PROOF OF THE CONTINUED FRACTION CONJECTURE FOR $(a,b) = (z, z^6 + z^5 + z^4 + z^3 + z)$

GUO-NIU HAN* AND YINING HU*

Abstract. The continued fraction conjecture claims that the continued fraction defined by the (a,b)-Thue-Morse sequence is algebraic over $\mathbb{F}_2(x)$ for all pairs of distinct elements (a,b) in $\mathbb{F}_2[x] \setminus \mathbb{F}_2$. In this paper we prove the conjecture for $(a,b) = (z, z^6 + z^5 + z^4 + z^3 + z)$.

1. Introduction

Let $\mathbb{F}_2$ be the finite field of cardinality 2. Given a sequence of polynomials $\mathbf{a} = (a_0(z), a_1(z), a_2(z), \ldots)$ of elements from $\mathbb{F}_2[z] \setminus \mathbb{F}_2$, we define the infinite continued fraction

$$\mathrm{CF}(\mathbf{a}(z)) = \cfrac{1}{a_0(z) + \cfrac{1}{a_1(z) + \cfrac{1}{a_2(z) + \cfrac{1}{\ddots}}}} \tag{1.1}$$

as the limit of the finite continued fractions

$$\mathrm{CF}_n(\mathbf{a}(z)) = \cfrac{1}{a_0(z) + \cfrac{1}{a_1(z) + \cfrac{1}{\ddots + \cfrac{1}{a_n(z)}}}} \in \mathbb{F}_2((1/z)). \tag{1.2}$$

Conversely, each power series in $\mathbb{F}_2[[1/z]]$ without constant term

$$c_{-1}z^{-1} + c_{-2}z^{-2} + c_{-3}z^{-3} + \cdots \tag{1.3}$$

admits a continued fraction expansion of form (1.1).

Let a and b be two distinct elements from $\mathbb{F}_2[z] \setminus \mathbb{F}_2$. We consider the continued fraction (1.1) associated with the (a,b)-Thue-Morse sequence

$$\mathbf{t} = (t_0(z), t_1(z), t_2(z), \ldots) = (a, b, b, a, b, a, a, b, \ldots)$$

that we shall denote

$$\mathrm{CF}(a,b) := \mathrm{CF}(\mathbf{t}). \tag{1.4}$$

Date: 9/04/2020 19:28:26 .

2010 *Mathematics Subject Classification.* 11B85, 11J70, 11B50, 11Y65, 05A15.

Key words and phrases. automatic sequence, continued fraction, Thue-Morse sequence.

* This paper was automatically generated from a computer program developed by the authors, with 1.6 hours CPU time used.

Theorem 1.1. *When $(a,b)=(z, z^6+z^5+z^4+z^3+z)$, the two power series* $\mathrm{CF}(a,b)$ *and* $\mathrm{CF}(b,a)$ *are algebraic over* $\mathbb{F}_2(z)$*, with minimal polynomials of the form*

$$p_4(z)y^4+p_3(z)y^3+p_2(z)y^2+p_1(z)y+p_0(z)=0$$

where, for $\mathrm{CF}(a,b)$*,*

$$\begin{aligned}
p_0(z)&=z^{18}+z^{15}+z^{13}+z^{12}+z^8+z^7+z^6+z^4+z^3+z^2+1,\\
p_1(z)&=z^{21}+z^{19}+z^{17}+z^{16}+z^{14}+z^8+z^7+z^5+z^4+z^3,\\
p_2(z)&=z^{22}+z^{20}+z^{18}+z^{16}+z^{14}+z^{12}+z^6+z^4+z^2,\\
p_3(z)&=z^{21}+z^{19}+z^{17}+z^{16}+z^{14}+z^8+z^7+z^5+z^4+z^3,\\
p_4(z)&=z^{20}+z^{16}+z^{15}+z^{14}+z^{13}+z^8+z^7+z^6+z^3+z^2+1,
\end{aligned}$$

and for $\mathrm{CF}(b,a)$*,*

$$\begin{aligned}
p_0(z)&=z^{15}+z^{14}+z^{13}+z^{12}+z^{10}+z^8+z^7+z^4+z^3+z^2+1,\\
p_1(z)&=z^{21}+z^{19}+z^{17}+z^{16}+z^{14}+z^8+z^7+z^5+z^4+z^3,\\
p_2(z)&=z^{22}+z^{20}+z^{18}+z^{16}+z^{14}+z^{12}+z^6+z^4+z^2,\\
p_3(z)&=z^{21}+z^{19}+z^{17}+z^{16}+z^{14}+z^8+z^7+z^5+z^4+z^3,\\
p_4(z)&=z^{20}+z^{18}+z^{16}+z^{15}+z^{13}+z^{10}+z^8+z^7+z^3+z^2+1.
\end{aligned}$$

2. Proof

Define the sequences of polynomials $(P_n(z))_{n\ge 0}$ and $(Q_n(z))_{n\ge 0}$ by

$$\begin{pmatrix} P_n(z) & Q_n(z)\\ P_{n-1}(z) & Q_{n-1}(z)\end{pmatrix} := \begin{pmatrix} t_n(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix} t_{n-1}(z) & 1\\ 1 & 0\end{pmatrix}\cdots\begin{pmatrix} t_0(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix} 0 & 1\\ 1 & 0\end{pmatrix}.$$

By the basic properties of continued fractions, we have

$$\mathrm{CF}_n(a,b)=\frac{P_n(z)}{Q_n(z)}\in\mathbb{F}_2((1/z)). \tag{2.1}$$

As formula (2.1) is not efficient for calculating $\mathrm{CF}_n(a,b)$, a fast method is to be derived and described as follows. Define

$$\begin{aligned}
M_n(x)&=x^{\deg(t_{2^n-1})}\begin{pmatrix} t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(t_{2^n-2})}\begin{pmatrix} t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\\
&\qquad\cdots\times x^{\deg(t_0)}\begin{pmatrix} t_0(1/x) & 1\\ 1 & 0\end{pmatrix},\\
W_n(x)&=x^{\deg(\bar t_{2^n-1})}\begin{pmatrix} \bar t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(\bar t_{2^n-2})}\begin{pmatrix} \bar t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\\
&\qquad\cdots\times x^{\deg(\bar t_0)}\begin{pmatrix} \bar t_0(1/x) & 1\\ 1 & 0\end{pmatrix},
\end{aligned}$$

where $\bar{\mathbf{t}}$ is the (b,a)-Thue-Morse sequence. By the properties of the Thue-Morse sequence, we have for $n\ge 0$

$$\begin{aligned}
M_{n+1}(x)&=W_n(x)\cdot M_n(x),\\
W_{n+1}(x)&=M_n(x)\cdot W_n(x).
\end{aligned}$$

Let $x := 1/z$. For each non-zero polynomial $P(z)$, define $\tilde{P}(x)$ to be $P(1/x)$. Then,

$$\mathrm{CF}_n(a,b) = \frac{P_n(z)}{Q_n(z)} = \frac{\tilde{P}_n(x)}{\tilde{Q}_n(x)} \in \mathbb{F}_2((x)) = \mathbb{F}_2((1/z)).$$

Comparing the definition of $M_n(x)$ with the definition of $P_n(x)$ and $Q_n(x)$, we see that

$$M_n(x)_{0,1} = x^{d_n}\tilde{P}_{2^n-1}(x),$$
$$M_n(x)_{0,0} = x^{d_n}\tilde{Q}_{2^n-1}(x),$$

for some positive integer d_n. Hence,

$$\mathrm{CF}_{2^{2n}-1}(a,b) = \frac{\tilde{P}_{2^{2n}-1}(x)}{\tilde{Q}_{2^{2n}-1}(x)} = \frac{M_{2n}(x)_{0,1}}{M_{2n}(x)_{0,0}}. \tag{2.2}$$

Therefore, by the convergence theorem of continued fraction, the algebraicity of $\mathrm{CF}(a,b)$ will be established if it is shown that both $M_{2n}(x)_{0,1}$ and $M_{2n}(x)_{0,0}$ converge to algebraic series in $\mathbb{F}_2[[x]]$.

Actually, we will prove that for all $0 \le i,j \le 1$ the four sequences $(M_{2n}(x)_{i,j})_n$, $(M_{2n+1}(x)_{i,j})_n$, $(W_{2n}(x)_{i,j})_n$, and $(W_{2n+1}(x)_{i,j})_n$ converge to algebraic series in $\mathbb{F}_2[[x]]$. For this purpose, we define four 2×2 matrices M^e, M^o, W^e, W^o as follows: For each $T \in \{M^e, M^o, W^e, W^o\}$ and $0 \le i,j \le 1$, $T_{i,j}$ is defined to be the unique solution in $\mathbb{F}_2[[x]]$ of the polynomial $\phi(T,i,j)$ under certain initial conditions; the polynomials $\phi(T,i,j)$ and initial conditions are given in Section 3. We will prove that these four matrices, whose components are algebraic by definition, are the limits of $(M_{2n}(x))_n$, $(M_{2n+1}(x))_n$, $(W_{2n}(x))_n$, and $(W_{2n+1}(x))_n$.

Let us explain how the polynomials $\phi(T,i,j)$ and initial conditions are found, and why the solutions exist and are unique. For $0 \le i,j \le 1$, the the coefficients of the polynomial $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$) are the Padé-Hermite approximants of type

$$(175, 175, 175, 175, 175)$$

of the vector

$$(1, T^3, T^6, T^9, T^{12}),$$

where $T = M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$), found by the Derksen algorithm. We take the first 8 terms of $M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$) as initial conditions for $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$). The following fact will be used to ensure that the solution exists and is unique: let $P(x,y) \in \mathbb{F}_2[x,y]$ and for each series $f(x) = \sum_{n=0}^{\infty} a_n x^n \in \mathbb{F}_2[[x]]$ denote the partial sum $\sum_{j=0}^{n-1} a_j x^j$ by $f_n(x)$ for $n \ge 0$. If for some $n \ge 0$ and $a_0, a_1, \ldots, a_{n-1} \in \mathbb{F}_2$ $P(x, \sum_{j=0}^{n-1} a_j x^j) = O(x^n)$ and $Q(x,y) := P(x, \sum_{j=0}^{n-1} a_j x^j + x^n y)$ can be written as $x^m \sum_{j=0}^{\infty} q_j(x) y^j$ where $q_j(x)$ are polynomials for $j \ge 0$, $q_1(0) = 1$, and $q_j(0) = 0$ for $j > 1$, then there exists a unique solution $f(x) \in \mathbb{F}_2[[x]]$ of $P(x, f(x)) = 0$ that satisfies the initial condition $f_n(x) = \sum_{j=0}^{n-1} a_j x^j$.

We state two lemmas concerning the four matrices M^e, M^o, W^e, W^o. The first one is about relations between them; the second, about the structure of the each matrix.

Lemma 2.1. *We have*

$$M^e = W^o \cdot M^o, \tag{2.3}$$

$$M^o = W^e \cdot M^e, \tag{2.4}$$

$$W^e = M^o \cdot W^o, \tag{2.5}$$

$$W^o = M^e \cdot W^e. \tag{2.6}$$

Proof. We give the proof of the identity

$$M^e_{0,0} = W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0},$$

the proofs of the others being similar.

First, we compute the minimal polynomials of $W^o_{0,0}M^o_{0,0}$ and $W^o_{0,1}M^o_{1,0}$. We know that

$$P(x,y) = \mathrm{Res}_z\left(\phi(W^o,0,0)(x,z),\ z^{12}\cdot\phi(M^o,0,0)(x,y/z)\right)$$

is an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We use Padé-Hermite approximation to find a candidate for the minimal polynomial of $W^o_{0,0}M^o_{0,0}$, that will be called $\phi_0(x,y)$. To prove that $\phi_0(x,y)$ is indeed the minimal polynomial, it suffices to prove that it is an irreducible factor of $P(x,y)$ of multiplicity m and that $Q(x,y) := P(x,y)/\phi_0(x,y)^m$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We verify the first point directly. For the second point, we truncate $W^o_{0,0}M^o_{0,0}$ to order 630 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 630, which proves that $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We find the minimal polynomial $\phi_1(x,y)$ of $W^o_{0,1}M^o_{1,0}$ in a similar way.

Now we prove that $\phi(M^e,0,0)$ is the minimal polynomial of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$. We know that

$$S(x,y) = \mathrm{Res}_z\left(\phi_0(x,z),\ \phi_1(x,y+z)\right)$$

is an annihilating of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$. We verify that $\phi(M^e,0,0)$ is an irreducible factor of $S(x,y)$ of multiplicity μ, and that $Q(x,y) := S(x,y)/\phi(M^e,0,0)^\mu$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$. To see the last point, we truncate $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$ to order 770 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 770, and therefore $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$.

Finally, the first 16 terms of $M^e_{0,0}$ and $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$ coincide. As these first terms determine a unique solution of $\phi(M^e,0,0)$, we know that the two series are one and the same. ☐

Define

$$R^e = \begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix} \qquad\text{and}\qquad R^o = \begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix}.$$

Lemma 2.2. *For all integers $k\ge 2$ and $u = 2^{2k-1}$, the following identities hold.*

$$\begin{aligned}M^e[:14u] = {}& M^e[:7u] + x^uM^e[:6u] + x^{5u}M^e[:2u] + x^uM^e[:7u] + x^{2u}M^e[:6u]\\ &+ x^{6u}M^e[:2u] + x^{2u}M^e[:7u] + x^{3u}M^e[:6u] + x^{7u}M^e[:2u]\\ &+ x^{3u}M^e[:7u] + x^{4u}M^e[:6u] + x^{8u}M^e[:2u] + x^{4u}M^e[:7u]\\ &+ x^{5u}M^e[:6u] + x^{9u}M^e[:2u] + x^{6u}M^e[:7u] + x^{7u}M^e[:6u]\\ &+ x^{11u}M^e[:2u] + x^{7u}M^e[:7u] + x^{8u}M^e[:6u] + x^{9u}M^e[:5u]\\ &+ x^{12u}M^e[:2u] + (x^{7u}+x^{8u}+x^{9u}+x^{10u}+x^{11u}+x^{13u})R^e,\end{aligned}$$

$$\begin{aligned}
W^e[:14u] &= W^e[:7u] + x^u W^e[:6u] + x^{5u} W^e[:2u] + x^u W^e[:7u] + x^{2u} W^e[:6u] \\
&\quad + x^{6u} W^e[:2u] + x^{2u} W^e[:7u] + x^{3u} W^e[:6u] + x^{7u} W^e[:2u] \\
&\quad + x^{3u} W^e[:7u] + x^{4u} W^e[:6u] + x^{8u} W^e[:2u] + x^{4u} W^e[:7u] \\
&\quad + x^{5u} W^e[:6u] + x^{9u} W^e[:2u] + x^{6u} W^e[:7u] + x^{7u} W^e[:6u] \\
&\quad + x^{11u} W^e[:2u] + x^{7u} W^e[:7u] + x^{8u} W^e[:6u] + x^{9u} W^e[:5u] \\
&\quad + x^{12u} W^e[:2u] + (x^{7u} + x^{8u} + x^{9u} + x^{10u} + x^{11u} + x^{13u}) R^e.
\end{aligned}$$

For all integers $k \geq 2$ and $u = 2^{2k}$, the following identities hold.

$$\begin{aligned}
M^o[:14u] &= M^o[:7u] + x^u M^o[:6u] + x^{5u} M^o[:2u] + x^u M^o[:7u] + x^{2u} M^o[:6u] \\
&\quad + x^{6u} M^o[:2u] + x^{2u} M^o[:7u] + x^{3u} M^o[:6u] + x^{7u} M^o[:2u] \\
&\quad + x^{3u} M^o[:7u] + x^{4u} M^o[:6u] + x^{8u} M^o[:2u] + x^{4u} M^o[:7u] \\
&\quad + x^{5u} M^o[:6u] + x^{9u} M^o[:2u] + x^{6u} M^o[:7u] + x^{7u} M^o[:6u] \\
&\quad + x^{11u} M^o[:2u] + x^{7u} M^o[:7u] + x^{8u} M^o[:6u] + x^{9u} M^o[:5u] \\
&\quad + x^{12u} M^o[:2u] + (x^{7u} + x^{8u} + x^{9u} + x^{10u} + x^{11u} + x^{13u}) R^o, \\
W^o[:14u] &= W^o[:7u] + x^u W^o[:6u] + x^{5u} W^o[:2u] + x^u W^o[:7u] + x^{2u} W^o[:6u] \\
&\quad + x^{6u} W^o[:2u] + x^{2u} W^o[:7u] + x^{3u} W^o[:6u] + x^{7u} W^o[:2u] \\
&\quad + x^{3u} W^o[:7u] + x^{4u} W^o[:6u] + x^{8u} W^o[:2u] + x^{4u} W^o[:7u] \\
&\quad + x^{5u} W^o[:6u] + x^{9u} W^o[:2u] + x^{6u} W^o[:7u] + x^{7u} W^o[:6u] \\
&\quad + x^{11u} W^o[:2u] + x^{7u} W^o[:7u] + x^{8u} W^o[:6u] + x^{9u} W^o[:5u] \\
&\quad + x^{12u} W^o[:2u] + (x^{7u} + x^{8u} + x^{9u} + x^{10u} + x^{11u} + x^{13u}) R^o.
\end{aligned}$$

Proof. To prove Lemma 2.2 we first construct an automaton for each sequence concerned, and then transform the conditions on infinitely many k's into finitely many conditions on the states of the automaton. In the following, we will prove that for $T = M^o_{0,0}$, for all integer $k \geq 2$ and $u = 2^{2k}$,

$$\begin{aligned}
T[:14u] &= T[:7u] + x^u T[:6u] + x^{5u} T[:2u] + x^u T[:7u] + x^{2u} T[:6u] + x^{6u} T[:2u] \\
&\quad + x^{2u} T[:7u] + x^{3u} T[:6u] + x^{7u} T[:2u] + x^{3u} T[:7u] + x^{4u} T[:6u] \\
&\quad + x^{8u} T[:2u] + x^{4u} T[:7u] + x^{5u} T[:6u] + x^{9u} T[:2u] + x^{6u} T[:7u] \\
&\quad + x^{7u} T[:6u] + x^{11u} T[:2u] + x^{7u} T[:7u] + x^{8u} T[:6u] + x^{9u} T[:5u] \\
&\quad + x^{12u} T[:2u].
\end{aligned}$$

The proof of the other 15 cases are similar. We break down the above identity into 7 parts:

$$\begin{aligned}
0 &= x^{7u} T[:u] + x^{5u} T[2u:3u] + x^u T[6u:7u] + T[7u:8u], \\
0 &= x^{7u} T[u:2u] + x^{6u} T[2u:3u] + x^{5u} T[3u:4u] + x^{2u} T[6u:7u] \\
&\quad + T[8u:9u], \\
0 &= x^{6u} T[3u:4u] + x^{5u} T[4u:5u] + x^{3u} T[6u:7u] + T[9u:10u], \\
0 &= x^{8u} T[2u:3u] + x^{6u} T[4u:5u] + x^{5u} T[5u:6u] + x^{4u} T[6u:7u] \\
&\quad + T[10u:11u],
\end{aligned}$$

$$
\begin{aligned}
0 &= x^{11u}T[:u] + x^{9u}T[2u:3u] + x^{8u}T[3u:4u] + x^{6u}T[5u:6u] \\
&\quad + T[11u:12u], \\
0 &= x^{12u}T[:u] + x^{11u}T[u:2u] + x^{9u}T[3u:4u] + x^{8u}T[4u:5u] \\
&\quad + x^{6u}T[6u:7u] + T[12u:13u], \\
0 &= x^{12u}T[u:2u] + x^{9u}T[4u:5u] + x^{8u}T[5u:6u] + x^{7u}T[6u:7u] \\
&\quad + T[13u:14u],
\end{aligned}
$$

which can be rewritten as

$$0 = T[[w]_2] + T[[10w]_2] + T[[110w]_2] + T[[111w]_2], \tag{2.7}$$

$$0 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[110w]_2] + T[[1000w]_2], \tag{2.8}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.9}$$

$$0 = T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2], \tag{2.10}$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[11w]_2] + T[[101w]_2] + T[[1011w]_2], \tag{2.11}$$

$$\begin{aligned} 0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] \\ + T[[1100w]_2], \end{aligned} \tag{2.12}$$

$$0 = T[[1w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.13}$$

for all binary word w of length $2k$ and $w \neq 0^{2k}$, and

$$0 = T[[w]_2] + T[[10w]_2] + T[[110w]_2] + T[[111w]_2], \tag{2.14}$$

$$0 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[110w]_2] + T[[1000w]_2], \tag{2.15}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.16}$$

$$0 = T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2], \tag{2.17}$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[11w]_2] + T[[101w]_2] + T[[1011w]_2], \tag{2.18}$$

$$\begin{aligned} 0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] \\ + T[[1100w]_2], \end{aligned} \tag{2.19}$$

$$0 = T[[1w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.20}$$

for $w = 0^{2k}$.

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 3905 states; its transition function and output function can be found in the annex. Let $A(s, w)$ denote the state reached after reading w from right to left starting from the state s, and τ the output function. Define

$$E_{2k} = \{A(i, w) : |w| = 2k, w \neq 0^{2k}\}.$$

Identities (2.7) through (2.20) can be written as

$$0 = \tau(A(s, \epsilon)) + \tau(A(s, 10)) + \tau(A(s, 110)) + \tau(A(s, 111)), \tag{2.21}$$

$$\begin{aligned} 0 = \tau(A(s, 1)) + \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 110)) \\ + \tau(A(s, 1000)), \end{aligned} \tag{2.22}$$

$$0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 110)) + \tau(A(s, 1001)), \tag{2.23}$$

$$\begin{aligned} 0 = \tau(A(s, 10)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 110)) \\ + \tau(A(s, 1010)), \end{aligned} \tag{2.24}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon)) + \tau(A(s,10)) + \tau(A(s,11)) + \tau(A(s,101)) \\ &\quad + \tau(A(s,1011)),\end{aligned} \tag{2.25}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon)) + \tau(A(s,1)) + \tau(A(s,11)) + \tau(A(s,100)) \\ &\quad + \tau(A(s,110)) + \tau(A(s,1100)),\end{aligned} \tag{2.26}$$

$$\begin{aligned}0 &= \tau(A(s,1)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,110)) \\ &\quad + \tau(A(s,1101)),\end{aligned} \tag{2.27}$$

for all $s \in E_{2k}$, and

$$0 = \tau(A(s,\epsilon)) + \tau(A(s,10)) + \tau(A(s,110)) + \tau(A(s,111)), \tag{2.28}$$

$$\begin{aligned}0 &= \tau(A(s,1)) + \tau(A(s,10)) + \tau(A(s,11)) + \tau(A(s,110)) \\ &\quad + \tau(A(s,1000)),\end{aligned} \tag{2.29}$$

$$0 = \tau(A(s,11)) + \tau(A(s,100)) + \tau(A(s,110)) + \tau(A(s,1001)), \tag{2.30}$$

$$\begin{aligned}0 &= \tau(A(s,10)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,110)) \\ &\quad + \tau(A(s,1010)),\end{aligned} \tag{2.31}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon)) + \tau(A(s,10)) + \tau(A(s,11)) + \tau(A(s,101)) \\ &\quad + \tau(A(s,1011)),\end{aligned} \tag{2.32}$$

$$\begin{aligned}0 &= \tau(A(s,\epsilon)) + \tau(A(s,1)) + \tau(A(s,11)) + \tau(A(s,100)) \\ &\quad + \tau(A(s,110)) + \tau(A(s,1100)),\end{aligned} \tag{2.33}$$

$$\begin{aligned}0 &= \tau(A(s,1)) + \tau(A(s,100)) + \tau(A(s,101)) + \tau(A(s,110)) \\ &\quad + \tau(A(s,1101)),\end{aligned} \tag{2.34}$$

for $s = A(i, 0^{2k})$. We find that $(A(i,0^{70}), E_{70}) = (A(i,0^{22}), E_{22})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2 \le k \le 35$, which turns out to be true. □

In the following lemma, we express M_{2k}, M_{2k+1}, W_{2k}, and W_{2k+1} in terms of M^e, M^o, W^e, and W^o.

Lemma 2.3. *For all integer $k \ge 2$, and $u = 2^{2k-1}$,*

$$\begin{aligned}M_{2k} &= M^e[:7u] + x^u M^e[:6u] + x^{5u} M^e[:2u] + x^{7u} R^e, \\ W_{2k} &= W^e[:7u] + x^u W^e[:6u] + x^{5u} W^e[:2u] + x^{7u} R^e.\end{aligned}$$

For all integer $k \ge 2$, and $u = 2^{2k}$,

$$\begin{aligned}M_{2k+1} &= M^o[:7u] + x^u M^o[:6u] + x^{5u} M^o[:2u] + x^{7u} R^o, \\ W_{2k+1} &= W^o[:7u] + x^u W^o[:6u] + x^{5u} W^o[:2u] + x^{7u} R^o.\end{aligned}$$

Proof. We call the four identities in Lemma 2.3 also by the name M_{2k}, W_{2k}, M_{2k+1}, and W_{2k+1}. For $n = 2$, the identities can be verified directly. For $n \ge 2$, we claim that

$$\begin{aligned}M_{2k} \wedge W_{2k} &\Rightarrow M_{2k+1} \wedge W_{2k+1}, \\ M_{2k+1} \wedge W_{2k+1} &\Rightarrow M_{2k+2} \wedge W_{2k+2}.\end{aligned}$$

We give the proof of

$$M_{2k} \wedge W_{2k} \Rightarrow M_{2k+1},$$

the other ones being similar. Set $u = 2^{2k}$ and $v = 2^{2k-1}$. By definition and induction hypothesis, the left side of identity M_{2k+1} is equal to

$$\begin{aligned} W_{2k}M_{2k} = \big(&W^e[:7v] + x^v W^e[:6v] + x^{5v} W^e[:2v] + x^{7u} R^e\big) \times \big(M^e[:7v] \\ &+ x^v M^e[:6v] + x^{5v} M^e[:2v] + x^{7u} R^e\big); \end{aligned} \tag{2.35}$$

Call this expression lhs. Note that both sides of identity M_{2k+1} have the same term of highest degree $x^{14v}R^o$. Therefore we only need to prove that their difference is $O(x^{14v})$. Using Lemma 2.1 it can be seen that the right side of identity M_{2k+1} is congruent, modulo x^{14v}, to

$$W^e[:14v]M^e[:14v] + x^{2v}W^e[:12v]M^e[:12v] + x^{10v}W^e[:4v]M^e[:4v].$$

For all $n \le 14$, replace the occurrences of $W^e[:n \cdot v]$ and $M^e[:n \cdot v]$ in the above expression by the reduction modulo $x^{n \cdot v}$ of the right side of the corresponding identity in Lemma 2.2 and get a new expression, which we call rhs. Define

$$\begin{aligned} X &:= x^v, \\ a_n &:= W^e[n \cdot v : (n+1) \cdot v]/X^n, \\ b_n &:= M^e[n \cdot v : (n+1) \cdot v]/X^n, \\ c &:= R^e. \end{aligned}$$

Using the notation introduced above, we can represent the expressions lhs (2.35) and rhs as polynomials in $\mathbb{F}_2[a_1, ..., a_{14}, b_1, ..., b_{14}, c][X]$. Note that it is not a problem that a_j commutes with b_k while W^e does not commute with M^e, because in the expressions concerned, the products of W^e-terms and M^e-terms are always in the same order. We let the computer do the simplification and check that the difference between these two polynomials is indeed $O(X^{14})$, which completes the proof. $\square$

Proof of Theorem 1.1. We prove the theorem for $\mathrm{CF}(a, b)$; for $\mathrm{CF}(b, a)$, the proof is similar. By Lemma 2.3, we have For all $0 \le j, k \le 1$,

$$\begin{aligned} \lim_{n\to\infty} M_{2n,j,k} &= M^e_{j,k}, \\ \lim_{n\to\infty} M_{2n+1,j,k} &= M^o_{j,k}, \\ \lim_{n\to\infty} W_{2n,j,k} &= W^e_{j,k}, \\ \lim_{n\to\infty} W_{2n+1,j,k} &= W^o_{j,k}. \end{aligned}$$

Let $z = 1/x$. By the convergence theorem and identity (2.2),

$$\mathrm{CF}(a, b) = \frac{M^e_{0,1}(x)}{M^e_{0,0}(x)}.$$

By definition, $\phi(M^e, 0, 1)$ and $\phi(M^e, 0, 0)$ are minimal polynomials of $M^e_{0,1}$ and $M^e_{0,0}$. Therefore

$$P(x, y) = \mathrm{Res}_t\left(\phi(M^e, 0, 1)(x, t), y^{12}\phi(M^e, 0, 1)(x, t/y)\right)$$

is an annihilating polynomial of $f(x) = M^e_{0,1}/M^e_{0,0}$.

Define

$$Q(x, y) = q_4(x)y^4 + q_3(x)y^3 + q_2(x)y^2 + q_1(x)y + q_0(x),$$

where

$$q_0(x) = x^{22} + x^{20} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{10} + x^9 + x^7 + x^4,$$

$$q_1(x) = x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^8 + x^6 + x^5 + x^3 + x,$$
$$q_2(x) = x^{20} + x^{18} + x^{16} + x^{10} + x^8 + x^6 + x^4 + x^2 + 1,$$
$$q_3(x) = x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^8 + x^6 + x^5 + x^3 + x,$$
$$q_4(x) = x^{22} + x^{20} + x^{19} + x^{16} + x^{15} + x^{14} + x^9 + x^8 + x^7 + x^6 + x^2.$$

The polynomial $Q(x, y)$ is the candidate for the minimal polynomial of $f(x)$ found by Padé-Hermite approximation. To prove that it is indeed the minimal polynomial of $f(x)$, we only need to prove that it is an irreducible factor of $P(x, y)$ of multiplicity m and $R(x, y) := P(x, y)/Q(x, y)^m$ is not an annihilating polynomial of $f(x)$. We verify the first point directly. For the second point, we find that when we truncate $f(x)$ to order 216, and substitute it for y in $R(z, y)$, we get a series with valuation smaller than 216, which proves that $R(z, y)$ is not an annihilating polynomial of $f(x)$. Finally, $z^{12}Q(1/z, y)$ is the minimal polynomial of $\mathrm{CF}(a, b) = f(1/z)$. □

3. Annexe

All 16 polynomials are of the form

$$p_0(x) + p_3(x)y^3 + p_6(x)y^6 + p_9(x)y^9 + p_{12}(x)y^{12}.$$

The coefficients $p_j(x)$ and the 16 initial terms to determine the solutions uniquely are given below.

For $\phi(M^e, 0, 0)$:

$$\begin{aligned}
p_0(x) = {} & x^{132} + x^{128} + x^{126} + x^{124} + x^{120} + x^{114} + x^{112} + x^{110} + x^{108} + x^{100} \\
& + x^{96} + x^{92} + x^{88} + x^{86} + x^{82} + x^{80} + x^{74} + x^{68} + x^{60} + x^{58} + x^{52} \\
& + x^{48} + x^{46} + x^{36} + x^{32} + x^{28} + x^{26} + x^{24} + x^{22} + x^{20} + x^{12}, \\
p_3(x) = {} & x^{122} + x^{120} + x^{118} + x^{116} + x^{114} + x^{112} + x^{104} + x^{102} + x^{98} + x^{96} \\
& + x^{94} + x^{90} + x^{86} + x^{84} + x^{82} + x^{74} + x^{72} + x^{68} + x^{64} + x^{62} + x^{60} \\
& + x^{58} + x^{56} + x^{50} + x^{38} + x^{36} + x^{34} + x^{28} + x^{26} + x^{22} + x^{20} + x^{18} \\
& + x^{16} + x^8, \\
p_6(x) = {} & x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{114} + x^{112} + x^{110} + x^{102} + x^{100} \\
& + x^{98} + x^{94} + x^{84} + x^{82} + x^{76} + x^{74} + x^{72} + x^{70} + x^{66} + x^{64} + x^{62} \\
& + x^{60} + x^{58} + x^{44} + x^{40} + x^{38} + x^{36} + x^{34} + x^{32} + x^{26} + x^{24} + x^{18} \\
& + x^{16} + x^{12} + x^8 + x^4 + x^2 + 1, \\
p_9(x) = {} & x^{118} + x^{114} + x^{108} + x^{106} + x^{98} + x^{94} + x^{90} + x^{88} + x^{86} + x^{80} + x^{76} \\
& + x^{74} + x^{72} + x^{70} + x^{58} + x^{48} + x^{46} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36} \\
& + x^{34} + x^{32} + x^{28} + x^{24} + x^{22} + x^{16} + x^{14} + x^{12} + x^8 + x^6 + x^4 + x^2, \\
p_{12}(x) = {} & x^{120} + x^{96} + x^{72} + x^{64} + x^{40} + x^{24} + x^{16} + x^8 + 1,
\end{aligned}$$

and the initial terms are [1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0].

For $\phi(M^e, 0, 1)$:

$$\begin{aligned}
p_0(x) = {} & x^{117} + x^{115} + x^{114} + x^{113} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{106} \\
& + x^{105} + x^{104} + x^{95} + x^{94} + x^{92} + x^{89} + x^{88} + x^{86} + x^{83} + x^{81} + x^{78}
\end{aligned}$$

$$
\begin{aligned}
&+x^{76}+x^{74}+x^{73}+x^{69}+x^{66}+x^{64}+x^{63}+x^{61}+x^{60}+x^{57}+x^{56}\\
&+x^{53}+x^{45}+x^{43}+x^{42}+x^{39}+x^{34}+x^{33}+x^{31}+x^{30}+x^{29}+x^{28}\\
&+x^{22}+x^{20}+x^{19}+x^{18},\\
p_3(x)=&\,x^{96}+x^{95}+x^{90}+x^{89}+x^{86}+x^{85}+x^{74}+x^{73}+x^{64}+x^{63}+x^{58}\\
&+x^{57}+x^{56}+x^{55}+x^{54}+x^{53}+x^{50}+x^{49}+x^{48}+x^{47}+x^{46}+x^{45}\\
&+x^{40}+x^{39}+x^{38}+x^{37}+x^{32}+x^{31}+x^{30}+x^{29}+x^{22}+x^{21}+x^{18}\\
&+x^{17}+x^{10}+x^{9},\\
p_6(x)=&\,x^{99}+x^{96}+x^{92}+x^{91}+x^{90}+x^{88}+x^{86}+x^{85}+x^{83}+x^{81}+x^{77}\\
&+x^{76}+x^{73}+x^{71}+x^{70}+x^{69}+x^{68}+x^{61}+x^{59}+x^{58}+x^{56}+x^{54}\\
&+x^{50}+x^{49}+x^{48}+x^{46}+x^{45}+x^{44}+x^{42}+x^{40}+x^{39}+x^{35}+x^{34}\\
&+x^{31}+x^{29}+x^{28}+x^{27}+x^{26}+x^{23}+x^{20}+x^{19}+x^{15}+x^{14}+x^{11}\\
&+x^{9}+x^{8}+x^{7}+x^{6},\\
p_9(x)=&\,x^{102}+x^{101}+x^{100}+x^{99}+x^{98}+x^{97}+x^{96}+x^{95}+x^{94}+x^{93}+x^{88}\\
&+x^{87}+x^{86}+x^{85}+x^{76}+x^{75}+x^{74}+x^{73}+x^{72}+x^{71}+x^{70}+x^{69}\\
&+x^{68}+x^{67}+x^{64}+x^{63}+x^{62}+x^{61}+x^{54}+x^{53}+x^{44}+x^{43}+x^{42}\\
&+x^{41}+x^{40}+x^{39}+x^{38}+x^{37}+x^{36}+x^{35}+x^{32}+x^{31}+x^{28}+x^{27}\\
&+x^{18}+x^{17}+x^{16}+x^{15}+x^{14}+x^{13}+x^{12}+x^{11}+x^{8}+x^{7}+x^{4}+x^{3},\\
p_{12}(x)=&\,x^{105}+x^{103}+x^{102}+x^{101}+x^{100}+x^{97}+x^{95}+x^{94}+x^{92}+x^{91}+x^{90}\\
&+x^{89}+x^{88}+x^{85}+x^{83}+x^{82}+x^{80}+x^{79}+x^{78}+x^{76}+x^{75}+x^{74}\\
&+x^{72}+x^{71}+x^{70}+x^{68}+x^{67}+x^{66}+x^{65}+x^{64}+x^{25}+x^{23}+x^{22}\\
&+x^{21}+x^{20}+x^{17}+x^{15}+x^{14}+x^{12}+x^{11}+x^{10}+x^{8}+x^{7}+x^{6}+x^{4}\\
&+x^{3}+x^{2}+x+1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0].

For $\phi(M^e, 1, 0)$:

$$
\begin{aligned}
p_0(x)=&\,x^{117}+x^{115}+x^{114}+x^{113}+x^{112}+x^{110}+x^{109}+x^{108}+x^{107}+x^{106}\\
&+x^{105}+x^{104}+x^{95}+x^{94}+x^{92}+x^{89}+x^{88}+x^{86}+x^{83}+x^{81}+x^{78}\\
&+x^{76}+x^{74}+x^{73}+x^{69}+x^{66}+x^{64}+x^{63}+x^{61}+x^{60}+x^{57}+x^{56}\\
&+x^{53}+x^{45}+x^{43}+x^{42}+x^{39}+x^{34}+x^{33}+x^{31}+x^{30}+x^{29}+x^{28}\\
&+x^{22}+x^{20}+x^{19}+x^{18},\\
p_3(x)=&\,x^{96}+x^{95}+x^{90}+x^{89}+x^{86}+x^{85}+x^{74}+x^{73}+x^{64}+x^{63}+x^{58}\\
&+x^{57}+x^{56}+x^{55}+x^{54}+x^{53}+x^{50}+x^{49}+x^{48}+x^{47}+x^{46}+x^{45}\\
&+x^{40}+x^{39}+x^{38}+x^{37}+x^{32}+x^{31}+x^{30}+x^{29}+x^{22}+x^{21}+x^{18}\\
&+x^{17}+x^{10}+x^{9},\\
p_6(x)=&\,x^{99}+x^{96}+x^{92}+x^{91}+x^{90}+x^{88}+x^{86}+x^{85}+x^{83}+x^{81}+x^{77}\\
&+x^{76}+x^{73}+x^{71}+x^{70}+x^{69}+x^{68}+x^{61}+x^{59}+x^{58}+x^{56}+x^{54}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{50} + x^{49} + x^{48} + x^{46} + x^{45} + x^{44} + x^{42} + x^{40} + x^{39} + x^{35} + x^{34}\\
&+ x^{31} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{20} + x^{19} + x^{15} + x^{14} + x^{11}\\
&+ x^{9} + x^{8} + x^{7} + x^{6},\\
p_9(x) &= x^{102} + x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{88}\\
&+ x^{87} + x^{86} + x^{85} + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{69}\\
&+ x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{61} + x^{54} + x^{53} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{31} + x^{28} + x^{27}\\
&+ x^{18} + x^{17} + x^{16} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{8} + x^{7} + x^{4} + x^{3},\\
p_{12}(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{97} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{85} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74}\\
&+ x^{72} + x^{71} + x^{70} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22}\\
&+ x^{21} + x^{20} + x^{17} + x^{15} + x^{14} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{4}\\
&+ x^{3} + x^{2} + x + 1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0].

For $\phi(M^e, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{102} + x^{92} + x^{90} + x^{86} + x^{76} + x^{72} + x^{68} + x^{62} + x^{60} + x^{58} + x^{56}\\
&+ x^{54} + x^{50} + x^{40} + x^{38} + x^{36} + x^{28} + x^{26} + x^{24},\\
p_3(x) &= x^{92} + x^{90} + x^{86} + x^{84} + x^{80} + x^{78} + x^{76} + x^{74} + x^{72} + x^{70} + x^{68}\\
&+ x^{46} + x^{44} + x^{40} + x^{38} + x^{36} + x^{30} + x^{22} + x^{14} + x^{12} + x^{10} + x^{6},\\
p_6(x) &= x^{94} + x^{92} + x^{88} + x^{86} + x^{82} + x^{80} + x^{76} + x^{74} + x^{64} + x^{62} + x^{60}\\
&+ x^{54} + x^{50} + x^{48} + x^{44} + x^{38} + x^{32} + x^{24} + x^{22} + x^{20} + x^{16} + x^{14}\\
&+ x^{10} + x^{8} + x^{6} + 1,\\
p_9(x) &= x^{88} + x^{82} + x^{78} + x^{72} + x^{68} + x^{64} + x^{60} + x^{56} + x^{50} + x^{48} + x^{40}\\
&+ x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^{18} + x^{14} + x^{6} + x^{2},\\
p_{12}(x) &= x^{90} + x^{86} + x^{84} + x^{82} + x^{80} + x^{74} + x^{70} + x^{68} + x^{66} + x^{64} + x^{10} + x^{6}\\
&+ x^{4} + x^{2} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0].

For $\phi(W^e, 0, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{102} + x^{94} + x^{92} + x^{90} + x^{88} + x^{86} + x^{82} + x^{78} + x^{72} + x^{54} + x^{50}\\
&+ x^{46} + x^{42} + x^{14} + x^{12},\\
p_3(x) &= x^{92} + x^{90} + x^{86} + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{66} + x^{60} + x^{58}\\
&+ x^{46} + x^{44} + x^{34} + x^{32} + x^{24} + x^{20} + x^{18} + x^{16} + x^{8},\\
p_6(x) &= x^{94} + x^{92} + x^{88} + x^{84} + x^{78} + x^{76} + x^{74} + x^{72} + x^{70} + x^{66} + x^{62}\\
&+ x^{56} + x^{54} + x^{50} + x^{48} + x^{44} + x^{42} + x^{40} + x^{38} + x^{34} + x^{32} + x^{30}\\
&+ x^{28} + x^{20} + x^{16} + x^{10} + x^{8} + x^{6} + x^{4} + 1,
\end{aligned}
$$

$$\begin{aligned}
p_9(x) &= x^{88}+x^{82}+x^{78}+x^{72}+x^{68}+x^{64}+x^{60}+x^{56}+x^{50}+x^{48}+x^{40}\\
&\quad +x^{30}+x^{28}+x^{26}+x^{24}+x^{22}+x^{18}+x^{14}+x^{6}+x^{2},\\
p_{12}(x) &= x^{90}+x^{86}+x^{84}+x^{82}+x^{80}+x^{74}+x^{70}+x^{68}+x^{66}+x^{64}+x^{10}+x^{6}\\
&\quad +x^{4}+x^{2}+1,
\end{aligned}$$

and the initial terms are [1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0].
For $\phi(W^e, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{117}+x^{115}+x^{114}+x^{113}+x^{112}+x^{110}+x^{109}+x^{108}+x^{106}+x^{105}\\
&\quad +x^{103}+x^{98}+x^{97}+x^{96}+x^{95}+x^{91}+x^{90}+x^{89}+x^{86}+x^{85}+x^{81}\\
&\quad +x^{80}+x^{78}+x^{77}+x^{73}+x^{72}+x^{71}+x^{69}+x^{68}+x^{64}+x^{61}+x^{59}\\
&\quad +x^{56}+x^{54}+x^{53}+x^{52}+x^{49}+x^{48}+x^{43}+x^{42}+x^{41}+x^{40}+x^{39}\\
&\quad +x^{37}+x^{36}+x^{33}+x^{32}+x^{29}+x^{27},\\
p_3(x) &= x^{96}+x^{95}+x^{90}+x^{89}+x^{86}+x^{85}+x^{74}+x^{73}+x^{64}+x^{63}+x^{58}\\
&\quad +x^{57}+x^{56}+x^{55}+x^{54}+x^{53}+x^{50}+x^{49}+x^{48}+x^{47}+x^{46}+x^{45}\\
&\quad +x^{40}+x^{39}+x^{38}+x^{37}+x^{32}+x^{31}+x^{30}+x^{29}+x^{22}+x^{21}+x^{18}\\
&\quad +x^{17}+x^{10}+x^{9},\\
p_6(x) &= x^{99}+x^{96}+x^{92}+x^{91}+x^{90}+x^{88}+x^{86}+x^{85}+x^{83}+x^{81}+x^{77}\\
&\quad +x^{76}+x^{73}+x^{71}+x^{70}+x^{69}+x^{68}+x^{61}+x^{59}+x^{58}+x^{56}+x^{54}\\
&\quad +x^{50}+x^{49}+x^{48}+x^{46}+x^{45}+x^{44}+x^{42}+x^{40}+x^{39}+x^{35}+x^{34}\\
&\quad +x^{31}+x^{29}+x^{28}+x^{27}+x^{26}+x^{23}+x^{20}+x^{19}+x^{15}+x^{14}+x^{11}\\
&\quad +x^{9}+x^{8}+x^{7}+x^{6},\\
p_9(x) &= x^{102}+x^{101}+x^{100}+x^{99}+x^{98}+x^{97}+x^{96}+x^{95}+x^{94}+x^{93}+x^{88}\\
&\quad +x^{87}+x^{86}+x^{85}+x^{76}+x^{75}+x^{74}+x^{73}+x^{72}+x^{71}+x^{70}+x^{69}\\
&\quad +x^{68}+x^{67}+x^{64}+x^{63}+x^{62}+x^{61}+x^{54}+x^{53}+x^{44}+x^{43}+x^{42}\\
&\quad +x^{41}+x^{40}+x^{39}+x^{38}+x^{37}+x^{36}+x^{35}+x^{32}+x^{31}+x^{28}+x^{27}\\
&\quad +x^{18}+x^{17}+x^{16}+x^{15}+x^{14}+x^{13}+x^{12}+x^{11}+x^{8}+x^{7}+x^{4}+x^{3},\\
p_{12}(x) &= x^{105}+x^{103}+x^{102}+x^{101}+x^{100}+x^{97}+x^{95}+x^{94}+x^{92}+x^{91}+x^{90}\\
&\quad +x^{89}+x^{88}+x^{85}+x^{83}+x^{82}+x^{80}+x^{79}+x^{78}+x^{76}+x^{75}+x^{74}\\
&\quad +x^{72}+x^{71}+x^{70}+x^{68}+x^{67}+x^{66}+x^{65}+x^{64}+x^{25}+x^{23}+x^{22}\\
&\quad +x^{21}+x^{20}+x^{17}+x^{15}+x^{14}+x^{12}+x^{11}+x^{10}+x^{8}+x^{7}+x^{6}+x^{4}\\
&\quad +x^{3}+x^{2}+x+1,
\end{aligned}$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 0, 1].
For $\phi(W^e, 1, 0)$:

$$\begin{aligned}
p_0(x) &= x^{117}+x^{115}+x^{114}+x^{113}+x^{112}+x^{110}+x^{109}+x^{108}+x^{106}+x^{105}\\
&\quad +x^{103}+x^{98}+x^{97}+x^{96}+x^{95}+x^{91}+x^{90}+x^{89}+x^{86}+x^{85}+x^{81}\\
&\quad +x^{80}+x^{78}+x^{77}+x^{73}+x^{72}+x^{71}+x^{69}+x^{68}+x^{64}+x^{61}+x^{59}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{56} + x^{54} + x^{53} + x^{52} + x^{49} + x^{48} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39}\\
&+ x^{37} + x^{36} + x^{33} + x^{32} + x^{29} + x^{27},\\
p_3(x) &= x^{96} + x^{95} + x^{90} + x^{89} + x^{86} + x^{85} + x^{74} + x^{73} + x^{64} + x^{63} + x^{58}\\
&+ x^{57} + x^{56} + x^{55} + x^{54} + x^{53} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{45}\\
&+ x^{40} + x^{39} + x^{38} + x^{37} + x^{32} + x^{31} + x^{30} + x^{29} + x^{22} + x^{21} + x^{18}\\
&+ x^{17} + x^{10} + x^{9},\\
p_6(x) &= x^{99} + x^{96} + x^{92} + x^{91} + x^{90} + x^{88} + x^{86} + x^{85} + x^{83} + x^{81} + x^{77}\\
&+ x^{76} + x^{73} + x^{71} + x^{70} + x^{69} + x^{68} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54}\\
&+ x^{50} + x^{49} + x^{48} + x^{46} + x^{45} + x^{44} + x^{42} + x^{40} + x^{39} + x^{35} + x^{34}\\
&+ x^{31} + x^{29} + x^{28} + x^{27} + x^{26} + x^{23} + x^{20} + x^{19} + x^{15} + x^{14} + x^{11}\\
&+ x^{9} + x^{8} + x^{7} + x^{6},\\
p_9(x) &= x^{102} + x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{88}\\
&+ x^{87} + x^{86} + x^{85} + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{69}\\
&+ x^{68} + x^{67} + x^{64} + x^{63} + x^{62} + x^{61} + x^{54} + x^{53} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{31} + x^{28} + x^{27}\\
&+ x^{18} + x^{17} + x^{16} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{8} + x^{7} + x^{4} + x^{3},\\
p_{12}(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{97} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{85} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74}\\
&+ x^{72} + x^{71} + x^{70} + x^{68} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22}\\
&+ x^{21} + x^{20} + x^{17} + x^{15} + x^{14} + x^{12} + x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{4}\\
&+ x^{3} + x^{2} + x + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 0, 1].

For $\phi(W^e, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{132} + x^{128} + x^{126} + x^{114} + x^{112} + x^{108} + x^{100} + x^{96} + x^{94} + x^{90}\\
&+ x^{88} + x^{86} + x^{78} + x^{74} + x^{72} + x^{70} + x^{66} + x^{60} + x^{52} + x^{44} + x^{42},\\
p_3(x) &= x^{122} + x^{120} + x^{118} + x^{116} + x^{110} + x^{106} + x^{102} + x^{98} + x^{96} + x^{88}\\
&+ x^{84} + x^{80} + x^{68} + x^{66} + x^{62} + x^{60} + x^{58} + x^{56} + x^{54} + x^{50} + x^{38}\\
&+ x^{36} + x^{34} + x^{28} + x^{24} + x^{20} + x^{8} + x^{6},\\
p_6(x) &= x^{124} + x^{122} + x^{120} + x^{118} + x^{112} + x^{108} + x^{106} + x^{104} + x^{102} + x^{100}\\
&+ x^{98} + x^{90} + x^{86} + x^{80} + x^{72} + x^{70} + x^{62} + x^{60} + x^{58} + x^{54} + x^{52}\\
&+ x^{44} + x^{40} + x^{38} + x^{36} + x^{34} + x^{32} + x^{28} + x^{24} + x^{22} + x^{20} + x^{12}\\
&+ x^{8} + x^{6} + x^{2} + 1,\\
p_9(x) &= x^{118} + x^{114} + x^{108} + x^{106} + x^{98} + x^{94} + x^{90} + x^{88} + x^{86} + x^{80} + x^{76}\\
&+ x^{74} + x^{72} + x^{70} + x^{58} + x^{48} + x^{46} + x^{44} + x^{42} + x^{40} + x^{38} + x^{36}\\
&+ x^{34} + x^{32} + x^{28} + x^{24} + x^{22} + x^{16} + x^{14} + x^{12} + x^{8} + x^{6} + x^{4} + x^{2},
\end{aligned}
$$

$$p_{12}(x) = x^{120} + x^{96} + x^{72} + x^{64} + x^{40} + x^{24} + x^{16} + x^8 + 1,$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0].

For $\phi(M^o, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{105} + x^{104} + x^{103} + x^{102} \\
&\quad + x^{101} + x^{100} + x^{95} + x^{90} + x^{88} + x^{86} + x^{84} + x^{81} + x^{80} + x^{79} + x^{77} \\
&\quad + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{59} \\
&\quad + x^{58} + x^{57} + x^{53} + x^{51} + x^{50} + x^{48} + x^{46} + x^{45} + x^{43} + x^{42} + x^{37} \\
&\quad + x^{31} + x^{27} + x^{25} + x^{24} + x^{23} + x^{22} + x^{21} + x^{16} + x^{13} + x^{12}, \\
p_3(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} \\
&\quad + x^{90} + x^{86} + x^{84} + x^{83} + x^{81} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71} \\
&\quad + x^{70} + x^{67} + x^{63} + x^{62} + x^{61} + x^{59} + x^{56} + x^{54} + x^{53} + x^{51} + x^{50} \\
&\quad + x^{49} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37} + x^{33} + x^{31} + x^{29} + x^{27} + x^{23} \\
&\quad + x^{21} + x^{20} + x^{17} + x^{15} + x^{14} + x^{12} + x^9 + x^8, \\
p_6(x) &= x^{109} + x^{107} + x^{106} + x^{104} + x^{103} + x^{102} + x^{97} + x^{93} + x^{91} + x^{87} \\
&\quad + x^{85} + x^{82} + x^{80} + x^{76} + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{65} + x^{62} \\
&\quad + x^{58} + x^{57} + x^{56} + x^{53} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{43} \\
&\quad + x^{42} + x^{41} + x^{39} + x^{36} + x^{35} + x^{33} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24} \\
&\quad + x^{23} + x^{22} + x^{19} + x^{17} + x^{16} + x^{13} + x^9 + x^8 + x^7 + x^6 + x^5 + x^3 \\
&\quad + x^2 + x + 1, \\
p_9(x) &= x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{88} + x^{87} \\
&\quad + x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} + x^{72} \\
&\quad + x^{71} + x^{70} + x^{69} + x^{68} + x^{21} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{12} \\
&\quad + x^{11} + x^{10} + x^8 + x^7 + x^6 + x^5 + x^4, \\
p_{12}(x) &= x^{105} + x^{103} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{89} + x^{87} + x^{86} \\
&\quad + x^{85} + x^{84} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22} + x^{20} \\
&\quad + x^{19} + x^{18} + x^{17} + x^{16} + x^5 + x^3 + x^2 + x + 1,
\end{aligned}$$

and the initial terms are [1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 0].

For $\phi(M^o, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{112} + x^{106} + x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{96} + x^{95} + x^{93} \\
&\quad + x^{87} + x^{85} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} + x^{78} + x^{77} + x^{76} + x^{75} \\
&\quad + x^{74} + x^{68} + x^{64} + x^{63} + x^{62} + x^{61} + x^{55} + x^{52} + x^{51} + x^{50} + x^{49} \\
&\quad + x^{48} + x^{47} + x^{45} + x^{42} + x^{40} + x^{39} + x^{38} + x^{36} + x^{35} + x^{34} + x^{32} \\
&\quad + x^{31} + x^{30} + x^{29} + x^{26} + x^{25} + x^{23} + x^{22} + x^{21} + x^{20} + x^{18}, \\
p_3(x) &= x^{91} + x^{90} + x^{88} + x^{86} + x^{83} + x^{81} + x^{79} + x^{78} + x^{77} + x^{73} + x^{59} \\
&\quad + x^{58} + x^{56} + x^{54} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{42} + x^{40} + x^{39}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{37} + x^{34} + x^{32} + x^{31} + x^{29} + x^{26} + x^{24} + x^{23} + x^{21} + x^{19} + x^{15} \\
&+ x^{14} + x^{13} + x^{9}, \\
p_6(x) &= x^{94} + x^{92} + x^{88} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{68} + x^{56} + x^{52} \\
&+ x^{50} + x^{46} + x^{42} + x^{38} + x^{36} + x^{34} + x^{26} + x^{18} + x^{16} + x^{14} + x^{6}, \\
p_9(x) &= x^{97} + x^{96} + x^{95} + x^{91} + x^{89} + x^{88} + x^{87} + x^{83} + x^{81} + x^{80} + x^{79} \\
&+ x^{75} + x^{73} + x^{72} + x^{71} + x^{67} + x^{17} + x^{16} + x^{15} + x^{11} + x^{9} + x^{8} + x^{7} \\
&+ x^{3}, \\
p_{12}(x) &= x^{100} + x^{96} + x^{84} + x^{64} + x^{20} + x^{16} + 1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0].

For $\phi(M^o, 1, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{132} + x^{126} + x^{125} + x^{124} + x^{123} + x^{121} + x^{117} + x^{113} + x^{111} + x^{108} \\
&+ x^{107} + x^{105} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{95} + x^{94} + x^{92} \\
&+ x^{90} + x^{89} + x^{88} + x^{86} + x^{83} + x^{82} + x^{81} + x^{76} + x^{74} + x^{71} + x^{70} \\
&+ x^{69} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{59} + x^{55} + x^{54} + x^{51} + x^{49} \\
&+ x^{48} + x^{47} + x^{46} + x^{45} + x^{43} + x^{42} + x^{40} + x^{39} + x^{36} + x^{32} + x^{31} \\
&+ x^{28} + x^{27}, \\
p_3(x) &= x^{111} + x^{110} + x^{108} + x^{106} + x^{102} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96} \\
&+ x^{92} + x^{91} + x^{90} + x^{88} + x^{85} + x^{82} + x^{81} + x^{76} + x^{74} + x^{73} + x^{71} \\
&+ x^{69} + x^{65} + x^{64} + x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{52} \\
&+ x^{51} + x^{46} + x^{44} + x^{43} + x^{41} + x^{39} + x^{35} + x^{34} + x^{33} + x^{31} + x^{30} \\
&+ x^{29} + x^{28} + x^{27} + x^{24} + x^{23} + x^{22} + x^{21} + x^{18} + x^{15} + x^{14} + x^{9}, \\
p_6(x) &= x^{114} + x^{112} + x^{108} + x^{106} + x^{100} + x^{88} + x^{84} + x^{80} + x^{78} + x^{76} + x^{70} \\
&+ x^{66} + x^{58} + x^{56} + x^{52} + x^{48} + x^{46} + x^{44} + x^{42} + x^{40} + x^{34} + x^{28} \\
&+ x^{24} + x^{20} + x^{18} + x^{16} + x^{10} + x^{6}, \\
p_9(x) &= x^{117} + x^{116} + x^{115} + x^{111} + x^{105} + x^{104} + x^{103} + x^{101} + x^{100} + x^{95} \\
&+ x^{93} + x^{92} + x^{91} + x^{87} + x^{77} + x^{76} + x^{75} + x^{73} + x^{72} + x^{67} + x^{37} \\
&+ x^{36} + x^{35} + x^{31} + x^{25} + x^{24} + x^{23} + x^{19} + x^{13} + x^{12} + x^{11} + x^{9} \\
&+ x^{8} + x^{3}, \\
p_{12}(x) &= x^{120} + x^{116} + x^{112} + x^{104} + x^{92} + x^{88} + x^{76} + x^{72} + x^{68} + x^{64} + x^{40} \\
&+ x^{36} + x^{32} + x^{20} + x^{16} + x^{12} + x^{8} + x^{4} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 1, 0, 0].

For $\phi(M^o, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{109} + x^{106} + x^{105} + x^{104} \\
&+ x^{103} + x^{101} + x^{97} + x^{96} + x^{95} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86} \\
&+ x^{84} + x^{83} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{74} + x^{71} + x^{70} + x^{68}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{67} + x^{66} + x^{64} + x^{63} + x^{60} + x^{59} + x^{55} + x^{54} + x^{53} + x^{50} + x^{47}\\
&+ x^{46} + x^{43} + x^{40} + x^{38} + x^{36} + x^{33},\\
p_3(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{97} + x^{96} + x^{95} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{87} + x^{86} + x^{79} + x^{76} + x^{74} + x^{71} + x^{70} + x^{67} + x^{65}\\
&+ x^{63} + x^{59} + x^{55} + x^{52} + x^{50} + x^{48} + x^{47} + x^{46} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{37} + x^{36} + x^{35} + x^{33} + x^{31} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23}\\
&+ x^{19} + x^{17} + x^{16} + x^{14} + x^{13} + x^{12},\\
p_6(x) &= x^{109} + x^{107} + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} + x^{98} + x^{93} + x^{92}\\
&+ x^{90} + x^{89} + x^{88} + x^{84} + x^{81} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{69}\\
&+ x^{68} + x^{67} + x^{63} + x^{61} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} + x^{52}\\
&+ x^{50} + x^{48} + x^{45} + x^{43} + x^{40} + x^{39} + x^{38} + x^{37} + x^{34} + x^{32} + x^{29}\\
&+ x^{27} + x^{26} + x^{25} + x^{24} + x^{22} + x^{20} + x^{16} + x^{12} + x^{11} + x^{9} + x^{7} + x^{6}\\
&+ x^{4} + x^{3} + x^{2} + x + 1,\\
p_9(x) &= x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{88} + x^{87}\\
&+ x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} + x^{72}\\
&+ x^{71} + x^{70} + x^{69} + x^{68} + x^{21} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{12}\\
&+ x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{4},\\
p_{12}(x) &= x^{105} + x^{103} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{89} + x^{87} + x^{86}\\
&+ x^{85} + x^{84} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22} + x^{20}\\
&+ x^{19} + x^{18} + x^{17} + x^{16} + x^{5} + x^{3} + x^{2} + x + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0].

For $\phi(W^o, 0, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{105} + x^{104} + x^{103} + x^{102}\\
&+ x^{101} + x^{100} + x^{95} + x^{90} + x^{88} + x^{86} + x^{84} + x^{81} + x^{80} + x^{79} + x^{77}\\
&+ x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{59}\\
&+ x^{58} + x^{57} + x^{53} + x^{51} + x^{50} + x^{48} + x^{46} + x^{45} + x^{43} + x^{42} + x^{37}\\
&+ x^{31} + x^{27} + x^{25} + x^{24} + x^{23} + x^{22} + x^{21} + x^{16} + x^{13} + x^{12},\\
p_3(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91}\\
&+ x^{90} + x^{86} + x^{84} + x^{83} + x^{81} + x^{77} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71}\\
&+ x^{70} + x^{67} + x^{63} + x^{62} + x^{61} + x^{59} + x^{56} + x^{54} + x^{53} + x^{51} + x^{50}\\
&+ x^{49} + x^{47} + x^{42} + x^{41} + x^{38} + x^{37} + x^{33} + x^{31} + x^{29} + x^{27} + x^{23}\\
&+ x^{21} + x^{20} + x^{17} + x^{15} + x^{14} + x^{12} + x^{9} + x^{8},\\
p_6(x) &= x^{109} + x^{107} + x^{106} + x^{104} + x^{103} + x^{102} + x^{97} + x^{93} + x^{91} + x^{87}\\
&+ x^{85} + x^{82} + x^{80} + x^{76} + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{65} + x^{62}\\
&+ x^{58} + x^{57} + x^{56} + x^{53} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{43}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{42} + x^{41} + x^{39} + x^{36} + x^{35} + x^{33} + x^{32} + x^{30} + x^{29} + x^{25} + x^{24}\\
&+ x^{23} + x^{22} + x^{19} + x^{17} + x^{16} + x^{13} + x^{9} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3}\\
&+ x^{2} + x + 1,\\
p_9(x) &= x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{88} + x^{87}\\
&+ x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} + x^{72}\\
&+ x^{71} + x^{70} + x^{69} + x^{68} + x^{21} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{12}\\
&+ x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{4},\\
p_{12}(x) &= x^{105} + x^{103} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{89} + x^{87} + x^{86}\\
&+ x^{85} + x^{84} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22} + x^{20}\\
&+ x^{19} + x^{18} + x^{17} + x^{16} + x^{5} + x^{3} + x^{2} + x + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 1, 1, 1, 0].

For $\phi(W^o, 0, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{132} + x^{126} + x^{125} + x^{124} + x^{123} + x^{121} + x^{117} + x^{113} + x^{111} + x^{108}\\
&+ x^{107} + x^{105} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{95} + x^{94} + x^{92}\\
&+ x^{90} + x^{89} + x^{88} + x^{86} + x^{83} + x^{82} + x^{81} + x^{76} + x^{74} + x^{71} + x^{70}\\
&+ x^{69} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{59} + x^{55} + x^{54} + x^{51} + x^{49}\\
&+ x^{48} + x^{47} + x^{46} + x^{45} + x^{43} + x^{42} + x^{40} + x^{39} + x^{36} + x^{32} + x^{31}\\
&+ x^{28} + x^{27},\\
p_3(x) &= x^{111} + x^{110} + x^{108} + x^{106} + x^{102} + x^{101} + x^{100} + x^{98} + x^{97} + x^{96}\\
&+ x^{92} + x^{91} + x^{90} + x^{88} + x^{85} + x^{82} + x^{81} + x^{76} + x^{74} + x^{73} + x^{71}\\
&+ x^{69} + x^{65} + x^{64} + x^{63} + x^{61} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{52}\\
&+ x^{51} + x^{46} + x^{44} + x^{43} + x^{41} + x^{39} + x^{35} + x^{34} + x^{33} + x^{31} + x^{30}\\
&+ x^{29} + x^{28} + x^{27} + x^{24} + x^{23} + x^{22} + x^{21} + x^{18} + x^{15} + x^{14} + x^{9},\\
p_6(x) &= x^{114} + x^{112} + x^{108} + x^{106} + x^{100} + x^{88} + x^{84} + x^{80} + x^{78} + x^{76} + x^{70}\\
&+ x^{66} + x^{58} + x^{56} + x^{52} + x^{48} + x^{46} + x^{44} + x^{42} + x^{40} + x^{34} + x^{28}\\
&+ x^{24} + x^{20} + x^{18} + x^{16} + x^{10} + x^{6},\\
p_9(x) &= x^{117} + x^{116} + x^{115} + x^{111} + x^{105} + x^{104} + x^{103} + x^{101} + x^{100} + x^{95}\\
&+ x^{93} + x^{92} + x^{91} + x^{87} + x^{77} + x^{76} + x^{75} + x^{73} + x^{72} + x^{67} + x^{37}\\
&+ x^{36} + x^{35} + x^{31} + x^{25} + x^{24} + x^{23} + x^{19} + x^{13} + x^{12} + x^{11} + x^{9}\\
&+ x^{8} + x^{3},\\
p_{12}(x) &= x^{120} + x^{116} + x^{112} + x^{104} + x^{92} + x^{88} + x^{76} + x^{72} + x^{68} + x^{64} + x^{40}\\
&+ x^{36} + x^{32} + x^{20} + x^{16} + x^{12} + x^{8} + x^{4} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 1, 0, 0].

For $\phi(W^o, 1, 0)$:

$$
p_0(x) = x^{112} + x^{106} + x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{96} + x^{95} + x^{93}
$$

$$
\begin{aligned}
&+ x^{87} + x^{85} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} + x^{78} + x^{77} + x^{76} + x^{75}\\
&+ x^{74} + x^{68} + x^{64} + x^{63} + x^{62} + x^{61} + x^{55} + x^{52} + x^{51} + x^{50} + x^{49}\\
&+ x^{48} + x^{47} + x^{45} + x^{42} + x^{40} + x^{39} + x^{38} + x^{36} + x^{35} + x^{34} + x^{32}\\
&+ x^{31} + x^{30} + x^{29} + x^{26} + x^{25} + x^{23} + x^{22} + x^{21} + x^{20} + x^{18},\\
p_3(x) &= x^{91} + x^{90} + x^{88} + x^{86} + x^{83} + x^{81} + x^{79} + x^{78} + x^{77} + x^{73} + x^{59}\\
&+ x^{58} + x^{56} + x^{54} + x^{50} + x^{49} + x^{48} + x^{47} + x^{45} + x^{42} + x^{40} + x^{39}\\
&+ x^{37} + x^{34} + x^{32} + x^{31} + x^{29} + x^{26} + x^{24} + x^{23} + x^{21} + x^{19} + x^{15}\\
&+ x^{14} + x^{13} + x^{9},\\
p_6(x) &= x^{94} + x^{92} + x^{88} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{68} + x^{56} + x^{52}\\
&+ x^{50} + x^{46} + x^{42} + x^{38} + x^{36} + x^{34} + x^{26} + x^{18} + x^{16} + x^{14} + x^{6},\\
p_9(x) &= x^{97} + x^{96} + x^{95} + x^{91} + x^{89} + x^{88} + x^{87} + x^{83} + x^{81} + x^{80} + x^{79}\\
&+ x^{75} + x^{73} + x^{72} + x^{71} + x^{67} + x^{17} + x^{16} + x^{15} + x^{11} + x^{9} + x^{8} + x^{7}\\
&+ x^{3},\\
p_{12}(x) &= x^{100} + x^{96} + x^{84} + x^{64} + x^{20} + x^{16} + 1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0].
For $\phi(W^o, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{110} + x^{109} + x^{106} + x^{105} + x^{104}\\
&+ x^{103} + x^{101} + x^{97} + x^{96} + x^{95} + x^{93} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86}\\
&+ x^{84} + x^{83} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{74} + x^{71} + x^{70} + x^{68}\\
&+ x^{67} + x^{66} + x^{64} + x^{63} + x^{60} + x^{59} + x^{55} + x^{54} + x^{53} + x^{50} + x^{47}\\
&+ x^{46} + x^{43} + x^{40} + x^{38} + x^{36} + x^{33},\\
p_3(x) &= x^{105} + x^{103} + x^{102} + x^{101} + x^{100} + x^{97} + x^{96} + x^{95} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{87} + x^{86} + x^{79} + x^{76} + x^{74} + x^{71} + x^{70} + x^{67} + x^{65}\\
&+ x^{63} + x^{59} + x^{55} + x^{52} + x^{50} + x^{48} + x^{47} + x^{46} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{37} + x^{36} + x^{35} + x^{33} + x^{31} + x^{30} + x^{29} + x^{28} + x^{25} + x^{23}\\
&+ x^{19} + x^{17} + x^{16} + x^{14} + x^{13} + x^{12},\\
p_6(x) &= x^{109} + x^{107} + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} + x^{98} + x^{93} + x^{92}\\
&+ x^{90} + x^{89} + x^{88} + x^{84} + x^{81} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{69}\\
&+ x^{68} + x^{67} + x^{63} + x^{61} + x^{60} + x^{58} + x^{57} + x^{56} + x^{55} + x^{53} + x^{52}\\
&+ x^{50} + x^{48} + x^{45} + x^{43} + x^{40} + x^{39} + x^{38} + x^{37} + x^{34} + x^{32} + x^{29}\\
&+ x^{27} + x^{26} + x^{25} + x^{24} + x^{22} + x^{20} + x^{16} + x^{12} + x^{11} + x^{9} + x^{7} + x^{6}\\
&+ x^{4} + x^{3} + x^{2} + x + 1,\\
p_9(x) &= x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{92} + x^{91} + x^{90} + x^{88} + x^{87}\\
&+ x^{86} + x^{84} + x^{83} + x^{82} + x^{80} + x^{79} + x^{78} + x^{76} + x^{75} + x^{74} + x^{72}\\
&+ x^{71} + x^{70} + x^{69} + x^{68} + x^{21} + x^{19} + x^{18} + x^{16} + x^{15} + x^{14} + x^{12}
\end{aligned}
$$

$$+ x^{11} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{4},$$

$$p_{12}(x) = x^{105} + x^{103} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{89} + x^{87} + x^{86}$$
$$+ x^{85} + x^{84} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{25} + x^{23} + x^{22} + x^{20}$$
$$+ x^{19} + x^{18} + x^{17} + x^{16} + x^{5} + x^{3} + x^{2} + x + 1,$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0].

Below is the transition function and output function of an 2-automaton that generates $T = M^o_{0,0}$:

Transition function $(n, j) \mapsto \delta(n, j)$ $(\Lambda(n) := [\delta(n, 0), \delta(n, 1)])$:

n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$
0	[1, 2]	977	[1604, 1605]	1954	[2602, 882]	2931	[3275, 2087]
1	[3, 4]	978	[1606, 1607]	1955	[2603, 2313]	2932	[2414, 1055]
2	[5, 6]	979	[1608, 521]	1956	[2416, 2109]	2933	[3276, 331]
3	[7, 8]	980	[1609, 1610]	1957	[2604, 2374]	2934	[98, 1180]
4	[9, 10]	981	[1611, 1612]	1958	[2605, 2469]	2935	[2337, 1189]
5	[11, 12]	982	[1613, 1614]	1959	[2606, 314]	2936	[3277, 1114]
6	[13, 14]	983	[1615, 576]	1960	[2607, 244]	2937	[3278, 1106]
7	[15, 16]	984	[1616, 1575]	1961	[2127, 2246]	2938	[2452, 2330]
8	[17, 18]	985	[750, 1617]	1962	[2608, 399]	2939	[3279, 1248]
9	[19, 20]	986	[1618, 1619]	1963	[2609, 847]	2940	[248, 941]
10	[21, 3]	987	[1620, 1621]	1964	[1313, 1120]	2941	[3280, 2294]
11	[22, 23]	988	[1622, 731]	1965	[91, 925]	2942	[1207, 2588]
12	[24, 25]	989	[1623, 1624]	1966	[2377, 1153]	2943	[1017, 2641]
13	[26, 27]	990	[1625, 1626]	1967	[2610, 263]	2944	[1211, 2593]
14	[28, 29]	991	[1594, 1561]	1968	[2611, 2390]	2945	[3281, 856]
15	[30, 31]	992	[1627, 1628]	1969	[1167, 2446]	2946	[2481, 2620]
16	[32, 33]	993	[1629, 164]	1970	[2612, 912]	2947	[3282, 1150]
17	[34, 35]	994	[1630, 586]	1971	[2613, 1016]	2948	[3283, 1205]
18	[36, 37]	995	[1631, 1632]	1972	[2542, 2481]	2949	[3284, 345]
19	[38, 39]	996	[1633, 1634]	1973	[2614, 1085]	2950	[3285, 1174]
20	[40, 41]	997	[1635, 1636]	1974	[2615, 1261]	2951	[3286, 2240]
21	[42, 43]	998	[1637, 1638]	1975	[2106, 2474]	2952	[3287, 2418]
22	[44, 45]	999	[1533, 1639]	1976	[2616, 944]	2953	[1052, 1327]
23	[46, 47]	1000	[1640, 1641]	1977	[2330, 2617]	2954	[2144, 2520]
24	[48, 49]	1001	[1642, 1643]	1978	[387, 2156]	2955	[3288, 415]
25	[50, 51]	1002	[151, 1644]	1979	[2618, 433]	2956	[2258, 2320]
26	[52, 53]	1003	[41, 779]	1980	[1086, 1000]	2957	[3289, 325]
27	[54, 55]	1004	[1645, 1646]	1981	[1063, 2602]	2958	[3290, 2533]
28	[56, 57]	1005	[1647, 125]	1982	[2619, 2279]	2959	[1337, 3161]
29	[58, 59]	1006	[1648, 771]	1983	[2620, 2140]	2960	[3291, 987]
30	[60, 61]	1007	[1512, 1649]	1984	[819, 2341]	2961	[2110, 437]
31	[62, 63]	1008	[1650, 1651]	1985	[2621, 413]	2962	[3292, 1204]
32	[64, 65]	1009	[1652, 1653]	1986	[2471, 2506]	2963	[3293, 430]
33	[66, 67]	1010	[1654, 1557]	1987	[2622, 904]	2964	[3294, 1055]

34	[68, 69]	1011	[771, 669]	1988	[2224, 2348]	2965	[3295, 900]
35	[70, 71]	1012	[1451, 621]	1989	[2623, 1283]	2966	[2371, 3296]
36	[72, 73]	1013	[1655, 1656]	1990	[2624, 2625]	2967	[276, 1053]
37	[74, 75]	1014	[566, 1657]	1991	[2626, 2627]	2968	[3297, 349]
38	[76, 77]	1015	[1658, 1659]	1992	[2560, 1237]	2969	[3298, 2242]
39	[78, 79]	1016	[1660, 1661]	1993	[2628, 886]	2970	[3299, 2259]
40	[80, 81]	1017	[1662, 1663]	1994	[2278, 2366]	2971	[3300, 1276]
41	[82, 83]	1018	[1664, 1665]	1995	[2582, 2457]	2972	[3301, 248]
42	[84, 85]	1019	[1666, 1667]	1996	[2629, 2630]	2973	[3302, 21]
43	[86, 87]	1020	[1668, 488]	1997	[939, 2631]	2974	[3303, 1080]
44	[88, 89]	1021	[625, 1669]	1998	[2298, 2449]	2975	[254, 2098]
45	[90, 91]	1022	[1670, 598]	1999	[2227, 2501]	2976	[3304, 2188]
46	[79, 92]	1023	[1671, 1672]	2000	[1001, 265]	2977	[1247, 370]
47	[93, 94]	1024	[1673, 1667]	2001	[2211, 2625]	2978	[3305, 2587]
48	[95, 96]	1025	[1674, 226]	2002	[990, 1067]	2979	[3296, 1141]
49	[97, 98]	1026	[488, 1675]	2003	[1264, 1051]	2980	[3306, 2350]
50	[99, 100]	1027	[1676, 725]	2004	[2632, 2421]	2981	[3307, 1327]
51	[101, 102]	1028	[563, 1677]	2005	[871, 2633]	2982	[2617, 1103]
52	[103, 104]	1029	[1678, 1679]	2006	[2406, 2634]	2983	[3308, 2593]
53	[105, 106]	1030	[1680, 737]	2007	[2630, 1307]	2984	[3309, 278]
54	[107, 108]	1031	[1681, 1682]	2008	[2635, 1053]	2985	[1005, 62]
55	[109, 110]	1032	[1683, 1684]	2009	[2539, 2262]	2986	[3310, 2291]
56	[111, 112]	1033	[1685, 1686]	2010	[2636, 1057]	2987	[3311, 304]
57	[113, 114]	1034	[1632, 1416]	2011	[2637, 893]	2988	[3312, 1073]
58	[115, 116]	1035	[217, 1687]	2012	[1310, 1215]	2989	[3313, 1136]
59	[117, 118]	1036	[1688, 1553]	2013	[2638, 2302]	2990	[3314, 2337]
60	[119, 120]	1037	[1457, 1689]	2014	[2639, 367]	2991	[3315, 1132]
61	[121, 122]	1038	[1484, 1690]	2015	[1304, 70]	2992	[350, 2168]
62	[123, 124]	1039	[1691, 1692]	2016	[2640, 877]	2993	[3316, 1241]
63	[125, 126]	1040	[1693, 608]	2017	[2641, 1319]	2994	[3317, 375]
64	[127, 128]	1041	[1694, 555]	2018	[2642, 1255]	2995	[3318, 2200]
65	[129, 130]	1042	[163, 1695]	2019	[2165, 2423]	2996	[3319, 276]
66	[131, 132]	1043	[223, 1696]	2020	[2643, 2528]	2997	[3320, 70]
67	[133, 134]	1044	[1697, 1698]	2021	[2644, 2467]	2998	[3321, 864]
68	[135, 136]	1045	[1699, 1700]	2022	[2551, 2601]	2999	[3322, 2523]
69	[137, 138]	1046	[1701, 1702]	2023	[2645, 998]	3000	[2296, 1134]
70	[139, 140]	1047	[1703, 1704]	2024	[2646, 2459]	3001	[1300, 2464]
71	[141, 142]	1048	[1705, 1706]	2025	[1338, 2647]	3002	[3323, 2327]
72	[143, 144]	1049	[1707, 1708]	2026	[2648, 1043]	3003	[3324, 388]
73	[145, 146]	1050	[1709, 1710]	2027	[1061, 2439]	3004	[3325, 977]
74	[53, 147]	1051	[1424, 1711]	2028	[2215, 881]	3005	[3326, 2444]
75	[148, 149]	1052	[1712, 1713]	2029	[2649, 997]	3006	[3327, 1104]
76	[150, 151]	1053	[1714, 173]	2030	[2650, 110]	3007	[3328, 1340]
77	[152, 153]	1054	[482, 1715]	2031	[931, 306]	3008	[3329, 1254]

78	[154, 155]	1055	[1716, 1717]	2032	[2651, 1077]	3009	[2343, 902]
79	[156, 157]	1056	[1718, 1719]	2033	[2652, 239]	3010	[3330, 1164]
80	[158, 159]	1057	[1720, 703]	2034	[2589, 2082]	3011	[3331, 972]
81	[160, 161]	1058	[1721, 1722]	2035	[2653, 2308]	3012	[3332, 2162]
82	[162, 163]	1059	[1723, 1724]	2036	[398, 886]	3013	[2315, 2284]
83	[164, 38]	1060	[1725, 1726]	2037	[61, 2309]	3014	[3333, 2618]
84	[165, 166]	1061	[1727, 1728]	2038	[2654, 2300]	3015	[3334, 2160]
85	[167, 168]	1062	[1729, 1730]	2039	[2117, 1283]	3016	[3335, 2520]
86	[169, 170]	1063	[1731, 1668]	2040	[2655, 1004]	3017	[3336, 992]
87	[171, 172]	1064	[1732, 1585]	2041	[2564, 2226]	3018	[1165, 1260]
88	[173, 174]	1065	[526, 1733]	2042	[1109, 2590]	3019	[3337, 2225]
89	[175, 176]	1066	[1734, 1735]	2043	[2656, 1220]	3020	[3338, 2620]
90	[177, 178]	1067	[1624, 1736]	2044	[2523, 2443]	3021	[3339, 1101]
91	[179, 180]	1068	[1737, 1738]	2045	[2657, 2167]	3022	[3340, 322]
92	[181, 182]	1069	[1739, 1740]	2046	[2658, 2171]	3023	[4, 1202]
93	[183, 184]	1070	[1741, 618]	2047	[2248, 1131]	3024	[3341, 1317]
94	[185, 186]	1071	[1742, 1549]	2048	[2659, 1049]	3025	[3342, 1134]
95	[187, 188]	1072	[1743, 1744]	2049	[1028, 986]	3026	[3343, 1059]
96	[189, 190]	1073	[1745, 1746]	2050	[2660, 256]	3027	[3344, 3161]
97	[191, 192]	1074	[1747, 601]	2051	[2661, 963]	3028	[3345, 2309]
98	[193, 194]	1075	[577, 1748]	2052	[2662, 2588]	3029	[969, 2462]
99	[195, 196]	1076	[1749, 686]	2053	[2663, 2408]	3030	[2213, 2571]
100	[197, 198]	1077	[1750, 1751]	2054	[1049, 872]	3031	[3346, 3154]
101	[199, 200]	1078	[1376, 1752]	2055	[2664, 858]	3032	[999, 1222]
102	[201, 202]	1079	[1753, 1455]	2056	[317, 2508]	3033	[3347, 2521]
103	[134, 203]	1080	[1754, 1755]	2057	[2665, 2095]	3034	[3348, 2292]
104	[204, 205]	1081	[1756, 1757]	2058	[965, 2231]	3035	[3349, 2602]
105	[206, 207]	1082	[1758, 1759]	2059	[23, 1316]	3036	[1184, 1330]
106	[208, 209]	1083	[1760, 1761]	2060	[2666, 118]	3037	[3350, 386]
107	[210, 211]	1084	[1762, 1763]	2061	[2572, 16]	3038	[3351, 1022]
108	[212, 213]	1085	[1764, 1765]	2062	[2465, 2095]	3039	[3352, 2102]
109	[214, 215]	1086	[1766, 1767]	2063	[2667, 1273]	3040	[3353, 824]
110	[216, 217]	1087	[1768, 615]	2064	[2123, 1314]	3041	[2437, 2136]
111	[218, 219]	1088	[1769, 1770]	2065	[2334, 1037]	3042	[3354, 75]
112	[220, 221]	1089	[758, 218]	2066	[2668, 2594]	3043	[3355, 996]
113	[222, 223]	1090	[144, 1762]	2067	[868, 245]	3044	[75, 2488]
114	[224, 225]	1091	[1771, 1772]	2068	[1105, 20]	3045	[3356, 1326]
115	[226, 227]	1092	[1773, 710]	2069	[2669, 332]	3046	[3357, 1165]
116	[228, 229]	1093	[1774, 1775]	2070	[2670, 114]	3047	[348, 2334]
117	[230, 231]	1094	[1776, 1777]	2071	[2671, 1084]	3048	[3358, 2189]
118	[232, 233]	1095	[1778, 543]	2072	[2672, 829]	3049	[3359, 2195]
119	[234, 235]	1096	[1456, 1779]	2073	[20, 2318]	3050	[3360, 2352]
120	[63, 236]	1097	[1780, 145]	2074	[2246, 2521]	3051	[3361, 346]
121	[237, 238]	1098	[1781, 1782]	2075	[375, 1255]	3052	[3362, 86]

122	[239, 240]	1099	[1783, 1784]	2076	[1183, 2673]	3053	[2447, 1306]
123	[241, 242]	1100	[1785, 1786]	2077	[2182, 2674]	3054	[3363, 2234]
124	[243, 244]	1101	[1787, 1788]	2078	[2675, 1222]	3055	[3364, 896]
125	[245, 246]	1102	[745, 546]	2079	[832, 1077]	3056	[3365, 105]
126	[247, 248]	1103	[1789, 1790]	2080	[2086, 943]	3057	[820, 1343]
127	[249, 250]	1104	[1791, 1602]	2081	[2676, 1411]	3058	[3366, 1119]
128	[251, 252]	1105	[1792, 1793]	2082	[2677, 1599]	3059	[3367, 287]
129	[253, 254]	1106	[1794, 1795]	2083	[1704, 605]	3060	[3368, 286]
130	[255, 256]	1107	[1796, 1797]	2084	[2678, 682]	3061	[3369, 1296]
131	[257, 258]	1108	[1798, 1775]	2085	[2037, 182]	3062	[3370, 1014]
132	[259, 260]	1109	[1799, 1645]	2086	[2679, 1554]	3063	[3371, 1246]
133	[261, 245]	1110	[1800, 53]	2087	[2680, 2681]	3064	[3372, 1320]
134	[262, 263]	1111	[497, 1483]	2088	[2682, 695]	3065	[3373, 2241]
135	[264, 265]	1112	[1801, 775]	2089	[2683, 1563]	3066	[2519, 976]
136	[266, 267]	1113	[1802, 1524]	2090	[2684, 2685]	3067	[3374, 960]
137	[268, 269]	1114	[1803, 1546]	2091	[2686, 600]	3068	[3375, 843]
138	[270, 271]	1115	[1521, 1804]	2092	[2687, 477]	3069	[3376, 1124]
139	[272, 273]	1116	[1805, 1806]	2093	[2688, 448]	3070	[3377, 2264]
140	[274, 109]	1117	[1807, 734]	2094	[2689, 1770]	3071	[3378, 1071]
141	[275, 276]	1118	[1808, 1508]	2095	[1900, 2686]	3072	[3379, 2205]
142	[277, 278]	1119	[1809, 773]	2096	[211, 583]	3073	[3380, 436]
143	[279, 280]	1120	[1810, 1811]	2097	[2690, 1502]	3074	[3381, 1118]
144	[281, 282]	1121	[1812, 1536]	2098	[477, 2005]	3075	[3382, 1070]
145	[283, 284]	1122	[795, 1813]	2099	[2691, 2692]	3076	[3383, 1266]
146	[285, 286]	1123	[1814, 1815]	2100	[2693, 1414]	3077	[2341, 242]
147	[104, 287]	1124	[1816, 1817]	2101	[2694, 2695]	3078	[3384, 257]
148	[288, 289]	1125	[689, 1818]	2102	[37, 1400]	3079	[3385, 2115]
149	[290, 291]	1126	[1403, 1819]	2103	[2696, 2697]	3080	[2627, 2191]
150	[292, 293]	1127	[1820, 1805]	2104	[2695, 214]	3081	[3386, 2303]
151	[294, 295]	1128	[1821, 1822]	2105	[2698, 806]	3082	[3387, 2439]
152	[296, 105]	1129	[641, 1823]	2106	[2699, 1980]	3083	[3388, 2183]
153	[110, 297]	1130	[643, 1824]	2107	[2700, 2701]	3084	[3389, 2511]
154	[298, 290]	1131	[1825, 1826]	2108	[2702, 2703]	3085	[3390, 303]
155	[299, 300]	1132	[1827, 1828]	2109	[2704, 616]	3086	[3391, 2349]
156	[301, 302]	1133	[656, 1829]	2110	[1767, 612]	3087	[3392, 841]
157	[303, 304]	1134	[1830, 1831]	2111	[2705, 755]	3088	[3393, 307]
158	[87, 305]	1135	[1832, 1651]	2112	[1717, 2706]	3089	[3394, 2553]
159	[306, 307]	1136	[1454, 1833]	2113	[1997, 2707]	3090	[3395, 426]
160	[308, 309]	1137	[1834, 1]	2114	[2708, 803]	3091	[3396, 2113]
161	[310, 311]	1138	[1835, 1836]	2115	[724, 1899]	3092	[3397, 1107]
162	[312, 313]	1139	[1837, 1611]	2116	[2709, 612]	3093	[1200, 1009]
163	[314, 315]	1140	[1838, 1839]	2117	[1831, 2710]	3094	[1273, 310]
164	[316, 317]	1141	[1840, 1841]	2118	[1482, 1461]	3095	[3398, 363]
165	[318, 319]	1142	[1842, 1556]	2119	[2711, 1604]	3096	[3399, 2146]

166	[320, 321]	1143	[1843, 1675]	2120	[1573, 2064]	3097	[2463, 2350]
167	[322, 323]	1144	[1844, 1845]	2121	[2712, 214]	3098	[434, 2354]
168	[324, 325]	1145	[126, 1846]	2122	[1772, 754]	3099	[3400, 1111]
169	[326, 327]	1146	[1598, 1847]	2123	[2713, 2714]	3100	[2441, 270]
170	[328, 285]	1147	[1848, 1426]	2124	[2715, 1410]	3101	[3401, 395]
171	[329, 330]	1148	[1755, 1849]	2125	[2716, 2717]	3102	[2181, 2338]
172	[331, 332]	1149	[1850, 1851]	2126	[2718, 1905]	3103	[3402, 2427]
173	[116, 333]	1150	[1852, 1853]	2127	[1566, 2719]	3104	[3403, 2423]
174	[334, 335]	1151	[1854, 535]	2128	[2720, 469]	3105	[3404, 69]
175	[336, 337]	1152	[1855, 492]	2129	[1823, 2721]	3106	[3405, 2582]
176	[338, 108]	1153	[1661, 1856]	2130	[2722, 468]	3107	[3406, 1138]
177	[339, 340]	1154	[475, 1857]	2131	[1728, 2723]	3108	[3407, 1291]
178	[341, 342]	1155	[1393, 1562]	2132	[535, 1395]	3109	[3408, 2112]
179	[343, 344]	1156	[1858, 1859]	2133	[2724, 2002]	3110	[3409, 234]
180	[345, 346]	1157	[1860, 724]	2134	[1397, 2725]	3111	[3410, 1000]
181	[347, 348]	1158	[548, 1861]	2135	[2726, 2727]	3112	[3411, 262]
182	[349, 350]	1159	[1862, 1863]	2136	[2728, 1816]	3113	[3412, 2437]
183	[351, 352]	1160	[607, 1864]	2137	[1988, 1915]	3114	[3413, 946]
184	[353, 354]	1161	[1865, 1866]	2138	[2729, 1712]	3115	[3414, 389]
185	[355, 356]	1162	[1867, 1868]	2139	[2730, 742]	3116	[3415, 2384]
186	[357, 358]	1163	[1869, 491]	2140	[1351, 679]	3117	[3416, 2168]
187	[359, 255]	1164	[1870, 1871]	2141	[2731, 2005]	3118	[3417, 2339]
188	[360, 361]	1165	[1872, 1873]	2142	[2732, 1965]	3119	[3418, 909]
189	[362, 363]	1166	[1874, 1875]	2143	[2733, 2734]	3120	[3419, 2572]
190	[364, 365]	1167	[1876, 1877]	2144	[2735, 2736]	3121	[3420, 1298]
191	[366, 367]	1168	[457, 677]	2145	[2737, 2738]	3122	[337, 952]
192	[106, 368]	1169	[1878, 549]	2146	[2739, 1891]	3123	[3421, 1131]
193	[369, 370]	1170	[157, 1397]	2147	[1700, 2740]	3124	[2868, 40]
194	[333, 371]	1171	[531, 1879]	2148	[2741, 1753]	3125	[1372, 1403]
195	[372, 373]	1172	[1880, 489]	2149	[2742, 2743]	3126	[572, 1]
196	[374, 375]	1173	[1881, 1882]	2150	[1487, 2744]	3127	[1873, 3080]
197	[376, 377]	1174	[1883, 1884]	2151	[2745, 1354]	3128	[3422, 679]
198	[65, 378]	1175	[1443, 1815]	2152	[2746, 1648]	3129	[3423, 3066]
199	[379, 380]	1176	[621, 1885]	2153	[1933, 576]	3130	[1961, 537]
200	[381, 382]	1177	[1886, 559]	2154	[2747, 1846]	3131	[3424, 574]
201	[383, 384]	1178	[1383, 1887]	2155	[2748, 1646]	3132	[1946, 1398]
202	[385, 234]	1179	[1385, 1888]	2156	[2749, 1586]	3133	[1984, 233]
203	[386, 387]	1180	[1889, 1890]	2157	[2750, 723]	3134	[1974, 1508]
204	[388, 389]	1181	[194, 1759]	2158	[2751, 1608]	3135	[2787, 442]
205	[256, 390]	1182	[1891, 596]	2159	[2752, 2753]	3136	[3425, 1916]
206	[391, 392]	1183	[1813, 1892]	2160	[2754, 2755]	3137	[3426, 2940]
207	[393, 24]	1184	[1893, 1368]	2161	[2756, 2757]	3138	[1690, 194]
208	[394, 395]	1185	[1894, 1895]	2162	[2758, 2759]	3139	[3427, 3428]
209	[305, 396]	1186	[1896, 195]	2163	[122, 2760]	3140	[3001, 757]

210	[397, 398]	1187	[1897, 1439]	2164	[1757, 1405]	3141	[2028, 2074]
211	[399, 400]	1188	[662, 1898]	2165	[2707, 2761]	3142	[3429, 1981]
212	[401, 402]	1189	[1899, 1900]	2166	[219, 494]	3143	[2856, 2799]
213	[403, 404]	1190	[1901, 1902]	2167	[1501, 2762]	3144	[3430, 605]
214	[405, 406]	1191	[1466, 673]	2168	[2763, 1769]	3145	[1763, 1769]
215	[407, 408]	1192	[1903, 1904]	2169	[1568, 1466]	3146	[544, 567]
216	[409, 410]	1193	[1905, 1906]	2170	[2764, 1839]	3147	[3094, 1573]
217	[411, 412]	1194	[1907, 1908]	2171	[2765, 1905]	3148	[2858, 2751]
218	[413, 414]	1195	[1909, 745]	2172	[1722, 505]	3149	[3431, 2773]
219	[415, 416]	1196	[1910, 567]	2173	[2766, 2757]	3150	[3432, 2802]
220	[417, 418]	1197	[1911, 1912]	2174	[1793, 2767]	3151	[3433, 1425]
221	[419, 420]	1198	[1913, 1914]	2175	[1617, 1799]	3152	[1549, 2695]
222	[421, 422]	1199	[676, 1652]	2176	[2719, 2768]	3153	[3434, 1746]
223	[423, 89]	1200	[678, 1904]	2177	[1875, 2769]	3154	[3435, 2700]
224	[424, 425]	1201	[1915, 122]	2178	[2770, 1357]	3155	[3009, 714]
225	[426, 427]	1202	[8, 1916]	2179	[2771, 2772]	3156	[3436, 507]
226	[428, 429]	1203	[1917, 201]	2180	[2017, 1545]	3157	[807, 2019]
227	[430, 431]	1204	[1918, 1919]	2181	[1610, 2773]	3158	[2717, 1896]
228	[432, 433]	1205	[1920, 1896]	2182	[1614, 2774]	3159	[1841, 2966]
229	[289, 434]	1206	[1525, 795]	2183	[1540, 191]	3160	[1888, 514]
230	[435, 436]	1207	[1921, 1922]	2184	[2064, 2775]	3161	[3437, 757]
231	[437, 328]	1208	[1923, 1924]	2185	[1656, 2776]	3162	[3438, 1559]
232	[438, 439]	1209	[1925, 628]	2186	[2777, 2778]	3163	[3439, 2710]
233	[440, 441]	1210	[1926, 1927]	2187	[752, 2779]	3164	[1478, 197]
234	[442, 443]	1211	[741, 1928]	2188	[1849, 2780]	3165	[2979, 1706]
235	[444, 203]	1212	[779, 1929]	2189	[2781, 714]	3166	[3440, 523]
236	[445, 446]	1213	[1930, 1931]	2190	[2782, 2697]	3167	[3441, 1367]
237	[447, 448]	1214	[1932, 556]	2191	[2783, 721]	3168	[1349, 475]
238	[449, 450]	1215	[209, 1933]	2192	[2784, 447]	3169	[3442, 2776]
239	[451, 452]	1216	[1934, 1935]	2193	[1829, 1742]	3170	[667, 465]
240	[453, 40]	1217	[1936, 1937]	2194	[2785, 705]	3171	[3443, 1690]
241	[454, 455]	1218	[1665, 12]	2195	[2786, 2787]	3172	[3444, 613]
242	[456, 457]	1219	[1938, 1939]	2196	[124, 1648]	3173	[645, 2771]
243	[458, 459]	1220	[665, 1940]	2197	[1441, 1594]	3174	[3445, 3057]
244	[460, 461]	1221	[1941, 515]	2198	[2788, 2789]	3175	[3446, 1468]
245	[462, 463]	1222	[1942, 1943]	2199	[1788, 1489]	3176	[3447, 1756]
246	[464, 465]	1223	[1639, 1944]	2200	[1643, 800]	3177	[3448, 2679]
247	[161, 466]	1224	[1945, 1946]	2201	[1775, 2679]	3178	[3449, 126]
248	[467, 468]	1225	[1947, 774]	2202	[492, 1700]	3179	[3450, 1393]
249	[469, 470]	1226	[1948, 1949]	2203	[2790, 2741]	3180	[2773, 572]
250	[471, 472]	1227	[1950, 592]	2204	[2791, 1398]	3181	[3451, 1966]
251	[473, 174]	1228	[1951, 1952]	2205	[2056, 469]	3182	[2913, 1854]
252	[474, 475]	1229	[1953, 1954]	2206	[2792, 2793]	3183	[3452, 683]
253	[476, 477]	1230	[1955, 1956]	2207	[2794, 603]	3184	[3453, 706]

254	[478, 479]	1231	[14, 1580]	2208	[1898, 2795]	3185	[1856, 3100]
255	[480, 120]	1232	[715, 1390]	2209	[1547, 784]	3186	[51, 1969]
256	[481, 482]	1233	[1957, 727]	2210	[2796, 47]	3187	[205, 594]
257	[483, 484]	1234	[1958, 577]	2211	[2797, 2798]	3188	[2025, 1772]
258	[485, 486]	1235	[1959, 192]	2212	[2799, 1451]	3189	[1698, 1557]
259	[487, 488]	1236	[1960, 1961]	2213	[2800, 1353]	3190	[537, 652]
260	[489, 490]	1237	[1962, 1872]	2214	[2031, 158]	3191	[1588, 223]
261	[491, 492]	1238	[1963, 1964]	2215	[2801, 548]	3192	[2744, 1362]
262	[493, 494]	1239	[1965, 506]	2216	[769, 2802]	3193	[3066, 752]
263	[495, 46]	1240	[1966, 1937]	2217	[2803, 1857]	3194	[3454, 2901]
264	[496, 497]	1241	[1967, 760]	2218	[2778, 710]	3195	[486, 697]
265	[498, 499]	1242	[1968, 1969]	2219	[2804, 580]	3196	[3455, 1873]
266	[500, 501]	1243	[1970, 1456]	2220	[2805, 2806]	3197	[2871, 747]
267	[502, 503]	1244	[1971, 1972]	2221	[2807, 2808]	3198	[3456, 726]
268	[504, 505]	1245	[1973, 1974]	2222	[2809, 2708]	3199	[591, 2017]
269	[506, 507]	1246	[1689, 167]	2223	[1563, 1631]	3200	[3457, 2977]
270	[508, 158]	1247	[756, 1666]	2224	[2810, 2811]	3201	[3023, 791]
271	[509, 510]	1248	[1366, 1975]	2225	[2812, 2813]	3202	[3458, 1617]
272	[511, 512]	1249	[1976, 1977]	2226	[2814, 2815]	3203	[3459, 3102]
273	[513, 514]	1250	[1978, 1979]	2227	[2816, 2817]	3204	[2009, 1883]
274	[515, 516]	1251	[1980, 1502]	2228	[2818, 673]	3205	[3460, 550]
275	[517, 518]	1252	[1981, 1982]	2229	[674, 531]	3206	[3461, 741]
276	[519, 520]	1253	[1983, 1984]	2230	[1979, 1880]	3207	[3462, 1653]
277	[521, 522]	1254	[1985, 1869]	2231	[2819, 1745]	3208	[2874, 727]
278	[523, 524]	1255	[1682, 1986]	2232	[2820, 701]	3209	[3463, 1550]
279	[525, 526]	1256	[1987, 491]	2233	[1939, 1954]	3210	[1871, 1747]
280	[527, 528]	1257	[1740, 1988]	2234	[1851, 808]	3211	[3464, 1935]
281	[529, 449]	1258	[1989, 743]	2235	[2821, 2822]	3212	[3465, 3036]
282	[530, 531]	1259	[1990, 769]	2236	[1956, 1625]	3213	[633, 1356]
283	[532, 533]	1260	[1991, 1992]	2237	[2823, 1379]	3214	[3466, 1643]
284	[534, 535]	1261	[1993, 1918]	2238	[568, 467]	3215	[1571, 2862]
285	[536, 537]	1262	[1994, 1995]	2239	[2824, 165]	3216	[1819, 1841]
286	[538, 539]	1263	[1996, 1997]	2240	[2825, 2006]	3217	[3097, 1604]
287	[203, 540]	1264	[1998, 1999]	2241	[1759, 1610]	3218	[59, 1514]
288	[541, 542]	1265	[1575, 2000]	2242	[1748, 547]	3219	[3467, 740]
289	[543, 538]	1266	[2001, 511]	2243	[2826, 1856]	3220	[1395, 3032]
290	[539, 544]	1267	[2002, 2003]	2244	[1659, 33]	3221	[3013, 1524]
291	[545, 546]	1268	[2004, 1835]	2245	[2827, 1415]	3222	[501, 1459]
292	[547, 548]	1269	[2005, 1726]	2246	[2828, 2829]	3223	[664, 1473]
293	[549, 550]	1270	[2006, 2007]	2247	[1669, 1914]	3224	[3468, 2924]
294	[551, 552]	1271	[793, 1927]	2248	[2830, 1794]	3225	[3469, 1670]
295	[553, 554]	1272	[153, 580]	2249	[1409, 176]	3226	[809, 526]
296	[555, 199]	1273	[2008, 2009]	2250	[2831, 1698]	3227	[2774, 1931]
297	[556, 557]	1274	[2010, 1803]	2251	[1553, 1414]	3228	[3470, 606]

298	[558, 559]	1275	[2011, 1945]	2252	[1853, 225]	3229	[3471, 1529]
299	[560, 561]	1276	[1866, 2012]	2253	[1535, 777]	3230	[3472, 1540]
300	[562, 563]	1277	[1626, 1793]	2254	[2832, 2833]	3231	[728, 229]
301	[564, 195]	1278	[1461, 2001]	2255	[600, 2027]	3232	[3473, 1898]
302	[565, 566]	1279	[2013, 1883]	2256	[2834, 739]	3233	[12, 2829]
303	[567, 568]	1280	[2014, 2015]	2257	[1795, 2835]	3234	[3474, 512]
304	[569, 570]	1281	[2016, 2017]	2258	[2836, 2837]	3235	[2956, 2887]
305	[571, 572]	1282	[2018, 2019]	2259	[2838, 1469]	3236	[3475, 1847]
306	[570, 573]	1283	[1651, 766]	2260	[2839, 2840]	3237	[3476, 1522]
307	[574, 575]	1284	[2020, 1798]	2261	[2841, 1526]	3238	[2903, 1447]
308	[576, 577]	1285	[1445, 1704]	2262	[2842, 646]	3239	[3477, 215]
309	[578, 579]	1286	[2021, 2022]	2263	[1552, 2729]	3240	[3478, 1711]
310	[580, 581]	1287	[1892, 127]	2264	[1474, 1998]	3241	[3479, 766]
311	[582, 583]	1288	[2023, 1932]	2265	[2843, 1986]	3242	[3480, 804]
312	[170, 584]	1289	[2024, 2025]	2266	[767, 2844]	3243	[2685, 14]
313	[585, 442]	1290	[1473, 1750]	2267	[1543, 2845]	3244	[3481, 1934]
314	[586, 587]	1291	[2026, 1727]	2268	[2846, 1664]	3245	[3482, 1884]
315	[588, 589]	1292	[2027, 1981]	2269	[186, 685]	3246	[1887, 138]
316	[590, 591]	1293	[215, 2028]	2270	[2847, 631]	3247	[3483, 1799]
317	[592, 593]	1294	[2, 735]	2271	[1885, 1875]	3248	[2740, 1588]
318	[594, 595]	1295	[2029, 756]	2272	[2848, 578]	3249	[3484, 2903]
319	[596, 597]	1296	[2030, 152]	2273	[2849, 1747]	3250	[524, 155]
320	[598, 476]	1297	[789, 1803]	2274	[787, 608]	3251	[3485, 2836]
321	[599, 600]	1298	[512, 2031]	2275	[221, 1838]	3252	[3486, 1632]
322	[601, 602]	1299	[2032, 1483]	2276	[2850, 668]	3253	[3093, 708]
323	[603, 604]	1300	[2033, 2034]	2277	[2851, 2852]	3254	[3487, 2696]
324	[605, 606]	1301	[2035, 2036]	2278	[2853, 1388]	3255	[3488, 1806]
325	[207, 607]	1302	[57, 586]	2279	[2007, 2854]	3256	[2916, 1638]
326	[608, 609]	1303	[31, 2037]	2280	[2855, 2856]	3257	[1449, 1974]
327	[610, 611]	1304	[1836, 141]	2281	[704, 2857]	3258	[3018, 1859]
328	[612, 613]	1305	[2038, 2039]	2282	[711, 2858]	3259	[178, 1621]
329	[614, 615]	1306	[2040, 2041]	2283	[2859, 2860]	3260	[3489, 199]
330	[616, 617]	1307	[726, 1945]	2284	[2861, 2862]	3261	[3490, 231]
331	[618, 619]	1308	[579, 170]	2285	[2863, 617]	3262	[3491, 511]
332	[620, 621]	1309	[1733, 1383]	2286	[2864, 506]	3263	[3492, 2799]
333	[622, 623]	1310	[2042, 1934]	2287	[2865, 2028]	3264	[3493, 1861]
334	[624, 625]	1311	[2043, 2044]	2288	[2866, 666]	3265	[2982, 1656]
335	[626, 627]	1312	[2045, 1694]	2289	[2867, 1352]	3266	[3494, 50]
336	[510, 628]	1313	[2046, 2047]	2290	[1706, 2868]	3267	[3495, 2073]
337	[629, 630]	1314	[2048, 2049]	2291	[1884, 179]	3268	[3496, 1363]
338	[136, 631]	1315	[2050, 204]	2292	[2692, 1680]	3269	[1713, 518]
339	[632, 633]	1316	[2051, 1537]	2293	[2869, 2870]	3270	[1914, 1471]
340	[634, 635]	1317	[2052, 2042]	2294	[584, 2871]	3271	[765, 1579]
341	[636, 637]	1318	[1367, 1735]	2295	[1940, 2041]	3272	[1964, 2741]

342	[638, 639]	1319	[2053, 2054]	2296	[2872, 1832]	3273	[1702, 1812]
343	[640, 641]	1320	[2055, 2056]	2297	[2873, 1999]	3274	[2935, 1434]
344	[642, 643]	1321	[720, 1788]	2298	[1634, 2756]	3275	[3497, 558]
345	[644, 645]	1322	[1710, 165]	2299	[1696, 2874]	3276	[3498, 1824]
346	[646, 647]	1323	[2057, 2058]	2300	[2875, 1894]	3277	[3499, 1644]
347	[196, 482]	1324	[1954, 2059]	2301	[2876, 1435]	3278	[142, 2787]
348	[648, 543]	1325	[450, 729]	2302	[2877, 483]	3279	[3500, 38]
349	[649, 650]	1326	[2060, 2061]	2303	[1675, 2878]	3280	[138, 636]
350	[651, 652]	1327	[1439, 2062]	2304	[2798, 2879]	3281	[3501, 687]
351	[653, 654]	1328	[2063, 2064]	2305	[2697, 689]	3282	[595, 623]
352	[655, 656]	1329	[1428, 1902]	2306	[1426, 1863]	3283	[1628, 1894]
353	[657, 658]	1330	[801, 455]	2307	[2880, 678]	3284	[2885, 1379]
354	[659, 660]	1331	[1582, 2065]	2308	[2881, 1520]	3285	[1719, 670]
355	[661, 662]	1332	[2066, 2067]	2309	[120, 768]	3286	[3502, 35]
356	[663, 664]	1333	[1411, 2068]	2310	[2882, 733]	3287	[2894, 1826]
357	[446, 665]	1334	[2069, 2065]	2311	[2883, 758]	3288	[3503, 1879]
358	[666, 667]	1335	[2070, 1723]	2312	[2884, 2885]	3289	[3504, 1381]
359	[507, 668]	1336	[2071, 729]	2313	[2886, 2887]	3290	[3505, 2858]
360	[669, 189]	1337	[2072, 799]	2314	[2888, 671]	3291	[804, 2054]
361	[670, 671]	1338	[10, 2073]	2315	[2889, 1820]	3292	[3506, 1751]
362	[672, 131]	1339	[2074, 2075]	2316	[2890, 704]	3293	[3102, 1352]
363	[673, 674]	1340	[1686, 2076]	2317	[2891, 153]	3294	[3507, 2735]
364	[675, 676]	1341	[2077, 178]	2318	[39, 2892]	3295	[3508, 2725]
365	[677, 678]	1342	[2078, 2079]	2319	[2893, 2894]	3296	[3509, 2077]
366	[679, 680]	1343	[1347, 2080]	2320	[2895, 1812]	3297	[3510, 1590]
367	[639, 681]	1344	[2081, 2082]	2321	[2896, 2897]	3298	[700, 646]
368	[682, 683]	1345	[2083, 2084]	2322	[2898, 196]	3299	[754, 3053]
369	[684, 685]	1346	[2085, 2086]	2323	[1882, 1495]	3300	[583, 691]
370	[686, 687]	1347	[2087, 2088]	2324	[2899, 219]	3301	[3511, 1823]
371	[688, 689]	1348	[2089, 279]	2325	[1586, 2806]	3302	[3512, 1521]
372	[690, 691]	1349	[904, 2090]	2326	[470, 2900]	3303	[3513, 642]
373	[692, 693]	1350	[2091, 316]	2327	[550, 2724]	3304	[3514, 2918]
374	[694, 594]	1351	[1279, 984]	2328	[1514, 1767]	3305	[3515, 1496]
375	[695, 696]	1352	[2092, 1286]	2329	[2901, 2902]	3306	[1995, 2813]
376	[697, 698]	1353	[960, 2093]	2330	[2900, 2903]	3307	[3516, 1679]
377	[699, 700]	1354	[2084, 324]	2331	[2904, 2874]	3308	[3517, 2954]
378	[701, 702]	1355	[2094, 1272]	2332	[2905, 1753]	3309	[3518, 3093]
379	[703, 704]	1356	[2095, 851]	2333	[2906, 1457]	3310	[3519, 499]
380	[705, 706]	1357	[2082, 1333]	2334	[1735, 2907]	3311	[3520, 1536]
381	[707, 708]	1358	[2096, 25]	2335	[192, 2852]	3312	[2923, 1413]
382	[709, 633]	1359	[1198, 837]	2336	[1495, 2727]	3313	[3521, 1607]
383	[710, 711]	1360	[2097, 908]	2337	[2908, 2909]	3314	[3522, 1899]
384	[712, 713]	1361	[2098, 2099]	2338	[1612, 2910]	3315	[2844, 721]
385	[714, 715]	1362	[2100, 2101]	2339	[2911, 584]	3316	[3523, 1994]

386	[33, 716]	1363	[2102, 2103]	2340	[2822, 713]	3317	[1751, 1682]
387	[717, 718]	1364	[2104, 274]	2341	[730, 654]	3318	[3524, 3047]
388	[719, 720]	1365	[2105, 2106]	2342	[2912, 1864]	3319	[706, 2982]
389	[721, 722]	1366	[2107, 2108]	2343	[1603, 1670]	3320	[3525, 1678]
390	[723, 724]	1367	[2109, 2110]	2344	[1590, 2913]	3321	[3526, 1606]
391	[725, 726]	1368	[402, 2111]	2345	[1649, 2914]	3322	[3527, 2686]
392	[727, 728]	1369	[1056, 2112]	2346	[2817, 1932]	3323	[3528, 2772]
393	[729, 730]	1370	[861, 2113]	2347	[2915, 2916]	3324	[2003, 656]
394	[731, 732]	1371	[2114, 897]	2348	[546, 1436]	3325	[3529, 189]
395	[606, 733]	1372	[2115, 938]	2349	[2917, 1438]	3326	[2727, 449]
396	[734, 735]	1373	[2116, 2117]	2350	[652, 2889]	3327	[619, 1797]
397	[736, 737]	1374	[2118, 2119]	2351	[1943, 500]	3328	[3530, 1722]
398	[738, 128]	1375	[2120, 2121]	2352	[1944, 2918]	3329	[3531, 2062]
399	[739, 542]	1376	[834, 903]	2353	[2919, 1665]	3330	[1770, 1872]
400	[740, 741]	1377	[2122, 823]	2354	[613, 1948]	3331	[763, 1599]
401	[742, 743]	1378	[427, 1297]	2355	[2920, 166]	3332	[3532, 1523]
402	[744, 745]	1379	[933, 2123]	2356	[777, 45]	3333	[3533, 800]
403	[746, 747]	1380	[2124, 392]	2357	[2921, 2889]	3334	[455, 457]
404	[748, 230]	1381	[2125, 920]	2358	[1641, 188]	3335	[3534, 3097]
405	[749, 750]	1382	[2126, 1019]	2359	[2922, 2923]	3336	[479, 2049]
406	[751, 752]	1383	[953, 2127]	2360	[1847, 2924]	3337	[472, 1832]
407	[753, 754]	1384	[2128, 1171]	2361	[1503, 498]	3338	[2934, 1351]
408	[755, 756]	1385	[2129, 889]	2362	[2925, 2845]	3339	[650, 1692]
409	[757, 758]	1386	[2130, 2131]	2363	[2776, 1845]	3340	[783, 1501]
410	[759, 144]	1387	[352, 1132]	2364	[1415, 1510]	3341	[3535, 677]
411	[760, 761]	1388	[1040, 1152]	2365	[2926, 1988]	3342	[2061, 1361]
412	[762, 763]	1389	[2132, 2133]	2366	[2852, 208]	3343	[3536, 3023]
413	[764, 765]	1390	[2134, 2135]	2367	[2927, 1741]	3344	[1790, 1912]
414	[766, 767]	1391	[1096, 289]	2368	[708, 1980]	3345	[2736, 10]
415	[768, 769]	1392	[2136, 2137]	2369	[561, 1869]	3346	[3537, 2975]
416	[770, 771]	1393	[996, 2138]	2370	[2928, 636]	3347	[2721, 43]
417	[772, 450]	1394	[2139, 1323]	2371	[2929, 2930]	3348	[3538, 141]
418	[773, 774]	1395	[2140, 825]	2372	[1507, 1800]	3349	[1417, 1964]
419	[140, 775]	1396	[2141, 2142]	2373	[459, 119]	3350	[3539, 680]
420	[776, 777]	1397	[2143, 2144]	2374	[2931, 2932]	3351	[1684, 2009]
421	[778, 779]	1398	[2145, 2146]	2375	[2059, 549]	3352	[3540, 1944]
422	[780, 781]	1399	[1182, 318]	2376	[1434, 2759]	3353	[3541, 1836]
423	[782, 783]	1400	[2147, 2148]	2377	[2933, 2934]	3354	[3542, 611]
424	[784, 785]	1401	[2149, 2150]	2378	[1519, 1922]	3355	[3543, 2729]
425	[786, 787]	1402	[2151, 1156]	2379	[2769, 2935]	3356	[3544, 179]
426	[788, 789]	1403	[1068, 2152]	2380	[2936, 2768]	3357	[1824, 1387]
427	[790, 791]	1404	[2153, 382]	2381	[2937, 1933]	3358	[3545, 619]
428	[792, 793]	1405	[2103, 850]	2382	[1711, 2938]	3359	[2772, 172]
429	[794, 795]	1406	[1190, 828]	2383	[2939, 1949]	3360	[3546, 607]

430	[796, 211]	1407	[2154, 306]	2384	[1846, 2940]	3361	[3547, 2068]
431	[797, 798]	1408	[2155, 291]	2385	[680, 151]	3362	[1868, 59]
432	[799, 765]	1409	[2156, 86]	2386	[1447, 1425]	3363	[1679, 725]
433	[800, 801]	1410	[2157, 61]	2387	[2941, 2765]	3364	[3548, 597]
434	[802, 803]	1411	[1025, 2158]	2388	[2845, 2942]	3365	[3549, 208]
435	[573, 804]	1412	[2159, 419]	2389	[693, 2943]	3366	[1545, 1507]
436	[805, 806]	1413	[1268, 2160]	2390	[2944, 1983]	3367	[3550, 1719]
437	[791, 807]	1414	[2161, 2162]	2391	[2945, 467]	3368	[1480, 2034]
438	[808, 49]	1415	[2163, 415]	2392	[1761, 2946]	3369	[1906, 1430]
439	[581, 809]	1416	[2101, 117]	2393	[2947, 1608]	3370	[3551, 645]
440	[810, 127]	1417	[2164, 2165]	2394	[2948, 697]	3371	[2049, 1784]
441	[811, 519]	1418	[1249, 97]	2395	[1815, 204]	3372	[2757, 1619]
442	[812, 813]	1419	[2166, 1288]	2396	[2949, 2724]	3373	[647, 1965]
443	[814, 296]	1420	[2167, 1301]	2397	[168, 1866]	3374	[1406, 1596]
444	[815, 816]	1421	[280, 823]	2398	[2950, 39]	3375	[3552, 1605]
445	[817, 385]	1422	[2168, 1087]	2399	[1895, 1628]	3376	[3553, 1503]
446	[818, 819]	1423	[2169, 923]	2400	[2951, 1603]	3377	[1822, 1585]
447	[813, 820]	1424	[327, 2170]	2401	[2952, 2953]	3378	[3554, 1728]
448	[821, 822]	1425	[2171, 2172]	2402	[2725, 2954]	3379	[557, 773]
449	[823, 824]	1426	[1238, 966]	2403	[2955, 2956]	3380	[3555, 2854]
450	[825, 826]	1427	[2173, 113]	2404	[2957, 785]	3381	[2857, 1765]
451	[827, 828]	1428	[2174, 2175]	2405	[2958, 2959]	3382	[3556, 2943]
452	[829, 830]	1429	[2176, 1226]	2406	[1782, 744]	3383	[3557, 807]
453	[831, 832]	1430	[429, 1149]	2407	[2960, 2961]	3384	[3558, 2736]
454	[833, 834]	1431	[2177, 1230]	2408	[1928, 1694]	3385	[3559, 2080]
455	[835, 394]	1432	[2178, 2179]	2409	[522, 1443]	3386	[2808, 2798]
456	[836, 368]	1433	[2180, 1127]	2410	[2962, 2837]	3387	[3560, 618]
457	[837, 838]	1434	[1266, 1210]	2411	[785, 1756]	3388	[176, 2909]
458	[839, 840]	1435	[846, 2134]	2412	[2963, 1887]	3389	[3428, 1624]
459	[841, 349]	1436	[981, 2181]	2413	[615, 1512]	3390	[2835, 479]
460	[842, 310]	1437	[983, 2182]	2414	[2870, 1718]	3391	[3561, 186]
461	[843, 844]	1438	[2183, 1091]	2415	[2068, 1831]	3392	[1937, 143]
462	[845, 846]	1439	[2184, 2185]	2416	[2964, 1642]	3393	[3562, 2707]
463	[847, 848]	1440	[2186, 2187]	2417	[2897, 1961]	3394	[3563, 2761]
464	[849, 850]	1441	[2188, 2189]	2418	[172, 2039]	3395	[2910, 173]
465	[851, 852]	1442	[2190, 2165]	2419	[1826, 1584]	3396	[3564, 1757]
466	[392, 853]	1443	[2191, 388]	2420	[1550, 1592]	3397	[3565, 520]
467	[854, 855]	1444	[2192, 376]	2421	[1499, 523]	3398	[1464, 1376]
468	[856, 857]	1445	[2193, 1070]	2422	[1558, 2698]	3399	[2062, 798]
469	[858, 859]	1446	[2194, 1129]	2423	[2965, 2966]	3400	[3566, 2779]
470	[860, 861]	1447	[1117, 2195]	2424	[1811, 2967]	3401	[3567, 1400]
471	[862, 863]	1448	[2196, 354]	2425	[2012, 705]	3402	[3568, 1715]
472	[853, 864]	1449	[2197, 2198]	2426	[2968, 2059]	3403	[3569, 1984]
473	[865, 866]	1450	[2199, 1212]	2427	[2079, 610]	3404	[1715, 1745]

474	[867, 868]	1451	[2200, 1099]	2428	[2969, 1820]	3405	[609, 789]
475	[869, 340]	1452	[2201, 282]	2429	[2970, 2967]	3406	[149, 1882]
476	[870, 871]	1453	[2202, 2203]	2430	[2971, 557]	3407	[3570, 1639]
477	[872, 873]	1454	[346, 1100]	2431	[35, 1678]	3408	[3571, 205]
478	[874, 875]	1455	[2204, 2205]	2432	[2972, 200]	3409	[3572, 3001]
479	[876, 877]	1456	[2206, 1118]	2433	[2811, 1518]	3410	[803, 1642]
480	[878, 879]	1457	[2207, 322]	2434	[227, 2061]	3411	[3573, 1906]
481	[880, 881]	1458	[2208, 2209]	2435	[2973, 2868]	3412	[3574, 3094]
482	[882, 883]	1459	[244, 2100]	2436	[2974, 696]	3413	[505, 2717]
483	[884, 885]	1460	[2210, 2211]	2437	[130, 2975]	3414	[1931, 1811]
484	[886, 887]	1461	[389, 2142]	2438	[2976, 143]	3415	[3575, 1849]
485	[888, 404]	1462	[335, 1021]	2439	[1726, 2894]	3416	[1857, 1768]
486	[889, 890]	1463	[2212, 837]	2440	[2065, 1822]	3417	[3576, 1940]
487	[891, 407]	1464	[1254, 2213]	2441	[2802, 2977]	3418	[718, 603]
488	[892, 893]	1465	[2214, 1173]	2442	[1390, 2856]	3419	[3577, 1979]
489	[894, 895]	1466	[2146, 2215]	2443	[2978, 2979]	3420	[231, 2743]
490	[896, 897]	1467	[844, 2216]	2444	[2980, 2771]	3421	[3047, 662]
491	[898, 899]	1468	[2217, 1007]	2445	[2044, 46]	3422	[3578, 1031]
492	[96, 900]	1469	[2218, 27]	2446	[2981, 2982]	3423	[3579, 2411]
493	[901, 902]	1470	[2219, 2220]	2447	[1877, 2822]	3424	[3580, 1178]
494	[903, 904]	1471	[2221, 2222]	2448	[2983, 665]	3425	[3581, 2268]
495	[905, 93]	1472	[2223, 2224]	2449	[1999, 2753]	3426	[3582, 1153]
496	[906, 907]	1473	[822, 2225]	2450	[2984, 2985]	3427	[3583, 441]
497	[908, 909]	1474	[2226, 2227]	2451	[2019, 2025]	3428	[1328, 1123]
498	[910, 911]	1475	[2228, 362]	2452	[2986, 2835]	3429	[3584, 2619]
499	[912, 399]	1476	[2229, 1170]	2453	[2987, 2001]	3430	[3585, 246]
500	[260, 913]	1477	[2230, 2231]	2454	[2988, 1417]	3431	[3586, 1028]
501	[914, 402]	1478	[2232, 65]	2455	[2989, 51]	3432	[3587, 1247]
502	[915, 916]	1479	[2233, 2090]	2456	[2878, 1641]	3433	[3588, 1238]
503	[917, 918]	1480	[2234, 821]	2457	[1621, 1392]	3434	[3589, 1010]
504	[919, 920]	1481	[2235, 2145]	2458	[45, 1708]	3435	[3590, 3198]
505	[921, 922]	1482	[2236, 2237]	2459	[2990, 2769]	3436	[3591, 913]
506	[923, 924]	1483	[907, 2238]	2460	[2991, 2992]	3437	[3592, 2354]
507	[925, 926]	1484	[909, 2167]	2461	[2914, 125]	3438	[3593, 2204]
508	[927, 357]	1485	[2239, 882]	2462	[2993, 1768]	3439	[3594, 2416]
509	[928, 929]	1486	[2240, 2241]	2463	[2994, 2074]	3440	[3595, 1184]
510	[284, 930]	1487	[2242, 834]	2464	[597, 1369]	3441	[3596, 1133]
511	[304, 931]	1488	[2243, 1332]	2465	[2995, 2913]	3442	[3597, 4]
512	[932, 933]	1489	[1251, 362]	2466	[2996, 522]	3443	[3598, 411]
513	[934, 935]	1490	[2244, 1079]	2467	[2997, 1362]	3444	[3599, 859]
514	[25, 936]	1491	[2245, 2246]	2468	[2998, 648]	3445	[3600, 295]
515	[937, 353]	1492	[2247, 2248]	2469	[2999, 1854]	3446	[3601, 2156]
516	[938, 939]	1493	[848, 816]	2470	[1744, 130]	3447	[3602, 2289]
517	[940, 941]	1494	[2249, 2250]	2471	[1361, 497]	3448	[3603, 2237]

518	[942, 93]	1495	[855, 1085]	2472	[1969, 1721]	3449	[3604, 1072]
519	[922, 113]	1496	[971, 357]	2473	[1387, 3000]	3450	[3605, 1262]
520	[943, 944]	1497	[2251, 854]	2474	[806, 3001]	3451	[3606, 2477]
521	[945, 946]	1498	[2252, 947]	2475	[190, 2836]	3452	[3607, 949]
522	[395, 847]	1499	[1155, 949]	2476	[3002, 2902]	3453	[3608, 2127]
523	[947, 948]	1500	[2253, 890]	2477	[1381, 2923]	3454	[3609, 2311]
524	[949, 950]	1501	[287, 2254]	2478	[2779, 1556]	3455	[3610, 2232]
525	[951, 379]	1502	[1219, 2255]	2479	[685, 2953]	3456	[3611, 2321]
526	[952, 953]	1503	[2256, 912]	2480	[747, 503]	3457	[3612, 1035]
527	[954, 98]	1504	[2257, 2258]	2481	[3003, 1818]	3458	[3613, 2508]
528	[955, 956]	1505	[2259, 2260]	2482	[1677, 1528]	3459	[3614, 2451]
529	[957, 825]	1506	[2261, 2262]	2483	[147, 1445]	3460	[3615, 2387]
530	[958, 77]	1507	[2263, 1033]	2484	[3004, 1589]	3461	[3616, 2137]
531	[959, 960]	1508	[2264, 1263]	2485	[3005, 1750]	3462	[3617, 1074]
532	[961, 962]	1509	[2265, 2134]	2486	[1579, 2079]	3463	[3618, 2185]
533	[332, 963]	1510	[2266, 1313]	2487	[3006, 595]	3464	[3619, 1090]
534	[964, 965]	1511	[2267, 826]	2488	[611, 1496]	3465	[3620, 2140]
535	[966, 967]	1512	[2268, 2269]	2489	[3007, 555]	3466	[3621, 988]
536	[968, 969]	1513	[2270, 431]	2490	[533, 1816]	3467	[3622, 364]
537	[924, 879]	1514	[2148, 994]	2491	[3008, 2774]	3468	[3623, 1290]
538	[970, 971]	1515	[2271, 1149]	2492	[516, 3009]	3469	[3624, 978]
539	[972, 973]	1516	[2272, 2273]	2493	[3010, 159]	3470	[3625, 1252]
540	[263, 974]	1517	[2274, 930]	2494	[3011, 538]	3471	[3626, 973]
541	[975, 281]	1518	[2275, 2276]	2495	[174, 1420]	3472	[3627, 2363]
542	[976, 977]	1519	[2277, 2278]	2496	[3012, 808]	3473	[3628, 1221]
543	[864, 978]	1520	[2279, 2280]	2497	[490, 3013]	3474	[3629, 2269]
544	[979, 247]	1521	[361, 96]	2498	[3014, 1978]	3475	[3630, 1177]
545	[980, 981]	1522	[380, 2281]	2499	[3015, 3000]	3476	[3631, 1331]
546	[982, 983]	1523	[384, 2282]	2500	[2022, 799]	3477	[3632, 2215]
547	[984, 985]	1524	[2283, 243]	2501	[2815, 1428]	3478	[3633, 2452]
548	[986, 987]	1525	[2284, 1127]	2502	[3016, 784]	3479	[3634, 2144]
549	[373, 988]	1526	[852, 2263]	2503	[3017, 3018]	3480	[3635, 1191]
550	[989, 990]	1527	[2285, 1003]	2504	[3019, 1718]	3481	[3636, 311]
551	[991, 97]	1528	[1116, 1161]	2505	[1845, 739]	3482	[3637, 2084]
552	[992, 355]	1529	[344, 1129]	2506	[2813, 2961]	3483	[3638, 366]
553	[993, 994]	1530	[2286, 1200]	2507	[1391, 1977]	3484	[3639, 2392]
554	[995, 996]	1531	[2287, 933]	2508	[3020, 2944]	3485	[3640, 835]
555	[866, 997]	1532	[2288, 871]	2509	[3021, 2775]	3486	[3641, 2101]
556	[998, 999]	1533	[112, 2289]	2510	[3022, 190]	3487	[3642, 921]
557	[1000, 1001]	1534	[2290, 91]	2511	[1526, 3023]	3488	[3643, 100]
558	[1002, 1003]	1535	[2291, 90]	2512	[1363, 1966]	3489	[3644, 381]
559	[1004, 1005]	1536	[2292, 1029]	2513	[3024, 596]	3490	[3645, 1097]
560	[1006, 1007]	1537	[323, 2283]	2514	[3025, 1762]	3491	[3646, 932]
561	[944, 898]	1538	[2293, 2294]	2515	[1422, 616]	3492	[3647, 1209]

562	[1008, 437]	1539	[2295, 2296]	2516	[3026, 2003]	3493	[3648, 2157]
563	[1009, 1010]	1540	[1203, 2193]	2517	[3027, 227]	3494	[3649, 101]
564	[1011, 76]	1541	[2297, 2298]	2518	[2977, 1835]	3495	[3650, 1086]
565	[1012, 1013]	1542	[2299, 982]	2519	[3028, 3029]	3496	[3651, 2377]
566	[1014, 1015]	1543	[2300, 1137]	2520	[2734, 3030]	3497	[3652, 2498]
567	[1016, 1017]	1544	[2301, 294]	2521	[3031, 3032]	3498	[3653, 396]
568	[1018, 1019]	1545	[1026, 2302]	2522	[3033, 1779]	3499	[3654, 822]
569	[1020, 1021]	1546	[1317, 1309]	2523	[3034, 2751]	3500	[3655, 2158]
570	[1022, 1023]	1547	[2303, 2304]	2524	[1818, 2735]	3501	[3656, 1249]
571	[1024, 1009]	1548	[2305, 1322]	2525	[3035, 667]	3502	[3657, 2227]
572	[875, 1025]	1549	[2306, 2188]	2526	[683, 3036]	3503	[3658, 892]
573	[1021, 1026]	1550	[311, 439]	2527	[3037, 2914]	3504	[3659, 358]
574	[1027, 1028]	1551	[2307, 102]	2528	[3038, 2698]	3505	[3660, 323]
575	[1029, 1030]	1552	[2308, 275]	2529	[602, 3029]	3506	[3661, 999]
576	[929, 372]	1553	[2309, 2163]	2530	[3032, 2778]	3507	[3662, 1066]
577	[295, 1031]	1554	[2237, 2242]	2531	[1646, 1552]	3508	[3663, 1293]
578	[315, 1032]	1555	[2310, 435]	2532	[1636, 1956]	3509	[3664, 299]
579	[250, 1022]	1556	[941, 2311]	2533	[3039, 34]	3510	[3665, 420]
580	[1033, 1034]	1557	[2312, 1048]	2534	[628, 781]	3511	[3666, 1258]
581	[297, 1035]	1558	[2220, 327]	2535	[3040, 41]	3512	[3667, 848]
582	[1036, 1037]	1559	[2313, 2264]	2536	[3041, 695]	3513	[3668, 1063]
583	[1038, 875]	1560	[2314, 2315]	2537	[1528, 2811]	3514	[3669, 2197]
584	[1039, 1040]	1561	[2282, 929]	2538	[3042, 2076]	3515	[3670, 2107]
585	[1041, 814]	1562	[1262, 2107]	2539	[3000, 644]	3516	[3671, 855]
586	[1042, 423]	1563	[2138, 2298]	2540	[3043, 1392]	3517	[3672, 2431]
587	[114, 1043]	1564	[2316, 277]	2541	[2076, 3044]	3518	[3673, 2501]
588	[1044, 952]	1565	[2317, 2318]	2542	[3045, 489]	3519	[3674, 883]
589	[1045, 410]	1566	[850, 2232]	2543	[3046, 1982]	3520	[3675, 1027]
590	[1046, 1047]	1567	[2319, 2129]	2544	[1912, 2932]	3521	[3676, 2472]
591	[1048, 1049]	1568	[2320, 2321]	2545	[3029, 3047]	3522	[3677, 2568]
592	[1050, 1027]	1569	[2322, 1067]	2546	[3048, 1888]	3523	[3678, 813]
593	[1051, 1052]	1570	[2323, 2324]	2547	[3049, 722]	3524	[3679, 2088]
594	[1053, 812]	1571	[396, 2087]	2548	[2753, 1871]	3525	[3680, 1215]
595	[390, 1054]	1572	[2325, 2326]	2549	[3050, 209]	3526	[3681, 2093]
596	[1055, 1056]	1573	[2327, 916]	2550	[3051, 544]	3527	[3682, 66]
597	[1057, 1058]	1574	[2328, 2109]	2551	[3052, 3053]	3528	[3683, 1279]
598	[978, 1059]	1575	[2198, 892]	2552	[3054, 1713]	3529	[3684, 1263]
599	[1060, 1061]	1576	[2329, 2330]	2553	[3055, 1813]	3530	[3685, 1240]
600	[1062, 1063]	1577	[2331, 112]	2554	[1518, 55]	3531	[3686, 853]
601	[1064, 1065]	1578	[2332, 82]	2555	[1357, 1354]	3532	[3687, 1251]
602	[1066, 348]	1579	[2158, 1076]	2556	[3056, 1800]	3533	[3688, 1333]
603	[1067, 1068]	1580	[27, 74]	2557	[448, 3057]	3534	[3689, 2366]
604	[1069, 947]	1581	[2333, 2334]	2558	[3058, 1625]	3535	[3690, 356]
605	[1070, 1071]	1582	[1160, 2300]	2559	[3059, 2844]	3536	[3691, 1181]

606	[1072, 1073]	1583	[2335, 1180]	2560	[3060, 3013]	3537	[3692, 2519]
607	[309, 1074]	1584	[1296, 76]	2561	[2047, 642]	3538	[3693, 1130]
608	[1073, 969]	1585	[89, 299]	2562	[3061, 2892]	3539	[3694, 2263]
609	[1075, 989]	1586	[1179, 239]	2563	[3062, 2744]	3540	[3695, 2164]
610	[1076, 979]	1587	[2336, 818]	2564	[3063, 1880]	3541	[3696, 275]
611	[1077, 1078]	1588	[1114, 2337]	2565	[3064, 2760]	3542	[3697, 971]
612	[994, 1079]	1589	[2338, 2339]	2566	[3065, 1900]	3543	[3698, 2438]
613	[1080, 1081]	1590	[2187, 2291]	2567	[722, 2696]	3544	[3699, 990]
614	[1082, 18]	1591	[2340, 2341]	2568	[2975, 3066]	3545	[3700, 2589]
615	[1083, 1084]	1592	[956, 2308]	2569	[3067, 2000]	3546	[3701, 2403]
616	[1085, 1086]	1593	[2342, 889]	2570	[1863, 1668]	3547	[3702, 317]
617	[1087, 1088]	1594	[977, 2343]	2571	[2966, 1697]	3548	[3703, 297]
618	[1089, 1090]	1595	[2344, 2345]	2572	[1353, 1421]	3549	[3704, 305]
619	[1091, 290]	1596	[840, 1282]	2573	[3068, 1804]	3550	[3705, 2255]
620	[1092, 1093]	1597	[2346, 1089]	2574	[3069, 168]	3551	[3706, 1121]
621	[1094, 955]	1598	[1007, 2347]	2575	[3070, 1422]	3552	[3707, 405]
622	[1095, 1096]	1599	[1035, 1244]	2576	[3071, 1666]	3553	[3708, 2386]
623	[278, 1097]	1600	[1288, 73]	2577	[2959, 1684]	3554	[3709, 2170]
624	[1098, 1099]	1601	[902, 2326]	2578	[3053, 3041]	3555	[3710, 109]
625	[1100, 1101]	1602	[2348, 2349]	2579	[518, 2870]	3556	[3711, 2181]
626	[1102, 1103]	1603	[302, 972]	2580	[2837, 692]	3557	[3712, 240]
627	[1104, 1105]	1604	[340, 281]	2581	[1949, 592]	3558	[3713, 80]
628	[1106, 1107]	1605	[2350, 1339]	2582	[3072, 498]	3559	[3714, 2462]
629	[1108, 1109]	1606	[2160, 1138]	2583	[702, 1535]	3560	[3715, 1091]
630	[1110, 1093]	1607	[2093, 1170]	2584	[184, 1571]	3561	[3716, 838]
631	[265, 1111]	1608	[2351, 2352]	2585	[3073, 1391]	3562	[3717, 2355]
632	[1112, 1113]	1609	[2353, 2172]	2586	[3074, 2075]	3563	[3718, 2673]
633	[330, 1114]	1610	[371, 841]	2587	[3075, 692]	3564	[3719, 2103]
634	[1115, 1116]	1611	[2354, 2355]	2588	[1471, 1468]	3565	[3720, 1045]
635	[930, 1117]	1612	[2356, 2236]	2589	[2992, 1606]	3566	[3721, 3177]
636	[1118, 1119]	1613	[2357, 2358]	2590	[3076, 3077]	3567	[3722, 2149]
637	[1120, 1121]	1614	[1030, 6]	2591	[468, 1663]	3568	[3723, 911]
638	[1122, 1123]	1615	[2359, 2360]	2592	[3078, 809]	3569	[3724, 1186]
639	[1124, 917]	1616	[2361, 1001]	2593	[3079, 3080]	3570	[3725, 1311]
640	[1125, 1126]	1617	[2362, 2363]	2594	[2954, 1702]	3571	[3726, 2561]
641	[1127, 1128]	1618	[2364, 1038]	2595	[3081, 1546]	3572	[3727, 2503]
642	[1129, 1130]	1619	[2324, 982]	2596	[2985, 627]	3573	[3728, 2539]
643	[1131, 1106]	1620	[2365, 2136]	2597	[3044, 650]	3574	[3729, 955]
644	[1132, 1133]	1621	[2366, 2367]	2598	[3082, 1712]	3575	[3730, 925]
645	[1134, 1135]	1622	[2368, 1250]	2599	[2775, 660]	3576	[3731, 948]
646	[1136, 283]	1623	[2369, 2370]	2600	[1638, 1798]	3577	[3732, 2222]
647	[1137, 923]	1624	[2304, 2371]	2601	[3083, 3009]	3578	[2932, 1891]
648	[1138, 1139]	1625	[425, 303]	2602	[1730, 742]	3579	[1804, 2022]
649	[1140, 926]	1626	[1119, 2372]	2603	[1806, 755]	3580	[3733, 140]

650	[1141, 1142]	1627	[2373, 74]	2604	[3084, 1486]	3581	[3734, 1436]
651	[1143, 235]	1628	[2175, 2374]	2605	[2015, 34]	3582	[2953, 2817]
652	[408, 970]	1629	[2375, 374]	2606	[3085, 1763]	3583	[1467, 561]
653	[1144, 1042]	1630	[2376, 2273]	2607	[2887, 1449]	3584	[3735, 2007]
654	[1145, 1146]	1631	[2260, 2377]	2608	[3086, 1554]	3585	[2892, 2815]
655	[1147, 1148]	1632	[2113, 2164]	2609	[3087, 575]	3586	[1982, 1853]
656	[1149, 1150]	1633	[2378, 2379]	2610	[1708, 145]	3587	[484, 686]
657	[1151, 1152]	1634	[2216, 2380]	2611	[3088, 1742]	3588	[1879, 1589]
658	[1153, 910]	1635	[2381, 2382]	2612	[1607, 1347]	3589	[3736, 2938]
659	[1154, 1155]	1636	[1196, 425]	2613	[1601, 461]	3590	[461, 578]
660	[1003, 1156]	1637	[2383, 2277]	2614	[3089, 2719]	3591	[3737, 1467]
661	[1157, 1158]	1638	[918, 992]	2615	[1922, 1994]	3592	[2967, 1482]
662	[857, 1113]	1639	[1146, 2384]	2616	[3090, 2907]	3593	[55, 1345]
663	[1159, 1160]	1640	[2385, 985]	2617	[3091, 1631]	3594	[1401, 1505]
664	[1161, 1162]	1641	[118, 426]	2618	[3092, 3041]	3595	[3738, 1649]
665	[1163, 341]	1642	[2386, 2387]	2619	[2943, 3093]	3596	[3100, 2897]
666	[1164, 1165]	1643	[1335, 99]	2620	[503, 3094]	3597	[2862, 648]
667	[307, 435]	1644	[293, 1158]	2621	[3095, 1689]	3598	[3739, 602]
668	[1166, 1167]	1645	[2363, 2388]	2622	[1592, 1543]	3599	[1924, 163]
669	[1168, 364]	1646	[2389, 2390]	2623	[3096, 2767]	3600	[2723, 1992]
670	[863, 1169]	1647	[2391, 247]	2624	[2036, 483]	3601	[798, 1924]
671	[1170, 1171]	1648	[1188, 21]	2625	[47, 3097]	3602	[1861, 1566]
672	[1172, 259]	1649	[1084, 2392]	2626	[520, 149]	3603	[3740, 1748]
673	[1173, 80]	1650	[2393, 236]	2627	[1929, 2015]	3604	[1605, 136]
674	[406, 1174]	1651	[2394, 1293]	2628	[229, 701]	3605	[1786, 2700]
675	[1175, 1176]	1652	[1176, 2395]	2629	[465, 1410]	3606	[3741, 500]
676	[414, 1177]	1653	[1177, 2266]	2630	[2759, 3098]	3607	[3742, 767]
677	[368, 1178]	1654	[2396, 2217]	2631	[3099, 3100]	3608	[575, 1636]
678	[838, 1179]	1655	[2397, 62]	2632	[3101, 521]	3609	[3743, 501]
679	[1180, 1181]	1656	[883, 2398]	2633	[1437, 3102]	3610	[3744, 2857]
680	[1031, 1182]	1657	[313, 385]	2634	[3103, 2795]	3611	[1529, 2047]
681	[1123, 1183]	1658	[2399, 1062]	2635	[3104, 1795]	3612	[3745, 2878]
682	[433, 1184]	1659	[6, 1230]	2636	[3105, 1998]	3613	[3746, 693]
683	[1185, 1186]	1660	[2400, 361]	2637	[2034, 152]	3614	[1904, 2044]
684	[1187, 1052]	1661	[2382, 1233]	2638	[3106, 443]	3615	[3747, 2012]
685	[356, 1188]	1662	[2401, 922]	2639	[3107, 1455]	3616	[1493, 760]
686	[1189, 1190]	1663	[291, 2224]	2640	[691, 459]	3617	[3748, 1892]
687	[887, 1191]	1664	[2402, 2403]	2641	[2840, 2901]	3618	[3749, 3098]
688	[1192, 1193]	1665	[1231, 1290]	2642	[3108, 768]	3619	[3750, 2935]
689	[242, 1194]	1666	[997, 2197]	2643	[1890, 2077]	3620	[3751, 702]
690	[1195, 1196]	1667	[1071, 2131]	2644	[3109, 2031]	3621	[3752, 593]
691	[1197, 1198]	1668	[2404, 2405]	2645	[654, 1533]	3622	[3753, 1733]
692	[404, 854]	1669	[1099, 2406]	2646	[3110, 1406]	3623	[3754, 2740]
693	[1199, 1200]	1670	[2349, 870]	2647	[1916, 1782]	3624	[1516, 1723]

694	[1201, 1202]	1671	[2407, 2218]	2648	[1663, 1740]	3625	[3755, 1983]
695	[1133, 1203]	1672	[2408, 1242]	2649	[542, 1441]	3626	[3756, 547]
696	[342, 366]	1673	[2409, 2275]	2650	[3111, 556]	3627	[1777, 1366]
697	[1204, 894]	1674	[2410, 270]	2651	[589, 131]	3628	[3757, 2910]
698	[1205, 1185]	1675	[2405, 2411]	2652	[3112, 1677]	3629	[2701, 1499]
699	[1206, 1167]	1676	[2412, 2161]	2653	[3098, 2685]	3630	[3758, 1562]
700	[420, 1207]	1677	[1088, 2413]	2654	[3113, 2721]	3631	[733, 2985]
701	[1208, 1209]	1678	[69, 338]	2655	[1435, 2956]	3632	[1859, 554]
702	[1210, 1211]	1679	[71, 419]	2656	[3114, 142]	3633	[3759, 2900]
703	[1212, 1213]	1680	[2294, 2414]	2657	[3115, 1946]	3634	[2833, 217]
704	[73, 1214]	1681	[2415, 1087]	2658	[3116, 1416]	3635	[3760, 490]
705	[873, 430]	1682	[1323, 2416]	2659	[1908, 2708]	3636	[3761, 711]
706	[1215, 1216]	1683	[2417, 429]	2660	[781, 723]	3637	[3762, 1829]
707	[1217, 1218]	1684	[2418, 2145]	2661	[660, 515]	3638	[1952, 1761]
708	[321, 1219]	1685	[2419, 1183]	2662	[1413, 2992]	3639	[3763, 2037]
709	[1220, 1221]	1686	[2326, 2149]	2663	[2039, 3077]	3640	[716, 2042]
710	[1222, 1223]	1687	[410, 1089]	2664	[3117, 1421]	3641	[2961, 230]
711	[1224, 1124]	1688	[2420, 1169]	2665	[1746, 2916]	3642	[3764, 1612]
712	[1225, 319]	1689	[2367, 101]	2666	[3118, 1838]	3643	[3765, 1626]
713	[1226, 1227]	1690	[2238, 2421]	2667	[3119, 610]	3644	[774, 709]
714	[1228, 1229]	1691	[2422, 830]	2668	[631, 1672]	3645	[3766, 1401]
715	[416, 1155]	1692	[2423, 2370]	2669	[3120, 2780]	3646	[2860, 1537]
716	[1230, 1231]	1693	[2424, 1141]	2670	[1469, 1978]	3647	[1430, 718]
717	[1232, 872]	1694	[2425, 379]	2671	[1692, 639]	3648	[2924, 452]
718	[1233, 1234]	1695	[1013, 274]	2672	[2755, 1480]	3649	[1657, 201]
719	[1235, 321]	1696	[422, 1212]	2673	[1584, 164]	3650	[1418, 2793]
720	[1236, 840]	1697	[2426, 2183]	2674	[3121, 3122]	3651	[2710, 1661]
721	[1237, 1238]	1698	[2427, 2220]	2675	[3123, 2027]	3652	[3767, 2723]
722	[1239, 1240]	1699	[2428, 2426]	2676	[3124, 1105]	3653	[2918, 664]
723	[1121, 907]	1700	[2108, 2429]	2677	[3125, 335]	3654	[2854, 635]
724	[1241, 1224]	1701	[2430, 2304]	2678	[3126, 887]	3655	[514, 1939]
725	[1242, 1173]	1702	[2431, 2292]	2679	[1181, 2240]	3656	[3768, 191]
726	[1169, 1243]	1703	[2432, 1199]	2680	[3127, 320]	3657	[2760, 463]
727	[1244, 428]	1704	[2231, 1072]	2681	[2528, 866]	3658	[1864, 2681]
728	[1245, 1246]	1705	[2433, 403]	2682	[3128, 342]	3659	[3769, 2756]
729	[81, 1247]	1706	[946, 959]	2683	[3129, 1078]	3660	[3770, 1915]
730	[826, 1248]	1707	[2434, 1211]	2684	[3130, 2464]	3661	[1839, 124]
731	[286, 1249]	1708	[400, 2435]	2685	[2647, 2618]	3662	[1784, 8]
732	[1250, 1251]	1709	[2436, 2163]	2686	[2241, 1239]	3663	[2714, 1717]
733	[1252, 1253]	1710	[2131, 2272]	2687	[3131, 1146]	3664	[1828, 3018]
734	[269, 1254]	1711	[378, 2437]	2688	[3132, 2372]	3665	[3771, 1418]
735	[1255, 935]	1712	[2438, 1322]	2689	[3133, 812]	3666	[3772, 1547]
736	[1256, 1257]	1713	[2439, 331]	2690	[3134, 2256]	3667	[3773, 524]
737	[1258, 1038]	1714	[2440, 2441]	2691	[3135, 2571]	3668	[2767, 1385]

738	[1259, 844]	1715	[881, 1096]	2692	[897, 1258]	3669	[1667, 1568]
739	[1260, 405]	1716	[2442, 1234]	2693	[3136, 318]	3670	[3774, 674]
740	[1261, 1262]	1717	[1248, 1228]	2694	[3137, 266]	3671	[1522, 1744]
741	[1263, 1264]	1718	[2443, 2386]	2695	[2111, 407]	3672	[1538, 2692]
742	[1265, 1266]	1719	[2444, 2086]	2696	[2195, 2418]	3673	[2940, 2934]
743	[1267, 1268]	1720	[2445, 2147]	2697	[1240, 269]	3674	[1935, 2067]
744	[83, 884]	1721	[102, 921]	2698	[319, 1300]	3675	[617, 563]
745	[1269, 1270]	1722	[2446, 2447]	2699	[3138, 2278]	3676	[713, 1908]
746	[1271, 393]	1723	[1059, 251]	2700	[2112, 3139]	3677	[1738, 1918]
747	[1272, 1273]	1724	[2273, 309]	2701	[2499, 1250]	3678	[1489, 2056]
748	[1274, 1088]	1725	[2448, 2449]	2702	[3140, 2100]	3679	[737, 2789]
749	[1275, 1261]	1726	[2450, 2451]	2703	[2189, 313]	3680	[3775, 1680]
750	[1276, 860]	1727	[899, 2452]	2704	[3141, 2471]	3681	[2909, 157]
751	[1277, 1278]	1728	[1043, 1257]	2705	[3142, 1270]	3682	[3776, 1995]
752	[431, 1279]	1729	[2453, 1265]	2706	[1234, 3143]	3683	[2780, 2738]
753	[1280, 1268]	1730	[1218, 398]	2707	[3143, 1075]	3684	[3777, 1721]
754	[1281, 337]	1731	[2454, 2338]	2708	[2451, 863]	3685	[3778, 1652]
755	[1282, 381]	1732	[2455, 2404]	2709	[3144, 1203]	3686	[3779, 516]
756	[1270, 1252]	1733	[1340, 856]	2710	[2530, 2545]	3687	[3780, 1697]
757	[1283, 413]	1734	[2456, 2457]	2711	[3145, 1135]	3688	[2703, 566]
758	[412, 1284]	1735	[1107, 255]	2712	[3146, 2405]	3689	[1672, 1409]
759	[1285, 1286]	1736	[2370, 1163]	2713	[3147, 1050]	3690	[2907, 1794]
760	[973, 1208]	1737	[2458, 1282]	2714	[436, 1069]	3691	[1561, 184]
761	[816, 1126]	1738	[2459, 2460]	2715	[3148, 1025]	3692	[2806, 1602]
762	[1287, 300]	1739	[2461, 1162]	2716	[3149, 857]	3693	[3781, 466]
763	[1097, 1288]	1740	[2462, 2463]	2717	[2489, 2469]	3694	[2768, 1388]
764	[1289, 78]	1741	[2464, 2465]	2718	[3150, 2573]	3695	[3782, 573]
765	[1290, 832]	1742	[1150, 2234]	2719	[2318, 1272]	3696	[2080, 519]
766	[1291, 1292]	1743	[2466, 2279]	2720	[3151, 860]	3697	[1736, 446]
767	[1293, 376]	1744	[2467, 1064]	2721	[1128, 1116]	3698	[1399, 1710]
768	[235, 932]	1745	[1216, 262]	2722	[3152, 338]	3699	[1972, 1454]
769	[236, 1145]	1746	[1054, 2327]	2723	[2170, 2483]	3700	[3783, 146]
770	[1294, 959]	1747	[2468, 1066]	2724	[2387, 2425]	3701	[3784, 1928]
771	[913, 858]	1748	[2469, 17]	2725	[2142, 1269]	3702	[3080, 2979]
772	[1295, 81]	1749	[2470, 1185]	2726	[3153, 2198]	3703	[2930, 2734]
773	[967, 1296]	1750	[1162, 1276]	2727	[1257, 3154]	3704	[2075, 734]
774	[1297, 330]	1751	[2225, 2471]	2728	[3155, 2293]	3705	[1977, 226]
775	[273, 1298]	1752	[2121, 2184]	2729	[2390, 2619]	3706	[1902, 720]
776	[1299, 1300]	1753	[271, 2472]	2730	[3156, 1328]	3707	[1653, 552]
777	[1301, 1197]	1754	[2473, 2474]	2731	[3157, 2450]	3708	[166, 591]
778	[1302, 1303]	1755	[2475, 2476]	2732	[3158, 378]	3709	[3785, 147]
779	[824, 1304]	1756	[325, 2477]	2733	[3159, 2213]	3710	[3786, 728]
780	[1305, 1306]	1757	[1311, 1331]	2734	[367, 937]	3711	[3787, 202]
781	[1307, 1241]	1758	[2478, 2446]	2735	[1194, 1168]	3712	[2938, 3122]

782	[1308, 1237]	1759	[370, 2479]	2736	[2119, 2530]	3713	[1368, 2755]
783	[1113, 1205]	1760	[2480, 2481]	2737	[3160, 2150]	3714	[775, 1577]
784	[1309, 1310]	1761	[2392, 1039]	2738	[3161, 1016]	3715	[3788, 539]
785	[962, 1311]	1762	[1286, 2083]	2739	[3162, 1335]	3716	[2073, 1730]
786	[1312, 1313]	1763	[282, 238]	2740	[900, 2475]	3717	[3789, 1805]
787	[1314, 403]	1764	[2482, 2483]	2741	[1320, 2204]	3718	[3790, 579]
788	[1315, 1316]	1765	[354, 2484]	2742	[3163, 2175]	3719	[3791, 732]
789	[1065, 1317]	1766	[2485, 2207]	2743	[1298, 2092]	3720	[3792, 3044]
790	[1318, 390]	1767	[2411, 1080]	2744	[2567, 2102]	3721	[2761, 213]
791	[1319, 1320]	1768	[94, 2268]	2745	[3164, 99]	3722	[3793, 1487]
792	[1321, 956]	1769	[2276, 1104]	2746	[3165, 1166]	3723	[3036, 2058]
793	[1322, 1323]	1770	[2486, 2179]	2747	[3166, 380]	3724	[3794, 1819]
794	[1324, 1189]	1771	[2487, 1325]	2748	[3167, 884]	3725	[1986, 1614]
795	[1325, 1326]	1772	[2488, 2489]	2749	[3168, 2564]	3726	[1356, 1828]
796	[1327, 1328]	1773	[2490, 1224]	2750	[3169, 1083]	3727	[155, 589]
797	[1329, 1330]	1774	[2491, 1319]	2751	[1142, 945]	3728	[3795, 715]
798	[1152, 68]	1775	[2395, 2211]	2752	[3170, 2641]	3729	[233, 533]
799	[1331, 1332]	1776	[2492, 355]	2753	[2633, 2382]	3730	[3796, 1929]
800	[988, 835]	1777	[2280, 2124]	2754	[3171, 942]	3731	[3797, 2871]
801	[1333, 1014]	1778	[2493, 970]	2755	[2152, 868]	3732	[2789, 3428]
802	[1334, 910]	1779	[2205, 846]	2756	[2379, 2615]	3733	[3798, 1213]
803	[1186, 1335]	1780	[2494, 285]	2757	[2634, 1267]	3734	[3799, 953]
804	[1023, 320]	1781	[2495, 83]	2758	[3172, 434]	3735	[3800, 2380]
805	[1336, 90]	1782	[18, 2431]	2759	[885, 1281]	3736	[3801, 2524]
806	[377, 1337]	1783	[2496, 1260]	2760	[238, 2557]	3737	[3802, 428]
807	[1202, 1338]	1784	[1191, 908]	2761	[2631, 2209]	3738	[3803, 931]
808	[1339, 843]	1785	[2497, 87]	2762	[890, 2356]	3739	[3804, 408]
809	[1034, 1340]	1786	[2498, 2499]	2763	[3173, 2486]	3740	[3805, 984]
810	[1341, 272]	1787	[2500, 1198]	2764	[3174, 2647]	3741	[3806, 914]
811	[1342, 1343]	1788	[2501, 78]	2765	[2133, 914]	3742	[3807, 1304]
812	[1344, 1345]	1789	[2502, 2489]	2766	[3175, 1214]	3743	[3808, 924]
813	[1346, 1347]	1790	[2503, 2250]	2767	[2372, 418]	3744	[3809, 2615]
814	[1348, 1349]	1791	[2504, 2143]	2768	[2483, 942]	3745	[3810, 2098]
815	[630, 625]	1792	[2505, 820]	2769	[1015, 2503]	3746	[3811, 1017]
816	[1350, 1351]	1793	[108, 2296]	2770	[3176, 343]	3747	[3812, 873]
817	[1352, 1353]	1794	[2281, 2459]	2771	[1306, 3177]	3748	[3813, 2152]
818	[1354, 50]	1795	[2506, 2200]	2772	[1135, 2117]	3749	[3814, 243]
819	[1355, 1356]	1796	[2507, 950]	2773	[2172, 1218]	3750	[3815, 1337]
820	[1345, 1357]	1797	[2090, 1050]	2774	[2358, 2315]	3751	[3816, 876]
821	[1358, 1359]	1798	[382, 294]	2775	[916, 2133]	3752	[3817, 2125]
822	[1360, 1361]	1799	[2508, 2389]	2776	[1103, 995]	3753	[3818, 983]
823	[1362, 1363]	1800	[2302, 2303]	2777	[3178, 1076]	3754	[3819, 1040]
824	[1364, 139]	1801	[2509, 1307]	2778	[3154, 2568]	3755	[3820, 819]
825	[1365, 1366]	1802	[2510, 2135]	2779	[1278, 2174]	3756	[3821, 995]

826	[637, 1367]	1803	[1316, 104]	2780	[2476, 2258]	3757	[3822, 2148]
827	[735, 1368]	1804	[2150, 2277]	2781	[3179, 416]	3758	[3823, 344]
828	[1369, 1370]	1805	[2511, 1136]	2782	[3180, 1188]	3759	[3824, 1058]
829	[1371, 1372]	1806	[2512, 981]	2783	[3181, 1239]	3760	[3825, 353]
830	[1373, 709]	1807	[2513, 1338]	2784	[3182, 2348]	3761	[3826, 2512]
831	[1374, 601]	1808	[2514, 2362]	2785	[3183, 71]	3762	[3827, 945]
832	[1375, 1376]	1809	[2515, 1297]	2786	[3184, 1253]	3763	[3828, 373]
833	[1377, 1378]	1810	[2516, 2191]	2787	[2587, 998]	3764	[3829, 2631]
834	[1379, 1380]	1811	[895, 116]	2788	[3185, 1267]	3765	[3830, 2083]
835	[593, 1381]	1812	[441, 2125]	2789	[2250, 962]	3766	[3831, 2236]
836	[1382, 1383]	1813	[258, 2517]	2790	[3186, 271]	3767	[3832, 2414]
837	[1384, 1385]	1814	[2518, 1194]	2791	[3187, 1182]	3768	[3833, 106]
838	[1386, 1387]	1815	[240, 2519]	2792	[3188, 2266]	3769	[3834, 2634]
839	[1388, 793]	1816	[2520, 2312]	2793	[877, 2248]	3770	[3835, 296]
840	[1389, 1390]	1817	[963, 1176]	2794	[3189, 1069]	3771	[3836, 1026]
841	[623, 1391]	1818	[2521, 2119]	2795	[1330, 352]	3772	[3837, 2389]
842	[658, 472]	1819	[1156, 818]	2796	[3190, 2463]	3773	[3838, 341]
843	[1392, 1393]	1820	[1139, 2512]	2797	[3191, 2499]	3774	[3839, 1168]
844	[1394, 1395]	1821	[2522, 400]	2798	[1078, 2221]	3775	[3840, 1128]
845	[1396, 1397]	1822	[439, 2523]	2799	[2135, 2402]	3776	[3841, 94]
846	[1398, 1399]	1823	[1126, 2524]	2800	[3192, 280]	3777	[3842, 371]
847	[1400, 1401]	1824	[1130, 2129]	2801	[3193, 360]	3778	[3843, 2347]
848	[1402, 1403]	1825	[2525, 2526]	2802	[2625, 257]	3779	[3844, 895]
849	[1404, 1405]	1826	[1227, 316]	2803	[3194, 2674]	3780	[3845, 284]
850	[732, 1406]	1827	[2527, 936]	2804	[3195, 1056]	3781	[3846, 2590]
851	[1407, 185]	1828	[2429, 2528]	2805	[3196, 821]	3782	[3847, 384]
852	[1408, 1409]	1829	[1148, 2306]	2806	[948, 302]	3783	[3848, 3296]
853	[1410, 1411]	1830	[2529, 2530]	2807	[3197, 2260]	3784	[3849, 2425]
854	[1412, 1413]	1831	[1332, 2468]	2808	[2162, 3198]	3785	[3850, 2193]
855	[1414, 1415]	1832	[2255, 1291]	2809	[3199, 440]	3786	[3851, 252]
856	[1416, 1417]	1833	[2203, 2147]	2810	[3200, 2320]	3787	[3852, 1023]
857	[687, 1418]	1834	[2531, 852]	2811	[1101, 2331]	3788	[3853, 979]
858	[1419, 1420]	1835	[300, 2438]	2812	[3201, 2110]	3789	[3854, 1223]
859	[1421, 1422]	1836	[2421, 277]	2813	[2674, 2157]	3790	[3855, 1236]
860	[1423, 1424]	1837	[2532, 2356]	2814	[3202, 2174]	3791	[3856, 1190]
861	[1425, 1426]	1838	[418, 1325]	2815	[2526, 1045]	3792	[3857, 1075]
862	[1427, 1428]	1839	[828, 2533]	2816	[3203, 1216]	3793	[3858, 2567]
863	[1429, 1430]	1840	[2534, 2475]	2817	[2533, 814]	3794	[3859, 2517]
864	[1431, 197]	1841	[935, 2426]	2818	[3204, 406]	3795	[3860, 1284]
865	[146, 1372]	1842	[2535, 1002]	2819	[3205, 1054]	3796	[3861, 1292]
866	[1432, 796]	1843	[2536, 1243]	2820	[3206, 1210]	3797	[3862, 2429]
867	[528, 658]	1844	[2537, 17]	2821	[3207, 1233]	3798	[3863, 180]
868	[1433, 1434]	1845	[2398, 1278]	2822	[2557, 1110]	3799	[671, 221]
869	[463, 1435]	1846	[246, 869]	2823	[3208, 2124]	3800	[3864, 167]

870	[1436, 1437]	1847	[974, 23]	2824	[3209, 267]	3801	[3865, 1895]
871	[1438, 1439]	1848	[2538, 2479]	2825	[3210, 3143]	3802	[1619, 2036]
872	[1440, 1441]	1849	[2474, 2539]	2826	[3211, 334]	3803	[1817, 1438]
873	[1442, 1443]	1850	[2540, 1339]	2827	[3212, 2542]	3804	[2902, 528]
874	[1444, 1445]	1851	[2541, 2542]	2828	[3213, 2282]	3805	[1927, 750]
875	[1446, 1447]	1852	[2543, 2281]	2829	[2601, 1062]	3806	[3866, 744]
876	[1448, 1449]	1853	[936, 2313]	2830	[3214, 2506]	3807	[761, 1943]
877	[1450, 1451]	1854	[1209, 440]	2831	[3215, 939]	3808	[3867, 1669]
878	[1452, 644]	1855	[2544, 383]	2832	[3216, 333]	3809	[3868, 218]
879	[1453, 1454]	1856	[2545, 2218]	2833	[267, 259]	3810	[559, 787]
880	[1455, 1456]	1857	[1090, 1083]	2834	[3217, 976]	3811	[3057, 2840]
881	[554, 1457]	1858	[2546, 986]	2835	[926, 1196]	3812	[499, 796]
882	[1458, 1459]	1859	[1074, 2207]	2836	[363, 66]	3813	[2067, 1952]
883	[1460, 1461]	1860	[2547, 2099]	2837	[365, 1199]	3814	[43, 2885]
884	[1420, 1462]	1861	[985, 1265]	2838	[3218, 2216]	3815	[635, 134]
885	[1463, 1464]	1862	[2548, 1179]	2839	[3219, 943]	3816	[552, 2808]
886	[1465, 1466]	1863	[2479, 2541]	2840	[2360, 2498]	3817	[188, 1520]
887	[128, 1467]	1864	[2403, 2408]	2841	[3220, 2398]	3818	[1644, 1582]
888	[1468, 1469]	1865	[2549, 1310]	2842	[3221, 1137]	3819	[2041, 1786]
889	[1470, 1471]	1866	[830, 2450]	2843	[3222, 2468]	3820	[3869, 730]
890	[1472, 1473]	1867	[2550, 1005]	2844	[1292, 1061]	3821	[49, 1349]
891	[1370, 1474]	1868	[1284, 2259]	2845	[2388, 1094]	3822	[3870, 1580]
892	[1475, 669]	1869	[2254, 2551]	2846	[3223, 1231]	3823	[1695, 1686]
893	[1476, 670]	1870	[2552, 1030]	2847	[3224, 2272]	3824	[3030, 2765]
894	[1477, 1478]	1871	[1047, 254]	2848	[3225, 250]	3825	[2738, 1493]
895	[1479, 1480]	1872	[1253, 2553]	2849	[3226, 1064]	3826	[1975, 1727]
896	[1481, 1482]	1873	[2179, 2427]	2850	[3227, 2488]	3827	[1779, 1877]
897	[1483, 1484]	1874	[2554, 899]	2851	[3228, 394]	3828	[1510, 1868]
898	[1485, 119]	1875	[2555, 422]	2852	[2484, 1164]	3829	[3871, 1484]
899	[1486, 1487]	1876	[2556, 2557]	2853	[3229, 2111]	3830	[3077, 2959]
900	[1488, 1489]	1877	[1193, 334]	2854	[2380, 85]	3831	[3872, 1601]
901	[1490, 470]	1878	[2558, 989]	2855	[3230, 2284]	3832	[3873, 1558]
902	[1491, 609]	1879	[1174, 2187]	2856	[3139, 876]	3833	[698, 682]
903	[1492, 1493]	1880	[1111, 896]	2857	[1213, 2627]	3834	[3874, 2002]
904	[1494, 1495]	1881	[2559, 1242]	2858	[1223, 2351]	3835	[743, 1790]
905	[1496, 185]	1882	[252, 2560]	2859	[3231, 1142]	3836	[3875, 1525]
906	[1497, 568]	1883	[2561, 343]	2860	[2339, 2293]	3837	[1752, 676]
907	[1498, 1499]	1884	[2262, 345]	2861	[3232, 2206]	3838	[3876, 1696]
908	[1500, 1501]	1885	[1093, 383]	2862	[1214, 2394]	3839	[2795, 510]
909	[1502, 1503]	1886	[2562, 2413]	2863	[3233, 3]	3840	[3877, 1948]
910	[1504, 1505]	1887	[1019, 1193]	2864	[3234, 2476]	3841	[2743, 1890]
911	[1506, 1507]	1888	[1171, 249]	2865	[3235, 1065]	3842	[2000, 1851]
912	[1508, 740]	1889	[2563, 1227]	2866	[3236, 2306]	3843	[3878, 801]
913	[627, 31]	1890	[1032, 2564]	2867	[3237, 2541]	3844	[2681, 2833]

914	[1509, 1510]	1891	[2472, 1057]	2868	[2673, 82]	3845	[1505, 1777]
915	[1511, 1512]	1892	[1326, 393]	2869	[3238, 2443]	3846	[3879, 598]
916	[1513, 1514]	1893	[2565, 249]	2870	[3177, 2444]	3847	[3880, 581]
917	[1515, 1516]	1894	[67, 1236]	2871	[2435, 272]	3848	[2054, 1516]
918	[1517, 1518]	1895	[2374, 1109]	2872	[3239, 2394]	3849	[1600, 703]
919	[1405, 1519]	1896	[2088, 374]	2873	[3240, 2633]	3850	[1687, 1741]
920	[1520, 1521]	1897	[2566, 2465]	2874	[1037, 1245]	3851	[2058, 783]
921	[200, 1522]	1898	[1158, 2115]	2875	[3241, 1245]	3852	[3881, 1645]
922	[202, 1523]	1899	[2099, 2567]	2876	[3242, 2280]	3853	[1380, 161]
923	[1524, 1525]	1900	[2568, 1204]	2877	[3243, 2460]	3854	[681, 139]
924	[1, 1526]	1901	[2569, 328]	2878	[893, 360]	3855	[1596, 700]
925	[1527, 1528]	1902	[950, 1047]	2879	[3198, 2630]	3856	[3882, 1369]
926	[180, 1529]	1903	[2570, 966]	2880	[3244, 1029]	3857	[3883, 1885]
927	[1530, 1437]	1904	[1178, 2526]	2881	[3245, 2545]	3858	[1833, 37]
928	[1531, 1370]	1905	[2571, 2572]	2882	[3246, 117]	3859	[3122, 763]
929	[1532, 1533]	1906	[2573, 2441]	2883	[3247, 898]	3860	[2829, 486]
930	[1534, 1535]	1907	[2574, 2092]	2884	[3248, 2226]	3861	[1919, 1611]
931	[1536, 574]	1908	[29, 965]	2885	[1010, 2106]	3862	[1577, 2714]
932	[443, 447]	1909	[2575, 2388]	2886	[3249, 1161]	3863	[3884, 2138]
933	[1537, 1538]	1910	[2576, 1018]	2887	[1229, 2324]	3864	[3885, 324]
934	[1539, 1399]	1911	[2577, 2560]	2888	[3250, 350]	3865	[3886, 1032]
935	[696, 1540]	1912	[920, 2206]	2889	[879, 2511]	3866	[3887, 1269]
936	[1541, 1474]	1913	[2578, 414]	2890	[3251, 273]	3867	[3888, 1314]
937	[1542, 1543]	1914	[2413, 2217]	2891	[3252, 1033]	3868	[3889, 1229]
938	[1544, 1545]	1915	[92, 2486]	2892	[77, 1002]	3869	[3890, 1145]
939	[1546, 1547]	1916	[16, 1303]	2893	[3253, 2182]	3870	[3891, 1048]
940	[1548, 1549]	1917	[2579, 1163]	2894	[2449, 1220]	3871	[3892, 870]
941	[466, 1550]	1918	[100, 28]	2895	[3254, 2351]	3872	[3893, 2551]
942	[1551, 1552]	1919	[2460, 2379]	2896	[3255, 2617]	3873	[3894, 29]
943	[182, 1553]	1920	[2580, 372]	2897	[2222, 1166]	3874	[3895, 1264]
944	[1554, 1486]	1921	[2581, 1219]	2898	[3256, 63]	3875	[3896, 1281]
945	[1555, 1519]	1922	[987, 2582]	2899	[3257, 2406]	3876	[3897, 1197]
946	[1556, 558]	1923	[2583, 2484]	2900	[1079, 386]	3877	[3898, 1034]
947	[1557, 1558]	1924	[1221, 1013]	2901	[1343, 2555]	3878	[3899, 365]
948	[225, 1559]	1925	[2584, 2331]	2902	[2594, 279]	3879	[3900, 2238]
949	[1560, 1561]	1926	[2585, 967]	2903	[1058, 2171]	3880	[3901, 1081]
950	[1562, 1563]	1927	[2185, 2362]	2904	[3258, 2402]	3881	[3902, 1309]
951	[1564, 643]	1928	[2137, 411]	2905	[3259, 427]	3882	[3903, 861]
952	[1565, 1566]	1929	[1303, 314]	2906	[3260, 2367]	3883	[3904, 918]
953	[1567, 1568]	1930	[2586, 2343]	2907	[2457, 2358]	3884	[587, 1755]
954	[1569, 476]	1931	[2209, 2587]	2908	[3261, 2276]	3885	[1724, 207]
955	[1570, 1571]	1932	[911, 2256]	2909	[2524, 2143]	3886	[213, 1659]
956	[1572, 1573]	1933	[2352, 1160]	2910	[2355, 1226]	3887	[2879, 2006]
957	[1574, 637]	1934	[2588, 2589]	2911	[3262, 2435]	3888	[1359, 2703]

958	[1378, 1575]	1935	[2590, 1004]	2912	[3263, 2395]	3889	[668, 1738]
959	[1576, 1577]	1936	[2591, 869]	2913	[2345, 2404]	3890	[540, 1598]
960	[1578, 1579]	1937	[2477, 266]	2914	[2269, 1018]	3891	[452, 2860]
961	[1580, 630]	1938	[2592, 851]	2915	[3264, 2555]	3892	[2946, 570]
962	[1581, 1582]	1939	[2517, 829]	2916	[85, 2467]	3893	[1992, 1478]
963	[1583, 1584]	1940	[2593, 2594]	2917	[3265, 2184]	3894	[1459, 1464]
964	[1585, 1586]	1941	[2595, 938]	2918	[2384, 2360]	3895	[198, 1424]
965	[1587, 1588]	1942	[2596, 260]	2919	[3266, 24]	3896	[1797, 57]
966	[1589, 1590]	1943	[1246, 2573]	2920	[3267, 1110]	3897	[2793, 1972]
967	[1591, 1592]	1944	[2289, 2275]	2921	[3268, 1139]	3898	[132, 641]
968	[1593, 1594]	1945	[2321, 2561]	2922	[3269, 2447]	3899	[1462, 2944]
969	[1595, 1596]	1946	[1243, 293]	2923	[358, 2161]	3900	[2942, 1664]
970	[1597, 1598]	1947	[2597, 79]	2924	[2347, 2345]	3901	[2762, 1634]
971	[159, 666]	1948	[859, 1042]	2925	[3270, 1207]	3902	[604, 731]
972	[1559, 1378]	1949	[1081, 1148]	2926	[3271, 92]	3903	[2706, 1997]
973	[1599, 1600]	1950	[2598, 1051]	2927	[3272, 974]	3904	[1765, 2930]
974	[494, 1601]	1951	[2599, 1117]	2928	[3273, 1120]		
975	[1523, 1359]	1952	[2311, 2203]	2929	[3274, 68]		
976	[1602, 1603]	1953	[2600, 2601]	2930	[2553, 2121]		

Output function $n \mapsto \tau(n)$:

n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$
0	0	651	1	1302	0	1953	0	2604	1	3255	0
1	0	652	1	1303	1	1954	1	2605	0	3256	0
2	0	653	1	1304	0	1955	1	2606	0	3257	0
3	0	654	0	1305	1	1956	1	2607	0	3258	0
4	0	655	0	1306	0	1957	1	2608	1	3259	1
5	0	656	0	1307	0	1958	0	2609	1	3260	0
6	0	657	0	1308	1	1959	0	2610	1	3261	0
7	0	658	0	1309	1	1960	0	2611	1	3262	0
8	0	659	1	1310	0	1961	0	2612	1	3263	1
9	0	660	1	1311	0	1962	1	2613	1	3264	1
10	1	661	0	1312	1	1963	1	2614	1	3265	0
11	0	662	1	1313	1	1964	1	2615	0	3266	0
12	0	663	0	1314	0	1965	0	2616	0	3267	0
13	0	664	0	1315	0	1966	1	2617	0	3268	0
14	1	665	1	1316	1	1967	1	2618	1	3269	0
15	0	666	1	1317	0	1968	1	2619	1	3270	0
16	1	667	0	1318	1	1969	0	2620	0	3271	0
17	0	668	1	1319	0	1970	1	2621	1	3272	1
18	1	669	0	1320	0	1971	1	2622	0	3273	0
19	0	670	1	1321	0	1972	1	2623	1	3274	0
20	1	671	1	1322	1	1973	1	2624	0	3275	0
21	1	672	0	1323	0	1974	0	2625	1	3276	1

22	0	673	1	1324	1	1975	1	2626	1	3277	0
23	1	674	0	1325	0	1976	0	2627	1	3278	1
24	0	675	0	1326	0	1977	1	2628	1	3279	1
25	1	676	0	1327	1	1978	0	2629	1	3280	1
26	0	677	0	1328	1	1979	1	2630	1	3281	0
27	0	678	1	1329	0	1980	1	2631	1	3282	1
28	1	679	1	1330	0	1981	1	2632	0	3283	0
29	0	680	1	1331	0	1982	1	2633	0	3284	1
30	0	681	1	1332	0	1983	0	2634	1	3285	1
31	1	682	0	1333	0	1984	0	2635	1	3286	1
32	1	683	0	1334	1	1985	1	2636	1	3287	1
33	0	684	0	1335	1	1986	1	2637	1	3288	1
34	0	685	0	1336	1	1987	0	2638	1	3289	0
35	0	686	1	1337	0	1988	0	2639	0	3290	1
36	1	687	1	1338	1	1989	1	2640	0	3291	1
37	1	688	0	1339	1	1990	0	2641	1	3292	0
38	0	689	0	1340	1	1991	1	2642	1	3293	0
39	1	690	1	1341	1	1992	0	2643	1	3294	1
40	1	691	0	1342	1	1993	1	2644	1	3295	1
41	1	692	1	1343	0	1994	1	2645	0	3296	0
42	1	693	0	1344	0	1995	1	2646	1	3297	0
43	0	694	1	1345	0	1996	1	2647	1	3298	1
44	0	695	0	1346	0	1997	0	2648	0	3299	0
45	0	696	0	1347	0	1998	1	2649	0	3300	0
46	1	697	1	1348	0	1999	1	2650	0	3301	1
47	1	698	0	1349	0	2000	1	2651	1	3302	0
48	0	699	0	1350	1	2001	1	2652	1	3303	1
49	1	700	1	1351	1	2002	1	2653	1	3304	0
50	1	701	0	1352	1	2003	1	2654	1	3305	0
51	0	702	0	1353	1	2004	0	2655	0	3306	1
52	0	703	0	1354	1	2005	1	2656	0	3307	1
53	1	704	0	1355	0	2006	1	2657	1	3308	0
54	0	705	1	1356	1	2007	1	2658	1	3309	0
55	1	706	0	1357	1	2008	1	2659	0	3310	1
56	1	707	0	1358	1	2009	0	2660	0	3311	0
57	0	708	0	1359	0	2010	1	2661	1	3312	1
58	0	709	1	1360	0	2011	1	2662	0	3313	0
59	1	710	0	1361	1	2012	0	2663	0	3314	0
60	0	711	0	1362	1	2013	1	2664	0	3315	1
61	0	712	0	1363	1	2014	0	2665	0	3316	1
62	1	713	0	1364	0	2015	0	2666	0	3317	0
63	0	714	0	1365	0	2016	0	2667	1	3318	1
64	1	715	0	1366	0	2017	1	2668	0	3319	0
65	0	716	1	1367	1	2018	1	2669	1	3320	1

66	0	717	0	1368	0	2019	0	2670	1	3321	0
67	0	718	1	1369	0	2020	1	2671	1	3322	0
68	0	719	0	1370	1	2021	1	2672	0	3323	1
69	0	720	0	1371	0	2022	1	2673	0	3324	1
70	0	721	1	1372	1	2023	0	2674	0	3325	1
71	1	722	0	1373	1	2024	1	2675	1	3326	1
72	1	723	1	1374	1	2025	1	2676	0	3327	0
73	0	724	1	1375	0	2026	0	2677	1	3328	1
74	1	725	1	1376	1	2027	1	2678	1	3329	0
75	0	726	0	1377	1	2028	1	2679	0	3330	0
76	0	727	1	1378	1	2029	0	2680	0	3331	0
77	1	728	1	1379	1	2030	0	2681	0	3332	1
78	1	729	1	1380	0	2031	0	2682	0	3333	0
79	1	730	0	1381	1	2032	1	2683	0	3334	1
80	1	731	1	1382	0	2033	1	2684	0	3335	0
81	1	732	0	1383	1	2034	1	2685	1	3336	1
82	1	733	1	1384	0	2035	1	2686	1	3337	1
83	0	734	1	1385	0	2036	0	2687	1	3338	0
84	1	735	0	1386	1	2037	0	2688	1	3339	0
85	0	736	0	1387	0	2038	1	2689	0	3340	1
86	0	737	1	1388	1	2039	0	2690	0	3341	1
87	1	738	0	1389	1	2040	0	2691	1	3342	1
88	0	739	1	1390	0	2041	0	2692	0	3343	0
89	1	740	1	1391	1	2042	0	2693	1	3344	1
90	0	741	1	1392	1	2043	0	2694	0	3345	1
91	0	742	0	1393	0	2044	1	2695	0	3346	0
92	1	743	1	1394	0	2045	1	2696	0	3347	0
93	1	744	0	1395	1	2046	1	2697	1	3348	1
94	0	745	1	1396	0	2047	0	2698	0	3349	0
95	0	746	1	1397	0	2048	0	2699	1	3350	0
96	0	747	0	1398	0	2049	0	2700	0	3351	0
97	1	748	1	1399	0	2050	0	2701	1	3352	1
98	0	749	1	1400	1	2051	1	2702	1	3353	0
99	1	750	1	1401	1	2052	0	2703	0	3354	0
100	1	751	0	1402	0	2053	0	2704	1	3355	0
101	0	752	0	1403	0	2054	1	2705	0	3356	1
102	0	753	0	1404	1	2055	0	2706	0	3357	0
103	0	754	0	1405	0	2056	1	2707	0	3358	1
104	0	755	1	1406	1	2057	0	2708	0	3359	0
105	1	756	1	1407	1	2058	0	2709	1	3360	0
106	1	757	0	1408	1	2059	1	2710	0	3361	1
107	0	758	0	1409	0	2060	0	2711	1	3362	1
108	0	759	0	1410	1	2061	1	2712	1	3363	1
109	1	760	1	1411	0	2062	1	2713	1	3364	1

110	0	761	1	1412	0	2063	1	2714	1	3365	0
111	1	762	0	1413	0	2064	1	2715	0	3366	0
112	0	763	0	1414	0	2065	1	2716	1	3367	1
113	0	764	1	1415	0	2066	0	2717	1	3368	0
114	1	765	0	1416	0	2067	1	2718	0	3369	0
115	0	766	0	1417	0	2068	1	2719	1	3370	1
116	0	767	0	1418	0	2069	1	2720	0	3371	0
117	1	768	1	1419	1	2070	1	2721	0	3372	1
118	1	769	1	1420	0	2071	1	2722	1	3373	0
119	0	770	0	1421	0	2072	0	2723	0	3374	1
120	0	771	1	1422	0	2073	1	2724	1	3375	0
121	0	772	0	1423	1	2074	1	2725	1	3376	1
122	0	773	1	1424	1	2075	0	2726	1	3377	1
123	1	774	0	1425	1	2076	0	2727	1	3378	0
124	1	775	1	1426	1	2077	1	2728	1	3379	1
125	0	776	1	1427	1	2078	1	2729	1	3380	0
126	0	777	1	1428	0	2079	0	2730	0	3381	0
127	1	778	0	1429	1	2080	0	2731	0	3382	1
128	1	779	0	1430	1	2081	0	2732	1	3383	1
129	0	780	1	1431	1	2082	1	2733	0	3384	0
130	1	781	0	1432	1	2083	0	2734	0	3385	1
131	0	782	1	1433	1	2084	1	2735	1	3386	0
132	1	783	1	1434	1	2085	0	2736	1	3387	0
133	0	784	1	1435	0	2086	0	2737	0	3388	1
134	0	785	0	1436	0	2087	0	2738	0	3389	1
135	0	786	1	1437	0	2088	0	2739	1	3390	0
136	1	787	0	1438	1	2089	0	2740	1	3391	1
137	0	788	0	1439	1	2090	0	2741	0	3392	1
138	1	789	0	1440	1	2091	1	2742	1	3393	1
139	0	790	1	1441	0	2092	1	2743	0	3394	1
140	1	791	0	1442	1	2093	1	2744	0	3395	0
141	1	792	0	1443	0	2094	0	2745	0	3396	0
142	1	793	1	1444	1	2095	1	2746	0	3397	1
143	1	794	1	1445	0	2096	1	2747	1	3398	1
144	0	795	0	1446	1	2097	0	2748	1	3399	1
145	0	796	1	1447	1	2098	1	2749	0	3400	1
146	1	797	0	1448	1	2099	1	2750	1	3401	0
147	0	798	1	1449	0	2100	1	2751	0	3402	1
148	0	799	0	1450	0	2101	0	2752	0	3403	1
149	0	800	0	1451	1	2102	1	2753	0	3404	1
150	0	801	0	1452	1	2103	0	2754	1	3405	1
151	1	802	1	1453	0	2104	0	2755	0	3406	0
152	1	803	0	1454	0	2105	0	2756	0	3407	1
153	0	804	1	1455	0	2106	1	2757	1	3408	1

154	1	805	1	1456	1	2107	0	2758	0	3409	1
155	1	806	0	1457	0	2108	1	2759	1	3410	0
156	1	807	0	1458	0	2109	1	2760	1	3411	1
157	1	808	1	1459	0	2110	0	2761	1	3412	1
158	1	809	0	1460	0	2111	0	2762	1	3413	0
159	0	810	1	1461	1	2112	0	2763	0	3414	1
160	1	811	1	1462	1	2113	0	2764	0	3415	1
161	0	812	0	1463	1	2114	0	2765	1	3416	0
162	1	813	0	1464	1	2115	1	2766	1	3417	0
163	1	814	0	1465	0	2116	1	2767	1	3418	1
164	0	815	1	1466	1	2117	0	2768	0	3419	1
165	1	816	1	1467	0	2118	1	2769	0	3420	0
166	1	817	1	1468	0	2119	1	2770	1	3421	1
167	0	818	1	1469	1	2120	0	2771	0	3422	0
168	1	819	0	1470	1	2121	1	2772	0	3423	0
169	0	820	0	1471	0	2122	1	2773	1	3424	1
170	1	821	1	1472	1	2123	1	2774	1	3425	1
171	1	822	0	1473	0	2124	0	2775	0	3426	0
172	0	823	1	1474	0	2125	1	2776	0	3427	0
173	0	824	0	1475	0	2126	0	2777	1	3428	1
174	0	825	0	1476	0	2127	0	2778	1	3429	0
175	1	826	0	1477	1	2128	0	2779	1	3430	1
176	1	827	0	1478	0	2129	0	2780	1	3431	1
177	0	828	0	1479	1	2130	1	2781	0	3432	0
178	1	829	0	1480	0	2131	1	2782	1	3433	0
179	0	830	1	1481	1	2132	1	2783	0	3434	1
180	0	831	1	1482	1	2133	1	2784	1	3435	1
181	1	832	0	1483	0	2134	0	2785	1	3436	0
182	1	833	1	1484	0	2135	1	2786	0	3437	0
183	1	834	1	1485	0	2136	1	2787	1	3438	1
184	0	835	1	1486	1	2137	0	2788	0	3439	1
185	0	836	0	1487	0	2138	1	2789	1	3440	1
186	1	837	0	1488	1	2139	0	2790	0	3441	1
187	0	838	1	1489	1	2140	1	2791	0	3442	1
188	0	839	1	1490	0	2141	0	2792	1	3443	1
189	0	840	1	1491	1	2142	1	2793	0	3444	0
190	0	841	1	1492	1	2143	0	2794	0	3445	0
191	1	842	0	1493	0	2144	1	2795	0	3446	1
192	1	843	1	1494	0	2145	0	2796	0	3447	1
193	0	844	0	1495	0	2146	1	2797	1	3448	0
194	0	845	0	1496	0	2147	1	2798	1	3449	1
195	1	846	0	1497	0	2148	0	2799	1	3450	0
196	1	847	1	1498	0	2149	1	2800	0	3451	0
197	1	848	0	1499	0	2150	0	2801	1	3452	1

198	0	849	1	1500	0	2151	0	2802	1	3453	0
199	0	850	0	1501	0	2152	0	2803	0	3454	0
200	0	851	1	1502	0	2153	1	2804	1	3455	1
201	0	852	1	1503	0	2154	1	2805	1	3456	0
202	0	853	1	1504	0	2155	1	2806	0	3457	0
203	0	854	0	1505	1	2156	0	2807	0	3458	0
204	0	855	0	1506	1	2157	1	2808	0	3459	1
205	0	856	0	1507	1	2158	0	2809	1	3460	0
206	1	857	1	1508	0	2159	0	2810	0	3461	0
207	1	858	1	1509	1	2160	1	2811	1	3462	1
208	1	859	0	1510	0	2161	0	2812	0	3463	0
209	0	860	1	1511	1	2162	0	2813	0	3464	1
210	0	861	1	1512	0	2163	0	2814	0	3465	1
211	1	862	1	1513	0	2164	0	2815	0	3466	0
212	0	863	1	1514	0	2165	0	2816	1	3467	1
213	1	864	1	1515	0	2166	1	2817	1	3468	0
214	1	865	1	1516	0	2167	0	2818	0	3469	0
215	0	866	1	1517	0	2168	0	2819	0	3470	0
216	0	867	1	1518	1	2169	1	2820	0	3471	1
217	1	868	1	1519	0	2170	0	2821	1	3472	1
218	1	869	1	1520	1	2171	1	2822	1	3473	0
219	1	870	0	1521	1	2172	1	2823	0	3474	1
220	0	871	1	1522	1	2173	1	2824	0	3475	1
221	1	872	1	1523	0	2174	0	2825	1	3476	1
222	0	873	1	1524	1	2175	0	2826	1	3477	0
223	1	874	1	1525	0	2176	1	2827	1	3478	0
224	1	875	1	1526	1	2177	1	2828	1	3479	1
225	0	876	1	1527	0	2178	1	2829	1	3480	0
226	0	877	0	1528	1	2179	0	2830	0	3481	1
227	1	878	1	1529	0	2180	1	2831	1	3482	1
228	0	879	0	1530	1	2181	0	2832	1	3483	1
229	1	880	0	1531	1	2182	1	2833	1	3484	0
230	1	881	1	1532	1	2183	1	2834	0	3485	1
231	0	882	0	1533	0	2184	1	2835	0	3486	0
232	1	883	0	1534	1	2185	0	2836	1	3487	1
233	1	884	0	1535	0	2186	1	2837	0	3488	0
234	0	885	1	1536	0	2187	0	2838	1	3489	0
235	1	886	0	1537	1	2188	0	2839	1	3490	0
236	1	887	1	1538	0	2189	0	2840	1	3491	0
237	0	888	0	1539	1	2190	1	2841	1	3492	1
238	1	889	1	1540	1	2191	0	2842	0	3493	1
239	0	890	1	1541	0	2192	1	2843	1	3494	0
240	1	891	1	1542	1	2193	0	2844	1	3495	0
241	1	892	0	1543	1	2194	1	2845	1	3496	0

242	0	893	0	1544	0	2195	0	2846	0	3497	0
243	1	894	1	1545	0	2196	1	2847	0	3498	1
244	0	895	1	1546	0	2197	0	2848	0	3499	0
245	0	896	1	1547	1	2198	0	2849	0	3500	1
246	1	897	0	1548	1	2199	0	2850	1	3501	0
247	0	898	0	1549	1	2200	1	2851	0	3502	1
248	0	899	1	1550	0	2201	1	2852	1	3503	1
249	1	900	1	1551	1	2202	0	2853	1	3504	0
250	1	901	0	1552	1	2203	0	2854	0	3505	1
251	1	902	1	1553	0	2204	0	2855	1	3506	0
252	1	903	1	1554	0	2205	1	2856	0	3507	1
253	0	904	0	1555	1	2206	1	2857	0	3508	1
254	1	905	0	1556	1	2207	0	2858	0	3509	0
255	1	906	0	1557	1	2208	0	2859	1	3510	0
256	0	907	0	1558	1	2209	1	2860	0	3511	1
257	0	908	0	1559	0	2210	0	2861	0	3512	0
258	0	909	0	1560	0	2211	1	2862	1	3513	1
259	1	910	0	1561	0	2212	1	2863	0	3514	0
260	1	911	1	1562	1	2213	0	2864	1	3515	0
261	0	912	0	1563	1	2214	0	2865	1	3516	1
262	0	913	1	1564	1	2215	1	2866	1	3517	0
263	0	914	1	1565	0	2216	1	2867	1	3518	0
264	0	915	1	1566	0	2217	0	2868	0	3519	1
265	0	916	0	1567	1	2218	1	2869	0	3520	0
266	1	917	0	1568	1	2219	1	2870	0	3521	0
267	1	918	0	1569	0	2220	1	2871	0	3522	0
268	0	919	0	1570	1	2221	0	2872	0	3523	1
269	1	920	1	1571	1	2222	1	2873	0	3524	1
270	1	921	0	1572	0	2223	1	2874	0	3525	1
271	1	922	0	1573	0	2224	0	2875	1	3526	0
272	0	923	1	1574	0	2225	0	2876	0	3527	0
273	1	924	0	1575	0	2226	0	2877	1	3528	1
274	1	925	0	1576	0	2227	1	2878	0	3529	1
275	1	926	0	1577	0	2228	0	2879	0	3530	1
276	0	927	1	1578	1	2229	0	2880	1	3531	0
277	1	928	1	1579	0	2230	1	2881	1	3532	1
278	1	929	1	1580	0	2231	0	2882	1	3533	0
279	1	930	1	1581	0	2232	0	2883	1	3534	0
280	0	931	0	1582	0	2233	1	2884	1	3535	1
281	0	932	0	1583	1	2234	0	2885	1	3536	0
282	1	933	1	1584	0	2235	1	2886	0	3537	0
283	0	934	1	1585	1	2236	1	2887	0	3538	1
284	1	935	0	1586	0	2237	0	2888	0	3539	0
285	1	936	0	1587	0	2238	1	2889	0	3540	1

286	1	937	1	1588	1	2239	0	2890	1	3541	0
287	0	938	0	1589	1	2240	1	2891	0	3542	0
288	0	939	0	1590	0	2241	1	2892	1	3543	0
289	1	940	1	1591	1	2242	0	2893	1	3544	1
290	0	941	1	1592	0	2243	1	2894	1	3545	1
291	0	942	1	1593	1	2244	0	2895	1	3546	0
292	0	943	1	1594	1	2245	1	2896	0	3547	1
293	1	944	0	1595	0	2246	1	2897	1	3548	1
294	1	945	1	1596	1	2247	1	2898	0	3549	0
295	1	946	1	1597	1	2248	0	2899	0	3550	1
296	1	947	1	1598	0	2249	0	2900	1	3551	1
297	1	948	0	1599	1	2250	1	2901	0	3552	0
298	1	949	0	1600	0	2251	0	2902	1	3553	1
299	1	950	1	1601	1	2252	0	2903	0	3554	0
300	1	951	1	1602	0	2253	0	2904	0	3555	0
301	1	952	0	1603	1	2254	1	2905	1	3556	1
302	1	953	1	1604	1	2255	0	2906	0	3557	1
303	1	954	0	1605	1	2256	0	2907	1	3558	0
304	0	955	1	1606	1	2257	0	2908	0	3559	1
305	0	956	0	1607	1	2258	1	2909	0	3560	0
306	0	957	0	1608	1	2259	1	2910	0	3561	1
307	0	958	1	1609	0	2260	1	2911	0	3562	1
308	1	959	0	1610	0	2261	1	2912	1	3563	1
309	0	960	1	1611	0	2262	0	2913	1	3564	0
310	0	961	0	1612	1	2263	1	2914	1	3565	1
311	0	962	0	1613	0	2264	0	2915	1	3566	1
312	1	963	1	1614	1	2265	1	2916	0	3567	0
313	0	964	1	1615	0	2266	0	2917	0	3568	1
314	1	965	0	1616	0	2267	1	2918	1	3569	1
315	0	966	1	1617	0	2268	0	2919	0	3570	1
316	0	967	1	1618	0	2269	1	2920	0	3571	1
317	1	968	1	1619	0	2270	0	2921	0	3572	1
318	1	969	0	1620	0	2271	0	2922	0	3573	1
319	0	970	1	1621	1	2272	0	2923	1	3574	1
320	1	971	0	1622	0	2273	0	2924	1	3575	1
321	0	972	0	1623	0	2274	0	2925	0	3576	0
322	0	973	1	1624	1	2275	1	2926	0	3577	1
323	1	974	1	1625	1	2276	1	2927	1	3578	0
324	1	975	0	1626	0	2277	0	2928	0	3579	0
325	1	976	0	1627	1	2278	1	2929	0	3580	1
326	0	977	1	1628	0	2279	1	2930	1	3581	1
327	1	978	1	1629	1	2280	1	2931	0	3582	0
328	1	979	1	1630	1	2281	0	2932	0	3583	0
329	1	980	0	1631	1	2282	0	2933	1	3584	0

330	1	981	0	1632	0	2283	1	2934	0	3585	1
331	0	982	0	1633	0	2284	0	2935	0	3586	1
332	0	983	0	1634	1	2285	0	2936	0	3587	0
333	0	984	0	1635	1	2286	1	2937	1	3588	0
334	0	985	1	1636	0	2287	1	2938	1	3589	1
335	1	986	0	1637	1	2288	1	2939	1	3590	1
336	1	987	0	1638	0	2289	1	2940	0	3591	0
337	1	988	0	1639	0	2290	1	2941	1	3592	0
338	1	989	0	1640	1	2291	0	2942	1	3593	1
339	0	990	1	1641	1	2292	0	2943	1	3594	1
340	1	991	1	1642	1	2293	0	2944	1	3595	1
341	1	992	1	1643	1	2294	1	2945	0	3596	1
342	0	993	1	1644	1	2295	1	2946	1	3597	1
343	0	994	1	1645	0	2296	0	2947	1	3598	1
344	0	995	1	1646	0	2297	0	2948	0	3599	0
345	0	996	0	1647	0	2298	1	2949	1	3600	0
346	0	997	1	1648	1	2299	1	2950	1	3601	1
347	1	998	1	1649	1	2300	1	2951	1	3602	1
348	1	999	0	1650	1	2301	0	2952	1	3603	0
349	1	1000	1	1651	0	2302	1	2953	0	3604	1
350	1	1001	1	1652	0	2303	1	2954	1	3605	0
351	1	1002	1	1653	0	2304	1	2955	1	3606	0
352	0	1003	1	1654	1	2305	1	2956	1	3607	1
353	0	1004	0	1655	1	2306	1	2957	0	3608	0
354	1	1005	0	1656	0	2307	1	2958	1	3609	0
355	0	1006	1	1657	0	2308	1	2959	0	3610	1
356	0	1007	0	1658	0	2309	0	2960	1	3611	0
357	1	1008	1	1659	0	2310	1	2961	0	3612	0
358	1	1009	0	1660	1	2311	1	2962	0	3613	0
359	0	1010	1	1661	0	2312	1	2963	0	3614	1
360	0	1011	1	1662	1	2313	0	2964	1	3615	0
361	1	1012	1	1663	0	2314	0	2965	1	3616	0
362	0	1013	1	1664	1	2315	0	2966	0	3617	1
363	1	1014	0	1665	1	2316	1	2967	0	3618	0
364	0	1015	0	1666	1	2317	0	2968	0	3619	1
365	0	1016	1	1667	0	2318	1	2969	1	3620	1
366	1	1017	1	1668	0	2319	1	2970	0	3621	0
367	0	1018	1	1669	1	2320	1	2971	0	3622	1
368	0	1019	1	1670	0	2321	0	2972	1	3623	0
369	0	1020	0	1671	1	2322	0	2973	0	3624	0
370	1	1021	1	1672	0	2323	1	2974	1	3625	0
371	0	1022	0	1673	0	2324	0	2975	1	3626	1
372	1	1023	1	1674	0	2325	0	2976	0	3627	1
373	1	1024	0	1675	1	2326	1	2977	1	3628	0

374	1	1025	0	1676	0	2327	0	2978	0	3629	1
375	0	1026	0	1677	1	2328	0	2979	0	3630	1
376	1	1027	0	1678	0	2329	0	2980	1	3631	1
377	0	1028	0	1679	1	2330	1	2981	1	3632	0
378	0	1029	0	1680	1	2331	0	2982	0	3633	0
379	0	1030	1	1681	1	2332	1	2983	0	3634	1
380	1	1031	1	1682	0	2333	0	2984	0	3635	0
381	0	1032	1	1683	1	2334	1	2985	0	3636	1
382	1	1033	0	1684	0	2335	1	2986	1	3637	1
383	0	1034	0	1685	0	2336	0	2987	0	3638	1
384	0	1035	1	1686	1	2337	0	2988	1	3639	0
385	0	1036	0	1687	0	2338	1	2989	0	3640	1
386	0	1037	0	1688	0	2339	0	2990	0	3641	0
387	0	1038	0	1689	1	2340	1	2991	1	3642	1
388	0	1039	1	1690	1	2341	0	2992	1	3643	0
389	1	1040	1	1691	1	2342	1	2993	1	3644	0
390	1	1041	0	1692	1	2343	1	2994	0	3645	0
391	1	1042	1	1693	1	2344	0	2995	1	3646	0
392	1	1043	1	1694	0	2345	1	2996	0	3647	1
393	1	1044	0	1695	1	2346	1	2997	1	3648	1
394	1	1045	1	1696	1	2347	1	2998	0	3649	0
395	0	1046	0	1697	0	2348	0	2999	0	3650	0
396	1	1047	1	1698	0	2349	0	3000	0	3651	0
397	0	1048	1	1699	1	2350	1	3001	1	3652	0
398	0	1049	1	1700	1	2351	1	3002	1	3653	1
399	1	1050	1	1701	0	2352	1	3003	1	3654	0
400	1	1051	1	1702	0	2353	0	3004	1	3655	1
401	0	1052	0	1703	1	2354	0	3005	1	3656	0
402	0	1053	1	1704	0	2355	0	3006	0	3657	1
403	1	1054	0	1705	1	2356	1	3007	1	3658	1
404	1	1055	0	1706	1	2357	0	3008	0	3659	0
405	1	1056	0	1707	1	2358	1	3009	1	3660	1
406	0	1057	1	1708	1	2359	0	3010	0	3661	0
407	0	1058	0	1709	1	2360	1	3011	0	3662	1
408	1	1059	0	1710	1	2361	0	3012	1	3663	1
409	0	1060	0	1711	0	2362	0	3013	0	3664	0
410	0	1061	1	1712	0	2363	0	3014	0	3665	0
411	1	1062	0	1713	0	2364	0	3015	1	3666	1
412	0	1063	1	1714	1	2365	0	3016	0	3667	0
413	1	1064	0	1715	1	2366	1	3017	1	3668	1
414	0	1065	0	1716	0	2367	1	3018	0	3669	0
415	1	1066	0	1717	0	2368	0	3019	1	3670	0
416	0	1067	1	1718	0	2369	0	3020	0	3671	1
417	0	1068	0	1719	1	2370	0	3021	0	3672	0

418	1	1069	1	1720	1	2371	0	3022	1	3673	0
419	1	1070	1	1721	0	2372	1	3023	0	3674	1
420	1	1071	0	1722	1	2373	1	3024	1	3675	0
421	0	1072	0	1723	0	2374	0	3025	1	3676	0
422	1	1073	0	1724	0	2375	1	3026	0	3677	0
423	1	1074	0	1725	0	2376	1	3027	1	3678	1
424	1	1075	1	1726	0	2377	1	3028	1	3679	1
425	1	1076	1	1727	1	2378	0	3029	0	3680	1
426	0	1077	1	1728	1	2379	0	3030	0	3681	0
427	1	1078	1	1729	0	2380	0	3031	0	3682	0
428	0	1079	1	1730	1	2381	1	3032	0	3683	1
429	1	1080	0	1731	1	2382	0	3033	0	3684	1
430	1	1081	1	1732	0	2383	1	3034	1	3685	1
431	0	1082	1	1733	1	2384	1	3035	0	3686	0
432	0	1083	0	1734	0	2385	1	3036	1	3687	1
433	0	1084	1	1735	1	2386	1	3037	0	3688	0
434	1	1085	1	1736	0	2387	1	3038	0	3689	0
435	1	1086	1	1737	0	2388	1	3039	1	3690	1
436	1	1087	0	1738	0	2389	0	3040	0	3691	0
437	0	1088	1	1739	1	2390	1	3041	1	3692	0
438	1	1089	0	1740	1	2391	0	3042	0	3693	1
439	1	1090	0	1741	1	2392	1	3043	0	3694	0
440	1	1091	0	1742	0	2393	1	3044	0	3695	1
441	1	1092	0	1743	0	2394	0	3045	1	3696	0
442	0	1093	0	1744	1	2395	1	3046	0	3697	0
443	0	1094	0	1745	0	2396	1	3047	1	3698	0
444	1	1095	0	1746	0	2397	1	3048	1	3699	1
445	1	1096	1	1747	0	2398	1	3049	0	3700	1
446	1	1097	0	1748	0	2399	0	3050	0	3701	0
447	0	1098	0	1749	1	2400	1	3051	1	3702	1
448	1	1099	1	1750	1	2401	1	3052	1	3703	1
449	1	1100	1	1751	0	2402	1	3053	0	3704	0
450	0	1101	1	1752	1	2403	1	3054	1	3705	1
451	0	1102	1	1753	1	2404	0	3055	1	3706	1
452	0	1103	0	1754	0	2405	1	3056	0	3707	0
453	1	1104	1	1755	0	2406	1	3057	0	3708	1
454	1	1105	1	1756	1	2407	1	3058	0	3709	0
455	1	1106	0	1757	0	2408	0	3059	1	3710	0
456	0	1107	1	1758	1	2409	0	3060	0	3711	1
457	0	1108	1	1759	1	2410	0	3061	0	3712	1
458	1	1109	0	1760	0	2411	0	3062	1	3713	0
459	1	1110	1	1761	1	2412	0	3063	0	3714	1
460	0	1111	0	1762	1	2413	0	3064	1	3715	0
461	1	1112	0	1763	1	2414	0	3065	0	3716	1

462	0	1113	1	1764	1	2415	1	3066	1	3717	1
463	1	1114	1	1765	1	2416	1	3067	1	3718	1
464	1	1115	1	1766	1	2417	1	3068	0	3719	0
465	1	1116	1	1767	0	2418	0	3069	1	3720	1
466	1	1117	1	1768	0	2419	0	3070	1	3721	1
467	0	1118	1	1769	1	2420	0	3071	0	3722	0
468	0	1119	0	1770	0	2421	0	3072	1	3723	1
469	1	1120	0	1771	0	2422	1	3073	0	3724	1
470	1	1121	1	1772	1	2423	1	3074	0	3725	1
471	1	1122	0	1773	0	2424	1	3075	1	3726	1
472	1	1123	1	1774	0	2425	0	3076	1	3727	1
473	1	1124	0	1775	1	2426	0	3077	0	3728	1
474	1	1125	0	1776	0	2427	0	3078	0	3729	1
475	1	1126	0	1777	1	2428	1	3079	1	3730	1
476	0	1127	0	1778	0	2429	0	3080	1	3731	0
477	1	1128	0	1779	1	2430	0	3081	0	3732	1
478	1	1129	0	1780	0	2431	0	3082	0	3733	1
479	1	1130	0	1781	0	2432	1	3083	1	3734	1
480	1	1131	0	1782	1	2433	1	3084	1	3735	0
481	0	1132	0	1783	1	2434	1	3085	0	3736	1
482	0	1133	0	1784	1	2435	0	3086	1	3737	0
483	0	1134	0	1785	1	2436	1	3087	1	3738	1
484	0	1135	0	1786	0	2437	1	3088	1	3739	1
485	0	1136	0	1787	1	2438	0	3089	1	3740	0
486	1	1137	0	1788	0	2439	0	3090	0	3741	0
487	1	1138	1	1789	0	2440	1	3091	0	3742	1
488	0	1139	0	1790	1	2441	1	3092	1	3743	0
489	1	1140	1	1791	1	2442	0	3093	1	3744	1
490	1	1141	0	1792	1	2443	0	3094	1	3745	0
491	0	1142	0	1793	0	2444	1	3095	1	3746	0
492	0	1143	1	1794	0	2445	1	3096	1	3747	0
493	0	1144	1	1795	0	2446	1	3097	0	3748	1
494	1	1145	0	1796	1	2447	0	3098	1	3749	0
495	0	1146	0	1797	0	2448	0	3099	1	3750	1
496	0	1147	0	1798	1	2449	1	3100	1	3751	1
497	0	1148	0	1799	0	2450	0	3101	0	3752	0
498	0	1149	0	1800	1	2451	0	3102	0	3753	1
499	0	1150	0	1801	0	2452	1	3103	1	3754	0
500	1	1151	0	1802	1	2453	0	3104	1	3755	0
501	1	1152	1	1803	1	2454	1	3105	1	3756	1
502	1	1153	0	1804	0	2455	0	3106	1	3757	0
503	0	1154	1	1805	1	2456	0	3107	0	3758	1
504	0	1155	0	1806	1	2457	1	3108	1	3759	0
505	0	1156	1	1807	1	2458	0	3109	1	3760	0

506	1	1157	0	1808	1	2459	0	3110	1	3761	1
507	0	1158	0	1809	0	2460	1	3111	0	3762	1
508	1	1159	0	1810	0	2461	1	3112	1	3763	0
509	1	1160	0	1811	1	2462	1	3113	1	3764	1
510	1	1161	0	1812	1	2463	0	3114	0	3765	0
511	0	1162	1	1813	0	2464	1	3115	1	3766	0
512	0	1163	1	1814	1	2465	1	3116	1	3767	0
513	1	1164	1	1815	1	2466	0	3117	0	3768	0
514	1	1165	0	1816	0	2467	1	3118	0	3769	0
515	1	1166	1	1817	1	2468	0	3119	1	3770	1
516	0	1167	0	1818	0	2469	0	3120	1	3771	0
517	1	1168	0	1819	1	2470	1	3121	0	3772	1
518	1	1169	0	1820	0	2471	1	3122	1	3773	0
519	0	1170	1	1821	0	2472	0	3123	1	3774	0
520	1	1171	0	1822	1	2473	0	3124	0	3775	1
521	1	1172	0	1823	0	2474	0	3125	1	3776	0
522	0	1173	1	1824	0	2475	0	3126	1	3777	1
523	1	1174	0	1825	0	2476	1	3127	0	3778	1
524	0	1175	0	1826	0	2477	1	3128	0	3779	0
525	1	1176	0	1827	0	2478	1	3129	0	3780	1
526	0	1177	0	1828	0	2479	0	3130	0	3781	1
527	0	1178	1	1829	0	2480	0	3131	1	3782	1
528	1	1179	0	1830	0	2481	1	3132	1	3783	1
529	0	1180	1	1831	0	2482	1	3133	0	3784	0
530	1	1181	0	1832	0	2483	0	3134	0	3785	0
531	0	1182	0	1833	0	2484	1	3135	1	3786	0
532	0	1183	0	1834	0	2485	1	3136	1	3787	1
533	0	1184	1	1835	1	2486	0	3137	0	3788	0
534	1	1185	0	1836	0	2487	0	3138	1	3789	1
535	1	1186	0	1837	0	2488	1	3139	0	3790	1
536	1	1187	0	1838	1	2489	1	3140	1	3791	0
537	0	1188	1	1839	0	2490	0	3141	1	3792	1
538	1	1189	1	1840	0	2491	0	3142	0	3793	0
539	0	1190	1	1841	0	2492	0	3143	0	3794	1
540	0	1191	1	1842	0	2493	0	3144	1	3795	1
541	0	1192	0	1843	1	2494	0	3145	1	3796	1
542	0	1193	0	1844	1	2495	0	3146	1	3797	0
543	1	1194	1	1845	1	2496	1	3147	1	3798	1
544	1	1195	1	1846	1	2497	1	3148	0	3799	1
545	0	1196	0	1847	1	2498	0	3149	1	3800	0
546	0	1197	0	1848	0	2499	1	3150	0	3801	1
547	0	1198	0	1849	0	2500	1	3151	0	3802	0
548	0	1199	0	1850	0	2501	0	3152	1	3803	1
549	1	1200	1	1851	0	2502	0	3153	1	3804	1

550	0	1201	1	1852	0	2503	1	3154	1	3805	0
551	1	1202	0	1853	0	2504	1	3155	1	3806	0
552	1	1203	1	1854	0	2505	1	3156	0	3807	1
553	1	1204	1	1855	1	2506	0	3157	0	3808	0
554	1	1205	0	1856	0	2507	1	3158	1	3809	1
555	1	1206	0	1857	0	2508	0	3159	0	3810	0
556	1	1207	1	1858	1	2509	0	3160	0	3811	0
557	1	1208	0	1859	0	2510	1	3161	0	3812	0
558	1	1209	0	1860	0	2511	1	3162	1	3813	1
559	0	1210	0	1861	1	2512	1	3163	1	3814	0
560	1	1211	1	1862	0	2513	1	3164	0	3815	1
561	0	1212	0	1863	0	2514	1	3165	0	3816	1
562	1	1213	0	1864	1	2515	0	3166	1	3817	0
563	0	1214	1	1865	0	2516	0	3167	1	3818	1
564	1	1215	0	1866	1	2517	1	3168	0	3819	0
565	1	1216	0	1867	1	2518	1	3169	1	3820	0
566	0	1217	0	1868	1	2519	1	3170	0	3821	1
567	1	1218	1	1869	1	2520	0	3171	1	3822	0
568	1	1219	0	1870	1	2521	0	3172	0	3823	1
569	0	1220	1	1871	1	2522	0	3173	0	3824	0
570	0	1221	0	1872	0	2523	1	3174	0	3825	0
571	0	1222	0	1873	0	2524	0	3175	1	3826	1
572	1	1223	0	1874	1	2525	0	3176	1	3827	1
573	1	1224	0	1875	1	2526	0	3177	0	3828	0
574	0	1225	0	1876	0	2527	0	3178	1	3829	1
575	0	1226	0	1877	0	2528	0	3179	0	3830	0
576	1	1227	0	1878	0	2529	0	3180	1	3831	0
577	1	1228	0	1879	0	2530	0	3181	0	3832	0
578	0	1229	0	1880	0	2531	0	3182	1	3833	0
579	1	1230	1	1881	1	2532	0	3183	1	3834	0
580	0	1231	1	1882	1	2533	1	3184	0	3835	1
581	1	1232	0	1883	0	2534	0	3185	0	3836	0
582	0	1233	1	1884	0	2535	0	3186	0	3837	1
583	0	1234	0	1885	0	2536	1	3187	0	3838	0
584	1	1235	0	1886	0	2537	1	3188	1	3839	0
585	0	1236	0	1887	1	2538	0	3189	0	3840	1
586	1	1237	1	1888	0	2539	0	3190	0	3841	0
587	1	1238	1	1889	1	2540	0	3191	1	3842	1
588	0	1239	0	1890	1	2541	0	3192	0	3843	1
589	1	1240	1	1891	0	2542	1	3193	1	3844	0
590	0	1241	1	1892	0	2543	0	3194	0	3845	1
591	1	1242	1	1893	1	2544	1	3195	1	3846	1
592	1	1243	1	1894	0	2545	0	3196	1	3847	1
593	1	1244	1	1895	0	2546	1	3197	0	3848	1

594	1	1245	1	1896	0	2547	0	3198	0	3849	0
595	1	1246	1	1897	0	2548	0	3199	1	3850	0
596	0	1247	1	1898	0	2549	0	3200	0	3851	0
597	1	1248	0	1899	1	2550	1	3201	0	3852	1
598	1	1249	0	1900	1	2551	1	3202	0	3853	0
599	0	1250	0	1901	1	2552	1	3203	1	3854	1
600	0	1251	1	1902	1	2553	1	3204	0	3855	1
601	0	1252	1	1903	0	2554	1	3205	0	3856	0
602	0	1253	0	1904	1	2555	1	3206	0	3857	1
603	1	1254	1	1905	0	2556	0	3207	1	3858	0
604	1	1255	0	1906	0	2557	1	3208	0	3859	1
605	1	1256	0	1907	1	2558	0	3209	0	3860	1
606	0	1257	1	1908	0	2559	1	3210	1	3861	1
607	0	1258	1	1909	1	2560	0	3211	1	3862	0
608	0	1259	0	1910	0	2561	0	3212	1	3863	1
609	1	1260	1	1911	0	2562	0	3213	1	3864	0
610	1	1261	1	1912	1	2563	1	3214	0	3865	1
611	1	1262	1	1913	0	2564	0	3215	1	3866	0
612	1	1263	1	1914	0	2565	1	3216	1	3867	0
613	0	1264	1	1915	1	2566	0	3217	0	3868	1
614	1	1265	0	1916	1	2567	0	3218	1	3869	0
615	0	1266	1	1917	1	2568	1	3219	1	3870	0
616	1	1267	1	1918	1	2569	1	3220	1	3871	1
617	0	1268	0	1919	1	2570	0	3221	0	3872	0
618	0	1269	1	1920	0	2571	0	3222	1	3873	0
619	0	1270	1	1921	1	2572	1	3223	0	3874	0
620	0	1271	1	1922	0	2573	0	3224	0	3875	0
621	0	1272	0	1923	0	2574	1	3225	0	3876	0
622	0	1273	1	1924	0	2575	1	3226	0	3877	1
623	1	1274	1	1925	0	2576	0	3227	1	3878	1
624	0	1275	1	1926	0	2577	0	3228	0	3879	1
625	1	1276	1	1927	0	2578	0	3229	1	3880	1
626	1	1277	0	1928	0	2579	1	3230	1	3881	1
627	1	1278	1	1929	1	2580	0	3231	1	3882	0
628	0	1279	1	1930	0	2581	1	3232	0	3883	1
629	1	1280	0	1931	1	2582	1	3233	0	3884	1
630	1	1281	0	1932	1	2583	0	3234	1	3885	0
631	0	1282	1	1933	1	2584	0	3235	1	3886	1
632	0	1283	0	1934	0	2585	0	3236	1	3887	0
633	1	1284	1	1935	1	2586	0	3237	1	3888	0
634	1	1285	0	1936	0	2587	1	3238	0	3889	1
635	1	1286	1	1937	1	2588	0	3239	0	3890	0
636	1	1287	0	1938	0	2589	1	3240	0	3891	0
637	0	1288	0	1939	1	2590	1	3241	1	3892	1

638	0	1289	1	1940	1	2591	0	3242	0	3893	0
639	0	1290	0	1941	0	2592	0	3243	1	3894	0
640	0	1291	0	1942	0	2593	1	3244	1	3895	0
641	0	1292	1	1943	1	2594	1	3245	1	3896	0
642	0	1293	0	1944	1	2595	0	3246	1	3897	0
643	0	1294	0	1945	0	2596	0	3247	1	3898	1
644	0	1295	0	1946	1	2597	0	3248	1	3899	1
645	0	1296	0	1947	0	2598	0	3249	0	3900	1
646	0	1297	0	1948	0	2599	0	3250	0	3901	1
647	0	1298	0	1949	1	2600	0	3251	1	3902	1
648	1	1299	1	1950	0	2601	1	3252	0	3903	0
649	1	1300	1	1951	0	2602	1	3253	1	3904	1
650	0	1301	1	1952	1	2603	1	3254	1		

Université de Strasbourg, CNRS, IRMA UMR 7501, F-67000 Strasbourg, France
Email address: guoniu.han@unistra.fr

School of Mathematics and Statistics, Huazhong University of Science and Technology, Wuhan, PR China
Email address: huyining@hust.edu.cn