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The problem of zero code redundancy in number systems and its resolution in the original Fibonacci number system

Annotation. It is shown that modern number systems (unlike Fibonacci) have a significant disadvantage in the form of zero redundancy of the code. But the redundancy of the Fibonacci code is not constant: the redundancy of the code for individual numbers varies significantly. Based on the Fibonacci number system with Fibonacci codes with unlimited redundancy, a Rule for limiting code redundancy is formulated.

Keywords: code redundancy, Fibonacci computer, binary code, Fibonacci code, new Fibonacci number system, Number matching rule.

Introduction. The most commonly used positional systems are: binary (in discrete mathematics, computer science, programming) (Table 1, a); ternary; octal; decimal (used everywhere); duodecimal (counting by dozens); hexadecimal (used in programming, computer science); twenty; sexagesimal (units of measurement of time, measurement of angles and in particular, coordinates, longitude and latitude). In addition, there is the so–called "Fibonacci" number system - a mixed number system for integers based on Fibonacci numbers (Table 1, b). It is based on the Zeckendorf theorem (any non-negative integer is only representable as the sum of some set of Fibonacci numbers with indices greater than one, which does not contain pairs of neighboring Fibonacci numbers). On the basis of the Fibonacci number system, the Fibonacci code is "built" – a universal code for natural numbers using sequences of bits. The combination "11" is prohibited in the Fibonacci number system and is used as a marker for the end of the record. The first positional number system in the history of science by George Bergman with an irrational base (golden proportion) also has a similar property of ambiguity in the representation of numbers [1] (Table 1, b).

Table 1 – Comparative representation of digits with examples of codes of random natural numbers and redundancy of codes of various number systems: binary (A), Bergman (B), Fibonacci (C)

Numbers/number of the category	8	7	6	5	4	3	2	1
a) Binary number system								
Base 2	128	64	32	16	8	4	2	1
49			1	1	0	0	0	1
155	1	0	0	1	1	0	1	1
b) The Bergman number system with an irrational base of the golden ratio constant								
The base is 1.61803...	6,854	4,236	2,618	1,618	1,000	0,382	0,236	0,146
8	1	0	0	0	1	0	0	1
8		1	1	0	1	0	0	1
6		1	0	0	1	1	1	1
6		1	0	1	0	0	0	1
6		1	1	1	1	1	1	1
c) The Fibonacci number system								
The base of the Fibonacci number	21	13	8	5	3	2	1	1
8			1	0	0	0	0	0
8				1	1	0	0	0
8				1	0	1	1	0
8				1	0	1	0	1
25	1	0	0	0	1	0	0	1
25	1	0	0	0	1	0	1	0
25	1	0	0	0	0	1	1	1
25		1	1	0	1	0	1	0
25		1	1	0	1	0	0	1
25		1	1	0	0	1	1	1
25		1	0	1	1	1	1	1

Doctor of Technical Sciences, Professor A.P. Stakhov (developed Fibonacci computer arithmetic [7] and put forward the concept of "Fibonacci computers" in the mid-70s of the last century [2, 3, 4, 5]). Speaking about the disadvantages of the binary number system that exists today, the scientist points to a significant problem for modern number systems: "*The Trojan horse of the binary system used in microprocessors is its zero redundancy. ...The lack of redundancy means that all binary code combinations within the binary system are "resolved", which makes it impossible to detect any errors. ...It is necessary to abandon the classical binary number system as the information and arithmetic basis of specialized computer systems and nanoelectronic systems and switch to new redundant number systems when designing them, preserving all the known advantages of the classical binary number system (positional representation of numbers, simplicity of arithmetic rules, the use of two (0, 1) digits to represent numbers, simple rules for comparing and*

rounding numbers, etc.) and allowing to improve reliability, controllability, noise immunity of computer systems" [6].

The main part. Unlike the code of the classical binary system, the Fibonacci code is a redundant code. At the same time, its redundancy manifests itself in the property of the ambiguity of the representation (in the form of a binary code) of natural numbers and is not constant: the redundancy of the code for individual numbers differs significantly.

Based on the Fibonacci number system with Fibonacci codes with unlimited redundancy, the Rule for limiting the redundancy of the Fibonacci code is formulated: numbers with an even digit value can only be represented with numbers of an odd digit value [1]. Natural numbers can be represented by two (and only two) variants of codes in connection with the introduced Rule (examples of Fibonacci codes without taking into account and taking into account the Redundancy Restriction Rule are presented in APPENDICES).

Forbidden combinations of Fibonacci codes can be distinguished, taking into account the Redundancy Restriction Rule (Table 2). For example, the number "8" can be represented only by two codes 11000 and 100000, and the number 7 is 1111 and 10011, and so on (Table 3).

Table 2 – Prohibited code combinations (with consecutive odd number of "0" characters) in Fibonacci-based number systems

Prohibited code combinations	
101	1000000000001
10001	10000000000001
1000001	1000000000000001
100000001	100000000000000001
10000000001	1000000000000000001 etc…

Table 3 – Natural numbers, represented in two ways by numbers and the Fibonacci code, taking into account the Redundancy Restriction Rule

Natural numbers	Numbers Fibonacci	The Fibonacci Code	Natural numbers	Numbers Fibonacci	The Fibonacci Code
1	1 and 1	1 and 1	8	5, 3 and 8	11000 and 100000
2	1, 1 and 2	11 and 100	9	5, 3, 1 and 8, 1	11001 and 100001
3	2, 1 and 3	110 and 1000	10	5, 3, 2 and 8, 2	11100 and 100100
4	2, 1, 1 and 3, 1	111 and 1001	11	5, 3, 2, 1 and 8, 2, 1	11110 and 100110
5	3, 2 and 5	1100 and 10000	12	5, 3, 2, 1, 1 and 8, 2, 1, 1	11111 and 100111
6	3, 2, 1 and 5, 1	1110 and 10010	13	8, 5 and 13	110000 and 1000000
7	3, 2, 1, 1 and 5, 1, 1	1111 and 10011	14	8, 5, 1 and 13, 1	110010 and 1000010

The proposed Rule for the new Fibonacci number system is based on the idea of numbers as ideal objects to which the laws of dialectics apply. In this regard, it is postulated: as dialectical patterns relate to material objects, so, accordingly, these laws relate to selected objects-ideas. Therefore, the numbers of the recurrent Fibonacci series are considered as similar ideal objects, where it is possible to distinguish among their set opposites that have a well-known property of agreement. Such thoughts echo Pythagoras' idea of masculine and feminine numbers in the natural series: Pythagoras defined even numbers as "feminine", and odd numbers as "masculine". For example, the numbers 2 and 3 (2+3=5). In the recurrent Fibonacci series, the numbers 2 and 3 represent opposites in relation to each other. In turn, the number 5 is the opposite of the number 3. Thus, the Rule of matching the numbers of the Fibonacci recurrent series is justified and the rule for the new Fibonacci number system is formulated: "*Numbers with even positions in the digits of the Fibonacci positional system or numbers with odd positions in the digits cannot be matched (positionally represented).*" Therefore, "*in the new Fibonacci positional number system, combinations of the code with a consecutive odd number of "0" characters are not possible (except for their sequential location at the end of the Fibonacci code).*"

It is possible to formulate this Rule in the form of a theorem – by analogy with Zeckendorf's theorem (any natural number can be represented in the only way as the sum of one or more different numbers of the Fibonacci series so that there are no two adjacent numbers from the Fibonacci sequence in this representation) – any natural number can be represented in two ways as the sum of one or more different numbers Fibonacci series numbers so that in this representation there are not two even or even values of a digit from the sequence of Fibonacci series numbers next to each other. An alternative theorem can also be supplemented with the formulation: numbers with an even digit value of a sequence of Fibonacci numbers can be jointly represented with numbers of an odd digit value of the same sequence.

The positional number system based on the formulated Rule (inconsistency of numbers with even digit positions or numbers with non–even digit positions) is conventionally called the new Fibonacci number system.

The "dialectical" algorithm for representing numbers (and the corresponding codes) was developed in connection with the search for the optimal number system based on Fibonacci (Figure).

The value expressed in the natural number	5	3	2	1	1		Discharge value	Discharge
1						1		
						1	1	1
1						1		
						1	1	1
2						2		
						1	1	2
						1	1	1
3, 4				3	4			
					1		2	3
					1		1	2
				0	1		1	1
5–7			5	6	7			
				1			3	4
				1			2	3
			0	1			1	2
			0	1			1	1
8–12		8	9	10	11	12		
			1				5	5
			1				3	4
		0		1			2	3
		0		1			1	2
		0	1	0	1		1	1
13–20	13	14	15	16	17	18	19	20
			1				8	6
			1				5	5
	0		1				3	4
	0			1			2	3
	0	1	0		1		1	2
	0	1	0	1	0	1	1	1
21–33	21 22 23 24 25	26 27 28	29 30	31	32	33		
	1						13	7
	1						8	6
	0	1					5	5
	0		1				3	4
	0 1	0	1				2	3
	0 1	0 1	0	1			1	2
	0 1 0 1	0 1	0 1	0	1		1	1

Figure – Codes of numbers of the natural series of the new Fibonacci number system

Conclusion.

1. It is shown that modern number systems have a significant disadvantage in the form of zero redundancy of the code. Unlike the code of the classical binary system, the Fibonacci code is a redundant code. At the same time, its redundancy manifests itself in the property of the ambiguity of the representation (in the form of a binary code) of natural numbers and is not constant: the redundancy of the code for individual numbers differs significantly.

2. Based on the Fibonacci number system with Fibonacci codes with unlimited redundancy, the rule for limiting the redundancy of the Fibonacci code is formulated: numbers with an even digit value can only be represented with numbers of an odd digit value. Natural numbers, therefore, can be represented by two (and only two) code variants in connection with the introduced Rule.

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APPENDICES

Table A1 – Fibonacci codes for numbers 20, 32, 52, 84

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
20/4	without using the Redundancy Restriction Rule									
				1	0	1	0	1	0	0
				1	0	1	0	0	1	1
				1	**0**	**0**	**1**	**1**	**1**	**1**
					1	**1**	**1**	**1**	**1**	**1**
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**1**	**1**	**1**	**1**
					1	**1**	**1**	**1**	**1**	**1**
32/7	without using the Redundancy Restriction Rule									
			1	0	1	0	1	0	0	0
			1	0	1	0	0	1	1	0
			1	0	1	0	0	1	0	1
			1	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	0	0	1	1	1	0	1
				1	**1**	**1**	**1**	**1**	**1**	**0**
				1	1	1	1	1	0	1
	using the Redundancy Restriction Rule									
			1	**0**	**0**	**1**	**1**	**1**	**1**	**0**
				1	**1**	**1**	**1**	**1**	**1**	**0**
52/7	without using the Redundancy Restriction Rule									
		1	0	1	0	1	0	0	0	0
		1	0	1	0	0	1	1	0	0
		1	0	1	0	0	1	0	1	1
		1	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	0	0	1	1	1	0	1	1
			1	**1**	**1**	**1**	**1**	**1**	**0**	**0**
			1	1	1	1	1	0	1	1
	using the Redundancy Restriction Rule									
		1	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
			1	**1**	**1**	**1**	**1**	**1**	**0**	**0**
84/10	without using the Redundancy Restriction Rule									
	1	0	1	0	1	0	0	0	0	0
	1	0	1	0	0	1	1	0	0	0
	1	0	1	0	0	1	0	1	1	0
	1	0	1	0	0	1	0	1	0	1
	1	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	1	1	0	1	1	0
	1	0	0	1	1	1	0	1	0	1
		1	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	1	1	1	0	1	1	0
		1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule									
	1	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**

Table A2 – Fibonacci codes for numbers 4, 6, 10, 16

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
4/3	without using the Redundancy Restriction Rule									
							1	0	1	0
							1	**0**	**0**	**1**
								1	**1**	**1**
	using the Redundancy Restriction Rule									
							1	**0**	**0**	**1**
								1	**1**	**1**
6/4	without using the Redundancy Restriction Rule									
						1	**0**	**0**	**1**	**0**
						1	0	0	0	1
							1	**1**	**1**	**0**
							1	1	0	1
	using the Redundancy Restriction Rule									
						1	**0**	**0**	**1**	**0**
							1	**1**	**1**	**0**
10/4	without using the Redundancy Restriction Rule									
					1	0	0	1	0	0
					1	0	0	0	1	1
						1	**1**	**1**	**0**	**0**
						1	**1**	**0**	**1**	**1**
	using the Redundancy Restriction Rule									
						1	**1**	**1**	**0**	**0**
						1	**1**	**0**	**1**	**1**
16/6	without using the Redundancy Restriction Rule									
				1	**0**	**0**	**1**	**0**	**0**	**0**
				1	0	0	0	1	1	0
				1	0	0	0	1	0	1
					1	**1**	**1**	**0**	**0**	**0**
					1	1	0	1	1	0
					1	1	0	1	0	1
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**1**	**0**	**0**	**0**
					1	**1**	**1**	**0**	**0**	**0**

Table A3 – Fibonacci codes for numbers 12, 19, 31, 50

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
12/4	without using the Redundancy Restriction Rule									
					1	0	1	0	1	0
					1	0	1	0	0	1
					1	**0**	**0**	**1**	**1**	**1**
						1	**1**	**1**	**1**	**1**
	using the Redundancy Restriction Rule									
					1	**0**	**0**	**1**	**1**	**1**
						1	**1**	**1**	**1**	**1**
19/6	without using the Redundancy Restriction Rule									
				1	0	1	0	0	1	0
				1	0	1	0	0	0	1
				1	**0**	**0**	**1**	**1**	**1**	**0**
				1	0	0	1	1	0	1
					1	**1**	**1**	**1**	**1**	**0**
					1	1	1	1	0	1
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**1**	**1**	**1**	**0**
					1	**1**	**1**	**1**	**1**	**0**
31/6	without using the Redundancy Restriction Rule									
			1	0	1	0	0	1	0	0
			1	0	1	0	0	0	1	1
			1	**0**	**0**	**1**	**1**	**1**	**0**	**0**
			1	0	0	1	1	0	1	1
				1	**1**	**1**	**1**	**1**	**0**	**0**
				1	1	1	1	0	1	1
	using the Redundancy Restriction Rule									
			1	**0**	**0**	**1**	**1**	**1**	**0**	**0**
				1	**1**	**1**	**1**	**1**	**0**	**0**
50/9	without using the Redundancy Restriction Rule									
		1	0	1	0	0	1	0	0	0
		1	0	1	0	0	0	1	1	0
		1	0	1	0	0	0	1	0	1
		1	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
		1	0	0	1	1	0	1	1	0
		1	0	0	1	1	0	1	0	1
			1	**1**	**1**	**1**	**1**	**0**	**0**	**0**
			1	1	1	1	0	1	1	0
			1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule									
		1	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
			1	**1**	**1**	**1**	**1**	**0**	**0**	**0**

Table A4 – Fibonacci codes for numbers 33, 53, 86, 139

Number/number of number codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
33/5	without using the Redundancy Restriction Rule										
				1	0	1	0	1	0	1	0
				1	0	1	0	1	0	0	1
				1	0	1	0	0	1	1	1
				1	**0**	**0**	**1**	**1**	**1**	**1**	**1**
					1	**1**	**1**	**1**	**1**	**1**	**1**
	using the Redundancy Restriction Rule										
				1	**0**	**0**	**1**	**1**	**1**	**1**	**1**
					1	**1**	**1**	**1**	**1**	**1**	**1**
53/8	without using the Redundancy Restriction Rule										
			1	0	1	0	1	0	0	1	0
			1	0	1	0	1	0	0	0	1
			1	0	1	0	0	1	1	1	0
			1	0	1	0	0	1	1	0	1
			1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
			1	0	0	1	1	1	1	0	1
				1	**1**	**1**	**1**	**1**	**1**	**1**	**0**
				1	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule										
			1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
				1	**1**	**1**	**1**	**1**	**1**	**1**	**0**
86/8	without using the Redundancy Restriction Rule										
		1	0	1	0	1	0	0	1	0	0
		1	0	1	0	1	0	0	0	1	1
		1	0	1	0	0	1	1	1	0	0
		1	0	1	0	0	1	1	0	1	1
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
		1	0	0	1	1	1	1	0	1	1
			1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
			1	1	1	1	1	1	0	1	1
	using the Redundancy Restriction Rule										
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
			1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
139/12	without using the Redundancy Restriction Rule										
	1	0	1	0	1	0	0	1	0	0	0
	1	0	1	0	1	0	0	0	1	1	0
	1	0	1	0	1	0	0	0	1	0	1
	1	0	1	0	0	1	1	1	0	0	0
	1	0	1	0	0	1	1	0	1	1	0
	1	0	1	0	0	1	1	0	1	0	1
	1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	1	1	1	0	1	1	0
	1	0	0	1	1	1	1	0	1	0	1
		1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	1	1	1	1	0	1	1	0
		1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule										
	1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**

Table A5 – Fibonacci codes for numbers 9, 14, 23, 37

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
9/5	without using the Redundancy Restriction Rule									
					1	0	0	0	1	0
					1	**0**	**0**	**0**	**0**	**1**
						1	1	0	1	0
						1	**1**	**0**	**0**	**1**
						1	0	1	1	1
	using the Redundancy Restriction Rule									
					1	**0**	**0**	**0**	**0**	**1**
						1	**1**	**0**	**0**	**1**
14/6	without using the Redundancy Restriction Rule									
				1	**0**	**0**	**0**	**0**	**1**	**0**
				1	0	0	0	0	0	1
					1	**1**	**0**	**0**	**1**	**0**
					1	1	0	0	0	1
					1	0	1	1	1	0
					1	0	1	1	0	1
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**0**	**0**	**1**	**0**
					1	**1**	**0**	**0**	**1**	**0**
23/6	without using the Redundancy Restriction Rule									
			1	**0**	**0**	**0**	**0**	**1**	**0**	**0**
			1	0	0	0	0	0	1	1
				1	**1**	**0**	**0**	**1**	**0**	**0**
				1	1	0	0	0	1	1
				1	0	1	1	1	0	0
				1	0	1	1	0	1	1
	using the Redundancy Restriction Rule									
			1	**0**	**0**	**0**	**0**	**1**	**0**	**0**
				1	**1**	**0**	**0**	**1**	**0**	**0**
37/9	without using the Redundancy Restriction Rule									
		1	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
		1	0	0	0	0	0	1	1	0
		1	0	0	0	0	0	1	0	1
			1	**1**	**0**	**0**	**1**	**0**	**0**	**0**
			1	1	0	0	0	1	1	0
			1	1	0	0	0	1	0	1
			1	0	1	1	1	0	0	0
			1	0	1	1	0	1	1	0
			1	0	1	1	0	1	0	1
	using the Redundancy Restriction Rule									
		1	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
			1	**1**	**0**	**0**	**1**	**0**	**0**	**0**

Table A6 – Fibonacci codes for numbers 15, 24, 39, 63

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
15/5	without using the Redundancy Restriction Rule									
				1	0	0	0	1	0	0
				1	**0**	**0**	**0**	**0**	**1**	**1**
					1	1	0	1	0	0
					1	**1**	**0**	**0**	**1**	**1**
					1	0	1	1	1	1
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**0**	**0**	**1**	**1**
					1	**1**	**0**	**0**	**1**	**1**
24/8	without using the Redundancy Restriction Rule									
			1	0	0	0	1	0	0	0
			1	**0**	**0**	**0**	**0**	**1**	**1**	**0**
			1	0	0	0	0	1	0	1
				1	1	0	1	0	0	0
				1	**1**	**0**	**0**	**1**	**1**	**0**
				1	1	0	0	1	0	1
				1	0	1	1	1	1	0
				1	0	1	1	1	0	1
	using the Redundancy Restriction Rule									
			1	**0**	**0**	**0**	**0**	**1**	**1**	**0**
				1	**1**	**0**	**0**	**1**	**1**	**0**
39/8	without using the Redundancy Restriction Rule									
		1	0	0	0	1	0	0	0	0
		1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
		1	0	0	0	0	1	0	1	1
			1	1	0	1	0	0	0	0
			1	**1**	**0**	**0**	**1**	**1**	**0**	**0**
			1	1	0	0	1	0	1	1
			1	0	1	1	1	1	0	0
			1	0	1	1	1	0	1	1
	using the Redundancy Restriction Rule									
		1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**
			1	**1**	**0**	**0**	**1**	**1**	**0**	**0**
63/11	without using the Redundancy Restriction Rule									
	1	0	0	0	1	0	0	0	0	0
	1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
	1	0	0	0	0	1	0	1	1	0
	1	0	0	0	0	1	0	1	0	1
		1	1	0	1	0	0	0	0	0
		1	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
		1	1	0	0	1	0	1	1	0
		1	1	0	0	1	0	1	0	1
		1	0	1	1	1	1	0	0	0
		1	0	1	1	1	0	1	1	0
		1	0	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule									
	1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**

Table A7 – Fibonacci codes for numbers 25, 40, 65, 105

Number/number of number codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
25/7				*without using the Redundancy Restriction Rule*							
				1	0	0	0	1	0	1	0
				1	0	0	0	1	0	0	1
				1	**0**	**0**	**0**	**0**	**1**	**1**	**1**
					1	1	0	1	0	1	0
					1	1	0	1	0	0	1
					1	**1**	**0**	**0**	**1**	**1**	**1**
					1	0	1	1	1	1	1
				using the Redundancy Restriction Rule							
				1	**0**	**0**	**0**	**0**	**1**	**1**	**1**
					1	**1**	**0**	**0**	**1**	**1**	**1**
40/10				*without using the Redundancy Restriction Rule*							
			1	0	0	0	1	0	0	1	0
			1	0	0	0	1	0	0	0	1
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**
			1	0	0	0	0	1	1	0	1
				1	1	0	1	0	0	1	0
				1	1	0	1	0	0	0	1
				1	**1**	**0**	**0**	**1**	**1**	**1**	**0**
				1	1	0	0	1	1	0	1
				1	0	1	1	1	1	1	0
				1	0	1	1	1	1	0	1
				using the Redundancy Restriction Rule							
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**
				1	**1**	**0**	**0**	**1**	**1**	**1**	**0**
65/10				*without using the Redundancy Restriction Rule*							
		1	0	0	0	1	0	0	1	0	0
		1	0	0	0	1	0	0	0	1	1
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
		1	0	0	0	0	1	1	0	1	1
			1	1	0	1	0	0	1	0	0
			1	1	0	1	0	0	0	1	1
			1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
			1	1	0	0	1	1	0	1	1
			1	0	1	1	1	1	1	0	0
			1	0	1	1	1	1	0	1	1
				using the Redundancy Restriction Rule							
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
105/15				*without using the Redundancy Restriction Rule*							
	1	0	0	0	1	0	0	1	0	0	0
	1	0	0	0	1	0	0	0	1	1	0
	1	0	0	0	1	0	0	0	1	0	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	0	0	1	1	0	1	1	0
	1	0	0	0	0	1	1	0	1	0	1
		1	1	0	1	0	0	1	0	0	0
		1	1	0	1	0	0	0	1	1	0
		1	1	0	1	0	0	0	1	0	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	0	0	1	1	0	1	1	0
		1	1	0	0	1	1	0	1	0	1
		1	0	1	1	1	1	1	0	0	0
		1	0	1	1	1	1	0	1	1	0
		1	0	1	1	1	1	0	1	0	1
				using the Redundancy Restriction Rule							
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**

Table A8 – Fibonacci codes for numbers 41, 66, 107

Number/number of number codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
41/7	without using the Redundancy Restriction Rule										
			1	0	0	0	1	0	1	0	0
			1	0	0	0	1	0	0	1	1
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**
				1	1	0	1	0	1	0	0
				1	1	0	1	0	0	1	1
				1	**1**	**0**	**0**	**1**	**1**	**1**	**1**
				1	0	1	1	1	1	1	1
	using the Redundancy Restriction Rule										
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**
				1	**1**	**0**	**0**	**1**	**1**	**1**	**1**
66/12	without using the Redundancy Restriction Rule										
		1	0	0	0	1	0	1	0	0	0
		1	0	0	0	1	0	0	1	1	0
		1	0	0	0	1	0	0	1	0	1
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
		1	0	0	0	0	1	1	1	0	1
			1	1	0	1	0	1	0	0	0
			1	1	0	1	0	0	1	1	0
			1	1	0	1	0	0	1	0	1
			1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	1	0	0	1	1	1	0	1
			1	0	1	1	1	1	1	1	0
			1	0	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule										
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
107/12	without using the Redundancy Restriction Rule										
	1	0	0	0	1	0	1	0	0	0	0
	1	0	0	0	1	0	0	1	1	0	0
	1	0	0	0	1	0	0	1	0	1	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
	1	0	0	0	0	1	1	1	0	1	1
		1	1	0	1	0	1	0	0	0	0
		1	1	0	1	0	0	1	1	0	0
		1	1	0	1	0	0	1	0	1	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	1	0	0	1	1	1	0	1	1
		1	0	1	1	1	1	1	1	0	0
		1	0	1	1	1	1	1	0	1	1
	using the Redundancy Restriction Rule										
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**

Table A9 – Fibonacci codes for numbers 17, 27, 44, 71

Number/number of number codes	The base is Fibonacci numbers									
	55	34	21	13	8	5	3	2	1	1
17/6	without using the Redundancy Restriction Rule									
				1	0	0	1	0	1	0
				1	**0**	**0**	**1**	**0**	**0**	**1**
				1	0	0	0	1	1	1
					1	1	1	0	1	0
					1	**1**	**1**	**0**	**0**	**1**
					1	1	0	1	1	1
	using the Redundancy Restriction Rule									
				1	**0**	**0**	**1**	**0**	**0**	**1**
					1	**1**	**1**	**0**	**0**	**1**
27/8	without using the Redundancy Restriction Rule									
			1	**0**	**0**	**1**	**0**	**0**	**1**	**0**
			1	0	0	1	0	0	0	1
			1	0	0	0	1	1	1	0
			1	0	0	0	1	1	0	1
				1	**1**	**1**	**0**	**0**	**1**	**0**
				1	1	1	0	0	0	1
				1	1	0	1	1	1	0
				1	1	0	1	1	0	1
	using the Redundancy Restriction Rule									
			1	**0**	**0**	**1**	**0**	**0**	**1**	**0**
				1	**1**	**1**	**0**	**0**	**1**	**0**
44/8	without using the Redundancy Restriction Rule									
		1	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
		1	0	0	1	0	0	0	1	1
		1	0	0	0	1	1	1	0	0
		1	0	0	0	1	1	0	1	1
			1	**1**	**1**	**0**	**0**	**1**	**0**	**0**
			1	1	1	0	0	0	1	1
			1	1	0	1	1	1	0	0
			1	1	0	1	1	0	1	1
	using the Redundancy Restriction Rule									
		1	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**
			1	**1**	**1**	**0**	**0**	**1**	**0**	**0**
71/12	without using the Redundancy Restriction Rule									
	1	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**
	1	0	0	1	0	0	0	1	1	0
	1	0	0	1	0	0	0	1	0	1
	1	0	0	0	1	1	1	0	0	0
	1	0	0	0	1	1	0	1	1	0
	1	0	0	0	1	1	0	1	0	1
		1	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**
		1	1	1	0	0	0	1	1	0
		1	1	1	0	0	0	1	0	1
		1	1	0	1	1	1	0	0	0
		1	1	0	1	1	0	1	1	0
		1	1	0	1	1	0	1	0	1
	using the Redundancy Restriction Rule									
	1	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**

Table A10 – Fibonacci codes for numbers 28, 45, 73, 118

Number/number of number codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
28/6	without using the Redundancy Restriction Rule										
				1	0	0	1	0	1	0	0
				1	**0**	**0**	**1**	**0**	**0**	**1**	**1**
				1	0	0	0	1	1	1	1
					1	1	1	0	1	0	0
					1	**1**	**1**	**0**	**0**	**1**	**1**
					1	1	0	1	1	1	1
	using the Redundancy Restriction Rule										
				1	**0**	**0**	**1**	**0**	**0**	**1**	**1**
					1	**1**	**1**	**0**	**0**	**1**	**1**
45/10	without using the Redundancy Restriction Rule										
			1	0	0	1	0	1	0	0	0
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**
			1	0	0	1	0	0	1	0	1
			1	0	0	0	1	1	1	1	0
			1	0	0	0	1	1	1	0	1
				1	1	1	0	1	0	0	0
				1	**1**	**1**	**0**	**0**	**1**	**1**	**0**
				1	1	1	0	0	1	0	1
				1	1	0	1	1	1	1	0
				1	1	0	1	1	1	0	1
	using the Redundancy Restriction Rule										
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**
			1	**1**	**1**	**0**	**0**	**1**	**1**	**0**	
73/10	without using the Redundancy Restriction Rule										
		1	0	0	1	0	1	0	0	0	0
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**
		1	0	0	1	0	0	1	0	1	1
		1	0	0	0	1	1	1	1	0	0
		1	0	0	0	1	1	1	0	1	1
			1	1	1	0	1	0	0	0	0
			1	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**
			1	1	1	0	0	1	0	1	1
			1	1	0	1	1	1	1	0	0
			1	1	0	1	1	1	0	1	1
	using the Redundancy Restriction Rule										
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	
118/14	without using the Redundancy Restriction Rule										
	1	0	0	1	0	1	0	0	0	0	0
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	0	0	1	0	1	1	0
	1	0	0	1	0	0	1	0	1	0	1
	1	0	0	0	1	1	1	1	0	0	0
	1	0	0	0	1	1	1	0	1	1	0
	1	0	0	0	1	1	1	0	1	0	1
		1	1	1	0	1	0	0	0	0	0
		1	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
		1	1	1	0	0	1	0	1	1	0
		1	1	1	0	0	1	0	1	0	1
		1	1	0	1	1	1	1	0	0	0
		1	1	0	1	1	1	0	1	1	0
		1	1	0	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule										
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**

Table A11 – Fibonacci codes for numbers 46, 74, 120, 194

Number/number of number codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule										
			1	0	0	1	0	1	0	1	0
			1	0	0	1	0	1	0	0	1
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**
46/8			1	0	0	0	1	1	1	1	1
				1	1	1	0	1	0	1	0
				1	1	1	0	1	0	0	1
				1	**1**	**1**	**0**	**0**	**1**	**1**	**1**
				1	1	0	1	1	1	1	1
	using the Redundancy Restriction Rule										
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**
				1	**1**	**1**	**0**	**0**	**1**	**1**	**1**
	without using the Redundancy Restriction Rule										
		1	0	0	1	0	1	0	0	1	0
		1	0	0	1	0	1	0	0	0	1
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**
		1	0	0	1	0	0	1	1	0	1
		1	0	0	0	1	1	1	1	1	0
		1	0	0	0	1	1	1	1	0	1
74/12			1	1	1	0	1	0	0	1	0
			1	1	1	0	1	0	0	0	1
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**
			1	1	1	0	0	1	1	0	1
			1	1	0	1	1	1	1	1	0
			1	1	0	1	1	1	1	0	1
	using the Redundancy Restriction Rule										
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**
	without using the Redundancy Restriction Rule										
	1	0	0	1	0	1	0	0	1	0	0
	1	0	0	1	0	1	0	0	1	1	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
	1	0	0	1	0	0	1	1	1	1	1
	1	0	0	0	1	1	1	1	1	0	0
	1	0	0	0	1	1	1	1	1	1	1
120/12		1	1	1	0	1	0	0	1	0	0
		1	1	1	0	1	0	0	1	1	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
		1	1	1	0	0	1	1	1	1	1
		1	1	0	1	1	1	1	1	0	0
		1	1	0	1	1	1	1	1	1	1
	using the Redundancy Restriction Rule										
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**

Table A12 – Fibonacci codes for numbers 75, 121, 196

Number/number of number codes	The base is Fibonacci numbers											
	144	89	55	34	21	13	8	5	3	2	1	1
75/8	without using the Redundancy Restriction Rule											
			1	0	0	1	0	1	0	1	0	0
			1	0	0	1	0	1	0	0	1	1
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**
			1	0	0	0	1	1	1	1	1	1
				1	1	1	0	1	0	1	0	0
				1	1	1	0	1	0	0	1	1
				1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**
				1	1	0	1	1	1	1	1	1
	using the Redundancy Restriction Rule											
			1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**
				1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**
121/14	without using the Redundancy Restriction Rule											
		1	0	0	1	0	1	0	1	0	0	0
		1	0	0	1	0	1	0	0	1	1	0
		1	0	0	1	0	1	0	0	1	0	1
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
		1	0	0	1	0	0	1	1	1	0	1
		1	0	0	0	1	1	1	1	1	1	0
		1	0	0	0	1	1	1	1	1	0	1
			1	1	1	0	1	0	1	0	0	0
			1	1	1	0	1	0	0	1	1	0
			1	1	1	0	1	0	0	1	0	1
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	1	1	0	0	1	1	1	0	1
			1	1	0	1	1	1	1	1	1	0
			1	1	0	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule											
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
196/14	without using the Redundancy Restriction Rule											
	1	0	0	1	0	1	0	1	0	0	0	0
	1	0	0	1	0	1	0	0	1	1	0	0
	1	0	0	1	0	1	0	0	1	0	1	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
	1	0	0	1	0	0	1	1	1	0	1	1
	1	0	0	0	1	1	1	1	1	1	0	0
	1	0	0	0	1	1	1	1	1	0	1	1
		1	1	1	0	1	0	1	0	0	0	0
		1	1	1	0	1	0	0	1	1	0	0
		1	1	1	0	1	0	0	1	0	1	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	1	1	0	0	1	1	1	0	1	1
		1	1	0	1	1	1	1	1	1	0	0
		1	1	0	1	1	1	1	1	0	1	1
	using the Redundancy Restriction Rule											
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**

Table A13 – Fibonacci codes for numbers 67, 108, 175

Number/number of number codes	The base is Fibonacci numbers											
	144	89	55	34	21	13	8	5	3	2	1	1
67/9	without using the Redundancy Restriction Rule											
			1	0	0	0	1	0	1	0	1	0
			1	0	0	0	1	0	1	0	0	1
			1	0	0	0	1	0	0	1	1	1
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**
				1	1	0	1	0	1	0	1	0
				1	1	0	1	0	1	0	0	1
				1	1	0	1	0	0	1	1	1
				1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**
				1	0	1	1	1	1	1	1	1
	using the Redundancy Restriction Rule											
			1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**
				1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**
108/14	without using the Redundancy Restriction Rule											
		1	0	0	0	1	0	1	0	0	1	0
		1	0	0	0	1	0	1	0	0	0	1
		1	0	0	0	1	0	0	1	1	1	0
		1	0	0	0	1	0	0	1	1	0	1
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
		1	0	0	0	0	1	1	1	1	0	1
			1	1	0	1	0	1	0	0	1	0
			1	1	0	1	0	1	0	0	0	1
			1	1	0	1	0	0	1	1	1	0
			1	1	0	1	0	0	1	1	0	1
			1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
			1	1	0	0	1	1	1	1	0	1
			1	0	1	1	1	1	1	1	1	0
			1	0	1	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule											
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
			1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
175/14	without using the Redundancy Restriction Rule											
	1	0	0	0	1	0	1	0	0	1	0	0
	1	0	0	0	1	0	1	0	0	0	1	1
	1	0	0	0	1	0	0	1	1	1	0	0
	1	0	0	0	1	0	0	1	1	0	1	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
	1	0	0	0	0	1	1	1	1	0	1	1
		1	1	0	1	0	1	0	0	1	0	0
		1	1	0	1	0	1	0	0	0	1	1
		1	1	0	1	0	0	1	1	1	0	0
		1	1	0	1	0	0	1	1	0	1	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
		1	1	0	0	1	1	1	1	0	1	1
		1	0	1	1	1	1	1	1	1	0	0
		1	0	1	1	1	1	1	1	0	1	1
	using the Redundancy Restriction Rule											
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**
	1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	

Table A14 – Fibonacci codes for a number 194

Number/number of number codes	The base is Fibonacci numbers											
	144	89	55	34	21	13	8	5	3	2	1	1
194/18	without using the Redundancy Restriction Rule											
	1	0	0	1	0	1	0	0	1	0	0	0
	1	0	0	1	0	1	0	0	0	1	1	0
	1	0	0	1	0	1	0	0	0	1	0	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	0	0	1	1	0	1	1	0
	1	0	0	1	0	0	1	1	0	1	0	1
	1	0	0	0	1	1	1	1	1	0	0	0
	1	0	0	0	1	1	1	1	0	1	1	0
	1	0	0	0	1	1	1	1	0	1	0	1
		1	1	1	0	1	0	0	1	0	0	0
		1	1	1	0	1	0	0	0	1	1	0
		1	1	1	0	1	0	0	0	1	0	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	1	0	0	1	1	0	1	1	0
		1	1	1	0	0	1	1	0	1	0	1
		1	1	0	1	1	1	1	1	0	0	0
		1	1	0	1	1	1	1	0	1	1	0
		1	1	0	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule											
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**

Table A15 – Fibonacci codes for numbers 665, 699

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
665/18	without using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0
	1	0	0	0	0	0	1	0	1	1	0	0	0	0	0
	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0
	1	0	0	0	0	0	1	0	1	0	1	0	1	1	0
	1	0	0	0	0	0	1	0	1	0	1	0	1	0	1
		1	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		1	1	0	0	0	1	1	0	0	0	0	0	0	0
		1	1	0	0	0	1	0	1	1	0	0	0	0	0
		1	1	0	0	0	1	0	1	0	1	1	0	0	0
		1	1	0	0	0	1	0	1	0	1	0	1	1	0
		1	1	0	0	0	1	0	1	0	1	0	1	0	1
		1	0	1	1	0	1	1	0	0	0	0	0	0	0
		1	0	1	1	0	1	0	1	1	0	0	0	0	0
		1	0	1	1	0	1	0	1	0	1	1	0	0	0
		1	0	1	1	0	1	0	1	0	1	0	1	1	0
		1	0	1	1	0	1	0	1	0	1	0	1	0	1
		1	0	1	1	0	1	1	0	0	0	0	0	0	0
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	1	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
699/17	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0
	1	0	0	0	0	1	0	1	0	1	1	0	0	0	0
	1	0	0	0	0	1	0	1	0	1	0	1	1	0	0
	1	0	0	0	0	1	0	1	0	1	0	1	0	1	1
		1	1	0	1	0	0	0	0	0	0	0	0	0	0
		1	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		1	1	0	0	1	0	1	1	0	0	0	0	0	0
		1	1	0	0	1	0	1	0	1	1	0	0	0	0
		1	1	0	0	1	0	1	0	1	0	1	1	0	0
		1	1	0	0	1	0	1	0	1	0	1	0	1	1
		1	0	1	1	1	1	0	0	0	0	0	0	0	0
		1	0	1	1	1	0	1	1	0	0	0	0	0	0
		1	0	1	1	1	0	1	0	1	1	0	0	0	0
		1	0	1	1	1	0	1	0	1	0	1	1	0	0
		1	0	1	1	1	0	1	0	1	0	1	0	1	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	1	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table A16 – Fibonacci codes for a number 720

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
720/25	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0
	1	0	0	0	1	0	0	0	1	0	1	1	0	0	0
	1	0	0	0	1	0	0	0	1	0	1	0	1	1	0
	1	0	0	0	1	0	0	0	1	0	1	0	1	0	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	1	0	0	0	0	1	1	0	1	1	0	0	0	0	0
	1	0	0	0	0	1	1	0	1	0	1	1	0	0	0
	1	0	0	0	0	1	1	0	1	0	1	0	1	1	0
	1	0	0	0	0	1	1	0	1	0	1	0	1	0	1
		1	1	0	1	0	0	1	0	0	0	0	0	0	0
		1	1	0	1	0	0	0	1	1	0	0	0	0	0
		1	1	0	1	0	0	0	1	0	1	1	0	0	0
		1	1	0	1	0	0	0	1	0	1	0	1	1	0
		1	1	0	1	0	0	0	1	0	1	0	1	0	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		1	1	0	0	1	1	0	1	1	0	0	0	0	0
		1	1	0	0	1	1	0	1	0	1	1	0	0	0
		1	1	0	0	1	1	0	1	0	1	0	1	1	0
		1	1	0	0	1	1	0	1	0	1	0	1	0	1
		1	0	1	1	1	1	1	0	0	0	0	0	0	0
		1	0	1	1	1	1	0	1	1	0	0	0	0	0
		1	0	1	1	1	1	0	1	0	1	1	0	0	0
		1	0	1	1	1	1	0	1	0	1	0	1	1	0
		1	0	1	1	1	1	0	1	0	1	0	1	0	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table A17 – Fibonacci codes for a number 733

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0
	1	0	0	0	1	0	0	1	1	0	0	0	0	0	0
	1	0	0	0	1	0	0	1	0	1	1	0	0	0	0
	1	0	0	0	1	0	0	1	0	1	0	1	1	0	0
	1	0	0	0	1	0	0	1	0	1	0	1	0	1	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
	1	0	0	0	0	1	1	1	0	1	1	0	0	0	0
	1	0	0	0	0	1	1	1	0	1	0	1	1	0	0
	1	0	0	0	0	1	1	1	0	1	0	1	0	1	1
733/22		1	1	0	1	0	1	0	0	0	0	0	0	0	0
		1	1	0	1	0	0	1	1	0	0	0	0	0	0
		1	1	0	1	0	0	1	0	1	1	0	0	0	0
		1	1	0	1	0	0	1	0	1	0	1	1	0	0
		1	1	0	1	0	0	1	0	1	0	1	0	1	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
		1	1	0	0	1	1	1	0	1	1	0	0	0	0
		1	1	0	0	1	1	1	0	1	0	1	1	0	0
		1	1	0	0	1	1	1	0	1	0	1	0	1	1
		1	0	1	1	1	1	1	1	0	0	0	0	0	0
		1	0	1	1	1	1	1	0	1	1	0	0	0	0
		1	0	1	1	1	1	1	0	1	0	1	1	0	0
		1	0	1	1	1	1	1	0	1	0	1	0	1	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

23

Table A18 – Fibonacci codes for a number 741

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0
	1	0	0	0	1	0	1	0	0	0	1	1	0	0	0
	1	0	0	0	1	0	1	0	0	0	1	0	1	1	0
	1	0	0	0	1	0	1	0	0	0	1	0	1	0	1
	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0
	1	0	0	0	1	0	0	1	1	0	1	1	0	0	0
	1	0	0	0	1	0	0	1	1	0	1	0	1	1	0
	1	0	0	0	1	0	0	1	1	0	1	0	1	0	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
	1	0	0	0	0	1	1	1	1	0	1	1	0	0	0
	1	0	0	0	0	1	1	1	1	0	1	0	1	1	0
	1	0	0	0	0	1	1	1	1	0	1	0	1	0	1
741/28		1	1	0	1	0	1	0	0	1	0	0	0	0	0
		1	1	0	1	0	1	0	0	0	1	1	0	0	0
		1	1	0	1	0	1	0	0	0	1	0	1	1	0
		1	1	0	1	0	1	0	0	0	1	0	1	0	1
		1	1	0	1	0	0	1	1	1	0	0	0	0	0
		1	1	0	1	0	0	1	1	0	1	1	0	0	0
		1	1	0	1	0	0	1	1	0	1	0	1	1	0
		1	1	0	1	0	0	1	1	0	1	0	1	0	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
		1	1	0	0	1	1	1	1	0	1	1	0	0	0
		1	1	0	0	1	1	1	1	0	1	0	1	1	0
		1	1	0	0	1	1	1	1	0	1	0	1	0	1
		1	0	1	1	1	1	1	1	1	0	0	0	0	0
		1	0	1	1	1	1	1	1	0	1	1	0	0	0
		1	0	1	1	1	1	1	1	0	1	0	1	1	0
		1	0	1	1	1	1	1	1	0	1	0	1	0	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**

Table A19 – Fibonacci codes for a number 746

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
746/23	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0
	1	0	0	0	1	0	1	0	0	1	1	0	0	0	0
	1	0	0	0	1	0	1	0	0	1	0	1	1	0	0
	1	0	0	0	1	0	1	0	0	1	0	1	0	1	1
	1	0	0	0	1	0	0	1	1	1	1	0	0	0	0
	1	0	0	0	1	0	0	1	1	1	0	1	1	0	0
	1	0	0	0	1	0	0	1	1	1	0	1	0	1	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
	1	0	0	0	0	1	1	1	1	1	0	1	1	0	0
	1	0	0	0	0	1	1	1	1	1	0	1	0	1	1
		1	1	0	1	0	1	0	1	0	0	0	0	0	0
		1	1	0	1	0	1	0	0	1	1	0	0	0	0
		1	1	0	1	0	1	0	0	1	0	1	1	0	0
		1	1	0	1	0	1	0	0	1	0	1	0	1	1
		1	1	0	1	0	0	1	1	1	1	0	0	0	0
		1	1	0	1	0	0	1	1	1	0	1	1	0	0
		1	1	0	1	0	0	1	1	1	0	1	0	1	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
		1	1	0	0	1	1	1	1	1	0	1	1	0	0
		1	1	0	0	1	1	1	1	1	0	1	0	1	1
		1	0	1	1	1	1	1	1	1	1	0	0	0	0
		1	0	1	1	1	1	1	1	1	0	1	1	0	0
		1	0	1	1	1	1	1	1	1	0	1	0	1	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**

Table A20 – Fibonacci codes for a number 749

Number/number of number codes	The base is Fibonacci numbers														
	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule														
	1	0	0	0	1	0	1	0	1	0	0	1	0	0	0
	1	0	0	0	1	0	1	0	1	0	0	0	1	1	0
	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1
	1	0	0	0	1	0	1	0	0	1	1	1	0	0	0
	1	0	0	0	1	0	1	0	0	1	1	0	1	1	0
	1	0	0	0	1	0	1	0	0	1	1	0	1	0	1
	1	0	0	0	1	0	0	1	1	1	1	1	0	0	0
	1	0	0	0	1	0	0	1	1	1	1	0	1	1	0
	1	0	0	0	1	0	0	1	1	1	1	0	1	0	1
749/27	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0
	1	0	0	0	0	1	1	1	1	1	1	0	1	0	1
		1	1	0	1	0	1	0	1	0	0	1	0	0	0
		1	1	0	1	0	1	0	1	0	0	0	1	1	0
		1	1	0	1	0	1	0	1	0	0	0	1	0	1
		1	1	0	1	0	1	0	0	1	1	1	0	0	0
		1	1	0	1	0	1	0	0	1	1	0	1	1	0
		1	1	0	1	0	1	0	0	1	1	0	1	0	1
		1	1	0	1	0	0	1	1	1	1	1	0	0	0
		1	1	0	1	0	0	1	1	1	1	0	1	1	0
		1	1	0	1	0	0	1	1	1	1	0	1	0	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	0	0	1	1	1	1	1	1	0	1	1	0
		1	1	0	0	1	1	1	1	1	1	0	1	0	1
		1	0	1	1	1	1	1	1	1	1	1	0	0	0
		1	0	1	1	1	1	1	1	1	1	0	1	1	0
		1	0	1	1	1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule														
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**

Table A21 – Fibonacci codes for numbers 122, 197

Number/number of number codes	The base is Fibonacci numbers											
	144	89	55	34	21	13	8	5	3	2	1	1
122/10	without using the Redundancy Restriction Rule											
		1	0	0	1	0	1	0	1	0	1	0
		1	0	0	1	0	1	0	1	0	0	1
		1	0	0	1	0	1	0	0	1	1	0
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
		1	0	0	0	1	1	1	1	1	1	0
			1	1	1	0	1	0	1	0	1	0
			1	1	1	0	1	0	1	0	0	1
			1	1	1	0	1	0	0	1	1	0
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	1	0	1	1	1	1	1	1	0
	using the Redundancy Restriction Rule											
		1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
			1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**
197/16	without using the Redundancy Restriction Rule											
	1	0	0	1	0	1	0	1	0	0	1	0
	1	0	0	1	0	1	0	1	0	0	0	1
	1	0	0	1	0	1	0	0	1	1	1	0
	1	0	0	1	0	1	0	0	1	1	0	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
	1	0	0	1	0	0	1	1	1	1	0	1
	1	0	0	0	1	1	1	1	1	1	1	0
	1	0	0	0	1	1	1	1	1	1	0	1
		1	1	1	0	1	0	1	0	0	1	0
		1	1	1	0	1	0	1	0	0	0	1
		1	1	1	0	1	0	0	1	1	1	0
		1	1	1	0	1	0	0	1	1	0	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
		1	1	1	0	0	1	1	1	1	0	1
		1	1	0	1	1	1	1	1	1	1	0
		1	1	0	1	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule											
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**

Table A22 – Fibonacci codes for numbers 109, 176

Number/number of number codes	The base is Fibonacci numbers											
	144	89	55	34	21	13	8	5	3	2	1	1
109/9	without using the Redundancy Restriction Rule											
		1	0	0	0	1	0	1	0	1	0	0
		1	0	0	0	1	0	1	0	0	1	1
		1	0	0	0	1	0	0	1	1	0	0
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	1	0	1	0	1	0	1	0	0
		1	1	0	1	0	1	0	0	1	1
		1	1	0	1	0	0	1	1	0	0
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	0	1	1	1	1	1	1	0	0
	using the Redundancy Restriction Rule											
		1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**0**
176/16	without using the Redundancy Restriction Rule											
	1	0	0	0	1	0	1	0	1	0	0	0
	1	0	0	0	1	0	1	0	0	1	1	0
	1	0	0	0	1	0	1	0	0	1	0	1
	1	0	0	0	1	0	0	1	1	1	1	0
	1	0	0	0	1	0	0	1	1	1	0	1
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**
	1	0	0	0	0	1	1	1	1	1	0	1
		1	1	0	1	0	1	0	1	0	0	0
		1	1	0	1	0	1	0	0	1	1	0
		1	1	0	1	0	1	0	0	1	0	1
		1	1	0	1	0	0	1	1	1	1	0
		1	1	0	1	0	0	1	1	1	0	1
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**
		1	1	0	0	1	1	1	1	1	0	1
		1	0	1	1	1	1	1	1	1	1	0
		1	0	1	1	1	1	1	1	1	0	1
	using the Redundancy Restriction Rule											
	1	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**
		1	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**

Table A23 – Fibonacci codes for numbers 225, 364

Number/number of number codes	The base is Fibonacci numbers												
	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule												
		1	0	1	0	1	0	0	1	0	0	0	0
		1	0	1	0	1	0	0	0	1	1	0	0
		1	0	1	0	1	0	0	0	1	0	1	1
		1	0	1	0	0	1	1	1	0	0	0	0
		1	0	1	0	0	1	1	0	1	1	0	0
225/12		1	0	1	0	0	1	1	0	1	0	1	1
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
		1	0	0	1	1	1	1	0	1	1	0	0
		1	0	0	1	1	1	1	0	1	0	1	1
			1	1	1	1	1	1	1	0	0	0	0
			1	1	1	1	1	1	0	1	1	0	0
			1	1	1	1	1	1	0	1	0	1	1
	using the Redundancy Restriction Rule												
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
			1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
	without using the Redundancy Restriction Rule												
	1	0	1	0	1	0	0	1	0	0	0	0	0
	1	0	1	0	1	0	0	0	1	1	0	0	0
	1	0	1	0	1	0	0	0	1	0	1	1	0
	1	0	1	0	1	0	0	0	1	0	1	0	1
	1	0	1	0	0	1	1	1	0	0	0	0	0
	1	0	1	0	0	1	1	0	1	1	0	0	0
	1	0	1	0	0	1	1	0	1	0	1	1	0
	1	0	1	0	0	1	1	0	1	0	1	0	1
364/16	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
	1	0	0	1	1	1	1	0	1	1	0	0	0
	1	0	0	1	1	1	1	0	1	0	1	1	0
	1	0	0	1	1	1	1	0	1	0	1	0	1
		1	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	
		1	1	1	1	1	1	0	1	1	0	0	0
		1	1	1	1	1	1	0	1	0	1	1	0
		1	1	1	1	1	1	0	1	0	1	0	1
	using the Redundancy Restriction Rule												
	1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**

Table A24 – Fibonacci codes for numbers 228, 369

Number/number of number codes	The base is Fibonacci numbers												
	233	144	89	55	34	21	13	8	5	3	2	1	1
228/13	without using the Redundancy Restriction Rule												
		1	0	1	0	1	0	1	0	0	0	0	0
		1	0	1	0	1	0	0	1	1	0	0	0
		1	0	1	0	1	0	0	1	0	1	1	0
		1	0	1	0	1	0	0	1	0	1	0	1
		1	0	1	0	0	1	1	1	1	0	0	0
		1	0	1	0	0	1	1	1	0	1	1	0
		1	0	1	0	0	1	1	1	0	1	0	1
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	0	0	1	1	1	1	1	0	1	1	0
		1	0	0	1	1	1	1	1	0	1	0	1
			1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
			1	1	1	1	1	1	1	0	1	1	0
			1	1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule												
		1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
			1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
369/13	without using the Redundancy Restriction Rule												
	1	0	1	0	1	0	1	0	0	0	0	0	0
	1	0	1	0	1	0	0	1	1	0	0	0	0
	1	0	1	0	1	0	0	1	0	1	1	0	0
	1	0	1	0	1	0	0	1	0	1	0	1	1
	1	0	1	0	0	1	1	1	1	0	0	0	0
	1	0	1	0	0	1	1	1	0	1	1	0	0
	1	0	1	0	0	1	1	1	0	1	0	1	1
	1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
	1	0	0	1	1	1	1	1	0	1	1	0	0
	1	0	0	1	1	1	1	1	0	1	0	1	1
		1	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	
		1	1	1	1	1	1	1	0	1	1	0	0
		1	1	1	1	1	1	1	0	1	0	1	1
	using the Redundancy Restriction Rule												
	1	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
		1	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**

Table A25 – Fibonacci codes for a numbe 1359

Number/number of number codes	The base is Fibonacci numbers															
	987	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
1359/30	without using the Redundancy Restriction Rule															
	1	0	0	1	0	1	0	1	0	1	0	0	1	0	0	0
	1	0	0	1	0	1	0	1	0	1	0	0	0	1	1	0
	1	0	0	1	0	1	0	1	0	1	0	0	0	1	0	1
	1	0	0	1	0	1	0	1	0	0	1	1	1	0	0	0
	1	0	0	1	0	1	0	1	0	0	1	1	0	1	1	0
	1	0	0	1	0	1	0	1	0	0	1	1	0	1	0	1
	1	0	0	1	0	1	0	0	1	1	1	1	1	0	0	0
	1	0	0	1	0	1	0	0	1	1	1	1	0	1	1	0
	1	0	0	1	0	1	0	0	1	1	1	1	0	1	0	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	0	0	1	1	1	1	1	1	0	1	1	0
	1	0	0	1	0	0	1	1	1	1	1	1	0	1	0	1
	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0
	1	0	0	0	1	1	1	1	1	1	1	1	0	1	1	0
	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	1
		1	1	1	0	1	0	1	0	1	0	0	1	0	0	0
		1	1	1	0	1	0	1	0	1	0	0	0	1	1	0
		1	1	1	0	1	0	1	0	1	0	0	0	1	0	1
		1	1	1	0	1	0	1	0	0	1	1	1	0	0	0
		1	1	1	0	1	0	1	0	0	1	1	0	1	1	0
		1	1	1	0	1	0	1	0	0	1	1	0	1	0	1
		1	1	1	0	1	0	0	1	1	1	1	1	0	0	0
		1	1	1	0	1	0	0	1	1	1	1	0	1	1	0
		1	1	1	0	1	0	0	1	1	1	1	0	1	0	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	1	0	0	1	1	1	1	1	1	0	1	1	0
		1	1	1	0	0	1	1	1	1	1	1	0	1	0	1
		1	1	0	1	1	1	1	1	1	1	1	1	0	0	0
		1	1	0	1	1	1	1	1	1	1	1	0	1	1	0
		1	1	0	1	1	1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule															
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**

31

Table A26 – Fibonacci codes for a numbe 1351

Number/number of number codes	The base is Fibonacci numbers															
	987	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule															
	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0
	1	0	0	1	0	1	0	1	0	0	0	1	1	0	0	0
	1	0	0	1	0	1	0	1	0	0	0	1	0	1	1	0
	1	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
	1	0	0	1	0	1	0	0	1	1	1	0	0	0	0	0
	1	0	0	1	0	1	0	0	1	1	0	1	1	0	0	0
	1	0	0	1	0	1	0	0	1	1	0	1	0	1	1	0
	1	0	0	1	0	1	0	0	1	1	0	1	0	1	0	1
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
	1	0	0	1	0	0	1	1	1	1	0	1	1	0	0	0
	1	0	0	1	0	0	1	1	1	1	0	1	0	1	1	0
	1	0	0	1	0	0	1	1	1	1	0	1	0	1	0	1
	1	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0
	1	0	0	0	1	1	1	1	1	1	0	1	1	0	0	0
	1	0	0	0	1	1	1	1	1	1	0	1	0	1	1	0
1351/32	1	0	0	0	1	1	1	1	1	1	0	1	0	1	0	1
		1	1	1	0	1	0	1	0	0	1	0	0	0	0	0
		1	1	1	0	1	0	1	0	0	0	1	1	0	0	0
		1	1	1	0	1	0	1	0	0	0	1	0	1	1	0
		1	1	1	0	1	0	1	0	0	0	1	0	1	0	1
		1	1	1	0	1	0	0	1	1	1	0	0	0	0	0
		1	1	1	0	1	0	0	1	1	0	1	1	0	0	0
		1	1	1	0	1	0	0	1	1	0	1	0	1	1	0
		1	1	1	0	1	0	0	1	1	0	1	0	1	0	1
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
		1	1	1	0	0	1	1	1	1	0	1	1	0	0	0
		1	1	1	0	0	1	1	1	1	0	1	0	1	1	0
		1	1	1	0	0	1	1	1	1	0	1	0	1	0	1
		1	1	0	1	1	1	1	1	1	1	0	0	0	0	0
		1	1	0	1	1	1	1	1	1	0	1	1	0	0	0
		1	1	0	1	1	1	1	1	1	0	1	0	1	1	0
		1	1	0	1	1	1	1	1	1	0	1	0	1	0	1
	using the Redundancy Restriction Rule															
	1	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
		1	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**

Table A27 – Fibonacci codes for numbers 22, 35, 57, 92

Number/number of codes	The base is Fibonacci numbers										
	89	55	34	21	13	8	5	3	2	1	1
22/7	without using the Redundancy Restriction Rule										
				1	0	0	0	0	0	1	0
				1	**0**	**0**	**0**	**0**	**0**	**0**	**1**
					1	1	0	0	0	1	0
					1	**1**	**0**	**0**	**0**	**0**	**1**
					1	0	1	1	0	1	0
					1	0	1	1	0	0	1
					1	0	1	0	1	1	1
	using the Redundancy Restriction Rule										
				1	**0**	**0**	**0**	**0**	**0**	**0**	**1**
					1	**1**	**0**	**0**	**0**	**0**	**1**
35/8	without using the Redundancy Restriction Rule										
			1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
			1	0	0	0	0	0	0	0	1
				1	**1**	**0**	**0**	**0**	**0**	**1**	**0**
				1	1	0	0	0	0	0	1
				1	0	1	1	0	0	1	0
				1	0	1	1	0	0	0	1
				1	0	1	0	1	1	1	0
				1	0	1	0	1	1	0	1
	using the Redundancy Restriction Rule										
			1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
				1	**1**	**0**	**0**	**0**	**0**	**1**	**0**
57/8	without using the Redundancy Restriction Rule										
		1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
		1	0	0	0	0	0	0	0	1	1
			1	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
			1	1	0	0	0	0	0	1	1
			1	0	1	1	0	0	1	0	0
			1	0	1	1	0	0	0	1	1
			1	0	1	0	1	1	1	0	0
			1	0	1	0	1	1	0	1	1
	using the Redundancy Restriction Rule										
		1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
			1	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**
92/12	without using the Redundancy Restriction Rule										
	1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
	1	0	0	0	0	0	0	0	1	1	0
	1	0	0	0	0	0	0	0	1	0	1
		1	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
		1	1	0	0	0	0	0	1	1	0
		1	1	0	0	0	0	0	1	0	1
		1	0	1	1	0	0	1	0	0	0
		1	0	1	1	0	0	0	1	1	0
		1	0	1	1	0	0	0	1	0	1
		1	0	1	0	1	1	1	0	0	0
		1	0	1	0	1	1	0	1	1	0
		1	0	1	0	1	1	0	1	0	1
	using the Redundancy Restriction Rule										
	1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

Table A28 – Fibonacci codes for a number 1736

Number/number of number codes	The base is Fibonacci numbers																
	1597	987	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule																
	1	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0
	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	1	0
	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1
	1	0	0	0	0	0	1	0	1	0	0	1	1	1	0	0	0
	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	1	0
	1	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1
	1	0	0	0	0	0	1	0	0	1	1	1	1	1	0	0	0
	1	0	0	0	0	0	1	0	0	1	1	1	1	0	1	1	0
	1	0	0	0	0	0	1	0	0	1	1	1	1	0	1	0	1
	1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	0
	1	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	1
1736/39		1	1	0	0	0	1	0	1	0	1	0	0	1	0	0	0
		1	1	0	0	0	1	0	1	0	1	0	0	0	1	1	0
		1	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1
		1	1	0	0	0	1	0	1	0	0	1	1	1	0	0	0
		1	1	0	0	0	1	0	1	0	0	1	1	0	1	1	0
		1	1	0	0	0	1	0	1	0	0	1	1	0	1	0	1
		1	1	0	0	0	1	0	0	1	1	1	1	1	0	0	0
		1	1	0	0	0	1	0	0	1	1	1	1	0	1	1	0
		1	1	0	0	0	1	0	0	1	1	1	1	0	1	0	1
		1	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0
		1	1	0	0	0	0	1	1	1	1	1	1	0	1	0	1
		1	0	1	1	0	1	0	1	0	1	0	0	1	0	0	0
		1	0	1	1	0	1	0	1	0	1	0	0	0	1	1	0
		1	0	1	1	0	1	0	1	0	1	0	0	0	1	0	1
		1	0	1	1	0	1	0	1	0	0	1	1	1	0	0	0
		1	0	1	1	0	1	0	1	0	0	1	1	0	1	1	0
		1	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1
		1	0	1	1	0	1	0	0	1	1	1	1	1	0	0	0
		1	0	1	1	0	1	0	0	1	1	1	1	0	1	1	0
		1	0	1	1	0	1	0	0	1	1	1	1	0	1	0	1
		1	0	1	1	0	0	1	1	1	1	1	1	1	0	0	0
		1	0	1	1	0	0	1	1	1	1	1	1	0	1	1	0
		1	0	1	1	0	0	1	1	1	1	1	1	0	1	0	1
		1	0	1	0	1	1	1	1	1	1	1	1	1	0	0	0
		1	0	1	0	1	1	1	1	1	1	1	1	0	1	1	0
		1	0	1	0	1	1	1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule																
	1	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**

Table A29 – Fibonacci codes for a number 2346

Number/number of number codes	The base is Fibonacci numbers																
	1597	987	610	377	233	144	89	55	34	21	13	8	5	3	2	1	1
	without using the Redundancy Restriction Rule																
	1	0	1	0	0	0	1	0	1	0	1	0	0	1	0	0	0
	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	1	0
	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1
	1	0	1	0	0	0	1	0	1	0	0	1	1	1	0	0	0
	1	0	1	0	0	0	1	0	1	0	0	1	1	0	1	1	0
	1	0	1	0	0	0	1	0	1	0	0	1	1	0	1	0	1
	1	0	1	0	0	0	1	0	0	1	1	1	1	1	0	0	0
	1	0	1	0	0	0	1	0	0	1	1	1	1	0	1	1	0
	1	0	1	0	0	0	1	0	0	1	1	1	1	0	1	0	1
	1	0	1	0	0	0	0	1	1	1	1	1	1	1	0	0	0
	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1	1	0
	1	0	1	0	0	0	0	1	1	1	1	1	1	0	1	0	1
	1	0	0	1	1	0	1	0	1	0	1	0	0	1	0	0	0
	1	0	0	1	1	0	1	0	1	0	1	0	0	0	1	1	0
	1	0	0	1	1	0	1	0	1	0	1	0	0	0	1	0	1
	1	0	0	1	1	0	1	0	1	0	0	1	1	1	0	0	0
	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	1	0
	1	0	0	1	1	0	1	0	1	0	0	1	1	0	1	0	1
	1	0	0	1	1	0	1	0	0	1	1	1	1	1	0	0	0
	1	0	0	1	1	0	1	0	0	1	1	1	1	0	1	1	0
	1	0	0	1	1	0	1	0	0	1	1	1	1	0	1	0	1
2346/42	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
	1	0	0	1	1	0	0	1	1	1	1	1	1	0	1	1	0
	1	0	0	1	1	0	0	1	1	1	1	1	1	0	1	0	1
	1	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0	0
	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	1	0
	1	0	0	1	0	1	1	1	1	1	1	1	1	0	1	0	1
		1	1	1	1	0	1	0	1	0	1	0	0	1	0	0	0
		1	1	1	1	0	1	0	1	0	1	0	0	0	1	1	0
		1	1	1	1	0	1	0	1	0	1	0	0	0	1	0	1
		1	1	1	1	0	1	0	1	0	0	1	1	1	0	0	0
		1	1	1	1	0	1	0	1	0	0	1	1	0	1	1	0
		1	1	1	1	0	1	0	1	0	0	1	1	0	1	0	1
		1	1	1	1	0	1	0	0	1	1	1	1	1	0	0	0
		1	1	1	1	0	1	0	0	1	1	1	1	0	1	1	0
		1	1	1	1	0	1	0	0	1	1	1	1	0	1	0	1
		1	**1**	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	0
		1	1	1	1	0	0	1	1	1	1	1	1	0	1	0	1
		1	1	1	0	1	1	1	1	1	1	1	1	1	0	0	0
		1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	0
		1	1	1	0	1	1	1	1	1	1	1	1	0	1	0	1
	using the Redundancy Restriction Rule																
	1	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**
		1	**1**	**1**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**