

## **Statistical Performance of Additive Congruential Random Number Generators**

### **Part 2 - Conjectures Concerning Seed Values Chosen Uniformly at Random**

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## Statistical Performance of Additive Congruential Random Number Generators

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#### Abstract

The Additive Congruential Random Number (ACORN) generator represents an approach to generating uniformly distributed pseudo-random numbers which is straightforward to implement for arbitrarily large order and modulus (where the modulus is a sufficiently large power of 2, typically up to  $2^{120}$ ); it has been demonstrated in previous papers to give rise to sequences with long period which, for the  $k$ -th order ACORN generator with modulus a power of 2, can be proven from theoretical considerations to approximate in a particular defined sense to the desired properties of uniformity in up to  $k$  dimensions.

Extensive empirical testing using standard test software has demonstrated the excellent statistical performance of the ACORN generators with appropriately chosen order and modulus, over a very wide range of initialisations. In this paper we propose two conjectures concerning appropriate initialisations for some specific choices of order and modulus. The conjectures are based on the results of extensive testing that has been reported either in Part 1 of this report or in earlier publications. New results are presented here to support the assertions made in the conjectures - that for order 8 (or larger) and modulus  $2^{120}$ , almost every choice of odd seed together with an arbitrary set of initial values (including the possibility that the initial values are all chosen equal to zero) leads to a different sequence that can reasonably be expected to pass all the tests in the current Version 1.2.3 of the standard empirical test package known as TestU01.

The author believes that comparable results and conclusions can be expected for the ACORN generators with any other similar empirical tests that may exist today or may be developed in the future for uniformly distributed pseudo-random numbers (although if the tests are made more demanding then it is possible that the minimum values of the order and modulus may need to be increased in order to fully satisfy the new tests).

#### CORRIGENDUM REAMC Report-003(2021)

**Issue 2, August 2021** (compared to **Issue 1, January 2021**): Corrects three minor typos (page 2 changed “having modulus 120 ...” to “having modulus  $2^{120}$  ...” and “Results are be presented ...” to “Results are presented ...”; page 3 changed “In short the modulus  $M$  needs to be a a ...” to “In short the modulus  $M$  needs to be a ...”) and the page numbering of the final two pages of the report (now pages 54 and 55, rather than restarting as pages 1 and 2).

## 1 INTRODUCTION

The Additive Congruential Random Number (ACORN) generator is a method for generating uniformly distributed pseudo-random numbers which gives rise to sequences with long period which can be proven from theoretical considerations to approximate to uniformity in any specified number of dimensions. Extensive empirical testing has previously demonstrated the excellent statistical performance of the ACORN generators with appropriately chosen parameters over a very wide range of initialisations.

This is the second part of a two-part report. In Part 1 of the report [1], the standard TestU01 package of statistical tests for uniform distribution of sequences were applied to a range of ACORN sequences having modulus equal to  $2^{120}$ , with different seed values and a range of different orders from 8 through 25 as well as a selection of larger orders up to 101. The results presented in Part 1 were focussed on testing ACORN sequences with a wide selection of seed values and identifying some very specific seed values that should be avoided.

In this second part of the report we present some significant conjectures on the very wide range of conditions (specifically relating to the choice of seed and initial values) under which ACORN sequences having modulus  $2^{120}$  and order 8 or larger can be expected to reliably pass all the TestU01 tests. Results are presented below to support the conjectures for a selection of ACORN generators having order 8, 9 or 10 and different seeds and initial values selected according to the criteria specified in the conjectures. The compilation of results presented below in Tables 1 and 2 are for a set of 1000 seed values that have been selected randomly as described in Section 5.1; the seeds and initial values used for each individual run and the results obtained for each of the individual runs are summarised in more detail in Tables 3 through 42.

Section 2 of the present report provides the definition of an ACORN sequence and an overview of the existing theoretical analysis and empirical test results that have been published to date. Section 3 gives a brief overview of the standard TestU01 package of empirical tests of uniformity and randomness that has been used in this work. It should be noted that Sections 2 and 3 are largely unchanged from the corresponding sections in Part 1; they have been reproduced here so that Part 2 of this report can be read in isolation without needing to refer back to Part 1 for this overview.

The main content of the present report is included in Section 4, which states the two conjectures, and Section 5 which details the test cases that provide the supporting evidence for their veracity; Section 6 goes on to discuss the significance of the results obtained to date.

## 2 OVERVIEW - ACORN SEQUENCES AND ACORN GENERATORS

Let  $k$  be a finite, strictly positive integer. A  $k$ -th order ACORN sequence is defined from an integer modulus  $M$ , an integer seed  $Y^0_0$  satisfying  $0 < Y^0_0 < M$  and an arbitrary set of  $k$  integer initial values  $Y^m_0, m = 1, \dots, k$ , each satisfying  $0 \leq Y^m_0 < M$  by the equations

$$Y^0_n = Y^0_{n-1} \quad n \geq 1 \quad (1)$$

$$Y^m_n = [Y^{m-1}_n + Y^m_{n-1}]_{\text{mod } M} \quad n \geq 1, m = 1, \dots, k \quad (2)$$

where by  $[Y]_{\text{mod } M}$  we mean the (integer) remainder on dividing  $Y$  by  $M$ .

The  $k$ -th order Additive Congruential Random Number (ACORN) generator is defined by Wikramaratna [2,3] from equations (1) and (2) together with the observation that the sequence of numbers  $Y^k_n$  can be normalised to the unit interval by dividing by  $M$

$$X^k_n = Y^k_n / M \quad n \geq 1 \quad (3)$$

The numbers  $X^k_n$  defined by equations (1) - (3) approximate to being uniformly distributed on the unit interval in up to  $k$  dimensions, provided a few simple constraints on the initial parameter values are satisfied. In short the modulus  $M$  needs to be a prime power, with powers of 2 offering the most straightforward implementation, while the seed  $Y^0_0$  and the modulus should be chosen to be relatively prime (two numbers are said to be relatively prime if they have no prime factors in common, which means that their greatest common divisor is 1). This is the approach that we have adopted in most of our previous experiments with the ACORN generator, and it appears to work very successfully.

The original implementation proposed in [2] used real arithmetic modulo one, calculating the  $X^k_n$  directly. This implementation suffered from a number of conceptual and practical limitations (in particular, the sequences generated with any specific initialisation could not be guaranteed reproducible on different hardware or with different compilers, although the statistical properties of the sequences were unaffected). These limitations could be overcome [3] through the use of the integer implementation based on equations (1) – (3). Theoretical analysis given by Wikramaratna [3] has shown that the numbers  $Y^m_n$  are of the form

$$Y^m_n = [\sum_{i=0}^m Y^i_0 Z^{m-i}_n]_{\text{mod } M} \quad (4)$$

where for any integer values of  $a$  (non-negative) and  $b$  (positive) we define  $Z^a_b$  by

$$Z^a_b = \frac{(a+b-1)!}{a!(b-1)!} \quad (5)$$

More extensive theoretical analysis and empirical testing of the algorithm have been described in subsequent papers, including [4] and [5].

From a theoretical viewpoint [4] the ACORN generator was shown to be a very particular special case of a multiple recursive generator; when this formulation was written in a specified matrix form, it led in turn to the discovery of some special matrices (called centro-invertible matrices) which have some interesting and unusual properties [6]. The theoretical analysis in [5] led to a proof that a  $k$ -th order ACORN generator with modulus  $2^{30p}$  approximates to being  $k$ -distributed in a particular sense that was defined in the paper.

Empirical tests carried out previously by the author, making use of the Diehard statistical test suite, Marsaglia [7], have been reported in [4]. Further empirical testing was carried out in 2008 and reported by the author [5], using the Version 0.6.1 of the TestU01 package described by L'Ecuyer and Simard [8]. More recently, empirical testing has been carried out using the most current Version 1.2.3 of the TestU01 package as reported in [9] and [10]; that work has now been systematically extended to ACORN generators with much wider choices of initialisations.

A recent paper by Wikramaratna [11] addressed the periodicity of ACORN sequences for any specified order, modulus and any choice of seed that is relatively prime with the modulus. As an example, every ACORN generator with order at least 8, modulus  $2^{120}$  and any choice of odd seed has a period length in excess of  $2^{123}$ . This period is already far in excess of the maximum period that might be required in the largest conceivable computationally practicable (using hardware available in 2020) application requiring a source of uniformly distributed pseudo-random numbers; however we note that the ACORN algorithm extends naturally and very easily to even longer period lengths simply by increasing the modulus to a larger power of 2.

This report is in two parts. In Part 1 of the report [1], the standard TestU01 package of statistical tests for uniform distribution of sequences were applied to a range of ACORN sequences having modulus equal to  $2^{120}$ , with different seed values and a range of different orders from 8 through 25 as well as a selection of larger orders up to 101. The results presented in Part 1 were focussed on testing ACORN sequences with a wide selection of seed values and identifying some very specific seed values that should be avoided; consideration of those results has in turn led to the Conjectures 1 and 2 in Section 4 of this second part of the report.

See also further discussion on the website <http://acorn.wikramaratna.org>, which includes a more comprehensive list of relevant ACORN references as well as links to downloadable

versions of the references. Recent ACORN references (including this report) are available for download from the REAMC Limited website, <https://www.reamc-limited.com>.

### 3 EMPIRICAL TEST PACKAGE - TESTU01 VERSION 1.2.3

The TestU01 package has been described by L'Ecuyer and Simard [8]. They considered the application of empirical tests of uniformity and randomness to sequences generated by a wide range of algorithms and developed a comprehensive set of empirical tests that were designed to detect undesirable characteristics in such sequences. L'Ecuyer and Simard present results of applying the TestU01 tests to a large number of different sequences, identifying specific generators that pass all of the tests (collectively called the BigCrush test battery), as well as identifying many generators (including some that are widely used) that have serious deficiencies in respect of certain specific tests.

The results presented below for ACORN generators (which were not included among generators considered by L'Ecuyer and Simard) were obtained using the latest version 1.2.3 of TestU01. For each sequence that is tested the BigCrush battery of tests calculates p-values for 180 different test statistics, making use of some  $2^{38}$  pseudo-random numbers from each sequence. We follow L'Ecuyer and Simard in defining a “failure” to be a test statistic with a p-value outside the range  $[10^{-10}, 1-10^{-10}]$  and a “suspect” value to be a test statistic falling in one of the ranges  $[10^{-10}, 10^{-4}]$  or  $[1-10^{-4}, 1-10^{-10}]$ . This is the same approach that was adopted in [9]. It is worth noting that there were a number of cases which gave rise to a test result with either  $p=0.9999$  or  $p=0.0001$ ; for the purpose of this study, this has in all cases been classed as a suspect value rather than a pass; how these cases are treated makes a small difference to the total number of suspect values, but has no impact on the overall conclusions concerning the statistical behaviour of ACORN sequences.

### 4 TWO CONJECTURES ON ACORN STATISTICAL PERFORMANCE

Based on our experience of testing ACORN generators (including results discussed in references [1], [9], [10] as well as other unpublished results) we can propose the following two conjectures concerning the results of applying the TestU01 version 1.2.3 BigCrush tests to certain ACORN generators. A few preliminaries are appropriate before stating the conjectures, in particular to define some terms that will be required.

1. The conjectures are stated for ACORN generators with modulus  $2^{120}$ . We believe that the same conjectures would hold for ACORN generators with modulus equal to any larger power of two (after making some obvious generalisations to the definitions).

2. It is straightforward to verify (as will be seen) by counterexample that the conjectures do not hold for order  $k=7$ , so that  $k=8$  is the smallest order for which the conjectures might hold.
3. The phrase ‘select an odd seed at random’ is interpreted to mean that each of the first 119 bits in the binary representation of the seed is assigned to be zero or one with probability 0.5, and the final bit is assigned to be one.
4. The phrase ‘select the initial values at random’ is interpreted to mean that each of the bits in the binary representation of the seed is assigned to be zero or one with probability 0.5.
5. The phrase “the sequence … will almost certainly pass all the tests in version 1.2.3 of the TestU01 BigCrush test suite” is interpreted to mean that the probability of failure on one or more of the tests is vanishingly small; based on our tests this probability is certainly less than  $10^{-3}$  and we believe in practice it will turn out to be very significantly less than  $10^{-6}$ .

**CONJECTURE 1.** If we define an ACORN generator with modulus  $2^{120}$  and order  $k$  of 8 or larger, select an odd seed “at random” and set all  $k$  initial values to be zero, then the resulting ACORN sequence will almost certainly pass all the tests in version 1.2.3 of the TestU01 BigCrush test suite.  $\square$

**CONJECTURE 2.** If we define an ACORN generator as in Conjecture 1, again select an odd seed “at random” (in the sense of conjecture 1) together with any specified set of initial values (which may either be selected “at random”, or assigned particular chosen values) then the resulting ACORN sequence will almost certainly pass all the tests in version 1.2.3 of the TestU01 BigCrush test suite.  $\square$

It should be noted that Conjecture 1 is a particular special case of Conjecture 2. If Conjecture 1 fails, then Conjecture 2 must also fail. On the other hand, if Conjecture 2 is correct then Conjecture 1 must also be correct.

It is clearly not possible to conclusively ‘prove’ the correctness of either of the conjectures, given the number of different possible choices of seed and the time it would take to exhaustively test all the possible choices; in addition, the probabilistic nature of the TestU01 tests means that a definitive answer cannot be achieved. However, it is possible to test the validity of the conjectures by randomly selecting a sufficiently large set of seeds and initial

values (using any appropriate method to assign a value to each of the bits) and then running the TestU01 BigCrush tests for each resulting case.

The result of such testing will be either to disprove the conjectures (if there is a significant fraction of the randomly selected initialisations that result in one or more failures) or to lend support to the conjectures (if there are either no failures or only a very small fraction of the randomly selected initialisations result in one or more failures).

We note the importance of selecting the seeds “at random”. However, it is possible to choose any appropriate and convenient method - including ACORN (as here), any other standard prn generator, or a physical method such as coin tossing to assign the individual bits in the seeds to be used for each of the test cases. The important point is that the bits take the values 0 and 1 with equal likelihood and that the values assigned to successive bits are uncorrelated.

## 5 SUPPORTING EVIDENCE - RESULTS OF TESTING

There are two sets of cases that are considered in this part of the report, respectively numbered R1-xxx and S1-xxx (where xxx runs from 000 to 999); these sets of cases have been selected to test the two Conjectures 1 and 2 respectively. The cases have been run with order 8, 9 and 10, and seeds and initial values are selected as discussed in Section 5.1.

All cases considered here have modulus equal to  $2^{120}$ . In each case considered, the seed  $S$  is a 120-bit integer. Note that all seeds are chosen to be odd (so that the last digit in the binary representation of the seed is a one). Choosing an odd seed value guarantees that the period of the sequence will be at least eight times the modulus (which comes out as  $2^{123}$  in this instance) for every ACORN generator of order 8 or more (see Wikramaratna [11]). When implementing an ACORN generator using either 64-bit or 32-bit integer arithmetic, the seed  $S$  can be represented as follows, either by two 60-bit integers,  $t_1$  and  $t_2$ , or by four 30-bit integers  $s_1, s_2, s_3$  and  $s_4$ .

$$S = 2^{60}t_1 + t_2 = 2^{90}s_1 + 2^{60}s_2 + 2^{30}s_3 + s_4 \quad (6)$$

This representation is unique in the sense that it defines a one-one onto mapping between any two of  $S$ ,  $(t_1, t_2)$  and  $(s_1, s_2, s_3, s_4)$ . In presenting the results it will be helpful to specify the values of  $s_1, s_2, s_3$  and  $s_4$  using base 10 as numbers in the range zero to  $(2^{30}-1)$ , and values of  $t_1$  and  $t_2$  using base 10 as numbers in the range zero to  $(2^{60}-1)$ .

### 5.1 Specification of Test Cases

Firstly, one thousand 120-bit integers were generated, the first 119 bits being assigned randomly and the final bit set to one; these integers were assigned Case Indices 1-000 to 1-

999, and their values are in the tables of results for individual test cases (see the Tables 3 to 42). In this study an ACORN generator was called 119 times to generate the individual bits for each of the 1000 seed values; however, as already discussed the particular method used to generate the seeds is not significant, and similar results would be expected if we used different generators to construct the seeds (either changing the order, modulus and initialisation of the ACORN generator used, or selecting any other standard algorithm to generate the individual bits).

The cases R1-xxx were designed to test Conjecture 1. These cases were run with order  $k=8, 9$  and 10 (in addition, a smaller number of cases, xxx from 000 to 099, were run with order  $k=7$ , to demonstrate that the conjecture 1 cannot hold for order  $k=7$ ). Each of the Cases R1-xxx (xxx from 000 to 999) was given a random seed, as selected above (with Case Index 1-xxx) and all  $k$  initial values set to zero.

The cases S1-xxx were designed to test Conjecture 2. These cases were run with order  $k=8, 9$  and 10 (in addition, a smaller number of cases, xxx from 000 to 099, were run with order  $k=7$ , to demonstrate that the conjecture 2 cannot hold for order  $k=7$ ). The Cases S1-xxx (xxx from 000 to 999) were given the same random seeds, as selected above for Case R1-xxx (with Case Index 1-xxx) and the  $i$ -th initial value set to equal to the integer assigned to Case Index 1- $[xxx+i]_{\text{mod } 1000}$  for  $i=1, \dots, k$ .

## 5.2 Summary Results

The results are summarised in Table 1 (for the Cases R1-xxx) and Table 2 (for the Cases S1-xxx). Tables 1 and 2 both have the same format, which can be summarised as follows:

- The left hand side summarises the average number of ‘failures’ obtained for each batch of runs, while the right hand side summarises the average number of ‘suspect values’ (the definition of ‘failures’ and ‘suspect values’ has been discussed in the final paragraph of Section 3).
- Each of the first 20 lines in the table represents 50 cases (for order 7 only 100 cases were run, so there are only two lines completed). The final line of the table gives the average over the full set of 1000 cases (for order 7 the average is over the 100 cases that were run).

The left hand side of Table 1 shows that there were no failures on any of the tests for any of the one thousand Cases R1-000 to R1-999 for the ACORN generators with order 8, 9 or 10. On the other hand, the corresponding ACORN generators with order 7 failed on four of the tests for every one of the 100 cases that were tested. The right hand side of Table 1 shows that there were suspect values found in between 4% and about 6% of the cases (the table

shows the total number of suspect values occurring; there were a very small number of cases giving rise to two failures, so the number of suspect values occurring is a close approximation to the number of cases with one or more suspect values).

The left hand side of Table 2 shows that there were no failures on any of the tests for any of the one thousand Cases S1-000 to S1-999 for the ACORN generators with order 8, 9 or 10. The corresponding ACORN generators with order 7 again failed on four of the tests for every one of the 100 cases that were tested. The right hand side of Table 2 shows that there were suspect values found in between 4% and about 6% of the cases (the table again shows the total number of suspect values occurring; there were a very small number of cases giving rise to two suspect values and a single test with three suspect values, so the number of suspect values occurring is a close approximation to the number of cases with one or more suspect values).

The results summarised in these two tables provide strong supporting evidence for the correctness of the two Conjectures 1 and 2 respectively.

### 5.3 Detailed Results

Table 3 to Table 42 give the seeds, initialisations and results for each individual case

- Each of the 40 tables gives 25 lines of data corresponding to a subset of 25 of the 1000 cases. The results have been divided up in this way for ease of reference, so that each individual table fits on a single page in the report.
- The left hand section of each table specifies the seeds used for each of the cases; the seeds are specified in two equivalent ways, as in equation (6).
- The central section of each table gives the results obtained for the cases R1-xxx with initial values set to zero, for order 7 (where applicable), 8, 9 and 10; these are relevant to Conjecture 1. The results show the number of failures, followed by the number of suspect values shown in brackets. Cases with one or more failures are highlighted pink; these occur for order 7 only. Cases with one or more suspect values are highlighted green.
- The right hand section of each table gives the results for the cases S1-xxx with initial values set randomly, for order 7 (where applicable), 8, 9 and 10; these are relevant to Conjecture 2. Results are shown in the same format as in the central section of the tables.

On average each run of TestU01 consumes about 4 hours of cpu-time (the exact time varies depending on the speed of the processor used, as well as the order and modulus of the ACORN generator being tested). The results included in this report therefore represent a

very significant computational effort over an extended period. Results of all individual runs have been saved and could be made available as a resource by arrangement - please contact the author if this might be of interest.

## 6 SIGNIFICANCE OF RESULTS

L'Ecuyer and Simard [8] documented the testing of prn sequences generated using some 92 different methods (which they described as "a long list of well known or widely used generators") and identified some 26 methods that gave rise to a sequence that passed all the tests in the TestU01 BigCrush Test Suite according to the criteria used. They state that the methods included in their paper represent a subset of the methods that they tested, and that the results presented were a representative subset of the overall results obtained.

If correct, the conjectures that have been proposed in this paper lead to a method for generating vast numbers of different sequences which can each be relied on to pass all the TestU01 BigCrush tests with an extremely high probability. The number of such sequences is a large multiple of  $2^{119}$ ; each of these sequences has a period length in excess of  $2^{123}$ .

In this report we have identified many thousands of different ACORN sequences with 1000 different seed values which were selected at random according to the criteria of the conjectures (six ACORN sequences for each seed value; orders 8, 9 and 10, both with all initial values set to zero, and with initial values assigned randomly), which we have demonstrated to pass all the TestU01 BigCrush tests; more significantly, using this approach of random selection we have so far completely avoided selection of any of the 'undesirable' seed values that do give rise to failures, lending considerable support to the conjectures.

It should be noted that two ACORN sequences selected in the manner described cannot be guaranteed to be independent unless they have different orders. For example, consider two sequences of the same order with different seeds that sum to  $2^{120}$ , and all initial values zero in each case (and note that other combinations can also be found which may give rise to similar issues). The two resulting sequences are such that corresponding terms will always sum to 1, so there is clearly a correlation between the two sequences in this case. However, if the seeds and the initial values are all chosen randomly, there is minimal chance of a significant correlation between the two resulting sequences even if they both have the same order.

## 7 CONCLUSIONS

In this report we have proposed two conjectures concerning the results of applying the TestU01 version 1.2.3 BigCrush tests to ACORN generators having modulus  $2^{120}$  and with order 8 or more.

Extensive results have been presented in the paper to support the veracity of the two conjectures with order 8, 9 and 10; these results provide strong supporting evidence for the correctness of the two Conjectures 1 and 2. Results also demonstrate that the conjectures cannot hold with order 7 - so that the condition that the order be eight or more for the conjectures to hold is demonstrated to be necessary.

If correct, the conjectures that have been proposed in this paper lead to a method for generating vast numbers of different sequences which can each be relied on to pass all the TestU01 BigCrush tests with an extremely high probability. The number of such sequences is a large multiple of  $2^{119}$ ; each of these sequences has a period length in excess of  $2^{123}$ .

It should be noted that two ACORN sequences selected in the manner described cannot be guaranteed to be independent unless they have different orders. Despite this, if the seeds and the initial values are all chosen randomly (in the sense defined in the paper), there is minimal chance of any significant correlation between the two resulting sequences even if they both have the same order.

On average each run of the TestU01 BigCrush tests consumes about 4 hours of cpu-time (the exact time varies for an individual run depends on the speed of the processor used, as well as the order and modulus of the ACORN generator being tested). The results included in this report therefore represent a very significant computational effort undertaken over an extended period of time. Results of all individual runs included in this paper have been saved and could be made available as a resource by arrangement - please contact the author if this might be of interest.

Table 1 Summary results for Cases R1-000 to R1-999

| FAILURES - SUMMARY       |       |       |       |       | SUSPECT VALUES - SUMMARY |       |       |       |       |
|--------------------------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|
|                          | Order | Order | Order | Order |                          | Order | Order | Order | Order |
|                          | 7     | 8     | 9     | 10    |                          | 7     | 8     | 9     | 10    |
| Cases R1-000 to R1-049   | 200   | 0     | 0     | 0     | Cases R1-000 to R1-049   | 4     | 4     | 5     | 4     |
| Cases R1-050 to R1-099   | 200   | 0     | 0     | 0     | Cases R1-050 to R1-099   | 4     | 1     | 3     | 6     |
| Cases R1-100 to R1-149   | ~     | 0     | 0     | 0     | Cases R1-100 to R1-149   | ~     | 3     | 1     | 3     |
| Cases R1-150 to R1-199   | ~     | 0     | 0     | 0     | Cases R1-150 to R1-199   | ~     | 4     | 1     | 4     |
| Cases R1-200 to R1-249   | ~     | 0     | 0     | 0     | Cases R1-200 to R1-249   | ~     | 4     | 4     | 3     |
| Cases R1-250 to R1-299   | ~     | 0     | 0     | 0     | Cases R1-250 to R1-299   | ~     | 3     | 4     | 2     |
| Cases R1-300 to R1-349   | ~     | 0     | 0     | 0     | Cases R1-300 to R1-349   | ~     | 3     | 3     | 2     |
| Cases R1-350 to R1-399   | ~     | 0     | 0     | 0     | Cases R1-350 to R1-399   | ~     | 2     | 1     | 4     |
| Cases R1-400 to R1-449   | ~     | 0     | 0     | 0     | Cases R1-400 to R1-449   | ~     | 1     | 3     | 1     |
| Cases R1-450 to R1-499   | ~     | 0     | 0     | 0     | Cases R1-450 to R1-499   | ~     | 0     | 4     | 3     |
| Cases R1-500 to R1-549   | ~     | 0     | 0     | 0     | Cases R1-500 to R1-549   | ~     | 4     | 3     | 2     |
| Cases R1-550 to R1-599   | ~     | 0     | 0     | 0     | Cases R1-550 to R1-599   | ~     | 2     | 2     | 1     |
| Cases R1-600 to R1-649   | ~     | 0     | 0     | 0     | Cases R1-600 to R1-649   | ~     | 5     | 1     | 1     |
| Cases R1-650 to R1-699   | ~     | 0     | 0     | 0     | Cases R1-650 to R1-699   | ~     | 3     | 3     | 4     |
| Cases R1-700 to R1-749   | ~     | 0     | 0     | 0     | Cases R1-700 to R1-749   | ~     | 6     | 4     | 3     |
| Cases R1-750 to R1-799   | ~     | 0     | 0     | 0     | Cases R1-750 to R1-799   | ~     | 2     | 2     | 3     |
| Cases R1-800 to R1-849   | ~     | 0     | 0     | 0     | Cases R1-800 to R1-849   | ~     | 5     | 2     | 1     |
| Cases R1-850 to R1-899   | ~     | 0     | 0     | 0     | Cases R1-850 to R1-899   | ~     | 4     | 0     | 1     |
| Cases R1-900 to R1-949   | ~     | 0     | 0     | 0     | Cases R1-900 to R1-949   | ~     | 2     | 0     | 2     |
| Cases R1-950 to R1-999   | ~     | 0     | 0     | 0     | Cases R1-950 to R1-999   | ~     | 5     | 1     | 2     |
| TOTAL R1-000 TO R1-999   | 400   | 0     | 0     | 0     | TOTAL R1-000 TO R1-999   | 8     | 63    | 47    | 52    |
| AVERAGE R1-000 TO R1-999 | 4.000 | 0.000 | 0.000 | 0.000 | AVERAGE R1-000 TO R1-999 | 0.080 | 0.063 | 0.047 | 0.052 |

Table 2 Summary results for Cases S1-000 to S1-999

| FAILURES - SUMMARY       |       |       |       |       | SUSPECT VALUES - SUMMARY |       |       |       |       |
|--------------------------|-------|-------|-------|-------|--------------------------|-------|-------|-------|-------|
|                          | Order | Order | Order | Order |                          | Order | Order | Order | Order |
|                          | 7     | 8     | 9     | 10    |                          | 7     | 8     | 9     | 10    |
| Cases S1-000 to S1-049   | 200   | 0     | 0     | 0     | Cases S1-000 to S1-049   | 2     | 4     | 2     | 2     |
| Cases S1-050 to S1-099   | 200   | 0     | 0     | 0     | Cases S1-050 to S1-099   | 1     | 6     | 3     | 3     |
| Cases S1-100 to S1-149   | ~     | 0     | 0     | 0     | Cases S1-100 to S1-149   | ~     | 3     | 5     | 0     |
| Cases S1-150 to S1-199   | ~     | 0     | 0     | 0     | Cases S1-150 to S1-199   | ~     | 1     | 3     | 5     |
| Cases S1-200 to S1-249   | ~     | 0     | 0     | 0     | Cases S1-200 to S1-249   | ~     | 5     | 2     | 0     |
| Cases S1-250 to S1-299   | ~     | 0     | 0     | 0     | Cases S1-250 to S1-299   | ~     | 2     | 1     | 2     |
| Cases S1-300 to S1-349   | ~     | 0     | 0     | 0     | Cases S1-300 to S1-349   | ~     | 0     | 1     | 2     |
| Cases S1-350 to S1-399   | ~     | 0     | 0     | 0     | Cases S1-350 to S1-399   | ~     | 2     | 1     | 3     |
| Cases S1-400 to S1-449   | ~     | 0     | 0     | 0     | Cases S1-400 to S1-449   | ~     | 3     | 3     | 1     |
| Cases S1-450 to S1-499   | ~     | 0     | 0     | 0     | Cases S1-450 to S1-499   | ~     | 3     | 0     | 6     |
| Cases S1-500 to S1-549   | ~     | 0     | 0     | 0     | Cases S1-500 to S1-549   | ~     | 4     | 1     | 1     |
| Cases S1-550 to S1-599   | ~     | 0     | 0     | 0     | Cases S1-550 to S1-599   | ~     | 4     | 1     | 2     |
| Cases S1-600 to S1-649   | ~     | 0     | 0     | 0     | Cases S1-600 to S1-649   | ~     | 3     | 2     | 1     |
| Cases S1-650 to S1-699   | ~     | 0     | 0     | 0     | Cases S1-650 to S1-699   | ~     | 4     | 4     | 0     |
| Cases S1-700 to S1-749   | ~     | 0     | 0     | 0     | Cases S1-700 to S1-749   | ~     | 4     | 0     | 1     |
| Cases S1-750 to S1-799   | ~     | 0     | 0     | 0     | Cases S1-750 to S1-799   | ~     | 3     | 2     | 5     |
| Cases S1-800 to S1-849   | ~     | 0     | 0     | 0     | Cases S1-800 to S1-849   | ~     | 3     | 1     | 1     |
| Cases S1-850 to S1-899   | ~     | 0     | 0     | 0     | Cases S1-850 to S1-899   | ~     | 3     | 4     | 3     |
| Cases S1-900 to S1-949   | ~     | 0     | 0     | 0     | Cases S1-900 to S1-949   | ~     | 1     | 2     | 4     |
| Cases S1-950 to S1-999   | ~     | 0     | 0     | 0     | Cases S1-950 to S1-999   | ~     | 4     | 5     | 1     |
| TOTAL S1-000 TO S1-999   | 400   | 0     | 0     | 0     | TOTAL S1-000 TO S1-999   | 3     | 62    | 43    | 43    |
| AVERAGE S1-000 TO S1-999 | 4.000 | 0.000 | 0.000 | 0.000 | AVERAGE S1-000 TO S1-999 | 0.030 | 0.062 | 0.043 | 0.043 |

**Table 3 Detailed Results for Seed Index 1-000 to 1-024, Cases R1-000 to R1-024 and S1-000 to S1-024**

| Case<br>Index | Seed<br>s1 | Seed<br>s2 | Seed<br>s3 | Seed<br>s4 | Seed<br>t1=s1*2^30+s2 | Seed<br>t2=s3*2^30+s4 | Case   | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 | Case   | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 |
|---------------|------------|------------|------------|------------|-----------------------|-----------------------|--------|------------|------------|------------|-------------|--------|------------|------------|------------|-------------|
| 1-000         | 449317483  | 1032863184 | 547737111  | 629455499  | 482450974784372176    | 588128245267085963    | R1-000 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-000 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-001         | 73109002   | 783012110  | 534063117  | 1024421113 | 78500193941311758     | 573445906403126521    | R1-001 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-001 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-002         | 510738026  | 574566204  | 75880538   | 255901843  | 548400780197965628    | 81476107534123155     | R1-002 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-002 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-003         | 447354547  | 252325167  | 734666562  | 217462417  | 480343287522798895    | 78884221453115105     | R1-003 | 4(0)       | 0(0)       | 0(1)       | 0(0)        | S1-003 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-004         | 836037317  | 692387446  | 1017355807 | 281211805  | 897688234380033654    | 1092377480146383773   | R1-004 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-004 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-005         | 721057738  | 828807395  | 4663741    | 712778377  | 774229851638241507    | 5007654480781961      | R1-005 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-005 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-006         | 169993483  | 673504310  | 961031466  | 748720205  | 182529113178037302    | 1031899679972954189   | R1-006 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-006 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-007         | 1043304689 | 232489204  | 517564125  | 85953645   | 1120239879987101940   | 555730247700417645    | R1-007 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-007 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-008         | 91605329   | 502720121  | 929122610  | 524239837  | 98360473551300217     | 997637806505280477    | R1-008 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-008 | 4(0)       | 0(0)       | 0(1)       | 0(0)        |
| 1-009         | 661319288  | 695630435  | 24158466   | 997480553  | 710086179239131747    | 25939956345362537     | R1-009 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-009 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-010         | 686591415  | 12266104   | 352681021  | 10896999   | 737221918297107064    | 378688362789619303    | R1-010 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-010 | 4(0)       | 0(0)       | 0(1)       | 0(0)        |
| 1-011         | 761807964  | 598765114  | 537562779  | 443436289  | 817985073401851450    | 577203639281405185    | R1-011 | 4(0)       | 0(1)       | 0(1)       | 0(0)        | S1-011 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-012         | 107449459  | 579947431  | 795067299  | 596372909  | 115372978674420647    | 853697012427386285    | R1-012 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-012 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-013         | 782072001  | 784726982  | 125023986  | 126483653  | 839743417637796806    | 134243482897874117    | R1-013 | 4(0)       | 0(0)       | 0(1)       | 0(0)        | S1-013 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-014         | 304059760  | 358541937  | 212312110  | 192414049  | 326481681665944177    | 227968392441102689    | R1-014 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-014 | 4(0)       | 0(0)       | 0(0)       | 0(1)        |
| 1-015         | 652893980  | 715929295  | 837706570  | 897205737  | 701039573679748815    | 899480581345789417    | R1-015 | 4(0)       | 0(0)       | 0(0)       | 0(1)        | S1-015 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-016         | 572530587  | 58859482   | 313952309  | 102926943  | 614750036840030170    | 337103725017598559    | R1-016 | 4(0)       | 0(0)       | 0(0)       | 0(1)        | S1-016 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-017         | 370661758  | 337574708  | 244859942  | 899592089  | 397995032459541300    | 262916361647206297    | R1-017 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-017 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-018         | 828132032  | 708195081  | 54201568   | 297728537  | 889199999260701449    | 58198490785708569     | R1-018 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-018 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-019         | 222120536  | 863372116  | 269509813  | 362390479  | 238500110335869780    | 289383958558909391    | R1-019 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-019 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-020         | 432158444  | 40134889   | 652218887  | 173393807  | 464026595957696745    | 700314697548023695    | R1-020 | 4(0)       | 0(0)       | 0(1)       | 0(0)        | S1-020 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-021         | 413135426  | 492046125  | 147762596  | 913396687  | 443600786364303149    | 158658880261411791    | R1-021 | 4(0)       | 0(1)       | 0(0)       | 0(0)        | S1-021 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-022         | 33220675   | 2842071    | 365861414  | 1050415455 | 35670428171853271     | 392840703049994591    | R1-022 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-022 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-023         | 269609634  | 1038584224 | 377033607  | 536618939  | 289491141217716640    | 404836753426098107    | R1-023 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-023 | 4(1)       | 0(0)       | 0(0)       | 0(0)        |
| 1-024         | 888282044  | 293617893  | 839055211  | 648167877  | 953785582444626149    | 900928673344012741    | R1-024 | 4(1)       | 0(1)       | 0(0)       | 0(1)        | S1-024 | 4(0)       | 0(1)       | 0(0)       | 0(0)        |

**Table 4 Detailed Results for Seed Index 1-025 to 1-049, Cases R1-025 to R1-049 and S1-025 to S1-049**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-025 | 42386421   | 984960311  | 306653547  | 164532735  | 45512073982332215   | 329266739056382463  | R1-025 | 4(0)  | 0(0)  | 0(1)  | 0(0)  | S1-025 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-026 | 234680417  | 733465030  | 772591733  | 901682567  | 251986179740125638  | 829564057500423559  | R1-026 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-026 | 4(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-027 | 586507865  | 94005300   | 628966691  | 453398717  | 629758024849451060  | 675347842482983101  | R1-027 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-027 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-028 | 563610329  | 835340158  | 565525441  | 443710243  | 605171983521040254  | 607228318981454627  | R1-028 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-028 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-029 | 83162548   | 288554128  | 520517120  | 593724521  | 89295106266561680   | 558901002445751401  | R1-029 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-029 | 4(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-030 | 835272475  | 772104076  | 163563668  | 246317771  | 896866991615598476  | 175625151464768203  | R1-030 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-030 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-031 | 777255959  | 267640348  | 913492951  | 908835499  | 834572231399169564  | 980855588326718123  | R1-031 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-031 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-032 | 120879209  | 242072555  | 281315987  | 172894285  | 129793062597409771  | 302060741174634573  | R1-032 | 4(0)  | 0(1)  | 0(0)  | 0(0)  | S1-032 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-033 | 304659303  | 875602906  | 743576664  | 398978843  | 327125436577391578  | 798409363886173979  | R1-033 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-033 | 4(0)  | 0(0)  | 0(0)  | 0(1)  |
| 1-034 | 563855909  | 656678195  | 839093026  | 372322333  | 605435672859516211  | 900969276615241757  | R1-034 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-034 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-035 | 1067910121 | 68865548   | 497371574  | 1016124919 | 1146659761259466252 | 534048662088635895  | R1-035 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-035 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-036 | 704177739  | 1035576684 | 438717446  | 188660917  | 756105090929632620  | 471069270877322421  | R1-036 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-036 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-037 | 625675125  | 630540188  | 891072872  | 817761913  | 671813550579468188  | 956782211715960441  | R1-037 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-037 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-038 | 174857184  | 128246859  | 855262178  | 583925701  | 187751471815910475  | 918330771587858373  | R1-038 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-038 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-039 | 969163429  | 548621125  | 667916886  | 511753373  | 1040631308557175621 | 717170295965793437  | R1-039 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-039 | 4(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-040 | 105167463  | 473419816  | 392664951  | 919623655  | 112922704020492328  | 421620781627234279  | R1-040 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-040 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-041 | 33018760   | 195894313  | 309369001  | 140380645  | 35453623784512553   | 332182435563178469  | R1-041 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-041 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-042 | 381478719  | 36870100   | 149208633  | 573097435  | 409609655593113556  | 160211550327064027  | R1-042 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-042 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-043 | 64770677   | 952436349  | 197801498  | 933739891  | 69546985816131197   | 212387742186192243  | R1-043 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-043 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-044 | 278616045  | 703780897  | 1044597124 | 907748657  | 299161701057746977  | 1121627622176662833 | R1-044 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-044 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-045 | 667749662  | 410419118  | 98010552   | 189161415  | 716990740461682606  | 105238029064888263  | R1-045 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-045 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-046 | 116479285  | 534080995  | 790931     | 653327095  | 125068680468196835  | 849256347925239     | R1-046 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-046 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-047 | 820055532  | 743062416  | 478212976  | 522576275  | 880527923454032784  | 513477273633284499  | R1-047 | 4(0)  | 0(0)  | 0(0)  | 0(1)  | S1-047 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-048 | 78202180   | 719630233  | 488671351  | 271001067  | 83968952113606553   | 524706868030285291  | R1-048 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-048 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-049 | 806294419  | 92831124   | 708244702  | 676891571  | 865752040230911380  | 760471958840708019  | R1-049 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-049 | 4(0)  | 0(1)  | 0(0)  | 0(0)  |

**Table 5 Detailed Results for Seed Index 1-050 to 1-074, Cases R1-050 to R1-074 and S1-050 to S1-074**

| Case<br>Index | Seed<br>s1 | Seed<br>s2 | Seed<br>s3 | Seed<br>s4 | Seed<br>$t1=s1*2^{30}+s2$ | Seed<br>$t2=s3*2^{30}+s4$ | Case   | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 | Case   | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 |
|---------------|------------|------------|------------|------------|---------------------------|---------------------------|--------|------------|------------|------------|-------------|--------|------------|------------|------------|-------------|
| 1-050         | 67904622   | 902852672  | 1071132163 | 974838723  | 72912033587163200         | 1150119403419524035       | R1-050 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-050 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-051         | 843178560  | 755955925  | 235933766  | 964297333  | 905356085728049365        | 253331953212326517        | R1-051 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-051 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-052         | 1059570845 | 828546647  | 6390732    | 911774941  | 1137705532596067927       | 6861997146150109          | R1-052 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-052 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-053         | 53398868   | 866537008  | 2293552    | 679980695  | 57336598792392240         | 2462683387899543          | R1-053 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-053 | 4(0)       | 0(1)       | 0(0)       | 0(0)        |
| 1-054         | 638335845  | 794612993  | 267400123  | 139407003  | 685407895329494273        | 287118695947251355        | R1-054 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-054 | 4(0)       | 0(0)       | 0(0)       | 0(1)        |
| 1-055         | 762507952  | 994986404  | 188161172  | 795214287  | 818736680189970852        | 202036520824472015        | R1-055 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-055 | 4(0)       | 0(0)       | 0(0)       | 0(1)        |
| 1-056         | 262085967  | 552746957  | 671053039  | 516461371  | 281412664804130765        | 720537714613064507        | R1-056 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-056 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-057         | 480225314  | 774130066  | 219777696  | 466162513  | 515638005359462802        | 235984504643720017        | R1-057 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-057 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-058         | 98627315   | 801642578  | 747110225  | 574550309  | 105900273905965138        | 802203496295100709        | R1-058 | 4(0)       | 0(0)       | 0(1)       | 0(0)        | S1-058 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-059         | 117140291  | 381973378  | 888448654  | 498809443  | 125778430104204162        | 953964478775114339        | R1-059 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-059 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-060         | 690566630  | 263229959  | 520895998  | 564822455  | 741490273152963079        | 559307819571642807        | R1-060 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-060 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-061         | 947028137  | 514946071  | 597196047  | 248958027  | 1016863719716647959       | 641234373040327755        | R1-061 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-061 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-062         | 854514011  | 593347200  | 124272401  | 932222947  | 917527433398043264        | 133436475454822371        | R1-062 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-062 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-063         | 347953713  | 89695917   | 71170827   | 73335233   | 373612454553888429        | 76419093671903681         | R1-063 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-063 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-064         | 306206     | 265789439  | 619501258  | 178081677  | 328786454749183           | 665184410913296269        | R1-064 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-064 | 4(0)       | 0(0)       | 0(0)       | 0(1)        |
| 1-065         | 513313416  | 740006465  | 367208986  | 136761021  | 551166084319517249        | 394287646553591485        | R1-065 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-065 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-066         | 472220884  | 961711543  | 816343078  | 868317947  | 507043314278763959        | 876541706449812219        | R1-066 | 4(0)       | 0(0)       | 0(0)       | 0(1)        | S1-066 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-067         | 869471939  | 225548383  | 410090907  | 92168647   | 933588385924225119        | 440331758580163015        | R1-067 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-067 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-068         | 577302040  | 213523761  | 453810322  | 566221589  | 619873345642044721        | 487275123460528917        | R1-068 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-068 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-069         | 963936582  | 498803679  | 181577259  | 657035651  | 1035019024275809247       | 194967097932616067        | R1-069 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-069 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-070         | 424225444  | 658260048  | 378761978  | 961917983  | 455508602686029904        | 406692578081485855        | R1-070 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-070 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-071         | 681473402  | 981522838  | 324038040  | 495023111  | 731726494652488086        | 347933196610008071        | R1-071 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-071 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |
| 1-072         | 93216701   | 102469682  | 291889647  | 912542093  | 100090670661472306        | 313414122889038221        | R1-072 | 4(0)       | 0(0)       | 0(0)       | 0(0)        | S1-072 | 4(0)       | 0(1)       | 0(0)       | 0(0)        |
| 1-073         | 727115480  | 322056955  | 231750700  | 382408695  | 780734302075892475        | 248840419713685495        | R1-073 | 4(0)       | 0(0)       | 0(0)       | 0(1)        | S1-073 | 4(1)       | 0(0)       | 0(0)       | 0(0)        |
| 1-074         | 624257153  | 917668698  | 986985807  | 883535961  | 670291015024935770        | 1059767941553827929       | R1-074 | 4(0)       | 0(0)       | 0(0)       | 0(1)        | S1-074 | 4(0)       | 0(0)       | 0(0)       | 0(0)        |

**Table 6 Detailed Results for Seed Index 1-075 to 1-099, Cases R1-075 to R1-099 and S1-075 to S1-099**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-075 | 719001660  | 216706975  | 421599371  | 275009725  | 772022154084134815  | 452688877889802429  | R1-075 | 4(0)  | 0(0)  | 0(0)  | 0(1)  | S1-075 | 4(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-076 | 11937851   | 163328615  | 555353757  | 93729053   | 12818170070708839   | 596306556100161821  | R1-076 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-076 | 4(0)  | 0(0)  | 0(1)  | 0(0)  |
| 1-077 | 262260864  | 653129859  | 83581321   | 717472907  | 281600459128305795  | 89744760780342411   | R1-077 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-077 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-078 | 78017819   | 763725932  | 600026227  | 550146797  | 83770996041287788   | 644273255976964845  | R1-078 | 4(0)  | 0(0)  | 0(1)  | 0(0)  | S1-078 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-079 | 297369059  | 486433043  | 496878948  | 269635785  | 319297596298256659  | 533519708202356937  | R1-079 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-079 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-080 | 366446193  | 21410838   | 1047802748 | 1032460631 | 393468603691086870  | 1125069634862192983 | R1-080 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-080 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-081 | 539950523  | 831475184  | 155860074  | 188775589  | 579767460267249136  | 167353480334310565  | R1-081 | 4(0)  | 0(0)  | 0(0)  | 0(1)  | S1-081 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-082 | 761778438  | 1048867442 | 389066136  | 45610685   | 817953370550858354  | 417756582570882749  | R1-082 | 4(0)  | 0(0)  | 0(1)  | 0(0)  | S1-082 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-083 | 954070956  | 1068343759 | 91603792   | 211709895  | 1024425889589207503 | 98358822919106503   | R1-083 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-083 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-084 | 588316308  | 646840681  | 621089645  | 664766463  | 631699826287706473  | 666889928954578943  | R1-084 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-084 | 4(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-085 | 2186024    | 809911385  | 83868010   | 533095769  | 2347226206979161    | 90052590565746009   | R1-085 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-085 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-086 | 237996472  | 401664227  | 272334858  | 829857533  | 255546766352509155  | 29241732799755825   | R1-086 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-086 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-087 | 178833522  | 997552837  | 244148360  | 1037988903 | 192021033102176965  | 262152306430997543  | R1-087 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-087 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-088 | 829775075  | 745400748  | 347850163  | 851336021  | 890964203285637548  | 373501269349653333  | R1-088 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-088 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-089 | 51691209   | 848245440  | 229256069  | 399965377  | 55503013884670656   | 246161830091095233  | R1-089 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-089 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-090 | 1000417834 | 445861357  | 282268949  | 640565967  | 1074190470287150573 | 303083976798388943  | R1-090 | 4(1)  | 0(1)  | 0(0)  | 0(1)  | S1-090 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-091 | 981531980  | 629578888  | 370137091  | 102186247  | 1053911939149110408 | 397431675322580231  | R1-091 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-091 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-092 | 1003214073 | 907160183  | 217684471  | 281008493  | 1077192909512649335 | 233736921229023597  | R1-092 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-092 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-093 | 44060647   | 519429199  | 338887283  | 428898787  | 47309759995829327   | 363877449807722979  | R1-093 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-093 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-094 | 978098312  | 51218093   | 387640996  | 980244607  | 1050225065629419181 | 416226351082461311  | R1-094 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-094 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-095 | 339754179  | 662700628  | 692463548  | 996691743  | 364808272533783124  | 743527074079723295  | R1-095 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-095 | 4(0)  | 0(2)  | 0(2)  | 0(0)  |
| 1-096 | 679748555  | 308790727  | 260980179  | 199316995  | 729874453615855047  | 280225333626623491  | R1-096 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-096 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-097 | 71705876   | 462971317  | 16675308   | 788594405  | 76993598550729141   | 17904976416276197   | R1-097 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-097 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-098 | 160580930  | 87047315   | 75898535   | 914975917  | 172422460764863635  | 81495432324803757   | R1-098 | 4(0)  | 0(0)  | 0(0)  | 0(0)  | S1-098 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-099 | 293349745  | 732362790  | 216683933  | 935503497  | 314981890998597670  | 232662602386417289  | R1-099 | 4(1)  | 0(0)  | 0(0)  | 0(0)  | S1-099 | 4(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 7 Detailed Results for Seed Index 1-100 to 1-124, Cases R1-100 to R1-124 and S1-100 to S1-124**

| Case<br>Index | Seed<br>s1 | Seed<br>s2 | Seed<br>s3 | Seed<br>s4 | Seed<br>$t1=s1*2^{30}+s2$ | Seed<br>$t2=s3*2^{30}+s4$ | Case<br>R1-100 | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 | Case<br>S1-100 | Order<br>7 | Order<br>8 | Order<br>9 | Order<br>10 |
|---------------|------------|------------|------------|------------|---------------------------|---------------------------|----------------|------------|------------|------------|-------------|----------------|------------|------------|------------|-------------|
|               |            |            |            |            |                           |                           |                |            |            |            |             |                |            |            |            |             |
| 1-100         | 703992144  | 33590217   | 473835908  | 838288887  | 755905808813820873        | 508777432970905079        | R1-100         | ~~         | 0(0)       | 0(0)       | 0(1)        | S1-100         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-101         | 802960342  | 1011627716 | 122136720  | 857120399  | 862172103230371524        | 131143305367297679        | R1-101         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-101         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-102         | 40546945   | 588307562  | 683662433  | 971500605  | 43536951270235242         | 734076948781198397        | R1-102         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-102         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-103         | 292046320  | 856754617  | 413734730  | 783547015  | 313582349186042297        | 444244284425894535        | R1-103         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-103         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-104         | 526330773  | 638349338  | 507778805  | 425816801  | 565143364866699290        | 545223340695057121        | R1-104         | ~~         | 0(0)       | 0(0)       | 0(1)        | S1-104         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-105         | 1045391660 | 83636608   | 601461462  | 917128907  | 1122480747886424448       | 645814328190715595        | R1-105         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-105         | ~~         | 0(0)       | 0(1)       | 0(0)        |
| 1-106         | 410256371  | 6870849    | 222630873  | 228401427  | 440509424112031553        | 239048079882133779        | R1-106         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-106         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-107         | 510630501  | 650945360  | 1043238128 | 517101733  | 548285326184719184        | 1120168410942167205       | R1-107         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-107         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-108         | 415729609  | 923731599  | 351115546  | 544354361  | 446386269582198415        | 377007447341150265        | R1-108         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-108         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-109         | 587929224  | 718778476  | 1150810    | 16406427   | 631284198079443052        | 1235672844883867          | R1-109         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-109         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-110         | 886652137  | 406590925  | 279254645  | 341942945  | 952035483242468813        | 299847392224715425        | R1-110         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-110         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-111         | 708409527  | 432068683  | 742938884  | 138127519  | 760648938092025931        | 797724552564811935        | R1-111         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-111         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-112         | 558907792  | 332109149  | 20434797   | 78537225   | 600122672362001757        | 21941696282386953         | R1-112         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-112         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-113         | 216956788  | 563597792  | 775193828  | 158644125  | 232955577839899104        | 832358034988906397        | R1-113         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-113         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-114         | 140857621  | 93402883   | 185597116  | 761473569  | 151244718990243587        | 199283386624453153        | R1-114         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-114         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-115         | 992467481  | 796355751  | 259791679  | 95851921   | 1065653844105981095       | 278949191365334417        | R1-115         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-115         | ~~         | 0(0)       | 0(1)       | 0(0)        |
| 1-116         | 416741887  | 17337362   | 992417388  | 201019929  | 447473193901919250        | 1065600056561455641       | R1-116         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-116         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-117         | 709695681  | 433978960  | 794411757  | 715287931  | 762029935435841104        | 852993129683512699        | R1-117         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-117         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-118         | 34857152   | 942476432  | 1060611280 | 906922407  | 37427582910401680         | 1138822691249097127       | R1-118         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-118         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-119         | 529426749  | 1025591773 | 200802245  | 271134783  | 568467644171241949        | 215609769080729663        | R1-119         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-119         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-120         | 739433684  | 1008739120 | 906273461  | 246234813  | 793960873593938736        | 973103719303167677        | R1-120         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-120         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-121         | 417101363  | 770296473  | 1035967839 | 54615871   | 447859179070802585        | 1112361997107814207       | R1-121         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-121         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-122         | 590196915  | 333021586  | 487710187  | 1010701165 | 633719112364294546        | 523674826783462253        | R1-122         | ~~         | 0(1)       | 0(0)       | 0(1)        | S1-122         | ~~         | 0(0)       | 0(1)       | 0(0)        |
| 1-123         | 131919203  | 477503732  | 1025865054 | 78746639   | 141647166127350004        | 1101514214338565135       | R1-123         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-123         | ~~         | 0(0)       | 0(0)       | 0(0)        |
| 1-124         | 991140099  | 467144723  | 352869173  | 225670905  | 1064228578206945299       | 378890389676062457        | R1-124         | ~~         | 0(0)       | 0(0)       | 0(0)        | S1-124         | ~~         | 0(0)       | 0(0)       | 0(0)        |

**Table 8 Detailed Results for Seed Index 1-125 to 1-149, Cases R1-125 to R1-149 and S1-125 to S1-149**

| Case  | Seed      | Seed       | Seed       | Seed       | Seed               | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|-----------|------------|------------|------------|--------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1        | s2         | s3         | s4         | t1=s1*2^30+s2      | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-125 | 792136289 | 263770168  | 1046679469 | 980908415  | 850549864071221304 | 1123863523168319871 | R1-125 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-125 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-126 | 428822589 | 995900746  | 153663645  | 1021058493 | 460444749881163082 | 164995083485846973  | R1-126 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-126 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-127 | 876740815 | 717641036  | 1065842284 | 70777667   | 941393282590987596 | 1144439438189263683 | R1-127 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-127 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-128 | 574837163 | 378374679  | 601287209  | 32933013   | 617226704280979991 | 645627224572462229  | R1-128 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-128 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-129 | 601737578 | 200557752  | 345172365  | 397136773  | 646110804771620024 | 370626005186630533  | R1-129 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-129 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-130 | 292577451 | 155171433  | 1057215872 | 810320601  | 314152646053182057 | 1135176899573351129 | R1-130 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-130 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-131 | 473439800 | 128417827  | 405299082  | 398203171  | 508352114534613027 | 435186575970408739  | R1-131 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-131 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-132 | 485827881 | 961196847  | 962325213  | 132667919  | 521653716056191791 | 1033288829620476431 | R1-132 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-132 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-133 | 387496972 | 187263709  | 528233072  | 649004503  | 416071705697020637 | 567185942875407831  | R1-133 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-133 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-134 | 575666517 | 872559552  | 283015974  | 35078875   | 618117216851866560 | 303886088178975451  | R1-134 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-134 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-135 | 593949147 | 1032076364 | 694170499  | 870653937  | 637748041495100492 | 745359898633904113  | R1-135 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-135 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-136 | 697882049 | 422790849  | 550444292  | 215688947  | 749345144652908225 | 591035058318157555  | R1-136 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-136 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-137 | 34210655  | 585101778  | 625487573  | 943808923  | 36733411685036498  | 671612168466162075  | R1-137 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-137 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-138 | 145032707 | 919609065  | 110362513  | 1009317935 | 155727684273446633 | 118500847019161647  | R1-138 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-138 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-139 | 570642580 | 444203174  | 680005707  | 191533211  | 612722805145469094 | 730150568356122779  | R1-139 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-139 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-140 | 746004015 | 215913689  | 524925140  | 238306655  | 801015711993337049 | 563634077525362015  | R1-140 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-140 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-141 | 192524164 | 428928722  | 970586305  | 500290847  | 206721247446363858 | 1042159109980411167 | R1-141 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-141 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-142 | 586041895 | 456779196  | 412183484  | 310023685  | 629257693734495676 | 442578646242858501  | R1-142 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-142 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-143 | 811467223 | 200861862  | 624416040  | 445075249  | 871306296341096614 | 670461618169532209  | R1-143 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-143 | ~~    | 0(2)  | 0(0)  | 0(0)  |
| 1-144 | 720333340 | 508060262  | 392665337  | 168010001  | 773452034887672422 | 421621195339964689  | R1-144 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-144 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-145 | 122033813 | 148696900  | 689198954  | 847887497  | 131032809108991812 | 740021742814739593  | R1-145 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-145 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-146 | 304795204 | 456098609  | 203318636  | 514122053  | 327271358745510705 | 218311723585954117  | R1-146 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-146 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-147 | 243052965 | 316825036  | 881984746  | 602135735  | 260976134284533196 | 947023910512352439  | R1-147 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-147 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-148 | 878504590 | 592867096  | 783763420  | 79691293   | 943287121451839256 | 841559564254969373  | R1-148 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-148 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-149 | 432510954 | 458223894  | 542399684  | 674398757  | 464405101106163990 | 582397226709582373  | R1-149 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-149 | ~~    | 0(0)  | 0(0)  | 0(0)  |

**Table 9 Detailed Results for Seed Index 1-150 to 1-174, Cases R1-150 to R1-174 and S1-150 to S1-174**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-150 | 734798757  | 976071678  | 650457577  | 894457465  | 788984158590184446  | 698423506057057913  | R1-150 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-150 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-151 | 553106965  | 241562877  | 885604227  | 56297857   | 593894081707767037  | 950910298097387905  | R1-151 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-151 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-152 | 249673314  | 315240183  | 320656162  | 20271963   | 268084679893724919  | 344301932282991451  | R1-152 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-152 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-153 | 851206801  | 513734126  | 425680517  | 539211593  | 913976343620679150  | 457070975304054601  | R1-153 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-153 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-154 | 269971247  | 404807265  | 198327190  | 620091745  | 289879419586141793  | 212952199359486305  | R1-154 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-154 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-155 | 436682241  | 763436453  | 934332960  | 231012463  | 468883986723184037  | 1003232376924731503 | R1-155 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-155 | ~~   | 0(0)  | 0(0)  | 0(3)  |       |
| 1-156 | 458640459  | 373719614  | 977033408  | 508082843  | 492461443380576830  | 1049081634122939035 | R1-156 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-156 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-157 | 458373367  | 261102869  | 426614066  | 642301707  | 492174655416704277  | 458073366013198091  | R1-157 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-157 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-158 | 815076547  | 144131536  | 251817608  | 687146363  | 875181778419533264  | 270387098416383355  | R1-158 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-158 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-159 | 120622003  | 15715456   | 550727488  | 33626649   | 129516889531468928  | 591339137525684761  | R1-159 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-159 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-160 | 711037394  | 997835779  | 558885674  | 1042998317 | 763470589363602435  | 600098924051227693  | R1-160 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-160 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-161 | 450202039  | 872884943  | 1060971568 | 954315551  | 483400759397264079  | 1139209547590775583 | R1-161 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-161 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-162 | 855486532  | 1035864319 | 218841986  | 401057311  | 918571670312978687  | 234979793616479775  | R1-162 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-162 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-163 | 508995448  | 412935679  | 941590225  | 905724261  | 546529701156152831  | 1011024806557794661 | R1-163 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-163 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-164 | 355060545  | 244549382  | 28120504   | 821859027  | 381243357463283462  | 30194162078618323   | R1-164 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-164 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-165 | 200557760  | 142193516  | 263077642  | 151827297  | 215347255181947756  | 282477467326526305  | R1-165 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-165 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-166 | 691251060  | 1067669409 | 563389680  | 229510181  | 742225175074002849  | 604935062855486501  | R1-166 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-166 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-167 | 49988822   | 739209082  | 628051306  | 211658165  | 53675089653100410   | 674364955081680309  | R1-167 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-167 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-168 | 1039787522 | 841831455  | 73612149   | 650898025  | 1116463351286551583 | 79040443786717801   | R1-168 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-168 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-169 | 399106656  | 860362119  | 185595579  | 792034121  | 428537509644342663  | 199281736313830217  | R1-169 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-169 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-170 | 931026057  | 939280740  | 937706249  | 849794931  | 999681617573988708  | 1006854419027253107 | R1-170 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-170 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-171 | 962273417  | 1057506152 | 106399298  | 402108527  | 1033233215013798760 | 114245376708948079  | R1-171 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-171 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-172 | 91181776   | 840276966  | 341365452  | 531912417  | 97905687318076390   | 366538363612976865  | R1-172 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-172 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-173 | 420999385  | 332940656  | 390890131  | 622240157  | 452044647885718896  | 419715082865779101  | R1-173 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-173 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-174 | 285729425  | 604348882  | 1042010432 | 838444259  | 306799634574320082  | 111885018272115227  | R1-174 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-174 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 10 Detailed Results for Seed Index 1-175 to 1-199, Cases R1-175 to R1-199 and S1-175 to S1-199**

| Case  | Seed       | Seed      | Seed      | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|-----------|-----------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2        | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-175 | 594377861  | 155941092 | 413899406 | 45367687   | 638208368771299556  | 444421103196324231  | R1-175 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-175 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-176 | 471729563  | 186684656 | 379307919 | 569915463  | 506515761597027568  | 407278777374619719  | R1-176 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-176 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-177 | 841788634  | 37283662  | 228836223 | 1003247505 | 903863663330912078  | 245711024484538257  | R1-177 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-177 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-178 | 488792065  | 735045398 | 688417349 | 927386847  | 524836484164871958  | 739182500915891423  | R1-178 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-178 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-179 | 862082983  | 107342095 | 130727891 | 237632639  | 925654554713123087  | 140368004367645823  | R1-179 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-179 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-180 | 695647696  | 598906393 | 723481240 | 428116721  | 746946026563343897  | 776832066695498481  | R1-180 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-180 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-181 | 737813584  | 700368082 | 183257896 | 29765027   | 792221304156505298  | 196771667543207331  | R1-181 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-181 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-182 | 810885875  | 126884087 | 852725299 | 1004222945 | 870682078605220087  | 915606818923428321  | R1-182 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-182 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-183 | 743742416  | 598030367 | 274285945 | 655962963  | 798587338940037151  | 294512291537826643  | R1-183 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-183 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-184 | 557230290  | 582226681 | 148725046 | 1045875265 | 598321468554875641  | 159692303212399169  | R1-184 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-184 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-185 | 908683834  | 468862901 | 768217751 | 602926815  | 975691837827336117  | 824867529790844639  | R1-185 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-185 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-186 | 439812136  | 706752769 | 549347830 | 890826529  | 472244685832728833  | 589857741885468449  | R1-186 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-186 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-187 | 678230769  | 788770526 | 249342988 | 868349779  | 728244743787753182  | 267729995605079891  | R1-187 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-187 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-188 | 459911911  | 901994622 | 570291734 | 856015659  | 493826655098460286  | 612346087533298475  | R1-188 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-188 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-189 | 657956547  | 720102778 | 511893993 | 504419703  | 706475463608624506  | 549641990242882935  | R1-189 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-189 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-190 | 1022710079 | 433251327 | 832876116 | 288435805  | 1098126586081895423 | 894293920248311389  | R1-190 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-190 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(0)  |
| 1-191 | 173496701  | 257696078 | 308653995 | 399579339  | 186290664447418702  | 331414703975766219  | R1-191 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-191 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-192 | 678715719  | 747869361 | 718352137 | 111053871  | 728765454844400817  | 771324733967731759  | R1-192 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-192 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-193 | 964940566  | 841882683 | 941684727 | 873987133  | 1036097044230315067 | 1011126277275909181 | R1-193 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-193 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-194 | 984974877  | 915973821 | 137540557 | 285930293  | 1057608721940129469 | 147683048833086261  | R1-194 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-194 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-195 | 137394796  | 764310815 | 720683534 | 235667879  | 147526539629458719  | 773828052559593895  | R1-195 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-195 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-196 | 779373209  | 63619416  | 744517912 | 231148879  | 836845611072012632  | 799420021062700367  | R1-196 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-196 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-197 | 826512100  | 314569035 | 383840458 | 533757377  | 887460610126639435  | 412145554031672769  | R1-197 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-197 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-198 | 476250573  | 222784018 | 759999603 | 73354087   | 511370159156849170  | 816043360037849959  | R1-198 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-198 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-199 | 178052190  | 205881118 | 186142716 | 3833297    | 191182083463675678  | 199869219405987281  | R1-199 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-199 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

Table 11 Detailed Results for Seed Index 1-200 to 1-224, Cases R1-200 to R1-224 and S1-200 to S1-224

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-200 | 451134907  | 322008131  | 742419303  | 144723343  | 484402418234258499  | 797166656720752015  | R1-200 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-200 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-201 | 780682223  | 402327761  | 881064616  | 178800003  | 838251154490722513  | 946035928024499587  | R1-201 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-201 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-202 | 970484860  | 311088554  | 831138268  | 790850533  | 1042050184051873194 | 892427920669371365  | R1-202 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-202 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-203 | 751793478  | 649404660  | 908378519  | 503526509  | 807232100988428532  | 975364008377005165  | R1-203 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-203 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-204 | 488711387  | 411598389  | 407049464  | 514086615  | 524749856498548277  | 437066034447668951  | R1-204 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-204 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-205 | 348229627  | 916860762  | 690321888  | 295669859  | 373908715782680410  | 741227483463913571  | R1-205 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-205 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-206 | 773021831  | 877611426  | 706239361  | 224625895  | 830025871687371170  | 758318739885360359  | R1-206 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-206 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-207 | 333962029  | 345651089  | 28954453   | 228512315  | 358588998510851985  | 31089607405654587   | R1-207 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-207 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-208 | 134349641  | 343755470  | 876711535  | 224209777  | 144256828924840654  | 941361842936949617  | R1-208 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-208 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-209 | 67981647   | 553285372  | 736160394  | 324534339  | 72994738201589500   | 790446204534652995  | R1-209 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-209 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-210 | 991462796  | 852776321  | 838348182  | 938572183  | 1064575071857956225 | 900169507026336151  | R1-210 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-210 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-211 | 1034268740 | 963274222  | 809285269  | 79084027   | 1110537604357055982 | 868963440951474683  | R1-211 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-211 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-212 | 321445891  | 456038092  | 942567184  | 912980017  | 345149897775683276  | 1012073808303683633 | R1-212 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-212 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-213 | 979947372  | 637207364  | 901713122  | 1033710995 | 1052210479272493892 | 968207093374725523  | R1-213 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-213 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-214 | 868946367  | 807640946  | 351069383  | 327176917  | 933024057868394354  | 376957879980151509  | R1-214 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-214 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-215 | 543749252  | 90941383   | 72775965   | 513258841  | 583846313732057031  | 78142597915719001   | R1-215 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-215 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-216 | 741828891  | 977750012  | 476829279  | 63623993   | 796532707495987196  | 511991539833688889  | R1-216 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-216 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-217 | 195837690  | 30606358   | 966234377  | 344293281  | 210279118499152918  | 1037486262715776929 | R1-217 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-217 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-218 | 462446365  | 911021247  | 763020370  | 313324325  | 496548004368291007  | 819286884146279205  | R1-218 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-218 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-219 | 714733297  | 779006590  | 203738888  | 603872819  | 767439034773320318  | 218762965824724531  | R1-219 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-219 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-220 | 936805435  | 638733724  | 1070451305 | 68057405   | 1005887177148747164 | 1149388336801937725 | R1-220 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-220 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-221 | 926885416  | 711290792  | 988595912  | 247144805  | 995235637926129576  | 1061496777996968293 | R1-221 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-221 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-222 | 81221116   | 1057834499 | 211270493  | 950502089  | 87210510298990083   | 226849965461701321  | R1-222 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-222 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-223 | 454346956  | 95074279   | 180420871  | 785415051  | 487851329359362023  | 193725435900623755  | R1-223 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-223 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-224 | 716419852  | 612562252  | 1037507509 | 953868351  | 769249959248852300  | 1114015206081224767 | R1-224 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-224 | ~~    | 0(1)  | 0(0)  | 0(0)  |

**Table 12 Detailed Results for Seed Index 1-225 to 1-249, Cases R1-225 to R1-249 and S1-225 to S1-249**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-225 | 350457777  | 528009503  | 54953256   | 1040380541 | 376301173238974751  | 59005610372559485   | R1-225 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-225 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-226 | 522181244  | 677833988  | 915814316  | 361726023  | 560687842068983044  | 983348134468878407  | R1-226 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-226 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-227 | 986807079  | 856074122  | 155318460  | 152395357  | 1059576033797646218 | 166771926693666397  | R1-227 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-227 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-228 | 427629577  | 319048561  | 209271724  | 493295537  | 459163762323377009  | 224703803132680113  | R1-228 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-228 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-229 | 621430767  | 160694135  | 568715023  | 1053733557 | 667256205408993143  | 610653107185955509  | R1-229 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-229 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-230 | 442736054  | 811576252  | 851008505  | 898606819  | 475384218984098748  | 913763425296819939  | R1-230 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-230 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-231 | 853978757  | 959221094  | 532540464  | 703791587  | 916952709157653862  | 571810969872957923  | R1-231 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-231 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-232 | 677968228  | 228411427  | 455809974  | 890463149  | 727962841975179299  | 489422233770615725  | R1-232 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-232 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-233 | 1019004661 | 604538097  | 699605625  | 91238291   | 1094147923971179761 | 751195819959398291  | R1-233 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-233 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-234 | 766070871  | 921516331  | 91873636   | 849325457  | 822562335262325035  | 98648566345477521   | R1-234 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-234 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-235 | 301729463  | 723807287  | 904467532  | 186119317  | 323979544679967799  | 971164617744577685  | R1-235 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-235 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-236 | 149199069  | 251326693  | 126160137  | 746624573  | 160201280738488549  | 135463416365094461  | R1-236 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-236 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-237 | 1026763474 | 1022737172 | 131480226  | 119618075  | 1102478886412073748 | 141175817804790299  | R1-237 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-237 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-238 | 963738994  | 643293368  | 900288127  | 163816175  | 1034806865920778424 | 966677015774339823  | R1-238 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-238 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-239 | 801476632  | 910786825  | 22747067   | 696124423  | 860578981647843593  | 24424477907354631   | R1-239 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-239 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-240 | 733254236  | 583047319  | 1063600623 | 29755009   | 787325741401413783  | 1142032472977311361 | R1-240 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-240 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-241 | 1032687839 | 297479138  | 833597240  | 138993753  | 1108840124167957474 | 895068221097959513  | R1-241 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-241 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-242 | 807726899  | 849146853  | 21429535   | 44338319   | 867290154675270629  | 23009788042710159   | R1-242 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-242 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-243 | 112328995  | 289684995  | 947040853  | 532177547  | 120612340269071875  | 1016877373434913419 | R1-243 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-243 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-244 | 16092188   | 139312263  | 475688694  | 307358579  | 17278855434583175   | 510766846259096435  | R1-244 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-244 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-245 | 523646810  | 579896957  | 623635367  | 248548765  | 562261481481078397  | 669623376722038173  | R1-245 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-245 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-246 | 597355241  | 92619491   | 40707717   | 156798773  | 641405306139919075  | 43709578459254581   | R1-246 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-246 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-247 | 135726149  | 880881739  | 836396503  | 938434481  | 145734843672637515  | 898073907656875953  | R1-247 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-247 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-248 | 855555428  | 371681078  | 195896122  | 47384277   | 918645646165501750  | 210341859398190805  | R1-248 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-248 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-249 | 216693741  | 476005789  | 167825088  | 1046509165 | 232673133186729373  | 180200817148589677  | R1-249 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-249 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 13 Detailed Results for Seed Index 1-250 to 1-274, Cases R1-250 to R1-274 and S1-250 to S1-274**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-250 | 249653337  | 98732683   | 633093909  | 851486955  | 268063229536799371  | 679779409464436971  | R1-250 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-250 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-251 | 675680376  | 369412059  | 539023182  | 558250783  | 725506279736657883  | 578771735177214751  | R1-251 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-251 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-252 | 831354307  | 759650589  | 542060558  | 529811259  | 892659890748086557  | 582033092795189051  | R1-252 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-252 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-253 | 986075258  | 387619083  | 265882351  | 278295017  | 1058790246513809675 | 285489000810443241  | R1-253 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-253 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-254 | 883684756  | 1004093795 | 255879971  | 905056771  | 948849282752528739  | 274749027691663875  | R1-254 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-254 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-255 | 6537805    | 178311931  | 717828681  | 304351303  | 7019914843968251    | 770762677560805447  | R1-255 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-255 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-256 | 476714536  | 801999341  | 673070002  | 517817839  | 511868336213953005  | 722703412144981487  | R1-256 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-256 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-257 | 269397085  | 30089261   | 389275196  | 262852949  | 289262917458272301  | 417981059253850453  | R1-257 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-257 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-258 | 132888453  | 1017235458 | 613659892  | 985173045  | 142687890929993730  | 658912292736896053  | R1-258 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-258 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-259 | 1072421307 | 670193745  | 545852483  | 275185213  | 1151503610944837713 | 586104641006534205  | R1-259 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-259 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-260 | 435656983  | 926946567  | 661476615  | 746280073  | 467783124491703559  | 710255107869725833  | R1-260 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-260 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-261 | 706852355  | 425668533  | 1028598877 | 570508735  | 758976937382064053  | 1104449634924840383 | R1-261 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-261 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-262 | 14657932   | 656239549  | 1067335985 | 594730251  | 15738835297987517   | 1146043287949466891 | R1-262 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-262 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-263 | 397110785  | 398049897  | 433313972  | 173488415  | 426394459014021737  | 465267334833453343  | R1-263 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-263 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-264 | 199786685  | 989179697  | 986052559  | 274364361  | 214519320551993137  | 1058765873534891977 | R1-264 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-264 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-265 | 777516614  | 497689142  | 549246818  | 70701555   | 834852107804353078  | 589749280256217587  | R1-265 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-265 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-266 | 297951172  | 510920400  | 431202547  | 1007428497 | 319922635397138128  | 463000210336654225  | R1-266 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-266 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-267 | 635012929  | 285793428  | 914138927  | 307669793  | 681839940933835924  | 981549199174052641  | R1-267 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-267 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-268 | 59102169   | 503634249  | 815650361  | 507805293  | 63460471248050505   | 875797906874203757  | R1-268 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-268 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-269 | 529695322  | 642826652  | 21586560   | 110259313  | 568756021851373980  | 23178392418544753   | R1-269 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-269 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-270 | 682232895  | 37097402   | 390265933  | 755802883  | 732541993107197882  | 419044855500284675  | R1-270 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-270 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-271 | 298421348  | 456169406  | 362528368  | 555562251  | 320427482978228158  | 389261871663625483  | R1-271 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-271 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-272 | 824238730  | 671151070  | 426103300  | 35259731   | 885019598032794590  | 457524934589678931  | R1-272 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-272 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-273 | 363321135  | 335907860  | 1025985142 | 144120497  | 390113098528558100  | 1101643157912099505 | R1-273 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-273 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-274 | 1062138470 | 484996729  | 606305415  | 178914809  | 1140462498603366009 | 651015482382091769  | R1-274 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-274 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

Table 14 Detailed Results for Seed Index 1-275 to 1-299, Cases R1-275 to R1-299 and S1-275 to S1-299

| Case  | Seed       | Seed      | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|-----------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-275 | 611766009  | 265435165 | 125805882  | 700016417  | 656878750630295581  | 135083037908625185  | R1-275 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-275 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-276 | 408941193  | 600356750 | 734398159  | 614512137  | 439097263080912782  | 788554019401414153  | R1-276 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-276 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-277 | 1073215164 | 191039012 | 280203350  | 972531091  | 1152356007928858148 | 300866057092441491  | R1-277 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-277 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-278 | 93110656   | 204299444 | 469759860  | 328585047  | 99976805811575988   | 504400809246969687  | R1-278 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-278 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-279 | 150538548  | 458701247 | 511071408  | 192681583  | 161639535570532799  | 548758746012849775  | R1-279 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-279 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-280 | 1016783845 | 243410248 | 413872595  | 306697623  | 1091763340587443528 | 444392315365610903  | R1-280 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-280 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-281 | 1012010793 | 293814428 | 69487209   | 8744813    | 1086638315077320860 | 74611322545074029   | R1-281 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-281 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-282 | 528854503  | 108106309 | 1021772023 | 544364409  | 567853198789939781  | 1097119356232554361 | R1-282 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-282 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-283 | 23503806   | 832045677 | 1062036313 | 888606653  | 25237020357427821   | 1140352808763461565 | R1-283 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-283 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-284 | 1064833011 | 318307486 | 217135515  | 1005326587 | 1143355739804859550 | 233147484936605947  | R1-284 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-284 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-285 | 682366615  | 478511492 | 892603979  | 867384089  | 732685574305317252  | 958426225388501785  | R1-285 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-285 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-286 | 249437732  | 752453574 | 658930490  | 38638259   | 267831726084556742  | 707521226260452019  | R1-286 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-286 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-287 | 529591662  | 584987586 | 203119740  | 671026959  | 568644717716059074  | 218098160789032719  | R1-287 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-287 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-288 | 590391666  | 296539354 | 481659050  | 996073749  | 633928224621778138  | 517177467889180949  | R1-288 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-288 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-289 | 910154132  | 232247591 | 1028897249 | 446053265  | 977270558047064359  | 1104770009295895441 | R1-289 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-289 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-290 | 764029436  | 157520281 | 1052229121 | 77489215   | 820370360357851545  | 1129822415725945919 | R1-290 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-290 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-291 | 468268899  | 57490877  | 289982073  | 490850247  | 50279990179222653   | 311365880481171399  | R1-291 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-291 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-292 | 646204976  | 494691081 | 747319926  | 964398815  | 693857310102807305  | 802428661419183839  | R1-292 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-292 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-293 | 481030357  | 72712405  | 671082427  | 143583065  | 516502412997263573  | 720569269364909913  | R1-293 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-293 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-294 | 1044356854 | 724943038 | 524669605  | 886864647  | 1121369634045804734 | 563359699556924167  | R1-294 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-294 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-295 | 648803072  | 432370904 | 913438052  | 1020062233 | 696646994378454232  | 980796641085549081  | R1-295 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-295 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-296 | 341372148  | 977732055 | 874693468  | 988573053  | 366545553834050007  | 939194960759778685  | R1-296 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-296 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-297 | 968066101  | 404906344 | 501309619  | 607906177  | 1039453061445214568 | 538277105301711233  | R1-297 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-297 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-298 | 1044974192 | 572174160 | 504152208  | 53290103   | 1122032495523180368 | 541329311444837495  | R1-298 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-298 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-299 | 992389118  | 708258739 | 546736250  | 254936967  | 1065569702387329971 | 587053578576856967  | R1-299 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-299 | ~~    | 0(0)  | 0(0)  | 0(0)  |

Table 15 Detailed Results for Seed Index 1-300 to 1-324, Cases R1-300 to R1-324 and S1-300 to S1-324

| Case Index | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order | Case   | Order | Order | Order |      |
|------------|------------|------------|------------|------------|---------------------|---------------------|--------|------|-------|-------|-------|-------|--------|-------|-------|-------|------|
|            | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        |      | 7     | 8     | 9     | 10    | S1-300 | ~     | 0(0)  | 0(0)  |      |
| 1-300      | 364865617  | 901051141  | 563027049  | 161052145  | 391771474013516549  | 604545690715649521  | R1-300 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-300 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-301      | 797750344  | 147459176  | 452886306  | 955736165  | 856577909610646632  | 486282969224798309  | R1-301 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  | S1-301 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-302      | 669132292  | 1061204362 | 701999168  | 722491507  | 718475328770584970  | 753765867817293939  | R1-302 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-302 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-303      | 384654816  | 613534907  | 1026507424 | 298035237  | 413019964355759291  | 1102203954093336613 | R1-303 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-303 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-304      | 152363055  | 24045622   | 476216815  | 876129601  | 163598584609957942  | 511333912433700161  | R1-304 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  | S1-304 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-305      | 980901577  | 437609495  | 1025289723 | 828826847  | 1053235048890065943 | 1100896458131301599 | R1-305 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-305 | ~     | 0(0)  | 0(0)  | 0(1) |
| 1-306      | 1039783438 | 345001140  | 718177557  | 463490161  | 1116458965628112052 | 771137280472534129  | R1-306 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-306 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-307      | 767123221  | 990167635  | 1028811010 | 339508983  | 823692287539462739  | 1104677410768191223 | R1-307 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-307 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-308      | 136221276  | 996742965  | 800695971  | 908569131  | 146266482356590389  | 859740753279560235  | R1-308 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  | S1-308 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-309      | 675712466  | 54904120   | 192971337  | 997062331  | 725540735797282104  | 207201396367161019  | R1-309 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-309 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-310      | 1007729369 | 246705405  | 811954279  | 1066283993 | 1082041171015134461 | 871829269604348889  | R1-310 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-310 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-311      | 131194991  | 1069278954 | 357277707  | 135166407  | 140869550005282538  | 383624016923883975  | R1-311 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-311 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-312      | 919846940  | 196641439  | 790728808  | 220338707  | 987678131353059999  | 849038592811604499  | R1-312 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-312 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-313      | 859061820  | 994119384  | 338293286  | 1032677621 | 922410606529679064  | 363239650989271285  | R1-313 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-313 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-314      | 974450529  | 253602249  | 880741332  | 1042719757 | 1046308288659827145 | 945688805336589325  | R1-314 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(1)  | S1-314 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-315      | 232002629  | 221831157  | 111844771  | 301267273  | 249110926257086453  | 120092408719669577  | R1-315 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-315 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-316      | 985359404  | 438282950  | 160722659  | 530268001  | 1058021604184795846 | 172574641563058017  | R1-316 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-316 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-317      | 798623835  | 206299646  | 946816334  | 506912777  | 857515813489074686  | 1016636297969065993 | R1-317 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-317 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-318      | 933117529  | 1040439838 | 325512033  | 695579181  | 1001927318635272734 | 349515884742947373  | R1-318 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-318 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-319      | 396161833  | 732208606  | 537542257  | 346863639  | 425375529896811998  | 577181603855120407  | R1-319 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-319 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-320      | 700500380  | 1046630335 | 983522856  | 269698305  | 752156556780523455  | 1056049625616827649 | R1-320 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-320 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-321      | 346396547  | 546304756  | 278171942  | 625266447  | 371940460749386484  | 298684849013968655  | R1-321 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-321 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-322      | 608575775  | 738303800  | 1047893690 | 450533641  | 653453263429017400  | 1125167282509224201 | R1-322 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-322 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-323      | 531069586  | 632290058  | 547900857  | 210437587  | 570231626574854922  | 588304065776780755  | R1-323 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-323 | ~     | 0(0)  | 0(0)  | 0(0) |
| 1-324      | 832327508  | 115557001  | 792797703  | 180226057  | 893704856720851593  | 851260051862456329  | R1-324 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  | S1-324 | ~     | 0(0)  | 0(0)  | 0(0) |

**Table 16 Detailed Results for Seed Index 1-325 to 1-349, Cases R1-325 to R1-349 and S1-325 to S1-349**

| Case  | Seed       | Seed      | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|-----------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-325 | 365463000  | 800826684 | 802021998  | 574213407  | 392412909025338684  | 861164563594857759  | R1-325 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-325 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-326 | 665145047  | 528581844 | 928935505  | 1008316333 | 714194056518927572  | 997436904525377453  | R1-326 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-326 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-327 | 673362871  | 237551895 | 620231190  | 455918249  | 723017877558968599  | 665968169708208809  | R1-327 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-327 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-328 | 613390153  | 828175976 | 20444109   | 457599887  | 658622662534035048  | 21951695345314703   | R1-328 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-328 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-329 | 585280822  | 560796073 | 1016474970 | 951640767  | 628440497927295401  | 1091431689289786047 | R1-329 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-329 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-330 | 170341894  | 64378605  | 1052447879 | 640931685  | 182903216031553261  | 1130057305903322981 | R1-330 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-330 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-331 | 366916446  | 738935163 | 149803142  | 795453833  | 393973534722572667  | 160849899727464841  | R1-331 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-331 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-332 | 523396383  | 931422007 | 509184428  | 682708179  | 56199258788844599   | 546732617155824851  | R1-332 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-332 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-333 | 555886405  | 453437278 | 664004402  | 870414615  | 596878482894939998  | 712969298617923863  | R1-333 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-333 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-334 | 217058159  | 36658633  | 576418835  | 567829573  | 233064423595400649  | 618925011848684613  | R1-334 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-334 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-335 | 957367747  | 489013358 | 451361057  | 784662971  | 1027965791391563886 | 484645245410410939  | R1-335 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-335 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-336 | 660105808  | 26277478  | 767727783  | 673536687  | 708783214341191270  | 824341430727432879  | R1-336 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-336 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-337 | 292349553  | 726654109 | 407514466  | 139886751  | 313907943010458781  | 437565326169112735  | R1-337 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-337 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-338 | 390950446  | 795477466 | 702536658  | 474725115  | 419779845777130970  | 754342993062509307  | R1-338 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-338 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-339 | 294791953  | 634425187 | 242179087  | 128975619  | 316530449949167459  | 260037814739010307  | R1-339 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-339 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-340 | 354788959  | 140828348 | 488955176  | 681697059  | 380951744112549564  | 525011623214178083  | R1-340 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-340 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-341 | 895547974  | 413022217 | 918429485  | 168877565  | 961587315495286793  | 986156150608158205  | R1-341 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-341 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-342 | 551108252  | 914150757 | 862600210  | 837019027  | 591747980638082405  | 926209923705202067  | R1-342 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-342 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-343 | 273547047  | 993771198 | 496680320  | 1054076769 | 293718906189364926  | 533306433795780449  | R1-343 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-343 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-344 | 205280880  | 771308158 | 1023005098 | 14156017   | 220418667294833278  | 1098443359901974769 | R1-344 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-344 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-345 | 922799168  | 202837606 | 1032942814 | 691677399  | 990848062036840038  | 1109113901883730135 | R1-345 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-345 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-346 | 1003589891 | 536287483 | 804661812  | 760879427  | 1077596440646588667 | 863999042480904515  | R1-346 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-346 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-347 | 309014977  | 434726430 | 463815240  | 745900681  | 331802305482024478  | 498017822542498441  | R1-347 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-347 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-348 | 523304258  | 156379096 | 346922173  | 562363711  | 561893668648265688  | 372504847385427263  | R1-348 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-348 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-349 | 208671005  | 449548445 | 777896788  | 655881267  | 224058785974161565  | 835260316686742579  | R1-349 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-349 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 17 Detailed Results for Seed Index 1-350 to 1-374, Cases R1-350 to R1-374 and S1-350 to S1-374**

| Case  | Seed      | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|-----------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1        | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-350 | 51955834  | 672667968  | 1065107391 | 648621717  | 55787152639269184   | 1143650353416842901 | R1-350 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-350 | ~~    | 0(0)  | 0(1)  | 0(1)  |
| 1-351 | 319007343 | 1007566397 | 544199814  | 1027848171 | 342531527349780029  | 584330101932668907  | R1-351 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-351 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-352 | 60986470  | 527003103  | 603325259  | 774664777  | 65483724064124383   | 647815564838597193  | R1-352 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-352 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-353 | 333722603 | 71150984   | 466577968  | 397229055  | 358331916526398856  | 500984278795762687  | R1-353 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-353 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-354 | 812355960 | 308324064  | 722832800  | 223155295  | 872260570535995104  | 776135809342182495  | R1-354 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-354 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-355 | 406013209 | 1028674827 | 799995687  | 756726335  | 435953364628428043  | 858988828908239423  | R1-355 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-355 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-356 | 672628660 | 650471258  | 477627338  | 325851945  | 722229524913547098  | 512848449422236457  | R1-356 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-356 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-357 | 112547344 | 354377849  | 275076253  | 108589713  | 120846790787293305  | 295360877743895185  | R1-357 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-357 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-358 | 887739426 | 8041313    | 158145172  | 35912575   | 953202950517994337  | 169807085475986303  | R1-358 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-358 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-359 | 829453664 | 289132483  | 900965761  | 578378665  | 890619090395975619  | 967404620156066729  | R1-359 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-359 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-360 | 736139440 | 30398256   | 1013762745 | 400251107  | 790423705054336816  | 1088519459319797987 | R1-360 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-360 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-361 | 671243386 | 714310457  | 13060323   | 344415703  | 720742098345886521  | 14023415384464855   | R1-361 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-361 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-362 | 764403677 | 648581999  | 486105183  | 721828857  | 820772199062868847  | 521951466572102649  | R1-362 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-362 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-363 | 361380729 | 591668430  | 667845062  | 522357289  | 388029603706578126  | 717093175543630377  | R1-363 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-363 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-364 | 666616523 | 550198703  | 719763125  | 68653051   | 715774041864756655  | 772839770754093051  | R1-364 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-364 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-365 | 968140009 | 103984897  | 967328702  | 858197011  | 1039532419255021313 | 1038661285751229459 | R1-365 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-365 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-366 | 67524531  | 930456320  | 207156853  | 938340913  | 72503914011140864   | 222432978132660785  | R1-366 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-366 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-367 | 842547083 | 75321325   | 864443114  | 221862013  | 904678041781620717  | 928188726192461949  | R1-367 | ~~    | 0(0)  | 0(1)  | 0(1)  | S1-367 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-368 | 206869627 | 72302799   | 317298574  | 582185425  | 222124570697482447  | 340696750181544401  | R1-368 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-368 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-369 | 455117650 | 32731614   | 221405801  | 142645399  | 488678855678325214  | 237732668752566423  | R1-369 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-369 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-370 | 469024961 | 1058804785 | 1055232581 | 275057327  | 503611718184473649  | 1133047356542225071 | R1-370 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-370 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-371 | 346459816 | 678754897  | 785287276  | 859961549  | 372008395453299281  | 843195792956192973  | R1-371 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-371 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-372 | 421340602 | 200311622  | 478927574  | 665093651  | 452411026717049670  | 514244567535748627  | R1-372 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-372 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-373 | 488231345 | 584253521  | 374875002  | 12721485   | 524234415498526801  | 402518968432205133  | R1-373 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-373 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-374 | 499697954 | 119988849  | 847011488  | 1061668991 | 536546592697016945  | 909471661135743103  | R1-374 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-374 | ~~    | 0(0)  | 0(0)  | 0(0)  |

**Table 18 Detailed Results for Seed Index 1-375 to 1-399, Cases R1-375 to R1-399 and S1-375 to S1-399**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-375 | 13339367   | 220187052  | 361593828  | 974660331  | 14323036473772460   | 388258417398522603  | R1-375 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-375 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-376 | 3213931    | 947350642  | 418577395  | 255532387  | 3450933081500786    | 449444055848000867  | R1-376 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-376 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-377 | 637322172  | 578078702  | 793692073  | 389124811  | 684319472017000430  | 852220374546485963  | R1-377 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-377 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-378 | 381278581  | 362029208  | 954777502  | 438882885  | 409394759377100952  | 1025184536950526533 | R1-378 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-378 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-379 | 851810080  | 185542085  | 804312508  | 717961903  | 914624109186328005  | 863623980123896495  | R1-379 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-379 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-380 | 336940533  | 8952512    | 867801880  | 218363577  | 361787142491904704  | 931795173720192697  | R1-380 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-380 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-381 | 521193258  | 171195038  | 69165351   | 540756639  | 559626999672617630  | 74265730681096863   | R1-381 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-381 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-382 | 586310385  | 449299037  | 398603291  | 172550373  | 629545982669341277  | 427997024903293157  | R1-382 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-382 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-383 | 415026655  | 687577055  | 54356379   | 1055148795 | 445631478235895775  | 58364718588644091   | R1-383 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-383 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-384 | 193571932  | 665651581  | 494508525  | 511313519  | 207846280006535549  | 530974486128363119  | R1-384 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-384 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-385 | 1030570359 | 988308660  | 195115433  | 577202037  | 1106566498021303476 | 209503601497171829  | R1-385 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-385 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-386 | 559348306  | 960166308  | 728153484  | 916338779  | 600595671295916452  | 781848850978453595  | R1-386 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-386 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-387 | 533474395  | 187828351  | 262432152  | 913728107  | 572813770132424831  | 281784378478453355  | R1-387 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-387 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-388 | 692942265  | 291320157  | 825319173  | 255534751  | 744041091839111517  | 886179714454726303  | R1-388 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-388 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-389 | 658625110  | 4541119    | 138058349  | 207399489  | 707193326948141759  | 148239023681088065  | R1-389 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-389 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-390 | 80636136   | 263486606  | 1065997189 | 683691787  | 86582392012438670   | 1144605766779424523 | R1-390 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-390 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-391 | 101714714  | 570504981  | 521032779  | 439159685  | 109215343108503317  | 559454686926408581  | R1-391 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-391 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-392 | 592151888  | 989421516  | 687485647  | 309096463  | 635818249295585228  | 738182092892696591  | R1-392 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-392 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-393 | 555379221  | 292278161  | 695912270  | 1049619763 | 596333898060517265  | 747230111183400243  | R1-393 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-393 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-394 | 855722362  | 502618256  | 811540046  | 392352503  | 918824890314086544  | 871384489633436407  | R1-394 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-394 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-395 | 979150716  | 991539320  | 872154357  | 798237107  | 1051355076760285304 | 936468610892964275  | R1-395 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-395 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-396 | 262501108  | 406409212  | 84343502   | 362444859  | 281858418912350204  | 90563146042472507   | R1-396 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-396 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-397 | 306077702  | 708651484  | 646706796  | 326169925  | 328648430739859932  | 694396135056405829  | R1-397 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-397 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-398 | 579260338  | 1007298356 | 405581750  | 763471793  | 621976052902274868  | 435490088789583793  | R1-398 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-398 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-399 | 412982962  | 753967246  | 508226784  | 80324825   | 443437079652769934  | 545704354138138841  | R1-399 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-399 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 19 Detailed Results for Seed Index 1-400 to 1-424, Cases R1-400 to R1-424 and S1-400 to S1-424**

| Case  | Seed       | Seed       | Seed      | Seed       | Seed                | Seed               | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|-----------|------------|---------------------|--------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4      |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-400 | 804173855  | 399372959  | 784317417 | 596562359  | 863475102280184479  | 842154414521110967 | R1-400 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-400 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-401 | 644379868  | 632390027  | 890325533 | 115976761  | 691897615447589259  | 955979761873168953 | R1-401 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-401 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-402 | 72618401   | 1053936539 | 59159771  | 514730239  | 77973415399639963   | 63522320935692543  | R1-402 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-402 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-403 | 485796733  | 221368196  | 487237813 | 638927217  | 521620270406029188  | 523167618691318129 | R1-403 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-403 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-404 | 30041271   | 154484757  | 331250869 | 646191651  | 32256569273303061   | 355677912927836707 | R1-404 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-404 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-405 | 556598552  | 824152718  | 183497922 | 939789337  | 597643145284391566  | 197029394408279065 | R1-405 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-405 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-406 | 187544595  | 98779629   | 766921327 | 691933489  | 201374475615420909  | 823475505209413937 | R1-406 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-406 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-407 | 109831575  | 1041118406 | 248513692 | 360089803  | 117930756714411206  | 266839545297144011 | R1-407 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-407 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-408 | 981829418  | 536104943  | 59436677  | 322296763  | 1054231310676283375 | 63819646296775611  | R1-408 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-408 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-409 | 117267067  | 1047868723 | 75744786  | 163385199  | 125914555463578931  | 81330344841514863  | R1-409 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-409 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-410 | 612097933  | 573161682  | 907331554 | 425796175  | 657235151619211474  | 974239838190510671 | R1-410 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-410 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-411 | 111368490  | 937313205  | 298599657 | 399691233  | 119581006526038965  | 320618940752645601 | R1-411 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-411 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-412 | 282598611  | 280488715  | 666749647 | 398559845  | 303437948315495179  | 715916982519695973 | R1-412 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-412 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-413 | 640990503  | 949961234  | 895884222 | 686396699  | 688258312807858706  | 961948359309497627 | R1-413 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-413 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-414 | 1042535832 | 201044309  | 813847916 | 327818309  | 1119414326038081877 | 873862546112257093 | R1-414 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-414 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-415 | 337024140  | 481284008  | 429684933 | 1032601397 | 361876915296915368  | 461370684737339189 | R1-415 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-415 | ~~   | 0(2)  | 0(0)  | 0(1)  |       |
| 1-416 | 139711580  | 879472755  | 307016521 | 764405245  | 150014167622594675  | 329656480021079549 | R1-416 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-416 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-417 | 585759287  | 736833966  | 340639692 | 528817429  | 628954245985153454  | 365759084743695637 | R1-417 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-417 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-418 | 1051627094 | 1061655766 | 859724339 | 718294295  | 1129175995141035222 | 923121980613348631 | R1-418 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-418 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-419 | 1030463492 | 864048893  | 351012994 | 932961573  | 1106451750329538301 | 376897333358222629 | R1-419 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-419 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-420 | 538688614  | 575352117  | 432604792 | 542834843  | 578412495539744053  | 464505858976055451 | R1-420 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-420 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-421 | 908440285  | 700785815  | 182256033 | 471694771  | 975430329311765655  | 195695925780118963 | R1-421 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-421 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-422 | 904678122  | 103702835  | 557066581 | 284853747  | 971390736952877363  | 598145687057237491 | R1-422 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-422 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-423 | 971136589  | 695260882  | 31410306  | 229941777  | 1042749973121259218 | 33726559486779921  | R1-423 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-423 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-424 | 149742596  | 273715131  | 549719979 | 106951113  | 160784888433250235  | 590257333047652809 | R1-424 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-424 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 20 Detailed Results for Seed Index 1-425 to 1-449, Cases R1-425 to R1-449 and S1-425 to S1-499**

| Case  | Seed      | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|-----------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1        | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-425 | 12605613  | 558411826  | 397945019  | 1057346937 | 13535174453669938   | 427290211610121593  | R1-425 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-425 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-426 | 961177295 | 672623488  | 464210625  | 194411891  | 1032056262593309568 | 498442363402091891  | R1-426 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-426 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-427 | 635690914 | 518571625  | 38900932   | 696588623  | 682567922017158761  | 41769558377568591   | R1-427 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-427 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-428 | 954394095 | 224132759  | 777850276  | 992083289  | 1024772856604262039 | 835210375143226713  | R1-428 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-428 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-429 | 172905142 | 86965487   | 501709388  | 294272485  | 185655482637024495  | 538706353683316197  | R1-429 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-429 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-430 | 95707221  | 918585679  | 190196422  | 457200859  | 102764846965096783  | 204221853533754587  | R1-430 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-430 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-431 | 790086021 | 680803413  | 552512133  | 542494111  | 848348405986245717  | 593255386012044703  | R1-431 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-431 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-432 | 784109712 | 1068204007 | 1050279009 | 95547343   | 841931393447198695  | 1127728498928119759 | R1-432 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-432 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-433 | 55936235  | 962868628  | 1035250035 | 188733719  | 60061075959461268   | 1111591261065697559 | R1-433 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-433 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-434 | 740336078 | 357326532  | 488722779  | 812101929  | 794929811122052804  | 524762088965910825  | R1-434 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-434 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-435 | 213612891 | 170828431  | 1068432207 | 657337953  | 229365095383081615  | 1147220347421863521 | R1-435 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-435 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-436 | 5963974   | 1066688012 | 1044385395 | 782021243  | 6403769387736588    | 1121400279768281723 | R1-436 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-436 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-437 | 137962211 | 895140567  | 448637199  | 235325935  | 148135796977353431  | 481720524603836911  | R1-437 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-437 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-438 | 865111382 | 941953963  | 1072588666 | 690931393  | 928906274213794731  | 1151683311323498177 | R1-438 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-438 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-439 | 398900497 | 835820973  | 689622566  | 458746771  | 428316148079107501  | 740476592347147155  | R1-439 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-439 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-440 | 780959897 | 106133121  | 58516924   | 889306771  | 838549304381765249  | 628320695999936147  | R1-440 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-440 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-441 | 611804769 | 162098633  | 1027945558 | 1008080195 | 656920368760057289  | 1103748139427697987 | R1-441 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-441 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-442 | 708406583 | 810554648  | 844771052  | 852778379  | 760645777374582040  | 907066011089657227  | R1-442 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-442 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-443 | 219932951 | 185719455  | 242716551  | 613388633  | 236151208150162079  | 260614912799117657  | R1-443 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-443 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-444 | 295787480 | 731074031  | 444238782  | 795160865  | 317599389022637551  | 476997760871379233  | R1-444 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-444 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-445 | 985351012 | 744117083  | 483031881  | 905273343  | 1058012593649242971 | 518651533860364287  | R1-445 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-445 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-446 | 332846919 | 476603448  | 898078090  | 201436279  | 357391658396443704  | 964304006652472439  | R1-446 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-446 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-447 | 496610203 | 440992428  | 916715287  | 193975063  | 533231145627222700  | 984315544546038551  | R1-447 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-447 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-448 | 303758206 | 192211561  | 167691282  | 641838933  | 326157890357619305  | 180057143645417301  | R1-448 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-448 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-449 | 298220943 | 879735124  | 158935004  | 413233767  | 320212300171555156  | 170655161505641063  | R1-449 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-449 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |

**Table 21 Detailed Results for Seed Index 1-450 to 1-474, Cases R1-450 to R1-474 and S1-450 to S1-474**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order  | Order | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7    | 8     | 9     | 10    |        | 7     | 8    | 9     | 10    |       |       |
| 1-450 | 411776096  | 386298719  | 938196681  | 291663779  | 442141216784937823  | 1007381015819349923 | R1-450 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-450 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-451 | 442255559  | 495342035  | 1017408848 | 154863051  | 474868291090141651  | 1092434432360121803 | R1-451 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-451 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-452 | 665837931  | 685684109  | 166438888  | 529672783  | 714938035206010253  | 178712395715324495  | R1-452 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-452 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-453 | 271169717  | 870894839  | 32234945   | 928384299  | 291166267416038647  | 34612009569223979   | R1-453 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-453 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-454 | 71801054   | 652659044  | 136485280  | 34720223   | 77095795339741540   | 146549953531070943  | R1-454 | ~~   | 0(0)  | 0(0)  | 0(1)  | S1-454 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-455 | 1071489548 | 961381501  | 606311524  | 825176663  | 1150503142627837053 | 651022042517156439  | R1-455 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-455 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-456 | 66850930   | 428120398  | 945292427  | 1035719219 | 71780639942416718   | 1015000015816086067 | R1-456 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-456 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-457 | 916395499  | 993661605  | 742523331  | 258969095  | 983972175595311781  | 797278356049464839  | R1-457 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-457 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-458 | 247243132  | 988692975  | 872053987  | 300242891  | 265475292513845743  | 936360838928095179  | R1-458 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-458 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-459 | 1000585071 | 18133939   | 814357547  | 305977491  | 1074370039220843443 | 874409758209923219  | R1-459 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-459 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-460 | 513107837  | 23202495   | 370335203  | 787133121  | 550945344832277183  | 397644397147763393  | R1-460 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-460 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-461 | 359879288  | 1070245741 | 648436919  | 305899657  | 386417444187187053  | 696253840461899913  | R1-461 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-461 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-462 | 735893953  | 598543549  | 719676182  | 964207217  | 790160115963333821  | 772746417314243185  | R1-462 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-462 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-463 | 749433450  | 150608547  | 212552013  | 70118305   | 804698039720221347  | 228225986203610017  | R1-463 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-463 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-464 | 560595878  | 734108742  | 76879061   | 902424349  | 601935241304710214  | 82548264087971613   | R1-464 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-464 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-465 | 592287772  | 1047104778 | 1029394044 | 427961131  | 635964153687280906  | 1105303438847257387 | R1-465 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-465 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-466 | 75754426   | 951454648  | 547303844  | 229512783  | 81340696500767672   | 587663027968284239  | R1-466 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-466 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-467 | 315808109  | 598813023  | 373302799  | 496505959  | 339096375590463839  | 400830828799071335  | R1-467 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-467 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-468 | 25372175   | 777195086  | 273762990  | 90374231   | 27243166240542286   | 293950772316667991  | R1-468 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-468 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-469 | 749021641  | 672854276  | 34599652   | 145539139  | 804255863695667460  | 37151093593784387   | R1-469 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-469 | ~~    | 0(1) | 0(0)  | 0(0)  |       |       |
| 1-470 | 148169870  | 327405013  | 405548383  | 517308939  | 159096186803047893  | 435454260999979531  | R1-470 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-470 | ~~    | 0(0) | 0(0)  | 0(1)  |       |       |
| 1-471 | 149593724  | 211838942  | 854560877  | 119188929  | 160625038278551518  | 917577754908208577  | R1-471 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-471 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-472 | 173534652  | 54203299   | 667739215  | 785308675  | 186331413819888547  | 716979523455736835  | R1-472 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-472 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-473 | 694027477  | 928707757  | 478793344  | 1016378007 | 74520632998805805   | 514100439521997463  | R1-473 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-473 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-474 | 962081291  | 176592374  | 422125494  | 936231691  | 1033026920411207158 | 453253798820692747  | R1-474 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-474 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |

**Table 22 Detailed Results for Seed Index 1-475 to 1-499, Cases R1-475 to R1-499 and S1-475 to S1-499**

| Case  | Seed       | Seed       | Seed       | Seed      | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|-----------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4        | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-475 | 334374178  | 909597633  | 1044015710 | 62679021  | 359031540693818305  | 1121003332802734061 | R1-475 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-475 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-476 | 209085274  | 966180018  | 465704590  | 42705749  | 224503604442479794  | 500046495954477909  | R1-476 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-476 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-477 | 196365928  | 65528510   | 63923842   | 121878417 | 210846309767701182  | 68637702828046225   | R1-477 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-477 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-478 | 36115195   | 663170649  | 322344290  | 857459389 | 38778396016586329   | 346114546758044349  | R1-478 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-478 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-479 | 574700177  | 269238100  | 152711455  | 139066847 | 617079616574340948  | 163972676376460767  | R1-479 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-479 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-480 | 847415088  | 470217954  | 624310299  | 629672107 | 909905022744458466  | 670348079819917483  | R1-480 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-480 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-481 | 130802739  | 755638615  | 440805987  | 841194519 | 140448372313694551  | 473311825352694807  | R1-481 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-481 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-482 | 499934025  | 1069659711 | 276528203  | 392785965 | 536800072952821311  | 296919897469448237  | R1-482 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-482 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-483 | 426877813  | 180981626  | 576976071  | 530699713 | 458356561736732538  | 619523339410593217  | R1-483 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-483 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-484 | 316199237  | 581435557  | 105237703  | 999292707 | 339516346065223845  | 112998124172082979  | R1-484 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-484 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-485 | 671759655  | 368965445  | 308511124  | 500801557 | 721296437618276165  | 331261297508851733  | R1-485 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-485 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-486 | 315167627  | 109493719  | 888522442  | 66693793  | 338408662790225367  | 954043707604708001  | R1-486 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-486 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-487 | 1003059609 | 161105714  | 813350615  | 46067351  | 1077027054309492530 | 873328572947689111  | R1-487 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-487 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-488 | 1024559668 | 121213223  | 723236097  | 289041883 | 1100112566836367655 | 776568846264462811  | R1-488 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-488 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-489 | 692253956  | 655835587  | 603388814  | 727458815 | 743302026042491331  | 647883806453015551  | R1-489 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-489 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-490 | 581872735  | 1006978344 | 1027420813 | 574378327 | 624781092821746984  | 1103184698340561239 | R1-490 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-490 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-491 | 886760352  | 1063703326 | 549637833  | 573919731 | 952151678871065374  | 590169129918747123  | R1-491 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-491 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-492 | 1049943410 | 94964202   | 516028502  | 175448181 | 1127368152245144042 | 554081385148915829  | R1-492 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-492 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-493 | 323454640  | 614730852  | 478807187  | 290563605 | 347306775749594212  | 514115302604252693  | R1-493 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-493 | ~~    | 0(1)  | 0(0)  | 0(1)  |
| 1-494 | 828760148  | 77625558   | 778915156  | 636559957 | 889874433049655510  | 836353780981244501  | R1-494 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-494 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-495 | 903167535  | 728536727  | 745991062  | 561859365 | 969768757137020567  | 801001804161436453  | R1-495 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-495 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-496 | 926000131  | 400779383  | 943325197  | 404962533 | 994285070084958327  | 1012887718056901861 | R1-496 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-496 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-497 | 45617125   | 654265426  | 221116368  | 149577167 | 48981015657401426   | 237421892442152399  | R1-497 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-497 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-498 | 505097096  | 448058615  | 1064359018 | 292669547 | 542343877604201719  | 1142846793670838379 | R1-498 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-498 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-499 | 388670707  | 836850805  | 872896307  | 2290153   | 417331994706400373  | 937265272843334121  | R1-499 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-499 | ~~    | 0(0)  | 0(0)  | 0(1)  |

Table 23 Detailed Results for Seed Index 1-500 to 1-524, Cases R1-500 to R1-524 and S1-500 to S1-524

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-500 | 858090288  | 1003679272 | 499529909  | 196470681  | 921367431997484584  | 536366155828684697  | R1-500 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-500 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-501 | 1038272840 | 86178528   | 997795183  | 1063441337 | 1114836973117438688 | 1071374420836275129 | R1-501 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-501 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-502 | 1001260133 | 282033439  | 770644925  | 16205485   | 1075094881787936031 | 827473687442048685  | R1-502 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-502 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-503 | 646208605  | 883752504  | 858046895  | 1057626417 | 693861207100948024  | 921320839172462897  | R1-503 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-503 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-504 | 892792749  | 31657215   | 584130231  | 680380869  | 958628914796891391  | 627205060367862213  | R1-504 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-504 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-505 | 579751262  | 99209995   | 974270139  | 746271771  | 622503177625391883  | 1046114596864865307 | R1-505 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-505 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-506 | 469535893  | 778230221  | 300724909  | 689045969  | 504160326961519053  | 322900913000939985  | R1-506 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-506 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-507 | 831711814  | 940620254  | 500247177  | 717785355  | 893043761147328990  | 537136317000616203  | R1-507 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-507 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-508 | 846776980  | 340451388  | 874325604  | 182794389  | 909219859366862908  | 938799968991656085  | R1-508 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-508 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-509 | 101748679  | 674539494  | 239389730  | 968156667  | 109251812853589990  | 257042766305224187  | R1-509 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-509 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-510 | 278457946  | 310763107  | 266251678  | 724228797  | 298991943156096611  | 285885563103009469  | R1-510 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-510 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-511 | 225143616  | 252271468  | 7111281    | 743186501  | 241746117158067052  | 7635680575103045    | R1-511 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-511 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-512 | 923098039  | 258280887  | 61126780   | 1024503997 | 991168972384964023  | 65634381276950717   | R1-512 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-512 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-513 | 676268718  | 389905122  | 1057605754 | 140101239  | 726138007169366754  | 1135595531512956535 | R1-513 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-513 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-514 | 607290286  | 450147877  | 334612298  | 446412035  | 652072979837269541  | 359287219633763587  | R1-514 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-514 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-515 | 176758973  | 1026838847 | 820857013  | 951793721  | 189793503104225599  | 881388507333605433  | R1-515 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-515 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-516 | 216237186  | 608422920  | 556093772  | 912532111  | 232182911120690184  | 597101141974852239  | R1-516 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-516 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-517 | 178418840  | 1053012338 | 1047814816 | 73213101   | 191575771750576498  | 1125082591819277485 | R1-517 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-517 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-518 | 386205077  | 102885242  | 1043677272 | 1045647233 | 414684543918925690  | 1120639938750271361 | R1-518 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-518 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-519 | 640298234  | 148142468  | 669282152  | 494464155  | 687514993827281284  | 718636239153589403  | R1-519 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-519 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-520 | 788995804  | 61034975   | 177157104  | 1046873715 | 847177793776341471  | 190220993030391411  | R1-520 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-520 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-521 | 139823341  | 121146657  | 638428894  | 284289031  | 150134169324260641  | 685507805422151687  | R1-521 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-521 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-522 | 469618528  | 313406460  | 506645906  | 673361351  | 504249055152321532  | 544006899903933895  | R1-522 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-522 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-523 | 562831098  | 261143225  | 341287080  | 83840595   | 604335290031585977  | 366454211870674515  | R1-523 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-523 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-524 | 78188027   | 13736825   | 946401867  | 127380515  | 83953754739678073   | 1016191267036965923 | R1-524 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-524 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 24 Detailed Results for Seed Index 1-525 to 1-549, Cases R1-525 to R1-549 and S1-525 to S1-549**

| Case  | Seed       | Seed      | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|-----------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-525 | 760144628  | 529567489 | 1066503805 | 855092983  | 816199079902088961  | 114514974173873303  | R1-525 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-525 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-526 | 465472718  | 708406046 | 41109110   | 796123811  | 499797525955963678  | 44140571550540451   | R1-526 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-526 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-527 | 1052058067 | 811536240 | 125968450  | 653655315  | 1129638748626030448 | 135257593923108115  | R1-527 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-527 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-528 | 452278773  | 248604187 | 195355178  | 1072448847 | 485630634926106139  | 209761026226013519  | R1-528 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-528 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-529 | 170176164  | 31364315  | 102802609  | 204997545  | 182725264766047451  | 110383461104616361  | R1-529 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-529 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-530 | 511084742  | 664681292 | 361176767  | 683025971  | 548773063758330700  | 387810601268028979  | R1-530 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-530 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-531 | 1018428108 | 652517669 | 59850493   | 987153117  | 1093528854949306661 | 64263978508272349   | R1-531 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-531 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-532 | 339153044  | 845900751 | 375225813  | 284809509  | 364162808925613007  | 402895649147312421  | R1-532 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-532 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-533 | 818368563  | 827404835 | 570983225  | 789194565  | 878716554367283747  | 613088570274096965  | R1-533 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-533 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-534 | 63196525   | 123640371 | 4388471    | 261758801  | 67856752147601971   | 4712085117869905    | R1-534 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-534 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-535 | 867655015  | 173242372 | 275093416  | 254313079  | 931637478582089732  | 295379306520543863  | R1-535 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-535 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-536 | 191671050  | 612645506 | 335863366  | 545468521  | 205805223447640706  | 360630543769088105  | R1-536 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-536 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-537 | 929858465  | 992075492 | 460593607  | 725975241  | 998427925263015652  | 494558620428894409  | R1-537 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-537 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-538 | 478765645  | 785564611 | 962116568  | 269519253  | 514070697716401091  | 1033064798894459285 | R1-538 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-538 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-539 | 969442288  | 152435442 | 946866075  | 734348543  | 1040930730732288754 | 1016689707188569343 | R1-539 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-539 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-540 | 485352911  | 585409127 | 682728134  | 1048580535 | 521143720526258791  | 733073752945856951  | R1-540 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-540 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-541 | 822079990  | 571373918 | 19820618   | 1068436055 | 882701668507875678  | 2128227592563287    | R1-541 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-541 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-542 | 669610366  | 883976688 | 93307143   | 677249387  | 718988656642124272  | 100187782594298219  | R1-542 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-542 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-543 | 340285001  | 459214989 | 808641392  | 480368069  | 365378238112796813  | 868272083688347077  | R1-543 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-543 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-544 | 769734765  | 930623581 | 164093199  | 402128847  | 826496411497934941  | 17619373120238323   | R1-544 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-544 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-545 | 935132745  | 919171838 | 480483873  | 633905953  | 1004091140217598718 | 515915630831510305  | R1-545 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-545 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-546 | 670945424  | 948940070 | 615955971  | 81635577   | 720422164319153446  | 661377687886866681  | R1-546 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-546 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-547 | 578378514  | 590403721 | 302237130  | 1058239143 | 621029201175173257  | 324524648304964263  | R1-547 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-547 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-548 | 295248653  | 715417797 | 447487867  | 1057252319 | 317020827921180869  | 480486439587701727  | R1-548 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-548 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(1)  |
| 1-549 | 785504350  | 305819872 | 420616731  | 419104453  | 843428873834754272  | 451633776367961797  | R1-549 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-549 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 25 Detailed Results for Seed Index 1-550 to 1-574, Cases R1-550 to R1-574 and S1-550 to S1-574**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-550 | 949667626  | 346231252  | 417489866  | 791464309  | 1019697849281221076 | 448276331011819893  | R1-550 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-550 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-551 | 1015465175 | 609298674  | 16310519   | 341684765  | 1090347429822277874 | 17513286763131421   | R1-551 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-551 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-552 | 193611589  | 919490051  | 864603617  | 646784667  | 207888861639888387  | 928361065401362075  | R1-552 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-552 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-553 | 998191205  | 1065567531 | 159273377  | 333119097  | 1071799646223025451 | 171018486667738745  | R1-553 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-553 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-554 | 980138389  | 668820978  | 374650861  | 572770087  | 1052415582246102514 | 402278299426080551  | R1-554 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-554 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-555 | 227909746  | 279857282  | 1018779768 | 726891345  | 244716226657273986  | 1093906447073508177 | R1-555 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-555 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-556 | 308267168  | 346561209  | 314953956  | 234130069  | 330999351594195641  | 338179235425585813  | R1-556 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-556 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-557 | 218507001  | 312086395  | 68707479   | 299248081  | 234620106122596219  | 73774094123149777   | R1-557 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-557 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-558 | 835547739  | 535346541  | 322729604  | 178578677  | 897162553848282477  | 346528273836336373  | R1-558 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-558 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-559 | 721757053  | 174998860  | 990131404  | 33795957   | 774980734748083532  | 1063145499764436853 | R1-559 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-559 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(1)  |
| 1-560 | 916836760  | 64276023   | 958962049  | 241010991  | 984445975056926263  | 1029677659881048367 | R1-560 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-560 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-561 | 412111009  | 775164666  | 767291466  | 853909967  | 442500827269305082  | 823872939096383951  | R1-561 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-561 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-562 | 889756557  | 3683060    | 730489858  | 577312169  | 955368828432823028  | 784357513119733161  | R1-562 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-562 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-563 | 488851570  | 129596225  | 376772807  | 553573417  | 524900376566659905  | 404556721575353385  | R1-563 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-563 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(1)  |
| 1-564 | 451129785  | 984085604  | 176667010  | 973341953  | 484396919190713444  | 189694758531368193  | R1-564 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-564 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-565 | 310065059  | 592869805  | 1072759506 | 195469187  | 332929822602197421  | 1151866748881248131 | R1-565 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-565 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-566 | 682133318  | 889545632  | 145752865  | 193962665  | 732435073970037664  | 156500947312288425  | R1-566 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-566 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-567 | 250719174  | 1034374479 | 757006945  | 281115801  | 269207664236907855  | 812830018186083481  | R1-567 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-567 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-568 | 393711024  | 120008395  | 542653972  | 679457605  | 422743993158676171  | 582670266375582533  | R1-568 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-568 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-569 | 106251748  | 383426794  | 1168083    | 328238515  | 114086946084135146  | 1254219899241907    | R1-569 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-569 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-570 | 555158622  | 772092746  | 562804660  | 793224413  | 596097032167699274  | 604306902977324253  | R1-570 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-570 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-571 | 812955038  | 22635599   | 771171476  | 301407267  | 872903825354744911  | 828039067558419491  | R1-571 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-571 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-572 | 868280619  | 137006856  | 846884547  | 360871879  | 932309215725915912  | 909335358574065607  | R1-572 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-572 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-573 | 1008253863 | 412759877  | 365478164  | 988689965  | 1082604342325425989 | 392429191434221101  | R1-573 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-573 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-574 | 774789349  | 236780449  | 152815459  | 1062195793 | 831923729047813025  | 164084350744253009  | R1-574 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-574 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 26 Detailed Results for Seed Index 1-575 to 1-599, Cases R1-575 to R1-599 and S1-575 to S1-599**

| Case  | Seed      | Seed      | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|-----------|-----------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1        | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-575 | 762752217 | 53032469  | 409147866  | 943301937  | 818998956794656277  | 439319176867849521  | R1-575 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-575 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-576 | 335232730 | 975243339 | 407894870  | 8045767    | 359953403949942859  | 437973781722088647  | R1-576 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-576 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-577 | 94968679  | 486234708 | 793736240  | 417924825  | 101971843098565204  | 852267798530426585  | R1-577 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-577 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-578 | 867081500 | 223232498 | 58600217   | 318540575  | 931021671589888498  | 62921504206916383   | R1-578 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-578 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-579 | 273342726 | 316572360 | 891851512  | 893390681  | 293499517508944584  | 957618270125428569  | R1-579 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-579 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-580 | 426289534 | 108358690 | 791362850  | 542906975  | 457724901897628706  | 849719390547745375  | R1-580 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-580 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-581 | 248828165 | 175637448 | 399823580  | 655988007  | 267177207925310408  | 429307300723397927  | R1-581 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-581 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-582 | 546478007 | 935997621 | 580203600  | 1011396401 | 586776292948062389  | 622988872766762801  | R1-582 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-582 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-583 | 542010423 | 572182201 | 429916676  | 211382513  | 581979260791213753  | 461619516067639537  | R1-583 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-583 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-584 | 686754350 | 316442761 | 355386813  | 285504597  | 737396868725377161  | 381593685101671509  | R1-584 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-584 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-585 | 201198196 | 582701222 | 648444850  | 205423075  | 216034918541250726  | 696262356207829475  | R1-585 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-585 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-586 | 514468733 | 599137905 | 403546716  | 273131985  | 552406596361526897  | 433304987180181969  | R1-586 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-586 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-587 | 771498473 | 534909491 | 504663199  | 287468419  | 828390178147144243  | 541877984087403395  | R1-587 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-587 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-588 | 542564287 | 58999002  | 880012795  | 699011955  | 582573967219638490  | 944906544345650035  | R1-588 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-588 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-589 | 91820042  | 942170109 | 915778401  | 912866431  | 98591020319006717   | 983309571582409855  | R1-589 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-589 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-590 | 737445823 | 524831448 | 984301445  | 427302217  | 791826423614032600  | 1056885629347437897 | R1-590 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-590 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-591 | 435054897 | 859557229 | 797993152  | 929987831  | 467136639504469357  | 856838623497977079  | R1-591 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-591 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-592 | 473334499 | 694505852 | 749541505  | 1013361515 | 508239049012892028  | 804814063755766635  | R1-592 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-592 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-593 | 192631900 | 495700274 | 780425603  | 941256501  | 206836928162285874  | 837975611402776373  | R1-593 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-593 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-594 | 351778679 | 430065675 | 246821296  | 444096463  | 377719480863836171  | 265022349013180367  | R1-594 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-594 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-595 | 262145763 | 217492065 | 762866172  | 368378037  | 281476869934983777  | 819121315359555765  | R1-595 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-595 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-596 | 98058251  | 635841771 | 386594167  | 116986519  | 105289245922831595  | 415102326139327127  | R1-596 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-596 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-597 | 258759950 | 256363461 | 700684958  | 163239547  | 277841380947512261  | 752354745015522939  | R1-597 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-597 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-598 | 995462719 | 585249766 | 1013888348 | 969224903  | 1068869956208309222 | 1088654325083091655 | R1-598 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-598 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-599 | 731757042 | 428047480 | 368384661  | 740565547  | 785718141429972088  | 395550018576327211  | R1-599 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-599 | ~~    | 0(0)  | 0(0)  | 0(0)  |

**Table 27 Detailed Results for Seed Index 1-600 to 1-624, Cases R1-600 to R1-624 and S1-600 to S1-624**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-600 | 241618615  | 314245639  | 105621169  | 8274041    | 259436012696699399  | 113409866663346297  | R1-600 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-600 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-601 | 118474732  | 105379638  | 732249824  | 392362605  | 127211274940970806  | 786247262037801581  | R1-601 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-601 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-602 | 905314791  | 520568230  | 686446846  | 830303321  | 972074355503087014  | 737066689333390425  | R1-602 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-602 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-603 | 511753951  | 480033378  | 967659975  | 298525433  | 549491621265980002  | 1039016986866819833 | R1-603 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-603 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-604 | 512207818  | 22170263   | 596518273  | 766354625  | 549978956788550295  | 640506619266704577  | R1-604 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-604 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-605 | 186617833  | 217376994  | 36965444   | 612372283  | 200379372613724386  | 39691343877902139   | R1-605 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-605 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-606 | 234028993  | 243316886  | 457646594  | 767234461  | 251286718056020118  | 491394289356181917  | R1-606 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-606 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-607 | 431122020  | 82055841   | 674221560  | 209129595  | 462913744203420321  | 723939887823655035  | R1-607 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-607 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-608 | 932542751  | 898034805  | 101296369  | 545600349  | 1001310155314752629 | 108766148560237405  | R1-608 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-608 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-609 | 740381807  | 243791867  | 263183417  | 133833873  | 794978912148387835  | 282591042349966481  | R1-609 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-609 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-610 | 971725176  | 804357900  | 990474933  | 423969615  | 1043381963709318924 | 1063514361609667407 | R1-610 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-610 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-611 | 1005554407 | 752664975  | 238570155  | 494297035  | 1079705823856083343 | 256162753875959755  | R1-611 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-611 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-612 | 492596916  | 883003412  | 419676758  | 119126513  | 528921911965618196  | 450624487744453105  | R1-612 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-612 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-613 | 588661486  | 676068486  | 765940753  | 635196901  | 632070458372258950  | 822422621837350373  | R1-613 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-613 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-614 | 343161441  | 357217558  | 690496614  | 1018619495 | 368466791943025942  | 741415094800803431  | R1-614 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-614 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-615 | 726785720  | 619461317  | 77333645   | 540413441  | 780380225269414597  | 83036369579281921   | R1-615 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-615 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-616 | 837709257  | 116494577  | 26642629   | 75523947   | 899483465709359345  | 28607305134139243   | R1-616 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-616 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-617 | 755319934  | 526977710  | 569629744  | 797409829  | 811018604163697326  | 611635281124622885  | R1-617 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-617 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-618 | 97728302   | 503345674  | 951740320  | 1050044761 | 104934965749248522  | 1021923388221188441 | R1-618 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-618 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-619 | 91419984   | 141236500  | 725255826  | 799405669  | 98161460511447316   | 778737514275272293  | R1-619 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-619 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-620 | 975044190  | 1021563130 | 168495782  | 236587883  | 1046945728072765690 | 180920968537574251  | R1-620 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-620 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-621 | 271558220  | 533320438  | 946566962  | 367219737  | 291583418998313718  | 1016368536683238425 | R1-621 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-621 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-622 | 268597903  | 10241550   | 512667979  | 1021452395 | 288404802300036622  | 550473051899306091  | R1-622 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-622 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-623 | 765104273  | 970102633  | 755654368  | 646929341  | 821524458611316585  | 811377700056816573  | R1-623 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-623 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-624 | 664563503  | 895384839  | 1048178210 | 702605243  | 713569628770434311  | 112547278378506283  | R1-624 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-624 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 28 Detailed Results for Seed Index 1-625 to 1-649, Cases R1-625 to R1-649 and S1-625 to S1-649**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-625 | 908445080  | 561660630  | 641751909  | 431515599  | 975435477764686550  | 689075865756657615  | R1-625 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-625 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-626 | 511481635  | 1055259592 | 999625950  | 410371393  | 549199224762661832  | 1073340191281104193 | R1-626 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-626 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-627 | 537080066  | 1052660921 | 281301134  | 807619015  | 576685330753541305  | 302044793522047431  | R1-627 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-627 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-628 | 516643743  | 77478160   | 693378974  | 250302897  | 554741995044485392  | 744510004516311473  | R1-628 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-628 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-629 | 87397469   | 492471985  | 125839750  | 1015169533 | 93842318269515441   | 135119403711873533  | R1-629 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-629 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(0)  |
| 1-630 | 611164805  | 874914566  | 170410284  | 393521899  | 656233213360218886  | 182976649564039915  | R1-630 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-630 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-631 | 247177137  | 781110505  | 601899344  | 399962219  | 265404430714588393  | 646284499890925675  | R1-631 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-631 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-632 | 8632016    | 369312794  | 608517043  | 56624079   | 9268556973949978    | 653390199742530511  | R1-632 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-632 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-633 | 538807050  | 216704685  | 789695165  | 893732075  | 578539664867763885  | 847928727764813035  | R1-633 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-633 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-634 | 698387758  | 75292272   | 518475647  | 854275831  | 749888145209482864  | 556708987763635959  | R1-634 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-634 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-635 | 541318768  | 906951785  | 1055505855 | 248245403  | 581236602224704617  | 1133340782238624923 | R1-635 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-635 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-636 | 146911720  | 275968061  | 881813521  | 520429587  | 157745258475745341  | 946840058986831891  | R1-636 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-636 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-637 | 779969481  | 761952777  | 307898839  | 298620241  | 837485853955226121  | 330603861293962577  | R1-637 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-637 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-638 | 1053178853 | 254707729  | 996097216  | 41786265   | 1130842182873155601 | 1069551241630948249 | R1-638 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-638 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-639 | 934566252  | 582085491  | 25278822   | 580645343  | 1003482872653409139 | 27142929023496671   | R1-639 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-639 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-640 | 516572399  | 70692554   | 896655931  | 720917505  | 554665390001008330  | 962776975573275649  | R1-640 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-640 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-641 | 747923774  | 656490576  | 268306922  | 855936555  | 803077037964214352  | 288092364676042283  | R1-641 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-641 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-642 | 413857924  | 996949167  | 554695689  | 558006211  | 444376563189562543  | 595599961429802947  | R1-642 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-642 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-643 | 939681990  | 872331379  | 788766388  | 172122731  | 1008975854794881139 | 846931460333134443  | R1-643 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-643 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-644 | 221014012  | 726505053  | 657472857  | 153226967  | 237311989100942941  | 705956104858898135  | R1-644 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-644 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-645 | 329129040  | 251324219  | 530194226  | 692021407  | 353399615992293179  | 569291715991529631  | R1-645 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-645 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-646 | 596695207  | 498179405  | 751429890  | 497899021  | 640696600434416973  | 806841701194618381  | R1-646 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-646 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-647 | 433392842  | 198047674  | 62429726   | 923332765  | 465352020875671482  | 67033408790392989   | R1-647 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-647 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-648 | 728149368  | 503885495  | 1031116204 | 474969799  | 781844431044652727  | 1107152594113885895 | R1-648 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-648 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-649 | 252215080  | 709306925  | 752875758  | 1037024439 | 270813880748812845  | 808394190677327031  | R1-649 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-649 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 29 Detailed Results for Seed Index 1-650 to 1-674, Cases R1-650 to R1-674 and S1-650 to S1-674**

| Case  | Seed       | Seed      | Seed       | Seed       | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order  | Order | Case | Order | Order | Order | Order |
|-------|------------|-----------|------------|------------|---------------------|---------------------|--------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|-------|
| Index | s1         | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       | Seed   | Case | 7     | 8     | 9     | 10     | Seed  | Case | Order | Order | Order | Order |
| 1-650 | 92938887   | 488011062 | 1050060764 | 1048872817 | 99792370535920950   | 1127494161097066353 | R1-650 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-650 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-651 | 709865538  | 407722299 | 83598323   | 565959047  | 762212317974583611  | 89763016387320199   | R1-651 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-651 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-652 | 415291614  | 170693615 | 321962208  | 248680857  | 445915975278957551  | 345704288725668249  | R1-652 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-652 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-653 | 420667032  | 124136485 | 998644084  | 306717437  | 451687786360482853  | 1072285920587686653 | R1-653 | ~~   | 0(0)  | 0(0)  | 0(1)  | S1-653 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-654 | 446259244  | 87409133  | 213031542  | 138571399  | 479167214716830189  | 228740876615184007  | R1-654 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-654 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-655 | 49680735   | 846973400 | 127288131  | 465552577  | 53344283863534040   | 136674590419043521  | R1-655 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-655 | ~~    | 0(0) | 0(1)  | 0(0)  | 0(0)  |       |
| 1-656 | 839608825  | 804214244 | 681281924  | 192828777  | 901523112006211044  | 731520895926818153  | R1-656 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-656 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-657 | 163114759  | 766247975 | 470559543  | 657381471  | 175143139616228391  | 505259462658807903  | R1-657 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-657 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-658 | 396379935  | 569976221 | 642595411  | 677924829  | 425609714973877661  | 689981569379094493  | R1-658 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-658 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-659 | 470589684  | 762491212 | 63165061   | 282432645  | 505291826416234828  | 67822968093643909   | R1-659 | ~~   | 0(0)  | 0(0)  | 0(1)  | S1-659 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-660 | 691965525  | 912477133 | 928935348  | 836416505  | 742992325871094733  | 997436735776011257  | R1-660 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-660 | ~~    | 0(1) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-661 | 669706179  | 793017217 | 523258060  | 580793815  | 719091534976547713  | 561844064347895255  | R1-661 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-661 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-662 | 797255610  | 870903586 | 996673815  | 93552629   | 856046693746536226  | 1070170360144691189 | R1-662 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-662 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-663 | 907752364  | 861396708 | 35611564   | 399928441  | 974691679923068644  | 38237626084781177   | R1-663 | ~~   | 0(0)  | 0(0)  | 0(1)  | S1-663 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-664 | 199970316  | 948685340 | 251926345  | 441992101  | 214716492796381724  | 270503853635945381  | R1-664 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-664 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-665 | 548158308  | 293443607 | 1305637    | 1017350809 | 588580501766117399  | 1401918071212697    | R1-665 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-665 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-666 | 337975349  | 173435195 | 812174691  | 225263163  | 362898267875731771  | 872065934346239547  | R1-666 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-666 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-667 | 555910311  | 465746782 | 451339097  | 922543893  | 596904151779294046  | 484621666177836821  | R1-667 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-667 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-668 | 502576190  | 589610782 | 253429310  | 106069729  | 539637075539181342  | 272117649680531169  | R1-668 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-668 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-669 | 1026321810 | 252501778 | 934751853  | 912131407  | 1102004652532883218 | 1003682160539731279 | R1-669 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-669 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-670 | 175007892  | 243671557 | 983045745  | 711673819  | 187913293414146565  | 1055537332023412699 | R1-670 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-670 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-671 | 72317760   | 120673679 | 454139728  | 109529687  | 77650603650667919   | 487628820003113559  | R1-671 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-671 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-672 | 838137689  | 872920112 | 593818806  | 228431589  | 899943491822924848  | 637608088108373733  | R1-672 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-672 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-673 | 188554430  | 669104563 | 593961811  | 364894279  | 202458778260584883  | 637761638694377543  | R1-673 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-673 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-674 | 136621338  | 269570158 | 337987453  | 16945177   | 146696044931010670  | 362911264290279449  | R1-674 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-674 | ~~    | 0(0) | 0(1)  | 0(0)  | 0(0)  |       |

**Table 30 Detailed Results for Seed Index 1-675 to 1-699, Cases R1-675 to R1-699 and S1-675 to S1-699**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-675 | 921472654  | 1018524293 | 180466648  | 174501569  | 989423729290605189  | 193774587969187521  | R1-675 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-675 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-676 | 559618047  | 909828453  | 290062278  | 1043030429 | 600885303438926181  | 311452000496345501  | R1-676 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-676 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-677 | 995025111  | 458377867  | 955494904  | 326050211  | 1068400078069320331 | 1025954841369715107 | R1-677 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-677 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-678 | 911149701  | 747848737  | 219039675  | 1043962547 | 978339542636643361  | 235192061206829747  | R1-678 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-678 | ~~    | 0(2)  | 0(0)  | 0(0)  |
| 1-679 | 605263676  | 877264203  | 557096250  | 254081521  | 649896924346449227  | 598177543872641521  | R1-679 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-679 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-680 | 453447205  | 372354232  | 884157267  | 557276735  | 486885229356756152  | 949356637128711743  | R1-680 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-680 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-681 | 553568665  | 140734006  | 196711716  | 857523913  | 594389828207078966  | 211217597597533897  | R1-681 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-681 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-682 | 981372391  | 803047765  | 715243372  | 252276907  | 1053740581938628949 | 767986723107467435  | R1-682 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-682 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-683 | 900836264  | 254989506  | 57170211   | 1057127661 | 967265573487695042  | 61386047694732525   | R1-683 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-683 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-684 | 87642901   | 868759245  | 981140221  | 207391221  | 94105849249150669   | 1053491290703694325 | R1-684 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-684 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-685 | 243959363  | 456865557  | 78746024   | 1026848231 | 261949371866363669  | 84552900469356007   | R1-685 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-685 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-686 | 980118106  | 159283243  | 792120041  | 896355559  | 1052393803031148587 | 850532418546650343  | R1-686 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-686 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-687 | 198844393  | 564256310  | 567623201  | 158876159  | 213507541796249142  | 609480771345334783  | R1-687 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-687 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-688 | 477364024  | 301474545  | 762333664  | 207198227  | 512565718143214321  | 818549539087161363  | R1-688 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-688 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-689 | 187956233  | 669536328  | 39818199   | 17722759   | 201816469123125320  | 42754465640377735   | R1-689 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-689 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-690 | 1050646430 | 35435512   | 880702955  | 232005093  | 1128123014162723832 | 945647597535895013  | R1-690 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-690 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-691 | 1070660457 | 442256346  | 932231867  | 487635159  | 1149612912426109914 | 1000976345751140567 | R1-691 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-691 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-692 | 6429485    | 1015116592 | 765151451  | 1060755695 | 6903607966397232    | 821575115693742319  | R1-692 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-692 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-693 | 450121319  | 930066852  | 449355033  | 650743985  | 483314087014412708  | 482491293407744177  | R1-693 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-693 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-694 | 1055736365 | 813294754  | 912387537  | 253791151  | 1133588291031524514 | 979668658427038639  | R1-694 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-694 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-695 | 832821931  | 148073871  | 354737865  | 193963977  | 894235739407216015  | 380896882400929737  | R1-695 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-695 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-696 | 649167006  | 44860430   | 1016499422 | 912207243  | 697037765147919374  | 1091457944385432971 | R1-696 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-696 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-697 | 149942908  | 1055772130 | 406941644  | 47482417   | 160999972587556322  | 436950263137601073  | R1-697 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-697 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-698 | 1036631136 | 763560961  | 975113071  | 981909447  | 1113074207547393025 | 1047019688443690951 | R1-698 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-698 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-699 | 288797887  | 934497262  | 678859502  | 362171661  | 310094370889223150  | 728919840279383309  | R1-699 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-699 | ~~    | 0(0)  | 0(0)  | 0(0)  |

Table 31 Detailed Results for Seed Index 1-700 to 1-724, Cases R1-700 to R1-724 and S1-700 to S1-724

| Case  | Seed       | Seed       | Seed      | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | 7  | 8    | 9    | Order |
|-------|------------|------------|-----------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|----|------|------|-------|
| Index | s1         | s2         | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7  | 8    | 9    | 10    |
| 1-700 | 519539837  | 896881630  | 277863076 | 1010162561 | 557851653117924318  | 298353207056653185  | R1-700 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-700 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-701 | 1045368133 | 330513357  | 101377644 | 963072777  | 1122455486209407949 | 108853417344455433  | R1-701 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-701 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-702 | 311586890  | 773483668  | 193661146 | 199939543  | 334563876376571028  | 207942072343909847  | R1-702 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-702 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-703 | 803154095  | 768183668  | 955123237 | 62333411   | 862380143686552948  | 1025555766703497699 | R1-703 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-703 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-704 | 632830609  | 631890477  | 54390502  | 34184389   | 679496693022581293  | 58401356859940037   | R1-704 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-704 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-705 | 649266587  | 257463498  | 851960965 | 549537359  | 697144689645098186  | 914786121085437519  | R1-705 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-705 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-706 | 417322995  | 953140832  | 227733153 | 114020035  | 448097154801583712  | 244526611201511107  | R1-706 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-706 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-707 | 782991294  | 1002957752 | 252360795 | 1067228235 | 840730501198638008  | 270970341396618315  | R1-707 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-707 | ~~ | 0(0) | 0(0) | 0(1)  |
| 1-708 | 215677810  | 731147075  | 362783806 | 509101651  | 231582285836872515  | 389536146081203795  | R1-708 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-708 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-709 | 259471045  | 576721351  | 355419022 | 950441371  | 278604913710207431  | 381628269917017499  | R1-709 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-709 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-710 | 785938965  | 830356146  | 569005655 | 855950001  | 843895538662128306  | 610965170721964721  | R1-710 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-710 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-711 | 807799730  | 612396000  | 225902869 | 253381193  | 867368356129303520  | 242561358860274249  | R1-711 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-711 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-712 | 773014054  | 643680468  | 829620238 | 851787339  | 830017520963274964  | 890797948429221451  | R1-712 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-712 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-713 | 653358243  | 423112783  | 917263905 | 425152389  | 701538071987368015  | 984904618869215109  | R1-713 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-713 | ~~ | 0(1) | 0(0) | 0(0)  |
| 1-714 | 104131829  | 775560662  | 996594733 | 147938203  | 111810700792476758  | 1070085446548151195 | R1-714 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-714 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-715 | 1022817261 | 376980484  | 411266963 | 95238857   | 1098241671821804548 | 441594539097799369  | R1-715 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-715 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-716 | 407727721  | 684239816  | 949987898 | 792093469  | 437794307526142920  | 1020041739168539421 | R1-716 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-716 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-717 | 920405370  | 751978060  | 72104599  | 794308573  | 988277741555172940  | 77421724443357149   | R1-717 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-717 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-718 | 178638888  | 868507194  | 751719205 | 235044395  | 191812046306958906  | 807152350547574315  | R1-718 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-718 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-719 | 105124001  | 1065929387 | 639069655 | 339076055  | 112876037645847211  | 686195817361826775  | R1-719 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-719 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-720 | 850362836  | 1048323340 | 874123496 | 328117723  | 913070143636776204  | 938582957324414427  | R1-720 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-720 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-721 | 678968232  | 392174851  | 364926784 | 346290291  | 729036588257910019  | 391837151024904307  | R1-721 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-721 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-722 | 194396367  | 332365179  | 57274536  | 715741055  | 208731510013918587  | 61498065469134719   | R1-722 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-722 | ~~ | 0(0) | 0(0) | 0(0)  |
| 1-723 | 109168252  | 906563965  | 631566177 | 593219339  | 117218518931935613  | 678139019461906187  | R1-723 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-723 | ~~ | 0(1) | 0(0) | 0(0)  |
| 1-724 | 671152026  | 773002469  | 596876333 | 491488241  | 720644001351537893  | 640891082989339633  | R1-724 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-724 | ~~ | 0(0) | 0(0) | 0(0)  |

**Table 32 Detailed Results for Seed Index 1-725 to 1-749, Cases R1-725 to R1-749 and S1-725 to S1-749**

| Case  | Seed      | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|-----------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1        | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-725 | 290209343 | 1039185489 | 656470427  | 921294955  | 311609910333847121  | 704879754610333803  | R1-725 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-725 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-726 | 760452994 | 868541987  | 931897468  | 473010407  | 816530185712363043  | 1000617287544312039 | R1-726 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-726 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-727 | 16369858  | 184649059  | 757843663  | 246916635  | 17577001372190051   | 813728437263377947  | R1-727 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-727 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-728 | 939816467 | 600779562  | 827399591  | 375440361  | 1009120248102595370 | 888413546392634345  | R1-728 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-728 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-729 | 816970402 | 917146901  | 694402186  | 59407437   | 877215290514640149  | 745608669844634701  | R1-729 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-729 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-730 | 792010168 | 405620475  | 1019591489 | 996684017  | 850414442820486907  | 1094778026130419953 | R1-730 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-730 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-731 | 749344007 | 983433915  | 444027431  | 721369717  | 804602001863082683  | 476770824389343861  | R1-731 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-731 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-732 | 172580367 | 1050036072 | 646059149  | 395049177  | 185306759099205480  | 693700729454196953  | R1-732 | ~~    | 0(1)  | 0(1)  | 0(1)  | S1-732 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-733 | 329562537 | 765623325  | 253010766  | 643693915  | 353865080366070813  | 271668242020171099  | R1-733 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-733 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-734 | 152292697 | 135172828  | 289192675  | 523645025  | 163523038393832156  | 310518270865584225  | R1-734 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-734 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-735 | 776306927 | 592117193  | 835087570  | 872378419  | 833553216372932041  | 896668451483906099  | R1-735 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-735 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-736 | 25405399  | 1046942490 | 231598271  | 494540199  | 27278840508650266   | 248676750433326503  | R1-736 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-736 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-737 | 108292148 | 130510191  | 926207557  | 10821991   | 116277808648908143  | 994507791666585959  | R1-737 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-737 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-738 | 154518733 | 789066693  | 28740739   | 523010937  | 165913227002655685  | 30860134039978873   | R1-738 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-738 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-739 | 714144664 | 615837728  | 644657322  | 777872993  | 766806994739064864  | 692195529557108321  | R1-739 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-739 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-740 | 836849419 | 1030132269 | 729515795  | 351679553  | 898560222600532525  | 783311620711789633  | R1-740 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-740 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-741 | 659549812 | 714084685  | 371859284  | 348469981  | 708186218869821773  | 399280866221963997  | R1-741 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-741 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-742 | 395831536 | 757311330  | 326385724  | 1001959401 | 425020876218672994  | 350454003617279977  | R1-742 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-742 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-743 | 509855990 | 375461813  | 782136420  | 309854727  | 547453701055387573  | 839812586537484807  | R1-743 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-743 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-744 | 192822590 | 292837733  | 842852408  | 447779095  | 207041679787841893  | 905005882376491287  | R1-744 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-744 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-745 | 591706581 | 372738113  | 696980263  | 584493305  | 635340103928481857  | 748376859470113017  | R1-745 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-745 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-746 | 399677304 | 1071179035 | 744933125  | 527562839  | 429150238479541531  | 799865852923082839  | R1-746 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-746 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-747 | 906463848 | 431792561  | 996164916  | 706917941  | 973308145973371313  | 1069623934617564725 | R1-747 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-747 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-748 | 218938635 | 79863339   | 951581174  | 197733855  | 235083569368833579  | 1021752505652555231 | R1-748 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-748 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-749 | 402903089 | 946778695  | 213826081  | 666337115  | 432613898624873031  | 229594006898048859  | R1-749 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-749 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

Table 33 Detailed Results for Seed Index 1-750 to 1-774, Cases R1-750 to R1-774 and S1-750 to S1-774

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order  | Order | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        |      | 7     | 8     | 9     | 10     |       |      | 7     | 8     | 9     | 10    |
| 1-750 | 547783251  | 144079006  | 621945896  | 1070622117 | 588177787229468830  | 667809321870976421  | R1-750 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-750 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-751 | 954666459  | 103532793  | 906910004  | 66757425   | 1025065305101814009 | 973787201965564721  | R1-751 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-751 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-752 | 380181891  | 746700160  | 669938417  | 263707267  | 408217197840809344  | 719340898100959875  | R1-752 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-752 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-753 | 262584647  | 443188847  | 929945557  | 688586281  | 281948118267364975  | 998521439282462249  | R1-753 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-753 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-754 | 283707047  | 100366689  | 811069422  | 524976421  | 304628122137470417  | 870879161093882149  | R1-754 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-754 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-755 | 837275763  | 663789119  | 885339293  | 594528511  | 899018005618400831  | 950625827919218943  | R1-755 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-755 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-756 | 337522195  | 362226526  | 318577791  | 445980723  | 362411697662010206  | 342070298840211507  | R1-756 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-756 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-757 | 558345934  | 317180578  | 230854048  | 222331999  | 599519381913324194  | 247877646799635551  | R1-757 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-757 | ~~    | 0(0) | 0(0)  | 0(1)  | 0(1)  |       |
| 1-758 | 747644837  | 1070415293 | 598968435  | 648463679  | 802777532054977981  | 643137460563789119  | R1-758 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-758 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-759 | 75055765   | 21394949   | 541754068  | 253160743  | 80590514034210309   | 581704001386900775  | R1-759 | ~~   | 0(0)  | 0(0)  | 0(1)  | S1-759 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-760 | 953923300  | 530497955  | 530918944  | 98737369   | 1024267344628597155 | 570069875425451225  | R1-760 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-760 | ~~    | 0(1) | 0(0)  | 0(1)  | 0(1)  |       |
| 1-761 | 321226261  | 776604679  | 100380463  | 1045807109 | 344914072179444743  | 107782702481391621  | R1-761 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-761 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-762 | 583682316  | 376436187  | 133792193  | 43362297   | 626724114994820571  | 143658273392142329  | R1-762 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-762 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-763 | 789061542  | 224259002  | 28174764   | 763158093  | 847248379579591610  | 30252423251287629   | R1-763 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-763 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-764 | 606427138  | 756653249  | 498201191  | 855339585  | 651146182035872961  | 534939456398651969  | R1-764 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-764 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-765 | 764427029  | 473265067  | 798398599  | 632121239  | 820797272906625963  | 857273968601425815  | R1-765 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-765 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-766 | 307471446  | 441720183  | 1001800826 | 571819525  | 330144951697677687  | 1075675446765766149 | R1-766 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-766 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-767 | 953795054  | 321194026  | 1039131062 | 629387421  | 1024129641325332522 | 1115758482516324509 | R1-767 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-767 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-768 | 433562730  | 103269957  | 756717215  | 172221965  | 465534436631889477  | 812518922858522125  | R1-768 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-768 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-769 | 768453643  | 288466852  | 473123522  | 349898241  | 825120816582731684  | 508012513839482369  | R1-769 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-769 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-770 | 689569171  | 60544905   | 154303628  | 971734179  | 740419259504252809  | 165682259950271651  | R1-770 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-770 | ~~    | 0(0) | 0(0)  | 0(1)  | 0(1)  |       |
| 1-771 | 1005772075 | 8427471768 | 348866604  | 514528429  | 1079939543181506568 | 374592664226174125  | R1-771 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-771 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-772 | 877547641  | 856213288  | 2105648    | 204891941  | 942259605550450472  | 2260922529113893    | R1-772 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-772 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-773 | 548373678  | 155585221  | 12593484   | 747498405  | 588811753404893893  | 13522151228173221   | R1-773 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-773 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-774 | 451240109  | 1054068136 | 731658592  | 744271173  | 484515378753686952  | 785612431863622981  | R1-774 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-774 | ~~    | 0(0) | 0(0)  | 0(1)  | 0(1)  |       |

Table 34 Detailed Results for Seed Index 1-775 to 1-799, Cases R1-775 to R1-799 and S1-775 to S1-799

| Case  | Seed       | Seed       | Seed       | Seed      | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|-----------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4        | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-775 | 905453682  | 501535144  | 512103706  | 112693299 | 972223488559731112  | 549867167470293043  | R1-775 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-775 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-776 | 1039879552 | 459295070  | 44019064   | 170257829 | 1116562167364077918 | 47265110240390565   | R1-776 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-776 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-777 | 736597620  | 820043359  | 605705289  | 847027113 | 790915672872902239  | 650371102664334249  | R1-777 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-777 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-778 | 480311294  | 460432134  | 35427293   | 672944063 | 515730325367792390  | 38039766878146495   | R1-778 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-778 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-779 | 317221923  | 557397513  | 501691929  | 895865509 | 340614446772205065  | 538687607826404005  | R1-779 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-779 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-780 | 145292485  | 1001212432 | 1006003177 | 127058319 | 156006618858605072  | 1080187686348833167 | R1-780 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-780 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-781 | 40409276   | 621584782  | 342337358  | 546820889 | 43389130340344206   | 367581939749081881  | R1-781 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-781 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-782 | 238936243  | 81812805   | 833587452  | 447089231 | 256555837460340037  | 895057711621081679  | R1-782 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-782 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-783 | 291380852  | 366546360  | 117986298  | 947223561 | 312867807871700408  | 126686823768751113  | R1-783 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-783 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-784 | 464552758  | 474250987  | 180975428  | 38524181  | 498809726193401579  | 194320886198424853  | R1-784 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-784 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-785 | 67457526   | 90442026   | 531425865  | 193689869 | 72431967100209450   | 570614177799567629  | R1-785 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-785 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-786 | 880940403  | 819166233  | 396190403  | 672816537 | 945902555971681305  | 425406206641331609  | R1-786 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-786 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-787 | 134131998  | 180734151  | 304229943  | 242147029 | 144023136370018503  | 326664414154383061  | R1-787 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-787 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-788 | 1066246396 | 444695591  | 120799192  | 367117879 | 1144873350519161895 | 129707145122924087  | R1-788 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-788 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-789 | 17341716   | 877043545  | 952630151  | 196235465 | 18620526646173529   | 1022878836128370889 | R1-789 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-789 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-790 | 700248226  | 510595759  | 1039548886 | 37672633  | 751885807948599983  | 1116207117028480697 | R1-790 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-790 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-791 | 684901117  | 300977614  | 161394606  | 493159753 | 735406974928195022  | 173296139123361097  | R1-791 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-791 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-792 | 245006856  | 975236729  | 953536042  | 840197969 | 263074109429182073  | 1023851529827018577 | R1-792 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-792 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-793 | 107253197  | 21309082   | 450515733  | 793853719 | 115162243397920410  | 483737585685970711  | R1-793 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-793 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-794 | 412546238  | 734123878  | 943139969  | 587753555 | 442968150808581990  | 1012688831189117011 | R1-794 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-794 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-795 | 107535453  | 90241213   | 666333522  | 556082717 | 115465313539127485  | 715470171860706845  | R1-795 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-795 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-796 | 635625510  | 833874355  | 466452157  | 234191845 | 682497695322204595  | 500849190100106213  | R1-796 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-796 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-797 | 735982624  | 435856576  | 44483549   | 570662421 | 790255325561922752  | 47763847611915797   | R1-797 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-797 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-798 | 955110433  | 476429389  | 890438901  | 435981739 | 1025542018927279181 | 956101490156277163  | R1-798 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-798 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-799 | 1057788767 | 154740164  | 625350495  | 418829725 | 1135792040240031172 | 671464981559432605  | R1-799 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-799 | ~~    | 0(0)  | 0(0)  | 0(0)  |

**Table 35 Detailed Results for Seed Index 1-800 to 1-824, Cases R1-800 to R1-824 and S1-800 to S1-824**

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order  | Order | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       | Seed   | Case | 7     | 8     | 9     | 10     | Seed  | Case | Order | Order | Order | Order |
| 1-800 | 116722943  | 125752538  | 263302893  | 852388491  | 125330305845220570  | 282719329446685323  | R1-800 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-800 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-801 | 205170667  | 848550959  | 1065371668 | 660267107  | 220300327064427567  | 1143934118696509539 | R1-801 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-801 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-802 | 867104080  | 987759382  | 841141761  | 880274559  | 931045917444801302  | 903169089578986623  | R1-802 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-802 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-803 | 843228374  | 491007711  | 473062975  | 715424227  | 905409572838321887  | 507947502358790627  | R1-803 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-803 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-804 | 386057162  | 355410979  | 469515475  | 92731653   | 414525721649554467  | 504138402615458053  | R1-804 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-804 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-805 | 278599305  | 394349299  | 835208090  | 307093727  | 299143726310181619  | 896797858283249887  | R1-805 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-805 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-806 | 1024205606 | 68110516   | 963167284  | 903201     | 1099732395605575860 | 1034192996340189217 | R1-806 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-806 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-807 | 530092955  | 597431910  | 585811706  | 371791679  | 569182976988681830  | 629010530092783423  | R1-807 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-807 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-808 | 914195465  | 1016588468 | 204016221  | 182134527  | 981609907098216628  | 219060749444261631  | R1-808 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-808 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-809 | 493096115  | 593195374  | 1029511496 | 106242343  | 529457922520609134  | 1105429551650251047 | R1-809 | ~~   | 0(0)  | 0(1)  | 0(0)  | S1-809 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-810 | 197629962  | 782645552  | 298385971  | 111475147  | 212203556657576240  | 320389496869026251  | R1-810 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-810 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-811 | 684083945  | 259382130  | 950814881  | 648248981  | 734529543132797810  | 1020929705259531925 | R1-811 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-811 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-812 | 344870269  | 299349600  | 947000322  | 1072887165 | 370301631978780256  | 1016833854145754493 | R1-812 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-812 | ~~    | 0(1) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-813 | 151933085  | 580129634  | 2476648    | 691277093  | 163136908393976674  | 2659281232203045    | R1-813 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-813 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-814 | 126300501  | 860838756  | 817312835  | 772827029  | 135614131176692580  | 877582975004338069  | R1-814 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-814 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-815 | 613385561  | 115847047  | 870589822  | 43240999   | 658617731199250311  | 934788703473356327  | R1-815 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-815 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-816 | 960241894  | 979203972  | 875959262  | 441865917  | 1031051883723978628 | 940554096171439805  | R1-816 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-816 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-817 | 442161118  | 876644537  | 337673281  | 483193849  | 474766886219843769  | 362573925140198393  | R1-817 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-817 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-818 | 297356324  | 251464453  | 615459280  | 243360717  | 319283921961159429  | 660844370148287437  | R1-818 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-818 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-819 | 213930437  | 162931782  | 307866253  | 368916813  | 229706057796428870  | 330568872413182285  | R1-819 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-819 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-820 | 51186018   | 588078379  | 604915210  | 773581265  | 54960568918695211   | 649522761724324305  | R1-820 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-820 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-821 | 885700990  | 291962890  | 926660878  | 141747469  | 951014196813168650  | 994994541514908941  | R1-821 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-821 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-822 | 560446996  | 1002394039 | 1051565405 | 896308093  | 601775380742754743  | 1129109756916306813 | R1-822 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-822 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-823 | 308915642  | 1050562350 | 139172966  | 132780677  | 331695645953773358  | 149435834497110661  | R1-823 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-823 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |
| 1-824 | 538532217  | 10142001   | 418549969  | 686033341  | 578244564974485809  | 449414607835236797  | R1-824 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-824 | ~~    | 0(0) | 0(0)  | 0(0)  | 0(0)  |       |

**Table 36 Detailed Results for Seed Index 1-825 to 1-849, Cases R1-825 to R1-849 and S1-825 to S1-849**

| Case  | Seed       | Seed       | Seed      | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|------------|-----------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-825 | 81974885   | 273823883  | 129798358 | 342758579  | 88019862815914123   | 139369926013883571  | R1-825 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-825 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-826 | 1026810886 | 559406214  | 336039522 | 994097113  | 1102529794196102278 | 360819690282465241  | R1-826 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-826 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-827 | 417863268  | 943738555  | 262356317 | 1034120073 | 448677268508659387  | 281702951387622281  | R1-827 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-827 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-828 | 763165009  | 792054218  | 559616128 | 676154955  | 819442189568690634  | 600883242694692427  | R1-828 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-828 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-829 | 1052671554 | 178814411  | 300528552 | 113637887  | 1130297474643688907 | 322690075702196735  | R1-829 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-829 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-830 | 640085485  | 99353492   | 207202959 | 754971965  | 687286556279178132  | 222482483889829181  | R1-830 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-830 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-831 | 434097518  | 352341703  | 847212037 | 818532585  | 466108661123534535  | 909686998741668073  | R1-831 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-831 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-832 | 837683913  | 172604569  | 53995510  | 265589241  | 899456252852681881  | 57977237660799481   | R1-832 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-832 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-833 | 441841100  | 45513418   | 785894522 | 171043021  | 474423268677679818  | 843847817694931149  | R1-833 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-833 | ~~   | 0(1)  | 0(0)  | 0(0)  | 0(0)  |
| 1-834 | 815601644  | 489194457  | 816644067 | 324622095  | 875745597375153113  | 876864890383980303  | R1-834 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-834 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-835 | 826244842  | 369577664  | 7787221   | 489765135  | 887173644089249472  | 8361465370196239    | R1-835 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-835 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-836 | 718327530  | 975877422  | 557037621 | 746470827  | 771298313267492142  | 598114591955631531  | R1-836 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-836 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-837 | 619544682  | 482387266  | 29927177  | 221507045  | 665231037382567234  | 32134061840657893   | R1-837 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-837 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-838 | 619110030  | 211937562  | 693725022 | 173306179  | 664764333080832282  | 744881570650026307  | R1-838 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-838 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-839 | 1030847102 | 693720902  | 156480630 | 508354049  | 1106863648260314950 | 168019797585223169  | R1-839 | ~~    | 0(0)  | 0(1)  | 0(0)  | S1-839 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-840 | 5833435    | 669041913  | 663560917 | 762307259  | 6263603806127353    | 712493110116999867  | R1-840 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-840 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-841 | 40270762   | 563069135  | 995538347 | 39216609   | 43240402006819023   | 1068951160608941537 | R1-841 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-841 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-842 | 396297160  | 725495116  | 217176297 | 467169663  | 425520836149914956  | 233191273737515391  | R1-842 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-842 | ~~   | 0(0)  | 0(0)  | 0(1)  | 0(0)  |
| 1-843 | 264224278  | 57818794   | 915181355 | 1030754109 | 283708658262621866  | 982668498439245629  | R1-843 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-843 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-844 | 282301629  | 338754830  | 452267442 | 342787241  | 303119066379386126  | 485618468451681449  | R1-844 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-844 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-845 | 686456437  | 1008821155 | 525915359 | 746732399  | 737076987769742243  | 564697317589007215  | R1-845 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-845 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-846 | 671812833  | 292641720  | 503625438 | 1048000439 | 721353536984669112  | 540763697458919351  | R1-846 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-846 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-847 | 38122879   | 262144003  | 994387943 | 73839719   | 40934129895735299   | 1067715923754267751 | R1-847 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-847 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-848 | 631757803  | 778165289  | 138650071 | 921796453  | 678344776497617961  | 148874381055065957  | R1-848 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-848 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-849 | 747184893  | 17743982   | 289247579 | 1039595115 | 802283669892808814  | 310577224102639211  | R1-849 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-849 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 37 Detailed Results for Seed Index 1-850 to 1-874, Cases R1-850 to R1-874 and S1-850 to S1-874**

| Case  | Seed      | Seed      | Seed      | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|-----------|-----------|-----------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1        | s2        | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-850 | 140160655 | 101571554 | 771516969 | 337613775  | 150496357454306274  | 828410037878625231  | R1-850 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-850 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-851 | 172684896 | 127404490 | 391185336 | 280678413  | 185418995335694794  | 420032056479371277  | R1-851 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-851 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-852 | 652599062 | 959011341 | 125170010 | 121481095  | 700722908131580429  | 134400274968979335  | R1-852 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-852 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-853 | 844767575 | 880468961 | 452074948 | 771162763  | 907062277717025761  | 485411780021387915  | R1-853 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-853 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-854 | 400336964 | 303644923 | 147683413 | 753472709  | 429858542243627259  | 158573858002638021  | R1-854 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-854 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-855 | 131718147 | 632942761 | 696896139 | 181383883  | 141431284046622889  | 748286531609801419  | R1-855 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-855 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-856 | 65266850  | 539426718 | 522932957 | 1034733469 | 70079747105161118   | 561494988113627037  | R1-856 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-856 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-857 | 522642734 | 711335577 | 469301692 | 32308619   | 561183363216842393  | 503908854806674827  | R1-857 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-857 | ~~    | 0(0)  | 0(0)  | 0(1)  |
| 1-858 | 738178533 | 924159236 | 634919094 | 415614697  | 792613165385223428  | 681739186499602153  | R1-858 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-858 | ~~    | 0(0)  | 0(1)  | 0(0)  |
| 1-859 | 534839848 | 742777237 | 944148077 | 411686627  | 574279914682179989  | 1013771278735759075 | R1-859 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-859 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-860 | 744886564 | 337121805 | 202815612 | 526351293  | 799815858239574541  | 217771605690907581  | R1-860 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-860 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-861 | 267748342 | 382111906 | 184634194 | 949754873  | 287492593494167714  | 198249457188084729  | R1-861 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-861 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-862 | 826647838 | 966942814 | 113591802 | 774256881  | 887606358346719326  | 121968269445183729  | R1-862 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-862 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-863 | 664078927 | 897710823 | 433086895 | 219359421  | 713049319254653671  | 465023512807155901  | R1-863 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-863 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-864 | 989136297 | 80152778  | 140787304 | 947042233  | 1062077011805538506 | 151169217540044729  | R1-864 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-864 | ~~    | 0(1)  | 0(0)  | 0(0)  |
| 1-865 | 838482564 | 418854294 | 673670877 | 185718027  | 900313798080411030  | 723348596431377675  | R1-865 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-865 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-866 | 88463662  | 537706408 | 824188184 | 289818605  | 94987134331305896   | 884965324297226221  | R1-866 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-866 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-867 | 320813002 | 255496646 | 543357640 | 325438421  | 344470338185892294  | 583425823783373781  | R1-867 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-867 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-868 | 227128100 | 764392194 | 436528920 | 138075453  | 243876941140046594  | 468719358927625533  | R1-868 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-868 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-869 | 743168506 | 942349816 | 510817167 | 22047141   | 797971108114144760  | 548485756647139749  | R1-869 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-869 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-870 | 636341639 | 589395234 | 806983100 | 549963273  | 683266632736404770  | 866491506281137673  | R1-870 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-870 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-871 | 195466637 | 19443151  | 425642996 | 1063400301 | 209880703362969039  | 457030687961265005  | R1-871 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-871 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-872 | 823803640 | 889091256 | 118037739 | 284082905  | 884552423920530616  | 126742057458778841  | R1-872 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-872 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-873 | 362962843 | 266540820 | 38615743  | 953032173  | 389728385353586452  | 41463339276967405   | R1-873 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-873 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-874 | 792770133 | 39908801  | 781191199 | 574116997  | 851230448660051393  | 838797663481123973  | R1-874 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-874 | ~~    | 0(0)  | 0(1)  | 0(0)  |

Table 38 Detailed Results for Seed Index 1-875 to 1-899, Cases R1-875 to R1-899 and S1-875 to S1-899

| Case  | Seed       | Seed       | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Case   | Order | Order | Order | Order |
|-------|------------|------------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7     | 8     | 9     | 10    |
| 1-875 | 335202830  | 476690552  | 360930186  | 415835469  | 359921298570852472  | 387545836668134733  | R1-875 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-875 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-876 | 800032298  | 853756971  | 311193223  | 626186913  | 859028139767188523  | 334141179506645665  | R1-876 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-876 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-877 | 207842914  | 915737610  | 29519121   | 329159091  | 223169630499572746  | 31695915154575795   | R1-877 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-877 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-878 | 494052511  | 864908323  | 837810521  | 363969753  | 530484845177828387  | 899592197348900057  | R1-878 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-878 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-879 | 293639794  | 865232732  | 594327341  | 1034775511 | 315293328873776988  | 638154124213185495  | R1-879 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-879 | ~~    | 0(1)  | 0(0)  | 0(1)  |
| 1-880 | 499712733  | 459996563  | 587743601  | 613533819  | 536562461867441555  | 631084886795602043  | R1-880 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-880 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-881 | 272679335  | 848475307  | 338896384  | 779628391  | 292787207378482347  | 363887222282792807  | R1-881 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-881 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-882 | 471922814  | 430511217  | 44498465   | 621856251  | 506723263522083953  | 47779863596156411   | R1-882 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-882 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-883 | 977530976  | 535719192  | 625305296  | 759104015  | 1049615893722459416 | 671416449843003919  | R1-883 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-883 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-884 | 889861654  | 1033165271 | 589967213  | 1017717685 | 955481676506782167  | 633472472404534197  | R1-884 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-884 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-885 | 10215973   | 1028631217 | 413586278  | 815620275  | 10969318511585969   | 444084885336711347  | R1-885 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-885 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-886 | 702852731  | 252903839  | 736959232  | 900763179  | 754682373640225183  | 791303950882082347  | R1-886 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-886 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-887 | 235216359  | 931771004  | 436625087  | 633502371  | 252561643279069820  | 468822617953041059  | R1-887 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-887 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-888 | 389983083  | 86405914   | 767823576  | 1008871575 | 418741146955969306  | 824444288013314199  | R1-888 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-888 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-889 | 511569124  | 592839651  | 972301288  | 150264135  | 549293164898681827  | 1044000558604933447 | R1-889 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-889 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-890 | 242547803  | 423121467  | 960232221  | 1031638207 | 260433720823534139  | 1031041497471749311 | R1-890 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-890 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-891 | 48111845   | 676641014  | 867920876  | 757622051  | 51659700882946294   | 931922945241539875  | R1-891 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-891 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-892 | 436609066  | 938276421  | 1027916170 | 357111891  | 468805415840052805  | 1103716583652005971 | R1-892 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-892 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-893 | 1044302997 | 417339049  | 214635794  | 734185717  | 1121311805224785577 | 230463429679433973  | R1-893 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-893 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-894 | 509804383  | 566388297  | 629152547  | 220361887  | 547398288652002889  | 675547403610387615  | R1-894 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-894 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-895 | 38251073   | 12082719   | 334734385  | 790667975  | 41071776905059871   | 359418309896086215  | R1-895 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-895 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-896 | 144309426  | 1049381769 | 393381655  | 757293641  | 154951067343014793  | 422390336525132361  | R1-896 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-896 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-897 | 1027923829 | 833491265  | 1005319285 | 22176565   | 1103724807917015361 | 1079453362800452405 | R1-897 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-897 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-898 | 368760875  | 491109373  | 705303721  | 130549069  | 395953975033445373  | 757314103991076173  | R1-898 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-898 | ~~    | 0(0)  | 0(0)  | 0(0)  |
| 1-899 | 917277472  | 309161569  | 833014808  | 903584085  | 984919186208550497  | 894442840264513877  | R1-899 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-899 | ~~    | 0(0)  | 0(0)  | 0(0)  |

Table 39 Detailed Results for Seed Index 1-900 to 1-924, Cases R1-900 to R1-924 and S1-900 to S1-924

| Case  | Seed       | Seed       | Seed      | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order |        | Case | Order | Order | Order | Order |
|-------|------------|------------|-----------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3        | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        | 7    | 8     | 9     | 10    |       |
| 1-900 | 586481604  | 298588758  | 256923162 | 1062797295 | 62972982751999454   | 275869145656524783  | R1-900 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-900 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-901 | 470339777  | 482685648  | 367048392 | 808513555  | 505023490538418896  | 394115210730860563  | R1-901 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-901 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-902 | 66531410   | 1072172471 | 126895479 | 927190943  | 71437558598864311   | 136252984006004639  | R1-902 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-902 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-903 | 651271827  | 939219537  | 730654943 | 944629807  | 699297800382011985  | 784534772156065839  | R1-903 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-903 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-904 | 42283215   | 549370016  | 700131852 | 532937593  | 45401256948054176   | 751760852339915641  | R1-904 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-904 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-905 | 56750339   | 104289440  | 943348739 | 1011249385 | 60935212614767776   | 1012912996693209321 | R1-905 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-905 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-906 | 49937173   | 257113704  | 725884181 | 698879093  | 53619631479537256   | 779412205218565237  | R1-906 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-906 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-907 | 143822189  | 563505057  | 203514620 | 789910099  | 154427900112037793  | 218522160079376979  | R1-907 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-907 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-908 | 745989040  | 575692000  | 671778909 | 997024501  | 800999633069300960  | 721317112071414517  | R1-908 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-908 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-909 | 247059209  | 436025395  | 120848542 | 788703789  | 265277806143682611  | 129760134703524397  | R1-909 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-909 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-910 | 147494384  | 217902587  | 319658911 | 416370169  | 158370889123819003  | 343231142571363833  | R1-910 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-910 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-911 | 361854147  | 303695137  | 901727192 | 640797951  | 388537932125439265  | 968222200529276159  | R1-911 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-911 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-912 | 985352570  | 525349139  | 745125959 | 1037400185 | 1058014266320236819 | 800072907363809401  | R1-912 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-912 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-913 | 213064770  | 191354067  | 604499938 | 195427165  | 228776554961294547  | 649076866231434077  | R1-913 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-913 | ~~   | 0(0)  | 0(0)  | 0(2)  |       |
| 1-914 | 833423452  | 302639495  | 741244607 | 500681829  | 894881617817495943  | 795905336851024997  | R1-914 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-914 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-915 | 1057988779 | 150785496  | 169785033 | 986157673  | 1136006801485778392 | 182305292007477865  | R1-915 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-915 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-916 | 417465661  | 245831387  | 269317669 | 564688351  | 448250340545337051  | 289177645712176607  | R1-916 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-916 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-917 | 263267937  | 672195183  | 611828215 | 407980201  | 282681795547292271  | 656945543956744361  | R1-917 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-917 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-918 | 456394030  | 258197929  | 109461187 | 768748103  | 490049358493108649  | 117533055355333191  | R1-918 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-918 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-919 | 196895363  | 228749596  | 667484725 | 721721771  | 211414786433511708  | 716706266835360171  | R1-919 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-919 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-920 | 708907949  | 965692139  | 616133020 | 43310589   | 761184115173051115  | 661567792764739069  | R1-920 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-920 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-921 | 975201220  | 577984516  | 173189523 | 17266563   | 1047114337307809796 | 185960834340976515  | R1-921 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-921 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-922 | 564116948  | 902894109  | 239690488 | 442635873  | 605715961597727261  | 257365702223205985  | R1-922 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-922 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-923 | 892440736  | 369643672  | 462396421 | 371129097  | 958250944054186136  | 496494376866741001  | R1-923 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-923 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-924 | 15775948   | 1070286180 | 653702829 | 73443451   | 16939296251135332   | 701908068037863547  | R1-924 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-924 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

**Table 40 Detailed Results for Seed Index 1-925 to 1-949, Cases R1-925 to R1-949 and S1-925 to S1-949**

| Case  | Seed       | Seed       | Seed       | Seed      | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|------------|------------|-----------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3         | s4        | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-925 | 126178406  | 814898164  | 1047264412 | 729158023 | 135483032622750708  | 1124491600680325511 | R1-925 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-925 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-926 | 564585877  | 557795317  | 878190804  | 482385031 | 606219469932414965  | 942950196189371527  | R1-926 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-926 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-927 | 66390517   | 185444278  | 599359958  | 673541927 | 71286275005327286   | 643557855209025319  | R1-927 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-927 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-928 | 1033283761 | 74618421   | 364767147  | 404929521 | 1109479990320338485 | 391665742159985649  | R1-928 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-928 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-929 | 717835640  | 443550536  | 400743931  | 265350179 | 770770149869357896  | 430295519694220323  | R1-929 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-929 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-930 | 1011800612 | 86520563   | 838369256  | 671318679 | 1086412634739716851 | 900192134794281623  | R1-930 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-930 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-931 | 264927396  | 309332256  | 215539400  | 588222799 | 284463625717942560  | 231433669088088399  | R1-931 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-931 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-932 | 852353638  | 481496115  | 568362926  | 47634123  | 915207750440651827  | 610275044904851147  | R1-932 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-932 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-933 | 386510039  | 403330211  | 81752866   | 930236679 | 415011994673501347  | 87781472386304263   | R1-933 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-933 | ~~   | 0(0)  | 0(1)  | 0(0)  | 0(0)  |
| 1-934 | 155191944  | 569898736  | 962033899  | 875080993 | 166636081590564592  | 1032976034337172769 | R1-934 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-934 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-935 | 977996361  | 260859160  | 524157455  | 656180575 | 1050115596786361624 | 562809782451078495  | R1-935 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-935 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-936 | 656164696  | 184553893  | 990439142  | 260814949 | 704551477711999397  | 1063475931152889957 | R1-936 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-936 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-937 | 328082128  | 811935661  | 963540692  | 107054835 | 352275503352457133  | 1034593940233357043 | R1-937 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-937 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-938 | 106496841  | 357681953  | 106111240  | 707552967 | 114350112663259937  | 113936077092054727  | R1-938 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-938 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-939 | 541753351  | 620289211  | 1060967513 | 171462469 | 581703231881141435  | 1139205192784826181 | R1-939 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-939 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-940 | 367974186  | 1005938102 | 842090306  | 752579271 | 395109274666493366  | 904187581889737415  | R1-940 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-940 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-941 | 906540641  | 727754201  | 928675190  | 34326447  | 973390602125223385  | 997157392448473007  | R1-941 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-941 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-942 | 441942669  | 191191788  | 699961356  | 594261911 | 474532327706680044  | 751577783715215255  | R1-942 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-942 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-943 | 742800355  | 656543400  | 500232120  | 652878219 | 797575808702090920  | 537120149605065099  | R1-943 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-943 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-944 | 573927266  | 449811765  | 112752109  | 474323877 | 616249709887984949  | 121066655651830693  | R1-944 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-944 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-945 | 595910404  | 477201809  | 499197329  | 788931575 | 639853924608738705  | 536009051365319671  | R1-945 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-945 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(1)  |
| 1-946 | 192857298  | 227752802  | 495280444  | 253070069 | 207078947153984354  | 531803327585159925  | R1-946 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-946 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-947 | 162236376  | 401503723  | 959022172  | 528577389 | 174199982686893547  | 1029742216748299117 | R1-947 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-947 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-948 | 329389654  | 338651399  | 614263034  | 426787667 | 353679448231340295  | 659559910969721683  | R1-948 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-948 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-949 | 259022421  | 323179123  | 195145844  | 427299869 | 278123207104615027  | 209536254909879325  | R1-949 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-949 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |

**Table 41 Detailed Results for Seed Index 1-950 to 1-974, Cases R1-950 to R1-974 and S1-950 to S1-974**

| Case  | Seed       | Seed       | Seed      | Seed      | Seed                | Seed                | Seed   | Case | Order | Order | Order | Order  | Order | Case | Order | Order | Order | Order |
|-------|------------|------------|-----------|-----------|---------------------|---------------------|--------|------|-------|-------|-------|--------|-------|------|-------|-------|-------|-------|
| Index | s1         | s2         | s3        | s4        | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7    | 8     | 9     | 10    |        | 7     | 8    | 9     | 10    |       |       |
| 1-950 | 1006439352 | 443478385  | 75917972  | 780568543 | 1080656026005336433 | 81516302510229471   | R1-950 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-950 | ~~    | 0(1) | 0(0)  | 0(0)  |       |       |
| 1-951 | 1024549694 | 952240099  | 877885454 | 733383521 | 1100101858166441955 | 942622329374411617  | R1-951 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-951 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-952 | 573055052  | 143415471  | 98812431  | 538417639 | 615313176930310319  | 106099040434231783  | R1-952 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-952 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-953 | 907493224  | 703696732  | 862836101 | 75587363  | 974413430309097308  | 926463208976375587  | R1-953 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-953 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-954 | 976942709  | 816233298  | 645654324 | 964065943 | 1048984247121394514 | 693266052489312919  | R1-954 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-954 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-955 | 419362709  | 739714088  | 441554991 | 373458931 | 450287280818955304  | 474116061806102515  | R1-955 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-955 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-956 | 802670695  | 716458339  | 323775527 | 676628643 | 861861096837106019  | 347651325604169891  | R1-956 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-956 | ~~    | 0(1) | 0(0)  | 0(0)  |       |       |
| 1-957 | 1024058155 | 132050803  | 183647245 | 308488071 | 1099574071363825523 | 197189728127362951  | R1-957 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-957 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-958 | 990071996  | 61235200   | 473158    | 32190655  | 1063081710937595904 | 508049566150847     | R1-958 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-958 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-959 | 1003806726 | 804869152  | 992135956 | 755306749 | 1077829265723577376 | 1065297871806730493 | R1-959 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-959 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-960 | 795752229  | 217722515  | 787908308 | 878755701 | 854432450036248211  | 846010104655429493  | R1-960 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-960 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-961 | 556597927  | 817328223  | 925844198 | 951451987 | 597642474188927071  | 994117638851789139  | R1-961 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-961 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-962 | 680025931  | 492263918  | 709437839 | 555201425 | 730172284011502062  | 761753079817679761  | R1-962 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-962 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-963 | 295804584  | 996448788  | 897020093 | 717003167 | 317617754568170004  | 963167991539472799  | R1-963 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-963 | ~~    | 0(0) | 0(1)  | 0(0)  |       |       |
| 1-964 | 1023169097 | 7307478    | 912557707 | 263914791 | 1098619452480520406 | 979851377083352359  | R1-964 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-964 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-965 | 101522520  | 284510494  | 665221569 | 613121471 | 109008976086386974  | 714276221475323327  | R1-965 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-965 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-966 | 102169859  | 461898752  | 181484981 | 883523547 | 109704051222381568  | 194868015411068891  | R1-966 | ~~   | 0(1)  | 0(0)  | 0(0)  | S1-966 | ~~    | 0(0) | 0(1)  | 0(0)  |       |       |
| 1-967 | 92288378   | 824951411  | 866676095 | 465474015 | 99093892152672883   | 930586371527971295  | R1-967 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-967 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-968 | 621968257  | 10221289   | 459613860 | 839887041 | 66783330751502057   | 493506625211967681  | R1-968 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-968 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-969 | 808692293  | 521142649  | 767190979 | 858580567 | 868326738261705081  | 823765042006386263  | R1-969 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-969 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-970 | 106388714  | 238114095  | 59471793  | 202499931 | 114234012061488431  | 63857351694870363   | R1-970 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-970 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-971 | 128792501  | 556011063  | 501409548 | 13213067  | 138289895497272887  | 538384402653748619  | R1-971 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-971 | ~~    | 0(1) | 0(0)  | 0(0)  |       |       |
| 1-972 | 715887953  | 1037765230 | 619732997 | 893623113 | 768678837471611502  | 665433239485389641  | R1-972 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-972 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |
| 1-973 | 275387402  | 36629986   | 226866096 | 151722117 | 295694971366731234  | 243595615874521221  | R1-973 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-973 | ~~    | 0(0) | 0(1)  | 0(0)  |       |       |
| 1-974 | 831287762  | 793256716  | 544669786 | 531292839 | 892588438632014604  | 584834730028622503  | R1-974 | ~~   | 0(0)  | 0(0)  | 0(0)  | S1-974 | ~~    | 0(0) | 0(0)  | 0(0)  |       |       |

**Table 42 Detailed Results for Seed Index 1-975 to 1-999, Cases R1-975 to R1-999 and S1-975 to S1-999**

| Case  | Seed       | Seed      | Seed       | Seed       | Seed                | Seed                | Case   | Order | Order | Order | Order | Order  | Case | Order | Order | Order | Order |
|-------|------------|-----------|------------|------------|---------------------|---------------------|--------|-------|-------|-------|-------|--------|------|-------|-------|-------|-------|
| Index | s1         | s2        | s3         | s4         | t1=s1*2^30+s2       | t2=s3*2^30+s4       |        | 7     | 8     | 9     | 10    |        |      | 7     | 8     | 9     | 10    |
| 1-975 | 565049120  | 360844770 | 603941280  | 952476907  | 606716873119239650  | 648477012528571627  | R1-975 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-975 | ~~   | 0(0)  | 0(0)  | 0(0)  | 0(0)  |
| 1-976 | 1053698890 | 801944896 | 381270801  | 990674607  | 1131400568897320256 | 409386406294355631  | R1-976 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-976 | ~~   | 0(0)  | 0(0)  | 0(1)  |       |
| 1-977 | 75809490   | 241737304 | 595326119  | 911284835  | 81399820310847064   | 639226553801185891  | R1-977 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-977 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-978 | 625207547  | 825524499 | 1059303450 | 447934521  | 671311492719870227  | 1137418419020427321 | R1-978 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-978 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-979 | 834989763  | 358147086 | 126876034  | 882793795  | 896563431503094798  | 136232105051839811  | R1-979 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-979 | ~~   | 0(1)  | 0(0)  | 0(0)  |       |
| 1-980 | 435961797  | 206082159 | 362484129  | 725565655  | 468110415311179887  | 389214370569076951  | R1-980 | ~~    | 0(1)  | 0(0)  | 0(0)  | S1-980 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-981 | 747132131  | 838751196 | 472599358  | 385098305  | 802227017947698140  | 507449697065247297  | R1-981 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-981 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-982 | 1036088277 | 769933771 | 604931170  | 615638841  | 1112491317140931019 | 649539898485892921  | R1-982 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-982 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-983 | 980987585  | 124629672 | 1002441905 | 159055203  | 1053327398963884712 | 1076363799687789923 | R1-983 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-983 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-984 | 718023744  | 13733048  | 78844987   | 1027126513 | 770972124571602104  | 84659161181762801   | R1-984 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-984 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-985 | 869418974  | 968924641 | 23303967   | 47360091   | 933531515931893217  | 25022444080375899   | R1-985 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-985 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-986 | 88216021   | 416490572 | 360733372  | 66692525   | 94721231711052876   | 387334508895643053  | R1-986 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-986 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-987 | 671948033  | 504834367 | 229311192  | 453087041  | 721498707091466559  | 246221018014781249  | R1-987 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-987 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-988 | 690095601  | 12265366  | 611944910  | 252443865  | 740984509364381590  | 657070844103359705  | R1-988 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-988 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-989 | 580325540  | 40283529  | 855097182  | 276865353  | 623119803873668489  | 918153608174805321  | R1-989 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-989 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-990 | 732694431  | 281689371 | 989643240  | 512230351  | 786724655058271515  | 1062621338139100111 | R1-990 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-990 | ~~   | 0(0)  | 0(1)  | 0(0)  |       |
| 1-991 | 1044365260 | 977429350 | 853685470  | 999907379  | 1121378660172063590 | 916637794680004659  | R1-991 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-991 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-992 | 741824091  | 277039851 | 10031832   | 111280513  | 796527552834521835  | 10771597701022081   | R1-992 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-992 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-993 | 605311590  | 391658021 | 895988112  | 168833937  | 649948371126598181  | 962059909830030225  | R1-993 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-993 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-994 | 208126707  | 913637573 | 160171027  | 892809427  | 223474350910931141  | 171982331575742675  | R1-994 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-994 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-995 | 168454486  | 946655457 | 664927679  | 435830967  | 180876628005277921  | 713960659313377463  | R1-995 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-995 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-996 | 888616632  | 940926889 | 797018560  | 1055854991 | 954144844221343657  | 855792163432108431  | R1-996 | ~~    | 0(0)  | 0(1)  | 0(1)  | S1-996 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-997 | 2653687    | 136382886 | 689643759  | 987142277  | 2849374856087974    | 740499348686018693  | R1-997 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-997 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-998 | 1056770722 | 522530697 | 92875126   | 624821531  | 1134698923112607625 | 99723907820291355   | R1-998 | ~~    | 0(0)  | 0(0)  | 0(0)  | S1-998 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |
| 1-999 | 551907149  | 115523636 | 123267273  | 640251471  | 592605788961423412  | 132357227190777423  | R1-999 | ~~    | 0(0)  | 0(0)  | 0(1)  | S1-999 | ~~   | 0(0)  | 0(0)  | 0(0)  |       |

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NOTE. Further discussion of ACORN sequences is available at the ACORN website <http://acorn.wikramaratna.org/index.html>. Included on that website there is a page with a more comprehensive list of relevant ACORN references as well as links, pointing to downloadable versions, or to other sites where those references can be accessed and downloaded (see <http://acorn.wikramaratna.org/references.html>). Recent ACORN references (including REAMC Limited reports, papers and presentations) are available for download from the publications page of the REAMC Limited website, <https://www.reamc-limited.com>.

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