

Analysis of Collatz Conjecture Rules

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Abstract

A proof of the Collatz Conjecture is presented. Changing the perspective of the problem from looking at the pattern of the positive integers to looking at the conjecture rules made the proof possible. The conjecture rule for even numbers organizes all positive integers into unique sets and the rule for odd numbers interconnects the unique sets into dendritic pathways to “1.” Infinite loops, other than the minor 4-2-1 loop after reaching “1,” and values continually increasing to infinity are shown to be mathematically impossible. The proof predicted a general equation that shows all positive integers reach a final value of “1,” and calculates the values and locations of the odd positive integers during the iterations for each tested positive integer.

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1. Introduction

The Collatz Conjecture was first proposed by Lohar Collatz in 1937. It is called the $3n+1$ problem, the $3n+1$ conjecture, the Ulam conjecture, Kakutani's, the Thwaites conjecture, and Hasse's algorithm (Lagarias, 1985).

The Collatz Conjecture states:

If N_0 is an even positive integer, then

$$\frac{N_0}{2} = N_1 \quad (1)$$

If N_0 is an odd positive integer, then

$$3N_0 + 1 = N_1 \quad (2)$$

Then repeated iterations of this process produces the value N_i , where i is the iteration step.

The original studies of the Collatz Conjecture considered individual positive integers and how the rules affected those positive integers. For each positive integer, the graph of its successors under the Collatz Conjecture process has a saw-tooth appearance. The values go up and down, and the number of steps until reaching "1" is unpredictable.

Previous attempts to prove the Collatz Conjecture have focused on studying the pattern of positive integers in the sequence and the number of steps each positive integer takes before reaching "1" (Boulkaboul, 2022; Furuta, 2022; Lagarias, 1985; Monks, *et.al.*, 2022; Sternberg, 2022). The difficulty in studying these parameters is that they greatly vary even when the positive integers are close in value.

For example, take the positive integers 26 and 27. The positive integer "26" shows that the highest value in the sequence is 40 and it takes 11 steps before reaching "1." However, the next positive integer "27," shows the highest value in the sequence is 9,232 and it takes 111 steps before reaching "1." Each positive integer N_0 produces what appears to be an unpredictable iteration of values.

The iteration of the positive integers illustrates the difficulty in proving the Collatz Conjecture. The use of different rules depending on whether the positive integer is odd or even causes the resulting iteration to be difficult to predict. For example, if the value of N is odd, then the value almost triples. However, since this value is even, the following value is divided in half. If the generated even positive integer is followed by an odd positive integer, then this produces an odd positive integer that

is larger than the previous N_i value, where i is the iteration step. This causes the iteration to have a higher value than the previous N_{i-1} . If the even positive integer generated by the odd number rule continues to produce an odd positive integer, the values of the iteration will continue to increase. It is only after the even positive integer generated by the odd number rule produces an even positive integer when halved does the values start to decrease until once again an odd positive integer is generated. It is hard to predict the path taken by the iteration when looking at a specific N_0 value. These iterations demonstrate the difficulty in predicting how many steps a specific N_0 will need before it reaches $N_i=1$, where i is the iteration step, or if the specific N_0 even reaches $N_i=1$, where i is the iteration step.

2. Discussion

Once it was determined that a proof of the Collatz Conjecture was not possible by studying the pattern of individual positive integers. The author decided to change the perspective of looking at the problem by studying how the rules organize the positive integers. A proof became clear once the perspective was changed.

The key to the proof is the same matter that gave previous people a difficult time when studying individual positive integers – there are different rules for even and odd positive integers. Looking at the rules, rather than individual positive integers, leads to the proof. These rules organize all positive integers into predictable and unique sets of positive integers.

2.1 Rule for Even Numbers – if N_0 is an even positive integer, then $\frac{N_0}{2}$

The rule for even numbers essentially repeatedly divides the value of the positive integer in half until an odd positive integer is reached. Therefore, for any even positive integer N , the Collatz rule for even positive integers halves the positive integer repeatedly until reaching the odd positive integer. The set of positive integers that consist of even positive integers with the same odd base positive integer will be called an “odd base number set” O_{bn} . The initial 6 positive integers of the odd base numbers set for 1, 3, 5 and 7 are shown in Table 1.

The positive integers in each set have the formula:

$$2^a X, \tag{3}$$

where $X = \mathbb{N}^{odd}$, $a = 0, 1, 2, 3, \dots$

It is noted that the general formula for an odd base number set is also the general formula for any positive integer from 1 to ∞ .

General formula for a positive integer:

$$2^a X, \tag{4}$$

where $X = \mathbb{N}^{odd}$, $a = 0, 1, 2, 3, \dots$

Table 1: Odd base number sets for 1, 3, 5, and 7

	1	3	5	7
2^1	2	6	10	14
2^2	4	12	20	28
2^3	8	24	40	56
2^4	16	48	80	112
2^5	32	96	160	224
2^6	64	192	320	448

All positive integers can be written using this general formula. Odd positive integers are generated when $a=0$. and even positive integers are generated when $a = 1, 2, 3, \dots$

Any even positive integer selected at random will proceed down the even positive integers in its odd base number set until reaching its base positive integer, which is odd. The rule of even positive integers therefore organizes all positive integers into one and only one odd base number set. All positive integers are organized into odd base number sets; however, this is not enough to prove the Collatz Conjecture since the rule only shows that all even positive integers are halved until reaching their odd base positive integer. The even number rule does not connect the odd base number sets into a path to eventually reach positive integer "1."

When examining the odd base number sets, an obvious dilemma appears. Each set has just a single odd positive integer with an infinite quantity of even positive integers. However, we know that there are equal quantities of even and odd positive integers. Therefore, the key to developing a proof for the Collatz Conjecture is analyzing how the odd number rule organizes the odd base number sets of positive integers.

The set of all odd base number sets equals the set of positive integers.

Proof 1 Let's denote O_{bn} as the set containing all such elements.

$$O_{bn} = f(X) = 2^a X: a \in \{0, 1, 2, \dots\}, X \text{ is odd.}$$

$$f(1) = O_{bn1} = \{1, 2, 4, 8, 16, \dots\}$$

$$f(3) = O_{bn3} = \{3, 6, 12, 24, 48, \dots\}$$

$$f(5) = O_{bn5} = \{5, 10, 20, 40, 80, \dots\}$$

$$f(7) = O_{bn7} = \{7, 14, 28, 56, 112, \dots\}$$

therefore,

$$f(x) = O_{bn} = \{\{O_{bn1}\}, \{O_{bn3}\}, \{O_{bn5}\}, \{O_{bn7}\}, \dots\}$$

Let's denote \mathbb{N} as the set containing all such elements.

$$\mathbb{N} = f(X) = 2^a X: a \in \{0, 1, 2, 3, \dots\}, X \text{ is odd.}$$

$$f(x) = O_{bn}$$

$$f(x) = \mathbb{N}$$

so

$$O_{bn} = \mathbb{N}$$

2.2 Rule for Odd Numbers - if X is an Odd Positive Integer, then $3X + 1$

The Collatz rule for handling odd positive integers is $3X + 1$, where X is an odd positive integer. This rule causes the generation of an even positive integer after reaching an odd positive integer. Multiplying the odd positive integer by “3” creates an odd positive integer. The addition of “1” generates an even positive integer. Since each odd base number set has an odd positive integer as the base positive integer, it becomes linked to an even positive integer with the general formula of $2^a X$, where $X = \mathbb{N}^{odd}$, $a = 0, 1, 2, 3, \dots$

Definition 2.1 A function $f: A \rightarrow B$ is:

1. injective if for all $a, a' \in A$, $a = a'$ implies $f(a) = f(a')$;
2. surjective if for every $b \in B$ there is an $a \in A$ with $f(a) = b$;
3. bijective if f is both injective and surjective.

Proof 2

$f(x) = 3x + 1: \mathbb{N}^{odd} \rightarrow C$ is bijective.

Is $f(x) = 3x + 1$ injective?

$x, x' \in \mathbb{N}_{odd}$ such that, $x = x'$. Therefore $3x + 1 = 3x' + 1$. Canceling out the 1 and dividing by 3, we get $x = x'$. Thus, $f(x) = 3x + 1$ is injective.

Is $f(x) = 3x + 1$ surjective?

Take some $y \in C$, then $y = f(x)$.

Since $f(x) = 3x + 1$, subtracting 1 and dividing by 3, we have $\frac{y-1}{3} = x$.

f is surjective since there exists some x such that $f(x) = y$.

Since $f(x) = 3x + 1$ is both injective and surjective, then $f(x) = 3x + 1$ is bijective.

$$f(x) = 3x + 1$$

$$\mathbb{N}^{odd} = \{1, 3, 5, 7, 9, \dots\}$$

$$C = \{4, 10, 16, 22, 28, \dots\}$$

So

$$|\mathbb{N}^{odd}| = |C|$$

Odd positive integers can be separated into 3 different categories based upon their characteristics in odd base number sets. Odd positive integers can be described as either being one less than a positive integer that is a multiple of 6 (e.g., $6N - 1$, where N is a positive integer), one more than a positive integer that is a multiple of 6 (e.g., $6N + 1$, where N is a positive integer) or divisible by 3 ($\frac{X}{3}$, where X is an odd positive integer and the result is a positive integer).

Odd positive integers that have the format of $6N - 1$, where X is an odd positive integer and N is a positive integer, will form odd base number sets where every other positive integer starting at the first even positive integer (e.g., $2x, 8x, 32x, \dots$, where x is an odd positive integer) will equal a positive integer that can be written as $3x' + 1$ (where x and x' are different odd positive integers). For example, if the odd base positive integer is 5 (e.g., $6 - 1$), then 10 $[(3 \times 3) + 1]$, 40 $[(13 \times 3) + 1]$, and 160 $[(53 \times 3) + 1]$ are connected to odd positive integers 3, 13, and 53, respectively (Table 1).

Odd positive integers that have the format of $6N + 1$, where N is a positive integer, will form odd base number sets where every other positive integer starting at the second even positive integer (e.g., $4x, 16x, 64x, \dots$, where x is an odd positive integer) will equal a positive integer that can be written as $3x' + 1$ (where x and x' are different odd positive integers). For example, if the odd positive integer is 7 (e.g., $6 + 1$), then 28 $[(9 \times 3) + 1]$, 112 $[(37 \times 3) + 1]$, and 448 $[(149 \times 3) + 1]$ are connected to odd positive integers 9, 37, and 149, respectively (Table 1).

Odd positive integers divisible by 3 form the most interesting, odd base number sets. Since each even positive integer in the odd base number set is divisible by 3, none of the even positive integers can be expressed by the formula $3x + 1$, where x an odd positive integer. This results in none of the even positive integers in the set being connected to another odd base number set. Unless the initial positive integer selected for analysis with the Collatz Conjecture is a positive integer divisible by 3, then none of the odd base number sets with an odd base positive integer divisible by 3 will be reached during the iteration of positive integers.

Each odd positive integer forms a separate and unique odd base number set comprising the odd positive integer as the lowest integer in the set and then doubling of the odd positive integer to generate the successive even positive integer of the set. Since each odd base number set contains a unique set of positive integers, the combination of the even $\left\lfloor \frac{N_0}{2} \right\rfloor$ and odd $[3N_0 + 1]$ number rules essentially requires the iteration down an odd base number set until reaching the odd positive integer at the base, then jumping to a different odd base number set. This continues until reaching the final odd base number set for “1.”

2.3 Dendritic (Tree-like) Pattern

At this point, it has been proven that the rule for even numbers organizes all positive integers into odd base number sets and the rule for odd numbers cause all the odd base numbers sets to be interconnected. The next thing to prove is that all interconnected sets go to “1.”

The odd base number set with a base positive integer of “1” can be viewed as the trunk of the tree: the primary (1°) branch. The primary branch has connected odd base number sets with base positive integers of “5”, “21”, and “85”, ...; which can be viewed as secondary (2°) branches [*i.e.*, “branch” will be used to represent an odd base number set]. Tertiary (3°) branches are connected to the secondary (2°) branches; 4° branches are connected to the 3° branches; which, in turn have 5° branches connected, and this continues for infinity. Each branch has an infinite quantity of even positive integers and there is an infinite quantity of branches (∞°).

In practice, when a positive integer is selected at random, the rule for even numbers causes the even positive integers for a particular odd base number set to go down

until reaching the odd positive integer at the base. Then, the rule for odd numbers causes the odd base number set to connect to an even positive integer in an odd base number set in the degree branch below it. The connected sets decrease from the original set “degree” down through the degrees until reaching the primary odd base number set of “1.” Therefore, all branches go to the lowest branch in the dendritic pattern.

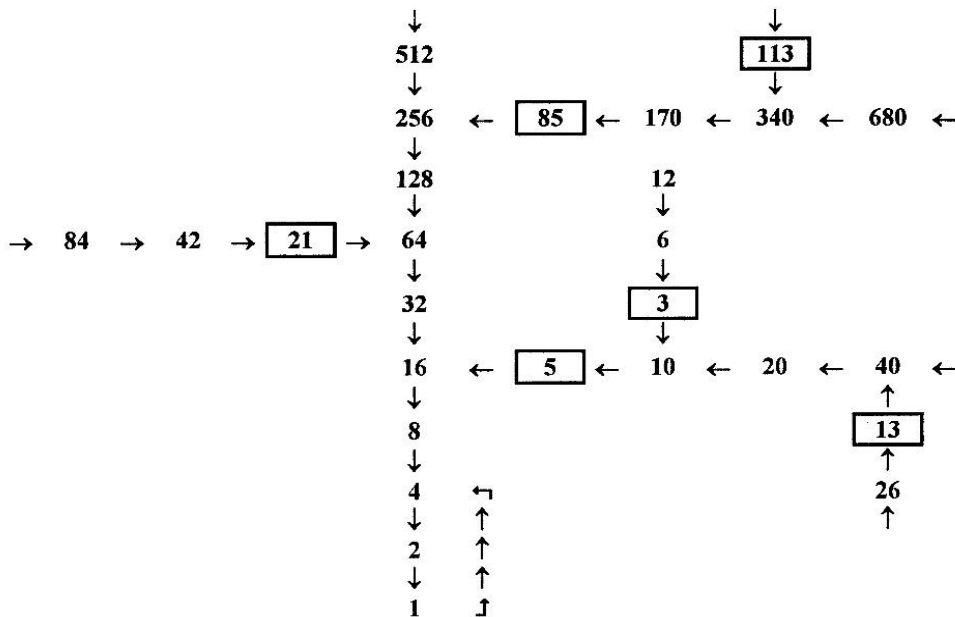


Figure 1. Illustrates a possible dendritic pattern produced by the Collatz rules of even and odd numbers, showing some 1°, 2°, and 3° branches.

This shows that the precise positive integer to be examined with the Collatz Conjecture is not important. What is important is the odd base number set in which the positive integer exists. For example, although the positive integer “33,554,432” is large and the positive integer “27” is small, “33,554,432” is in the primary branch and “27” is in a 42° branch.

If an even positive integer is in a particular odd base number set, it will have the same path to “1” as other even positive integers in the odd base number set. This shows that all even positive integers branches go to the odd positive integer at the base and all odd base numbers sets connect, which eventually go to “1.”

Proof 3

Let $k = 1$ (branch), so $1 = 3^{k-1}x$
 and each new branch, $x = \left(\frac{1}{2^*} + \frac{3}{2^*}x\right)$; where $* = 1, 2, 3, 4, \dots$ (position of connection on branch)

This implies:

$k+1$ branch,

$$1 = 3^{k-1} \times \left(\frac{1}{2^a} + \frac{3}{2^a}x\right)$$

$$1 = \frac{3^{k-1}}{2^a} + \frac{(3^{k-1} \times 3^1)}{2^a}x$$

$$1 = \frac{3^{k-1}}{2^a} + \frac{3^k}{2^a}x$$

$k+2$ branch,

$$1 = \frac{3^{k-1}}{2^a} + \left[\frac{3^k}{2^a} \times \left(\frac{1}{2^b} + \frac{3^1}{2^b}x\right) \right]$$

$$1 = \frac{3^{k-1}}{2^a} + \frac{3^k}{2^a 2^b} + \frac{3^{k+1}}{2^a 2^b}x$$

$k+3$ branch,

⋮

thus, all branches go to 1.

2.4 Rule for Odd Numbers Prevents Infinite Loops

A loop means that a line begins and returns to the same point. In relation to the Collatz Conjecture, this means that during iteration a number is reached and then ultimately returns to the same number. This loop could be small or very large before returning to the value. However, it would not be a single number, but a series of numbers included in the loop. Conversely, if there are no loops formed with the Collatz Conjecture, then no number is ever repeated and once a number is reached it never occurs again during the iterations.

As shown in Figure 1, the Collatz Conjecture forms a pattern that resembles a dendritic pattern, therefore, the values go down the number set until reaching the base number and then connects to a different number set to go down that number set until reaching the base number. If there is a loop during the actions of the Collatz Conjecture, then a number, any number, will be repeatedly reached over again after an undetermined number of branches. It does not matter if it is 2 branches or over 1,000 branches. If a number occurs again after being previously reached, then a loop is disclosed, and the Collatz Conjecture is not true.

The key to understanding why loops are impossible using the Collatz Conjecture rules lies in the development of an equation that shows the interconnectivity of the number sets. It has already been shown that each even positive integer of a number set has the format of $2^a X$, where X is an odd positive integer and $a = 0, 1, 2, 3, \dots$. Upon reaching an odd positive integer, the $3x + 1$ rule is applied, which generates an even positive integer. These two rules in combination form the equality:

$$2^a X' = 3X + 1 \quad (5)$$

or

$$X' = \frac{1}{2^a} + \frac{3}{2^a} X \quad (6)$$

where X' and X are different odd positive integers and $a = 0, 1, 2, 3, \dots$

A base positive integer of "1" is the only odd positive integer that forms an infinite loop within an odd base number set. There are no other odd positive integers that solve the $2^a X' = 3X + 1$ equation where $X = X'$ and $a = 0, 1, 2, 3, \dots$. It does not matter whether there is 1 branch, 2 branches, 3 branches or an infinite number of branches between the initial equation of $3X + 1$ and the final equation of $2^a X'$, there is no solution where $X = X'$ and $a = 0, 1, 2, 3, \dots$; except for $X = 1$.

$$\begin{aligned} 3X + 1 &= 2^a X \\ 1 &= 2^2 X - 3X \\ 1 &= 4X - 3X \\ 1 &= X \end{aligned} \quad (7)$$

where X is an odd positive integer and $a = 0, 1, 2, 3, \dots$

This equation can be solved to find the odd positive integer that connects to the number set, and the value of the number in the number set where the odd positive integer connects. For example, looking at Figure 1, 5 connects to the primary number set at 16. Putting those values in the equation:

$$\begin{aligned}
2^4 &= 3X + 1 \\
1 &= \frac{1}{2^4} + \frac{3}{2^4}X \\
\frac{16}{16} - \frac{1}{16} &= \frac{3}{16}X \\
\frac{15}{16} \times \frac{16}{3} &= X \\
5 &= X
\end{aligned} \tag{8}$$

To find the value of the odd positive integer that connects to the odd base number set of 5, and the value of the number in the number set where the odd positive integer connects, it is necessary to add another branch to the equation.

$$X' = \frac{1}{2^a} + \frac{3}{2^a 2^b} + \frac{9}{2^a 2^{2b}} X \tag{9}$$

Looking at Figure 1, 13 connects to the secondary number set at 40 (8×5). Putting those values in the equation:

$$\begin{aligned}
1 &= \frac{1}{2^4} + \frac{3}{2^4 2^3} + \frac{9}{2^4 2^3} X \\
1 &= \frac{1}{16} + \frac{3}{128} + \frac{9}{128} X \\
1 &= \frac{8}{128} + \frac{3}{128} + \frac{9}{128} X \\
\frac{128}{128} - \frac{11}{128} &= \frac{9}{128} X \\
\frac{117}{128} \times \frac{128}{9} &= X \\
13 &= X
\end{aligned} \tag{10}$$

These two examples demonstrate that the equation can be used to calculate the value of any odd positive integer connecting to a number set of any quantity of branches between the two numbers sets. If there is a loop, then this equation can calculate the value of the number that begins the loop, and which is the same number that is reached once the loop is completed. These examples assume the path will end at "1"; however, in the case of checking for loops, the starting/ending number could be any odd positive integer.

For the following equations, the starting number will be X and the ending number will be X' . If there is a loop, then $X = X'$. If there is no loop, then $X \neq X'$, and X and X' can be any odd positive integer.

To form a two-branch loop, odd base positive integer “ X ” would need to connect to odd base number set with odd base positive integer “ Y ,” which in turn would connect back to odd base number set with odd base positive integer “ X ,” and a and b are positive integers.

$$\begin{aligned}
 2^a X &= 3Y + 1 \\
 X &= \frac{3Y + 1}{2^a} \\
 2^b Y &= 3x + 1 \\
 Y &= \frac{3x + 1}{2^b} \\
 \\
 X' &= \frac{3Y + 1}{2^a} \\
 X' &= \frac{3Y}{2^a} + \frac{1}{2^a} \\
 &\quad 3\left(\frac{3x + 1}{2^b}\right) \\
 X' &= \frac{3\left(\frac{3x + 1}{2^b}\right)}{2^a} + \frac{1}{2^a} \\
 \\
 X' &= \frac{9X + 3}{2^a 2^b} + \frac{1}{2^a} \\
 X' &= \frac{9}{2^a 2^b} X + \frac{3}{2^a 2^b} + \frac{1}{2^a} \\
 \\
 \text{or} \\
 X' &= \frac{1}{2^a} + \frac{3}{2^a 2^b} + \frac{9}{2^a 2^b} X
 \end{aligned} \tag{11}$$

Additionally, to form a three-branch loop, odd base positive integer “ X ” would need to connect to odd base number set with odd base positive integer “ Y ,” which in turn would connect to odd base number set with odd base positive integer “ Z ,” which in turn would connect back to odd base number set with odd base positive integer “ X .”

As can be seen in the equations, each additional branch in a potential loop adds another fraction with the exponent of 3 increased by “1” and the denominator is multiplied by 2^n , where $3^n < 2^n$ and n is positive integer. This final fraction is multiplied by X , where X is an odd positive integer and $a, b, c, d, e, f,$ and g are positive integers. The denominator of the previous fraction is multiplied by 2^n .

$$2^a X = 3Y + 1$$

$$X = \frac{3Y + 1}{2^a}$$

$$2^b Y = 3Z + 1$$

$$Y = \frac{3Z + 1}{2^b}$$

$$2^c Z = 3x + 1$$

$$Z = \frac{3x + 1}{2^c}$$

$$X' = \frac{3Y + 1}{2^a}$$

$$X' = \frac{3Y}{2^a} + \frac{1}{2^a}$$

$$X' = \frac{3\left(\frac{3Z + 1}{2^b}\right)}{2^a} + \frac{1}{2^a}$$

$$X' = \frac{9Z + 3}{2^a 2^b} + \frac{1}{2^a}$$

(12)

$$X' = \frac{9\left(\frac{3x + 1}{2^c}\right)}{2^a 2^b} + \frac{3}{2^a 2^b} + \frac{1}{2^a}$$

$$X' = \frac{27}{2^a 2^b 2^c} X + \frac{9}{2^a 2^b 2^c} + \frac{3}{2^a 2^b} + \frac{1}{2^a}$$

or

$$X' = \frac{1}{2^a} + \frac{3}{2^a 2^b} + \frac{9}{2^a 2^b 2^c} + \frac{27}{2^a 2^b 2^c} X$$

The equation for multiple branches is as follows:

$$X' = \frac{1}{2^a} + \frac{3^1}{2^b} + \frac{3^2}{2^c} + \frac{3^3}{2^d} + \dots + \frac{3^{n-2}}{2^e} + \frac{3^{n-1}}{2^f} + \frac{3^n}{2^g} X \quad (13)$$

It is observed that all the equations in Table 2 have the same form. Section A is the value of the odd positive integer that is reached after the number of branches.

Table 2. Similar Format of Equations to Detect Loops

	SECTION		
	A	B	C
Two Branches	$X =$	$\frac{1}{2^a} + \frac{3}{2^a 2^b}$	$\frac{9}{2^a 2^b} X$
Three Branches	$X =$	$\frac{1}{2^a} + \frac{3}{2^a 2^b} + \frac{9}{2^a 2^b 2^c}$	$\frac{27}{2^a 2^b 2^c} X$
Multiple Branches	$X =$	$\frac{1}{2^a} + \frac{3^1}{2^b} + \dots + \frac{3^{n-2}}{2^e} + \frac{3^{n-1}}{2^f}$	$\frac{3^n}{2^g} X$

Section B is composed of a series of fractions with the form of $\frac{3^n}{2^n}$, where n is a positive integer. Section C is a fraction of form $\frac{3^n}{2^n}$, where $3^n < 2^n$ and n in 3^n is one less than the number of branches times the starting value to test for the formation of loop (see Table 2).

Therefore, Section B must equal X minus Section C. For example, a two-branch loop must have equality if there is a loop.

Proof 4

Assume there exists loops.

Therefore, $X' = X$; where $X', X = 3, 5, 7, 11, \dots$

and

$A = B + C$, when $X' = X$

let:

$$A - C = B$$

$$X - \frac{9}{2^a 2^b} X = \frac{2^b}{2^a 2^b} + \frac{3}{2^a 2^b}$$

$$\frac{2^a 2^b X - 9X}{2^a 2^b} = \frac{2^b}{2^a 2^b} + \frac{3}{2^a 2^b}$$

$$\frac{(2^a 2^b - 9)}{2^a 2^b} X = \frac{2^b + 3}{2^a 2^b}$$

so

$$(2^a 2^b - 9)X \neq 2^b + 3$$

Therefore

$$X' \neq X$$

Conclusion: There are no loops.

It is obvious there is no value for X that solves the equation since the left side only has fractions in the form of $\frac{3^n}{2^n}$, and X is an odd positive integer so it cannot be 2 and it cannot be 3 since numbers divisible by 3 have no connections. Since all the equations have the same form, the observation for a two-branch loop is additionally true for any number of branches. The Collatz Conjecture rules prevent the formation of loops. It is concluded that there are no loops formed during the iteration of positive integers using the rules of even and odd numbers.

Therefore, it was found that the rules for even and odd numbers prevents the formation of loops during the iteration to "1" and makes it mathematical impossible for a value to return to the same value no matter how many number sets are between the two values.

2.5 Rule for Odd Numbers Prevents the Possibility of Numbers Continuously Increasing to Infinity

The idea that the values of the numbers might continuously increase to infinity is an artifact of graphing the sequence of numbers during the Collatz Conjecture process. This graphing suggests that when the values of the numbers get farther from 1 that this indicates the failure of the process, rather than just the process of proceeding down the number sets to reach each subsequent base number that then connects to the next number set in series.

The value of the number increases every time the base number of the set is reached, and the odd number rule is applied. The value of the subsequent number increases by $3x + 1$ every time a base number is reached. Since this value is even, the value is automatically divided in half. It is at this point that the value is increased if the value after being divided in half is odd. Thus, the value of the base number in the following number set is larger in value than the previous base number.

The only instance in which this occurs is if the previous base number, after applying the rule for odd numbers, equals the first even positive integer (e.g., $2x$) of the number set with an odd base number with a $6N - 1$ format. Additionally, the subsequent value after applying the rule for odd numbers must equal the first even positive integer (e.g., $2x$) of the number set with an odd base number with a $6N - 1$ format. This series of number sets with a $6N - 1$ base number must continue for infinity.

It was observed that the rule for odd numbers, which is followed by the rule for even numbers $\frac{(3x + 1)}{2}$, produces equal numbers of subsequent number sets with $6N - 1$ and $6N + 1$ values, which alternate in occurrence. If $f(x) = \frac{(3x + 1)}{2}$, where $x = 1, 3, 5, 7, \dots$, is applied to the odd numbers in numerical order, the order of the subsequent base numbers will alternate between $6N - 1$ and $6N + 1$. If the results are sorted to place the $6N - 1$ base numbers together and then sorted in numerical order, $f(x) = \frac{(3x + 1)}{2}$ where x is the value of the previous iteration, will again produce an alternating occurrence between the two formats. The pattern is predictable. The first value in the series from the previous iteration will always be $6N + 1$.

For an odd number to continuously increase in value to infinity, it must continuously produce a value with the format of $6N - 1$. Due to the pattern with repeatedly applying $f(x) = \frac{(3x + 1)}{2}$, it was observed that the odd number in a series of odd numbers from 1 to $2^n - 1$ ($n \in \mathbb{N}$) with the longest series of values with a format of $6N - 1$ was the last number: $2^n - 1$.

For example, examining the odd numbers from $2^8 - 1$:

$$f^8(x) = \frac{(3x+1)}{2}, \text{ where } x = 255 \text{ produces the series of values as follows:}$$

$$383 \rightarrow 575 \rightarrow 863 \rightarrow 1295 \rightarrow 1943 \rightarrow 2915 \rightarrow 4373 \rightarrow 6560$$

The n^{th} number in the series will be even.

This finding was confirmed by Ren (2019). During a discussion of their data sets, they mentioned that the data set for $2^{100} - 1$ begins with 100 steps of $\frac{(3x+1)}{2}$ and the data set for $2^{10000} - 1$ begins with 10,000 steps of $\frac{(3x+1)}{2}$.

Therefore, no positive integer will continuously increase to infinity for every iteration of $f^n(x) = \frac{(3x+1)}{2}$, where $x = 2^n - 1$.

To prove that for all n , where n is a non-negative integer, $f^n(x) = 3x + 1$, when $x = 2^n - 1$ results in an even number, we can use mathematical induction.

PROOF 5

Let $f^n(x)$ be the mathematical statement:

$$\frac{(3x+1)}{2} \text{ is even, when } x = 2^n - 1$$

Base Case: $n = 1$.

$$f^1(x) = \frac{(3x+1)}{2} \text{ is even, when } x = 2^1 - 1 = 1$$

Substituting $x = 1$ into the equation, we get:

$$f^1(x) = \frac{(3 \times 1) + 1}{2}$$

$$f^1(x) = \frac{4}{2} = 2$$

2 is even, so the statement is TRUE.

Induction hypothesis:

assume $n = k$, where k is some non-negative integer. That is, $f^k(x) = \frac{(3x+1)}{2}$ is even, when $x = 2^k - 1$.

so,

$$f^k(x) = \frac{(3x+1)}{2}, x = 2^k - 1$$

$$f^k(x) = \frac{(3(2^k - 1) + 1)}{2}$$

$$f^k(x) = \frac{((3 \times 2^k) - 3) + 1}{2}$$

$$f^k(x) = \frac{(3 \times 2^k - 2)}{2}$$

$$f^k(x) = \frac{2((3 \times 2^{k-1}) - 1)}{2}$$

$$f^k(x) = (3 \times 2^{k-1}) - 1 = 2m, \text{ is even for some integer } m$$

$$\text{therefore, } 3 \times 2^{k-1} = 2m + 1$$

Induction step:

$$f^{k+1}(x) = \frac{(3x+1)}{2} \text{ is even, when } x = 2^{k+1} - 1$$

$$f^k(x) = \frac{(3 \times (2^{k+1} - 1) + 1)}{2}$$

$$f^k(x) = \frac{(3 \times 2^{k+1}) - 3 + 1}{2}$$

$$f^k(x) = \frac{(3 \times 2^{k+1}) - 2}{2}$$

$$f^k(x) = \frac{2((3 \times 2^k) - 1)}{2}$$

$$f^k(x) = (3 \times 2^k) - 1$$

$$f^{k+1}(x) = \frac{(3(3 \times 2^k) - 1) + 1}{2}$$

$$f^{k+1}(x) = \frac{((9 \times 2^k) - 3) + 1}{2}$$

$$f^{k+1}(x) = \frac{(9 \times 2^k) - 2}{2}$$

$$f^{k+1}(x) = \frac{2((9 \times 2^{k-1}) - 1)}{2}$$

$$f^{k+1}(x) = (9 \times 2^{k-1}) - 1$$

$$f^{k+1}(x) = (3 \times (3 \times 2^{k-1})) - 1$$

$$f^{k+1}(x) = (3 \times (2m + 1)) - 1$$

$$f^{k+1}(x) = 6m + 3 - 1$$

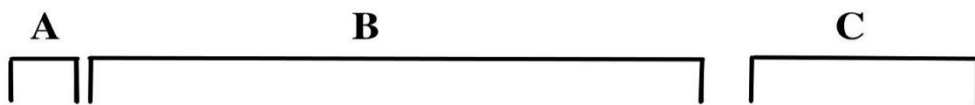
$$f^{k+1}(x) = 6m + 2$$

$6m + 2 = 2m + 2m + 2m + 2$, which is even, so the statement is *TRUE*.

$f(x)$ is correct for all non-negative integers n .

2.6 General Equation of Collatz Conjecture

The general equation is powerful in confirming the Collatz Conjecture proof. All the features of the Collatz Conjecture are generated by solving for different parameters of the general equation. The equation can be used to show that all iterations go to “1.” Additionally, the equation can be solved to show the individual odd positive integers which form the connections between the values from the selected positive integer to its termination. And finally, the equation can be solved for any odd positive integer, up to infinity, to determine how many steps it takes to go from the odd positive integer down to “1.”



$$1 = \frac{1}{2^a} + \frac{3^1}{2^{a+b}} + \frac{3^2}{2^{a+b+c}} + \dots + \frac{3^{n-1}}{2^{a+b+c+\dots+z}} + \frac{3^n}{2^{a+b+c+\dots+z}} X$$

Figure 2: General equation, where exponents are positive integers, and n is a positive integer and the exponent of “3” in the last fraction which is multiplied by X .

There are three important parts of the equation (Figure 2).

2.6.1 Section A

All Positive Integers Go to “1”

The value in Section A is always an odd positive integer. The value is “1” when the general equation is solving the Collatz Conjecture. Additionally, this value can be any odd positive integer when the equation is used to determine the odd positive integer further up the iteration from “1”.

2.6.2 Section B

Test with Small Number.

The general equation was initially tested to see if it correctly calculated a small number with a relatively short iteration. The iteration of the number “43” was selected and the sequence of values during the iteration are:

43, 130, 65, 196, 98, 49, 148, 74, 37, 112, 56, 28, 14, 7, 22, 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1

The general equation; however, uses the values from “1” up to the selected value, in this case, 43. So the order of the numbers must be reversed before using the general equation.

1, 2, 4, 8, 16, 5, 10, 20, 40, 13, 26, 52, 17, 34, 11, 22, 7, 14, 28, 56, 112, 37, 74, 148, 49, 98, 196, 65, 130, 43

These values are further organized to separate the odd positive integers into separate lines with the even positive integers following the odd positive integer on the same line. The quantity of even numbers on each line is counted. Beginning with the odd positive integer following the terminating “1”, each line of odd number is assigned a value of “3” raised to an exponent that increases by “1” each time. The quantity of even numbers is combined with the running total of even numbers in the rows above to obtain the value of the exponent of “2” (Table 3).

The value of “3” is divided by the value of “2” on each line to generate a series of fractions. The last fraction corresponding to the selected odd positive integer is multiplied by the last value of “3” divided by the last value of “2”.

$$1 = \frac{1}{2^4} + \frac{3^1}{2^7} + \frac{3^2}{2^9} + \frac{3^3}{2^{10}} + \frac{3^4}{2^{11}} + \frac{3^5}{2^{15}} + \frac{3^6}{2^{17}} + \frac{3^7}{2^{19}} + \frac{3^8}{2^{20}} + \left(\frac{3^9}{2^{20}} \times 43 \right) \quad (14)$$

It is possible to use the general equation to determine the value of the odd positive integer at intermediate positions during the iteration of the selected positive integer. The equation can be separated at any point to either use the equation from the value in Section A, usually 1, and solve for “X”; or the equation can be used starting from the selected number “X” and solve for the value in Section A.

The equation for “43” was separated at the fraction $\frac{3^6}{2^{17}}$ and each part was used to calculate “X” or Section A, respectively. The calculation using the first part only had to change the exponent of the fraction from 2^{17} to 2^{15} and multiplied by “X”. Solving for “X” gives 37.

$$1 = \frac{1}{2^4} + \frac{3^1}{2^7} + \frac{3^2}{2^9} + \frac{3^3}{2^{10}} + \frac{3^4}{2^{11}} + \frac{3^5}{2^{15}} + \left(\frac{3^6}{2^{15}} \times 37 \right) \quad (15)$$

Table 3: Organizing iteration data for use in general equation

Odd Number	3^n	Even Numbers				Quantity of Even	2^n
1	0	2	4	8	16	4	4
5	1	10	20	40		3	7
13	2	26	52			2	9
17	3	34				1	10
11	4	22				1	11
7	5	14	28	56	112	4	15
37	6	74	148			2	17
49	7	98	196			2	19
65	8	130				1	20
43	9						20

The calculation using the second part required more modifications to conform to the requirements of the general equation. The first fraction $\left(\frac{3^7}{2^{22}}\right)$ after the point of separation had to be modified to reflect it being the first fraction in the equation. The first fraction always has a numerator of “1” and a denominator of 2 to an exponent corresponding to the quantity of even numbers after the odd number, in this case “2”, (i.e., $\frac{1}{2^2}$). Each subsequent fraction was modified to have the exponent of “3” increasing by “1”, starting with the second fraction and the exponent of 2 was increased by the quantity of even numbers. The last fraction remained multiplied by “43.” Solving the modified equation for the value of Section A gives “37.”

$$37 = \frac{1}{2^2} + \frac{3^1}{2^4} + \frac{3^2}{2^5} + \left(\frac{3^3}{2^5} \times 43 \right) \quad (16)$$

Therefore, it does not matter where the equation is separated, the value of the iteration at that point can be solved by calculating either part. The answer will be the same value.

2.6.3 Test with Large Number

Once the general equation was confirmed to work with a small number, it was decided to check a larger number with a more complex equation. A 14-digit number (84484621575169) was randomly generated to test the equation. This number was iterated using the Collatz conjecture rules and the positions were recorded of the odd and even numbers.

The numbers were organized as described above and an equation was generated with Section A equaling “1” and Section C equaling the last fraction multiplied by 84484621575169. An online calculator with a precision of 10,000 decimals was used to calculate the equation [mathsisfun.com/calculator-precision]. It is important when calculating these large equations that the answers have sufficient precision, so the numbers are not rounded or truncated. Each decimal is needed to correctly calculate the answer. The value of “1” in Section A must be exactly “1” with enough zeros to show the precision. Any difference from 1.0000 means the equation is wrong.

$$\begin{aligned}
 1 = & \frac{1}{2^4} + \frac{3^1}{2^9} + \frac{3^2}{2^{10}} + \frac{3^3}{2^{11}} + \frac{3^4}{2^{14}} + \frac{3^5}{2^{18}} + \frac{3^6}{2^{20}} + \frac{3^7}{2^{22}} + \frac{3^8}{2^{26}} + \frac{3^9}{2^{27}} + \frac{3^{10}}{2^{28}} + \\
 & \frac{3^{11}}{2^{29}} + \frac{3^{12}}{2^{32}} + \frac{3^{13}}{2^{33}} + \frac{3^{14}}{2^{34}} + \frac{3^{15}}{2^{35}} + \frac{3^{16}}{2^{36}} + \frac{3^{17}}{2^{37}} + \frac{3^{18}}{2^{39}} + \frac{3^{19}}{2^{40}} + \frac{3^{20}}{2^{42}} + \frac{3^{21}}{2^{43}} + \\
 & \frac{3^{22}}{2^{44}} + \frac{3^{23}}{2^{47}} + \frac{3^{24}}{2^{49}} + \frac{3^{25}}{2^{50}} + \frac{3^{26}}{2^{51}} + \frac{3^{27}}{2^{52}} + \frac{3^{28}}{2^{54}} + \frac{3^{29}}{2^{55}} + \frac{3^{30}}{2^{56}} + \frac{3^{31}}{2^{58}} + \frac{3^{32}}{2^{59}} + \\
 & \frac{3^{33}}{2^{61}} + \frac{3^{34}}{2^{63}} + \frac{3^{35}}{2^{64}} + \frac{3^{36}}{2^{65}} + \frac{3^{37}}{2^{66}} + \frac{3^{38}}{2^{67}} + \frac{3^{39}}{2^{69}} + \frac{3^{40}}{2^{72}} + \frac{3^{41}}{2^{74}} + \frac{3^{42}}{2^{76}} + \frac{3^{43}}{2^{78}} + \\
 & \frac{3^{44}}{2^{81}} + \frac{3^{45}}{2^{83}} + \frac{3^{46}}{2^{85}} + \frac{3^{47}}{2^{86}} + \frac{3^{48}}{2^{88}} + \frac{3^{49}}{2^{90}} + \frac{3^{50}}{2^{92}} + \frac{3^{51}}{2^{94}} + \frac{3^{52}}{2^{97}} + \frac{3^{53}}{2^{101}} + \frac{3^{54}}{2^{105}} + \\
 & \frac{3^{55}}{2^{109}} + \frac{3^{56}}{2^{111}} + \frac{3^{57}}{2^{113}} + \frac{3^{58}}{2^{116}} + \frac{3^{59}}{2^{118}} + \frac{3^{60}}{2^{121}} + \frac{3^{61}}{2^{123}} + \frac{3^{62}}{2^{124}} + \frac{3^{63}}{2^{125}} + \frac{3^{64}}{2^{127}} + \\
 & \frac{3^{65}}{2^{131}} + \frac{3^{66}}{2^{133}} + \frac{3^{67}}{2^{135}} + \frac{3^{68}}{2^{138}} + \frac{3^{69}}{2^{140}} + \frac{3^{70}}{2^{143}} + \frac{3^{71}}{2^{147}} + \frac{3^{72}}{2^{149}} + \frac{3^{73}}{2^{151}} + \frac{3^{74}}{2^{155}} + \\
 & \frac{3^{75}}{2^{157}} + \frac{3^{76}}{2^{158}} + \frac{3^{77}}{2^{161}} + \frac{3^{78}}{2^{163}} + \frac{3^{79}}{2^{167}} + \frac{3^{80}}{2^{171}} + \frac{3^{81}}{2^{173}} + \frac{3^{82}}{2^{174}} + \frac{3^{83}}{2^{178}} + \frac{3^{84}}{2^{180}} + \\
 & \frac{3^{85}}{2^{182}} + \frac{3^{86}}{2^{184}} + \frac{3^{87}}{2^{186}} + \left(\frac{3^{88}}{2^{186}} \times 84484621575169 \right)
 \end{aligned} \tag{17}$$

The equation for “84484621575169” was correct and the value in Section A was 1.0 (186 decimals).

2.6.4 Test with Very Large Number

The final test of the general equation used a very large number. Ren (2018) developed a computer program to quickly test very large numbers with the Collatz Conjecture. The output from his program was either “1” for an odd number step or “0” for an even number step. He published the data sets from his tests.

A data set for the output of using his program to test the number $2^{10000} - 1$ was used for this final test of the general equation. The data set had to be modified as described above. Additionally, the data set had to be modified to change each occurrence of “1” to “10”, since the program automatically recognized that each odd number step generated an even number, so “1” indicated an odd number step and an even number step. [Appendix]

The data set of Wei (2018) did not give the values during the iteration, just a printout of “1’s” and “0’s”. The length of the equation using this data set had to be limited so as not to exceed the precision of the online calculator. Therefore, only the first 5,000 fractions were used to calculate the value of the iteration from that point. The entire equation for the iteration of $2^{10000} - 1$ consisted of 24,617 fractions.

Calculating the equation with the first 5,000 fractions gave a result for “X” having 609 digits. The precision necessary for this calculation was 9,949 decimal places. The iteration of this number requires 14,950 steps. [Appendix]

2.6.5 Section C

Solving for the Positive Integer

The power of the general equation is best illustrated by its ability to solve for the fractions in Section B when only the selected positive integer is known. The final fraction in the series contains X, where X represents either the odd positive integer selected or the base number, which is odd, of the even number selected. The fraction is one positive integer higher of the exponent of “3” and the same exponent of “2” as the previous fraction.

$$\frac{3^n}{2^y} \times X, \quad (18)$$

where n and y are positive integers and X is an odd positive integer.

The general equation calculates the number of steps in the iteration of the selected number. The number of steps is calculated by adding the exponents of 3 and 2 in the fraction of the final term. For example, the positive integer “43” takes 29 steps

from “43” to “1.” When $x = 43$, the exponent for 3 is “9” and the exponent for 2 is “20.”

$$\frac{3^9}{2^{20}} \times 43 \quad (19)$$

Solving for the fraction in Section C, when the tested positive integer is known, will disclose sufficient information to solve for the values of the fractions in Section B. If the odd positive integer to be tested is multiplied by fractions with various combinations of exponents to the numerator (3) and denominator (2); which give a value between 0.95 and 0.80, will disclose possible values for the exponents to the numerator (3) and denominator (2) of the final fraction in Section C.

For example, if the odd positive integer to be tested is 61, then one of the values between 0.95 and 0.80 is 0.904724121093750 for the exponent of “3” being 5 and the exponent of “2” being 14.

$$\frac{3^5}{2^{14}} \times 61 = 0.904724121093750 \quad (20)$$

The difference between 1 and the identified value is 0.09527587890625.

$$1 - 0.904724121093750 = 0.09527587890625 \quad (21)$$

This information tells us that Section B will have 5 fractions and the lowest common denominator for all fractions will be 2^{14} . We know the numerator of each fraction will be 1, 3^1 , 3^2 , 3^3 , and 3^4 . Although we do not know the exact values of the denominators of each fraction, we do know that the exponents of “2” increase in value for each subsequent fraction until the last exponent of “2” is 14.

$$0.09527587890625 = \frac{1}{2^{\alpha}} + \frac{3^1}{2^{\beta}} + \frac{3^2}{2^{\gamma}} + \frac{3^3}{2^{\delta}} + \frac{3^4}{2^{14}}, \quad (22)$$

where $\alpha < \beta < \gamma < \delta$

Converting each fraction to the value of the lowest common denominator

$$2^{14} = 16384 \quad (23)$$

gives the value of 1561 ($0.09527587890625 \times 2^{14}$) for Section B (Table 4).

$$16384 \times 0.09527587890625 = 1561 \quad (24)$$

$$1561 = (1 \times 2^{(14-a)}) + (3^1 \times 2^{(14-b)}) + (3^2 \times 2^{(14-c)}) + (3^3 \times 2^{(14-d)}) + (3^4), \quad (25)$$

where a, b, c and d are positive integers and $a > b > c > d$.

Table 4: Calculating the values of Section B

1561		$(2^{(14-a)} + (3 \times 2^{(14-b)}) + (3^2 \times 2^{(14-c)}) + (3^3 \times 2^{(14-d)}) + (3^4))$
-81	minus 3^4	
1480	subtotal	$(2^{(14-a)} + (3 \times 2^{(14-b)}) + (3^2 \times 2^{(14-c)}) + (3^3 \times 2^{(14-d)}))$
740	$\frac{n}{2}$	$(2^{(14-a)-1} + (3 \times 2^{(14-b)-1}) + (3^2 \times 2^{(14-c)-1}) + (3^3 \times 2^{(14-d)-1}))$
370	$\frac{n}{2}$	$(2^{(14-a)-2} + (3 \times 2^{(14-b)-2}) + (3^2 \times 2^{(14-c)-2}) + (3^3 \times 2^{(14-d)-2}))$
185	$\frac{n}{2}$	$(2^{(14-a)-3} + (3 \times 2^{(14-b)-3}) + (3^2 \times 2^{(14-c)-3}) + (3^3 \times 2^{(0)}))$
-27	minus 3^3	
158	subtotal	$(2^{(14-a)-3} + (3 \times 2^{(14-b)-3}) + (3^2 \times 2^{(14-c)-3}))$
79	$\frac{n}{2}$	$(2^{(14-a)-4} + (3 \times 2^{(14-b)-4}) + (3^2 \times 2^{(0)}))$
-9	minus 3^2	
70	subtotal	$(2^{(14-a)-4} + (3 \times 2^{(14-b)-4}))$
35	$\frac{n}{2}$	$(2^{(14-a)-5} + (3 \times 2^{(0)}))$
-3	minus 3^1	
32	subtotal	$(2^{(14-a)-5})$
16	$\frac{n}{2}$	$(2^{(14-a)-6})$
8	$\frac{n}{2}$	$(2^{(14-a)-7})$
4	$\frac{n}{2}$	$(2^{(14-a)-8})$
2	$\frac{n}{2}$	$(2^{(14-a)-9})$
1	$\frac{n}{2}$	(2^0)

At this point, it is just a matter of subtracting the values of “3” to the appropriate exponent that matches the last fraction in Section B as it is divided by 2 to remove the exponents of “2” as it is processed.

Counting how many times the quantity is divided by 2 before each subtraction of the value of “3” allows the calculation of the individual denominator for each fraction. The denominator of the last fraction is known since it is the identified exponent of “2.” The number of times the quantity was divided by 2 is subtracted from the identified exponent of “2”; which gives the value of the exponent for the denominator.

$$14 - a > 14 - b > 14 - c > 14 - d \quad (26)$$

Therefore, the equation for 61 is:

$$1 = \frac{1}{2^{14-10}} + \frac{3^1}{2^{14-5}} + \frac{3^2}{2^{14-4}} + \frac{3^3}{2^{14-3}} + \frac{3^4}{2^{14}} + \left(\frac{3^5}{2^{14}} \times 61 \right) \quad (27)$$

$$1 = \frac{1}{2^4} + \frac{3^1}{2^9} + \frac{3^2}{2^{10}} + \frac{3^3}{2^{11}} + \frac{3^4}{2^{14}} + \left(\frac{3^5}{2^{14}} \times 61 \right) \quad (28)$$

Solving the equation gives

$$1.0000000000000000 = 0.095275878906250 + 0.904724121093750 \quad (29)$$

3. Conclusion

For all positive integers:

- If the rule for even positive integers is $\frac{N_0}{2}$:
 - o Then the rule organizes all positive integers into odd base number sets with an odd positive integer as the base positive integer and each successive even positive integer in the set is double the previous positive integer.
- If the rule for odd positive integers is $3N_0 + 1$:
 - o Then the rule interconnects the base odd positive integer (N) of an odd base number set to an even positive integer ($2^a X'$, where a is a positive integer and X' is odd positive integer different from X) in a different odd base number set.

- If the rule for odd positive integers $3N_0 + 1$ generates an even positive integer ($2^a X'$, where a is a positive integer and X' is odd positive integer different from X) in a different odd base number set:

- o Then successive odd base number sets cannot eventually loop back to a previous odd base number set because there is no positive integer solution to the equations and the values cannot continually increase to infinity.

- If the Collatz Conjecture proof is correct, it predicts a general equation of the following format:

$$1 = \frac{1}{2^a} + \frac{3^1}{2^{a+b}} + \frac{3^2}{2^{a+b+c}} + \dots + \frac{3^{n-1}}{2^{a+b+c+\dots+z}} + \frac{3^n}{2^{a+b+c+\dots+z}} X, \quad (30)$$

where exponents are positive integers and X is odd positive integer.

- o Then the general equation calculates all the parameters of the Conjecture (Figure 2).

1. demonstrates all positive integers go to “1”,
2. calculates the number of steps from the selected positive integer to “1”,
3. shows each connecting odd positive integer in the pathway from the initial odd positive integer to “1”,
4. calculates Section B after only knowing the odd positive integer.

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4. Appendix

4.1 Equation of Very Large Number

$$\begin{aligned}
 1 = & \frac{1}{2^4} + \frac{3^1}{2^9} + \frac{3^2}{2^{10}} + \frac{3^3}{2^{11}} + \frac{3^4}{2^{16}} + \frac{3^5}{2^{17}} + \frac{3^6}{2^{19}} + \frac{3^7}{2^{23}} + \frac{3^8}{2^{26}} + \frac{3^9}{2^{30}} + \frac{3^{10}}{2^{32}} + \\
 & \frac{3^{11}}{2^{34}} + \frac{3^{12}}{2^{35}} + \frac{3^{13}}{2^{38}} + \frac{3^{14}}{2^{40}} + \frac{3^{15}}{2^{41}} + \frac{3^{16}}{2^{43}} + \frac{3^{17}}{2^{46}} + \frac{3^{18}}{2^{47}} + \frac{3^{19}}{2^{53}} + \frac{3^{20}}{2^{54}} + \frac{3^{21}}{2^{55}} + \\
 & \frac{3^{22}}{2^{56}} + \frac{3^{23}}{2^{57}} + \frac{3^{24}}{2^{58}} + \frac{3^{25}}{2^{59}} + \frac{3^{26}}{2^{61}} + \frac{3^{27}}{2^{63}} + \frac{3^{28}}{2^{64}} + \frac{3^{29}}{2^{65}} + \frac{3^{30}}{2^{68}} + \frac{3^{31}}{2^{69}} + \frac{3^{32}}{2^{71}} + \\
 & \frac{3^{33}}{2^{72}} + \frac{3^{34}}{2^{73}} + \frac{3^{35}}{2^{79}} + \frac{3^{36}}{2^{80}} + \frac{3^{37}}{2^{81}} + \frac{3^{38}}{2^{82}} + \frac{3^{39}}{2^{83}} + \frac{3^{40}}{2^{84}} + \frac{3^{41}}{2^{89}} + \frac{3^{42}}{2^{91}} + \frac{3^{43}}{2^{93}} + \\
 & \frac{3^{44}}{2^{94}} + \frac{3^{45}}{2^{96}} + \frac{3^{46}}{2^{99}} + \frac{3^{47}}{2^{102}} + \frac{3^{48}}{2^{104}} + \frac{3^{49}}{2^{107}} + \frac{3^{50}}{2^{110}} + \frac{3^{51}}{2^{114}} + \frac{3^{52}}{2^{115}} + \frac{3^{53}}{2^{120}} + \\
 & \frac{3^{54}}{2^{121}} + \frac{3^{55}}{2^{123}} + \frac{3^{56}}{2^{124}} + \frac{3^{57}}{2^{125}} + \frac{3^{58}}{2^{128}} + \frac{3^{59}}{2^{129}} + \frac{3^{60}}{2^{132}} + \frac{3^{61}}{2^{133}} + \frac{3^{62}}{2^{135}} + \frac{3^{63}}{2^{136}} + \\
 & \frac{3^{64}}{2^{137}} + \frac{3^{65}}{2^{140}} + \frac{3^{66}}{2^{141}} + \frac{3^{67}}{2^{142}} + \frac{3^{68}}{2^{143}} + \frac{3^{69}}{2^{144}} + \frac{3^{70}}{2^{145}} + \frac{3^{71}}{2^{146}} + \frac{3^{72}}{2^{147}} + \frac{3^{73}}{2^{149}} + \\
 & \frac{3^{74}}{2^{150}} + \frac{3^{75}}{2^{152}} + \frac{3^{76}}{2^{154}} + \frac{3^{77}}{2^{155}} + \frac{3^{78}}{2^{157}} + \frac{3^{79}}{2^{161}} + \frac{3^{80}}{2^{162}} + \frac{3^{81}}{2^{167}} + \frac{3^{82}}{2^{169}} + \frac{3^{83}}{2^{177}} + \\
 & \frac{3^{84}}{2^{179}} + \frac{3^{85}}{2^{180}} + \frac{3^{86}}{2^{182}} + \frac{3^{87}}{2^{183}} + \frac{3^{88}}{2^{184}} + \frac{3^{89}}{2^{185}} + \frac{3^{90}}{2^{188}} + \frac{3^{91}}{2^{198}} + \frac{3^{92}}{2^{199}} + \frac{3^{93}}{2^{200}} + \\
 & \frac{3^{94}}{2^{201}} + \frac{3^{95}}{2^{202}} + \frac{3^{96}}{2^{203}} + \frac{3^{97}}{2^{204}} + \frac{3^{98}}{2^{207}} + \frac{3^{99}}{2^{208}} + \frac{3^{100}}{2^{210}} + \frac{3^{101}}{2^{211}} + \frac{3^{102}}{2^{214}} + \frac{3^{103}}{2^{219}} + \\
 & \frac{3^{104}}{2^{223}} + \frac{3^{105}}{2^{224}} + \frac{3^{106}}{2^{225}} + \frac{3^{107}}{2^{229}} + \frac{3^{108}}{2^{230}} + \frac{3^{109}}{2^{232}} + \frac{3^{110}}{2^{233}} + \frac{3^{111}}{2^{236}} + \frac{3^{112}}{2^{237}} + \frac{3^{113}}{2^{238}} + \\
 & \frac{3^{114}}{2^{239}} + \frac{3^{115}}{2^{241}} + \frac{3^{116}}{2^{245}} + \frac{3^{117}}{2^{248}} + \frac{3^{118}}{2^{252}} + \frac{3^{119}}{2^{253}} + \frac{3^{120}}{2^{256}} + \frac{3^{121}}{2^{260}} + \frac{3^{122}}{2^{261}} + \frac{3^{123}}{2^{265}} +
 \end{aligned}$$

$$\begin{aligned}
& \frac{3^{124}}{2^{266}} + \frac{3^{125}}{2^{268}} + \frac{3^{126}}{2^{271}} + \frac{3^{127}}{2^{272}} + \frac{3^{128}}{2^{273}} + \frac{3^{129}}{2^{274}} + \frac{3^{130}}{2^{275}} + \frac{3^{131}}{2^{277}} + \frac{3^{132}}{2^{279}} + \frac{3^{133}}{2^{281}} + \\
& \frac{3^{134}}{2^{282}} + \frac{3^{135}}{2^{284}} + \frac{3^{136}}{2^{285}} + \frac{3^{137}}{2^{286}} + \frac{3^{138}}{2^{287}} + \frac{3^{139}}{2^{289}} + \frac{3^{140}}{2^{290}} + \frac{3^{141}}{2^{292}} + \frac{3^{142}}{2^{295}} + \frac{3^{143}}{2^{297}} + \\
& \frac{3^{144}}{2^{300}} + \frac{3^{145}}{2^{301}} + \frac{3^{146}}{2^{302}} + \frac{3^{147}}{2^{304}} + \frac{3^{148}}{2^{306}} + \frac{3^{149}}{2^{307}} + \frac{3^{150}}{2^{309}} + \frac{3^{151}}{2^{310}} + \frac{3^{152}}{2^{313}} + \frac{3^{153}}{2^{315}} + \\
& \frac{3^{154}}{2^{316}} + \frac{3^{155}}{2^{318}} + \frac{3^{156}}{2^{320}} + \frac{3^{157}}{2^{322}} + \frac{3^{158}}{2^{323}} + \frac{3^{159}}{2^{325}} + \frac{3^{160}}{2^{327}} + \frac{3^{161}}{2^{328}} + \frac{3^{162}}{2^{330}} + \frac{3^{163}}{2^{332}} + \\
& \frac{3^{164}}{2^{333}} + \frac{3^{165}}{2^{334}} + \frac{3^{166}}{2^{337}} + \frac{3^{167}}{2^{338}} + \frac{3^{168}}{2^{339}} + \frac{3^{169}}{2^{344}} + \frac{3^{170}}{2^{345}} + \frac{3^{171}}{2^{347}} + \frac{3^{172}}{2^{348}} + \frac{3^{173}}{2^{349}} + \\
& \frac{3^{174}}{2^{350}} + \frac{3^{175}}{2^{353}} + \frac{3^{176}}{2^{356}} + \frac{3^{177}}{2^{357}} + \frac{3^{178}}{2^{358}} + \frac{3^{179}}{2^{360}} + \frac{3^{180}}{2^{364}} + \frac{3^{181}}{2^{365}} + \frac{3^{182}}{2^{367}} + \frac{3^{183}}{2^{368}} + \\
& \frac{3^{184}}{2^{369}} + \frac{3^{185}}{2^{370}} + \frac{3^{186}}{2^{371}} + \frac{3^{187}}{2^{372}} + \frac{3^{188}}{2^{378}} + \frac{3^{189}}{2^{379}} + \frac{3^{190}}{2^{381}} + \frac{3^{191}}{2^{382}} + \frac{3^{192}}{2^{383}} + \frac{3^{193}}{2^{384}} + \\
& \frac{3^{194}}{2^{389}} + \frac{3^{195}}{2^{390}} + \frac{3^{196}}{2^{392}} + \frac{3^{197}}{2^{393}} + \frac{3^{198}}{2^{394}} + \frac{3^{199}}{2^{395}} + \frac{3^{200}}{2^{396}} + \frac{3^{201}}{2^{398}} + \frac{3^{202}}{2^{403}} + \frac{3^{203}}{2^{405}} + \\
& \frac{3^{204}}{2^{406}} + \frac{3^{205}}{2^{407}} + \frac{3^{206}}{2^{409}} + \frac{3^{207}}{2^{411}} + \frac{3^{208}}{2^{412}} + \frac{3^{209}}{2^{415}} + \frac{3^{210}}{2^{417}} + \frac{3^{211}}{2^{421}} + \frac{3^{212}}{2^{423}} + \frac{3^{213}}{2^{424}} + \\
& \frac{3^{214}}{2^{425}} + \frac{3^{215}}{2^{427}} + \frac{3^{216}}{2^{428}} + \frac{3^{217}}{2^{429}} + \frac{3^{218}}{2^{430}} + \frac{3^{219}}{2^{433}} + \frac{3^{220}}{2^{434}} + \frac{3^{221}}{2^{436}} + \frac{3^{222}}{2^{437}} + \frac{3^{223}}{2^{441}} + \\
& \frac{3^{224}}{2^{443}} + \frac{3^{225}}{2^{444}} + \frac{3^{226}}{2^{447}} + \frac{3^{227}}{2^{450}} + \frac{3^{228}}{2^{451}} + \frac{3^{229}}{2^{455}} + \frac{3^{230}}{2^{456}} + \frac{3^{231}}{2^{459}} + \frac{3^{232}}{2^{461}} + \frac{3^{233}}{2^{462}} + \\
& \frac{3^{234}}{2^{463}} + \frac{3^{235}}{2^{467}} + \frac{3^{236}}{2^{471}} + \frac{3^{237}}{2^{472}} + \frac{3^{238}}{2^{474}} + \frac{3^{239}}{2^{476}} + \frac{3^{240}}{2^{477}} + \frac{3^{241}}{2^{479}} + \frac{3^{242}}{2^{481}} + \frac{3^{243}}{2^{486}} + \\
& \frac{3^{244}}{2^{488}} + \frac{3^{245}}{2^{489}} + \frac{3^{246}}{2^{491}} + \frac{3^{247}}{2^{494}} + \frac{3^{248}}{2^{496}} + \frac{3^{249}}{2^{497}} + \frac{3^{250}}{2^{499}} + \frac{3^{251}}{2^{500}} + \frac{3^{252}}{2^{501}} + \frac{3^{253}}{2^{502}} + \\
& \frac{3^{254}}{2^{505}} + \frac{3^{255}}{2^{506}} + \frac{3^{256}}{2^{510}} + \frac{3^{257}}{2^{511}} + \frac{3^{258}}{2^{513}} + \frac{3^{259}}{2^{516}} + \frac{3^{260}}{2^{517}} + \frac{3^{261}}{2^{524}} + \frac{3^{262}}{2^{525}} + \frac{3^{263}}{2^{527}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{264}}{2^{528}} + \frac{3^{265}}{2^{529}} + \frac{3^{266}}{2^{533}} + \frac{3^{267}}{2^{534}} + \frac{3^{268}}{2^{535}} + \frac{3^{269}}{2^{542}} + \frac{3^{270}}{2^{543}} + \frac{3^{271}}{2^{544}} + \frac{3^{272}}{2^{547}} + \frac{3^{273}}{2^{549}} + \\
& \frac{3^{274}}{2^{550}} + \frac{3^{275}}{2^{551}} + \frac{3^{276}}{2^{552}} + \frac{3^{277}}{2^{555}} + \frac{3^{278}}{2^{556}} + \frac{3^{279}}{2^{559}} + \frac{3^{280}}{2^{561}} + \frac{3^{281}}{2^{564}} + \frac{3^{282}}{2^{568}} + \frac{3^{283}}{2^{569}} + \\
& \frac{3^{284}}{2^{574}} + \frac{3^{285}}{2^{576}} + \frac{3^{286}}{2^{579}} + \frac{3^{287}}{2^{581}} + \frac{3^{288}}{2^{582}} + \frac{3^{289}}{2^{583}} + \frac{3^{290}}{2^{587}} + \frac{3^{291}}{2^{588}} + \frac{3^{292}}{2^{590}} + \frac{3^{293}}{2^{592}} + \\
& \frac{3^{294}}{2^{593}} + \frac{3^{295}}{2^{594}} + \frac{3^{296}}{2^{595}} + \frac{3^{297}}{2^{596}} + \frac{3^{298}}{2^{597}} + \frac{3^{299}}{2^{600}} + \frac{3^{300}}{2^{601}} + \frac{3^{301}}{2^{602}} + \frac{3^{302}}{2^{606}} + \frac{3^{303}}{2^{607}} + \\
& \frac{3^{304}}{2^{608}} + \frac{3^{305}}{2^{609}} + \frac{3^{306}}{2^{613}} + \frac{3^{307}}{2^{614}} + \frac{3^{308}}{2^{615}} + \frac{3^{309}}{2^{616}} + \frac{3^{310}}{2^{617}} + \frac{3^{311}}{2^{619}} + \frac{3^{312}}{2^{621}} + \frac{3^{313}}{2^{623}} + \\
& \frac{3^{314}}{2^{624}} + \frac{3^{315}}{2^{626}} + \frac{3^{316}}{2^{627}} + \frac{3^{317}}{2^{631}} + \frac{3^{318}}{2^{634}} + \frac{3^{319}}{2^{635}} + \frac{3^{320}}{2^{636}} + \frac{3^{321}}{2^{638}} + \frac{3^{322}}{2^{639}} + \frac{3^{323}}{2^{640}} + \\
& \frac{3^{324}}{2^{641}} + \frac{3^{325}}{2^{647}} + \frac{3^{326}}{2^{649}} + \frac{3^{327}}{2^{651}} + \frac{3^{328}}{2^{653}} + \frac{3^{329}}{2^{654}} + \frac{3^{330}}{2^{655}} + \frac{3^{331}}{2^{656}} + \frac{3^{332}}{2^{657}} + \frac{3^{333}}{2^{658}} + \\
& \frac{3^{334}}{2^{659}} + \frac{3^{335}}{2^{660}} + \frac{3^{336}}{2^{661}} + \frac{3^{337}}{2^{663}} + \frac{3^{338}}{2^{665}} + \frac{3^{339}}{2^{667}} + \frac{3^{340}}{2^{668}} + \frac{3^{341}}{2^{670}} + \frac{3^{342}}{2^{671}} + \frac{3^{343}}{2^{672}} + \\
& \frac{3^{344}}{2^{674}} + \frac{3^{345}}{2^{677}} + \frac{3^{346}}{2^{678}} + \frac{3^{347}}{2^{679}} + \frac{3^{348}}{2^{681}} + \frac{3^{349}}{2^{682}} + \frac{3^{350}}{2^{684}} + \frac{3^{351}}{2^{685}} + \frac{3^{352}}{2^{686}} + \frac{3^{353}}{2^{687}} + \\
& \frac{3^{354}}{2^{691}} + \frac{3^{355}}{2^{692}} + \frac{3^{356}}{2^{695}} + \frac{3^{357}}{2^{698}} + \frac{3^{358}}{2^{699}} + \frac{3^{359}}{2^{700}} + \frac{3^{360}}{2^{701}} + \frac{3^{361}}{2^{703}} + \frac{3^{362}}{2^{705}} + \frac{3^{363}}{2^{706}} + \\
& \frac{3^{364}}{2^{709}} + \frac{3^{365}}{2^{710}} + \frac{3^{366}}{2^{711}} + \frac{3^{367}}{2^{712}} + \frac{3^{368}}{2^{715}} + \frac{3^{369}}{2^{717}} + \frac{3^{370}}{2^{718}} + \frac{3^{371}}{2^{720}} + \frac{3^{372}}{2^{721}} + \frac{3^{373}}{2^{723}} + \\
& \frac{3^{374}}{2^{725}} + \frac{3^{375}}{2^{727}} + \frac{3^{376}}{2^{729}} + \frac{3^{377}}{2^{730}} + \frac{3^{378}}{2^{734}} + \frac{3^{379}}{2^{735}} + \frac{3^{380}}{2^{736}} + \frac{3^{381}}{2^{739}} + \frac{3^{382}}{2^{741}} + \frac{3^{383}}{2^{743}} + \\
& \frac{3^{384}}{2^{744}} + \frac{3^{385}}{2^{745}} + \frac{3^{386}}{2^{747}} + \frac{3^{387}}{2^{748}} + \frac{3^{388}}{2^{751}} + \frac{3^{389}}{2^{752}} + \frac{3^{390}}{2^{753}} + \frac{3^{391}}{2^{754}} + \frac{3^{392}}{2^{760}} + \frac{3^{393}}{2^{763}} + \\
& \frac{3^{394}}{2^{766}} + \frac{3^{395}}{2^{767}} + \frac{3^{396}}{2^{768}} + \frac{3^{397}}{2^{769}} + \frac{3^{398}}{2^{773}} + \frac{3^{399}}{2^{774}} + \frac{3^{400}}{2^{776}} + \frac{3^{401}}{2^{778}} + \frac{3^{402}}{2^{783}} + \frac{3^{403}}{2^{784}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{404}}{2^{785}} + \frac{3^{405}}{2^{786}} + \frac{3^{406}}{2^{788}} + \frac{3^{407}}{2^{789}} + \frac{3^{408}}{2^{790}} + \frac{3^{409}}{2^{794}} + \frac{3^{410}}{2^{795}} + \frac{3^{411}}{2^{796}} + \frac{3^{412}}{2^{797}} + \frac{3^{413}}{2^{799}} + \\
& \frac{3^{414}}{2^{800}} + \frac{3^{415}}{2^{803}} + \frac{3^{416}}{2^{805}} + \frac{3^{417}}{2^{806}} + \frac{3^{418}}{2^{807}} + \frac{3^{419}}{2^{808}} + \frac{3^{420}}{2^{809}} + \frac{3^{421}}{2^{810}} + \frac{3^{422}}{2^{812}} + \frac{3^{423}}{2^{813}} + \\
& \frac{3^{424}}{2^{814}} + \frac{3^{425}}{2^{818}} + \frac{3^{426}}{2^{819}} + \frac{3^{427}}{2^{825}} + \frac{3^{428}}{2^{826}} + \frac{3^{429}}{2^{828}} + \frac{3^{430}}{2^{829}} + \frac{3^{431}}{2^{832}} + \frac{3^{432}}{2^{833}} + \frac{3^{433}}{2^{838}} + \\
& \frac{3^{434}}{2^{839}} + \frac{3^{435}}{2^{844}} + \frac{3^{436}}{2^{845}} + \frac{3^{437}}{2^{846}} + \frac{3^{438}}{2^{847}} + \frac{3^{439}}{2^{848}} + \frac{3^{440}}{2^{852}} + \frac{3^{441}}{2^{853}} + \frac{3^{442}}{2^{854}} + \frac{3^{443}}{2^{856}} + \\
& \frac{3^{444}}{2^{857}} + \frac{3^{445}}{2^{859}} + \frac{3^{446}}{2^{860}} + \frac{3^{447}}{2^{861}} + \frac{3^{448}}{2^{862}} + \frac{3^{449}}{2^{863}} + \frac{3^{450}}{2^{866}} + \frac{3^{451}}{2^{868}} + \frac{3^{452}}{2^{869}} + \frac{3^{453}}{2^{870}} + \\
& \frac{3^{454}}{2^{872}} + \frac{3^{455}}{2^{875}} + \frac{3^{456}}{2^{878}} + \frac{3^{457}}{2^{879}} + \frac{3^{458}}{2^{883}} + \frac{3^{459}}{2^{889}} + \frac{3^{460}}{2^{890}} + \frac{3^{461}}{2^{891}} + \frac{3^{462}}{2^{892}} + \frac{3^{463}}{2^{893}} + \\
& \frac{3^{464}}{2^{894}} + \frac{3^{465}}{2^{896}} + \frac{3^{466}}{2^{897}} + \frac{3^{467}}{2^{898}} + \frac{3^{468}}{2^{899}} + \frac{3^{469}}{2^{900}} + \frac{3^{470}}{2^{903}} + \frac{3^{471}}{2^{904}} + \frac{3^{472}}{2^{905}} + \frac{3^{473}}{2^{906}} + \\
& \frac{3^{474}}{2^{907}} + \frac{3^{475}}{2^{910}} + \frac{3^{476}}{2^{912}} + \frac{3^{477}}{2^{914}} + \frac{3^{478}}{2^{915}} + \frac{3^{479}}{2^{916}} + \frac{3^{480}}{2^{919}} + \frac{3^{481}}{2^{920}} + \frac{3^{482}}{2^{921}} + \frac{3^{483}}{2^{922}} + \\
& \frac{3^{484}}{2^{926}} + \frac{3^{485}}{2^{928}} + \frac{3^{486}}{2^{929}} + \frac{3^{487}}{2^{931}} + \frac{3^{488}}{2^{934}} + \frac{3^{489}}{2^{935}} + \frac{3^{490}}{2^{937}} + \frac{3^{491}}{2^{939}} + \frac{3^{492}}{2^{944}} + \frac{3^{493}}{2^{946}} + \\
& \frac{3^{494}}{2^{947}} + \frac{3^{495}}{2^{957}} + \frac{3^{496}}{2^{960}} + \frac{3^{497}}{2^{964}} + \frac{3^{498}}{2^{965}} + \frac{3^{499}}{2^{967}} + \frac{3^{500}}{2^{968}} + \frac{3^{501}}{2^{970}} + \frac{3^{502}}{2^{971}} + \frac{3^{503}}{2^{974}} + \\
& \frac{3^{504}}{2^{980}} + \frac{3^{505}}{2^{981}} + \frac{3^{506}}{2^{991}} + \frac{3^{507}}{2^{992}} + \frac{3^{508}}{2^{994}} + \frac{3^{509}}{2^{995}} + \frac{3^{510}}{2^{998}} + \frac{3^{511}}{2^{1001}} + \frac{3^{512}}{2^{1002}} + \frac{3^{513}}{2^{1007}} + \\
& \frac{3^{514}}{2^{1008}} + \frac{3^{515}}{2^{1009}} + \frac{3^{516}}{2^{1010}} + \frac{3^{517}}{2^{1012}} + \frac{3^{518}}{2^{1016}} + \frac{3^{519}}{2^{1017}} + \frac{3^{520}}{2^{1018}} + \frac{3^{521}}{2^{1020}} + \frac{3^{522}}{2^{1023}} + \\
& \frac{3^{523}}{2^{1025}} + \frac{3^{524}}{2^{1027}} + \frac{3^{525}}{2^{1030}} + \frac{3^{526}}{2^{1032}} + \frac{3^{527}}{2^{1034}} + \frac{3^{528}}{2^{1035}} + \frac{3^{529}}{2^{1036}} + \frac{3^{530}}{2^{1038}} + \frac{3^{531}}{2^{1040}} + \\
& \frac{3^{532}}{2^{1041}} + \frac{3^{533}}{2^{1044}} + \frac{3^{534}}{2^{1045}} + \frac{3^{535}}{2^{1047}} + \frac{3^{536}}{2^{1050}} + \frac{3^{537}}{2^{1053}} + \frac{3^{538}}{2^{1054}} + \frac{3^{539}}{2^{1055}} + \frac{3^{540}}{2^{1060}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{541}}{2^{1061}} + \frac{3^{542}}{2^{1062}} + \frac{3^{543}}{2^{1064}} + \frac{3^{544}}{2^{1068}} + \frac{3^{545}}{2^{1069}} + \frac{3^{546}}{2^{1070}} + \frac{3^{547}}{2^{1073}} + \frac{3^{548}}{2^{1074}} + \frac{3^{549}}{2^{1075}} + \\
& \frac{3^{550}}{2^{1076}} + \frac{3^{551}}{2^{1078}} + \frac{3^{552}}{2^{1084}} + \frac{3^{553}}{2^{1086}} + \frac{3^{554}}{2^{1087}} + \frac{3^{555}}{2^{1090}} + \frac{3^{556}}{2^{1092}} + \frac{3^{557}}{2^{1096}} + \frac{3^{558}}{2^{1097}} + \\
& \frac{3^{559}}{2^{1099}} + \frac{3^{560}}{2^{1100}} + \frac{3^{561}}{2^{1101}} + \frac{3^{562}}{2^{1102}} + \frac{3^{563}}{2^{1104}} + \frac{3^{564}}{2^{1105}} + \frac{3^{565}}{2^{1107}} + \frac{3^{566}}{2^{1109}} + \frac{3^{567}}{2^{1110}} + \\
& \frac{3^{568}}{2^{1111}} + \frac{3^{569}}{2^{1113}} + \frac{3^{570}}{2^{1114}} + \frac{3^{571}}{2^{1115}} + \frac{3^{572}}{2^{1118}} + \frac{3^{573}}{2^{1119}} + \frac{3^{574}}{2^{1123}} + \frac{3^{575}}{2^{1127}} + \frac{3^{576}}{2^{1128}} + \\
& \frac{3^{577}}{2^{1130}} + \frac{3^{578}}{2^{1132}} + \frac{3^{579}}{2^{1134}} + \frac{3^{580}}{2^{1135}} + \frac{3^{581}}{2^{1136}} + \frac{3^{582}}{2^{1138}} + \frac{3^{583}}{2^{1140}} + \frac{3^{584}}{2^{1142}} + \frac{3^{585}}{2^{1145}} + \\
& \frac{3^{586}}{2^{1147}} + \frac{3^{587}}{2^{1150}} + \frac{3^{588}}{2^{1151}} + \frac{3^{589}}{2^{1152}} + \frac{3^{590}}{2^{1153}} + \frac{3^{591}}{2^{1155}} + \frac{3^{592}}{2^{1158}} + \frac{3^{593}}{2^{1160}} + \frac{3^{594}}{2^{1162}} + \\
& \frac{3^{595}}{2^{1163}} + \frac{3^{596}}{2^{1172}} + \frac{3^{597}}{2^{1174}} + \frac{3^{598}}{2^{1176}} + \frac{3^{599}}{2^{1178}} + \frac{3^{600}}{2^{1180}} + \frac{3^{601}}{2^{1181}} + \frac{3^{602}}{2^{1182}} + \frac{3^{603}}{2^{1185}} + \\
& \frac{3^{604}}{2^{1186}} + \frac{3^{605}}{2^{1187}} + \frac{3^{606}}{2^{1188}} + \frac{3^{607}}{2^{1190}} + \frac{3^{608}}{2^{1191}} + \frac{3^{609}}{2^{1193}} + \frac{3^{610}}{2^{1195}} + \frac{3^{611}}{2^{1200}} + \frac{3^{612}}{2^{1203}} + \\
& \frac{3^{613}}{2^{1205}} + \frac{3^{614}}{2^{1209}} + \frac{3^{615}}{2^{1211}} + \frac{3^{616}}{2^{1212}} + \frac{3^{617}}{2^{1213}} + \frac{3^{618}}{2^{1214}} + \frac{3^{619}}{2^{1220}} + \frac{3^{620}}{2^{1221}} + \frac{3^{621}}{2^{1223}} + \\
& \frac{3^{622}}{2^{1224}} + \frac{3^{623}}{2^{1225}} + \frac{3^{624}}{2^{1230}} + \frac{3^{625}}{2^{1235}} + \frac{3^{626}}{2^{1238}} + \frac{3^{627}}{2^{1239}} + \frac{3^{628}}{2^{1242}} + \frac{3^{629}}{2^{1245}} + \frac{3^{630}}{2^{1247}} + \\
& \frac{3^{631}}{2^{1250}} + \frac{3^{632}}{2^{1251}} + \frac{3^{633}}{2^{1254}} + \frac{3^{634}}{2^{1255}} + \frac{3^{635}}{2^{1257}} + \frac{3^{636}}{2^{1258}} + \frac{3^{637}}{2^{1260}} + \frac{3^{638}}{2^{1261}} + \frac{3^{639}}{2^{1263}} + \\
& \frac{3^{640}}{2^{1264}} + \frac{3^{641}}{2^{1266}} + \frac{3^{642}}{2^{1272}} + \frac{3^{643}}{2^{1273}} + \frac{3^{644}}{2^{1275}} + \frac{3^{645}}{2^{1281}} + \frac{3^{646}}{2^{1285}} + \frac{3^{647}}{2^{1288}} + \frac{3^{648}}{2^{1289}} + \\
& \frac{3^{649}}{2^{1290}} + \frac{3^{650}}{2^{1291}} + \frac{3^{651}}{2^{1293}} + \frac{3^{652}}{2^{1294}} + \frac{3^{653}}{2^{1295}} + \frac{3^{654}}{2^{1296}} + \frac{3^{655}}{2^{1297}} + \frac{3^{656}}{2^{1298}} + \frac{3^{657}}{2^{1302}} + \\
& \frac{3^{658}}{2^{1303}} + \frac{3^{659}}{2^{1304}} + \frac{3^{660}}{2^{1305}} + \frac{3^{661}}{2^{1308}} + \frac{3^{662}}{2^{1310}} + \frac{3^{663}}{2^{1312}} + \frac{3^{664}}{2^{1314}} + \frac{3^{665}}{2^{1315}} + \frac{3^{666}}{2^{1316}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{667}}{2^{1318}} + \frac{3^{668}}{2^{1319}} + \frac{3^{669}}{2^{1321}} + \frac{3^{670}}{2^{1323}} + \frac{3^{671}}{2^{1328}} + \frac{3^{672}}{2^{1330}} + \frac{3^{673}}{2^{1332}} + \frac{3^{674}}{2^{1333}} + \frac{3^{675}}{2^{1336}} + \\
& \frac{3^{676}}{2^{1337}} + \frac{3^{677}}{2^{1338}} + \frac{3^{678}}{2^{1341}} + \frac{3^{679}}{2^{1342}} + \frac{3^{680}}{2^{1344}} + \frac{3^{681}}{2^{1345}} + \frac{3^{682}}{2^{1351}} + \frac{3^{683}}{2^{1353}} + \frac{3^{684}}{2^{1355}} + \\
& \frac{3^{685}}{2^{1356}} + \frac{3^{686}}{2^{1357}} + \frac{3^{687}}{2^{1358}} + \frac{3^{688}}{2^{1360}} + \frac{3^{689}}{2^{1361}} + \frac{3^{690}}{2^{1365}} + \frac{3^{691}}{2^{1367}} + \frac{3^{692}}{2^{1368}} + \frac{3^{693}}{2^{1369}} + \\
& \frac{3^{694}}{2^{1370}} + \frac{3^{695}}{2^{1371}} + \frac{3^{696}}{2^{1375}} + \frac{3^{697}}{2^{1376}} + \frac{3^{698}}{2^{1377}} + \frac{3^{699}}{2^{1379}} + \frac{3^{700}}{2^{1383}} + \frac{3^{701}}{2^{1384}} + \frac{3^{702}}{2^{1387}} + \\
& \frac{3^{703}}{2^{1388}} + \frac{3^{704}}{2^{1389}} + \frac{3^{705}}{2^{1393}} + \frac{3^{706}}{2^{1394}} + \frac{3^{707}}{2^{1395}} + \frac{3^{708}}{2^{1396}} + \frac{3^{709}}{2^{1398}} + \frac{3^{710}}{2^{1399}} + \frac{3^{711}}{2^{1400}} + \\
& \frac{3^{712}}{2^{1402}} + \frac{3^{713}}{2^{1403}} + \frac{3^{714}}{2^{1404}} + \frac{3^{715}}{2^{1406}} + \frac{3^{716}}{2^{1408}} + \frac{3^{717}}{2^{1409}} + \frac{3^{718}}{2^{1411}} + \frac{3^{719}}{2^{1413}} + \frac{3^{720}}{2^{1414}} + \\
& \frac{3^{721}}{2^{1415}} + \frac{3^{722}}{2^{1420}} + \frac{3^{723}}{2^{1423}} + \frac{3^{724}}{2^{1424}} + \frac{3^{725}}{2^{1425}} + \frac{3^{726}}{2^{1431}} + \frac{3^{727}}{2^{1433}} + \frac{3^{728}}{2^{1437}} + \frac{3^{729}}{2^{1438}} + \\
& \frac{3^{730}}{2^{1443}} + \frac{3^{731}}{2^{1444}} + \frac{3^{732}}{2^{1445}} + \frac{3^{733}}{2^{1447}} + \frac{3^{734}}{2^{1448}} + \frac{3^{735}}{2^{1450}} + \frac{3^{736}}{2^{1454}} + \frac{3^{737}}{2^{1455}} + \frac{3^{738}}{2^{1456}} + \\
& \frac{3^{739}}{2^{1457}} + \frac{3^{740}}{2^{1458}} + \frac{3^{741}}{2^{1460}} + \frac{3^{742}}{2^{1461}} + \frac{3^{743}}{2^{1462}} + \frac{3^{744}}{2^{1468}} + \frac{3^{745}}{2^{1473}} + \frac{3^{746}}{2^{1474}} + \frac{3^{747}}{2^{1477}} + \\
& \frac{3^{748}}{2^{1481}} + \frac{3^{749}}{2^{1484}} + \frac{3^{750}}{2^{1487}} + \frac{3^{751}}{2^{1488}} + \frac{3^{752}}{2^{1490}} + \frac{3^{753}}{2^{1494}} + \frac{3^{754}}{2^{1495}} + \frac{3^{755}}{2^{1501}} + \frac{3^{756}}{2^{1504}} + \\
& \frac{3^{757}}{2^{1505}} + \frac{3^{758}}{2^{1511}} + \frac{3^{759}}{2^{1515}} + \frac{3^{760}}{2^{1516}} + \frac{3^{761}}{2^{1518}} + \frac{3^{762}}{2^{1521}} + \frac{3^{763}}{2^{1526}} + \frac{3^{764}}{2^{1527}} + \frac{3^{765}}{2^{1530}} + \\
& \frac{3^{766}}{2^{1533}} + \frac{3^{767}}{2^{1536}} + \frac{3^{768}}{2^{1539}} + \frac{3^{769}}{2^{1541}} + \frac{3^{770}}{2^{1543}} + \frac{3^{771}}{2^{1545}} + \frac{3^{772}}{2^{1547}} + \frac{3^{773}}{2^{1548}} + \frac{3^{774}}{2^{1550}} + \\
& \frac{3^{775}}{2^{1551}} + \frac{3^{776}}{2^{1552}} + \frac{3^{777}}{2^{1553}} + \frac{3^{778}}{2^{1554}} + \frac{3^{779}}{2^{1555}} + \frac{3^{780}}{2^{1557}} + \frac{3^{781}}{2^{1558}} + \frac{3^{782}}{2^{1559}} + \frac{3^{783}}{2^{1562}} + \\
& \frac{3^{784}}{2^{1567}} + \frac{3^{785}}{2^{1568}} + \frac{3^{786}}{2^{1571}} + \frac{3^{787}}{2^{1573}} + \frac{3^{788}}{2^{1576}} + \frac{3^{789}}{2^{1578}} + \frac{3^{790}}{2^{1580}} + \frac{3^{791}}{2^{1582}} + \frac{3^{792}}{2^{1583}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{793}}{2^{1586}} + \frac{3^{794}}{2^{1587}} + \frac{3^{795}}{2^{1594}} + \frac{3^{796}}{2^{1596}} + \frac{3^{797}}{2^{1597}} + \frac{3^{798}}{2^{1598}} + \frac{3^{799}}{2^{1599}} + \frac{3^{800}}{2^{1601}} + \frac{3^{801}}{2^{1605}} + \\
& \frac{3^{802}}{2^{1607}} + \frac{3^{803}}{2^{1608}} + \frac{3^{804}}{2^{1610}} + \frac{3^{805}}{2^{1611}} + \frac{3^{806}}{2^{1612}} + \frac{3^{807}}{2^{1613}} + \frac{3^{808}}{2^{1614}} + \frac{3^{809}}{2^{1619}} + \frac{3^{810}}{2^{1620}} + \\
& \frac{3^{811}}{2^{1621}} + \frac{3^{812}}{2^{1624}} + \frac{3^{813}}{2^{1625}} + \frac{3^{814}}{2^{1629}} + \frac{3^{815}}{2^{1630}} + \frac{3^{816}}{2^{1637}} + \frac{3^{817}}{2^{1639}} + \frac{3^{818}}{2^{1642}} + \frac{3^{819}}{2^{1643}} + \\
& \frac{3^{820}}{2^{1645}} + \frac{3^{821}}{2^{1647}} + \frac{3^{822}}{2^{1651}} + \frac{3^{823}}{2^{1655}} + \frac{3^{824}}{2^{1660}} + \frac{3^{825}}{2^{1661}} + \frac{3^{826}}{2^{1663}} + \frac{3^{827}}{2^{1664}} + \frac{3^{828}}{2^{1665}} + \\
& \frac{3^{829}}{2^{1666}} + \frac{3^{830}}{2^{1667}} + \frac{3^{831}}{2^{1668}} + \frac{3^{832}}{2^{1669}} + \frac{3^{833}}{2^{1671}} + \frac{3^{834}}{2^{1672}} + \frac{3^{835}}{2^{1674}} + \frac{3^{836}}{2^{1677}} + \frac{3^{837}}{2^{1679}} + \\
& \frac{3^{838}}{2^{1680}} + \frac{3^{839}}{2^{1683}} + \frac{3^{840}}{2^{1688}} + \frac{3^{841}}{2^{1690}} + \frac{3^{842}}{2^{1691}} + \frac{3^{843}}{2^{1693}} + \frac{3^{844}}{2^{1696}} + \frac{3^{845}}{2^{1697}} + \frac{3^{846}}{2^{1699}} + \\
& \frac{3^{847}}{2^{1700}} + \frac{3^{848}}{2^{1701}} + \frac{3^{849}}{2^{1704}} + \frac{3^{850}}{2^{1705}} + \frac{3^{851}}{2^{1706}} + \frac{3^{852}}{2^{1707}} + \frac{3^{853}}{2^{1708}} + \frac{3^{854}}{2^{1709}} + \frac{3^{855}}{2^{1713}} + \\
& \frac{3^{856}}{2^{1714}} + \frac{3^{857}}{2^{1717}} + \frac{3^{858}}{2^{1718}} + \frac{3^{859}}{2^{1720}} + \frac{3^{860}}{2^{1722}} + \frac{3^{861}}{2^{1725}} + \frac{3^{862}}{2^{1726}} + \frac{3^{863}}{2^{1728}} + \frac{3^{864}}{2^{1729}} + \\
& \frac{3^{865}}{2^{1731}} + \frac{3^{866}}{2^{1733}} + \frac{3^{867}}{2^{1734}} + \frac{3^{868}}{2^{1740}} + \frac{3^{869}}{2^{1742}} + \frac{3^{870}}{2^{1744}} + \frac{3^{871}}{2^{1746}} + \frac{3^{872}}{2^{1747}} + \frac{3^{873}}{2^{1748}} + \\
& \frac{3^{874}}{2^{1749}} + \frac{3^{875}}{2^{1752}} + \frac{3^{876}}{2^{1753}} + \frac{3^{877}}{2^{1756}} + \frac{3^{878}}{2^{1759}} + \frac{3^{879}}{2^{1763}} + \frac{3^{880}}{2^{1765}} + \frac{3^{881}}{2^{1768}} + \frac{3^{882}}{2^{1769}} + \\
& \frac{3^{883}}{2^{1772}} + \frac{3^{884}}{2^{1773}} + \frac{3^{885}}{2^{1778}} + \frac{3^{886}}{2^{1779}} + \frac{3^{887}}{2^{1782}} + \frac{3^{888}}{2^{1784}} + \frac{3^{889}}{2^{1785}} + \frac{3^{890}}{2^{1789}} + \frac{3^{891}}{2^{1793}} + \\
& \frac{3^{892}}{2^{1794}} + \frac{3^{893}}{2^{1796}} + \frac{3^{894}}{2^{1797}} + \frac{3^{895}}{2^{1800}} + \frac{3^{896}}{2^{1802}} + \frac{3^{897}}{2^{1804}} + \frac{3^{898}}{2^{1805}} + \frac{3^{899}}{2^{1807}} + \frac{3^{900}}{2^{1810}} + \\
& \frac{3^{901}}{2^{1811}} + \frac{3^{902}}{2^{1812}} + \frac{3^{903}}{2^{1814}} + \frac{3^{904}}{2^{1818}} + \frac{3^{905}}{2^{1819}} + \frac{3^{906}}{2^{1822}} + \frac{3^{907}}{2^{1826}} + \frac{3^{908}}{2^{1827}} + \frac{3^{909}}{2^{1828}} + \\
& \frac{3^{910}}{2^{1829}} + \frac{3^{911}}{2^{1830}} + \frac{3^{912}}{2^{1831}} + \frac{3^{913}}{2^{1832}} + \frac{3^{914}}{2^{1834}} + \frac{3^{915}}{2^{1835}} + \frac{3^{916}}{2^{1838}} + \frac{3^{917}}{2^{1844}} + \frac{3^{918}}{2^{1845}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{919}}{2^{1846}} + \frac{3^{920}}{2^{1847}} + \frac{3^{921}}{2^{1849}} + \frac{3^{922}}{2^{1852}} + \frac{3^{923}}{2^{1859}} + \frac{3^{924}}{2^{1863}} + \frac{3^{925}}{2^{1865}} + \frac{3^{926}}{2^{1868}} + \frac{3^{927}}{2^{1870}} + \\
& \frac{3^{928}}{2^{1875}} + \frac{3^{929}}{2^{1878}} + \frac{3^{930}}{2^{1880}} + \frac{3^{931}}{2^{1881}} + \frac{3^{932}}{2^{1882}} + \frac{3^{933}}{2^{1883}} + \frac{3^{934}}{2^{1886}} + \frac{3^{935}}{2^{1888}} + \frac{3^{936}}{2^{1890}} + \\
& \frac{3^{937}}{2^{1904}} + \frac{3^{938}}{2^{1905}} + \frac{3^{939}}{2^{1906}} + \frac{3^{940}}{2^{1907}} + \frac{3^{941}}{2^{1908}} + \frac{3^{942}}{2^{1909}} + \frac{3^{943}}{2^{1910}} + \frac{3^{944}}{2^{1916}} + \frac{3^{945}}{2^{1917}} + \\
& \frac{3^{946}}{2^{1918}} + \frac{3^{947}}{2^{1922}} + \frac{3^{948}}{2^{1923}} + \frac{3^{949}}{2^{1927}} + \frac{3^{950}}{2^{1928}} + \frac{3^{951}}{2^{1929}} + \frac{3^{952}}{2^{1932}} + \frac{3^{953}}{2^{1934}} + \frac{3^{954}}{2^{1936}} + \\
& \frac{3^{955}}{2^{1937}} + \frac{3^{956}}{2^{1938}} + \frac{3^{957}}{2^{1939}} + \frac{3^{958}}{2^{1940}} + \frac{3^{959}}{2^{1943}} + \frac{3^{960}}{2^{1944}} + \frac{3^{961}}{2^{1950}} + \frac{3^{962}}{2^{1951}} + \frac{3^{963}}{2^{1952}} + \\
& \frac{3^{964}}{2^{1954}} + \frac{3^{965}}{2^{1956}} + \frac{3^{966}}{2^{1957}} + \frac{3^{967}}{2^{1960}} + \frac{3^{968}}{2^{1963}} + \frac{3^{969}}{2^{1965}} + \frac{3^{970}}{2^{1967}} + \frac{3^{971}}{2^{1968}} + \frac{3^{972}}{2^{1969}} + \\
& \frac{3^{973}}{2^{1970}} + \frac{3^{974}}{2^{1973}} + \frac{3^{975}}{2^{1974}} + \frac{3^{976}}{2^{1977}} + \frac{3^{977}}{2^{1978}} + \frac{3^{978}}{2^{1979}} + \frac{3^{979}}{2^{1982}} + \frac{3^{980}}{2^{1983}} + \frac{3^{981}}{2^{1986}} + \\
& \frac{3^{982}}{2^{1988}} + \frac{3^{983}}{2^{1990}} + \frac{3^{984}}{2^{1992}} + \frac{3^{985}}{2^{1993}} + \frac{3^{986}}{2^{1994}} + \frac{3^{987}}{2^{1998}} + \frac{3^{988}}{2^{1999}} + \frac{3^{989}}{2^{2000}} + \frac{3^{990}}{2^{2001}} + \\
& \frac{3^{991}}{2^{2002}} + \frac{3^{992}}{2^{2003}} + \frac{3^{993}}{2^{2004}} + \frac{3^{994}}{2^{2005}} + \frac{3^{995}}{2^{2006}} + \frac{3^{996}}{2^{2011}} + \frac{3^{997}}{2^{2012}} + \frac{3^{998}}{2^{2014}} + \frac{3^{999}}{2^{2019}} + \\
& \frac{3^{1000}}{2^{2020}} + \frac{3^{1001}}{2^{2021}} + \frac{3^{1002}}{2^{2022}} + \frac{3^{1003}}{2^{2025}} + \frac{3^{1004}}{2^{2026}} + \frac{3^{1005}}{2^{2032}} + \frac{3^{1006}}{2^{2034}} + \frac{3^{1007}}{2^{2038}} + \frac{3^{1008}}{2^{2040}} + \\
& \frac{3^{1009}}{2^{2041}} + \frac{3^{1010}}{2^{2042}} + \frac{3^{1011}}{2^{2045}} + \frac{3^{1012}}{2^{2047}} + \frac{3^{1013}}{2^{2050}} + \frac{3^{1014}}{2^{2054}} + \frac{3^{1015}}{2^{2057}} + \frac{3^{1016}}{2^{2060}} + \frac{3^{1017}}{2^{2061}} + \\
& \frac{3^{1018}}{2^{2062}} + \frac{3^{1019}}{2^{2063}} + \frac{3^{1020}}{2^{2065}} + \frac{3^{1021}}{2^{2066}} + \frac{3^{1022}}{2^{2067}} + \frac{3^{1023}}{2^{2068}} + \frac{3^{1024}}{2^{2069}} + \frac{3^{1025}}{2^{2071}} + \frac{3^{1026}}{2^{2072}} + \\
& \frac{3^{1027}}{2^{2074}} + \frac{3^{1028}}{2^{2077}} + \frac{3^{1029}}{2^{2078}} + \frac{3^{1030}}{2^{2080}} + \frac{3^{1031}}{2^{2085}} + \frac{3^{1032}}{2^{2086}} + \frac{3^{1033}}{2^{2087}} + \frac{3^{1034}}{2^{2091}} + \frac{3^{1035}}{2^{2096}} + \\
& \frac{3^{1036}}{2^{2102}} + \frac{3^{1037}}{2^{2103}} + \frac{3^{1038}}{2^{2104}} + \frac{3^{1039}}{2^{2108}} + \frac{3^{1040}}{2^{2109}} + \frac{3^{1041}}{2^{2111}} + \frac{3^{1042}}{2^{2112}} + \frac{3^{1043}}{2^{2113}} + \frac{3^{1044}}{2^{2114}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{919}}{2^{1846}} + \frac{3^{920}}{2^{1847}} + \frac{3^{921}}{2^{1849}} + \frac{3^{922}}{2^{1852}} + \frac{3^{923}}{2^{1859}} + \frac{3^{924}}{2^{1863}} + \frac{3^{925}}{2^{1865}} + \frac{3^{926}}{2^{1868}} + \frac{3^{927}}{2^{1870}} + \\
& \frac{3^{928}}{2^{1875}} + \frac{3^{929}}{2^{1878}} + \frac{3^{930}}{2^{1880}} + \frac{3^{931}}{2^{1881}} + \frac{3^{932}}{2^{1882}} + \frac{3^{933}}{2^{1883}} + \frac{3^{934}}{2^{1886}} + \frac{3^{935}}{2^{1888}} + \frac{3^{936}}{2^{1890}} + \\
& \frac{3^{937}}{2^{1904}} + \frac{3^{938}}{2^{1905}} + \frac{3^{939}}{2^{1906}} + \frac{3^{940}}{2^{1907}} + \frac{3^{941}}{2^{1908}} + \frac{3^{942}}{2^{1909}} + \frac{3^{943}}{2^{1910}} + \frac{3^{944}}{2^{1916}} + \frac{3^{945}}{2^{1917}} + \\
& \frac{3^{946}}{2^{1918}} + \frac{3^{947}}{2^{1922}} + \frac{3^{948}}{2^{1923}} + \frac{3^{949}}{2^{1927}} + \frac{3^{950}}{2^{1928}} + \frac{3^{951}}{2^{1929}} + \frac{3^{952}}{2^{1932}} + \frac{3^{953}}{2^{1934}} + \frac{3^{954}}{2^{1936}} + \\
& \frac{3^{955}}{2^{1937}} + \frac{3^{956}}{2^{1938}} + \frac{3^{957}}{2^{1939}} + \frac{3^{958}}{2^{1940}} + \frac{3^{959}}{2^{1943}} + \frac{3^{960}}{2^{1944}} + \frac{3^{961}}{2^{1950}} + \frac{3^{962}}{2^{1951}} + \frac{3^{963}}{2^{1952}} + \\
& \frac{3^{964}}{2^{1954}} + \frac{3^{965}}{2^{1956}} + \frac{3^{966}}{2^{1957}} + \frac{3^{967}}{2^{1960}} + \frac{3^{968}}{2^{1963}} + \frac{3^{969}}{2^{1965}} + \frac{3^{970}}{2^{1967}} + \frac{3^{971}}{2^{1968}} + \frac{3^{972}}{2^{1969}} + \\
& \frac{3^{973}}{2^{1970}} + \frac{3^{974}}{2^{1973}} + \frac{3^{975}}{2^{1974}} + \frac{3^{976}}{2^{1977}} + \frac{3^{977}}{2^{1978}} + \frac{3^{978}}{2^{1979}} + \frac{3^{979}}{2^{1982}} + \frac{3^{980}}{2^{1983}} + \frac{3^{981}}{2^{1986}} + \\
& \frac{3^{982}}{2^{1988}} + \frac{3^{983}}{2^{1990}} + \frac{3^{984}}{2^{1992}} + \frac{3^{985}}{2^{1993}} + \frac{3^{986}}{2^{1994}} + \frac{3^{987}}{2^{1998}} + \frac{3^{988}}{2^{1999}} + \frac{3^{989}}{2^{2000}} + \frac{3^{990}}{2^{2001}} + \\
& \frac{3^{991}}{2^{2002}} + \frac{3^{992}}{2^{2003}} + \frac{3^{993}}{2^{2004}} + \frac{3^{994}}{2^{2005}} + \frac{3^{995}}{2^{2006}} + \frac{3^{996}}{2^{2011}} + \frac{3^{997}}{2^{2012}} + \frac{3^{998}}{2^{2014}} + \frac{3^{999}}{2^{2019}} + \\
& \frac{3^{1000}}{2^{2020}} + \frac{3^{1001}}{2^{2021}} + \frac{3^{1002}}{2^{2022}} + \frac{3^{1003}}{2^{2025}} + \frac{3^{1004}}{2^{2026}} + \frac{3^{1005}}{2^{2032}} + \frac{3^{1006}}{2^{2034}} + \frac{3^{1007}}{2^{2038}} + \frac{3^{1008}}{2^{2040}} + \\
& \frac{3^{1009}}{2^{2041}} + \frac{3^{1010}}{2^{2042}} + \frac{3^{1011}}{2^{2045}} + \frac{3^{1012}}{2^{2047}} + \frac{3^{1013}}{2^{2050}} + \frac{3^{1014}}{2^{2054}} + \frac{3^{1015}}{2^{2057}} + \frac{3^{1016}}{2^{2060}} + \frac{3^{1017}}{2^{2061}} + \\
& \frac{3^{1018}}{2^{2062}} + \frac{3^{1019}}{2^{2063}} + \frac{3^{1020}}{2^{2065}} + \frac{3^{1021}}{2^{2066}} + \frac{3^{1022}}{2^{2067}} + \frac{3^{1023}}{2^{2068}} + \frac{3^{1024}}{2^{2069}} + \frac{3^{1025}}{2^{2071}} + \frac{3^{1026}}{2^{2072}} + \\
& \frac{3^{1027}}{2^{2074}} + \frac{3^{1028}}{2^{2077}} + \frac{3^{1029}}{2^{2078}} + \frac{3^{1030}}{2^{2080}} + \frac{3^{1031}}{2^{2085}} + \frac{3^{1032}}{2^{2086}} + \frac{3^{1033}}{2^{2087}} + \frac{3^{1034}}{2^{2091}} + \frac{3^{1035}}{2^{2096}} + \\
& \frac{3^{1036}}{2^{2102}} + \frac{3^{1037}}{2^{2103}} + \frac{3^{1038}}{2^{2104}} + \frac{3^{1039}}{2^{2108}} + \frac{3^{1040}}{2^{2109}} + \frac{3^{1041}}{2^{2111}} + \frac{3^{1042}}{2^{2112}} + \frac{3^{1043}}{2^{2113}} + \frac{3^{1044}}{2^{2114}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1045}}{2^{2115}} + \frac{3^{1046}}{2^{2117}} + \frac{3^{1047}}{2^{2120}} + \frac{3^{1048}}{2^{2122}} + \frac{3^{1049}}{2^{2123}} + \frac{3^{1050}}{2^{2124}} + \frac{3^{1051}}{2^{2125}} + \frac{3^{1052}}{2^{2126}} + \frac{3^{1053}}{2^{2127}} + \\
& \frac{3^{1054}}{2^{2128}} + \frac{3^{1055}}{2^{2130}} + \frac{3^{1056}}{2^{2131}} + \frac{3^{1057}}{2^{2132}} + \frac{3^{1058}}{2^{2133}} + \frac{3^{1059}}{2^{2135}} + \frac{3^{1060}}{2^{2136}} + \frac{3^{1061}}{2^{2138}} + \frac{3^{1062}}{2^{2141}} + \\
& \frac{3^{1063}}{2^{2142}} + \frac{3^{1064}}{2^{2145}} + \frac{3^{1065}}{2^{2146}} + \frac{3^{1066}}{2^{2147}} + \frac{3^{1067}}{2^{2148}} + \frac{3^{1068}}{2^{2152}} + \frac{3^{1069}}{2^{2153}} + \frac{3^{1070}}{2^{2155}} + \frac{3^{1071}}{2^{2156}} + \\
& \frac{3^{1072}}{2^{2160}} + \frac{3^{1073}}{2^{2166}} + \frac{3^{1074}}{2^{2168}} + \frac{3^{1075}}{2^{2170}} + \frac{3^{1076}}{2^{2171}} + \frac{3^{1077}}{2^{2172}} + \frac{3^{1078}}{2^{2173}} + \frac{3^{1079}}{2^{2174}} + \frac{3^{1080}}{2^{2175}} + \\
& \frac{3^{1081}}{2^{2177}} + \frac{3^{1082}}{2^{2178}} + \frac{3^{1083}}{2^{2179}} + \frac{3^{1084}}{2^{2180}} + \frac{3^{1085}}{2^{2181}} + \frac{3^{1086}}{2^{2182}} + \frac{3^{1087}}{2^{2186}} + \frac{3^{1088}}{2^{2187}} + \frac{3^{1089}}{2^{2190}} + \\
& \frac{3^{1090}}{2^{2191}} + \frac{3^{1091}}{2^{2192}} + \frac{3^{1092}}{2^{2194}} + \frac{3^{1093}}{2^{2196}} + \frac{3^{1094}}{2^{2197}} + \frac{3^{1095}}{2^{2198}} + \frac{3^{1096}}{2^{2203}} + \frac{3^{1097}}{2^{2206}} + \frac{3^{1098}}{2^{2208}} + \\
& \frac{3^{1099}}{2^{2209}} + \frac{3^{1100}}{2^{2211}} + \frac{3^{1101}}{2^{2213}} + \frac{3^{1102}}{2^{2214}} + \frac{3^{1103}}{2^{2215}} + \frac{3^{1104}}{2^{2217}} + \frac{3^{1105}}{2^{2218}} + \frac{3^{1106}}{2^{2221}} + \frac{3^{1107}}{2^{2223}} + \\
& \frac{3^{1108}}{2^{2227}} + \frac{3^{1109}}{2^{2228}} + \frac{3^{1110}}{2^{2229}} + \frac{3^{1111}}{2^{2231}} + \frac{3^{1112}}{2^{2232}} + \frac{3^{1113}}{2^{2233}} + \frac{3^{1114}}{2^{2236}} + \frac{3^{1115}}{2^{2237}} + \frac{3^{1116}}{2^{2239}} + \\
& \frac{3^{1117}}{2^{2241}} + \frac{3^{1118}}{2^{2242}} + \frac{3^{1119}}{2^{2243}} + \frac{3^{1120}}{2^{2245}} + \frac{3^{1121}}{2^{2247}} + \frac{3^{1122}}{2^{2249}} + \frac{3^{1123}}{2^{2251}} + \frac{3^{1124}}{2^{2252}} + \frac{3^{1125}}{2^{2254}} + \\
& \frac{3^{1126}}{2^{2255}} + \frac{3^{1127}}{2^{2257}} + \frac{3^{1128}}{2^{2261}} + \frac{3^{1129}}{2^{2266}} + \frac{3^{1130}}{2^{2269}} + \frac{3^{1131}}{2^{2271}} + \frac{3^{1132}}{2^{2275}} + \frac{3^{1133}}{2^{2277}} + \frac{3^{1134}}{2^{2279}} + \\
& \frac{3^{1135}}{2^{2281}} + \frac{3^{1136}}{2^{2282}} + \frac{3^{1137}}{2^{2283}} + \frac{3^{1138}}{2^{2285}} + \frac{3^{1139}}{2^{2286}} + \frac{3^{1140}}{2^{2288}} + \frac{3^{1141}}{2^{2289}} + \frac{3^{1142}}{2^{2291}} + \frac{3^{1143}}{2^{2294}} + \\
& \frac{3^{1144}}{2^{2296}} + \frac{3^{1145}}{2^{2300}} + \frac{3^{1146}}{2^{2301}} + \frac{3^{1147}}{2^{2303}} + \frac{3^{1148}}{2^{2308}} + \frac{3^{1149}}{2^{2309}} + \frac{3^{1150}}{2^{2313}} + \frac{3^{1151}}{2^{2314}} + \frac{3^{1152}}{2^{2315}} + \\
& \frac{3^{1153}}{2^{2316}} + \frac{3^{1154}}{2^{2318}} + \frac{3^{1155}}{2^{2319}} + \frac{3^{1156}}{2^{2321}} + \frac{3^{1157}}{2^{2323}} + \frac{3^{1158}}{2^{2324}} + \frac{3^{1159}}{2^{2325}} + \frac{3^{1160}}{2^{2327}} + \frac{3^{1161}}{2^{2328}} + \\
& \frac{3^{1162}}{2^{2331}} + \frac{3^{1163}}{2^{2335}} + \frac{3^{1164}}{2^{2336}} + \frac{3^{1165}}{2^{2337}} + \frac{3^{1166}}{2^{2342}} + \frac{3^{1167}}{2^{2343}} + \frac{3^{1168}}{2^{2346}} + \frac{3^{1169}}{2^{2348}} + \frac{3^{1170}}{2^{2350}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1171}}{2^{2351}} + \frac{3^{1172}}{2^{2352}} + \frac{3^{1173}}{2^{2353}} + \frac{3^{1174}}{2^{2354}} + \frac{3^{1175}}{2^{2355}} + \frac{3^{1176}}{2^{2356}} + \frac{3^{1177}}{2^{2359}} + \frac{3^{1178}}{2^{2360}} + \frac{3^{1179}}{2^{2363}} + \\
& \frac{3^{1180}}{2^{2366}} + \frac{3^{1181}}{2^{2368}} + \frac{3^{1182}}{2^{2369}} + \frac{3^{1183}}{2^{2370}} + \frac{3^{1184}}{2^{2372}} + \frac{3^{1185}}{2^{2375}} + \frac{3^{1186}}{2^{2376}} + \frac{3^{1187}}{2^{2378}} + \frac{3^{1188}}{2^{2384}} + \\
& \frac{3^{1189}}{2^{2385}} + \frac{3^{1190}}{2^{2388}} + \frac{3^{1191}}{2^{2391}} + \frac{3^{1192}}{2^{2393}} + \frac{3^{1193}}{2^{2394}} + \frac{3^{1194}}{2^{2395}} + \frac{3^{1195}}{2^{2398}} + \frac{3^{1196}}{2^{2400}} + \frac{3^{1197}}{2^{2402}} + \\
& \frac{3^{1198}}{2^{2404}} + \frac{3^{1199}}{2^{2407}} + \frac{3^{1200}}{2^{2408}} + \frac{3^{1201}}{2^{2409}} + \frac{3^{1202}}{2^{2410}} + \frac{3^{1203}}{2^{2411}} + \frac{3^{1204}}{2^{2412}} + \frac{3^{1205}}{2^{2415}} + \frac{3^{1206}}{2^{2416}} + \\
& \frac{3^{1207}}{2^{2418}} + \frac{3^{1208}}{2^{2421}} + \frac{3^{1209}}{2^{2424}} + \frac{3^{1210}}{2^{2425}} + \frac{3^{1211}}{2^{2426}} + \frac{3^{1212}}{2^{2427}} + \frac{3^{1213}}{2^{2428}} + \frac{3^{1214}}{2^{2431}} + \frac{3^{1215}}{2^{2432}} + \\
& \frac{3^{1216}}{2^{2434}} + \frac{3^{1217}}{2^{2435}} + \frac{3^{1218}}{2^{2437}} + \frac{3^{1219}}{2^{2440}} + \frac{3^{1220}}{2^{2441}} + \frac{3^{1221}}{2^{2442}} + \frac{3^{1222}}{2^{2444}} + \frac{3^{1223}}{2^{2445}} + \frac{3^{1224}}{2^{2449}} + \\
& \frac{3^{1225}}{2^{2451}} + \frac{3^{1226}}{2^{2452}} + \frac{3^{1227}}{2^{2454}} + \frac{3^{1228}}{2^{2455}} + \frac{3^{1229}}{2^{2456}} + \frac{3^{1230}}{2^{2459}} + \frac{3^{1231}}{2^{2463}} + \frac{3^{1232}}{2^{2464}} + \frac{3^{1233}}{2^{2465}} + \\
& \frac{3^{1234}}{2^{2468}} + \frac{3^{1235}}{2^{2469}} + \frac{3^{1236}}{2^{2470}} + \frac{3^{1237}}{2^{2474}} + \frac{3^{1238}}{2^{2475}} + \frac{3^{1239}}{2^{2476}} + \frac{3^{1240}}{2^{2477}} + \frac{3^{1241}}{2^{2478}} + \frac{3^{1242}}{2^{2479}} + \\
& \frac{3^{1243}}{2^{2484}} + \frac{3^{1244}}{2^{2485}} + \frac{3^{1245}}{2^{2486}} + \frac{3^{1246}}{2^{2487}} + \frac{3^{1247}}{2^{2488}} + \frac{3^{1248}}{2^{2490}} + \frac{3^{1249}}{2^{2491}} + \frac{3^{1250}}{2^{2492}} + \frac{3^{1251}}{2^{2493}} + \\
& \frac{3^{1252}}{2^{2496}} + \frac{3^{1253}}{2^{2497}} + \frac{3^{1254}}{2^{2498}} + \frac{3^{1255}}{2^{2499}} + \frac{3^{1256}}{2^{2500}} + \frac{3^{1257}}{2^{2501}} + \frac{3^{1258}}{2^{2504}} + \frac{3^{1259}}{2^{2505}} + \frac{3^{1260}}{2^{2509}} + \\
& \frac{3^{1261}}{2^{2511}} + \frac{3^{1262}}{2^{2512}} + \frac{3^{1263}}{2^{2514}} + \frac{3^{1264}}{2^{2516}} + \frac{3^{1265}}{2^{2518}} + \frac{3^{1266}}{2^{2520}} + \frac{3^{1267}}{2^{2521}} + \frac{3^{1268}}{2^{2522}} + \frac{3^{1269}}{2^{2525}} + \\
& \frac{3^{1270}}{2^{2527}} + \frac{3^{1271}}{2^{2528}} + \frac{3^{1272}}{2^{2529}} + \frac{3^{1273}}{2^{2531}} + \frac{3^{1274}}{2^{2532}} + \frac{3^{1275}}{2^{2533}} + \frac{3^{1276}}{2^{2534}} + \frac{3^{1277}}{2^{2535}} + \frac{3^{1278}}{2^{2536}} + \\
& \frac{3^{1279}}{2^{2540}} + \frac{3^{1280}}{2^{2542}} + \frac{3^{1281}}{2^{2545}} + \frac{3^{1282}}{2^{2546}} + \frac{3^{1283}}{2^{2547}} + \frac{3^{1284}}{2^{2552}} + \frac{3^{1285}}{2^{2554}} + \frac{3^{1286}}{2^{2555}} + \frac{3^{1287}}{2^{2556}} + \\
& \frac{3^{1288}}{2^{2557}} + \frac{3^{1289}}{2^{2558}} + \frac{3^{1290}}{2^{2559}} + \frac{3^{1291}}{2^{2562}} + \frac{3^{1292}}{2^{2564}} + \frac{3^{1293}}{2^{2567}} + \frac{3^{1294}}{2^{2568}} + \frac{3^{1295}}{2^{2569}} + \frac{3^{1296}}{2^{2572}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1297}}{2^{2574}} + \frac{3^{1298}}{2^{2575}} + \frac{3^{1299}}{2^{2576}} + \frac{3^{1300}}{2^{2577}} + \frac{3^{1301}}{2^{2578}} + \frac{3^{1302}}{2^{2579}} + \frac{3^{1303}}{2^{2582}} + \frac{3^{1304}}{2^{2583}} + \frac{3^{1305}}{2^{2584}} + \\
& \frac{3^{1306}}{2^{2586}} + \frac{3^{1307}}{2^{2587}} + \frac{3^{1308}}{2^{2591}} + \frac{3^{1309}}{2^{2597}} + \frac{3^{1310}}{2^{2598}} + \frac{3^{1311}}{2^{2599}} + \frac{3^{1312}}{2^{2600}} + \frac{3^{1313}}{2^{2601}} + \frac{3^{1314}}{2^{2603}} + \\
& \frac{3^{1315}}{2^{2604}} + \frac{3^{1316}}{2^{2605}} + \frac{3^{1317}}{2^{2606}} + \frac{3^{1318}}{2^{2607}} + \frac{3^{1319}}{2^{2608}} + \frac{3^{1320}}{2^{2609}} + \frac{3^{1321}}{2^{2610}} + \frac{3^{1322}}{2^{2611}} + \frac{3^{1323}}{2^{2615}} + \\
& \frac{3^{1324}}{2^{2620}} + \frac{3^{1325}}{2^{2621}} + \frac{3^{1326}}{2^{2622}} + \frac{3^{1327}}{2^{2623}} + \frac{3^{1328}}{2^{2627}} + \frac{3^{1329}}{2^{2628}} + \frac{3^{1330}}{2^{2629}} + \frac{3^{1331}}{2^{2631}} + \frac{3^{1332}}{2^{2632}} + \\
& \frac{3^{1333}}{2^{2633}} + \frac{3^{1334}}{2^{2634}} + \frac{3^{1335}}{2^{2635}} + \frac{3^{1336}}{2^{2637}} + \frac{3^{1337}}{2^{2638}} + \frac{3^{1338}}{2^{2642}} + \frac{3^{1339}}{2^{2643}} + \frac{3^{1340}}{2^{2648}} + \frac{3^{1341}}{2^{2649}} + \\
& \frac{3^{1342}}{2^{2650}} + \frac{3^{1343}}{2^{2655}} + \frac{3^{1344}}{2^{2656}} + \frac{3^{1345}}{2^{2657}} + \frac{3^{1346}}{2^{2658}} + \frac{3^{1347}}{2^{2659}} + \frac{3^{1348}}{2^{2660}} + \frac{3^{1349}}{2^{2661}} + \frac{3^{1350}}{2^{2663}} + \\
& \frac{3^{1351}}{2^{2665}} + \frac{3^{1352}}{2^{2666}} + \frac{3^{1353}}{2^{2669}} + \frac{3^{1354}}{2^{2672}} + \frac{3^{1355}}{2^{2674}} + \frac{3^{1356}}{2^{2675}} + \frac{3^{1357}}{2^{2676}} + \frac{3^{1358}}{2^{2677}} + \frac{3^{1359}}{2^{2679}} + \\
& \frac{3^{1360}}{2^{2682}} + \frac{3^{1361}}{2^{2686}} + \frac{3^{1362}}{2^{2690}} + \frac{3^{1363}}{2^{2692}} + \frac{3^{1364}}{2^{2693}} + \frac{3^{1365}}{2^{2696}} + \frac{3^{1366}}{2^{2698}} + \frac{3^{1367}}{2^{2699}} + \frac{3^{1368}}{2^{2702}} + \\
& \frac{3^{1369}}{2^{2703}} + \frac{3^{1370}}{2^{2704}} + \frac{3^{1371}}{2^{2710}} + \frac{3^{1372}}{2^{2712}} + \frac{3^{1373}}{2^{2715}} + \frac{3^{1374}}{2^{2716}} + \frac{3^{1375}}{2^{2717}} + \frac{3^{1376}}{2^{2721}} + \frac{3^{1377}}{2^{2725}} + \\
& \frac{3^{1378}}{2^{2727}} + \frac{3^{1379}}{2^{2729}} + \frac{3^{1380}}{2^{2735}} + \frac{3^{1381}}{2^{2737}} + \frac{3^{1382}}{2^{2740}} + \frac{3^{1383}}{2^{2741}} + \frac{3^{1384}}{2^{2742}} + \frac{3^{1385}}{2^{2743}} + \frac{3^{1386}}{2^{2747}} + \\
& \frac{3^{1387}}{2^{2748}} + \frac{3^{1388}}{2^{2749}} + \frac{3^{1389}}{2^{2750}} + \frac{3^{1390}}{2^{2751}} + \frac{3^{1391}}{2^{2756}} + \frac{3^{1392}}{2^{2757}} + \frac{3^{1393}}{2^{2761}} + \frac{3^{1394}}{2^{2763}} + \frac{3^{1395}}{2^{2766}} + \\
& \frac{3^{1396}}{2^{2767}} + \frac{3^{1397}}{2^{2770}} + \frac{3^{1398}}{2^{2771}} + \frac{3^{1399}}{2^{2772}} + \frac{3^{1400}}{2^{2773}} + \frac{3^{1401}}{2^{2775}} + \frac{3^{1402}}{2^{2779}} + \frac{3^{1403}}{2^{2783}} + \frac{3^{1404}}{2^{2785}} + \\
& \frac{3^{1405}}{2^{2786}} + \frac{3^{1406}}{2^{2791}} + \frac{3^{1407}}{2^{2792}} + \frac{3^{1408}}{2^{2793}} + \frac{3^{1409}}{2^{2794}} + \frac{3^{1410}}{2^{2797}} + \frac{3^{1411}}{2^{2800}} + \frac{3^{1412}}{2^{2802}} + \frac{3^{1413}}{2^{2807}} + \\
& \frac{3^{1414}}{2^{2809}} + \frac{3^{1415}}{2^{2810}} + \frac{3^{1416}}{2^{2811}} + \frac{3^{1417}}{2^{2812}} + \frac{3^{1418}}{2^{2813}} + \frac{3^{1419}}{2^{2814}} + \frac{3^{1420}}{2^{2817}} + \frac{3^{1421}}{2^{2818}} + \frac{3^{1422}}{2^{2821}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1423}}{2^{2822}} + \frac{3^{1424}}{2^{2823}} + \frac{3^{1425}}{2^{2824}} + \frac{3^{1426}}{2^{2827}} + \frac{3^{1427}}{2^{2831}} + \frac{3^{1428}}{2^{2834}} + \frac{3^{1429}}{2^{2837}} + \frac{3^{1430}}{2^{2840}} + \frac{3^{1431}}{2^{2841}} + \\
& \frac{3^{1432}}{2^{2842}} + \frac{3^{1433}}{2^{2845}} + \frac{3^{1434}}{2^{2846}} + \frac{3^{1435}}{2^{2847}} + \frac{3^{1436}}{2^{2848}} + \frac{3^{1437}}{2^{2850}} + \frac{3^{1438}}{2^{2851}} + \frac{3^{1439}}{2^{2853}} + \frac{3^{1440}}{2^{2856}} + \\
& \frac{3^{1441}}{2^{2858}} + \frac{3^{1442}}{2^{2859}} + \frac{3^{1443}}{2^{2862}} + \frac{3^{1444}}{2^{2863}} + \frac{3^{1445}}{2^{2864}} + \frac{3^{1446}}{2^{2866}} + \frac{3^{1447}}{2^{2867}} + \frac{3^{1448}}{2^{2868}} + \frac{3^{1449}}{2^{2869}} + \\
& \frac{3^{1450}}{2^{2870}} + \frac{3^{1451}}{2^{2873}} + \frac{3^{1452}}{2^{2874}} + \frac{3^{1453}}{2^{2876}} + \frac{3^{1454}}{2^{2879}} + \frac{3^{1455}}{2^{2884}} + \frac{3^{1456}}{2^{2885}} + \frac{3^{1457}}{2^{2888}} + \frac{3^{1458}}{2^{2889}} + \\
& \frac{3^{1459}}{2^{2892}} + \frac{3^{1460}}{2^{2893}} + \frac{3^{1461}}{2^{2894}} + \frac{3^{1462}}{2^{2896}} + \frac{3^{1463}}{2^{2899}} + \frac{3^{1464}}{2^{2900}} + \frac{3^{1465}}{2^{2903}} + \frac{3^{1466}}{2^{2904}} + \frac{3^{1467}}{2^{2906}} + \\
& \frac{3^{1468}}{2^{2908}} + \frac{3^{1469}}{2^{2909}} + \frac{3^{1470}}{2^{2911}} + \frac{3^{1471}}{2^{2912}} + \frac{3^{1472}}{2^{2917}} + \frac{3^{1473}}{2^{2919}} + \frac{3^{1474}}{2^{2920}} + \frac{3^{1475}}{2^{2923}} + \frac{3^{1476}}{2^{2925}} + \\
& \frac{3^{1477}}{2^{2926}} + \frac{3^{1478}}{2^{2928}} + \frac{3^{1479}}{2^{2930}} + \frac{3^{1480}}{2^{2932}} + \frac{3^{1481}}{2^{2937}} + \frac{3^{1482}}{2^{2938}} + \frac{3^{1483}}{2^{2943}} + \frac{3^{1484}}{2^{2944}} + \frac{3^{1485}}{2^{2945}} + \\
& \frac{3^{1486}}{2^{2950}} + \frac{3^{1487}}{2^{2951}} + \frac{3^{1488}}{2^{2953}} + \frac{3^{1489}}{2^{2954}} + \frac{3^{1490}}{2^{2955}} + \frac{3^{1491}}{2^{2957}} + \frac{3^{1492}}{2^{2958}} + \frac{3^{1493}}{2^{2959}} + \frac{3^{1494}}{2^{2960}} + \\
& \frac{3^{1495}}{2^{2963}} + \frac{3^{1496}}{2^{2964}} + \frac{3^{1497}}{2^{2967}} + \frac{3^{1498}}{2^{2970}} + \frac{3^{1499}}{2^{2971}} + \frac{3^{1500}}{2^{2974}} + \frac{3^{1501}}{2^{2977}} + \frac{3^{1502}}{2^{2979}} + \frac{3^{1503}}{2^{2980}} + \\
& \frac{3^{1504}}{2^{2981}} + \frac{3^{1505}}{2^{2983}} + \frac{3^{1506}}{2^{2985}} + \frac{3^{1507}}{2^{2987}} + \frac{3^{1508}}{2^{2989}} + \frac{3^{1509}}{2^{2990}} + \frac{3^{1510}}{2^{2994}} + \frac{3^{1511}}{2^{2995}} + \frac{3^{1512}}{2^{2996}} + \\
& \frac{3^{1513}}{2^{2997}} + \frac{3^{1514}}{2^{2999}} + \frac{3^{1515}}{2^{3001}} + \frac{3^{1516}}{2^{3002}} + \frac{3^{1517}}{2^{3004}} + \frac{3^{1518}}{2^{3008}} + \frac{3^{1519}}{2^{3010}} + \frac{3^{1520}}{2^{3011}} + \frac{3^{1521}}{2^{3012}} + \\
& \frac{3^{1522}}{2^{3014}} + \frac{3^{1523}}{2^{3015}} + \frac{3^{1524}}{2^{3018}} + \frac{3^{1525}}{2^{3022}} + \frac{3^{1526}}{2^{3025}} + \frac{3^{1527}}{2^{3027}} + \frac{3^{1528}}{2^{3028}} + \frac{3^{1529}}{2^{3029}} + \frac{3^{1530}}{2^{3030}} + \\
& \frac{3^{1531}}{2^{3033}} + \frac{3^{1532}}{2^{3034}} + \frac{3^{1533}}{2^{3035}} + \frac{3^{1534}}{2^{3036}} + \frac{3^{1535}}{2^{3037}} + \frac{3^{1536}}{2^{3040}} + \frac{3^{1537}}{2^{3041}} + \frac{3^{1538}}{2^{3042}} + \frac{3^{1539}}{2^{3044}} + \\
& \frac{3^{1540}}{2^{3046}} + \frac{3^{1541}}{2^{3048}} + \frac{3^{1542}}{2^{3050}} + \frac{3^{1543}}{2^{3051}} + \frac{3^{1544}}{2^{3053}} + \frac{3^{1545}}{2^{3055}} + \frac{3^{1546}}{2^{3056}} + \frac{3^{1547}}{2^{3057}} + \frac{3^{1548}}{2^{3058}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1549}}{2^{3060}} + \frac{3^{1550}}{2^{3061}} + \frac{3^{1551}}{2^{3062}} + \frac{3^{1552}}{2^{3063}} + \frac{3^{1553}}{2^{3067}} + \frac{3^{1554}}{2^{3069}} + \frac{3^{1555}}{2^{3070}} + \frac{3^{1556}}{2^{3071}} + \frac{3^{1557}}{2^{3072}} + \\
& \frac{3^{1558}}{2^{3074}} + \frac{3^{1559}}{2^{3075}} + \frac{3^{1560}}{2^{3076}} + \frac{3^{1561}}{2^{3077}} + \frac{3^{1562}}{2^{3079}} + \frac{3^{1563}}{2^{3080}} + \frac{3^{1564}}{2^{3086}} + \frac{3^{1565}}{2^{3087}} + \frac{3^{1566}}{2^{3089}} + \\
& \frac{3^{1567}}{2^{3090}} + \frac{3^{1568}}{2^{3092}} + \frac{3^{1569}}{2^{3094}} + \frac{3^{1570}}{2^{3096}} + \frac{3^{1571}}{2^{3098}} + \frac{3^{1572}}{2^{3099}} + \frac{3^{1573}}{2^{3100}} + \frac{3^{1574}}{2^{3102}} + \frac{3^{1575}}{2^{3104}} + \\
& \frac{3^{1576}}{2^{3106}} + \frac{3^{1577}}{2^{3108}} + \frac{3^{1578}}{2^{3113}} + \frac{3^{1579}}{2^{3114}} + \frac{3^{1580}}{2^{3121}} + \frac{3^{1581}}{2^{3125}} + \frac{3^{1582}}{2^{3126}} + \frac{3^{1583}}{2^{3127}} + \frac{3^{1584}}{2^{3128}} + \\
& \frac{3^{1585}}{2^{3130}} + \frac{3^{1586}}{2^{3136}} + \frac{3^{1587}}{2^{3138}} + \frac{3^{1588}}{2^{3139}} + \frac{3^{1589}}{2^{3140}} + \frac{3^{1590}}{2^{3141}} + \frac{3^{1591}}{2^{3142}} + \frac{3^{1592}}{2^{3143}} + \frac{3^{1593}}{2^{3144}} + \\
& \frac{3^{1594}}{2^{3150}} + \frac{3^{1595}}{2^{3151}} + \frac{3^{1596}}{2^{3152}} + \frac{3^{1597}}{2^{3153}} + \frac{3^{1598}}{2^{3154}} + \frac{3^{1599}}{2^{3155}} + \frac{3^{1600}}{2^{3159}} + \frac{3^{1601}}{2^{3160}} + \frac{3^{1602}}{2^{3170}} + \\
& \frac{3^{1603}}{2^{3171}} + \frac{3^{1604}}{2^{3172}} + \frac{3^{1605}}{2^{3175}} + \frac{3^{1606}}{2^{3176}} + \frac{3^{1607}}{2^{3177}} + \frac{3^{1608}}{2^{3179}} + \frac{3^{1609}}{2^{3180}} + \frac{3^{1610}}{2^{3182}} + \frac{3^{1611}}{2^{3183}} + \\
& \frac{3^{1612}}{2^{3184}} + \frac{3^{1613}}{2^{3186}} + \frac{3^{1614}}{2^{3187}} + \frac{3^{1615}}{2^{3188}} + \frac{3^{1616}}{2^{3189}} + \frac{3^{1617}}{2^{3190}} + \frac{3^{1618}}{2^{3194}} + \frac{3^{1619}}{2^{3196}} + \frac{3^{1620}}{2^{3200}} + \\
& \frac{3^{1621}}{2^{3203}} + \frac{3^{1622}}{2^{3209}} + \frac{3^{1623}}{2^{3210}} + \frac{3^{1624}}{2^{3211}} + \frac{3^{1625}}{2^{3213}} + \frac{3^{1626}}{2^{3214}} + \frac{3^{1627}}{2^{3217}} + \frac{3^{1628}}{2^{3220}} + \frac{3^{1629}}{2^{3222}} + \\
& \frac{3^{1630}}{2^{3223}} + \frac{3^{1631}}{2^{3224}} + \frac{3^{1632}}{2^{3226}} + \frac{3^{1633}}{2^{3227}} + \frac{3^{1634}}{2^{3228}} + \frac{3^{1635}}{2^{3229}} + \frac{3^{1636}}{2^{3231}} + \frac{3^{1637}}{2^{3232}} + \frac{3^{1638}}{2^{3236}} + \\
& \frac{3^{1639}}{2^{3238}} + \frac{3^{1640}}{2^{3239}} + \frac{3^{1641}}{2^{3240}} + \frac{3^{1642}}{2^{3241}} + \frac{3^{1643}}{2^{3242}} + \frac{3^{1644}}{2^{3243}} + \frac{3^{1645}}{2^{3246}} + \frac{3^{1646}}{2^{3247}} + \frac{3^{1647}}{2^{3252}} + \\
& \frac{3^{1648}}{2^{3253}} + \frac{3^{1649}}{2^{3254}} + \frac{3^{1650}}{2^{3255}} + \frac{3^{1651}}{2^{3257}} + \frac{3^{1652}}{2^{3259}} + \frac{3^{1653}}{2^{3262}} + \frac{3^{1654}}{2^{3265}} + \frac{3^{1655}}{2^{3266}} + \frac{3^{1656}}{2^{3267}} + \\
& \frac{3^{1657}}{2^{3268}} + \frac{3^{1658}}{2^{3270}} + \frac{3^{1659}}{2^{3271}} + \frac{3^{1660}}{2^{3272}} + \frac{3^{1661}}{2^{3273}} + \frac{3^{1662}}{2^{3275}} + \frac{3^{1663}}{2^{3278}} + \frac{3^{1664}}{2^{3279}} + \frac{3^{1665}}{2^{3280}} + \\
& \frac{3^{1666}}{2^{3281}} + \frac{3^{1667}}{2^{3282}} + \frac{3^{1668}}{2^{3283}} + \frac{3^{1669}}{2^{3284}} + \frac{3^{1670}}{2^{3285}} + \frac{3^{1671}}{2^{3286}} + \frac{3^{1672}}{2^{3287}} + \frac{3^{1673}}{2^{3289}} + \frac{3^{1674}}{2^{3290}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1675}}{2^{3291}} + \frac{3^{1676}}{2^{3292}} + \frac{3^{1677}}{2^{3293}} + \frac{3^{1678}}{2^{3295}} + \frac{3^{1679}}{2^{3297}} + \frac{3^{1680}}{2^{3299}} + \frac{3^{1681}}{2^{3300}} + \frac{3^{1682}}{2^{3301}} + \frac{3^{1683}}{2^{3303}} + \\
& \frac{3^{1684}}{2^{3304}} + \frac{3^{1685}}{2^{3305}} + \frac{3^{1686}}{2^{3306}} + \frac{3^{1687}}{2^{3309}} + \frac{3^{1688}}{2^{3310}} + \frac{3^{1689}}{2^{3311}} + \frac{3^{1690}}{2^{3314}} + \frac{3^{1691}}{2^{3315}} + \frac{3^{1692}}{2^{3318}} + \\
& \frac{3^{1693}}{2^{3319}} + \frac{3^{1694}}{2^{3320}} + \frac{3^{1695}}{2^{3322}} + \frac{3^{1696}}{2^{3323}} + \frac{3^{1697}}{2^{3324}} + \frac{3^{1698}}{2^{3325}} + \frac{3^{1699}}{2^{3326}} + \frac{3^{1700}}{2^{3332}} + \frac{3^{1701}}{2^{3334}} + \\
& \frac{3^{1702}}{2^{3335}} + \frac{3^{1703}}{2^{3345}} + \frac{3^{1704}}{2^{3347}} + \frac{3^{1705}}{2^{3349}} + \frac{3^{1706}}{2^{3352}} + \frac{3^{1707}}{2^{3353}} + \frac{3^{1708}}{2^{3354}} + \frac{3^{1709}}{2^{3355}} + \frac{3^{1710}}{2^{3356}} + \\
& \frac{3^{1711}}{2^{3357}} + \frac{3^{1712}}{2^{3358}} + \frac{3^{1713}}{2^{3359}} + \frac{3^{1714}}{2^{3360}} + \frac{3^{1715}}{2^{3361}} + \frac{3^{1716}}{2^{3364}} + \frac{3^{1717}}{2^{3365}} + \frac{3^{1718}}{2^{3367}} + \frac{3^{1719}}{2^{3368}} + \\
& \frac{3^{1720}}{2^{3369}} + \frac{3^{1721}}{2^{3372}} + \frac{3^{1722}}{2^{3373}} + \frac{3^{1723}}{2^{3376}} + \frac{3^{1724}}{2^{3378}} + \frac{3^{1725}}{2^{3379}} + \frac{3^{1726}}{2^{3382}} + \frac{3^{1727}}{2^{3383}} + \frac{3^{1728}}{2^{3386}} + \\
& \frac{3^{1729}}{2^{3388}} + \frac{3^{1730}}{2^{3390}} + \frac{3^{1731}}{2^{3391}} + \frac{3^{1732}}{2^{3393}} + \frac{3^{1733}}{2^{3394}} + \frac{3^{1734}}{2^{3395}} + \frac{3^{1735}}{2^{3396}} + \frac{3^{1736}}{2^{3397}} + \frac{3^{1737}}{2^{3398}} + \\
& \frac{3^{1738}}{2^{3400}} + \frac{3^{1739}}{2^{3403}} + \frac{3^{1740}}{2^{3405}} + \frac{3^{1741}}{2^{3406}} + \frac{3^{1742}}{2^{3408}} + \frac{3^{1743}}{2^{3410}} + \frac{3^{1744}}{2^{3411}} + \frac{3^{1745}}{2^{3416}} + \frac{3^{1746}}{2^{3417}} + \\
& \frac{3^{1747}}{2^{3418}} + \frac{3^{1748}}{2^{3419}} + \frac{3^{1749}}{2^{3422}} + \frac{3^{1750}}{2^{3425}} + \frac{3^{1751}}{2^{3426}} + \frac{3^{1752}}{2^{3427}} + \frac{3^{1753}}{2^{3432}} + \frac{3^{1754}}{2^{3433}} + \frac{3^{1755}}{2^{3437}} + \\
& \frac{3^{1756}}{2^{3440}} + \frac{3^{1757}}{2^{3441}} + \frac{3^{1758}}{2^{3442}} + \frac{3^{1759}}{2^{3452}} + \frac{3^{1760}}{2^{3453}} + \frac{3^{1761}}{2^{3454}} + \frac{3^{1762}}{2^{3459}} + \frac{3^{1763}}{2^{3460}} + \frac{3^{1764}}{2^{3462}} + \\
& \frac{3^{1765}}{2^{3463}} + \frac{3^{1766}}{2^{3464}} + \frac{3^{1767}}{2^{3465}} + \frac{3^{1768}}{2^{3466}} + \frac{3^{1769}}{2^{3468}} + \frac{3^{1770}}{2^{3470}} + \frac{3^{1771}}{2^{3471}} + \frac{3^{1772}}{2^{3473}} + \frac{3^{1773}}{2^{3475}} + \\
& \frac{3^{1774}}{2^{3481}} + \frac{3^{1775}}{2^{3482}} + \frac{3^{1776}}{2^{3483}} + \frac{3^{1777}}{2^{3487}} + \frac{3^{1778}}{2^{3490}} + \frac{3^{1779}}{2^{3493}} + \frac{3^{1780}}{2^{3494}} + \frac{3^{1781}}{2^{3495}} + \frac{3^{1782}}{2^{3497}} + \\
& \frac{3^{1783}}{2^{3498}} + \frac{3^{1784}}{2^{3499}} + \frac{3^{1785}}{2^{3501}} + \frac{3^{1786}}{2^{3502}} + \frac{3^{1787}}{2^{3504}} + \frac{3^{1788}}{2^{3505}} + \frac{3^{1789}}{2^{3506}} + \frac{3^{1790}}{2^{3507}} + \frac{3^{1791}}{2^{3509}} + \\
& \frac{3^{1792}}{2^{3512}} + \frac{3^{1793}}{2^{3516}} + \frac{3^{1794}}{2^{3517}} + \frac{3^{1795}}{2^{3519}} + \frac{3^{1796}}{2^{3522}} + \frac{3^{1797}}{2^{3525}} + \frac{3^{1798}}{2^{3526}} + \frac{3^{1799}}{2^{3529}} + \frac{3^{1800}}{2^{3533}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1801}}{2^{3535}} + \frac{3^{1802}}{2^{3536}} + \frac{3^{1803}}{2^{3538}} + \frac{3^{1804}}{2^{3541}} + \frac{3^{1805}}{2^{3542}} + \frac{3^{1806}}{2^{3546}} + \frac{3^{1807}}{2^{3547}} + \frac{3^{1808}}{2^{3552}} + \frac{3^{1809}}{2^{3553}} + \\
& \frac{3^{1810}}{2^{3555}} + \frac{3^{1811}}{2^{3556}} + \frac{3^{1812}}{2^{3557}} + \frac{3^{1813}}{2^{3559}} + \frac{3^{1814}}{2^{3561}} + \frac{3^{1815}}{2^{3562}} + \frac{3^{1816}}{2^{3563}} + \frac{3^{1817}}{2^{3565}} + \frac{3^{1818}}{2^{3566}} + \\
& \frac{3^{1819}}{2^{3569}} + \frac{3^{1820}}{2^{3570}} + \frac{3^{1821}}{2^{3571}} + \frac{3^{1822}}{2^{3573}} + \frac{3^{1823}}{2^{3574}} + \frac{3^{1824}}{2^{3576}} + \frac{3^{1825}}{2^{3578}} + \frac{3^{1826}}{2^{3580}} + \frac{3^{1827}}{2^{3583}} + \\
& \frac{3^{1828}}{2^{3585}} + \frac{3^{1829}}{2^{3586}} + \frac{3^{1830}}{2^{3587}} + \frac{3^{1831}}{2^{3588}} + \frac{3^{1832}}{2^{3591}} + \frac{3^{1833}}{2^{3597}} + \frac{3^{1834}}{2^{3599}} + \frac{3^{1835}}{2^{3600}} + \frac{3^{1836}}{2^{3602}} + \\
& \frac{3^{1837}}{2^{3603}} + \frac{3^{1838}}{2^{3606}} + \frac{3^{1839}}{2^{3609}} + \frac{3^{1840}}{2^{3613}} + \frac{3^{1841}}{2^{3614}} + \frac{3^{1842}}{2^{3615}} + \frac{3^{1843}}{2^{3616}} + \frac{3^{1844}}{2^{3621}} + \frac{3^{1845}}{2^{3624}} + \\
& \frac{3^{1846}}{2^{3626}} + \frac{3^{1847}}{2^{3628}} + \frac{3^{1848}}{2^{3630}} + \frac{3^{1849}}{2^{3631}} + \frac{3^{1850}}{2^{3632}} + \frac{3^{1851}}{2^{3633}} + \frac{3^{1852}}{2^{3634}} + \frac{3^{1853}}{2^{3637}} + \frac{3^{1854}}{2^{3638}} + \\
& \frac{3^{1855}}{2^{3639}} + \frac{3^{1856}}{2^{3642}} + \frac{3^{1857}}{2^{3643}} + \frac{3^{1858}}{2^{3644}} + \frac{3^{1859}}{2^{3645}} + \frac{3^{1860}}{2^{3646}} + \frac{3^{1861}}{2^{3649}} + \frac{3^{1862}}{2^{3656}} + \frac{3^{1863}}{2^{3659}} + \\
& \frac{3^{1864}}{2^{3663}} + \frac{3^{1865}}{2^{3664}} + \frac{3^{1866}}{2^{3665}} + \frac{3^{1867}}{2^{3667}} + \frac{3^{1868}}{2^{3670}} + \frac{3^{1869}}{2^{3671}} + \frac{3^{1870}}{2^{3674}} + \frac{3^{1871}}{2^{3675}} + \frac{3^{1872}}{2^{3676}} + \\
& \frac{3^{1873}}{2^{3677}} + \frac{3^{1874}}{2^{3678}} + \frac{3^{1875}}{2^{3680}} + \frac{3^{1876}}{2^{3682}} + \frac{3^{1877}}{2^{3688}} + \frac{3^{1878}}{2^{3689}} + \frac{3^{1879}}{2^{3691}} + \frac{3^{1880}}{2^{3692}} + \frac{3^{1881}}{2^{3694}} + \\
& \frac{3^{1882}}{2^{3697}} + \frac{3^{1883}}{2^{3699}} + \frac{3^{1884}}{2^{3701}} + \frac{3^{1885}}{2^{3702}} + \frac{3^{1886}}{2^{3704}} + \frac{3^{1887}}{2^{3705}} + \frac{3^{1888}}{2^{3707}} + \frac{3^{1889}}{2^{3710}} + \frac{3^{1890}}{2^{3712}} + \\
& \frac{3^{1891}}{2^{3714}} + \frac{3^{1892}}{2^{3716}} + \frac{3^{1893}}{2^{3719}} + \frac{3^{1894}}{2^{3722}} + \frac{3^{1895}}{2^{3723}} + \frac{3^{1896}}{2^{3724}} + \frac{3^{1897}}{2^{3729}} + \frac{3^{1898}}{2^{3730}} + \frac{3^{1899}}{2^{3732}} + \\
& \frac{3^{1900}}{2^{3733}} + \frac{3^{1901}}{2^{3737}} + \frac{3^{1902}}{2^{3740}} + \frac{3^{1903}}{2^{3743}} + \frac{3^{1904}}{2^{3744}} + \frac{3^{1905}}{2^{3747}} + \frac{3^{1906}}{2^{3751}} + \frac{3^{1907}}{2^{3752}} + \frac{3^{1908}}{2^{3754}} + \\
& \frac{3^{1909}}{2^{3755}} + \frac{3^{1910}}{2^{3756}} + \frac{3^{1911}}{2^{3758}} + \frac{3^{1912}}{2^{3760}} + \frac{3^{1913}}{2^{3761}} + \frac{3^{1914}}{2^{3762}} + \frac{3^{1915}}{2^{3766}} + \frac{3^{1916}}{2^{3773}} + \frac{3^{1917}}{2^{3774}} + \\
& \frac{3^{1918}}{2^{3778}} + \frac{3^{1919}}{2^{3779}} + \frac{3^{1920}}{2^{3781}} + \frac{3^{1921}}{2^{3783}} + \frac{3^{1922}}{2^{3784}} + \frac{3^{1923}}{2^{3788}} + \frac{3^{1924}}{2^{3789}} + \frac{3^{1925}}{2^{3790}} + \frac{3^{1926}}{2^{3798}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{1927}}{2^{3799}} + \frac{3^{1928}}{2^{3800}} + \frac{3^{1929}}{2^{3801}} + \frac{3^{1930}}{2^{3804}} + \frac{3^{1931}}{2^{3805}} + \frac{3^{1932}}{2^{3806}} + \frac{3^{1933}}{2^{3807}} + \frac{3^{1934}}{2^{3809}} + \frac{3^{1935}}{2^{3811}} + \\
& \frac{3^{1936}}{2^{3813}} + \frac{3^{1937}}{2^{3814}} + \frac{3^{1938}}{2^{3816}} + \frac{3^{1939}}{2^{3819}} + \frac{3^{1940}}{2^{3821}} + \frac{3^{1941}}{2^{3822}} + \frac{3^{1942}}{2^{3823}} + \frac{3^{1943}}{2^{3825}} + \frac{3^{1944}}{2^{3828}} + \\
& \frac{3^{1945}}{2^{3829}} + \frac{3^{1946}}{2^{3831}} + \frac{3^{1947}}{2^{3835}} + \frac{3^{1948}}{2^{3836}} + \frac{3^{1949}}{2^{3839}} + \frac{3^{1950}}{2^{3840}} + \frac{3^{1951}}{2^{3841}} + \frac{3^{1952}}{2^{3843}} + \frac{3^{1953}}{2^{3844}} + \\
& \frac{3^{1954}}{2^{3845}} + \frac{3^{1955}}{2^{3846}} + \frac{3^{1956}}{2^{3847}} + \frac{3^{1957}}{2^{3848}} + \frac{3^{1958}}{2^{3849}} + \frac{3^{1959}}{2^{3852}} + \frac{3^{1960}}{2^{3853}} + \frac{3^{1961}}{2^{3855}} + \frac{3^{1962}}{2^{3856}} + \\
& \frac{3^{1963}}{2^{3858}} + \frac{3^{1964}}{2^{3859}} + \frac{3^{1965}}{2^{3862}} + \frac{3^{1966}}{2^{3864}} + \frac{3^{1967}}{2^{3865}} + \frac{3^{1968}}{2^{3866}} + \frac{3^{1969}}{2^{3869}} + \frac{3^{1970}}{2^{3873}} + \frac{3^{1971}}{2^{3875}} + \\
& \frac{3^{1972}}{2^{3877}} + \frac{3^{1973}}{2^{3879}} + \frac{3^{1974}}{2^{3881}} + \frac{3^{1975}}{2^{3882}} + \frac{3^{1976}}{2^{3883}} + \frac{3^{1977}}{2^{3885}} + \frac{3^{1978}}{2^{3886}} + \frac{3^{1979}}{2^{3887}} + \frac{3^{1980}}{2^{3888}} + \\
& \frac{3^{1981}}{2^{3889}} + \frac{3^{1982}}{2^{3892}} + \frac{3^{1983}}{2^{3893}} + \frac{3^{1984}}{2^{3894}} + \frac{3^{1985}}{2^{3895}} + \frac{3^{1986}}{2^{3897}} + \frac{3^{1987}}{2^{3898}} + \frac{3^{1988}}{2^{3899}} + \frac{3^{1989}}{2^{3900}} + \\
& \frac{3^{1990}}{2^{3906}} + \frac{3^{1991}}{2^{3908}} + \frac{3^{1992}}{2^{3909}} + \frac{3^{1993}}{2^{3911}} + \frac{3^{1994}}{2^{3912}} + \frac{3^{1995}}{2^{3913}} + \frac{3^{1996}}{2^{3916}} + \frac{3^{1997}}{2^{3917}} + \frac{3^{1998}}{2^{3919}} + \\
& \frac{3^{1999}}{2^{3921}} + \frac{3^{2000}}{2^{3923}} + \frac{3^{2001}}{2^{3924}} + \frac{3^{2002}}{2^{3925}} + \frac{3^{2003}}{2^{3927}} + \frac{3^{2004}}{2^{3928}} + \frac{3^{2005}}{2^{3931}} + \frac{3^{2006}}{2^{3932}} + \frac{3^{2007}}{2^{3933}} + \\
& \frac{3^{2008}}{2^{3936}} + \frac{3^{2009}}{2^{3937}} + \frac{3^{2010}}{2^{3939}} + \frac{3^{2011}}{2^{3940}} + \frac{3^{2012}}{2^{3941}} + \frac{3^{2013}}{2^{3942}} + \frac{3^{2014}}{2^{3943}} + \frac{3^{2015}}{2^{3945}} + \frac{3^{2016}}{2^{3946}} + \\
& \frac{3^{2017}}{2^{3950}} + \frac{3^{2018}}{2^{3956}} + \frac{3^{2019}}{2^{3959}} + \frac{3^{2020}}{2^{3960}} + \frac{3^{2021}}{2^{3962}} + \frac{3^{2022}}{2^{3965}} + \frac{3^{2023}}{2^{3966}} + \frac{3^{2024}}{2^{3969}} + \frac{3^{2025}}{2^{3974}} + \\
& \frac{3^{2026}}{2^{3976}} + \frac{3^{2027}}{2^{3978}} + \frac{3^{2028}}{2^{3980}} + \frac{3^{2029}}{2^{3981}} + \frac{3^{2030}}{2^{3982}} + \frac{3^{2031}}{2^{3983}} + \frac{3^{2032}}{2^{3986}} + \frac{3^{2033}}{2^{3990}} + \frac{3^{2034}}{2^{3992}} + \\
& \frac{3^{2035}}{2^{3993}} + \frac{3^{2036}}{2^{3994}} + \frac{3^{2037}}{2^{3996}} + \frac{3^{2038}}{2^{3999}} + \frac{3^{2039}}{2^{4000}} + \frac{3^{2040}}{2^{4005}} + \frac{3^{2041}}{2^{4006}} + \frac{3^{2042}}{2^{4007}} + \frac{3^{2043}}{2^{4008}} + \\
& \frac{3^{2044}}{2^{4009}} + \frac{3^{2045}}{2^{4010}} + \frac{3^{2046}}{2^{4013}} + \frac{3^{2047}}{2^{4014}} + \frac{3^{2048}}{2^{4017}} + \frac{3^{2049}}{2^{4018}} + \frac{3^{2050}}{2^{4019}} + \frac{3^{2051}}{2^{4024}} + \frac{3^{2052}}{2^{4025}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2053}}{2^{4027}} + \frac{3^{2054}}{2^{4029}} + \frac{3^{2055}}{2^{4030}} + \frac{3^{2056}}{2^{4035}} + \frac{3^{2057}}{2^{4037}} + \frac{3^{2058}}{2^{4039}} + \frac{3^{2059}}{2^{4040}} + \frac{3^{2060}}{2^{4041}} + \frac{3^{2061}}{2^{4042}} + \\
& \frac{3^{2062}}{2^{4043}} + \frac{3^{2063}}{2^{4046}} + \frac{3^{2064}}{2^{4047}} + \frac{3^{2065}}{2^{4048}} + \frac{3^{2066}}{2^{4052}} + \frac{3^{2067}}{2^{4053}} + \frac{3^{2068}}{2^{4054}} + \frac{3^{2069}}{2^{4055}} + \frac{3^{2070}}{2^{4059}} + \\
& \frac{3^{2071}}{2^{4061}} + \frac{3^{2072}}{2^{4063}} + \frac{3^{2073}}{2^{4065}} + \frac{3^{2074}}{2^{4066}} + \frac{3^{2075}}{2^{4067}} + \frac{3^{2076}}{2^{4068}} + \frac{3^{2077}}{2^{4069}} + \frac{3^{2078}}{2^{4073}} + \frac{3^{2079}}{2^{4074}} + \\
& \frac{3^{2080}}{2^{4075}} + \frac{3^{2081}}{2^{4077}} + \frac{3^{2082}}{2^{4081}} + \frac{3^{2083}}{2^{4082}} + \frac{3^{2084}}{2^{4083}} + \frac{3^{2085}}{2^{4085}} + \frac{3^{2086}}{2^{4086}} + \frac{3^{2087}}{2^{4087}} + \frac{3^{2088}}{2^{4089}} + \\
& \frac{3^{2089}}{2^{4092}} + \frac{3^{2090}}{2^{4094}} + \frac{3^{2091}}{2^{4097}} + \frac{3^{2092}}{2^{4098}} + \frac{3^{2093}}{2^{4099}} + \frac{3^{2094}}{2^{4100}} + \frac{3^{2095}}{2^{4103}} + \frac{3^{2096}}{2^{4104}} + \frac{3^{2097}}{2^{4106}} + \\
& \frac{3^{2098}}{2^{4110}} + \frac{3^{2099}}{2^{4111}} + \frac{3^{2100}}{2^{4112}} + \frac{3^{2101}}{2^{4113}} + \frac{3^{2102}}{2^{4115}} + \frac{3^{2103}}{2^{4117}} + \frac{3^{2104}}{2^{4118}} + \frac{3^{2105}}{2^{4119}} + \frac{3^{2106}}{2^{4122}} + \\
& \frac{3^{2107}}{2^{4123}} + \frac{3^{2108}}{2^{4124}} + \frac{3^{2109}}{2^{4125}} + \frac{3^{2110}}{2^{4126}} + \frac{3^{2111}}{2^{4130}} + \frac{3^{2112}}{2^{4131}} + \frac{3^{2113}}{2^{4132}} + \frac{3^{2114}}{2^{4135}} + \frac{3^{2115}}{2^{4137}} + \\
& \frac{3^{2116}}{2^{4138}} + \frac{3^{2117}}{2^{4140}} + \frac{3^{2118}}{2^{4141}} + \frac{3^{2119}}{2^{4142}} + \frac{3^{2120}}{2^{4145}} + \frac{3^{2121}}{2^{4146}} + \frac{3^{2122}}{2^{4148}} + \frac{3^{2123}}{2^{4152}} + \frac{3^{2124}}{2^{4153}} + \\
& \frac{3^{2125}}{2^{4154}} + \frac{3^{2126}}{2^{4156}} + \frac{3^{2127}}{2^{4157}} + \frac{3^{2128}}{2^{4158}} + \frac{3^{2129}}{2^{4159}} + \frac{3^{2130}}{2^{4160}} + \frac{3^{2131}}{2^{4162}} + \frac{3^{2132}}{2^{4164}} + \frac{3^{2133}}{2^{4165}} + \\
& \frac{3^{2134}}{2^{4169}} + \frac{3^{2135}}{2^{4170}} + \frac{3^{2136}}{2^{4171}} + \frac{3^{2137}}{2^{4175}} + \frac{3^{2138}}{2^{4176}} + \frac{3^{2139}}{2^{4177}} + \frac{3^{2140}}{2^{4178}} + \frac{3^{2141}}{2^{4182}} + \frac{3^{2142}}{2^{4184}} + \\
& \frac{3^{2143}}{2^{4187}} + \frac{3^{2144}}{2^{4188}} + \frac{3^{2145}}{2^{4189}} + \frac{3^{2146}}{2^{4192}} + \frac{3^{2147}}{2^{4194}} + \frac{3^{2148}}{2^{4195}} + \frac{3^{2149}}{2^{4196}} + \frac{3^{2150}}{2^{4197}} + \frac{3^{2151}}{2^{4198}} + \\
& \frac{3^{2152}}{2^{4199}} + \frac{3^{2153}}{2^{4203}} + \frac{3^{2154}}{2^{4204}} + \frac{3^{2155}}{2^{4205}} + \frac{3^{2156}}{2^{4206}} + \frac{3^{2157}}{2^{4212}} + \frac{3^{2158}}{2^{4214}} + \frac{3^{2159}}{2^{4215}} + \frac{3^{2160}}{2^{4216}} + \\
& \frac{3^{2161}}{2^{4218}} + \frac{3^{2162}}{2^{4219}} + \frac{3^{2163}}{2^{4220}} + \frac{3^{2164}}{2^{4222}} + \frac{3^{2165}}{2^{4223}} + \frac{3^{2166}}{2^{4225}} + \frac{3^{2167}}{2^{4226}} + \frac{3^{2168}}{2^{4229}} + \frac{3^{2169}}{2^{4230}} + \\
& \frac{3^{2170}}{2^{4231}} + \frac{3^{2171}}{2^{4234}} + \frac{3^{2172}}{2^{4236}} + \frac{3^{2173}}{2^{4237}} + \frac{3^{2174}}{2^{4238}} + \frac{3^{2175}}{2^{4239}} + \frac{3^{2176}}{2^{4241}} + \frac{3^{2177}}{2^{4242}} + \frac{3^{2178}}{2^{4243}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2179}}{2^{4244}} + \frac{3^{2180}}{2^{4245}} + \frac{3^{2181}}{2^{4248}} + \frac{3^{2182}}{2^{4255}} + \frac{3^{2183}}{2^{4257}} + \frac{3^{2184}}{2^{4258}} + \frac{3^{2185}}{2^{4259}} + \frac{3^{2186}}{2^{4260}} + \frac{3^{2187}}{2^{4265}} + \\
& \frac{3^{2188}}{2^{4266}} + \frac{3^{2189}}{2^{4267}} + \frac{3^{2190}}{2^{4268}} + \frac{3^{2191}}{2^{4269}} + \frac{3^{2192}}{2^{4270}} + \frac{3^{2193}}{2^{4273}} + \frac{3^{2194}}{2^{4274}} + \frac{3^{2195}}{2^{4277}} + \frac{3^{2196}}{2^{4278}} + \\
& \frac{3^{2197}}{2^{4281}} + \frac{3^{2198}}{2^{4284}} + \frac{3^{2199}}{2^{4287}} + \frac{3^{2200}}{2^{4288}} + \frac{3^{2201}}{2^{4290}} + \frac{3^{2202}}{2^{4291}} + \frac{3^{2203}}{2^{4293}} + \frac{3^{2204}}{2^{4295}} + \frac{3^{2205}}{2^{4297}} + \\
& \frac{3^{2206}}{2^{4300}} + \frac{3^{2207}}{2^{4302}} + \frac{3^{2208}}{2^{4303}} + \frac{3^{2209}}{2^{4304}} + \frac{3^{2210}}{2^{4307}} + \frac{3^{2211}}{2^{4308}} + \frac{3^{2212}}{2^{4311}} + \frac{3^{2213}}{2^{4312}} + \frac{3^{2214}}{2^{4314}} + \\
& \frac{3^{2215}}{2^{4316}} + \frac{3^{2216}}{2^{4317}} + \frac{3^{2217}}{2^{4320}} + \frac{3^{2218}}{2^{4321}} + \frac{3^{2219}}{2^{4322}} + \frac{3^{2220}}{2^{4323}} + \frac{3^{2221}}{2^{4326}} + \frac{3^{2222}}{2^{4327}} + \frac{3^{2223}}{2^{4330}} + \\
& \frac{3^{2224}}{2^{4331}} + \frac{3^{2225}}{2^{4333}} + \frac{3^{2226}}{2^{4334}} + \frac{3^{2227}}{2^{4335}} + \frac{3^{2228}}{2^{4336}} + \frac{3^{2229}}{2^{4338}} + \frac{3^{2230}}{2^{4339}} + \frac{3^{2231}}{2^{4340}} + \frac{3^{2232}}{2^{4342}} + \\
& \frac{3^{2233}}{2^{4343}} + \frac{3^{2234}}{2^{4345}} + \frac{3^{2235}}{2^{4347}} + \frac{3^{2236}}{2^{4348}} + \frac{3^{2237}}{2^{4351}} + \frac{3^{2238}}{2^{4352}} + \frac{3^{2239}}{2^{4353}} + \frac{3^{2240}}{2^{4354}} + \frac{3^{2241}}{2^{4356}} + \\
& \frac{3^{2242}}{2^{4357}} + \frac{3^{2243}}{2^{4365}} + \frac{3^{2244}}{2^{4367}} + \frac{3^{2245}}{2^{4369}} + \frac{3^{2246}}{2^{4370}} + \frac{3^{2247}}{2^{4372}} + \frac{3^{2248}}{2^{4374}} + \frac{3^{2249}}{2^{4377}} + \frac{3^{2250}}{2^{4378}} + \\
& \frac{3^{2251}}{2^{4380}} + \frac{3^{2252}}{2^{4382}} + \frac{3^{2253}}{2^{4386}} + \frac{3^{2254}}{2^{4387}} + \frac{3^{2255}}{2^{4389}} + \frac{3^{2256}}{2^{4392}} + \frac{3^{2257}}{2^{4394}} + \frac{3^{2258}}{2^{4395}} + \frac{3^{2259}}{2^{4396}} + \\
& \frac{3^{2260}}{2^{4397}} + \frac{3^{2261}}{2^{4398}} + \frac{3^{2262}}{2^{4399}} + \frac{3^{2263}}{2^{4400}} + \frac{3^{2264}}{2^{4402}} + \frac{3^{2265}}{2^{4405}} + \frac{3^{2266}}{2^{4407}} + \frac{3^{2267}}{2^{4410}} + \frac{3^{2268}}{2^{4413}} + \\
& \frac{3^{2269}}{2^{4416}} + \frac{3^{2270}}{2^{4420}} + \frac{3^{2271}}{2^{4422}} + \frac{3^{2272}}{2^{4428}} + \frac{3^{2273}}{2^{4429}} + \frac{3^{2274}}{2^{4432}} + \frac{3^{2275}}{2^{4435}} + \frac{3^{2276}}{2^{4437}} + \frac{3^{2277}}{2^{4439}} + \\
& \frac{3^{2278}}{2^{4440}} + \frac{3^{2279}}{2^{4441}} + \frac{3^{2280}}{2^{4442}} + \frac{3^{2281}}{2^{4447}} + \frac{3^{2282}}{2^{4448}} + \frac{3^{2283}}{2^{4449}} + \frac{3^{2284}}{2^{4451}} + \frac{3^{2285}}{2^{4456}} + \frac{3^{2286}}{2^{4457}} + \\
& \frac{3^{2287}}{2^{4459}} + \frac{3^{2288}}{2^{4462}} + \frac{3^{2289}}{2^{4464}} + \frac{3^{2290}}{2^{4468}} + \frac{3^{2291}}{2^{4469}} + \frac{3^{2292}}{2^{4470}} + \frac{3^{2293}}{2^{4471}} + \frac{3^{2294}}{2^{4472}} + \frac{3^{2295}}{2^{4474}} + \\
& \frac{3^{2296}}{2^{4475}} + \frac{3^{2297}}{2^{4479}} + \frac{3^{2298}}{2^{4480}} + \frac{3^{2299}}{2^{4484}} + \frac{3^{2300}}{2^{4485}} + \frac{3^{2301}}{2^{4487}} + \frac{3^{2302}}{2^{4489}} + \frac{3^{2303}}{2^{4490}} + \frac{3^{2304}}{2^{4492}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2305}}{2^{4496}} + \frac{3^{2306}}{2^{4497}} + \frac{3^{2307}}{2^{4500}} + \frac{3^{2308}}{2^{4501}} + \frac{3^{2309}}{2^{4503}} + \frac{3^{2310}}{2^{4504}} + \frac{3^{2311}}{2^{4508}} + \frac{3^{2312}}{2^{4513}} + \frac{3^{2313}}{2^{4516}} + \\
& \frac{3^{2314}}{2^{4517}} + \frac{3^{2315}}{2^{4519}} + \frac{3^{2316}}{2^{4520}} + \frac{3^{2317}}{2^{4521}} + \frac{3^{2318}}{2^{4522}} + \frac{3^{2319}}{2^{4523}} + \frac{3^{2320}}{2^{4524}} + \frac{3^{2321}}{2^{4525}} + \frac{3^{2322}}{2^{4526}} + \\
& \frac{3^{2323}}{2^{4527}} + \frac{3^{2324}}{2^{4528}} + \frac{3^{2325}}{2^{4530}} + \frac{3^{2326}}{2^{4533}} + \frac{3^{2327}}{2^{4535}} + \frac{3^{2328}}{2^{4536}} + \frac{3^{2329}}{2^{4537}} + \frac{3^{2330}}{2^{4538}} + \frac{3^{2331}}{2^{4540}} + \\
& \frac{3^{2332}}{2^{4541}} + \frac{3^{2333}}{2^{4544}} + \frac{3^{2334}}{2^{4546}} + \frac{3^{2335}}{2^{4547}} + \frac{3^{2336}}{2^{4554}} + \frac{3^{2337}}{2^{4555}} + \frac{3^{2338}}{2^{4556}} + \frac{3^{2339}}{2^{4557}} + \frac{3^{2340}}{2^{4558}} + \\
& \frac{3^{2341}}{2^{4559}} + \frac{3^{2342}}{2^{4564}} + \frac{3^{2343}}{2^{4565}} + \frac{3^{2344}}{2^{4568}} + \frac{3^{2345}}{2^{4569}} + \frac{3^{2346}}{2^{4570}} + \frac{3^{2347}}{2^{4571}} + \frac{3^{2348}}{2^{4572}} + \frac{3^{2349}}{2^{4573}} + \\
& \frac{3^{2350}}{2^{4574}} + \frac{3^{2351}}{2^{4576}} + \frac{3^{2352}}{2^{4580}} + \frac{3^{2353}}{2^{4581}} + \frac{3^{2354}}{2^{4582}} + \frac{3^{2355}}{2^{4584}} + \frac{3^{2356}}{2^{4585}} + \frac{3^{2357}}{2^{4586}} + \frac{3^{2358}}{2^{4593}} + \\
& \frac{3^{2359}}{2^{4599}} + \frac{3^{2360}}{2^{4602}} + \frac{3^{2361}}{2^{4603}} + \frac{3^{2362}}{2^{4605}} + \frac{3^{2363}}{2^{4608}} + \frac{3^{2364}}{2^{4610}} + \frac{3^{2365}}{2^{4615}} + \frac{3^{2366}}{2^{4616}} + \frac{3^{2367}}{2^{4618}} + \\
& \frac{3^{2368}}{2^{4619}} + \frac{3^{2369}}{2^{4621}} + \frac{3^{2370}}{2^{4625}} + \frac{3^{2371}}{2^{4629}} + \frac{3^{2372}}{2^{4631}} + \frac{3^{2373}}{2^{4634}} + \frac{3^{2374}}{2^{4635}} + \frac{3^{2375}}{2^{4637}} + \frac{3^{2376}}{2^{4639}} + \\
& \frac{3^{2377}}{2^{4640}} + \frac{3^{2378}}{2^{4641}} + \frac{3^{2379}}{2^{4645}} + \frac{3^{2380}}{2^{4646}} + \frac{3^{2381}}{2^{4647}} + \frac{3^{2382}}{2^{4648}} + \frac{3^{2383}}{2^{4649}} + \frac{3^{2384}}{2^{4650}} + \frac{3^{2385}}{2^{4657}} + \\
& \frac{3^{2386}}{2^{4658}} + \frac{3^{2387}}{2^{4660}} + \frac{3^{2388}}{2^{4663}} + \frac{3^{2389}}{2^{4664}} + \frac{3^{2390}}{2^{4668}} + \frac{3^{2391}}{2^{4671}} + \frac{3^{2392}}{2^{4673}} + \frac{3^{2393}}{2^{4676}} + \frac{3^{2394}}{2^{4677}} + \\
& \frac{3^{2395}}{2^{4678}} + \frac{3^{2396}}{2^{4679}} + \frac{3^{2397}}{2^{4680}} + \frac{3^{2398}}{2^{4681}} + \frac{3^{2399}}{2^{4683}} + \frac{3^{2400}}{2^{4684}} + \frac{3^{2401}}{2^{4685}} + \frac{3^{2402}}{2^{4687}} + \frac{3^{2403}}{2^{4691}} + \\
& \frac{3^{2404}}{2^{4692}} + \frac{3^{2405}}{2^{4693}} + \frac{3^{2406}}{2^{4697}} + \frac{3^{2407}}{2^{4700}} + \frac{3^{2408}}{2^{4701}} + \frac{3^{2409}}{2^{4703}} + \frac{3^{2410}}{2^{4704}} + \frac{3^{2411}}{2^{4705}} + \frac{3^{2412}}{2^{4708}} + \\
& \frac{3^{2413}}{2^{4709}} + \frac{3^{2414}}{2^{4711}} + \frac{3^{2415}}{2^{4713}} + \frac{3^{2416}}{2^{4714}} + \frac{3^{2417}}{2^{4717}} + \frac{3^{2418}}{2^{4718}} + \frac{3^{2419}}{2^{4720}} + \frac{3^{2420}}{2^{4721}} + \frac{3^{2421}}{2^{4722}} + \\
& \frac{3^{2422}}{2^{4723}} + \frac{3^{2423}}{2^{4725}} + \frac{3^{2424}}{2^{4730}} + \frac{3^{2425}}{2^{4731}} + \frac{3^{2426}}{2^{4735}} + \frac{3^{2427}}{2^{4736}} + \frac{3^{2428}}{2^{4737}} + \frac{3^{2429}}{2^{4739}} + \frac{3^{2430}}{2^{4742}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2431}}{2^{4743}} + \frac{3^{2432}}{2^{4746}} + \frac{3^{2433}}{2^{4747}} + \frac{3^{2434}}{2^{4748}} + \frac{3^{2435}}{2^{4749}} + \frac{3^{2436}}{2^{4750}} + \frac{3^{2437}}{2^{4751}} + \frac{3^{2438}}{2^{4752}} + \frac{3^{2439}}{2^{4753}} + \\
& \frac{3^{2440}}{2^{4754}} + \frac{3^{2441}}{2^{4759}} + \frac{3^{2442}}{2^{4760}} + \frac{3^{2443}}{2^{4761}} + \frac{3^{2444}}{2^{4762}} + \frac{3^{2445}}{2^{4763}} + \frac{3^{2446}}{2^{4766}} + \frac{3^{2447}}{2^{4767}} + \frac{3^{2448}}{2^{4769}} + \\
& \frac{3^{2449}}{2^{4770}} + \frac{3^{2450}}{2^{4771}} + \frac{3^{2451}}{2^{4773}} + \frac{3^{2452}}{2^{4774}} + \frac{3^{2453}}{2^{4775}} + \frac{3^{2454}}{2^{4777}} + \frac{3^{2455}}{2^{4783}} + \frac{3^{2456}}{2^{4786}} + \frac{3^{2457}}{2^{4787}} + \\
& \frac{3^{2458}}{2^{4789}} + \frac{3^{2459}}{2^{4792}} + \frac{3^{2460}}{2^{4793}} + \frac{3^{2461}}{2^{4799}} + \frac{3^{2462}}{2^{4800}} + \frac{3^{2463}}{2^{4801}} + \frac{3^{2464}}{2^{4803}} + \frac{3^{2465}}{2^{4809}} + \frac{3^{2466}}{2^{4811}} + \\
& \frac{3^{2467}}{2^{4813}} + \frac{3^{2468}}{2^{4814}} + \frac{3^{2469}}{2^{4817}} + \frac{3^{2470}}{2^{4819}} + \frac{3^{2471}}{2^{4820}} + \frac{3^{2472}}{2^{4821}} + \frac{3^{2473}}{2^{4824}} + \frac{3^{2474}}{2^{4825}} + \frac{3^{2475}}{2^{4828}} + \\
& \frac{3^{2476}}{2^{4829}} + \frac{3^{2477}}{2^{4832}} + \frac{3^{2478}}{2^{4839}} + \frac{3^{2479}}{2^{4840}} + \frac{3^{2480}}{2^{4841}} + \frac{3^{2481}}{2^{4847}} + \frac{3^{2482}}{2^{4848}} + \frac{3^{2483}}{2^{4849}} + \frac{3^{2484}}{2^{4851}} + \\
& \frac{3^{2485}}{2^{4852}} + \frac{3^{2486}}{2^{4856}} + \frac{3^{2487}}{2^{4857}} + \frac{3^{2488}}{2^{4858}} + \frac{3^{2489}}{2^{4859}} + \frac{3^{2490}}{2^{4861}} + \frac{3^{2491}}{2^{4863}} + \frac{3^{2492}}{2^{4865}} + \frac{3^{2493}}{2^{4866}} + \\
& \frac{3^{2494}}{2^{4867}} + \frac{3^{2495}}{2^{4869}} + \frac{3^{2496}}{2^{4870}} + \frac{3^{2497}}{2^{4871}} + \frac{3^{2498}}{2^{4872}} + \frac{3^{2499}}{2^{4873}} + \frac{3^{2500}}{2^{4876}} + \frac{3^{2501}}{2^{4877}} + \frac{3^{2502}}{2^{4880}} + \\
& \frac{3^{2503}}{2^{4881}} + \frac{3^{2504}}{2^{4884}} + \frac{3^{2505}}{2^{4886}} + \frac{3^{2506}}{2^{4887}} + \frac{3^{2507}}{2^{4888}} + \frac{3^{2508}}{2^{4889}} + \frac{3^{2509}}{2^{4890}} + \frac{3^{2510}}{2^{4891}} + \frac{3^{2511}}{2^{4894}} + \\
& \frac{3^{2512}}{2^{4895}} + \frac{3^{2513}}{2^{4899}} + \frac{3^{2514}}{2^{4900}} + \frac{3^{2515}}{2^{4903}} + \frac{3^{2516}}{2^{4905}} + \frac{3^{2517}}{2^{4906}} + \frac{3^{2518}}{2^{4907}} + \frac{3^{2519}}{2^{4909}} + \frac{3^{2520}}{2^{4912}} + \\
& \frac{3^{2521}}{2^{4914}} + \frac{3^{2522}}{2^{4916}} + \frac{3^{2523}}{2^{4918}} + \frac{3^{2524}}{2^{4920}} + \frac{3^{2525}}{2^{4925}} + \frac{3^{2526}}{2^{4926}} + \frac{3^{2527}}{2^{4929}} + \frac{3^{2528}}{2^{4930}} + \frac{3^{2529}}{2^{4931}} + \\
& \frac{3^{2530}}{2^{4932}} + \frac{3^{2531}}{2^{4933}} + \frac{3^{2532}}{2^{4935}} + \frac{3^{2533}}{2^{4936}} + \frac{3^{2534}}{2^{4938}} + \frac{3^{2535}}{2^{4940}} + \frac{3^{2536}}{2^{4941}} + \frac{3^{2537}}{2^{4942}} + \frac{3^{2538}}{2^{4943}} + \\
& \frac{3^{2539}}{2^{4944}} + \frac{3^{2540}}{2^{4946}} + \frac{3^{2541}}{2^{4948}} + \frac{3^{2542}}{2^{4949}} + \frac{3^{2543}}{2^{4950}} + \frac{3^{2544}}{2^{4954}} + \frac{3^{2545}}{2^{4955}} + \frac{3^{2546}}{2^{4959}} + \frac{3^{2547}}{2^{4960}} + \\
& \frac{3^{2548}}{2^{4961}} + \frac{3^{2549}}{2^{4962}} + \frac{3^{2550}}{2^{4963}} + \frac{3^{2551}}{2^{4964}} + \frac{3^{2552}}{2^{4965}} + \frac{3^{2553}}{2^{4971}} + \frac{3^{2554}}{2^{4972}} + \frac{3^{2555}}{2^{4978}} + \frac{3^{2556}}{2^{4979}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2557}}{2^{4982}} + \frac{3^{2558}}{2^{4988}} + \frac{3^{2559}}{2^{4989}} + \frac{3^{2560}}{2^{4993}} + \frac{3^{2561}}{2^{4994}} + \frac{3^{2562}}{2^{4996}} + \frac{3^{2563}}{2^{4998}} + \frac{3^{2564}}{2^{4999}} + \frac{3^{2565}}{2^{5001}} + \\
& \frac{3^{2566}}{2^{5003}} + \frac{3^{2567}}{2^{5005}} + \frac{3^{2568}}{2^{5006}} + \frac{3^{2569}}{2^{5007}} + \frac{3^{2570}}{2^{5017}} + \frac{3^{2571}}{2^{5018}} + \frac{3^{2572}}{2^{5020}} + \frac{3^{2573}}{2^{5024}} + \frac{3^{2574}}{2^{5028}} + \\
& \frac{3^{2575}}{2^{5031}} + \frac{3^{2576}}{2^{5032}} + \frac{3^{2577}}{2^{5038}} + \frac{3^{2578}}{2^{5039}} + \frac{3^{2579}}{2^{5040}} + \frac{3^{2580}}{2^{5041}} + \frac{3^{2581}}{2^{5042}} + \frac{3^{2582}}{2^{5044}} + \frac{3^{2583}}{2^{5045}} + \\
& \frac{3^{2584}}{2^{5046}} + \frac{3^{2585}}{2^{5047}} + \frac{3^{2586}}{2^{5050}} + \frac{3^{2587}}{2^{5051}} + \frac{3^{2588}}{2^{5052}} + \frac{3^{2589}}{2^{5054}} + \frac{3^{2590}}{2^{5055}} + \frac{3^{2591}}{2^{5056}} + \frac{3^{2592}}{2^{5058}} + \\
& \frac{3^{2593}}{2^{5068}} + \frac{3^{2594}}{2^{5072}} + \frac{3^{2595}}{2^{5075}} + \frac{3^{2596}}{2^{5076}} + \frac{3^{2597}}{2^{5078}} + \frac{3^{2598}}{2^{5079}} + \frac{3^{2599}}{2^{5081}} + \frac{3^{2600}}{2^{5083}} + \frac{3^{2601}}{2^{5085}} + \\
& \frac{3^{2602}}{2^{5089}} + \frac{3^{2603}}{2^{5091}} + \frac{3^{2604}}{2^{5093}} + \frac{3^{2605}}{2^{5095}} + \frac{3^{2606}}{2^{5096}} + \frac{3^{2607}}{2^{5097}} + \frac{3^{2608}}{2^{5100}} + \frac{3^{2609}}{2^{5101}} + \frac{3^{2610}}{2^{5103}} + \\
& \frac{3^{2611}}{2^{5109}} + \frac{3^{2612}}{2^{5112}} + \frac{3^{2613}}{2^{5114}} + \frac{3^{2614}}{2^{5115}} + \frac{3^{2615}}{2^{5117}} + \frac{3^{2616}}{2^{5118}} + \frac{3^{2617}}{2^{5119}} + \frac{3^{2618}}{2^{5120}} + \frac{3^{2619}}{2^{5125}} + \\
& \frac{3^{2620}}{2^{5126}} + \frac{3^{2621}}{2^{5128}} + \frac{3^{2622}}{2^{5130}} + \frac{3^{2623}}{2^{5132}} + \frac{3^{2624}}{2^{5134}} + \frac{3^{2625}}{2^{5137}} + \frac{3^{2626}}{2^{5138}} + \frac{3^{2627}}{2^{5139}} + \frac{3^{2628}}{2^{5140}} + \\
& \frac{3^{2629}}{2^{5141}} + \frac{3^{2630}}{2^{5145}} + \frac{3^{2631}}{2^{5146}} + \frac{3^{2632}}{2^{5147}} + \frac{3^{2633}}{2^{5148}} + \frac{3^{2634}}{2^{5151}} + \frac{3^{2635}}{2^{5152}} + \frac{3^{2636}}{2^{5153}} + \frac{3^{2637}}{2^{5154}} + \\
& \frac{3^{2638}}{2^{5157}} + \frac{3^{2639}}{2^{5159}} + \frac{3^{2640}}{2^{5160}} + \frac{3^{2641}}{2^{5165}} + \frac{3^{2642}}{2^{5167}} + \frac{3^{2643}}{2^{5170}} + \frac{3^{2644}}{2^{5177}} + \frac{3^{2645}}{2^{5178}} + \frac{3^{2646}}{2^{5181}} + \\
& \frac{3^{2647}}{2^{5185}} + \frac{3^{2648}}{2^{5187}} + \frac{3^{2649}}{2^{5190}} + \frac{3^{2650}}{2^{5191}} + \frac{3^{2651}}{2^{5193}} + \frac{3^{2652}}{2^{5195}} + \frac{3^{2653}}{2^{5196}} + \frac{3^{2654}}{2^{5197}} + \frac{3^{2655}}{2^{5202}} + \\
& \frac{3^{2656}}{2^{5208}} + \frac{3^{2657}}{2^{5210}} + \frac{3^{2658}}{2^{5211}} + \frac{3^{2659}}{2^{5212}} + \frac{3^{2660}}{2^{5214}} + \frac{3^{2661}}{2^{5219}} + \frac{3^{2662}}{2^{5228}} + \frac{3^{2663}}{2^{5229}} + \frac{3^{2664}}{2^{5230}} + \\
& \frac{3^{2665}}{2^{5231}} + \frac{3^{2666}}{2^{5233}} + \frac{3^{2667}}{2^{5236}} + \frac{3^{2668}}{2^{5237}} + \frac{3^{2669}}{2^{5238}} + \frac{3^{2670}}{2^{5240}} + \frac{3^{2671}}{2^{5243}} + \frac{3^{2672}}{2^{5244}} + \frac{3^{2673}}{2^{5250}} + \\
& \frac{3^{2674}}{2^{5252}} + \frac{3^{2675}}{2^{5254}} + \frac{3^{2676}}{2^{5255}} + \frac{3^{2677}}{2^{5256}} + \frac{3^{2678}}{2^{5258}} + \frac{3^{2679}}{2^{5264}} + \frac{3^{2680}}{2^{5265}} + \frac{3^{2681}}{2^{5267}} + \frac{3^{2682}}{2^{5269}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2683}}{2^{5272}} + \frac{3^{2684}}{2^{5276}} + \frac{3^{2685}}{2^{5278}} + \frac{3^{2686}}{2^{5280}} + \frac{3^{2687}}{2^{5282}} + \frac{3^{2688}}{2^{5283}} + \frac{3^{2689}}{2^{5284}} + \frac{3^{2690}}{2^{5285}} + \frac{3^{2691}}{2^{5287}} + \\
& \frac{3^{2692}}{2^{5288}} + \frac{3^{2693}}{2^{5292}} + \frac{3^{2694}}{2^{5293}} + \frac{3^{2695}}{2^{5295}} + \frac{3^{2696}}{2^{5296}} + \frac{3^{2697}}{2^{5299}} + \frac{3^{2698}}{2^{5303}} + \frac{3^{2699}}{2^{5304}} + \frac{3^{2700}}{2^{5306}} + \\
& \frac{3^{2701}}{2^{5307}} + \frac{3^{2702}}{2^{5309}} + \frac{3^{2703}}{2^{5311}} + \frac{3^{2704}}{2^{5315}} + \frac{3^{2705}}{2^{5316}} + \frac{3^{2706}}{2^{5317}} + \frac{3^{2707}}{2^{5319}} + \frac{3^{2708}}{2^{5321}} + \frac{3^{2709}}{2^{5323}} + \\
& \frac{3^{2710}}{2^{5324}} + \frac{3^{2711}}{2^{5326}} + \frac{3^{2712}}{2^{5327}} + \frac{3^{2713}}{2^{5330}} + \frac{3^{2714}}{2^{5331}} + \frac{3^{2715}}{2^{5334}} + \frac{3^{2716}}{2^{5336}} + \frac{3^{2717}}{2^{5337}} + \frac{3^{2718}}{2^{5338}} + \\
& \frac{3^{2719}}{2^{5340}} + \frac{3^{2720}}{2^{5341}} + \frac{3^{2721}}{2^{5342}} + \frac{3^{2722}}{2^{5343}} + \frac{3^{2723}}{2^{5344}} + \frac{3^{2724}}{2^{5345}} + \frac{3^{2725}}{2^{5346}} + \frac{3^{2726}}{2^{5347}} + \frac{3^{2727}}{2^{5349}} + \\
& \frac{3^{2728}}{2^{5353}} + \frac{3^{2729}}{2^{5357}} + \frac{3^{2730}}{2^{5359}} + \frac{3^{2731}}{2^{5364}} + \frac{3^{2732}}{2^{5365}} + \frac{3^{2733}}{2^{5366}} + \frac{3^{2734}}{2^{5367}} + \frac{3^{2735}}{2^{5368}} + \frac{3^{2736}}{2^{5369}} + \\
& \frac{3^{2737}}{2^{5370}} + \frac{3^{2738}}{2^{5377}} + \frac{3^{2739}}{2^{5378}} + \frac{3^{2740}}{2^{5379}} + \frac{3^{2741}}{2^{5380}} + \frac{3^{2742}}{2^{5383}} + \frac{3^{2743}}{2^{5384}} + \frac{3^{2744}}{2^{5386}} + \frac{3^{2745}}{2^{5387}} + \\
& \frac{3^{2746}}{2^{5388}} + \frac{3^{2747}}{2^{5389}} + \frac{3^{2748}}{2^{5390}} + \frac{3^{2749}}{2^{5391}} + \frac{3^{2750}}{2^{5394}} + \frac{3^{2751}}{2^{5395}} + \frac{3^{2752}}{2^{5397}} + \frac{3^{2753}}{2^{5403}} + \frac{3^{2754}}{2^{5406}} + \\
& \frac{3^{2755}}{2^{5411}} + \frac{3^{2756}}{2^{5413}} + \frac{3^{2757}}{2^{5414}} + \frac{3^{2758}}{2^{5416}} + \frac{3^{2759}}{2^{5419}} + \frac{3^{2760}}{2^{5421}} + \frac{3^{2761}}{2^{5423}} + \frac{3^{2762}}{2^{5424}} + \frac{3^{2763}}{2^{5426}} + \\
& \frac{3^{2764}}{2^{5428}} + \frac{3^{2765}}{2^{5429}} + \frac{3^{2766}}{2^{5430}} + \frac{3^{2767}}{2^{5433}} + \frac{3^{2768}}{2^{5434}} + \frac{3^{2769}}{2^{5437}} + \frac{3^{2770}}{2^{5440}} + \frac{3^{2771}}{2^{5443}} + \frac{3^{2772}}{2^{5444}} + \\
& \frac{3^{2773}}{2^{5445}} + \frac{3^{2774}}{2^{5448}} + \frac{3^{2775}}{2^{5449}} + \frac{3^{2776}}{2^{5450}} + \frac{3^{2777}}{2^{5451}} + \frac{3^{2778}}{2^{5452}} + \frac{3^{2779}}{2^{5453}} + \frac{3^{2780}}{2^{5454}} + \frac{3^{2781}}{2^{5456}} + \\
& \frac{3^{2782}}{2^{5457}} + \frac{3^{2783}}{2^{5459}} + \frac{3^{2784}}{2^{5460}} + \frac{3^{2785}}{2^{5461}} + \frac{3^{2786}}{2^{5463}} + \frac{3^{2787}}{2^{5465}} + \frac{3^{2788}}{2^{5466}} + \frac{3^{2789}}{2^{5468}} + \frac{3^{2790}}{2^{5471}} + \\
& \frac{3^{2791}}{2^{5473}} + \frac{3^{2792}}{2^{5474}} + \frac{3^{2793}}{2^{5477}} + \frac{3^{2794}}{2^{5479}} + \frac{3^{2795}}{2^{5481}} + \frac{3^{2796}}{2^{5482}} + \frac{3^{2797}}{2^{5485}} + \frac{3^{2798}}{2^{5486}} + \frac{3^{2799}}{2^{5490}} + \\
& \frac{3^{2800}}{2^{5491}} + \frac{3^{2801}}{2^{5495}} + \frac{3^{2802}}{2^{5496}} + \frac{3^{2803}}{2^{5498}} + \frac{3^{2804}}{2^{5499}} + \frac{3^{2805}}{2^{5500}} + \frac{3^{2806}}{2^{5503}} + \frac{3^{2807}}{2^{5507}} + \frac{3^{2808}}{2^{5515}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2809}}{2^{5516}} + \frac{3^{2810}}{2^{5518}} + \frac{3^{2811}}{2^{5520}} + \frac{3^{2812}}{2^{5522}} + \frac{3^{2813}}{2^{5525}} + \frac{3^{2814}}{2^{5527}} + \frac{3^{2815}}{2^{5528}} + \frac{3^{2816}}{2^{5531}} + \frac{3^{2817}}{2^{5534}} + \\
& \frac{3^{2818}}{2^{5535}} + \frac{3^{2819}}{2^{5537}} + \frac{3^{2820}}{2^{5538}} + \frac{3^{2821}}{2^{5540}} + \frac{3^{2822}}{2^{5542}} + \frac{3^{2823}}{2^{5543}} + \frac{3^{2824}}{2^{5547}} + \frac{3^{2825}}{2^{5549}} + \frac{3^{2826}}{2^{5550}} + \\
& \frac{3^{2827}}{2^{5551}} + \frac{3^{2828}}{2^{5553}} + \frac{3^{2829}}{2^{5555}} + \frac{3^{2830}}{2^{5556}} + \frac{3^{2831}}{2^{5563}} + \frac{3^{2832}}{2^{5568}} + \frac{3^{2833}}{2^{5569}} + \frac{3^{2834}}{2^{5570}} + \frac{3^{2835}}{2^{5571}} + \\
& \frac{3^{2836}}{2^{5576}} + \frac{3^{2837}}{2^{5577}} + \frac{3^{2838}}{2^{5579}} + \frac{3^{2839}}{2^{5581}} + \frac{3^{2840}}{2^{5587}} + \frac{3^{2841}}{2^{5588}} + \frac{3^{2842}}{2^{5593}} + \frac{3^{2843}}{2^{5594}} + \frac{3^{2844}}{2^{5595}} + \\
& \frac{3^{2845}}{2^{5599}} + \frac{3^{2846}}{2^{5604}} + \frac{3^{2847}}{2^{5606}} + \frac{3^{2848}}{2^{5607}} + \frac{3^{2849}}{2^{5608}} + \frac{3^{2850}}{2^{5609}} + \frac{3^{2851}}{2^{5611}} + \frac{3^{2852}}{2^{5617}} + \frac{3^{2853}}{2^{5620}} + \\
& \frac{3^{2854}}{2^{5621}} + \frac{3^{2855}}{2^{5623}} + \frac{3^{2856}}{2^{5624}} + \frac{3^{2857}}{2^{5625}} + \frac{3^{2858}}{2^{5629}} + \frac{3^{2859}}{2^{5632}} + \frac{3^{2860}}{2^{5633}} + \frac{3^{2861}}{2^{5635}} + \frac{3^{2862}}{2^{5636}} + \\
& \frac{3^{2863}}{2^{5639}} + \frac{3^{2864}}{2^{5640}} + \frac{3^{2865}}{2^{5645}} + \frac{3^{2866}}{2^{5646}} + \frac{3^{2867}}{2^{5647}} + \frac{3^{2868}}{2^{5648}} + \frac{3^{2869}}{2^{5651}} + \frac{3^{2870}}{2^{5658}} + \frac{3^{2871}}{2^{5664}} + \\
& \frac{3^{2872}}{2^{5665}} + \frac{3^{2873}}{2^{5666}} + \frac{3^{2874}}{2^{5669}} + \frac{3^{2875}}{2^{5677}} + \frac{3^{2876}}{2^{5679}} + \frac{3^{2877}}{2^{5684}} + \frac{3^{2878}}{2^{5685}} + \frac{3^{2879}}{2^{5686}} + \frac{3^{2880}}{2^{5688}} + \\
& \frac{3^{2881}}{2^{5690}} + \frac{3^{2882}}{2^{5691}} + \frac{3^{2883}}{2^{5692}} + \frac{3^{2884}}{2^{5693}} + \frac{3^{2885}}{2^{5695}} + \frac{3^{2886}}{2^{5696}} + \frac{3^{2887}}{2^{5698}} + \frac{3^{2888}}{2^{5699}} + \frac{3^{2889}}{2^{5701}} + \\
& \frac{3^{2890}}{2^{5702}} + \frac{3^{2891}}{2^{5703}} + \frac{3^{2892}}{2^{5705}} + \frac{3^{2893}}{2^{5706}} + \frac{3^{2894}}{2^{5707}} + \frac{3^{2895}}{2^{5708}} + \frac{3^{2896}}{2^{5710}} + \frac{3^{2897}}{2^{5714}} + \frac{3^{2898}}{2^{5716}} + \\
& \frac{3^{2899}}{2^{5718}} + \frac{3^{2900}}{2^{5722}} + \frac{3^{2901}}{2^{5723}} + \frac{3^{2902}}{2^{5724}} + \frac{3^{2903}}{2^{5725}} + \frac{3^{2904}}{2^{5727}} + \frac{3^{2905}}{2^{5728}} + \frac{3^{2906}}{2^{5729}} + \frac{3^{2907}}{2^{5730}} + \\
& \frac{3^{2908}}{2^{5733}} + \frac{3^{2909}}{2^{5735}} + \frac{3^{2910}}{2^{5736}} + \frac{3^{2911}}{2^{5739}} + \frac{3^{2912}}{2^{5741}} + \frac{3^{2913}}{2^{5745}} + \frac{3^{2914}}{2^{5746}} + \frac{3^{2915}}{2^{5747}} + \frac{3^{2916}}{2^{5748}} + \\
& \frac{3^{2917}}{2^{5749}} + \frac{3^{2918}}{2^{5753}} + \frac{3^{2919}}{2^{5755}} + \frac{3^{2920}}{2^{5759}} + \frac{3^{2921}}{2^{5760}} + \frac{3^{2922}}{2^{5765}} + \frac{3^{2923}}{2^{5768}} + \frac{3^{2924}}{2^{5770}} + \frac{3^{2925}}{2^{5773}} + \\
& \frac{3^{2926}}{2^{5774}} + \frac{3^{2927}}{2^{5775}} + \frac{3^{2928}}{2^{5780}} + \frac{3^{2929}}{2^{5781}} + \frac{3^{2930}}{2^{5782}} + \frac{3^{2931}}{2^{5784}} + \frac{3^{2932}}{2^{5785}} + \frac{3^{2933}}{2^{5786}} + \frac{3^{2934}}{2^{5787}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{2935}}{2^{5789}} + \frac{3^{2936}}{2^{5792}} + \frac{3^{2937}}{2^{5793}} + \frac{3^{2938}}{2^{5795}} + \frac{3^{2939}}{2^{5798}} + \frac{3^{2940}}{2^{5799}} + \frac{3^{2941}}{2^{5800}} + \frac{3^{2942}}{2^{5801}} + \frac{3^{2943}}{2^{5802}} + \\
& \frac{3^{2944}}{2^{5803}} + \frac{3^{2945}}{2^{5804}} + \frac{3^{2946}}{2^{5805}} + \frac{3^{2947}}{2^{5807}} + \frac{3^{2948}}{2^{5808}} + \frac{3^{2949}}{2^{5809}} + \frac{3^{2950}}{2^{5810}} + \frac{3^{2951}}{2^{5813}} + \frac{3^{2952}}{2^{5814}} + \\
& \frac{3^{2953}}{2^{5817}} + \frac{3^{2954}}{2^{5820}} + \frac{3^{2955}}{2^{5823}} + \frac{3^{2956}}{2^{5830}} + \frac{3^{2957}}{2^{5834}} + \frac{3^{2958}}{2^{5839}} + \frac{3^{2959}}{2^{5840}} + \frac{3^{2960}}{2^{5842}} + \frac{3^{2961}}{2^{5843}} + \\
& \frac{3^{2962}}{2^{5844}} + \frac{3^{2963}}{2^{5848}} + \frac{3^{2964}}{2^{5849}} + \frac{3^{2965}}{2^{5850}} + \frac{3^{2966}}{2^{5852}} + \frac{3^{2967}}{2^{5858}} + \frac{3^{2968}}{2^{5863}} + \frac{3^{2969}}{2^{5864}} + \frac{3^{2970}}{2^{5865}} + \\
& \frac{3^{2971}}{2^{5866}} + \frac{3^{2972}}{2^{5869}} + \frac{3^{2973}}{2^{5872}} + \frac{3^{2974}}{2^{5873}} + \frac{3^{2975}}{2^{5877}} + \frac{3^{2976}}{2^{5881}} + \frac{3^{2977}}{2^{5884}} + \frac{3^{2978}}{2^{5886}} + \frac{3^{2979}}{2^{5888}} + \\
& \frac{3^{2980}}{2^{5889}} + \frac{3^{2981}}{2^{5890}} + \frac{3^{2982}}{2^{5896}} + \frac{3^{2983}}{2^{5899}} + \frac{3^{2984}}{2^{5902}} + \frac{3^{2985}}{2^{5903}} + \frac{3^{2986}}{2^{5904}} + \frac{3^{2987}}{2^{5905}} + \frac{3^{2988}}{2^{5907}} + \\
& \frac{3^{2989}}{2^{5908}} + \frac{3^{2990}}{2^{5915}} + \frac{3^{2991}}{2^{5916}} + \frac{3^{2992}}{2^{5917}} + \frac{3^{2993}}{2^{5918}} + \frac{3^{2994}}{2^{5920}} + \frac{3^{2995}}{2^{5922}} + \frac{3^{2996}}{2^{5923}} + \frac{3^{2997}}{2^{5926}} + \\
& \frac{3^{2998}}{2^{5927}} + \frac{3^{2999}}{2^{5928}} + \frac{3^{3000}}{2^{5929}} + \frac{3^{3001}}{2^{5930}} + \frac{3^{3002}}{2^{5933}} + \frac{3^{3003}}{2^{5935}} + \frac{3^{3004}}{2^{5938}} + \frac{3^{3005}}{2^{5940}} + \frac{3^{3006}}{2^{5941}} + \\
& \frac{3^{3007}}{2^{5942}} + \frac{3^{3008}}{2^{5943}} + \frac{3^{3009}}{2^{5946}} + \frac{3^{3010}}{2^{5947}} + \frac{3^{3011}}{2^{5948}} + \frac{3^{3012}}{2^{5949}} + \frac{3^{3013}}{2^{5950}} + \frac{3^{3014}}{2^{5952}} + \frac{3^{3015}}{2^{5954}} + \\
& \frac{3^{3016}}{2^{5955}} + \frac{3^{3017}}{2^{5956}} + \frac{3^{3018}}{2^{5957}} + \frac{3^{3019}}{2^{5958}} + \frac{3^{3020}}{2^{5959}} + \frac{3^{3021}}{2^{5960}} + \frac{3^{3022}}{2^{5961}} + \frac{3^{3023}}{2^{5963}} + \frac{3^{3024}}{2^{5964}} + \\
& \frac{3^{3025}}{2^{5967}} + \frac{3^{3026}}{2^{5971}} + \frac{3^{3027}}{2^{5973}} + \frac{3^{3028}}{2^{5974}} + \frac{3^{3029}}{2^{5976}} + \frac{3^{3030}}{2^{5979}} + \frac{3^{3031}}{2^{5989}} + \frac{3^{3032}}{2^{5994}} + \frac{3^{3033}}{2^{5997}} + \\
& \frac{3^{3034}}{2^{5998}} + \frac{3^{3035}}{2^{6007}} + \frac{3^{3036}}{2^{6008}} + \frac{3^{3037}}{2^{6009}} + \frac{3^{3038}}{2^{6012}} + \frac{3^{3039}}{2^{6014}} + \frac{3^{3040}}{2^{6017}} + \frac{3^{3041}}{2^{6018}} + \frac{3^{3042}}{2^{6019}} + \\
& \frac{3^{3043}}{2^{6021}} + \frac{3^{3044}}{2^{6026}} + \frac{3^{3045}}{2^{6027}} + \frac{3^{3046}}{2^{6028}} + \frac{3^{3047}}{2^{6030}} + \frac{3^{3048}}{2^{6031}} + \frac{3^{3049}}{2^{6032}} + \frac{3^{3050}}{2^{6033}} + \frac{3^{3051}}{2^{6035}} + \\
& \frac{3^{3052}}{2^{6036}} + \frac{3^{3053}}{2^{6039}} + \frac{3^{3054}}{2^{6040}} + \frac{3^{3055}}{2^{6041}} + \frac{3^{3056}}{2^{6042}} + \frac{3^{3057}}{2^{6043}} + \frac{3^{3058}}{2^{6046}} + \frac{3^{3059}}{2^{6047}} + \frac{3^{3060}}{2^{6049}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3061}}{2^{6050}} + \frac{3^{3062}}{2^{6053}} + \frac{3^{3063}}{2^{6054}} + \frac{3^{3064}}{2^{6056}} + \frac{3^{3065}}{2^{6059}} + \frac{3^{3066}}{2^{6060}} + \frac{3^{3067}}{2^{6062}} + \frac{3^{3068}}{2^{6065}} + \frac{3^{3069}}{2^{6067}} + \\
& \frac{3^{3070}}{2^{6069}} + \frac{3^{3071}}{2^{6071}} + \frac{3^{3072}}{2^{6072}} + \frac{3^{3073}}{2^{6075}} + \frac{3^{3074}}{2^{6078}} + \frac{3^{3075}}{2^{6079}} + \frac{3^{3076}}{2^{6080}} + \frac{3^{3077}}{2^{6081}} + \frac{3^{3078}}{2^{6083}} + \\
& \frac{3^{3079}}{2^{6087}} + \frac{3^{3080}}{2^{6088}} + \frac{3^{3081}}{2^{6091}} + \frac{3^{3082}}{2^{6093}} + \frac{3^{3083}}{2^{6096}} + \frac{3^{3084}}{2^{6099}} + \frac{3^{3085}}{2^{6100}} + \frac{3^{3086}}{2^{6101}} + \frac{3^{3087}}{2^{6102}} + \\
& \frac{3^{3088}}{2^{6105}} + \frac{3^{3089}}{2^{6109}} + \frac{3^{3090}}{2^{6111}} + \frac{3^{3091}}{2^{6112}} + \frac{3^{3092}}{2^{6115}} + \frac{3^{3093}}{2^{6116}} + \frac{3^{3094}}{2^{6117}} + \frac{3^{3095}}{2^{6121}} + \frac{3^{3096}}{2^{6122}} + \\
& \frac{3^{3097}}{2^{6123}} + \frac{3^{3098}}{2^{6125}} + \frac{3^{3099}}{2^{6126}} + \frac{3^{3100}}{2^{6128}} + \frac{3^{3101}}{2^{6129}} + \frac{3^{3102}}{2^{6131}} + \frac{3^{3103}}{2^{6134}} + \frac{3^{3104}}{2^{6136}} + \frac{3^{3105}}{2^{6138}} + \\
& \frac{3^{3106}}{2^{6141}} + \frac{3^{3107}}{2^{6142}} + \frac{3^{3108}}{2^{6144}} + \frac{3^{3109}}{2^{6145}} + \frac{3^{3110}}{2^{6146}} + \frac{3^{3111}}{2^{6147}} + \frac{3^{3112}}{2^{6148}} + \frac{3^{3113}}{2^{6150}} + \frac{3^{3114}}{2^{6151}} + \\
& \frac{3^{3115}}{2^{6153}} + \frac{3^{3116}}{2^{6154}} + \frac{3^{3117}}{2^{6156}} + \frac{3^{3118}}{2^{6157}} + \frac{3^{3119}}{2^{6158}} + \frac{3^{3120}}{2^{6160}} + \frac{3^{3121}}{2^{6163}} + \frac{3^{3122}}{2^{6165}} + \frac{3^{3123}}{2^{6167}} + \\
& \frac{3^{3124}}{2^{6169}} + \frac{3^{3125}}{2^{6170}} + \frac{3^{3126}}{2^{6172}} + \frac{3^{3127}}{2^{6173}} + \frac{3^{3128}}{2^{6175}} + \frac{3^{3129}}{2^{6178}} + \frac{3^{3130}}{2^{6180}} + \frac{3^{3131}}{2^{6181}} + \frac{3^{3132}}{2^{6182}} + \\
& \frac{3^{3133}}{2^{6186}} + \frac{3^{3134}}{2^{6189}} + \frac{3^{3135}}{2^{6198}} + \frac{3^{3136}}{2^{6199}} + \frac{3^{3137}}{2^{6205}} + \frac{3^{3138}}{2^{6206}} + \frac{3^{3139}}{2^{6214}} + \frac{3^{3140}}{2^{6217}} + \frac{3^{3141}}{2^{6218}} + \\
& \frac{3^{3142}}{2^{6219}} + \frac{3^{3143}}{2^{6221}} + \frac{3^{3144}}{2^{6223}} + \frac{3^{3145}}{2^{6228}} + \frac{3^{3146}}{2^{6229}} + \frac{3^{3147}}{2^{6231}} + \frac{3^{3148}}{2^{6233}} + \frac{3^{3149}}{2^{6236}} + \frac{3^{3150}}{2^{6237}} + \\
& \frac{3^{3151}}{2^{6238}} + \frac{3^{3152}}{2^{6239}} + \frac{3^{3153}}{2^{6241}} + \frac{3^{3154}}{2^{6242}} + \frac{3^{3155}}{2^{6244}} + \frac{3^{3156}}{2^{6247}} + \frac{3^{3157}}{2^{6248}} + \frac{3^{3158}}{2^{6249}} + \frac{3^{3159}}{2^{6254}} + \\
& \frac{3^{3160}}{2^{6255}} + \frac{3^{3161}}{2^{6256}} + \frac{3^{3162}}{2^{6257}} + \frac{3^{3163}}{2^{6258}} + \frac{3^{3164}}{2^{6259}} + \frac{3^{3165}}{2^{6261}} + \frac{3^{3166}}{2^{6267}} + \frac{3^{3167}}{2^{6268}} + \frac{3^{3168}}{2^{6271}} + \\
& \frac{3^{3169}}{2^{6276}} + \frac{3^{3170}}{2^{6277}} + \frac{3^{3171}}{2^{6279}} + \frac{3^{3172}}{2^{6280}} + \frac{3^{3173}}{2^{6281}} + \frac{3^{3174}}{2^{6282}} + \frac{3^{3175}}{2^{6286}} + \frac{3^{3176}}{2^{6287}} + \frac{3^{3177}}{2^{6293}} + \\
& \frac{3^{3178}}{2^{6296}} + \frac{3^{3179}}{2^{6297}} + \frac{3^{3180}}{2^{6298}} + \frac{3^{3181}}{2^{6299}} + \frac{3^{3182}}{2^{6300}} + \frac{3^{3183}}{2^{6307}} + \frac{3^{3184}}{2^{6309}} + \frac{3^{3185}}{2^{6312}} + \frac{3^{3186}}{2^{6313}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3187}}{2^{6314}} + \frac{3^{3188}}{2^{6318}} + \frac{3^{3189}}{2^{6320}} + \frac{3^{3190}}{2^{6321}} + \frac{3^{3191}}{2^{6322}} + \frac{3^{3192}}{2^{6324}} + \frac{3^{3193}}{2^{6326}} + \frac{3^{3194}}{2^{6328}} + \frac{3^{3195}}{2^{6334}} + \\
& \frac{3^{3196}}{2^{6335}} + \frac{3^{3197}}{2^{6336}} + \frac{3^{3198}}{2^{6337}} + \frac{3^{3199}}{2^{6338}} + \frac{3^{3200}}{2^{6342}} + \frac{3^{3201}}{2^{6343}} + \frac{3^{3202}}{2^{6347}} + \frac{3^{3203}}{2^{6351}} + \frac{3^{3204}}{2^{6352}} + \\
& \frac{3^{3205}}{2^{6354}} + \frac{3^{3206}}{2^{6355}} + \frac{3^{3207}}{2^{6356}} + \frac{3^{3208}}{2^{6357}} + \frac{3^{3209}}{2^{6358}} + \frac{3^{3210}}{2^{6359}} + \frac{3^{3211}}{2^{6360}} + \frac{3^{3212}}{2^{6361}} + \frac{3^{3213}}{2^{6363}} + \\
& \frac{3^{3214}}{2^{6364}} + \frac{3^{3215}}{2^{6366}} + \frac{3^{3216}}{2^{6368}} + \frac{3^{3217}}{2^{6374}} + \frac{3^{3218}}{2^{6378}} + \frac{3^{3219}}{2^{6380}} + \frac{3^{3220}}{2^{6381}} + \frac{3^{3221}}{2^{6382}} + \frac{3^{3222}}{2^{6386}} + \\
& \frac{3^{3223}}{2^{6388}} + \frac{3^{3224}}{2^{6390}} + \frac{3^{3225}}{2^{6397}} + \frac{3^{3226}}{2^{6399}} + \frac{3^{3227}}{2^{6401}} + \frac{3^{3228}}{2^{6402}} + \frac{3^{3229}}{2^{6404}} + \frac{3^{3230}}{2^{6406}} + \frac{3^{3231}}{2^{6409}} + \\
& \frac{3^{3232}}{2^{6410}} + \frac{3^{3233}}{2^{6413}} + \frac{3^{3234}}{2^{6422}} + \frac{3^{3235}}{2^{6424}} + \frac{3^{3236}}{2^{6427}} + \frac{3^{3237}}{2^{6431}} + \frac{3^{3238}}{2^{6432}} + \frac{3^{3239}}{2^{6433}} + \frac{3^{3240}}{2^{6434}} + \\
& \frac{3^{3241}}{2^{6438}} + \frac{3^{3242}}{2^{6442}} + \frac{3^{3243}}{2^{6443}} + \frac{3^{3244}}{2^{6445}} + \frac{3^{3245}}{2^{6448}} + \frac{3^{3246}}{2^{6449}} + \frac{3^{3247}}{2^{6450}} + \frac{3^{3248}}{2^{6451}} + \frac{3^{3249}}{2^{6452}} + \\
& \frac{3^{3250}}{2^{6453}} + \frac{3^{3251}}{2^{6454}} + \frac{3^{3252}}{2^{6456}} + \frac{3^{3253}}{2^{6457}} + \frac{3^{3254}}{2^{6459}} + \frac{3^{3255}}{2^{6460}} + \frac{3^{3256}}{2^{6462}} + \frac{3^{3257}}{2^{6463}} + \frac{3^{3258}}{2^{6468}} + \\
& \frac{3^{3259}}{2^{6471}} + \frac{3^{3260}}{2^{6475}} + \frac{3^{3261}}{2^{6476}} + \frac{3^{3262}}{2^{6477}} + \frac{3^{3263}}{2^{6478}} + \frac{3^{3264}}{2^{6479}} + \frac{3^{3265}}{2^{6480}} + \frac{3^{3266}}{2^{6481}} + \frac{3^{3267}}{2^{6483}} + \\
& \frac{3^{3268}}{2^{6485}} + \frac{3^{3269}}{2^{6488}} + \frac{3^{3270}}{2^{6489}} + \frac{3^{3271}}{2^{6493}} + \frac{3^{3272}}{2^{6498}} + \frac{3^{3273}}{2^{6500}} + \frac{3^{3274}}{2^{6501}} + \frac{3^{3275}}{2^{6502}} + \frac{3^{3276}}{2^{6503}} + \\
& \frac{3^{3277}}{2^{6506}} + \frac{3^{3278}}{2^{6508}} + \frac{3^{3279}}{2^{6510}} + \frac{3^{3280}}{2^{6513}} + \frac{3^{3281}}{2^{6515}} + \frac{3^{3282}}{2^{6516}} + \frac{3^{3283}}{2^{6517}} + \frac{3^{3284}}{2^{6518}} + \frac{3^{3285}}{2^{6519}} + \\
& \frac{3^{3286}}{2^{6520}} + \frac{3^{3287}}{2^{6521}} + \frac{3^{3288}}{2^{6523}} + \frac{3^{3289}}{2^{6525}} + \frac{3^{3290}}{2^{6526}} + \frac{3^{3291}}{2^{6527}} + \frac{3^{3292}}{2^{6528}} + \frac{3^{3293}}{2^{6533}} + \frac{3^{3294}}{2^{6534}} + \\
& \frac{3^{3295}}{2^{6535}} + \frac{3^{3296}}{2^{6537}} + \frac{3^{3297}}{2^{6538}} + \frac{3^{3298}}{2^{6540}} + \frac{3^{3299}}{2^{6541}} + \frac{3^{3300}}{2^{6542}} + \frac{3^{3301}}{2^{6545}} + \frac{3^{3302}}{2^{6546}} + \frac{3^{3303}}{2^{6548}} + \\
& \frac{3^{3304}}{2^{6551}} + \frac{3^{3305}}{2^{6556}} + \frac{3^{3306}}{2^{6558}} + \frac{3^{3307}}{2^{6559}} + \frac{3^{3308}}{2^{6571}} + \frac{3^{3309}}{2^{6572}} + \frac{3^{3310}}{2^{6573}} + \frac{3^{3311}}{2^{6574}} + \frac{3^{3312}}{2^{6576}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3313}}{2^{6578}} + \frac{3^{3314}}{2^{6581}} + \frac{3^{3315}}{2^{6587}} + \frac{3^{3316}}{2^{6590}} + \frac{3^{3317}}{2^{6591}} + \frac{3^{3318}}{2^{6597}} + \frac{3^{3319}}{2^{6599}} + \frac{3^{3320}}{2^{6602}} + \frac{3^{3321}}{2^{6606}} + \\
& \frac{3^{3322}}{2^{6607}} + \frac{3^{3323}}{2^{6608}} + \frac{3^{3324}}{2^{6609}} + \frac{3^{3325}}{2^{6610}} + \frac{3^{3326}}{2^{6612}} + \frac{3^{3327}}{2^{6613}} + \frac{3^{3328}}{2^{6615}} + \frac{3^{3329}}{2^{6617}} + \frac{3^{3330}}{2^{6619}} + \\
& \frac{3^{3331}}{2^{6620}} + \frac{3^{3332}}{2^{6621}} + \frac{3^{3333}}{2^{6623}} + \frac{3^{3334}}{2^{6624}} + \frac{3^{3335}}{2^{6625}} + \frac{3^{3336}}{2^{6627}} + \frac{3^{3337}}{2^{6628}} + \frac{3^{3338}}{2^{6632}} + \frac{3^{3339}}{2^{6636}} + \\
& \frac{3^{3340}}{2^{6637}} + \frac{3^{3341}}{2^{6639}} + \frac{3^{3342}}{2^{6640}} + \frac{3^{3343}}{2^{6641}} + \frac{3^{3344}}{2^{6643}} + \frac{3^{3345}}{2^{6645}} + \frac{3^{3346}}{2^{6646}} + \frac{3^{3347}}{2^{6648}} + \frac{3^{3348}}{2^{6649}} + \\
& \frac{3^{3349}}{2^{6652}} + \frac{3^{3350}}{2^{6654}} + \frac{3^{3351}}{2^{6659}} + \frac{3^{3352}}{2^{6660}} + \frac{3^{3353}}{2^{6662}} + \frac{3^{3354}}{2^{6663}} + \frac{3^{3355}}{2^{6664}} + \frac{3^{3356}}{2^{6665}} + \frac{3^{3357}}{2^{6666}} + \\
& \frac{3^{3358}}{2^{6668}} + \frac{3^{3359}}{2^{6670}} + \frac{3^{3360}}{2^{6671}} + \frac{3^{3361}}{2^{6672}} + \frac{3^{3362}}{2^{6674}} + \frac{3^{3363}}{2^{6676}} + \frac{3^{3364}}{2^{6678}} + \frac{3^{3365}}{2^{6681}} + \frac{3^{3366}}{2^{6684}} + \\
& \frac{3^{3367}}{2^{6686}} + \frac{3^{3368}}{2^{6687}} + \frac{3^{3369}}{2^{6688}} + \frac{3^{3370}}{2^{6690}} + \frac{3^{3371}}{2^{6691}} + \frac{3^{3372}}{2^{6692}} + \frac{3^{3373}}{2^{6695}} + \frac{3^{3374}}{2^{6696}} + \frac{3^{3375}}{2^{6697}} + \\
& \frac{3^{3376}}{2^{6698}} + \frac{3^{3377}}{2^{6699}} + \frac{3^{3378}}{2^{6701}} + \frac{3^{3379}}{2^{6704}} + \frac{3^{3380}}{2^{6705}} + \frac{3^{3381}}{2^{6709}} + \frac{3^{3382}}{2^{6710}} + \frac{3^{3383}}{2^{6711}} + \frac{3^{3384}}{2^{6712}} + \\
& \frac{3^{3385}}{2^{6713}} + \frac{3^{3386}}{2^{6715}} + \frac{3^{3387}}{2^{6719}} + \frac{3^{3388}}{2^{6722}} + \frac{3^{3389}}{2^{6723}} + \frac{3^{3390}}{2^{6725}} + \frac{3^{3391}}{2^{6727}} + \frac{3^{3392}}{2^{6730}} + \frac{3^{3393}}{2^{6735}} + \\
& \frac{3^{3394}}{2^{6736}} + \frac{3^{3395}}{2^{6737}} + \frac{3^{3396}}{2^{6738}} + \frac{3^{3397}}{2^{6739}} + \frac{3^{3398}}{2^{6740}} + \frac{3^{3399}}{2^{6741}} + \frac{3^{3400}}{2^{6742}} + \frac{3^{3401}}{2^{6744}} + \frac{3^{3402}}{2^{6746}} + \\
& \frac{3^{3403}}{2^{6747}} + \frac{3^{3404}}{2^{6748}} + \frac{3^{3405}}{2^{6750}} + \frac{3^{3406}}{2^{6752}} + \frac{3^{3407}}{2^{6753}} + \frac{3^{3408}}{2^{6756}} + \frac{3^{3409}}{2^{6761}} + \frac{3^{3410}}{2^{6766}} + \frac{3^{3411}}{2^{6767}} + \\
& \frac{3^{3412}}{2^{6777}} + \frac{3^{3413}}{2^{6782}} + \frac{3^{3414}}{2^{6788}} + \frac{3^{3415}}{2^{6790}} + \frac{3^{3416}}{2^{6791}} + \frac{3^{3417}}{2^{6792}} + \frac{3^{3418}}{2^{6794}} + \frac{3^{3419}}{2^{6799}} + \frac{3^{3420}}{2^{6803}} + \\
& \frac{3^{3421}}{2^{6804}} + \frac{3^{3422}}{2^{6806}} + \frac{3^{3423}}{2^{6811}} + \frac{3^{3424}}{2^{6815}} + \frac{3^{3425}}{2^{6817}} + \frac{3^{3426}}{2^{6818}} + \frac{3^{3427}}{2^{6821}} + \frac{3^{3428}}{2^{6822}} + \frac{3^{3429}}{2^{6824}} + \\
& \frac{3^{3430}}{2^{6825}} + \frac{3^{3431}}{2^{6831}} + \frac{3^{3432}}{2^{6832}} + \frac{3^{3433}}{2^{6833}} + \frac{3^{3434}}{2^{6835}} + \frac{3^{3435}}{2^{6836}} + \frac{3^{3436}}{2^{6837}} + \frac{3^{3437}}{2^{6838}} + \frac{3^{3438}}{2^{6841}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3439}}{2^{6842}} + \frac{3^{3440}}{2^{6843}} + \frac{3^{3441}}{2^{6844}} + \frac{3^{3442}}{2^{6845}} + \frac{3^{3443}}{2^{6846}} + \frac{3^{3444}}{2^{6847}} + \frac{3^{3445}}{2^{6848}} + \frac{3^{3446}}{2^{6849}} + \frac{3^{3447}}{2^{6852}} + \\
& \frac{3^{3448}}{2^{6858}} + \frac{3^{3449}}{2^{6859}} + \frac{3^{3450}}{2^{6860}} + \frac{3^{3451}}{2^{6861}} + \frac{3^{3452}}{2^{6863}} + \frac{3^{3453}}{2^{6864}} + \frac{3^{3454}}{2^{6865}} + \frac{3^{3455}}{2^{6867}} + \frac{3^{3456}}{2^{6868}} + \\
& \frac{3^{3457}}{2^{6871}} + \frac{3^{3458}}{2^{6872}} + \frac{3^{3459}}{2^{6874}} + \frac{3^{3460}}{2^{6875}} + \frac{3^{3461}}{2^{6876}} + \frac{3^{3462}}{2^{6878}} + \frac{3^{3463}}{2^{6879}} + \frac{3^{3464}}{2^{6880}} + \frac{3^{3465}}{2^{6881}} + \\
& \frac{3^{3466}}{2^{6884}} + \frac{3^{3467}}{2^{6885}} + \frac{3^{3468}}{2^{6887}} + \frac{3^{3469}}{2^{6889}} + \frac{3^{3470}}{2^{6890}} + \frac{3^{3471}}{2^{6895}} + \frac{3^{3472}}{2^{6897}} + \frac{3^{3473}}{2^{6898}} + \frac{3^{3474}}{2^{6899}} + \\
& \frac{3^{3475}}{2^{6900}} + \frac{3^{3476}}{2^{6902}} + \frac{3^{3477}}{2^{6905}} + \frac{3^{3478}}{2^{6907}} + \frac{3^{3479}}{2^{6908}} + \frac{3^{3480}}{2^{6910}} + \frac{3^{3481}}{2^{6916}} + \frac{3^{3482}}{2^{6918}} + \frac{3^{3483}}{2^{6922}} + \\
& \frac{3^{3484}}{2^{6925}} + \frac{3^{3485}}{2^{6927}} + \frac{3^{3486}}{2^{6930}} + \frac{3^{3487}}{2^{6932}} + \frac{3^{3488}}{2^{6933}} + \frac{3^{3489}}{2^{6934}} + \frac{3^{3490}}{2^{6935}} + \frac{3^{3491}}{2^{6936}} + \frac{3^{3492}}{2^{6938}} + \\
& \frac{3^{3493}}{2^{6939}} + \frac{3^{3494}}{2^{6941}} + \frac{3^{3495}}{2^{6942}} + \frac{3^{3496}}{2^{6943}} + \frac{3^{3497}}{2^{6946}} + \frac{3^{3498}}{2^{6948}} + \frac{3^{3499}}{2^{6949}} + \frac{3^{3500}}{2^{6950}} + \frac{3^{3501}}{2^{6951}} + \\
& \frac{3^{3502}}{2^{6960}} + \frac{3^{3503}}{2^{6963}} + \frac{3^{3504}}{2^{6967}} + \frac{3^{3505}}{2^{6968}} + \frac{3^{3506}}{2^{6969}} + \frac{3^{3507}}{2^{6970}} + \frac{3^{3508}}{2^{6973}} + \frac{3^{3509}}{2^{6974}} + \frac{3^{3510}}{2^{6975}} + \\
& \frac{3^{3511}}{2^{6977}} + \frac{3^{3512}}{2^{6978}} + \frac{3^{3513}}{2^{6982}} + \frac{3^{3514}}{2^{6985}} + \frac{3^{3515}}{2^{6986}} + \frac{3^{3516}}{2^{6987}} + \frac{3^{3517}}{2^{6990}} + \frac{3^{3518}}{2^{6994}} + \frac{3^{3519}}{2^{6995}} + \\
& \frac{3^{3520}}{2^{6996}} + \frac{3^{3521}}{2^{6997}} + \frac{3^{3522}}{2^{6998}} + \frac{3^{3523}}{2^{7003}} + \frac{3^{3524}}{2^{7006}} + \frac{3^{3525}}{2^{7007}} + \frac{3^{3526}}{2^{7008}} + \frac{3^{3527}}{2^{7009}} + \frac{3^{3528}}{2^{7011}} + \\
& \frac{3^{3529}}{2^{7013}} + \frac{3^{3530}}{2^{7014}} + \frac{3^{3531}}{2^{7015}} + \frac{3^{3532}}{2^{7017}} + \frac{3^{3533}}{2^{7018}} + \frac{3^{3534}}{2^{7019}} + \frac{3^{3535}}{2^{7020}} + \frac{3^{3536}}{2^{7021}} + \frac{3^{3537}}{2^{7026}} + \\
& \frac{3^{3538}}{2^{7027}} + \frac{3^{3539}}{2^{7028}} + \frac{3^{3540}}{2^{7030}} + \frac{3^{3541}}{2^{7032}} + \frac{3^{3542}}{2^{7037}} + \frac{3^{3543}}{2^{7041}} + \frac{3^{3544}}{2^{7042}} + \frac{3^{3545}}{2^{7047}} + \frac{3^{3546}}{2^{7048}} + \\
& \frac{3^{3547}}{2^{7049}} + \frac{3^{3548}}{2^{7050}} + \frac{3^{3549}}{2^{7052}} + \frac{3^{3550}}{2^{7054}} + \frac{3^{3551}}{2^{7056}} + \frac{3^{3552}}{2^{7061}} + \frac{3^{3553}}{2^{7062}} + \frac{3^{3554}}{2^{7063}} + \frac{3^{3555}}{2^{7064}} + \\
& \frac{3^{3556}}{2^{7065}} + \frac{3^{3557}}{2^{7066}} + \frac{3^{3558}}{2^{7068}} + \frac{3^{3559}}{2^{7072}} + \frac{3^{3560}}{2^{7073}} + \frac{3^{3561}}{2^{7074}} + \frac{3^{3562}}{2^{7075}} + \frac{3^{3563}}{2^{7076}} + \frac{3^{3564}}{2^{7077}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3565}}{2^{7081}} + \frac{3^{3566}}{2^{7083}} + \frac{3^{3567}}{2^{7085}} + \frac{3^{3568}}{2^{7086}} + \frac{3^{3569}}{2^{7088}} + \frac{3^{3570}}{2^{7089}} + \frac{3^{3571}}{2^{7090}} + \frac{3^{3572}}{2^{7092}} + \frac{3^{3573}}{2^{7095}} + \\
& \frac{3^{3574}}{2^{7099}} + \frac{3^{3575}}{2^{7101}} + \frac{3^{3576}}{2^{7102}} + \frac{3^{3577}}{2^{7107}} + \frac{3^{3578}}{2^{7109}} + \frac{3^{3579}}{2^{7110}} + \frac{3^{3580}}{2^{7111}} + \frac{3^{3581}}{2^{7115}} + \frac{3^{3582}}{2^{7119}} + \\
& \frac{3^{3583}}{2^{7120}} + \frac{3^{3584}}{2^{7124}} + \frac{3^{3585}}{2^{7127}} + \frac{3^{3586}}{2^{7128}} + \frac{3^{3587}}{2^{7129}} + \frac{3^{3588}}{2^{7130}} + \frac{3^{3589}}{2^{7133}} + \frac{3^{3590}}{2^{7134}} + \frac{3^{3591}}{2^{7135}} + \\
& \frac{3^{3592}}{2^{7136}} + \frac{3^{3593}}{2^{7137}} + \frac{3^{3594}}{2^{7138}} + \frac{3^{3595}}{2^{7139}} + \frac{3^{3596}}{2^{7140}} + \frac{3^{3597}}{2^{7145}} + \frac{3^{3598}}{2^{7146}} + \frac{3^{3599}}{2^{7147}} + \frac{3^{3600}}{2^{7148}} + \\
& \frac{3^{3601}}{2^{7152}} + \frac{3^{3602}}{2^{7154}} + \frac{3^{3603}}{2^{7157}} + \frac{3^{3604}}{2^{7158}} + \frac{3^{3605}}{2^{7160}} + \frac{3^{3606}}{2^{7162}} + \frac{3^{3607}}{2^{7163}} + \frac{3^{3608}}{2^{7164}} + \frac{3^{3609}}{2^{7165}} + \\
& \frac{3^{3610}}{2^{7167}} + \frac{3^{3611}}{2^{7168}} + \frac{3^{3612}}{2^{7171}} + \frac{3^{3613}}{2^{7172}} + \frac{3^{3614}}{2^{7181}} + \frac{3^{3615}}{2^{7182}} + \frac{3^{3616}}{2^{7183}} + \frac{3^{3617}}{2^{7184}} + \frac{3^{3618}}{2^{7187}} + \\
& \frac{3^{3619}}{2^{7193}} + \frac{3^{3620}}{2^{7194}} + \frac{3^{3621}}{2^{7197}} + \frac{3^{3622}}{2^{7198}} + \frac{3^{3623}}{2^{7201}} + \frac{3^{3624}}{2^{7202}} + \frac{3^{3625}}{2^{7204}} + \frac{3^{3626}}{2^{7205}} + \frac{3^{3627}}{2^{7206}} + \\
& \frac{3^{3628}}{2^{7207}} + \frac{3^{3629}}{2^{7208}} + \frac{3^{3630}}{2^{7210}} + \frac{3^{3631}}{2^{7212}} + \frac{3^{3632}}{2^{7214}} + \frac{3^{3633}}{2^{7215}} + \frac{3^{3634}}{2^{7216}} + \frac{3^{3635}}{2^{7217}} + \frac{3^{3636}}{2^{7218}} + \\
& \frac{3^{3637}}{2^{7219}} + \frac{3^{3638}}{2^{7220}} + \frac{3^{3639}}{2^{7222}} + \frac{3^{3640}}{2^{7223}} + \frac{3^{3641}}{2^{7226}} + \frac{3^{3642}}{2^{7229}} + \frac{3^{3643}}{2^{7230}} + \frac{3^{3644}}{2^{7232}} + \frac{3^{3645}}{2^{7234}} + \\
& \frac{3^{3646}}{2^{7236}} + \frac{3^{3647}}{2^{7237}} + \frac{3^{3648}}{2^{7242}} + \frac{3^{3649}}{2^{7245}} + \frac{3^{3650}}{2^{7247}} + \frac{3^{3651}}{2^{7249}} + \frac{3^{3652}}{2^{7251}} + \frac{3^{3653}}{2^{7252}} + \frac{3^{3654}}{2^{7254}} + \\
& \frac{3^{3655}}{2^{7261}} + \frac{3^{3656}}{2^{7263}} + \frac{3^{3657}}{2^{7264}} + \frac{3^{3658}}{2^{7265}} + \frac{3^{3659}}{2^{7266}} + \frac{3^{3660}}{2^{7267}} + \frac{3^{3661}}{2^{7268}} + \frac{3^{3662}}{2^{7271}} + \frac{3^{3663}}{2^{7272}} + \\
& \frac{3^{3664}}{2^{7273}} + \frac{3^{3665}}{2^{7274}} + \frac{3^{3666}}{2^{7275}} + \frac{3^{3667}}{2^{7277}} + \frac{3^{3668}}{2^{7281}} + \frac{3^{3669}}{2^{7286}} + \frac{3^{3670}}{2^{7288}} + \frac{3^{3671}}{2^{7290}} + \frac{3^{3672}}{2^{7292}} + \\
& \frac{3^{3673}}{2^{7293}} + \frac{3^{3674}}{2^{7294}} + \frac{3^{3675}}{2^{7297}} + \frac{3^{3676}}{2^{7299}} + \frac{3^{3677}}{2^{7301}} + \frac{3^{3678}}{2^{7303}} + \frac{3^{3679}}{2^{7304}} + \frac{3^{3680}}{2^{7305}} + \frac{3^{3681}}{2^{7306}} + \\
& \frac{3^{3682}}{2^{7309}} + \frac{3^{3683}}{2^{7311}} + \frac{3^{3684}}{2^{7312}} + \frac{3^{3685}}{2^{7313}} + \frac{3^{3686}}{2^{7314}} + \frac{3^{3687}}{2^{7316}} + \frac{3^{3688}}{2^{7317}} + \frac{3^{3689}}{2^{7319}} + \frac{3^{3690}}{2^{7320}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3691}}{2^{7323}} + \frac{3^{3692}}{2^{7324}} + \frac{3^{3693}}{2^{7327}} + \frac{3^{3694}}{2^{7330}} + \frac{3^{3695}}{2^{7331}} + \frac{3^{3696}}{2^{7333}} + \frac{3^{3697}}{2^{7334}} + \frac{3^{3698}}{2^{7335}} + \frac{3^{3699}}{2^{7336}} + \\
& \frac{3^{3700}}{2^{7337}} + \frac{3^{3701}}{2^{7338}} + \frac{3^{3702}}{2^{7339}} + \frac{3^{3703}}{2^{7341}} + \frac{3^{3704}}{2^{7343}} + \frac{3^{3705}}{2^{7344}} + \frac{3^{3706}}{2^{7346}} + \frac{3^{3707}}{2^{7347}} + \frac{3^{3708}}{2^{7348}} + \\
& \frac{3^{3709}}{2^{7349}} + \frac{3^{3710}}{2^{7350}} + \frac{3^{3711}}{2^{7351}} + \frac{3^{3712}}{2^{7352}} + \frac{3^{3713}}{2^{7355}} + \frac{3^{3714}}{2^{7362}} + \frac{3^{3715}}{2^{7368}} + \frac{3^{3716}}{2^{7369}} + \frac{3^{3717}}{2^{7370}} + \\
& \frac{3^{3718}}{2^{7371}} + \frac{3^{3719}}{2^{7373}} + \frac{3^{3720}}{2^{7376}} + \frac{3^{3721}}{2^{7377}} + \frac{3^{3722}}{2^{7381}} + \frac{3^{3723}}{2^{7385}} + \frac{3^{3724}}{2^{7387}} + \frac{3^{3725}}{2^{7389}} + \frac{3^{3726}}{2^{7390}} + \\
& \frac{3^{3727}}{2^{7394}} + \frac{3^{3728}}{2^{7398}} + \frac{3^{3729}}{2^{7399}} + \frac{3^{3730}}{2^{7403}} + \frac{3^{3731}}{2^{7406}} + \frac{3^{3732}}{2^{7407}} + \frac{3^{3733}}{2^{7408}} + \frac{3^{3734}}{2^{7413}} + \frac{3^{3735}}{2^{7414}} + \\
& \frac{3^{3736}}{2^{7415}} + \frac{3^{3737}}{2^{7416}} + \frac{3^{3738}}{2^{7417}} + \frac{3^{3739}}{2^{7419}} + \frac{3^{3740}}{2^{7420}} + \frac{3^{3741}}{2^{7421}} + \frac{3^{3742}}{2^{7423}} + \frac{3^{3743}}{2^{7427}} + \frac{3^{3744}}{2^{7429}} + \\
& \frac{3^{3745}}{2^{7434}} + \frac{3^{3746}}{2^{7435}} + \frac{3^{3747}}{2^{7440}} + \frac{3^{3748}}{2^{7442}} + \frac{3^{3749}}{2^{7444}} + \frac{3^{3750}}{2^{7445}} + \frac{3^{3751}}{2^{7448}} + \frac{3^{3752}}{2^{7450}} + \frac{3^{3753}}{2^{7451}} + \\
& \frac{3^{3754}}{2^{7453}} + \frac{3^{3755}}{2^{7455}} + \frac{3^{3756}}{2^{7458}} + \frac{3^{3757}}{2^{7459}} + \frac{3^{3758}}{2^{7461}} + \frac{3^{3759}}{2^{7462}} + \frac{3^{3760}}{2^{7463}} + \frac{3^{3761}}{2^{7465}} + \frac{3^{3762}}{2^{7466}} + \\
& \frac{3^{3763}}{2^{7468}} + \frac{3^{3764}}{2^{7472}} + \frac{3^{3765}}{2^{7473}} + \frac{3^{3766}}{2^{7477}} + \frac{3^{3767}}{2^{7482}} + \frac{3^{3768}}{2^{7483}} + \frac{3^{3769}}{2^{7484}} + \frac{3^{3770}}{2^{7486}} + \frac{3^{3771}}{2^{7487}} + \\
& \frac{3^{3772}}{2^{7488}} + \frac{3^{3773}}{2^{7490}} + \frac{3^{3774}}{2^{7493}} + \frac{3^{3775}}{2^{7495}} + \frac{3^{3776}}{2^{7496}} + \frac{3^{3777}}{2^{7499}} + \frac{3^{3778}}{2^{7500}} + \frac{3^{3779}}{2^{7505}} + \frac{3^{3780}}{2^{7506}} + \\
& \frac{3^{3781}}{2^{7512}} + \frac{3^{3782}}{2^{7513}} + \frac{3^{3783}}{2^{7515}} + \frac{3^{3784}}{2^{7516}} + \frac{3^{3785}}{2^{7517}} + \frac{3^{3786}}{2^{7519}} + \frac{3^{3787}}{2^{7520}} + \frac{3^{3788}}{2^{7523}} + \frac{3^{3789}}{2^{7524}} + \\
& \frac{3^{3790}}{2^{7526}} + \frac{3^{3791}}{2^{7528}} + \frac{3^{3792}}{2^{7534}} + \frac{3^{3793}}{2^{7535}} + \frac{3^{3794}}{2^{7536}} + \frac{3^{3795}}{2^{7537}} + \frac{3^{3796}}{2^{7538}} + \frac{3^{3797}}{2^{7541}} + \frac{3^{3798}}{2^{7543}} + \\
& \frac{3^{3799}}{2^{7544}} + \frac{3^{3800}}{2^{7547}} + \frac{3^{3801}}{2^{7548}} + \frac{3^{3802}}{2^{7549}} + \frac{3^{3803}}{2^{7553}} + \frac{3^{3804}}{2^{7555}} + \frac{3^{3805}}{2^{7556}} + \frac{3^{3806}}{2^{7558}} + \frac{3^{3807}}{2^{7560}} + \\
& \frac{3^{3808}}{2^{7562}} + \frac{3^{3809}}{2^{7565}} + \frac{3^{3810}}{2^{7567}} + \frac{3^{3811}}{2^{7569}} + \frac{3^{3812}}{2^{7571}} + \frac{3^{3813}}{2^{7576}} + \frac{3^{3814}}{2^{7578}} + \frac{3^{3815}}{2^{7579}} + \frac{3^{3816}}{2^{7586}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3817}}{2^{7590}} + \frac{3^{3818}}{2^{7591}} + \frac{3^{3819}}{2^{7592}} + \frac{3^{3820}}{2^{7593}} + \frac{3^{3821}}{2^{7594}} + \frac{3^{3822}}{2^{7595}} + \frac{3^{3823}}{2^{7596}} + \frac{3^{3824}}{2^{7601}} + \frac{3^{3825}}{2^{7605}} + \\
& \frac{3^{3826}}{2^{7606}} + \frac{3^{3827}}{2^{7607}} + \frac{3^{3828}}{2^{7608}} + \frac{3^{3829}}{2^{7609}} + \frac{3^{3830}}{2^{7610}} + \frac{3^{3831}}{2^{7612}} + \frac{3^{3832}}{2^{7614}} + \frac{3^{3833}}{2^{7616}} + \frac{3^{3834}}{2^{7617}} + \\
& \frac{3^{3835}}{2^{7618}} + \frac{3^{3836}}{2^{7619}} + \frac{3^{3837}}{2^{7625}} + \frac{3^{3838}}{2^{7626}} + \frac{3^{3839}}{2^{7630}} + \frac{3^{3840}}{2^{7632}} + \frac{3^{3841}}{2^{7633}} + \frac{3^{3842}}{2^{7637}} + \frac{3^{3843}}{2^{7638}} + \\
& \frac{3^{3844}}{2^{7639}} + \frac{3^{3845}}{2^{7641}} + \frac{3^{3846}}{2^{7644}} + \frac{3^{3847}}{2^{7647}} + \frac{3^{3848}}{2^{7649}} + \frac{3^{3849}}{2^{7650}} + \frac{3^{3850}}{2^{7651}} + \frac{3^{3851}}{2^{7654}} + \frac{3^{3852}}{2^{7655}} + \\
& \frac{3^{3853}}{2^{7656}} + \frac{3^{3854}}{2^{7659}} + \frac{3^{3855}}{2^{7661}} + \frac{3^{3856}}{2^{7664}} + \frac{3^{3857}}{2^{7665}} + \frac{3^{3858}}{2^{7666}} + \frac{3^{3859}}{2^{7668}} + \frac{3^{3860}}{2^{7669}} + \frac{3^{3861}}{2^{7673}} + \\
& \frac{3^{3862}}{2^{7676}} + \frac{3^{3863}}{2^{7679}} + \frac{3^{3864}}{2^{7682}} + \frac{3^{3865}}{2^{7683}} + \frac{3^{3866}}{2^{7688}} + \frac{3^{3867}}{2^{7690}} + \frac{3^{3868}}{2^{7691}} + \frac{3^{3869}}{2^{7694}} + \frac{3^{3870}}{2^{7695}} + \\
& \frac{3^{3871}}{2^{7696}} + \frac{3^{3872}}{2^{7698}} + \frac{3^{3873}}{2^{7700}} + \frac{3^{3874}}{2^{7702}} + \frac{3^{3875}}{2^{7703}} + \frac{3^{3876}}{2^{7708}} + \frac{3^{3877}}{2^{7710}} + \frac{3^{3878}}{2^{7712}} + \frac{3^{3879}}{2^{7713}} + \\
& \frac{3^{3880}}{2^{7719}} + \frac{3^{3881}}{2^{7723}} + \frac{3^{3882}}{2^{7724}} + \frac{3^{3883}}{2^{7727}} + \frac{3^{3884}}{2^{7733}} + \frac{3^{3885}}{2^{7735}} + \frac{3^{3886}}{2^{7738}} + \frac{3^{3887}}{2^{7739}} + \frac{3^{3888}}{2^{7740}} + \\
& \frac{3^{3889}}{2^{7741}} + \frac{3^{3890}}{2^{7742}} + \frac{3^{3891}}{2^{7743}} + \frac{3^{3892}}{2^{7744}} + \frac{3^{3893}}{2^{7748}} + \frac{3^{3894}}{2^{7750}} + \frac{3^{3895}}{2^{7752}} + \frac{3^{3896}}{2^{7753}} + \frac{3^{3897}}{2^{7754}} + \\
& \frac{3^{3898}}{2^{7756}} + \frac{3^{3899}}{2^{7757}} + \frac{3^{3900}}{2^{7758}} + \frac{3^{3901}}{2^{7761}} + \frac{3^{3902}}{2^{7762}} + \frac{3^{3903}}{2^{7763}} + \frac{3^{3904}}{2^{7766}} + \frac{3^{3905}}{2^{7767}} + \frac{3^{3906}}{2^{7769}} + \\
& \frac{3^{3907}}{2^{7770}} + \frac{3^{3908}}{2^{7773}} + \frac{3^{3909}}{2^{7775}} + \frac{3^{3910}}{2^{7777}} + \frac{3^{3911}}{2^{7779}} + \frac{3^{3912}}{2^{7780}} + \frac{3^{3913}}{2^{7782}} + \frac{3^{3914}}{2^{7785}} + \frac{3^{3915}}{2^{7786}} + \\
& \frac{3^{3916}}{2^{7788}} + \frac{3^{3917}}{2^{7789}} + \frac{3^{3918}}{2^{7791}} + \frac{3^{3919}}{2^{7792}} + \frac{3^{3920}}{2^{7796}} + \frac{3^{3921}}{2^{7798}} + \frac{3^{3922}}{2^{7799}} + \frac{3^{3923}}{2^{7801}} + \frac{3^{3924}}{2^{7806}} + \\
& \frac{3^{3925}}{2^{7807}} + \frac{3^{3926}}{2^{7808}} + \frac{3^{3927}}{2^{7809}} + \frac{3^{3928}}{2^{7811}} + \frac{3^{3929}}{2^{7813}} + \frac{3^{3930}}{2^{7816}} + \frac{3^{3931}}{2^{7817}} + \frac{3^{3932}}{2^{7818}} + \frac{3^{3933}}{2^{7824}} + \\
& \frac{3^{3934}}{2^{7826}} + \frac{3^{3935}}{2^{7827}} + \frac{3^{3936}}{2^{7828}} + \frac{3^{3937}}{2^{7829}} + \frac{3^{3938}}{2^{7830}} + \frac{3^{3939}}{2^{7831}} + \frac{3^{3940}}{2^{7834}} + \frac{3^{3941}}{2^{7838}} + \frac{3^{3942}}{2^{7839}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{3943}}{2^{7842}} + \frac{3^{3944}}{2^{7843}} + \frac{3^{3945}}{2^{7845}} + \frac{3^{3946}}{2^{7846}} + \frac{3^{3947}}{2^{7848}} + \frac{3^{3948}}{2^{7850}} + \frac{3^{3949}}{2^{7852}} + \frac{3^{3950}}{2^{7855}} + \frac{3^{3951}}{2^{7856}} + \\
& \frac{3^{3952}}{2^{7859}} + \frac{3^{3953}}{2^{7860}} + \frac{3^{3954}}{2^{7861}} + \frac{3^{3955}}{2^{7862}} + \frac{3^{3956}}{2^{7865}} + \frac{3^{3957}}{2^{7866}} + \frac{3^{3958}}{2^{7869}} + \frac{3^{3959}}{2^{7872}} + \frac{3^{3960}}{2^{7873}} + \\
& \frac{3^{3961}}{2^{7878}} + \frac{3^{3962}}{2^{7882}} + \frac{3^{3963}}{2^{7883}} + \frac{3^{3964}}{2^{7885}} + \frac{3^{3965}}{2^{7886}} + \frac{3^{3966}}{2^{7887}} + \frac{3^{3967}}{2^{7890}} + \frac{3^{3968}}{2^{7895}} + \frac{3^{3969}}{2^{7896}} + \\
& \frac{3^{3970}}{2^{7898}} + \frac{3^{3971}}{2^{7900}} + \frac{3^{3972}}{2^{7901}} + \frac{3^{3973}}{2^{7902}} + \frac{3^{3974}}{2^{7905}} + \frac{3^{3975}}{2^{7906}} + \frac{3^{3976}}{2^{7907}} + \frac{3^{3977}}{2^{7909}} + \frac{3^{3978}}{2^{7910}} + \\
& \frac{3^{3979}}{2^{7916}} + \frac{3^{3980}}{2^{7920}} + \frac{3^{3981}}{2^{7923}} + \frac{3^{3982}}{2^{7924}} + \frac{3^{3983}}{2^{7926}} + \frac{3^{3984}}{2^{7927}} + \frac{3^{3985}}{2^{7930}} + \frac{3^{3986}}{2^{7933}} + \frac{3^{3987}}{2^{7939}} + \\
& \frac{3^{3988}}{2^{7943}} + \frac{3^{3989}}{2^{7945}} + \frac{3^{3990}}{2^{7948}} + \frac{3^{3991}}{2^{7949}} + \frac{3^{3992}}{2^{7952}} + \frac{3^{3993}}{2^{7956}} + \frac{3^{3994}}{2^{7957}} + \frac{3^{3995}}{2^{7962}} + \frac{3^{3996}}{2^{7964}} + \\
& \frac{3^{3997}}{2^{7965}} + \frac{3^{3998}}{2^{7966}} + \frac{3^{3999}}{2^{7967}} + \frac{3^{4000}}{2^{7968}} + \frac{3^{4001}}{2^{7969}} + \frac{3^{4002}}{2^{7970}} + \frac{3^{4003}}{2^{7973}} + \frac{3^{4004}}{2^{7975}} + \frac{3^{4005}}{2^{7977}} + \\
& \frac{3^{4006}}{2^{7978}} + \frac{3^{4007}}{2^{7980}} + \frac{3^{4008}}{2^{7981}} + \frac{3^{4009}}{2^{7982}} + \frac{3^{4010}}{2^{7983}} + \frac{3^{4011}}{2^{7987}} + \frac{3^{4012}}{2^{7989}} + \frac{3^{4013}}{2^{7991}} + \frac{3^{4014}}{2^{7994}} + \\
& \frac{3^{4015}}{2^{7995}} + \frac{3^{4016}}{2^{7996}} + \frac{3^{4017}}{2^{7998}} + \frac{3^{4018}}{2^{8000}} + \frac{3^{4019}}{2^{8002}} + \frac{3^{4020}}{2^{8004}} + \frac{3^{4021}}{2^{8005}} + \frac{3^{4022}}{2^{8006}} + \frac{3^{4023}}{2^{8009}} + \\
& \frac{3^{4024}}{2^{8010}} + \frac{3^{4025}}{2^{8012}} + \frac{3^{4026}}{2^{8014}} + \frac{3^{4027}}{2^{8016}} + \frac{3^{4028}}{2^{8018}} + \frac{3^{4029}}{2^{8022}} + \frac{3^{4030}}{2^{8023}} + \frac{3^{4031}}{2^{8025}} + \frac{3^{4032}}{2^{8026}} + \\
& \frac{3^{4033}}{2^{8028}} + \frac{3^{4034}}{2^{8029}} + \frac{3^{4035}}{2^{8030}} + \frac{3^{4036}}{2^{8031}} + \frac{3^{4037}}{2^{8032}} + \frac{3^{4038}}{2^{8033}} + \frac{3^{4039}}{2^{8037}} + \frac{3^{4040}}{2^{8040}} + \frac{3^{4041}}{2^{8042}} + \\
& \frac{3^{4042}}{2^{8043}} + \frac{3^{4043}}{2^{8045}} + \frac{3^{4044}}{2^{8047}} + \frac{3^{4045}}{2^{8048}} + \frac{3^{4046}}{2^{8050}} + \frac{3^{4047}}{2^{8051}} + \frac{3^{4048}}{2^{8052}} + \frac{3^{4049}}{2^{8053}} + \frac{3^{4050}}{2^{8056}} + \\
& \frac{3^{4051}}{2^{8058}} + \frac{3^{4052}}{2^{8062}} + \frac{3^{4053}}{2^{8064}} + \frac{3^{4054}}{2^{8066}} + \frac{3^{4055}}{2^{8067}} + \frac{3^{4056}}{2^{8068}} + \frac{3^{4057}}{2^{8072}} + \frac{3^{4058}}{2^{8075}} + \frac{3^{4059}}{2^{8076}} + \\
& \frac{3^{4060}}{2^{8077}} + \frac{3^{4061}}{2^{8078}} + \frac{3^{4062}}{2^{8080}} + \frac{3^{4063}}{2^{8081}} + \frac{3^{4064}}{2^{8083}} + \frac{3^{4065}}{2^{8086}} + \frac{3^{4066}}{2^{8090}} + \frac{3^{4067}}{2^{8091}} + \frac{3^{4068}}{2^{8095}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4069}}{2^{8096}} + \frac{3^{4070}}{2^{8101}} + \frac{3^{4071}}{2^{8103}} + \frac{3^{4072}}{2^{8105}} + \frac{3^{4073}}{2^{8106}} + \frac{3^{4074}}{2^{8108}} + \frac{3^{4075}}{2^{8111}} + \frac{3^{4076}}{2^{8113}} + \frac{3^{4077}}{2^{8114}} + \\
& \frac{3^{4078}}{2^{8115}} + \frac{3^{4079}}{2^{8116}} + \frac{3^{4080}}{2^{8118}} + \frac{3^{4081}}{2^{8120}} + \frac{3^{4082}}{2^{8121}} + \frac{3^{4083}}{2^{8124}} + \frac{3^{4084}}{2^{8126}} + \frac{3^{4085}}{2^{8128}} + \frac{3^{4086}}{2^{8130}} + \\
& \frac{3^{4087}}{2^{8131}} + \frac{3^{4088}}{2^{8132}} + \frac{3^{4089}}{2^{8135}} + \frac{3^{4090}}{2^{8137}} + \frac{3^{4091}}{2^{8139}} + \frac{3^{4092}}{2^{8140}} + \frac{3^{4093}}{2^{8141}} + \frac{3^{4094}}{2^{8144}} + \frac{3^{4095}}{2^{8146}} + \\
& \frac{3^{4096}}{2^{8151}} + \frac{3^{4097}}{2^{8153}} + \frac{3^{4098}}{2^{8157}} + \frac{3^{4099}}{2^{8158}} + \frac{3^{4100}}{2^{8159}} + \frac{3^{4101}}{2^{8160}} + \frac{3^{4102}}{2^{8163}} + \frac{3^{4103}}{2^{8165}} + \frac{3^{4104}}{2^{8166}} + \\
& \frac{3^{4105}}{2^{8168}} + \frac{3^{4106}}{2^{8170}} + \frac{3^{4107}}{2^{8171}} + \frac{3^{4108}}{2^{8173}} + \frac{3^{4109}}{2^{8174}} + \frac{3^{4110}}{2^{8176}} + \frac{3^{4111}}{2^{8178}} + \frac{3^{4112}}{2^{8179}} + \frac{3^{4113}}{2^{8180}} + \\
& \frac{3^{4114}}{2^{8188}} + \frac{3^{4115}}{2^{8189}} + \frac{3^{4116}}{2^{8192}} + \frac{3^{4117}}{2^{8195}} + \frac{3^{4118}}{2^{8196}} + \frac{3^{4119}}{2^{8197}} + \frac{3^{4120}}{2^{8199}} + \frac{3^{4121}}{2^{8202}} + \frac{3^{4122}}{2^{8206}} + \\
& \frac{3^{4123}}{2^{8208}} + \frac{3^{4124}}{2^{8212}} + \frac{3^{4125}}{2^{8214}} + \frac{3^{4126}}{2^{8215}} + \frac{3^{4127}}{2^{8217}} + \frac{3^{4128}}{2^{8219}} + \frac{3^{4129}}{2^{8222}} + \frac{3^{4130}}{2^{8228}} + \frac{3^{4131}}{2^{8230}} + \\
& \frac{3^{4132}}{2^{8233}} + \frac{3^{4133}}{2^{8234}} + \frac{3^{4134}}{2^{8235}} + \frac{3^{4135}}{2^{8238}} + \frac{3^{4136}}{2^{8239}} + \frac{3^{4137}}{2^{8240}} + \frac{3^{4138}}{2^{8242}} + \frac{3^{4139}}{2^{8243}} + \frac{3^{4140}}{2^{8244}} + \\
& \frac{3^{4141}}{2^{8245}} + \frac{3^{4142}}{2^{8246}} + \frac{3^{4143}}{2^{8247}} + \frac{3^{4144}}{2^{8248}} + \frac{3^{4145}}{2^{8249}} + \frac{3^{4146}}{2^{8250}} + \frac{3^{4147}}{2^{8251}} + \frac{3^{4148}}{2^{8252}} + \frac{3^{4149}}{2^{8253}} + \\
& \frac{3^{4150}}{2^{8254}} + \frac{3^{4151}}{2^{8255}} + \frac{3^{4152}}{2^{8256}} + \frac{3^{4153}}{2^{8257}} + \frac{3^{4154}}{2^{8261}} + \frac{3^{4155}}{2^{8262}} + \frac{3^{4156}}{2^{8266}} + \frac{3^{4157}}{2^{8269}} + \frac{3^{4158}}{2^{8271}} + \\
& \frac{3^{4159}}{2^{8277}} + \frac{3^{4160}}{2^{8278}} + \frac{3^{4161}}{2^{8279}} + \frac{3^{4162}}{2^{8284}} + \frac{3^{4163}}{2^{8287}} + \frac{3^{4164}}{2^{8288}} + \frac{3^{4165}}{2^{8291}} + \frac{3^{4166}}{2^{8292}} + \frac{3^{4167}}{2^{8293}} + \\
& \frac{3^{4168}}{2^{8294}} + \frac{3^{4169}}{2^{8295}} + \frac{3^{4170}}{2^{8296}} + \frac{3^{4171}}{2^{8297}} + \frac{3^{4172}}{2^{8301}} + \frac{3^{4173}}{2^{8304}} + \frac{3^{4174}}{2^{8306}} + \frac{3^{4175}}{2^{8307}} + \frac{3^{4176}}{2^{8309}} + \\
& \frac{3^{4177}}{2^{8310}} + \frac{3^{4178}}{2^{8315}} + \frac{3^{4179}}{2^{8316}} + \frac{3^{4180}}{2^{8317}} + \frac{3^{4181}}{2^{8319}} + \frac{3^{4182}}{2^{8320}} + \frac{3^{4183}}{2^{8321}} + \frac{3^{4184}}{2^{8326}} + \frac{3^{4185}}{2^{8327}} + \\
& \frac{3^{4186}}{2^{8328}} + \frac{3^{4187}}{2^{8331}} + \frac{3^{4188}}{2^{8333}} + \frac{3^{4189}}{2^{8336}} + \frac{3^{4190}}{2^{8341}} + \frac{3^{4191}}{2^{8343}} + \frac{3^{4192}}{2^{8351}} + \frac{3^{4193}}{2^{8352}} + \frac{3^{4194}}{2^{8354}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4195}}{2^{8355}} + \frac{3^{4196}}{2^{8359}} + \frac{3^{4197}}{2^{8360}} + \frac{3^{4198}}{2^{8363}} + \frac{3^{4199}}{2^{8364}} + \frac{3^{4200}}{2^{8365}} + \frac{3^{4201}}{2^{8366}} + \frac{3^{4202}}{2^{8367}} + \frac{3^{4203}}{2^{8368}} + \\
& \frac{3^{4204}}{2^{8371}} + \frac{3^{4205}}{2^{8372}} + \frac{3^{4206}}{2^{8374}} + \frac{3^{4207}}{2^{8375}} + \frac{3^{4208}}{2^{8377}} + \frac{3^{4209}}{2^{8378}} + \frac{3^{4210}}{2^{8385}} + \frac{3^{4211}}{2^{8387}} + \frac{3^{4212}}{2^{8388}} + \\
& \frac{3^{4213}}{2^{8391}} + \frac{3^{4214}}{2^{8393}} + \frac{3^{4215}}{2^{8395}} + \frac{3^{4216}}{2^{8397}} + \frac{3^{4217}}{2^{8399}} + \frac{3^{4218}}{2^{8400}} + \frac{3^{4219}}{2^{8401}} + \frac{3^{4220}}{2^{8402}} + \frac{3^{4221}}{2^{8403}} + \\
& \frac{3^{4222}}{2^{8405}} + \frac{3^{4223}}{2^{8406}} + \frac{3^{4224}}{2^{8407}} + \frac{3^{4225}}{2^{8409}} + \frac{3^{4226}}{2^{8411}} + \frac{3^{4227}}{2^{8412}} + \frac{3^{4228}}{2^{8413}} + \frac{3^{4229}}{2^{8414}} + \frac{3^{4230}}{2^{8416}} + \\
& \frac{3^{4231}}{2^{8418}} + \frac{3^{4232}}{2^{8419}} + \frac{3^{4233}}{2^{8422}} + \frac{3^{4234}}{2^{8425}} + \frac{3^{4235}}{2^{8427}} + \frac{3^{4236}}{2^{8430}} + \frac{3^{4237}}{2^{8431}} + \frac{3^{4238}}{2^{8435}} + \frac{3^{4239}}{2^{8437}} + \\
& \frac{3^{4240}}{2^{8439}} + \frac{3^{4241}}{2^{8440}} + \frac{3^{4242}}{2^{8441}} + \frac{3^{4243}}{2^{8442}} + \frac{3^{4244}}{2^{8445}} + \frac{3^{4245}}{2^{8446}} + \frac{3^{4246}}{2^{8447}} + \frac{3^{4247}}{2^{8449}} + \frac{3^{4248}}{2^{8450}} + \\
& \frac{3^{4249}}{2^{8456}} + \frac{3^{4250}}{2^{8458}} + \frac{3^{4251}}{2^{8459}} + \frac{3^{4252}}{2^{8460}} + \frac{3^{4253}}{2^{8461}} + \frac{3^{4254}}{2^{8462}} + \frac{3^{4255}}{2^{8463}} + \frac{3^{4256}}{2^{8464}} + \frac{3^{4257}}{2^{8467}} + \\
& \frac{3^{4258}}{2^{8469}} + \frac{3^{4259}}{2^{8473}} + \frac{3^{4260}}{2^{8474}} + \frac{3^{4261}}{2^{8475}} + \frac{3^{4262}}{2^{8479}} + \frac{3^{4263}}{2^{8482}} + \frac{3^{4264}}{2^{8487}} + \frac{3^{4265}}{2^{8491}} + \frac{3^{4266}}{2^{8497}} + \\
& \frac{3^{4267}}{2^{8498}} + \frac{3^{4268}}{2^{8499}} + \frac{3^{4269}}{2^{8500}} + \frac{3^{4270}}{2^{8503}} + \frac{3^{4271}}{2^{8509}} + \frac{3^{4272}}{2^{8513}} + \frac{3^{4273}}{2^{8522}} + \frac{3^{4274}}{2^{8523}} + \frac{3^{4275}}{2^{8525}} + \\
& \frac{3^{4276}}{2^{8529}} + \frac{3^{4277}}{2^{8530}} + \frac{3^{4278}}{2^{8531}} + \frac{3^{4279}}{2^{8534}} + \frac{3^{4280}}{2^{8539}} + \frac{3^{4281}}{2^{8543}} + \frac{3^{4282}}{2^{8547}} + \frac{3^{4283}}{2^{8552}} + \frac{3^{4284}}{2^{8553}} + \\
& \frac{3^{4285}}{2^{8557}} + \frac{3^{4286}}{2^{8558}} + \frac{3^{4287}}{2^{8559}} + \frac{3^{4288}}{2^{8560}} + \frac{3^{4289}}{2^{8566}} + \frac{3^{4290}}{2^{8568}} + \frac{3^{4291}}{2^{8569}} + \frac{3^{4292}}{2^{8572}} + \frac{3^{4293}}{2^{8573}} + \\
& \frac{3^{4294}}{2^{8574}} + \frac{3^{4295}}{2^{8575}} + \frac{3^{4296}}{2^{8577}} + \frac{3^{4297}}{2^{8579}} + \frac{3^{4298}}{2^{8582}} + \frac{3^{4299}}{2^{8583}} + \frac{3^{4300}}{2^{8586}} + \frac{3^{4301}}{2^{8588}} + \frac{3^{4302}}{2^{8589}} + \\
& \frac{3^{4303}}{2^{8591}} + \frac{3^{4304}}{2^{8595}} + \frac{3^{4305}}{2^{8600}} + \frac{3^{4306}}{2^{8601}} + \frac{3^{4307}}{2^{8603}} + \frac{3^{4308}}{2^{8604}} + \frac{3^{4309}}{2^{8609}} + \frac{3^{4310}}{2^{8610}} + \frac{3^{4311}}{2^{8617}} + \\
& \frac{3^{4312}}{2^{8618}} + \frac{3^{4313}}{2^{8619}} + \frac{3^{4314}}{2^{8621}} + \frac{3^{4315}}{2^{8626}} + \frac{3^{4316}}{2^{8627}} + \frac{3^{4317}}{2^{8628}} + \frac{3^{4318}}{2^{8629}} + \frac{3^{4319}}{2^{8630}} + \frac{3^{4320}}{2^{8631}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4321}}{2^{8633}} + \frac{3^{4322}}{2^{8635}} + \frac{3^{4323}}{2^{8636}} + \frac{3^{4324}}{2^{8638}} + \frac{3^{4325}}{2^{8639}} + \frac{3^{4326}}{2^{8640}} + \frac{3^{4327}}{2^{8641}} + \frac{3^{4328}}{2^{8642}} + \frac{3^{4329}}{2^{8643}} + \\
& \frac{3^{4330}}{2^{8648}} + \frac{3^{4331}}{2^{8649}} + \frac{3^{4332}}{2^{8651}} + \frac{3^{4333}}{2^{8652}} + \frac{3^{4334}}{2^{8656}} + \frac{3^{4335}}{2^{8658}} + \frac{3^{4336}}{2^{8659}} + \frac{3^{4337}}{2^{8662}} + \frac{3^{4338}}{2^{8664}} + \\
& \frac{3^{4339}}{2^{8667}} + \frac{3^{4340}}{2^{8668}} + \frac{3^{4341}}{2^{8670}} + \frac{3^{4342}}{2^{8671}} + \frac{3^{4343}}{2^{8676}} + \frac{3^{4344}}{2^{8679}} + \frac{3^{4345}}{2^{8680}} + \frac{3^{4346}}{2^{8681}} + \frac{3^{4347}}{2^{8684}} + \\
& \frac{3^{4348}}{2^{8688}} + \frac{3^{4349}}{2^{8689}} + \frac{3^{4350}}{2^{8690}} + \frac{3^{4351}}{2^{8691}} + \frac{3^{4352}}{2^{8692}} + \frac{3^{4353}}{2^{8697}} + \frac{3^{4354}}{2^{8698}} + \frac{3^{4355}}{2^{8700}} + \frac{3^{4356}}{2^{8701}} + \\
& \frac{3^{4357}}{2^{8703}} + \frac{3^{4358}}{2^{8706}} + \frac{3^{4359}}{2^{8709}} + \frac{3^{4360}}{2^{8711}} + \frac{3^{4361}}{2^{8714}} + \frac{3^{4362}}{2^{8715}} + \frac{3^{4363}}{2^{8716}} + \frac{3^{4364}}{2^{8718}} + \frac{3^{4365}}{2^{8719}} + \\
& \frac{3^{4366}}{2^{8720}} + \frac{3^{4367}}{2^{8721}} + \frac{3^{4368}}{2^{8722}} + \frac{3^{4369}}{2^{8723}} + \frac{3^{4370}}{2^{8724}} + \frac{3^{4371}}{2^{8725}} + \frac{3^{4372}}{2^{8730}} + \frac{3^{4373}}{2^{8732}} + \frac{3^{4374}}{2^{8734}} + \\
& \frac{3^{4375}}{2^{8735}} + \frac{3^{4376}}{2^{8736}} + \frac{3^{4377}}{2^{8740}} + \frac{3^{4378}}{2^{8742}} + \frac{3^{4379}}{2^{8745}} + \frac{3^{4380}}{2^{8750}} + \frac{3^{4381}}{2^{8753}} + \frac{3^{4382}}{2^{8754}} + \frac{3^{4383}}{2^{8756}} + \\
& \frac{3^{4384}}{2^{8758}} + \frac{3^{4385}}{2^{8759}} + \frac{3^{4386}}{2^{8763}} + \frac{3^{4387}}{2^{8765}} + \frac{3^{4388}}{2^{8766}} + \frac{3^{4389}}{2^{8769}} + \frac{3^{4390}}{2^{8770}} + \frac{3^{4391}}{2^{8772}} + \frac{3^{4392}}{2^{8773}} + \\
& \frac{3^{4393}}{2^{8775}} + \frac{3^{4394}}{2^{8776}} + \frac{3^{4395}}{2^{8778}} + \frac{3^{4396}}{2^{8779}} + \frac{3^{4397}}{2^{8782}} + \frac{3^{4398}}{2^{8783}} + \frac{3^{4399}}{2^{8784}} + \frac{3^{4400}}{2^{8786}} + \frac{3^{4401}}{2^{8787}} + \\
& \frac{3^{4402}}{2^{8790}} + \frac{3^{4403}}{2^{8792}} + \frac{3^{4404}}{2^{8793}} + \frac{3^{4405}}{2^{8794}} + \frac{3^{4406}}{2^{8795}} + \frac{3^{4407}}{2^{8798}} + \frac{3^{4408}}{2^{8800}} + \frac{3^{4409}}{2^{8803}} + \frac{3^{4410}}{2^{8805}} + \\
& \frac{3^{4411}}{2^{8807}} + \frac{3^{4412}}{2^{8809}} + \frac{3^{4413}}{2^{8810}} + \frac{3^{4414}}{2^{8811}} + \frac{3^{4415}}{2^{8812}} + \frac{3^{4416}}{2^{8815}} + \frac{3^{4417}}{2^{8817}} + \frac{3^{4418}}{2^{8818}} + \frac{3^{4419}}{2^{8819}} + \\
& \frac{3^{4420}}{2^{8820}} + \frac{3^{4421}}{2^{8821}} + \frac{3^{4422}}{2^{8824}} + \frac{3^{4423}}{2^{8825}} + \frac{3^{4424}}{2^{8826}} + \frac{3^{4425}}{2^{8827}} + \frac{3^{4426}}{2^{8829}} + \frac{3^{4427}}{2^{8830}} + \frac{3^{4428}}{2^{8831}} + \\
& \frac{3^{4429}}{2^{8834}} + \frac{3^{4430}}{2^{8835}} + \frac{3^{4431}}{2^{8836}} + \frac{3^{4432}}{2^{8838}} + \frac{3^{4433}}{2^{8841}} + \frac{3^{4434}}{2^{8842}} + \frac{3^{4435}}{2^{8844}} + \frac{3^{4436}}{2^{8846}} + \frac{3^{4437}}{2^{8851}} + \\
& \frac{3^{4438}}{2^{8857}} + \frac{3^{4439}}{2^{8860}} + \frac{3^{4440}}{2^{8861}} + \frac{3^{4441}}{2^{8863}} + \frac{3^{4442}}{2^{8864}} + \frac{3^{4443}}{2^{8868}} + \frac{3^{4444}}{2^{8869}} + \frac{3^{4445}}{2^{8871}} + \frac{3^{4446}}{2^{8872}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4447}}{2^{8873}} + \frac{3^{4448}}{2^{8874}} + \frac{3^{4449}}{2^{8876}} + \frac{3^{4450}}{2^{8880}} + \frac{3^{4451}}{2^{8881}} + \frac{3^{4452}}{2^{8883}} + \frac{3^{4453}}{2^{8887}} + \frac{3^{4454}}{2^{8889}} + \frac{3^{4455}}{2^{8891}} + \\
& \frac{3^{4456}}{2^{8893}} + \frac{3^{4457}}{2^{8895}} + \frac{3^{4458}}{2^{8896}} + \frac{3^{4459}}{2^{8897}} + \frac{3^{4460}}{2^{8898}} + \frac{3^{4461}}{2^{8899}} + \frac{3^{4462}}{2^{8900}} + \frac{3^{4463}}{2^{8901}} + \frac{3^{4464}}{2^{8902}} + \\
& \frac{3^{4465}}{2^{8903}} + \frac{3^{4466}}{2^{8904}} + \frac{3^{4467}}{2^{8905}} + \frac{3^{4468}}{2^{8906}} + \frac{3^{4469}}{2^{8907}} + \frac{3^{4470}}{2^{8910}} + \frac{3^{4471}}{2^{8913}} + \frac{3^{4472}}{2^{8914}} + \frac{3^{4473}}{2^{8915}} + \\
& \frac{3^{4474}}{2^{8916}} + \frac{3^{4475}}{2^{8917}} + \frac{3^{4476}}{2^{8920}} + \frac{3^{4477}}{2^{8922}} + \frac{3^{4478}}{2^{8923}} + \frac{3^{4479}}{2^{8925}} + \frac{3^{4480}}{2^{8926}} + \frac{3^{4481}}{2^{8928}} + \frac{3^{4482}}{2^{8931}} + \\
& \frac{3^{4483}}{2^{8935}} + \frac{3^{4484}}{2^{8938}} + \frac{3^{4485}}{2^{8940}} + \frac{3^{4486}}{2^{8942}} + \frac{3^{4487}}{2^{8943}} + \frac{3^{4488}}{2^{8944}} + \frac{3^{4489}}{2^{8945}} + \frac{3^{4490}}{2^{8947}} + \frac{3^{4491}}{2^{8948}} + \\
& \frac{3^{4492}}{2^{8949}} + \frac{3^{4493}}{2^{8950}} + \frac{3^{4494}}{2^{8954}} + \frac{3^{4495}}{2^{8955}} + \frac{3^{4496}}{2^{8957}} + \frac{3^{4497}}{2^{8961}} + \frac{3^{4498}}{2^{8966}} + \frac{3^{4499}}{2^{8968}} + \frac{3^{4500}}{2^{8970}} + \\
& \frac{3^{4501}}{2^{8974}} + \frac{3^{4502}}{2^{8975}} + \frac{3^{4503}}{2^{8976}} + \frac{3^{4504}}{2^{8982}} + \frac{3^{4505}}{2^{8983}} + \frac{3^{4506}}{2^{8985}} + \frac{3^{4507}}{2^{8989}} + \frac{3^{4508}}{2^{8990}} + \frac{3^{4509}}{2^{8994}} + \\
& \frac{3^{4510}}{2^{8995}} + \frac{3^{4511}}{2^{8999}} + \frac{3^{4512}}{2^{9001}} + \frac{3^{4513}}{2^{9002}} + \frac{3^{4514}}{2^{9004}} + \frac{3^{4515}}{2^{9005}} + \frac{3^{4516}}{2^{9007}} + \frac{3^{4517}}{2^{9009}} + \frac{3^{4518}}{2^{9010}} + \\
& \frac{3^{4519}}{2^{9012}} + \frac{3^{4520}}{2^{9015}} + \frac{3^{4521}}{2^{9017}} + \frac{3^{4522}}{2^{9018}} + \frac{3^{4523}}{2^{9019}} + \frac{3^{4524}}{2^{9021}} + \frac{3^{4525}}{2^{9026}} + \frac{3^{4526}}{2^{9027}} + \frac{3^{4527}}{2^{9030}} + \\
& \frac{3^{4528}}{2^{9031}} + \frac{3^{4529}}{2^{9033}} + \frac{3^{4530}}{2^{9035}} + \frac{3^{4531}}{2^{9038}} + \frac{3^{4532}}{2^{9042}} + \frac{3^{4533}}{2^{9043}} + \frac{3^{4534}}{2^{9044}} + \frac{3^{4535}}{2^{9046}} + \frac{3^{4536}}{2^{9048}} + \\
& \frac{3^{4537}}{2^{9049}} + \frac{3^{4538}}{2^{9051}} + \frac{3^{4539}}{2^{9054}} + \frac{3^{4540}}{2^{9056}} + \frac{3^{4541}}{2^{9058}} + \frac{3^{4542}}{2^{9064}} + \frac{3^{4543}}{2^{9065}} + \frac{3^{4544}}{2^{9067}} + \frac{3^{4545}}{2^{9068}} + \\
& \frac{3^{4546}}{2^{9069}} + \frac{3^{4547}}{2^{9072}} + \frac{3^{4548}}{2^{9074}} + \frac{3^{4549}}{2^{9076}} + \frac{3^{4550}}{2^{9077}} + \frac{3^{4551}}{2^{9078}} + \frac{3^{4552}}{2^{9081}} + \frac{3^{4553}}{2^{9084}} + \frac{3^{4554}}{2^{9086}} + \\
& \frac{3^{4555}}{2^{9087}} + \frac{3^{4556}}{2^{9089}} + \frac{3^{4557}}{2^{9093}} + \frac{3^{4558}}{2^{9095}} + \frac{3^{4559}}{2^{9096}} + \frac{3^{4560}}{2^{9097}} + \frac{3^{4561}}{2^{9098}} + \frac{3^{4562}}{2^{9102}} + \frac{3^{4563}}{2^{9103}} + \\
& \frac{3^{4564}}{2^{9104}} + \frac{3^{4565}}{2^{9111}} + \frac{3^{4566}}{2^{9113}} + \frac{3^{4567}}{2^{9114}} + \frac{3^{4568}}{2^{9117}} + \frac{3^{4569}}{2^{9118}} + \frac{3^{4570}}{2^{9120}} + \frac{3^{4571}}{2^{9121}} + \frac{3^{4572}}{2^{9123}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4573}}{2^{9124}} + \frac{3^{4574}}{2^{9126}} + \frac{3^{4575}}{2^{9128}} + \frac{3^{4576}}{2^{9129}} + \frac{3^{4577}}{2^{9135}} + \frac{3^{4578}}{2^{9138}} + \frac{3^{4579}}{2^{9139}} + \frac{3^{4580}}{2^{9140}} + \frac{3^{4581}}{2^{9141}} + \\
& \frac{3^{4582}}{2^{9142}} + \frac{3^{4583}}{2^{9143}} + \frac{3^{4584}}{2^{9145}} + \frac{3^{4585}}{2^{9150}} + \frac{3^{4586}}{2^{9152}} + \frac{3^{4587}}{2^{9155}} + \frac{3^{4588}}{2^{9156}} + \frac{3^{4589}}{2^{9157}} + \frac{3^{4590}}{2^{9158}} + \\
& \frac{3^{4591}}{2^{9159}} + \frac{3^{4592}}{2^{9162}} + \frac{3^{4593}}{2^{9164}} + \frac{3^{4594}}{2^{9165}} + \frac{3^{4595}}{2^{9167}} + \frac{3^{4596}}{2^{9168}} + \frac{3^{4597}}{2^{9170}} + \frac{3^{4598}}{2^{9171}} + \frac{3^{4599}}{2^{9175}} + \\
& \frac{3^{4600}}{2^{9177}} + \frac{3^{4601}}{2^{9180}} + \frac{3^{4602}}{2^{9184}} + \frac{3^{4603}}{2^{9187}} + \frac{3^{4604}}{2^{9192}} + \frac{3^{4605}}{2^{9195}} + \frac{3^{4606}}{2^{9197}} + \frac{3^{4607}}{2^{9198}} + \frac{3^{4608}}{2^{9200}} + \\
& \frac{3^{4609}}{2^{9204}} + \frac{3^{4610}}{2^{9206}} + \frac{3^{4611}}{2^{9208}} + \frac{3^{4612}}{2^{9211}} + \frac{3^{4613}}{2^{9212}} + \frac{3^{4614}}{2^{9213}} + \frac{3^{4615}}{2^{9216}} + \frac{3^{4616}}{2^{9218}} + \frac{3^{4617}}{2^{9219}} + \\
& \frac{3^{4618}}{2^{9221}} + \frac{3^{4619}}{2^{9223}} + \frac{3^{4620}}{2^{9227}} + \frac{3^{4621}}{2^{9228}} + \frac{3^{4622}}{2^{9229}} + \frac{3^{4623}}{2^{9236}} + \frac{3^{4624}}{2^{9237}} + \frac{3^{4625}}{2^{9238}} + \frac{3^{4626}}{2^{9241}} + \\
& \frac{3^{4627}}{2^{9243}} + \frac{3^{4628}}{2^{9247}} + \frac{3^{4629}}{2^{9248}} + \frac{3^{4630}}{2^{9249}} + \frac{3^{4631}}{2^{9252}} + \frac{3^{4632}}{2^{9253}} + \frac{3^{4633}}{2^{9256}} + \frac{3^{4634}}{2^{9258}} + \frac{3^{4635}}{2^{9259}} + \\
& \frac{3^{4636}}{2^{9260}} + \frac{3^{4637}}{2^{9266}} + \frac{3^{4638}}{2^{9272}} + \frac{3^{4639}}{2^{9273}} + \frac{3^{4640}}{2^{9275}} + \frac{3^{4641}}{2^{9276}} + \frac{3^{4642}}{2^{9277}} + \frac{3^{4643}}{2^{9278}} + \frac{3^{4644}}{2^{9285}} + \\
& \frac{3^{4645}}{2^{9286}} + \frac{3^{4646}}{2^{9288}} + \frac{3^{4647}}{2^{9290}} + \frac{3^{4648}}{2^{9291}} + \frac{3^{4649}}{2^{9292}} + \frac{3^{4650}}{2^{9295}} + \frac{3^{4651}}{2^{9297}} + \frac{3^{4652}}{2^{9298}} + \frac{3^{4653}}{2^{9302}} + \\
& \frac{3^{4654}}{2^{9304}} + \frac{3^{4655}}{2^{9305}} + \frac{3^{4656}}{2^{9306}} + \frac{3^{4657}}{2^{9307}} + \frac{3^{4658}}{2^{9308}} + \frac{3^{4659}}{2^{9309}} + \frac{3^{4660}}{2^{9313}} + \frac{3^{4661}}{2^{9314}} + \frac{3^{4662}}{2^{9316}} + \\
& \frac{3^{4663}}{2^{9317}} + \frac{3^{4664}}{2^{9318}} + \frac{3^{4665}}{2^{9319}} + \frac{3^{4666}}{2^{9322}} + \frac{3^{4667}}{2^{9325}} + \frac{3^{4668}}{2^{9326}} + \frac{3^{4669}}{2^{9330}} + \frac{3^{4670}}{2^{9332}} + \frac{3^{4671}}{2^{9333}} + \\
& \frac{3^{4672}}{2^{9336}} + \frac{3^{4673}}{2^{9340}} + \frac{3^{4674}}{2^{9342}} + \frac{3^{4675}}{2^{9344}} + \frac{3^{4676}}{2^{9347}} + \frac{3^{4677}}{2^{9350}} + \frac{3^{4678}}{2^{9351}} + \frac{3^{4679}}{2^{9352}} + \frac{3^{4680}}{2^{9355}} + \\
& \frac{3^{4681}}{2^{9356}} + \frac{3^{4682}}{2^{9357}} + \frac{3^{4683}}{2^{9358}} + \frac{3^{4684}}{2^{9359}} + \frac{3^{4685}}{2^{9364}} + \frac{3^{4686}}{2^{9365}} + \frac{3^{4687}}{2^{9368}} + \frac{3^{4688}}{2^{9369}} + \frac{3^{4689}}{2^{9370}} + \\
& \frac{3^{4690}}{2^{9371}} + \frac{3^{4691}}{2^{9373}} + \frac{3^{4692}}{2^{9375}} + \frac{3^{4693}}{2^{9377}} + \frac{3^{4694}}{2^{9381}} + \frac{3^{4695}}{2^{9382}} + \frac{3^{4696}}{2^{9383}} + \frac{3^{4697}}{2^{9384}} + \frac{3^{4698}}{2^{9391}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4699}}{2^{9393}} + \frac{3^{4700}}{2^{9394}} + \frac{3^{4701}}{2^{9395}} + \frac{3^{4702}}{2^{9396}} + \frac{3^{4703}}{2^{9398}} + \frac{3^{4704}}{2^{9400}} + \frac{3^{4705}}{2^{9401}} + \frac{3^{4706}}{2^{9402}} + \frac{3^{4707}}{2^{9403}} + \\
& \frac{3^{4708}}{2^{9404}} + \frac{3^{4709}}{2^{9407}} + \frac{3^{4710}}{2^{9408}} + \frac{3^{4711}}{2^{9411}} + \frac{3^{4712}}{2^{9412}} + \frac{3^{4713}}{2^{9413}} + \frac{3^{4714}}{2^{9414}} + \frac{3^{4715}}{2^{9415}} + \frac{3^{4716}}{2^{9419}} + \\
& \frac{3^{4717}}{2^{9421}} + \frac{3^{4718}}{2^{9422}} + \frac{3^{4719}}{2^{9423}} + \frac{3^{4720}}{2^{9424}} + \frac{3^{4721}}{2^{9426}} + \frac{3^{4722}}{2^{9429}} + \frac{3^{4723}}{2^{9431}} + \frac{3^{4724}}{2^{9432}} + \frac{3^{4725}}{2^{9434}} + \\
& \frac{3^{4726}}{2^{9437}} + \frac{3^{4727}}{2^{9438}} + \frac{3^{4728}}{2^{9439}} + \frac{3^{4729}}{2^{9441}} + \frac{3^{4730}}{2^{9443}} + \frac{3^{4731}}{2^{9444}} + \frac{3^{4732}}{2^{9445}} + \frac{3^{4733}}{2^{9446}} + \frac{3^{4734}}{2^{9447}} + \\
& \frac{3^{4735}}{2^{9448}} + \frac{3^{4736}}{2^{9450}} + \frac{3^{4737}}{2^{9452}} + \frac{3^{4738}}{2^{9454}} + \frac{3^{4739}}{2^{9457}} + \frac{3^{4740}}{2^{9458}} + \frac{3^{4741}}{2^{9459}} + \frac{3^{4742}}{2^{9460}} + \frac{3^{4743}}{2^{9466}} + \\
& \frac{3^{4744}}{2^{9468}} + \frac{3^{4745}}{2^{9470}} + \frac{3^{4746}}{2^{9471}} + \frac{3^{4747}}{2^{9475}} + \frac{3^{4748}}{2^{9476}} + \frac{3^{4749}}{2^{9477}} + \frac{3^{4750}}{2^{9478}} + \frac{3^{4751}}{2^{9479}} + \frac{3^{4752}}{2^{9480}} + \\
& \frac{3^{4753}}{2^{9484}} + \frac{3^{4754}}{2^{9485}} + \frac{3^{4755}}{2^{9488}} + \frac{3^{4756}}{2^{9489}} + \frac{3^{4757}}{2^{9493}} + \frac{3^{4758}}{2^{9495}} + \frac{3^{4759}}{2^{9496}} + \frac{3^{4760}}{2^{9498}} + \frac{3^{4761}}{2^{9501}} + \\
& \frac{3^{4762}}{2^{9502}} + \frac{3^{4763}}{2^{9504}} + \frac{3^{4764}}{2^{9505}} + \frac{3^{4765}}{2^{9511}} + \frac{3^{4766}}{2^{9513}} + \frac{3^{4767}}{2^{9515}} + \frac{3^{4768}}{2^{9516}} + \frac{3^{4769}}{2^{9517}} + \frac{3^{4770}}{2^{9518}} + \\
& \frac{3^{4771}}{2^{9519}} + \frac{3^{4772}}{2^{9520}} + \frac{3^{4773}}{2^{9521}} + \frac{3^{4774}}{2^{9522}} + \frac{3^{4775}}{2^{9523}} + \frac{3^{4776}}{2^{9524}} + \frac{3^{4777}}{2^{9529}} + \frac{3^{4778}}{2^{9531}} + \frac{3^{4779}}{2^{9532}} + \\
& \frac{3^{4780}}{2^{9535}} + \frac{3^{4781}}{2^{9537}} + \frac{3^{4782}}{2^{9538}} + \frac{3^{4783}}{2^{9539}} + \frac{3^{4784}}{2^{9541}} + \frac{3^{4785}}{2^{9544}} + \frac{3^{4786}}{2^{9545}} + \frac{3^{4787}}{2^{9546}} + \frac{3^{4788}}{2^{9547}} + \\
& \frac{3^{4789}}{2^{9548}} + \frac{3^{4790}}{2^{9550}} + \frac{3^{4791}}{2^{9551}} + \frac{3^{4792}}{2^{9553}} + \frac{3^{4793}}{2^{9554}} + \frac{3^{4794}}{2^{9555}} + \frac{3^{4795}}{2^{9557}} + \frac{3^{4796}}{2^{9559}} + \frac{3^{4797}}{2^{9560}} + \\
& \frac{3^{4798}}{2^{9564}} + \frac{3^{4799}}{2^{9566}} + \frac{3^{4800}}{2^{9569}} + \frac{3^{4801}}{2^{9572}} + \frac{3^{4802}}{2^{9573}} + \frac{3^{4803}}{2^{9575}} + \frac{3^{4804}}{2^{9581}} + \frac{3^{4805}}{2^{9584}} + \frac{3^{4806}}{2^{9586}} + \\
& \frac{3^{4807}}{2^{9587}} + \frac{3^{4808}}{2^{9588}} + \frac{3^{4809}}{2^{9592}} + \frac{3^{4810}}{2^{9593}} + \frac{3^{4811}}{2^{9594}} + \frac{3^{4812}}{2^{9595}} + \frac{3^{4813}}{2^{9597}} + \frac{3^{4814}}{2^{9600}} + \frac{3^{4815}}{2^{9604}} + \\
& \frac{3^{4816}}{2^{9605}} + \frac{3^{4817}}{2^{9607}} + \frac{3^{4818}}{2^{9610}} + \frac{3^{4819}}{2^{9613}} + \frac{3^{4820}}{2^{9615}} + \frac{3^{4821}}{2^{9617}} + \frac{3^{4822}}{2^{9620}} + \frac{3^{4823}}{2^{9621}} + \frac{3^{4824}}{2^{9623}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{3^{4825}}{2^{9624}} + \frac{3^{4826}}{2^{9626}} + \frac{3^{4827}}{2^{9627}} + \frac{3^{4828}}{2^{9629}} + \frac{3^{4829}}{2^{9630}} + \frac{3^{4830}}{2^{9632}} + \frac{3^{4831}}{2^{9634}} + \frac{3^{4832}}{2^{9635}} + \frac{3^{4833}}{2^{9637}} + \\
& \frac{3^{4834}}{2^{9639}} + \frac{3^{4835}}{2^{9640}} + \frac{3^{4836}}{2^{9646}} + \frac{3^{4837}}{2^{9648}} + \frac{3^{4838}}{2^{9649}} + \frac{3^{4839}}{2^{9652}} + \frac{3^{4840}}{2^{9653}} + \frac{3^{4841}}{2^{9654}} + \frac{3^{4842}}{2^{9660}} + \\
& \frac{3^{4843}}{2^{9662}} + \frac{3^{4844}}{2^{9663}} + \frac{3^{4845}}{2^{9664}} + \frac{3^{4846}}{2^{9667}} + \frac{3^{4847}}{2^{9669}} + \frac{3^{4848}}{2^{9670}} + \frac{3^{4849}}{2^{9671}} + \frac{3^{4850}}{2^{9672}} + \frac{3^{4851}}{2^{9674}} + \\
& \frac{3^{4852}}{2^{9675}} + \frac{3^{4853}}{2^{9676}} + \frac{3^{4854}}{2^{9679}} + \frac{3^{4855}}{2^{9680}} + \frac{3^{4856}}{2^{9681}} + \frac{3^{4857}}{2^{9682}} + \frac{3^{4858}}{2^{9683}} + \frac{3^{4859}}{2^{9684}} + \frac{3^{4860}}{2^{9689}} + \\
& \frac{3^{4861}}{2^{9692}} + \frac{3^{4862}}{2^{9693}} + \frac{3^{4863}}{2^{9694}} + \frac{3^{4864}}{2^{9697}} + \frac{3^{4865}}{2^{9701}} + \frac{3^{4866}}{2^{9702}} + \frac{3^{4867}}{2^{9703}} + \frac{3^{4868}}{2^{9704}} + \frac{3^{4869}}{2^{9706}} + \\
& \frac{3^{4870}}{2^{9710}} + \frac{3^{4871}}{2^{9711}} + \frac{3^{4872}}{2^{9712}} + \frac{3^{4873}}{2^{9715}} + \frac{3^{4874}}{2^{9716}} + \frac{3^{4875}}{2^{9717}} + \frac{3^{4876}}{2^{9718}} + \frac{3^{4877}}{2^{9719}} + \frac{3^{4878}}{2^{9720}} + \\
& \frac{3^{4879}}{2^{9722}} + \frac{3^{4880}}{2^{9723}} + \frac{3^{4881}}{2^{9725}} + \frac{3^{4882}}{2^{9727}} + \frac{3^{4883}}{2^{9728}} + \frac{3^{4884}}{2^{9729}} + \frac{3^{4885}}{2^{9731}} + \frac{3^{4886}}{2^{9733}} + \frac{3^{4887}}{2^{9734}} + \\
& \frac{3^{4888}}{2^{9735}} + \frac{3^{4889}}{2^{9739}} + \frac{3^{4890}}{2^{9741}} + \frac{3^{4891}}{2^{9742}} + \frac{3^{4892}}{2^{9745}} + \frac{3^{4893}}{2^{9746}} + \frac{3^{4894}}{2^{9747}} + \frac{3^{4895}}{2^{9748}} + \frac{3^{4896}}{2^{9749}} + \\
& \frac{3^{4897}}{2^{9751}} + \frac{3^{4898}}{2^{9752}} + \frac{3^{4899}}{2^{9755}} + \frac{3^{4900}}{2^{9758}} + \frac{3^{4901}}{2^{9759}} + \frac{3^{4902}}{2^{9761}} + \frac{3^{4903}}{2^{9763}} + \frac{3^{4904}}{2^{9765}} + \frac{3^{4905}}{2^{9767}} + \\
& \frac{3^{4906}}{2^{9769}} + \frac{3^{4907}}{2^{9770}} + \frac{3^{4908}}{2^{9771}} + \frac{3^{4909}}{2^{9772}} + \frac{3^{4910}}{2^{9773}} + \frac{3^{4911}}{2^{9774}} + \frac{3^{4912}}{2^{9776}} + \frac{3^{4913}}{2^{9777}} + \frac{3^{4914}}{2^{9779}} + \\
& \frac{3^{4915}}{2^{9780}} + \frac{3^{4916}}{2^{9781}} + \frac{3^{4917}}{2^{9785}} + \frac{3^{4918}}{2^{9786}} + \frac{3^{4919}}{2^{9793}} + \frac{3^{4920}}{2^{9796}} + \frac{3^{4921}}{2^{9797}} + \frac{3^{4922}}{2^{9798}} + \frac{3^{4923}}{2^{9800}} + \\
& \frac{3^{4924}}{2^{9801}} + \frac{3^{4925}}{2^{9804}} + \frac{3^{4926}}{2^{9806}} + \frac{3^{4927}}{2^{9807}} + \frac{3^{4928}}{2^{9813}} + \frac{3^{4929}}{2^{9814}} + \frac{3^{4930}}{2^{9815}} + \frac{3^{4931}}{2^{9818}} + \frac{3^{4932}}{2^{9819}} + \\
& \frac{3^{4933}}{2^{9821}} + \frac{3^{4934}}{2^{9822}} + \frac{3^{4935}}{2^{9823}} + \frac{3^{4936}}{2^{9824}} + \frac{3^{4937}}{2^{9827}} + \frac{3^{4938}}{2^{9828}} + \frac{3^{4939}}{2^{9832}} + \frac{3^{4940}}{2^{9834}} + \frac{3^{4941}}{2^{9836}} + \\
& \frac{3^{4942}}{2^{9837}} + \frac{3^{4943}}{2^{9840}} + \frac{3^{4944}}{2^{9842}} + \frac{3^{4945}}{2^{9847}} + \frac{3^{4946}}{2^{9849}} + \frac{3^{4947}}{2^{9850}} + \frac{3^{4948}}{2^{9854}} + \frac{3^{4949}}{2^{9855}} + \frac{3^{4950}}{2^{9858}} +
\end{aligned}$$

$$\begin{aligned} & \frac{3^{4951}}{2^{9860}} + \frac{3^{4952}}{2^{9863}} + \frac{3^{4953}}{2^{9865}} + \frac{3^{4954}}{2^{9866}} + \frac{3^{4955}}{2^{9870}} + \frac{3^{4956}}{2^{9872}} + \frac{3^{4957}}{2^{9873}} + \frac{3^{4958}}{2^{9874}} + \frac{3^{4959}}{2^{9875}} + \\ & \frac{3^{4960}}{2^{9876}} + \frac{3^{4961}}{2^{9877}} + \frac{3^{4962}}{2^{9878}} + \frac{3^{4963}}{2^{9879}} + \frac{3^{4964}}{2^{9881}} + \frac{3^{4965}}{2^{9882}} + \frac{3^{4966}}{2^{9883}} + \frac{3^{4967}}{2^{9886}} + \frac{3^{4968}}{2^{9887}} + \\ & \frac{3^{4969}}{2^{9888}} + \frac{3^{4970}}{2^{9889}} + \frac{3^{4971}}{2^{9890}} + \frac{3^{4972}}{2^{9891}} + \frac{3^{4973}}{2^{9892}} + \frac{3^{4974}}{2^{9895}} + \frac{3^{4975}}{2^{9896}} + \frac{3^{4976}}{2^{9898}} + \frac{3^{4977}}{2^{9899}} + \\ & \frac{3^{4978}}{2^{9901}} + \frac{3^{4979}}{2^{9904}} + \frac{3^{4980}}{2^{9905}} + \frac{3^{4981}}{2^{9906}} + \frac{3^{4982}}{2^{9908}} + \frac{3^{4983}}{2^{9909}} + \frac{3^{4984}}{2^{9910}} + \frac{3^{4985}}{2^{9911}} + \frac{3^{4986}}{2^{9913}} + \\ & \frac{3^{4987}}{2^{9914}} + \frac{3^{4988}}{2^{9918}} + \frac{3^{4989}}{2^{9919}} + \frac{3^{4990}}{2^{9920}} + \frac{3^{4991}}{2^{9922}} + \frac{3^{4992}}{2^{9925}} + \frac{3^{4993}}{2^{9928}} + \frac{3^{4994}}{2^{9929}} + \frac{3^{4995}}{2^{9932}} + \\ & \frac{3^{4996}}{2^{9936}} + \frac{3^{4997}}{2^{9943}} + \frac{3^{4998}}{2^{9946}} + \frac{3^{4999}}{2^{9947}} + \frac{3^{5000}}{2^{9949}} + \left(\frac{3^{5001}}{2^{9949}} \times X \right) \end{aligned}$$

4.2 Value of Section B

B=0.09527150810026858148025671122063057592541827081687198584971644
 163605996348607178486070116125319137896964536579961916894059391890
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 993900529144986551816711667421460247028083030823004345408410402522
 886959743818163815697456473934967723486309691145164236345940500870
 797993892742519610191253881911296489099063456382502831751723482867
 871470748258944793637286400936543256631939998113612314264585763230
 800784163352089563171283085523841847068325951305824242633761978120
 064036022909081836665594620987039663524796317125179997477145047020
 640133010617266877215514120106706712040295397607261890430211052811
 209789639157168520348854386448352252373129489813172853126699720182
 465207107117198806182856105501401357496804891811104393401122313043
 857939045530477637168817369307096976890506526998931746797761497249
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 851517297155174173855419125713362265811178062839023560339223560841
 691046552971246110840614508372099690061169703280167982789187919929
 874120530624570517832301527961719395400692302183817448993238799193
 429269373887748368391099796627176257872596685623450586384089960819
 775209703585440998445203789574656602742751363380373287641583336074
 450100517587763207475340858145726156130191586676292516776215593348

310926812416353825530500384554026073492235673913375563571079440482
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432748103791269629974055074665409060410208543196615028778002868417
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518564263089257156622761503530009866979765851114865265896051516833
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177486572250042042162636449619865065467835225625991829571330970389
005341821358330353080116549793919569345147993596045442325448004474
795427224906229052356283361778945268930906112874636475217430847228
664581816976810957676830276954045805290704896995253030659794824055
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891286931514714881041616914413440286449460621428950625434573455011
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605941855905454794606410394396138862954699746875293959575643716011
488260898421755037736518001887338790270231476965658692926532281361
858403573028251910260018355424890347683754158521662894619106697005
674410297185298321361261627898386161844060831382832328419093210130
676754084980596112102447285539397942337174577748630082327676921143
562367805482614338674374738370658746762510045177216094550945436113
669655020801147046076292892723503098196144946475023274445519577741
236428982755233549297453917239516291683646754618097427080756458269
439103958790428415108244072200623399864126834118182175854133726017
925650173852436466713837167447723987351434541711371416156343708497
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685957771284049819102339461979251662214174249899505351546257787852
308011270274813791010269802533780622045336779531737496877009406793
699866384347818850364137217404119884705179867800322605935643519711
324245634709548882571922024461714243675454230385449973227226541830
962540854104615548560679320687097945387261648059501390917389980431
882468188617368341576948614478487224823706760649429135077685207810
063782394952771203696364767020271327621512760169321188718511077820
043902512283907668494906118294051283246211155918855640967853530219
934073774449511903361239452746424738338334364464968566897730882475
474989092146212191706481275200872392540892745451710044082651743814
274501676970558497090894071169747589596918765668848704380303656149
319361268317628619170735367152204666679175785074101855291006833495
266298103694415144961053789595255274515992722624590088498497296228
419009335802639192038205024987436808036875011590830826885278258992
508648874813463078076988474474286332094814937735703303349682897195
75006594212175647928830812816158868372440338134765625

4.3 Value of Section

$$C = \frac{3^{5001}}{2^{9949}} X$$

C=0.90472849189973141851974328877936942407458172918312801415028355
836394003651392821513929883874680862103035463420038083105940608109
948354790661763007967839601659482776384541638414225798711897419739
774069399575544738552299147775546781841164053864636334790884955863
006099470855013448183288332578539752971916969176995654591589597477
113040256181836184302543526065032276513690308854835763654059499129
202006107257480389808746118088703510900936543617497168248276517132
128529251741055206362713599063456743368060001886387685735414236769
199215836647910436828716914476158152931674048694175757366238021879
935963977090918163334405379012960336475203682874820002522854952979
359866989382733122784485879893293287959704602392738109569788947188
790210360842831479651145613551647747626870510186827146873300279817
534792892882801193817143894498598642503195108188895606598877686956
142060954469522362831182630692903023109493473001068253202238502750
613327780361227193426414215186176667197274866152846036805789152525
148482702844825826144580874286637734188821937160976439660776439158
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570730626112251631608900203372823742127403314376549413615910039180
224790296414559001554796210425343397257248636619626712358416663925
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529910628583790441780042053015090108109139988742734561379290269744
693460467838805463470159287126455208880300847657532153671302527474
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449214736401686947612403054834446588025901142883519621383897629221
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707562346738501074886072909745670718118037877955769933669528467880
120036496479449056708189285984998557192212256050363424568955803740
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112734496619164717893837662005653645224641424575039365825356587513
199285077404503730830129347905055759294908004909088324894945648865

084158078129981254217082982660577383045758138668382766777306948253
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178388090841880894163279317868652774088813007109986296392065030752
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594645872728348670917329006098438328567825101021099715023396867518
301251411776266424259030618086427155627395203172397556200082431056
153561325352956761305566865445815315520868439639576449056426427027
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010360146307743575868137459817724530865402691170723337083427618894
948431495263097421098858272793502563283003687930941435085233603632
188433450876385876968971091002852755590178594856598333678488061825
633271668161740021010714953243340800751228969348081961241040384735
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4.4 Value of X

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