangle + 8!)$$

$$80698 := 8! - \sqrt{9} + \langle 6 \parallel 0! \rangle + 8!$$

$$80728 := 8! \times 2 + \langle (7+0!) \parallel 8 \rangle$$

$$80742 := 2 \times \langle (-\sqrt{4} + 7) \parallel 0! \rangle + 8!$$

$$80762 := 2 \times (\langle 6 \parallel (7 \times 0!) \rangle + 8!)$$

$$80782 := 2 \times (8! + \langle 7 \parallel (0 \times 8!) \rangle)$$

$$80794 := \sqrt{4} \times (\langle (\sqrt{9})! + \langle 7 \parallel 0! \rangle + 8!)$$

$$80804 := \sqrt{4} \times (0! + \langle 8 \parallel 0! \rangle + 8!)$$

$$80842 := 2 \times \left(\langle (\sqrt{4} + 8) \parallel 0! \rangle + 8! \right)$$

$$80883 := 3 \times (8! + \langle 8 \parallel 0! \rangle) - 8!$$

$$80942 := 2 \times (\langle (4! - 9) \parallel 0! \rangle + 8!)$$

$$80982 := 2 \times (\langle (8+9) \parallel 0! \rangle + 8!)$$

$$85344 := \left(\langle 4 \parallel \sqrt{4} \rangle + 3!! \right) \times (5! - 8)$$

$$\begin{aligned}
 87744 &:= (4! \times \langle 4! \parallel 7 \rangle + 7!) \times 8 & 93955 &:= -5 + 5! \times \left((\sqrt{9})!! + \langle 3! \parallel \sqrt{9} \rangle \right) \\
 90567 &:= (7! \times 6 - \langle 5 \parallel 0! \rangle) \times \sqrt{9} & 94058 &:= \langle (8+5) \parallel 0! \rangle \times \left(-\sqrt{4} + (\sqrt{9})!! \right) \\
 92364 &:= (-4 + 6!) \times \langle (3! \times 2) \parallel 9 \rangle & 94794 &:= (4 \times \sqrt{9})! / 7! - \langle 4! \parallel (\sqrt{9})! \rangle \\
 92493 &:= (3!! - \sqrt{9}) \times \langle (4!/2) \parallel 9 \rangle & 96624 &:= (4! + 2 \times 6!) \times \langle 6 \parallel (\sqrt{9})! \rangle \\
 93024 &:= \left(-\sqrt{4} + \langle 2 \parallel 0! \rangle \right)! / (3! + 9)! & 98404 &:= \langle 4! \parallel 0! \rangle^{\sqrt{4}} + 8! + \sqrt{9} \\
 93504 &:= \left(-\langle 4 \parallel 0! \rangle + 5^{3!} \right) \times (\sqrt{9})! & 99645 &:= 5 \times \left(\langle 4! \parallel 6 \rangle + \sqrt{9^9} \right)
 \end{aligned}$$

3 Number Patterns

In 1966, Madachy [14] pp. 174-175, gave an idea of number patterns writing as:

$$\begin{array}{lll}
 3^4 \times 425 &:= 34425 & 31^2 \times 325 &:= 312325 & 73 \times 9 \times 42 &:= 73942 \\
 3^4 \times 4250 &:= 344250 & 31^2 \times 3250 &:= 3123250 & 73 \times 9 \times 420 &:= 739420 \\
 3^4 \times 42500 &:= 3442500 & 31^2 \times 32500 &:= 31232500 & 73 \times 9 \times 4200 &:= 7394200
 \end{array}$$

Based on same idea as above, there are some concatenation-type selfie numbers, those can be extended in patterned form just multiplying successively by 10. See below examples:

$$\begin{array}{ll}
 305 &:= \langle 3! \parallel 0! \rangle \times 5 & 1968 &:= \langle (1 + \sqrt{9})! \parallel 6 \rangle \times 8 \\
 3050 &:= \langle 3! \parallel 0! \rangle \times 50 & 19680 &:= \langle (1 + \sqrt{9})! \parallel 6 \rangle \times 80 \\
 30500 &:= \langle 3! \parallel 0! \rangle \times 500 & 196800 &:= \langle (1 + \sqrt{9})! \parallel 6 \rangle \times 800 \\
 \\
 396 &:= \langle 3! \parallel (\sqrt{9})! \rangle \times 6 & \\
 3960 &:= \langle 3! \parallel (\sqrt{9})! \rangle \times 60 & \\
 39600 &:= \langle 3! \parallel (\sqrt{9})! \rangle \times 600 & \\
 \\
 492 &:= \langle 4! \parallel (\sqrt{9})! \rangle \times 2 & 3905 &:= \left(3!! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 5 \\
 4920 &:= \langle 4! \parallel (\sqrt{9})! \rangle \times 20 & 39050 &:= \left(3!! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 50 \\
 49200 &:= \langle 4! \parallel (\sqrt{9})! \rangle \times 200 & 390500 &:= \left(3!! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 500 \\
 \\
 1446 &:= \left(-1 + \langle 4! \parallel \sqrt{4} \rangle \right) \times 6 & 10285 &:= \langle 1 \parallel 0! \rangle^2 \times 85 \\
 14460 &:= \left(-1 + \langle 4! \parallel \sqrt{4} \rangle \right) \times 60 & 102850 &:= \langle 1 \parallel 0! \rangle^2 \times 850 \\
 144600 &:= \left(-1 + \langle 4! \parallel \sqrt{4} \rangle \right) \times 600 & 1028500 &:= \langle 1 \parallel 0! \rangle^2 \times 8500 \\
 \\
 1476 &:= (-1 + \langle 4! \parallel 7 \rangle) \times 6 & 10635 &:= (-\langle 1 \parallel 0! \rangle + 6!) \times 3 \times 5 \\
 14760 &:= (-1 + \langle 4! \parallel 7 \rangle) \times 60 & 106350 &:= (-\langle 1 \parallel 0! \rangle + 6!) \times 3 \times 50 \\
 147600 &:= (-1 + \langle 4! \parallel 7 \rangle) \times 600 & 1063500 &:= (-\langle 1 \parallel 0! \rangle + 6!) \times 3 \times 500
 \end{array}$$

$$\begin{aligned}
 10648 &:= \langle 1 \parallel 0! \rangle^{6/\sqrt{4}} \times 8 & 30667 &:= (\langle 3! \parallel 0! \rangle + 6! \times 6) \times 7 \\
 106480 &:= \langle 1 \parallel 0! \rangle^{6/\sqrt{4}} \times 80 & 306670 &:= (\langle 3! \parallel 0! \rangle + 6! \times 6) \times 70 \\
 1064800 &:= \langle 1 \parallel 0! \rangle^{6/\sqrt{4}} \times 800 & 3066700 &:= (\langle 3! \parallel 0! \rangle + 6! \times 6) \times 700 \\
 \\
 14056 &:= \langle (1 + 4!) \parallel 0! \rangle \times 56 & 33044 &:= (3!! + \langle 3 \parallel 0! \rangle) \times 44 \\
 140560 &:= \langle (1 + 4!) \parallel 0! \rangle \times 560 & 330440 &:= (3!! + \langle 3 \parallel 0! \rangle) \times 440 \\
 1405600 &:= \langle (1 + 4!) \parallel 0! \rangle \times 5600 & 3304400 &:= (3!! + \langle 3 \parallel 0! \rangle) \times 4400 \\
 \\
 15129 &:= \langle (-1 + 5) \parallel 1 \rangle^2 \times 9 & 33124 &:= \langle (3 \times 3) \parallel 1 \rangle^2 \times 4 \\
 151290 &:= \langle (-1 + 5) \parallel 1 \rangle^2 \times 90 & 331240 &:= \langle (3 \times 3) \parallel 1 \rangle^2 \times 40 \\
 1512900 &:= \langle (-1 + 5) \parallel 1 \rangle^2 \times 900 & 3312400 &:= \langle (3 \times 3) \parallel 1 \rangle^2 \times 400 \\
 \\
 19225 &:= \left(1 + \langle (\sqrt{9})! \parallel 2 \rangle^2 \right) \times 5 & 33327 &:= (\langle 3! \parallel 3 \rangle + 3!)^2 \times 7 \\
 192250 &:= \left(1 + \langle (\sqrt{9})! \parallel 2 \rangle^2 \right) \times 50 & 333270 &:= (\langle 3! \parallel 3 \rangle + 3!)^2 \times 70 \\
 1922500 &:= \left(1 + \langle (\sqrt{9})! \parallel 2 \rangle^2 \right) \times 500 & 3332700 &:= (\langle 3! \parallel 3 \rangle + 3!)^2 \times 700 \\
 \\
 25405 &:= ((2 + 5)! + \langle 4 \parallel 0! \rangle) \times 5 & 39052 &:= (3!! + \langle \sqrt{9} \parallel 0! \rangle) \times 52 \\
 254050 &:= ((2 + 5)! + \langle 4 \parallel 0! \rangle) \times 50 & 390520 &:= (3!! + \langle \sqrt{9} \parallel 0! \rangle) \times 520 \\
 2540500 &:= ((2 + 5)! + \langle 4 \parallel 0! \rangle) \times 500 & 3905200 &:= (3!! + \langle \sqrt{9} \parallel 0! \rangle) \times 5200 \\
 \\
 25575 &:= (\langle (2 + 5) \parallel 5 \rangle + 7!) \times 5 & 39105 &:= (3!! - 9) \times \langle 1 \parallel 0! \rangle \times 5 \\
 255750 &:= (\langle (2 + 5) \parallel 5 \rangle + 7!) \times 50 & 391050 &:= (3!! - 9) \times \langle 1 \parallel 0! \rangle \times 50 \\
 2557500 &:= (\langle (2 + 5) \parallel 5 \rangle + 7!) \times 500 & 3910500 &:= (3!! - 9) \times \langle 1 \parallel 0! \rangle \times 500 \\
 \\
 30576 &:= (\langle 3! \parallel 0! \rangle - 5 + 7!) \times 6 & 39768 &:= \left(-\langle 3! \parallel \sqrt{9} \rangle + 7! - 6 \right) \times 8 \\
 305760 &:= (\langle 3! \parallel 0! \rangle - 5 + 7!) \times 60 & 397680 &:= \left(-\langle 3! \parallel \sqrt{9} \rangle + 7! - 6 \right) \times 80 \\
 3057600 &:= (\langle 3! \parallel 0! \rangle - 5 + 7!) \times 600 & 3976800 &:= \left(-\langle 3! \parallel \sqrt{9} \rangle + 7! - 6 \right) \times 800 \\
 \\
 30606 &:= ((3! + 0!)! + \langle 6 \parallel 0! \rangle) \times 6 & 40959 &:= \langle 4 \parallel 0! \rangle \times (-9 + 5!) \times 9 \\
 306060 &:= ((3! + 0!)! + \langle 6 \parallel 0! \rangle) \times 60 & 409590 &:= \langle 4 \parallel 0! \rangle \times (-9 + 5!) \times 90 \\
 3060600 &:= ((3! + 0!)! + \langle 6 \parallel 0! \rangle) \times 600 & 4095900 &:= \langle 4 \parallel 0! \rangle \times (-9 + 5!) \times 900 \\
 \\
 30636 &:= ((3! + 0!)! + \langle 6 \parallel 3! \rangle) \times 6 & 45909 &:= \left((\sqrt{4} + 5)! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 9 \\
 306360 &:= ((3! + 0!)! + \langle 6 \parallel 3! \rangle) \times 60 & 459090 &:= \left((\sqrt{4} + 5)! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 90 \\
 3063600 &:= ((3! + 0!)! + \langle 6 \parallel 3! \rangle) \times 600 & 4590900 &:= \left((\sqrt{4} + 5)! + \langle (\sqrt{9})! \parallel 0! \rangle \right) \times 900
 \end{aligned}$$

$$\begin{aligned}
 47424 &:= \langle 4! \parallel 7 \rangle \times 4! \times 2 \times 4 \\
 474240 &:= \langle 4! \parallel 7 \rangle \times 4! \times 2 \times 40 \\
 4742400 &:= \langle 4! \parallel 7 \rangle \times 4! \times 2 \times 400 \\
 \\
 47488 &:= (\langle 4! \parallel 7 \rangle \times 4! + 8) \times 8 \\
 474880 &:= (\langle 4! \parallel 7 \rangle \times 4! + 8) \times 80 \\
 4748800 &:= (\langle 4! \parallel 7 \rangle \times 4! + 8) \times 800 \\
 \\
 49923 &:= \langle (4 \times \sqrt{9}) \parallel 9 \rangle^2 \times 3 \\
 499230 &:= \langle (4 \times \sqrt{9}) \parallel 9 \rangle^2 \times 30 \\
 4992300 &:= \langle (4 \times \sqrt{9}) \parallel 9 \rangle^2 \times 300 \\
 \\
 60846 &:= (\langle 6 \parallel 0! \rangle + 8!/4) \times 6 \\
 608460 &:= (\langle 6 \parallel 0! \rangle + 8!/4) \times 60 \\
 6084600 &:= (\langle 6 \parallel 0! \rangle + 8!/4) \times 600 \\
 \\
 63084 &:= (6! + \langle 3 \parallel 0! \rangle) \times 84 \\
 630840 &:= (6! + \langle 3 \parallel 0! \rangle) \times 840 \\
 6308400 &:= (6! + \langle 3 \parallel 0! \rangle) \times 8400 \\
 \\
 68085 &:= (6! + \langle 8 \parallel 0! \rangle) \times 85 \\
 680850 &:= (6! + \langle 8 \parallel 0! \rangle) \times 850 \\
 6808500 &:= (6! + \langle 8 \parallel 0! \rangle) \times 8500 \\
 \\
 69092 &:= (6! + \langle \sqrt{9} \parallel 0! \rangle) \times 92 \\
 690920 &:= (6! + \langle \sqrt{9} \parallel 0! \rangle) \times 920 \\
 6909200 &:= (6! + \langle \sqrt{9} \parallel 0! \rangle) \times 9200 \\
 \\
 69408 &:= 6 \times (\sqrt{9})! \times \langle 4! \parallel 0! \rangle \times 8 \\
 694080 &:= 6 \times (\sqrt{9})! \times \langle 4! \parallel 0! \rangle \times 80 \\
 6940800 &:= 6 \times (\sqrt{9})! \times \langle 4! \parallel 0! \rangle \times 800 \\
 \\
 69435 &:= (\langle 6 \parallel \sqrt{9} \rangle + 4!^3) \times 5 \\
 694350 &:= (\langle 6 \parallel \sqrt{9} \rangle + 4!^3) \times 50 \\
 6943500 &:= (\langle 6 \parallel \sqrt{9} \rangle + 4!^3) \times 500 \\
 \\
 80482 &:= (-\langle 8 \parallel 0! \rangle + \sqrt{4} + 8!) \times 2 \\
 804820 &:= (-\langle 8 \parallel 0! \rangle + \sqrt{4} + 8!) \times 20 \\
 8048200 &:= (-\langle 8 \parallel 0! \rangle + \sqrt{4} + 8!) \times 200 \\
 \\
 80802 &:= (\langle 8 \parallel 0! \rangle + 8!) \times 02 \\
 80802 &:= (\langle 8 \parallel 0! \rangle + 8!) \times 020 \\
 80802 &:= (\langle 8 \parallel 0! \rangle + 8!) \times 0200 \\
 \\
 80832 &:= (8! + \langle (0! + 8) \parallel 3! \rangle) \times 2 \\
 808320 &:= (8! + \langle (0! + 8) \parallel 3! \rangle) \times 20 \\
 8083200 &:= (8! + \langle (0! + 8) \parallel 3! \rangle) \times 200 \\
 \\
 90782 &:= (\langle \sqrt{9} \parallel 0! \rangle + 7! + 8!) \times 2 \\
 907820 &:= (\langle \sqrt{9} \parallel 0! \rangle + 7! + 8!) \times 20 \\
 9078200 &:= (\langle \sqrt{9} \parallel 0! \rangle + 7! + 8!) \times 200 \\
 \\
 91295 &:= \langle \sqrt{9} \parallel 1 \rangle^2 \times 95 \\
 912950 &:= \langle \sqrt{9} \parallel 1 \rangle^2 \times 950 \\
 9129500 &:= \langle \sqrt{9} \parallel 1 \rangle^2 \times 9500 \\
 \\
 99225 &:= \langle (\sqrt{9})! \parallel \sqrt{9} \rangle^2 \times 25 \\
 992250 &:= \langle (\sqrt{9})! \parallel \sqrt{9} \rangle^2 \times 250 \\
 9922500 &:= \langle (\sqrt{9})! \parallel \sqrt{9} \rangle^2 \times 2500
 \end{aligned}$$

4 Summary: Selfie Numbers

This section, we shall give some idea of selfie numbers calculated in different situations. These are divided in subsection as below.

4.1 Factorial

This subsection brings **selfie numbers** with use of **factorial**. See below some examples:

$$\begin{array}{ll}
 145 = 1! + 4! + 5! & 363239 = 36 + 323 + 9! \\
 733 = 7 + 3!! + 3! & 363269 = 363 + 26 + 9! \\
 5177 = 5! + 17 + 7!. & 403199 = 40319 + 9!. \\
 \\
 1463 = -1! + 4! + 6! + 3!! & 361469 = 3! - 6! - 1! + 4! - 6! + 9!. \\
 10077 = -1! - 0! - 0! + 7! + 7!. & 364292 = 3!! + 6! - 4! - 2! + 9! - 2!. \\
 40585 = 4! + 0! + 5! + 8! + 5!. & 397584 = -3!! + 9! - 7! + 5! + 8! + 4!. \\
 80518 = 8! - 0! - 5! - 1! + 8!. & 398173 = 3! + 9! + 8! + 1! - 7! + 3!. \\
 317489 = -3! - 1! - 7! - 4! - 8! + 9!. & 408937 = -4! + 0! + 8! + 9! + 3!! + 7!. \\
 352797 = -3! + 5 - 2! - 7! + 9! - 7!. & 715799 = -7! - 1! + 5! - 7! + 9! + 9!. \\
 357592 = -3! - 5! - 7! - 5! + 9! - 2!. & 720599 = -7! - 2! + 0! - 5! + 9! + 9!. \\
 357941 = 3! + 5! - 7! + 9! - 4! - 1!. &
 \end{array}$$

For details refer author's work [30, 31].

4.2 Factorial and Square-Root

Below are some examples with **factorial** and **square-root** written in both ways, i.e., in digit's order and its reverse

$$\begin{array}{l}
 5040 := (5 + 0 + \sqrt{4})! + 0 = 0 + (\sqrt{4} + 0 + 5)! \\
 5041 := (5 + 0 + \sqrt{4})! + 1 = 1 + (\sqrt{4} + 0 + 5)! \\
 5042 := (5 + 0 + \sqrt{4})! + 2 = 2 + (\sqrt{4} + 0 + 5)! \\
 5043 := (5 + 0 + \sqrt{4})! + 3 = 3 + (\sqrt{4} + 0 + 5)! \\
 5044 := (5 + 0 + \sqrt{4})! + 4 = 4 + (\sqrt{4} + 0 + 5)! \\
 5045 := (5 + 0 + \sqrt{4})! + 5 = 5 + (\sqrt{4} + 0 + 5)! \\
 5046 := (5 + 0 + \sqrt{4})! + 6 = 6 + (\sqrt{4} + 0 + 5)! \\
 5047 := (5 + 0 + \sqrt{4})! + 7 = 7 + (\sqrt{4} + 0 + 5)! \\
 5048 := (5 + 0 + \sqrt{4})! + 8 = 8 + (\sqrt{4} + 0 + 5)! \\
 5049 := (5 + 0 + \sqrt{4})! + 9 = 9 + (\sqrt{4} + 0 + 5)!
 \end{array}$$

$$\begin{aligned}
 936 &:= (\sqrt{9})!^3 + 6! &= 6! + (3!)^{\sqrt{9}} \\
 1296 &:= \sqrt{(1+2)!^9/6} &= 6^{(\sqrt{9}+2-1)} \\
 2896 &:= 2 \times (8 + (\sqrt{9})!! + 6!) &= (6! + (\sqrt{9})!! + 8) \times 2 \\
 331779 &:= 3 + (31 - 7)^{\sqrt{7+9}} &= \sqrt{9} + (7 \times 7 - 1)^3 \times 3 \\
 342995 &:= (3^4 - 2 - 9)^{\sqrt{9}} - 5 &= -5 + (-9 + 9^2 - \sqrt{4})^3 \\
 759375 &:= (-7 + 59 - 37)^5 &= (5 + 7 + 3)^{\sqrt{9}-5+7}. \\
 759381 &:= 7 + (5 \times \sqrt{9})^{-3+8} - 1 &= -1 + (8 \times 3 - 9)^5 + 7.
 \end{aligned}$$

The following examples are in digit's order and its reverse separately:

$120 := ((1+2)! - 0)! $	$25 := 5^2$
$127 := -1 + 2^7$	$64 := \sqrt{4^6}$
$1673 := -1 - 6 + 7!/3$	$289 := (9+8)^2$
$1679 := 1 + (-6 + 7!)/\sqrt{9}$	$3894 := (\sqrt{4} + \sqrt{(\sqrt{9})!^8}) \times 3$
$1680 := (1+6)!/\sqrt{8+0!}$	$4957 := 7! - 59 - 4!$
$38970 := -3!! + 8! - 9 \times 70$	$6992 := 2^9 + 9 \times 6!$
$38986 := -3 + 8! - \sqrt{(\sqrt{9} + 8)^6}$	$26493 := (2+6)! - 4!^{\sqrt{9}} - 3$
$40310 := (\sqrt{4^{03}})! - 10$	$30792 := 3! \times ((0+7)! + 92)$
$90894 := -(\sqrt{9})! + ((0! + 8)! + (\sqrt{9})!!)/4$	$54476 := (5! + 4!^4 - 7!)/6$
$91560 := ((\sqrt{9})! + 1)! + 5! \times (6! + 0!)$	$75989 := \sqrt{9} \times (8 - (\sqrt{9})!!) + 5^7$

First column numbers are in **digit's order** and second columns are in **reverse order of digits**. For details refer author's work [18, 19, 20, 23, 24].

4.3 Fibonacci Sequence

Fibonacci sequence numbers are well known in literature. This sequence is defined as

$$F(0) = 0, \quad F(1) = 1, \quad F(n+1) = F(n) + F(n-1), \quad n \geq 1.$$

Below are examples of **selfie numbers** by use of **Fibonacci sequence values**. This we have done in different situations, such as using $F(\cdot)$ and $F(F(\cdot))$ in separate works. See below examples:

$$\begin{aligned}
 834660 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 0 = 0 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834661 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 1 = 1 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834662 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 2 = 2 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834663 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 3 = 3 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834664 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 4 = 4 + 6 \times (6 + F(4) \times F(3 \times 8))
 \end{aligned}$$

$$\begin{aligned}
 834665 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 5 = 5 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834666 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 6 = 6 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834667 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 7 = 7 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834668 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 8 = 8 + 6 \times (6 + F(4) \times F(3 \times 8)) \\
 834669 &:= (F(8 \times 3) \times F(4) + 6) \times 6 + 9 = 9 + 6 \times (6 + F(4) \times F(3 \times 8)).
 \end{aligned}$$

$$\begin{aligned}
 21960 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 0 = 0 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21961 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 1 = 1 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21962 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 2 = 2 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21963 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 3 = 3 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21964 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 4 = 4 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21965 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 5 = 5 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21966 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 6 = 6 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21967 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 7 = 7 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21968 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 8 = 8 + (F(F(F(6))) + F(9)) \times 1 \times 2 \\
 21969 &:= 2 \times 1 \times (F(9) + F(F(F(6)))) + 9 = 9 + (F(F(F(6))) + F(9)) \times 1 \times 2.
 \end{aligned}$$

$$\begin{aligned}
 143 &:= -1 + F(4 \times 3) &= F(3 \times 4) - 1 \\
 986 &:= F(9) \times (F(8) + F(6)) &= (F(6) + F(8)) \times F(9) \\
 1178 &:= F(11) \times F(7) + F(8) &= F(8) + F(7) \times F(11) \\
 2585 &:= F(2) + F(5 + 8 + 5) &= F(5 + 8 + 5) + F(2) \\
 12819 &:= 1 + F(2 \times (8 - 1)) \times F(9) &= F(9) \times F((-1 + 8) \times 2) + 1 \\
 24297 &:= F(2 \times 4) \times F(2 + 9) \times F(7) &= F(7) \times F(9 + 2) \times F(4 \times 2) \\
 39394 &:= -3 + 93 + F(9)^{F(4)} &= (-4 + F(9)) \times 3 + F(9)^3 \\
 74997 &:= -7 \times 4 + F(9 + 9 + 7) &= F(7 + 9 + 9) - 4 \times 7 \\
 87937 &:= -8 + F(7) \times F(9 \times 3 - 7) &= F(7) \times F(3 \times 9 - 7) - 8 \\
 98703 &:= 9 \times (F(8) + F(7 \times 03)) &= (F(3 \times 07) + F(8)) \times 9
 \end{aligned}$$

$$\begin{aligned}
 34 &:= F(3 \times F(4)) & 36 &:= 6^{F(3)} \\
 233 &:= F(F(-2 + 3 \times 3)) & 143 &:= F(3 \times 4) - 1 \\
 630 &:= F(F(6)) \times 30 & 231 &:= F(13) - 2 \\
 1178 &:= F(11) \times F(7) + F(8) & 377 &:= F(-7 + 7 \times 3) \\
 2079 &:= (-2 + F(F(07))) \times 9 & 986 &:= (F(6) + F(8)) \times F(9) \\
 4864 &:= F(F(4))^8 \times (F(F(6)) - F(F(4))) & 1165 &:= 5 \times F(F(6 \times 1 + 1)) \\
 8759 &:= -F(9 - 5)^7 + F(F(8)) & 1596 &:= F(F(6) + 9) - F(F(F(5 - 1))) \\
 8849 &:= -9 \times F(F(F(F(F(4)))) - 8) + F(F(8)) & 2592 &:= F(2 \times 9) + F(5 + F(2)) \\
 9349 &:= -F(F(9)/F(F(4))) + F(F(F(-3 + 9))) & 9756 &:= F(F(F(6))) - 5 \times 7 \times F(9)
 \end{aligned}$$

First three blocks are in both ways. In the last block the first column values are in **digit's order** and the second columns values are in **reverse order of digits**. For more details see author's [27, 28, 29].

4.4 Triangular Numbers

Triangular numbers are very much famous in the literature of mathematics. The general formula to write these numbers is given by

$$T(n) = 1 + 2 + 3 + \dots = \frac{n + 1}{2} = C(n + 1, 2)$$

The examples given in above subsections are with **factorial, square-root, Fibonacci sequence** numbers, etc. Still, one can have similar kind of results using **Triangular numbers**. See below some examples:

1069 := $T(10) - T(6) + T(T(9))$	874 := $T(T(T(4))) - T(T(7) + 8)$
1081 := $T(1 + T(08 + 1))$	0105 := $50 + T(10)$
2887 := $T(T(T(T(2)))) + T(T(8) + T(8)) + T(7)$	1155 := $-T(T(5)) + T(51 - 1)$
4965 := $T(-4 + 9) + T(-T(6) + T(T(5)))$	1224 := $T(T(T(4)) - T(T(2))) - 2 + 1$
4999 := $49 + T(99)$	2418 := $T(81) - T(42)$
99545 := $T(9) + T(9) \times T(T(T(5) - 4)) + 5$	99632 := $2 + (3 + T(T(6) + T(9))) \times T(9)$
99546 := $T(9) + T(9) \times T(T(T(5) - 4)) + 6.$	99633 := $3 + (3 + T(T(6) + T(9))) \times T(9).$

First column values are in **digit's order** and the second column values are in **reverse order of digits**. In consecutive sequential values we have:

2210 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 0 = 0 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2211 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 1 = 1 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2212 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 2 = 2 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2213 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 3 = 3 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2214 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 4 = 4 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2215 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 5 = 5 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2216 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 6 = 6 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2217 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 7 = 7 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2218 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 8 = 8 - 1 + T(T(T(T(T(2))))/T(T(T(2))))$
2219 := $T(T(T(T(T(2))))/T(T(T(2)))) - 1 + 9 = 9 - 1 + T(T(T(T(T(2))))/T(T(T(2)))).$

For more details see author's work [34]. Due to high quantity of numbers, we worked only up to 4 digits, i.e., from 1 to 9999.

4.5 Binomial Coefficients

Binomial coefficients are well known in literature. They are given by

$$C(m, r) = \frac{m!}{r! \times (m - r)!}, \quad m \geq r \geq 0, \quad m, r \in \mathbf{N}.$$

In above subsections, we gave examples of selfie numbers with **Fibonacci sequence, Triangular numbers**, etc. Still, one can have similar kind results using **binomial coefficients**. See below

some examples written in **both ways, digit's order and reverse order of digits**:

$$\begin{aligned} 6435 &:= C(C(6, 4), 3 + 5) = C(5 \times 3, \sqrt{4} + 6) \\ 15504 &:= C(15 + 5, 0! + 4) = C(4 \times 05, 5 \times 1) \\ 42504 &:= C(4!, \sqrt{2 \times 50/4}) = C(4!, -05 + 24) \\ 54264 &:= C(5 + 4^2, C(6, 4)) = C(4! - 6/2, (\sqrt{4} + 5)!) \\ 74613 &:= C(7 \times 4 - 6, 1 \times 3!) = C(3! + 16, (-4 + 7)!). \end{aligned}$$

$$\begin{aligned} 12650 &:= C(-1 + 26, 5 - 0!) & 28 &:= C(8, 2) \\ 12870 &:= C(1 \times 2 \times 8, 7 + 0!) & 792 &:= C(2 \times (\sqrt{9})!, 7) \\ 14950 &:= C(-1 + 4! + \sqrt{9}, 5 - 0!) & 924 &:= C(4!/2, (\sqrt{9})!) \\ 18564 &:= C(18, (5 - 6 + 4)!) & 2024 &:= C(4!, 2 + (0 \times 2)!) \\ 19448 &:= C(19 - \sqrt{4}, \sqrt{4} + 8) & 4845 &:= C(5 \times 4, 8 - 4) \\ 26334 &:= C(2 + C(6, 3), 3 + \sqrt{4}) & 00378 &:= C(C(8, \sqrt{7-3}), 0! + 0!) \\ 43758 &:= C(4! - 3!, 7 - 5 + 8) & 00792 &:= C(2 \times (\sqrt{9})!, 7 - 0! - 0!) \\ 53130 &:= C(5^{3-1}, 3! - 0!). & 00924 &:= C(4!/2, \sqrt{9} \times (0! + 0!)). \end{aligned}$$

Consecutive sequential representations:

$$\begin{aligned} 25920 &:= (-2 + 5)!! \times C(9, 2) + 0 & 98280 &:= 0 + C(C(8, 2), 8 - \sqrt{9}) \\ 25921 &:= (-2 + 5)!! \times C(9, 2) + 1 & 98281 &:= 1 + C(C(8, 2), 8 - \sqrt{9}) \\ 25922 &:= (-2 + 5)!! \times C(9, 2) + 2 & 98282 &:= 2 + C(C(8, 2), 8 - \sqrt{9}) \\ 25923 &:= (-2 + 5)!! \times C(9, 2) + 3 & 98283 &:= 3 + C(C(8, 2), 8 - \sqrt{9}) \\ 25924 &:= (-2 + 5)!! \times C(9, 2) + 4 & 98284 &:= 4 + C(C(8, 2), 8 - \sqrt{9}) \\ 25925 &:= (-2 + 5)!! \times C(9, 2) + 5 & 98285 &:= 5 + C(C(8, 2), 8 - \sqrt{9}) \\ 25926 &:= (-2 + 5)!! \times C(9, 2) + 6 & 98286 &:= 6 + C(C(8, 2), 8 - \sqrt{9}) \\ 25927 &:= (-2 + 5)!! \times C(9, 2) + 7 & 98287 &:= 7 + C(C(8, 2), 8 - \sqrt{9}) \\ 25928 &:= (-2 + 5)!! \times C(9, 2) + 8 & 98288 &:= 8 + C(C(8, 2), 8 - \sqrt{9}) \\ 25929 &:= (-2 + 5)!! \times C(9, 2) + 9. & 98289 &:= 9 + C(C(8, 2), 8 - \sqrt{9}). \end{aligned}$$

For more details refer author's work [32].

4.6 S-gonal numbers

The formula for **S-gonal numbers** is given by

$$P(n, s) := \frac{n(n-1)(s-2)}{2} + n, \quad s > 2.$$

This subsection brings some examples of selfie numbrs using **S-gonal numbers**. These examples are in **digit's order** and in **reverse order of digits**:

$$\begin{aligned}
 4992 &:= P(4!, 9 + 9 + 2) & 8967 &:= 7 \times P(P(6, \sqrt{9}), 8) \\
 7744 &:= (P(7, 7) - 4!)^{\sqrt{4}} & 9504 &:= 4! \times P(\sqrt{0! + 5!}, 9) \\
 7896 &:= 7 \times P(8 \times \sqrt{9}, 6) & 9744 &:= 4! \times P(4 \times 7, \sqrt{9}) \\
 65485 &:= -P(6, 5) + \sqrt{4} \times 8^5 & 49281 &:= 1 \times 8! + P(29, 4!) \\
 65943 &:= P(6, 5) \times ((\sqrt{9})!^4 - 3) & 49548 &:= -8! - P(4!, 5) + 9!/4 \\
 67977 &:= (6 + 7) \times (P(9, 7) + 7!) & 50424 &:= 4! \times P(-2 + 4!, \sqrt{0! + 5!}) \\
 72495 &:= -P(7 + 2, 4) + 9!/5 & 52895 &:= (5 + P(9, 8))^2 - 5 \\
 83544 &:= \sqrt{P(8, 3)} \times (5! - \sqrt{4})^{\sqrt{4}}. & 53995 &:= (5! - P(9, \sqrt{9})) \times 3!! - 5.
 \end{aligned}$$

The consecutive sequential examples are given by

$$\begin{aligned}
 86640 &:= P(8, 6) \times (6! + \sqrt{4}) + 0 & 5640 &:= 0 + P(4!, 6) \times 5 \\
 86641 &:= P(8, 6) \times (6! + \sqrt{4}) + 1 & 5641 &:= 1 + P(4!, 6) \times 5 \\
 86642 &:= P(8, 6) \times (6! + \sqrt{4}) + 2 & 5642 &:= 2 + P(4!, 6) \times 5 \\
 86643 &:= P(8, 6) \times (6! + \sqrt{4}) + 3 & 5643 &:= 3 + P(4!, 6) \times 5 \\
 86644 &:= P(8, 6) \times (6! + \sqrt{4}) + 4 & 5644 &:= 4 + P(4!, 6) \times 5 \\
 86645 &:= P(8, 6) \times (6! + \sqrt{4}) + 5 & 5645 &:= 5 + P(4!, 6) \times 5 \\
 86646 &:= P(8, 6) \times (6! + \sqrt{4}) + 6 & 5646 &:= 6 + P(4!, 6) \times 5 \\
 86647 &:= P(8, 6) \times (6! + \sqrt{4}) + 7 & 5647 &:= 7 + P(4!, 6) \times 5 \\
 86648 &:= P(8, 6) \times (6! + \sqrt{4}) + 8 & 5648 &:= 8 + P(4!, 6) \times 5 \\
 86649 &:= P(8, 6) \times (6! + \sqrt{4}) + 9. & 5649 &:= 9 + P(4!, 6) \times 5.
 \end{aligned}$$

For more details refer author’s work [33].

4.7 Centered Polygonal Numbers

The formula for **centered polygonal numbers** is given by

$$K(n, t) := \frac{tn(n-1)}{2} + 1, \quad t > 2.$$

Below are some examples of selfie numbers with **centered polygonal numbers**. These are in **digit’s order** and **inreverse order of digits**:

$$\begin{aligned}
 2883 &:= K(2 \times 8, 8) \times 3 & 15144 &:= K(15, (-1 + 4)!) \times 4! \\
 2888 &:= K(2 + 8, 8) \times 8 & 15347 &:= (-1 + 5)! \times 3!! - K(4!, 7) \\
 3640 &:= K(3!, 6) \times 40 & 15399 &:= K(1 \times 5!/3!, 9) \times 9 \\
 14939 &:= -1 + (K(4!, (\sqrt{9})!) + 3) \times 9 & 00938 &:= K(\sqrt{K(8, 3!)}, (\sqrt{9})!) \times (0! + 0!) \\
 14959 &:= (-1 + K(4!, (\sqrt{9})!) + 5) \times 9 & 01051 &:= K(15, 010)
 \end{aligned}$$

$$01199 := K(9, \sqrt{9}) \times (1 + 10)$$

$$59938 := K(8, 3!) + (\sqrt{9})!! + 9^5$$

$$62424 := 4! \times K(2 + 4!, 2 + 6)$$

$$63384 := 4! + (K(8, 3) + 3) \times 6!$$

$$63744 := 4! \times (K(4!, 7) + 3 + 6!)$$

$$63973 := K(3! + 7, 9) \times K(3!, 6).$$

The consecutive sequential examples are given by

$$99360 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 0 = 0 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99361 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 1 = 1 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99362 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 2 = 2 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99363 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 3 = 3 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99364 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 4 = 4 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99365 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 5 = 5 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99366 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 6 = 6 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99367 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 7 = 7 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99368 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 8 = 8 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}$$

$$99369 := K((\sqrt{9})!, \sqrt{9}) \times 3 \times 6! + 9 = 9 + 6! \times K(3!, \sqrt{9}) \times \sqrt{9}.$$

For more details refer author's work [33].

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References

- [1] ABRAHAMMS, M, Lots of numbers, plain and almost simple, IMPROBABLE RESEACH, <http://www.improbable.com/2013/02/12/lots-of-numbers-plain-and-almost-simple/>.
- [2] ABRAHAMMS, M, Lots more numbers, deemed "crazy consecutive", IMPROBABLE RE-SEACH, <http://www.improbable.com/2013/06/08/lots-more-numbers-deemed-crazy-sequential/>
- [3] NEBUS, J., Counting To 52, nebusresearch, <http://nebusresearch.wordpress.com/2013/02/17/counting-to-52/>.
- [4] NEBUS, J., Counting From 52 to 11,108, nebusresearch, <http://nebusresearch.wordpress.com/2013/06/10/counting-from-52-to-11108/>.
- [5] C. RIVEIRA, Problems & Puzzles: Puzzles, Puzzle 864. 10958, the only hole..., http://www.primepuzzles.net/puzzles/puzz_864.htm or - <https://goo.gl/Tdv2AD>
- [6] Futility Closet, The Holdout, <https://www.futilitycloset.com/?s=10958>

- [7] Puzzling, The 10,958 Problem, <https://puzzling.stackexchange.com/questions/51129/the-10-958-problem>
- [8] Puzzling, Rendering the number 10,958 with the string 1 2 3 4 5 6 7 8 9, <https://puzzling.stackexchange.com/questions/47923/rendering-the-number-10-958-with-the-string-1-2-3-4-5-6-7-8-9>
- [9] MATHEMATICS, Associativity of concatenation, <https://math.stackexchange.com/questions/2133595/associativity-of-concatenation>
- [10] M. PARKER, The 10,958 Problem - Numberphile, Youtube video, <https://www.youtube.com/watch?v=-ruC5A9EzzE>
- [11] M. PARKER, A 10,958 Solution - Numberphile, Youtube video, <https://www.youtube.com/watch?v=pasyRUj7UwM>
- [12] B HARAN, 10958, <http://www.bradyharanblog.com/blog/10958>
- [13] R. MULLER, Concatenation of the numbers from 1 to n, <https://oeis.org/A007908>.
- [14] J.S. MADACHY, Mathematics on Vacations, Charlars Scriber's Son, New York, 1966.
- [15] H. BOTTOMLEY, Concatenate next digit at right hand end (where the next digit after 9 is again 0), <https://oeis.org/A057137>.
- [16] C. A. PICKOVER, A Passion for Mathematics, Wiley, 2005; see p. 61 - Also refer <http://sprott.physics.wisc.edu/pickover/trianglegod.html>
- [17] I.J. TANEJA, Crazy Sequential Representation: Numbers from 0 to 11111 in terms of Increasing and Decreasing Orders of 1 to 9, Jan. 2014, pp.1-161, <http://arxiv.org/abs/1302.1479>.
- [18] TANEJA, I.J., Selfie Numbers: Consecutive Representations in Increasing and Decreasing Orders, RGMIA Research Report Collection, 17(2014), Article 140, pp. 1-57. <http://rgmia.org/papers/v17/v17a140.pdf>.
- [19] I.J. TANEJA, Different Types of Pretty Wild Narcissistic Numbers: Selfie Representations - I, RGMIA Research Report Collection, 18(2015), Article 32, pp.1-43. <http://rgmia.org/papers/v18/v18a32.pdf>.
- [20] I.J. TANEJA, Selfie Numbers: Representations in Increasing and Decreasing Orders of Non Consecutive Digits, RGMIA Research Report Collection, 18(2015), Article 70, pp.1-104. <http://rgmia.org/papers/v18/v18a70.pdf>.
- [21] I.J. TANEJA, Unified Selfie Numbers, RGMIA Research Report Collection, 18(2015), Article 153, pp. 1-14. <http://rgmia.org/papers/v18/v18a153.pdf>.
- [22] I.J. TANEJA, Patterns in Selfie Numbers, RGMIA Research Report Collection, 18(2015), Article 154, pp. 1-41. <http://rgmia.org/papers/v18/v18a154.pdf>.

- [23] I.J. TANEJA, Selfie Numbers - I: Symmetrical and Unified Representations, RGMIA Research Report Collection, 18(2015), Article 174, pp.1-94, <http://rgmia.org/papers/v18/v18a174.pdf>.
- [24] I.J. TANEJA, Selfie Numbers - II: Six Digits Symmetrical, Unified and Patterned Representations Without Factorial, RGMIA Research Report Collection, 18(2015), Article 175, pp.1-41, <http://rgmia.org/papers/v18/v18a175.pdf>.
- [25] I.J. TANEJA, Selfie Numbers - III: With Factorial and Without Square-Root - Up To Five Digits, RGMIA Research Report Collection, 19(2016), Article 16, pp.1-52, <http://rgmia.org/papers/v19/v19a16.pdf>.
- [26] I.J. TANEJA, Selfie Power Representations, RGMIA Research Report Collection, 19(2016), Article 17, pp. 1-20, <http://rgmia.org/papers/v19/v19a17.pdf>.
- [27] I.J. TANEJA, Fibonacci Sequence and Selfie Numbers - I, RGMIA Research Report Collection, 19(2016), Art 142, pp. 1-59, <http://rgmia.org/papers/v19/v19a142.pdf>.
- [28] I.J. TANEJA, Fibonacci Sequence and Selfie Numbers - II, RGMIA Research Report Collection, 19(2016), Art 143, pp. 1-47, <http://rgmia.org/papers/v19/v19a143.pdf>.
- [29] I.J. TANEJA, Fibonacci Sequence and Selfie Numbers - III, RGMIA Research Report Collection, 19(2016), Art 156, pp. 1-72, <http://rgmia.org/papers/v19/v19a156.pdf>.
- [30] I.J. TANEJA, Selfie Numbers - IV: Addition, Subtraction and Factorial, RGMIA Research Report Collection, 19(2016), Article 163, pp.1-42, <http://rgmia.org/papers/v19/v19a163.pdf>.
- [31] I.J. TANEJA, Selfie Numbers - V: Six Digits Symmetrical Representations with Factorial, RGMIA Research Report Collection, 19(2016), Article 164, pp.1-60, <http://rgmia.org/papers/v19/v19a164.pdf>.
- [32] I.J. TANEJA, Selfie Numbers and Binomial Coefficients, RGMIA Research Report Collection, 20(2017), pp. 1-18, Art. 25, <http://rgmia.org/papers/v20/v20a25.pdf>.
- [33] I.J. TANEJA, S-gonal and Centered Polygonal Selfie Numbers, and Connections with Binomials Coefficients, RGMIA Research Report Collection, 20(2017), pp. 1-42, <http://rgmia.org/papers/v20/v20a43.pdf>.
- [34] I.J. TANEJA, Triangular Selfie Numbers - I, RGMIA Research Report Collection, 20(2017), pp. 1-78, <http://rgmia.org/v20.php>.
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