

PROOF OF THE CONTINUED FRACTION CONJECTURE FOR

$$(a, b) = (z^5 + z^2 + z, z^2 + 1)$$

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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 $(a, b) = (z^5 + z^2 + z, z^2 + 1)$.

1. INTRODUCTION

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

$$(1.1) \quad \text{CF}(\mathbf{a}(z)) = \frac{1}{a_0(z) + \frac{1}{a_1(z) + \frac{1}{a_2(z) + \frac{1}{\ddots}}}}$$

as the limit of the finite continued fractions

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

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

$$(1.3) \quad c_{-1}z^{-1} + c_{-2}z^{-2} + c_{-3}z^{-3} + \dots$$

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

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

that we shall denote

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

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Theorem 1.1. *When $(a, b) = (z^5 + z^2 + z, z^2 + 1)$, the two power series $\text{CF}(a, b)$ and $\text{CF}(b, a)$ 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 $\text{CF}(a, b)$,

$$p_0(z) = z^{21} + z^{19} + z^{18} + z^{17} + z^{16} + z^{14} + z^{12} + z^{11} + z^{10} + z^9 + z^7 + z^3 + z + 1,$$

$$p_1(z) = z^{26} + z^{24} + z^{23} + z^{20} + z^{17} + z^{14} + z^{13} + z^{12} + z^{10} + z^7 + z^5 + z,$$

$$p_2(z) = z^{28} + z^{24} + z^{18} + z^{16} + z^{12} + z^8 + z^4 + z^2,$$

$$p_3(z) = z^{26} + z^{24} + z^{23} + z^{20} + z^{17} + z^{14} + z^{13} + z^{12} + z^{10} + z^7 + z^5 + z,$$

$$p_4(z) = z^{24} + z^{21} + z^{19} + z^{17} + z^{16} + z^{14} + z^{12} + z^{11} + z^{10} + z^9 + z^7 + z^4 + z^3 + z^2 + z,$$

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

$$p_0(z) = z^{21} + z^{20} + z^{19} + z^{18} + z^{17} + z^{16} + z^{14} + z^{12} + z^{11} + z^{10} + z^9 + z^7 + z^4 + z^3 + z,$$

$$p_1(z) = z^{26} + z^{24} + z^{23} + z^{20} + z^{17} + z^{14} + z^{13} + z^{12} + z^{10} + z^7 + z^5 + z,$$

$$p_2(z) = z^{28} + z^{24} + z^{18} + z^{16} + z^{12} + z^8 + z^4 + z^2,$$

$$p_3(z) = z^{26} + z^{24} + z^{23} + z^{20} + z^{17} + z^{14} + z^{13} + z^{12} + z^{10} + z^7 + z^5 + z,$$

$$p_4(z) = z^{24} + z^{21} + z^{20} + z^{19} + z^{17} + z^{16} + z^{14} + z^{12} + z^{11} + z^{10} + z^9 + z^7 + z^3 + z^2 + z + 1.$$

2. PROOF

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

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

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

$$\begin{aligned} M_n(x) &= x^{\deg(t_{2^n-1})} \begin{pmatrix} t_{2^n-1}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times x^{\deg(t_{2^n-2})} \begin{pmatrix} t_{2^n-2}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times \\ &\quad \cdots \times x^{\deg(t_0)} \begin{pmatrix} t_0(1/x) & 1 \\ 1 & 0 \end{pmatrix}, \\ W_n(x) &= x^{\deg(\bar{t}_{2^n-1})} \begin{pmatrix} \bar{t}_{2^n-1}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times x^{\deg(\bar{t}_{2^n-2})} \begin{pmatrix} \bar{t}_{2^n-2}(1/x) & 1 \\ 1 & 0 \end{pmatrix} \times \\ &\quad \cdots \times x^{\deg(\bar{t}_0)} \begin{pmatrix} \bar{t}_0(1/x) & 1 \\ 1 & 0 \end{pmatrix}, \end{aligned}$$

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

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

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

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

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

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

for some positive integer d_n . Hence,

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

Therefore, by the convergence theorem of continued fraction, the algebraicity of $\text{CF}(a, b)$ 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 $0 \leq i, j \leq 1$ 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 $0 \leq i, j \leq 1$, $T_{i,j}$ 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 $0 \leq i, j \leq 1$, 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 $n \geq 0$. If for some $n \geq 0$ and $a_0, a_1, \dots, a_{n-1} \in \mathbb{F}_2$ $P(x, \sum_{j=0}^{n-1} a_j x^j) = O(x^n)$ 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 $j \geq 0$, $q_1(0) = 1$, 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*

$$(2.3) \quad M^e = W^o \cdot M^o,$$

$$(2.4) \quad M^o = W^e \cdot M^e,$$

$$(2.5) \quad W^e = M^o \cdot W^o,$$

$$(2.6) \quad W^o = M^e \cdot W^e.$$

Proof. We give the proof of the identity

$$M_{0,0}^e = W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o,$$

the proofs of the others being similar.

First, we compute the minimal polynomials of $W_{0,0}^o M_{0,0}^o$ and $W_{0,1}^o M_{1,0}^o$. We know that

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

is an annihilating polynomial of $W_{0,0}^o M_{0,0}^o$. We use Padé-Hermite approximation to find a candidate for the minimal polynomial of $W_{0,0}^o M_{0,0}^o$, 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 $W_{0,0}^o M_{0,0}^o$. We verify the first point directly. For the second point, we truncate $W_{0,0}^o M_{0,0}^o$ 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 $W_{0,0}^o M_{0,0}^o$. We find the minimal polynomial $\phi_1(x, y)$ of $W_{0,1}^o M_{1,0}^o$ in a similar way.

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

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

is an annihilating of $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$. 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 $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$. To see the last point, we truncate $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$ 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 $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$.

Finally, the first 16 terms of $M_{0,0}^e$ and $W_{0,0}^o M_{0,0}^o + W_{0,1}^o M_{1,0}^o$ 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. $\square$

Define

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

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

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

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

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

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

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 $T = M_{0,0}^o$, for all integer $k \geq 2$ and $u = 2^{2k}$,

$$\begin{aligned}
T[:14u] &= T[:7u] + x^{2u} T[:5u] + x^{3u} T[:4u] + x^{5u} T[:2u] + x^{2u} T[:7u] + x^{4u} T[:5u] \\
& + x^{5u} T[:4u] + x^{7u} T[:2u] + x^{3u} T[:7u] + x^{5u} T[:5u] + x^{6u} T[:4u] \\
& + x^{8u} T[:2u] + x^{4u} T[:7u] + x^{6u} T[:5u] + x^{7u} T[:4u] + x^{9u} T[:2u] \\
& + x^{5u} T[:7u] + x^{7u} T[:5u] + x^{8u} T[:4u] + x^{10u} T[:2u] + x^{8u} T[:6u] \\
& + x^{10u} T[:4u] + x^{9u} T[:5u] + x^{11u} T[:3u] + x^{13u} T[:u].
\end{aligned}$$

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

$$\begin{aligned}
0 &= x^{7u}T[:u] + x^{5u}T[2u:3u] + x^{3u}T[4u:5u] + x^{2u}T[5u:6u] + T[7u:8u], \\
0 &= x^{8u}T[:u] + x^{7u}T[u:2u] + x^{5u}T[3u:4u] + x^{3u}T[5u:6u] \\
&\quad + x^{2u}T[6u:7u] + T[8u:9u], \\
0 &= x^{8u}T[u:2u] + x^{4u}T[5u:6u] + x^{3u}T[6u:7u] + T[9u:10u], \\
0 &= x^{6u}T[4u:5u] + x^{5u}T[5u:6u] + x^{4u}T[6u:7u] + T[10u:11u], \\
0 &= x^{11u}T[:u] + x^{9u}T[2u:3u] + x^{7u}T[4u:5u] + x^{5u}T[6u:7u] \\
&\quad + T[11u:12u], \\
0 &= x^{11u}T[u:2u] + x^{10u}T[2u:3u] + x^{9u}T[3u:4u] + x^{8u}T[4u:5u] \\
&\quad + T[12u:13u], \\
0 &= x^{13u}T[:u] + x^{11u}T[2u:3u] + x^{10u}T[3u:4u] + x^{9u}T[4u:5u] \\
&\quad + x^{8u}T[5u:6u] + T[13u:14u],
\end{aligned}$$

which can be rewritten as

$$(2.7) \quad 0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[111w]_2],$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[101w]_2] + T[[110w]_2]$$

$$(2.8) \quad + T[[1000w]_2],$$

$$(2.9) \quad 0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1001w]_2],$$

$$(2.10) \quad 0 = T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2],$$

$$(2.11) \quad 0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1011w]_2],$$

$$(2.12) \quad 0 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[1100w]_2],$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2]$$

$$(2.13) \quad + T[[1101w]_2],$$

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

$$(2.14) \quad 0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[101w]_2] + T[[111w]_2],$$

$$0 = T[[w]_2] + T[[1w]_2] + T[[11w]_2] + T[[101w]_2] + T[[110w]_2]$$

$$(2.15) \quad + T[[1000w]_2],$$

$$(2.16) \quad 0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1001w]_2],$$

$$(2.17) \quad 0 = T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1010w]_2],$$

$$(2.18) \quad 0 = T[[w]_2] + T[[10w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1011w]_2],$$

$$(2.19) \quad 0 = T[[1w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[1100w]_2],$$

$$0 = T[[w]_2] + T[[10w]_2] + T[[11w]_2] + T[[100w]_2] + T[[101w]_2]$$

$$(2.20) \quad + T[[1101w]_2],$$

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

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 5725 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

$$(2.21) \quad \begin{aligned} 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 10)) + \tau(A(s, 100)) + \tau(A(s, 101)) \\ &\quad + \tau(A(s, 111)), \end{aligned}$$

$$(2.22) \quad \begin{aligned} 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 101)) \\ &\quad + \tau(A(s, 110)) + \tau(A(s, 1000)), \end{aligned}$$

$$(2.23) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1001)),$$

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

$$(2.25) \quad \begin{aligned} &+ \tau(A(s, 1011)), \\ 0 &= \tau(A(s, 1)) + \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) \end{aligned}$$

$$(2.26) \quad \begin{aligned} &+ \tau(A(s, 1100)), \\ 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) \end{aligned}$$

$$(2.27) \quad + \tau(A(s, 101)) + \tau(A(s, 1101)),$$

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

$$(2.28) \quad \begin{aligned} 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 10)) + \tau(A(s, 100)) + \tau(A(s, 101)) \\ &\quad + \tau(A(s, 111)), \end{aligned}$$

$$(2.29) \quad \begin{aligned} 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 101)) \\ &\quad + \tau(A(s, 110)) + \tau(A(s, 1000)), \end{aligned}$$

$$(2.30) \quad 0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1001)),$$

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

$$(2.32) \quad \begin{aligned} &+ \tau(A(s, 1011)), \\ 0 &= \tau(A(s, 1)) + \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) \end{aligned}$$

$$(2.33) \quad \begin{aligned} &+ \tau(A(s, 1100)), \\ 0 &= \tau(A(s, \epsilon)) + \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 100)) \end{aligned}$$

$$(2.34) \quad + \tau(A(s, 101)) + \tau(A(s, 1101)),$$

for $s = A(i, 0^{2k})$. We find that $(A(i, 0^{84}), E_{84}) = (A(i, 0^{24}), E_{24})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2 \leq k \leq 42$, which turns out to be true. $\square$

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 $k \geq 2$, and $u = 2^{2k-1}$,*

$$\begin{aligned} M_{2k} &= M^e[:7u] + x^{2u}M^e[:5u] + x^{3u}M^e[:4u] + x^{5u}M^e[:2u] + x^{7u}R^e, \\ W_{2k} &= W^e[:7u] + x^{2u}W^e[:5u] + x^{3u}W^e[:4u] + x^{5u}W^e[:2u] + x^{7u}R^e. \end{aligned}$$

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

$$\begin{aligned} M_{2k+1} &= M^o[:7u] + x^{2u}M^o[:5u] + x^{3u}M^o[:4u] + x^{5u}M^o[:2u] + x^{7u}R^o, \\ W_{2k+1} &= W^o[:7u] + x^{2u}W^o[:5u] + x^{3u}W^o[:4u] + x^{5u}W^o[:2u] + x^{7u}R^o. \end{aligned}$$

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 $n \geq 2$, 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

$$\begin{aligned} W_{2k}M_{2k} &= (W^e[:7v] + x^{2v}W^e[:5v] + x^{3v}W^e[:4v] + x^{5v}W^e[:2v] + x^{7v}R^e \\ &\quad) \times (M^e[:7v] + x^{2v}M^e[:5v] + x^{3v}M^e[:4v] + x^{5v}M^e[:2v] + x^{7v}R^e \\ (2.35) \quad &); \end{aligned}$$

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

$$\begin{aligned} W^e[:14v]M^e[:14v] &+ x^{4v}W^e[:10v]M^e[:10v] + x^{6v}W^e[:8v]M^e[:8v] \\ &+ x^{10v}W^e[:4v]M^e[:4v]. \end{aligned}$$

For all $n \leq 14$, 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 $\mathbb{F}_2[a_1, \dots, a_{14}, b_1, \dots, b_{14}, c][X]$. 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 $\text{CF}(a, b)$; for $\text{CF}(b, a)$, the proof is similar. By Lemma 2.3, we have For all $0 \leq j, k \leq 1$,

$$\begin{aligned} \lim_{n \rightarrow \infty} M_{2n, j, k} &= M_{j, k}^e, \\ \lim_{n \rightarrow \infty} M_{2n+1, j, k} &= M_{j, k}^o, \\ \lim_{n \rightarrow \infty} W_{2n, j, k} &= W_{j, k}^e, \end{aligned}$$

$$\lim_{n \rightarrow \infty} W_{2n+1,j,k} = W_{j,k}^o.$$

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

$$\text{CF}(a, b) = \frac{M_{0,1}^e(x)}{M_{0,0}^e(x)}.$$

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

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

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

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

$$\begin{aligned} q_0(x) &= x^{28} + x^{27} + x^{25} + x^{21} + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} \\ &\quad + x^9 + x^7, \\ q_1(x) &= x^{27} + x^{23} + x^{21} + x^{18} + x^{16} + x^{15} + x^{14} + x^{11} + x^8 + x^5 + x^4 + x^2, \\ q_2(x) &= x^{26} + x^{24} + x^{20} + x^{16} + x^{12} + x^{10} + x^4 + 1, \\ q_3(x) &= x^{27} + x^{23} + x^{21} + x^{18} + x^{16} + x^{15} + x^{14} + x^{11} + x^8 + x^5 + x^4 + x^2, \\ q_4(x) &= x^{27} + x^{26} + x^{25} + x^{24} + x^{21} + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} \\ &\quad + x^9 + x^7 + x^4. \end{aligned}$$

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 $\text{CF}(a, b) = f(1/z)$. $\square$

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

$$\begin{aligned} p_0(x) &= x^{138} + x^{134} + x^{128} + x^{124} + x^{122} + x^{106} + x^{104} + x^{102} + x^{94} + x^{88} \\ &\quad + x^{86} + x^{82} + x^{80} + x^{78} + x^{70} + x^{66} + x^{62} + x^{60} + x^{46} + x^{42} + x^{34} \\ &\quad + x^{32} + x^{24}, \\ p_3(x) &= x^{130} + x^{128} + x^{126} + x^{120} + x^{114} + x^{112} + x^{110} + x^{108} + x^{104} + x^{100} \\ &\quad + x^{98} + x^{92} + x^{88} + x^{86} + x^{84} + x^{82} + x^{78} + x^{76} + x^{70} + x^{66} + x^{64} \\ &\quad + x^{56} + x^{54} + x^{52} + x^{48} + x^{42} + x^{40} + x^{38} + x^{34} + x^{32} + x^{28} + x^{24} \end{aligned}$$

$$\begin{aligned}
& + x^{22} + x^{20} + x^{18} + x^{16}, \\
p_6(x) &= x^{134} + x^{128} + x^{126} + x^{116} + x^{114} + x^{106} + x^{102} + x^{98} + x^{94} + x^{90} \\
& + x^{86} + x^{80} + x^{74} + x^{70} + x^{66} + x^{62} + x^{60} + x^{58} + x^{56} + x^{54} + x^{48} \\
& + x^{42} + x^{38} + x^{34} + x^{30} + x^{28} + x^{18} + x^{14} + x^8 + x^6 + x^4 + 1, \\
p_9(x) &= x^{136} + x^{130} + x^{126} + x^{122} + x^{118} + x^{116} + x^{108} + x^{104} + x^{102} + x^{100} \\
& + x^{94} + x^{86} + x^{82} + x^{76} + x^{74} + x^{68} + x^{66} + x^{64} + x^{62} + x^{58} + x^{56} \\
& + x^{54} + x^{46} + x^{32} + x^{28} + x^{26} + x^{24} + x^{18} + x^{12} + x^4, \\
p_{12}(x) &= x^{136} + x^{134} + x^{128} + x^{120} + x^{118} + x^{112} + x^{104} + x^{102} + x^{96} + x^{56} \\
& + x^{54} + x^{48} + x^{24} + x^{22} + x^{16} + x^8 + x^6 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} \\
& + x^{134} + x^{131} + x^{130} + x^{128} + x^{127} + x^{126} + x^{124} + x^{123} + x^{122} \\
& + x^{120} + x^{118} + x^{116} + x^{115} + x^{112} + x^{108} + x^{105} + x^{103} + x^{100} \\
& + x^{99} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{89} + x^{86} + x^{83} + x^{82} + x^{80} \\
& + x^{79} + x^{76} + x^{74} + x^{71} + x^{70} + x^{69} + x^{68} + x^{65} + x^{63} + x^{61} + x^{57} \\
& + x^{53} + x^{52} + x^{50} + x^{48} + x^{43} + x^{42} + x^{38} + x^{36} + x^{33}, \\
p_3(x) &= x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{136} + x^{134} + x^{132} \\
& + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} + x^{116} + x^{113} + x^{112} + x^{111} \\
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{98} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} \\
& + x^{67} + x^{63} + x^{59} + x^{57} + x^{56} + x^{54} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{39} + x^{35} + x^{33} + x^{32} + x^{30} + x^{28} + x^{27} \\
& + x^{26} + x^{23} + x^{18}, \\
p_6(x) &= x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132} + x^{130} \\
& + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{115} \\
& + x^{114} + x^{112} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} + x^{90} + x^{89} \\
& + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{72} + x^{66} + x^{65} \\
& + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} \\
& + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{34} + x^{31} + x^{30} \\
& + x^{29} + x^{27} + x^{26} + x^{23} + x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^{12}, \\
p_9(x) &= x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{132} + x^{131} \\
& + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} \\
& + x^{101} + x^{97} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{82} + x^{81} + x^{80} + x^{76} \\
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{54} + x^{53} + x^{49} + x^{44} + x^{41}
\end{aligned}$$

$$\begin{aligned}
& + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{33} + x^{30} + x^{28} + x^{25} + x^{24} + x^{20} \\
& + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} + x^6, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} \\
& + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{101} + x^{99} + x^{97} \\
& + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} \\
& + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} \\
& + x^{50} + x^{48} + x^{30} + x^{29} + x^{28} + x^{27} + x^{25} + x^{23} + x^{21} + x^{19} + x^{17} \\
& + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{147} + x^{146} + x^{145} + x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{136} \\
& + x^{134} + x^{131} + x^{130} + x^{128} + x^{127} + x^{126} + x^{124} + x^{123} + x^{122} \\
& + x^{120} + x^{118} + x^{116} + x^{115} + x^{112} + x^{108} + x^{105} + x^{103} + x^{100} \\
& + x^{99} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{89} + x^{86} + x^{83} + x^{82} + x^{80} \\
& + x^{79} + x^{76} + x^{74} + x^{71} + x^{70} + x^{69} + x^{68} + x^{65} + x^{63} + x^{61} + x^{57} \\
& + x^{53} + x^{52} + x^{50} + x^{48} + x^{43} + x^{42} + x^{38} + x^{36} + x^{33}, \\
p_3(x) = & x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{136} + x^{134} + x^{132} \\
& + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} + x^{116} + x^{113} + x^{112} + x^{111} \\
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{98} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} \\
& + x^{67} + x^{63} + x^{59} + x^{57} + x^{56} + x^{54} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{39} + x^{35} + x^{33} + x^{32} + x^{30} + x^{28} + x^{27} \\
& + x^{26} + x^{23} + x^{18}, \\
p_6(x) = & x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132} + x^{130} \\
& + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{115} \\
& + x^{114} + x^{112} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} + x^{90} + x^{89} \\
& + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{72} + x^{66} + x^{65} \\
& + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} \\
& + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{34} + x^{31} + x^{30} \\
& + x^{29} + x^{27} + x^{26} + x^{23} + x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^{12}, \\
p_9(x) = & x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{132} + x^{131} \\
& + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} \\
& + x^{101} + x^{97} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{82} + x^{81} + x^{80} + x^{76}
\end{aligned}$$

$$\begin{aligned}
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{54} + x^{53} + x^{49} + x^{44} + x^{41} \\
& + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{33} + x^{30} + x^{28} + x^{25} + x^{24} + x^{20} \\
& + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} + x^6, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} \\
& + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{101} + x^{99} + x^{97} \\
& + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} \\
& + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} \\
& + x^{50} + x^{48} + x^{30} + x^{29} + x^{28} + x^{27} + x^{25} + x^{23} + x^{21} + x^{19} + x^{17} \\
& + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{156} + x^{154} + x^{150} + x^{148} + x^{146} + x^{144} + x^{142} + x^{136} + x^{130} + x^{126} \\
& + x^{122} + x^{116} + x^{114} + x^{112} + x^{110} + x^{108} + x^{106} + x^{102} + x^{100} \\
& + x^{98} + x^{96} + x^{92} + x^{86} + x^{84} + x^{80} + x^{76} + x^{74} + x^{72} + x^{70} + x^{62} \\
& + x^{60} + x^{56} + x^{50} + x^{48} + x^{42}, \\
p_3(x) = & x^{150} + x^{146} + x^{136} + x^{134} + x^{132} + x^{128} + x^{124} + x^{122} + x^{120} + x^{114} \\
& + x^{102} + x^{100} + x^{98} + x^{96} + x^{94} + x^{90} + x^{88} + x^{86} + x^{84} + x^{80} + x^{78} \\
& + x^{76} + x^{74} + x^{72} + x^{70} + x^{64} + x^{60} + x^{54} + x^{52} + x^{48} + x^{46} + x^{44} \\
& + x^{42} + x^{40} + x^{38} + x^{36} + x^{32} + x^{26} + x^{16} + x^{12}, \\
p_6(x) = & x^{150} + x^{148} + x^{144} + x^{142} + x^{136} + x^{134} + x^{128} + x^{126} + x^{124} + x^{118} \\
& + x^{116} + x^{110} + x^{108} + x^{106} + x^{104} + x^{100} + x^{98} + x^{88} + x^{84} + x^{82} \\
& + x^{80} + x^{78} + x^{72} + x^{68} + x^{58} + x^{48} + x^{42} + x^{36} + x^{32} + x^{30} + x^{28} \\
& + x^{26} + x^{24} + x^{18} + x^{16} + x^{12} + x^{10} + 1, \\
p_9(x) = & x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134} + x^{132} + x^{130} + x^{126} + x^{122} \\
& + x^{118} + x^{110} + x^{104} + x^{98} + x^{96} + x^{94} + x^{92} + x^{80} + x^{70} + x^{68} + x^{64} \\
& + x^{52} + x^{44} + x^{42} + x^{40} + x^{34} + x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^{16} \\
& + x^{14} + x^{10} + x^8 + x^4, \\
p_{12}(x) = & x^{148} + x^{144} + x^{140} + x^{136} + x^{108} + x^{104} + x^{100} + x^{96} + x^{92} + x^{88} \\
& + x^{76} + x^{72} + x^{68} + x^{64} + x^{52} + x^{48} + x^{36} + x^{32} + x^{28} + x^{24} + x^4 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{156} + x^{154} + x^{152} + x^{150} + x^{142} + x^{138} + x^{136} + x^{134} + x^{132} + x^{126} \\
& + x^{124} + x^{122} + x^{118} + x^{114} + x^{112} + x^{110} + x^{106} + x^{104} + x^{102}
\end{aligned}$$

$$\begin{aligned}
& + x^{98} + x^{92} + x^{86} + x^{84} + x^{82} + x^{74} + x^{72} + x^{68} + x^{64} + x^{60} + x^{56} \\
& + x^{54} + x^{32} + x^{30} + x^{28} + x^{24}, \\
p_3(x) &= x^{150} + x^{136} + x^{134} + x^{132} + x^{130} + x^{126} + x^{122} + x^{120} + x^{118} + x^{114} \\
& + x^{108} + x^{106} + x^{104} + x^{98} + x^{94} + x^{92} + x^{88} + x^{82} + x^{80} + x^{78} + x^{68} \\
& + x^{66} + x^{64} + x^{62} + x^{60} + x^{54} + x^{50} + x^{48} + x^{46} + x^{44} + x^{28} + x^{26} \\
& + x^{22} + x^{20} + x^{18} + x^{16}, \\
p_6(x) &= x^{150} + x^{148} + x^{146} + x^{142} + x^{140} + x^{134} + x^{132} + x^{130} + x^{128} + x^{124} \\
& + x^{116} + x^{110} + x^{108} + x^{104} + x^{102} + x^{98} + x^{96} + x^{92} + x^{90} + x^{88} \\
& + x^{86} + x^{84} + x^{80} + x^{78} + x^{76} + x^{74} + x^{70} + x^{68} + x^{66} + x^{64} + x^{62} \\
& + x^{60} + x^{58} + x^{56} + x^{52} + x^{50} + x^{40} + x^{38} + x^{30} + x^{26} + x^{22} + x^{20} \\
& + x^{12} + x^{10} + x^8 + 1, \\
p_9(x) &= x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134} + x^{132} + x^{130} + x^{126} + x^{122} \\
& + x^{118} + x^{110} + x^{104} + x^{98} + x^{96} + x^{94} + x^{92} + x^{80} + x^{70} + x^{68} + x^{64} \\
& + x^{52} + x^{44} + x^{42} + x^{40} + x^{34} + x^{30} + x^{28} + x^{26} + x^{24} + x^{22} + x^{16} \\
& + x^{14} + x^{10} + x^8 + x^4, \\
p_{12}(x) &= x^{148} + x^{144} + x^{140} + x^{136} + x^{108} + x^{104} + x^{100} + x^{96} + x^{92} + x^{88} \\
& + x^{76} + x^{72} + x^{68} + x^{64} + x^{52} + x^{48} + x^{36} + x^{32} + x^{28} + x^{24} + x^4 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{145} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{134} + x^{133} \\
& + x^{132} + x^{129} + x^{128} + x^{127} + x^{126} + x^{124} + x^{120} + x^{111} + x^{108} \\
& + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} \\
& + x^{91} + x^{90} + x^{89} + x^{88} + x^{86} + x^{84} + x^{83} + x^{81} + x^{79} + x^{78} + x^{76} \\
& + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{59} \\
& + x^{57} + x^{55} + x^{54} + x^{51} + x^{50} + x^{42} + x^{41} + x^{40} + x^{39} + x^{37} + x^{36} \\
& + x^{35} + x^{34} + x^{33}, \\
p_3(x) &= x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{136} + x^{134} + x^{132} \\
& + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} + x^{116} + x^{113} + x^{112} + x^{111} \\
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{98} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} \\
& + x^{67} + x^{63} + x^{59} + x^{57} + x^{56} + x^{54} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{39} + x^{35} + x^{33} + x^{32} + x^{30} + x^{28} + x^{27} \\
& + x^{26} + x^{23} + x^{18}, \\
p_6(x) &= x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132} + x^{130} \\
& + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{115} \\
& + x^{114} + x^{112} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} + x^{90} + x^{89}
\end{aligned}$$

$$\begin{aligned}
& + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{72} + x^{66} + x^{65} \\
& + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} \\
& + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{34} + x^{31} + x^{30} \\
& + x^{29} + x^{27} + x^{26} + x^{23} + x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^{12}, \\
p_9(x) = & x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{132} + x^{131} \\
& + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} \\
& + x^{101} + x^{97} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{82} + x^{81} + x^{80} + x^{76} \\
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{54} + x^{53} + x^{49} + x^{44} + x^{41} \\
& + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{33} + x^{30} + x^{28} + x^{25} + x^{24} + x^{20} \\
& + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} + x^6, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} \\
& + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{101} + x^{99} + x^{97} \\
& + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} \\
& + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} \\
& + x^{50} + x^{48} + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{33} + x^{31} + x^{29} + x^{28} + x^{27} + x^{25} + x^{23} + x^{21} + x^{19} + x^{17} \\
& + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{147} + x^{145} + x^{144} + x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{134} + x^{133} \\
& + x^{132} + x^{129} + x^{128} + x^{127} + x^{126} + x^{124} + x^{120} + x^{111} + x^{108} \\
& + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} \\
& + x^{91} + x^{90} + x^{89} + x^{88} + x^{86} + x^{84} + x^{83} + x^{81} + x^{79} + x^{78} + x^{76} \\
& + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{63} + x^{62} + x^{60} + x^{59} \\
& + x^{57} + x^{55} + x^{54} + x^{51} + x^{50} + x^{42} + x^{41} + x^{40} + x^{39} + x^{37} + x^{36} \\
& + x^{35} + x^{34} + x^{33}, \\
p_3(x) = & x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{139} + x^{137} + x^{136} + x^{134} + x^{132} \\
& + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} + x^{116} + x^{113} + x^{112} + x^{111} \\
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{98} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} \\
& + x^{67} + x^{63} + x^{59} + x^{57} + x^{56} + x^{54} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{39} + x^{35} + x^{33} + x^{32} + x^{30} + x^{28} + x^{27} \\
& + x^{26} + x^{23} + x^{18}, \\
p_6(x) = & x^{144} + x^{143} + x^{142} + x^{141} + x^{139} + x^{137} + x^{135} + x^{133} + x^{132} + x^{130}
\end{aligned}$$

$$\begin{aligned}
& + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{119} + x^{118} + x^{117} + x^{115} \\
& + x^{114} + x^{112} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{100} + x^{90} + x^{89} \\
& + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{78} + x^{76} + x^{75} + x^{72} + x^{66} + x^{65} \\
& + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} \\
& + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{34} + x^{31} + x^{30} \\
& + x^{29} + x^{27} + x^{26} + x^{23} + x^{19} + x^{18} + x^{17} + x^{15} + x^{14} + x^{12}, \\
p_9(x) = & x^{143} + x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{132} + x^{131} \\
& + x^{129} + x^{128} + x^{126} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{106} + x^{105} \\
& + x^{101} + x^{97} + x^{93} + x^{91} + x^{90} + x^{88} + x^{87} + x^{82} + x^{81} + x^{80} + x^{76} \\
& + x^{63} + x^{62} + x^{61} + x^{60} + x^{59} + x^{57} + x^{54} + x^{53} + x^{49} + x^{44} + x^{41} \\
& + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{33} + x^{30} + x^{28} + x^{25} + x^{24} + x^{20} \\
& + x^{19} + x^{18} + x^{17} + x^{16} + x^{14} + x^{12} + x^{11} + x^{10} + x^6, \\
p_{12}(x) = & x^{142} + x^{141} + x^{140} + x^{139} + x^{137} + x^{135} + x^{133} + x^{131} + x^{129} + x^{127} \\
& + x^{125} + x^{123} + x^{122} + x^{120} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} \\
& + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{105} + x^{103} + x^{101} + x^{99} + x^{97} \\
& + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} \\
& + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{56} + x^{54} + x^{53} + x^{52} + x^{51} \\
& + x^{50} + x^{48} + x^{40} + x^{30} + x^{29} + x^{28} + x^{27} + x^{25} + x^{23} + x^{21} + x^{19} + x^{17} \\
& + x^{15} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{138} + x^{136} + x^{134} + x^{126} + x^{124} + x^{116} + x^{112} + x^{110} + x^{108} + x^{106} \\
& + x^{100} + x^{98} + x^{94} + x^{90} + x^{88} + x^{84} + x^{78} + x^{74} + x^{70} + x^{68} + x^{66} \\
& + x^{64} + x^{62} + x^{60} + x^{58} + x^{56} + x^{54} + x^{50} + x^{48} + x^{44} + x^{42}, \\
p_3(x) = & x^{134} + x^{132} + x^{122} + x^{120} + x^{118} + x^{112} + x^{110} + x^{102} + x^{98} + x^{94} \\
& + x^{92} + x^{88} + x^{84} + x^{80} + x^{76} + x^{72} + x^{70} + x^{68} + x^{62} + x^{60} + x^{52} \\
& + x^{50} + x^{44} + x^{42} + x^{38} + x^{28} + x^{26} + x^{24} + x^{18} + x^{12}, \\
p_6(x) = & x^{124} + x^{122} + x^{118} + x^{116} + x^{104} + x^{100} + x^{96} + x^{94} + x^{86} + x^{80} \\
& + x^{78} + x^{76} + x^{74} + x^{68} + x^{64} + x^{62} + x^{58} + x^{54} + x^{52} + x^{48} + x^{44} \\
& + x^{40} + x^{38} + x^{36} + x^{18} + x^{16} + x^{12} + x^6 + x^4 + 1, \\
p_9(x) = & x^{136} + x^{130} + x^{126} + x^{122} + x^{118} + x^{116} + x^{108} + x^{104} + x^{102} + x^{100} \\
& + x^{94} + x^{86} + x^{82} + x^{76} + x^{74} + x^{68} + x^{66} + x^{64} + x^{62} + x^{58} + x^{56} \\
& + x^{54} + x^{46} + x^{32} + x^{28} + x^{26} + x^{24} + x^{18} + x^{12} + x^4,
\end{aligned}$$

$$p_{12}(x) = x^{136} + x^{134} + x^{128} + x^{120} + x^{118} + x^{112} + x^{104} + x^{102} + x^{96} + x^{56} \\ + x^{54} + x^{48} + x^{24} + x^{22} + x^{16} + x^8 + x^6 + 1,$$

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

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

$$p_0(x) = x^{147} + x^{146} + x^{143} + x^{141} + x^{140} + x^{139} + x^{137} + x^{136} + x^{135} + x^{134} \\ + x^{133} + x^{132} + x^{130} + x^{128} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\ + x^{115} + x^{113} + x^{110} + x^{109} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101} \\ + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{88} + x^{85} + x^{83} + x^{82} + x^{81} \\ + x^{80} + x^{78} + x^{75} + x^{72} + x^{70} + x^{69} + x^{64} + x^{62} + x^{60} + x^{59} + x^{56} \\ + x^{55} + x^{53} + x^{51} + x^{50} + x^{49} + x^{40} + x^{38} + x^{36} + x^{30} + x^{29} + x^{27} \\ + x^{26} + x^{24},$$

$$p_3(x) = x^{146} + x^{143} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{131} + x^{128} + x^{126} \\ + x^{125} + x^{124} + x^{120} + x^{118} + x^{114} + x^{111} + x^{110} + x^{107} + x^{104} \\ + x^{99} + x^{95} + x^{94} + x^{93} + x^{92} + x^{89} + x^{88} + x^{87} + x^{85} + x^{83} + x^{82} \\ + x^{79} + x^{76} + x^{73} + x^{71} + x^{70} + x^{69} + x^{67} + x^{66} + x^{64} + x^{58} + x^{56} \\ + x^{53} + x^{52} + x^{48} + x^{46} + x^{44} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{33} \\ + x^{30} + x^{29} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{19} + x^{18} + x^{16},$$

$$p_6(x) = x^{146} + x^{143} + x^{138} + x^{137} + x^{136} + x^{126} + x^{125} + x^{123} + x^{119} + x^{116} \\ + x^{115} + x^{112} + x^{108} + x^{95} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} \\ + x^{80} + x^{79} + x^{76} + x^{72} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{63} \\ + x^{62} + x^{60} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{37} + x^{36} + x^{34} \\ + x^{33} + x^{31} + x^{30} + x^{28} + x^{25} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{14} \\ + x^6 + x^5 + x^4 + x^3 + x^2 + 1,$$

$$p_9(x) = x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{126} + x^{125} \\ + x^{124} + x^{123} + x^{122} + x^{120} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} \\ + x^{107} + x^{106} + x^{104} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{92} + x^{82} + x^{81} \\ + x^{80} + x^{79} + x^{78} + x^{76} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{34} \\ + x^{33} + x^{32} + x^{31} + x^{29} + x^{27} + x^{26} + x^{24} + x^{14} + x^{13} + x^{12} + x^{11} \\ + x^{10} + x^8,$$

$$p_{12}(x) = x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\ + x^{133} + x^{131} + x^{129} + x^{127} + x^{126} + x^{124} + x^{118} + x^{117} + x^{116} \\ + x^{115} + x^{113} + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} \\ + x^{101} + x^{99} + x^{98} + x^{96} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{74} \\ + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} \\ + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30}$$

$$\begin{aligned}
& + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} \\
& + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{160} + x^{157} + x^{155} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} + x^{145} + x^{144} \\
& + x^{142} + x^{141} + x^{139} + x^{136} + x^{127} + x^{126} + x^{124} + x^{121} + x^{120} \\
& + x^{119} + x^{118} + x^{117} + x^{113} + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} \\
& + x^{100} + x^{96} + x^{95} + x^{94} + x^{90} + x^{89} + x^{88} + x^{87} + x^{85} + x^{84} + x^{82} \\
& + x^{80} + x^{78} + x^{77} + x^{75} + x^{73} + x^{72} + x^{65} + x^{64} + x^{60} + x^{57} + x^{54} \\
& + x^{53} + x^{51} + x^{50} + x^{49} + x^{45} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} \\
& + x^{37} + x^{35} + x^{33},
\end{aligned}$$

$$\begin{aligned}
p_3(x) = & x^{153} + x^{151} + x^{144} + x^{143} + x^{140} + x^{136} + x^{135} + x^{134} + x^{133} + x^{131} \\
& + x^{128} + x^{127} + x^{125} + x^{119} + x^{118} + x^{114} + x^{111} + x^{109} + x^{108} \\
& + x^{107} + x^{106} + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{81} + x^{79} + x^{73} \\
& + x^{72} + x^{68} + x^{62} + x^{61} + x^{60} + x^{59} + x^{54} + x^{51} + x^{48} + x^{46} + x^{45} \\
& + x^{42} + x^{38} + x^{37} + x^{36} + x^{35} + x^{33} + x^{31} + x^{30} + x^{27} + x^{25} + x^{22} \\
& + x^{21} + x^{20} + x^{18},
\end{aligned}$$

$$\begin{aligned}
p_6(x) = & x^{154} + x^{142} + x^{138} + x^{136} + x^{134} + x^{132} + x^{124} + x^{120} + x^{116} + x^{114} \\
& + x^{112} + x^{110} + x^{108} + x^{106} + x^{104} + x^{102} + x^{100} + x^{94} + x^{92} + x^{88} \\
& + x^{84} + x^{80} + x^{68} + x^{64} + x^{58} + x^{52} + x^{48} + x^{46} + x^{40} + x^{32} + x^{28} \\
& + x^{18} + x^{16} + x^{12},
\end{aligned}$$

$$\begin{aligned}
p_9(x) = & x^{155} + x^{153} + x^{151} + x^{149} + x^{147} + x^{146} + x^{143} + x^{139} + x^{138} + x^{136} \\
& + x^{134} + x^{133} + x^{132} + x^{131} + x^{126} + x^{123} + x^{120} + x^{119} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{111} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} \\
& + x^{100} + x^{98} + x^{95} + x^{94} + x^{90} + x^{87} + x^{84} + x^{82} + x^{79} + x^{78} + x^{75} \\
& + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{57} + x^{56} + x^{54} + x^{43} + x^{41} \\
& + x^{39} + x^{37} + x^{35} + x^{34} + x^{31} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} \\
& + x^{19} + x^{14} + x^9 + x^8 + x^6,
\end{aligned}$$

$$\begin{aligned}
p_{12}(x) = & x^{156} + x^{152} + x^{148} + x^{140} + x^{136} + x^{132} + x^{124} + x^{120} + x^{116} + x^{112} \\
& + x^{80} + x^{76} + x^{72} + x^{68} + x^{64} + x^{48} + x^{44} + x^{40} + x^{36} + x^{28} + x^{24} \\
& + x^{20} + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{146} + x^{145} + x^{144} + x^{142} + x^{140} + x^{137} + x^{134} + x^{131} + x^{129} + x^{128} \\
& + x^{126} + x^{124} + x^{122} + x^{120} + x^{119} + x^{118} + x^{116} + x^{112} + x^{111}
\end{aligned}$$

$$\begin{aligned}
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{100} + x^{98} + x^{93} + x^{90} + x^{85} + x^{79} \\
& + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} \\
& + x^{57} + x^{53} + x^{52} + x^{50} + x^{48} + x^{47} + x^{45} + x^{44} + x^{43} + x^{42} + x^{40} \\
& + x^{39} + x^{36} + x^{34} + x^{33}, \\
p_3(x) &= x^{145} + x^{143} + x^{141} + x^{139} + x^{136} + x^{135} + x^{131} + x^{129} + x^{126} + x^{125} \\
& + x^{124} + x^{122} + x^{121} + x^{119} + x^{117} + x^{115} + x^{112} + x^{111} + x^{107} \\
& + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{73} + x^{71} + x^{69} + x^{67} + x^{65} \\
& + x^{64} + x^{61} + x^{57} + x^{56} + x^{55} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{47} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{33} + x^{32} + x^{31} + x^{30} \\
& + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{22} + x^{21} + x^{20} + x^{18}, \\
p_6(x) &= x^{146} + x^{142} + x^{134} + x^{130} + x^{128} + x^{122} + x^{120} + x^{118} + x^{116} + x^{112} \\
& + x^{108} + x^{100} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82} + x^{76} + x^{74} + x^{72} + x^{68} \\
& + x^{66} + x^{62} + x^{48} + x^{46} + x^{40} + x^{38} + x^{34} + x^{32} + x^{30} + x^{28} + x^{26} \\
& + x^{20} + x^{18} + x^{16} + x^{12}, \\
p_9(x) &= x^{147} + x^{145} + x^{138} + x^{137} + x^{134} + x^{131} + x^{130} + x^{129} + x^{128} + x^{121} \\
& + x^{120} + x^{118} + x^{115} + x^{113} + x^{106} + x^{105} + x^{102} + x^{98} + x^{96} + x^{90} \\
& + x^{88} + x^{82} + x^{80} + x^{74} + x^{72} + x^{67} + x^{66} + x^{65} + x^{64} + x^{57} + x^{56} \\
& + x^{54} + x^{35} + x^{33} + x^{26} + x^{25} + x^{22} + x^{19} + x^{18} + x^{17} + x^{16} + x^9 \\
& + x^8 + x^6, \\
p_{12}(x) &= x^{148} + x^{136} + x^{128} + x^{124} + x^{120} + x^{116} + x^{112} + x^{104} + x^{100} + x^{96} \\
& + x^{92} + x^{84} + x^{76} + x^{60} + x^{56} + x^{48} + x^{36} + x^{24} + x^{16} + x^{12} + x^8 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{147} + x^{142} + x^{140} + x^{139} + x^{137} + x^{133} + x^{132} + x^{130} + x^{129} + x^{128} \\
& + x^{124} + x^{123} + x^{122} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} + x^{113} \\
& + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{102} + x^{99} + x^{98} + x^{92} + x^{91} \\
& + x^{90} + x^{89} + x^{88} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} \\
& + x^{78} + x^{76} + x^{74} + x^{71} + x^{67} + x^{64} + x^{63} + x^{61} + x^{53} + x^{51} + x^{50} \\
& + x^{47} + x^{46} + x^{43} + x^{42}, \\
p_3(x) &= x^{146} + x^{144} + x^{141} + x^{140} + x^{139} + x^{136} + x^{135} + x^{133} + x^{131} + x^{130} \\
& + x^{128} + x^{126} + x^{125} + x^{124} + x^{122} + x^{121} + x^{120} + x^{118} + x^{117} \\
& + x^{112} + x^{110} + x^{106} + x^{105} + x^{104} + x^{103} + x^{101} + x^{98} + x^{96} + x^{95} \\
& + x^{94} + x^{93} + x^{92} + x^{89} + x^{88} + x^{87} + x^{85} + x^{83} + x^{82} + x^{79} + x^{76} \\
& + x^{73} + x^{72} + x^{70} + x^{69} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{57} \\
& + x^{52} + x^{49} + x^{48} + x^{46} + x^{45} + x^{44} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36}
\end{aligned}$$

$$\begin{aligned}
& + x^{34} + x^{32} + x^{30} + x^{27} + x^{26} + x^{25} + x^{23} + x^{22}, \\
p_6(x) = & x^{146} + x^{144} + x^{140} + x^{135} + x^{134} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126} \\
& + x^{122} + x^{118} + x^{117} + x^{116} + x^{114} + x^{108} + x^{106} + x^{105} + x^{104} \\
& + x^{103} + x^{101} + x^{99} + x^{97} + x^{94} + x^{92} + x^{90} + x^{87} + x^{81} + x^{80} + x^{76} \\
& + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{61} \\
& + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} + x^{51} + x^{49} + x^{47} + x^{46} + x^{45} + x^{43} \\
& + x^{42} + x^{41} + x^{37} + x^{34} + x^{33} + x^{32} + x^{30} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{21} + x^{18} + x^{14} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1, \\
p_9(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{126} + x^{125} \\
& + x^{124} + x^{123} + x^{122} + x^{120} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} \\
& + x^{107} + x^{106} + x^{104} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{92} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{34} \\
& + x^{33} + x^{32} + x^{31} + x^{29} + x^{27} + x^{26} + x^{24} + x^{14} + x^{13} + x^{12} + x^{11} \\
& + x^{10} + x^8, \\
p_{12}(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{129} + x^{127} + x^{126} + x^{124} + x^{118} + x^{117} + x^{116} \\
& + x^{115} + x^{113} + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{74} \\
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} \\
& + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} \\
& + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} \\
& + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{147} + x^{146} + x^{143} + x^{141} + x^{140} + x^{139} + x^{137} + x^{136} + x^{135} + x^{134} \\
& + x^{133} + x^{132} + x^{130} + x^{128} + x^{122} + x^{121} + x^{120} + x^{119} + x^{117} \\
& + x^{115} + x^{113} + x^{110} + x^{109} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101} \\
& + x^{99} + x^{98} + x^{97} + x^{94} + x^{93} + x^{92} + x^{88} + x^{85} + x^{83} + x^{82} + x^{81} \\
& + x^{80} + x^{78} + x^{75} + x^{72} + x^{70} + x^{69} + x^{64} + x^{62} + x^{60} + x^{59} + x^{56} \\
& + x^{55} + x^{53} + x^{51} + x^{50} + x^{49} + x^{40} + x^{38} + x^{36} + x^{30} + x^{29} + x^{27} \\
& + x^{26} + x^{24}, \\
p_3(x) = & x^{146} + x^{143} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{131} + x^{128} + x^{126} \\
& + x^{125} + x^{124} + x^{120} + x^{118} + x^{114} + x^{111} + x^{110} + x^{107} + x^{104} \\
& + x^{99} + x^{95} + x^{94} + x^{93} + x^{92} + x^{89} + x^{88} + x^{87} + x^{85} + x^{83} + x^{82} \\
& + x^{79} + x^{76} + x^{73} + x^{71} + x^{70} + x^{69} + x^{67} + x^{66} + x^{64} + x^{58} + x^{56}
\end{aligned}$$

$$\begin{aligned}
& + x^{53} + x^{52} + x^{48} + x^{46} + x^{44} + x^{38} + x^{37} + x^{36} + x^{35} + x^{34} + x^{33} \\
& + x^{30} + x^{29} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{19} + x^{18} + x^{16}, \\
p_6(x) &= x^{146} + x^{143} + x^{138} + x^{137} + x^{136} + x^{126} + x^{125} + x^{123} + x^{119} + x^{116} \\
& + x^{115} + x^{112} + x^{108} + x^{95} + x^{89} + x^{87} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{76} + x^{72} + x^{70} + x^{69} + x^{68} + x^{67} + x^{66} + x^{65} + x^{63} \\
& + x^{62} + x^{60} + x^{46} + x^{44} + x^{43} + x^{41} + x^{40} + x^{39} + x^{37} + x^{36} + x^{34} \\
& + x^{33} + x^{31} + x^{30} + x^{28} + x^{25} + x^{20} + x^{18} + x^{17} + x^{16} + x^{15} + x^{14} \\
& + x^6 + x^5 + x^4 + x^3 + x^2 + 1, \\
p_9(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{126} + x^{125} \\
& + x^{124} + x^{123} + x^{122} + x^{120} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} \\
& + x^{107} + x^{106} + x^{104} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{92} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{34} \\
& + x^{33} + x^{32} + x^{31} + x^{29} + x^{27} + x^{26} + x^{24} + x^{14} + x^{13} + x^{12} + x^{11} \\
& + x^{10} + x^8, \\
p_{12}(x) &= x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135} \\
& + x^{133} + x^{131} + x^{129} + x^{127} + x^{126} + x^{124} + x^{118} + x^{117} + x^{116} \\
& + x^{115} + x^{113} + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{74} \\
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} \\
& + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} \\
& + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} \\
& + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{146} + x^{145} + x^{144} + x^{142} + x^{140} + x^{137} + x^{134} + x^{131} + x^{129} + x^{128} \\
& + x^{126} + x^{124} + x^{122} + x^{120} + x^{119} + x^{118} + x^{116} + x^{112} + x^{111} \\
& + x^{110} + x^{108} + x^{107} + x^{103} + x^{100} + x^{98} + x^{93} + x^{90} + x^{85} + x^{79} \\
& + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{63} + x^{62} + x^{60} + x^{59} + x^{58} \\
& + x^{57} + x^{53} + x^{52} + x^{50} + x^{48} + x^{47} + x^{45} + x^{44} + x^{43} + x^{42} + x^{40} \\
& + x^{39} + x^{36} + x^{34} + x^{33}, \\
p_3(x) &= x^{145} + x^{143} + x^{141} + x^{139} + x^{136} + x^{135} + x^{131} + x^{129} + x^{126} + x^{125} \\
& + x^{124} + x^{122} + x^{121} + x^{119} + x^{117} + x^{115} + x^{112} + x^{111} + x^{107} \\
& + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{73} + x^{71} + x^{69} + x^{67} + x^{65} \\
& + x^{64} + x^{61} + x^{57} + x^{56} + x^{55} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{47} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{41} + x^{40} + x^{37} + x^{33} + x^{32} + x^{31} + x^{30}
\end{aligned}$$

$$\begin{aligned}
& + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{22} + x^{21} + x^{20} + x^{18}, \\
p_6(x) &= x^{146} + x^{142} + x^{134} + x^{130} + x^{128} + x^{122} + x^{120} + x^{118} + x^{116} + x^{112} \\
& + x^{108} + x^{100} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82} + x^{76} + x^{74} + x^{72} + x^{68} \\
& + x^{66} + x^{62} + x^{48} + x^{46} + x^{40} + x^{38} + x^{34} + x^{32} + x^{30} + x^{28} + x^{26} \\
& + x^{20} + x^{18} + x^{16} + x^{12}, \\
p_9(x) &= x^{147} + x^{145} + x^{138} + x^{137} + x^{134} + x^{131} + x^{130} + x^{129} + x^{128} + x^{121} \\
& + x^{120} + x^{118} + x^{115} + x^{113} + x^{106} + x^{105} + x^{102} + x^{98} + x^{96} + x^{90} \\
& + x^{88} + x^{82} + x^{80} + x^{74} + x^{72} + x^{67} + x^{66} + x^{65} + x^{64} + x^{57} + x^{56} \\
& + x^{54} + x^{35} + x^{33} + x^{26} + x^{25} + x^{22} + x^{19} + x^{18} + x^{17} + x^{16} + x^9 \\
& + x^8 + x^6, \\
p_{12}(x) &= x^{148} + x^{136} + x^{128} + x^{124} + x^{120} + x^{116} + x^{112} + x^{104} + x^{100} + x^{96} \\
& + x^{92} + x^{84} + x^{76} + x^{60} + x^{56} + x^{48} + x^{36} + x^{24} + x^{16} + x^{12} + x^8 + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) &= x^{160} + x^{157} + x^{155} + x^{152} + x^{150} + x^{149} + x^{148} + x^{147} + x^{145} + x^{144} \\
& + x^{142} + x^{141} + x^{139} + x^{136} + x^{127} + x^{126} + x^{124} + x^{121} + x^{120} \\
& + x^{119} + x^{118} + x^{117} + x^{113} + x^{106} + x^{104} + x^{103} + x^{102} + x^{101} \\
& + x^{100} + x^{96} + x^{95} + x^{94} + x^{90} + x^{89} + x^{88} + x^{87} + x^{85} + x^{84} + x^{82} \\
& + x^{80} + x^{78} + x^{77} + x^{75} + x^{73} + x^{72} + x^{65} + x^{64} + x^{60} + x^{57} + x^{54} \\
& + x^{53} + x^{51} + x^{50} + x^{49} + x^{45} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} \\
& + x^{37} + x^{35} + x^{33}, \\
p_3(x) &= x^{153} + x^{151} + x^{144} + x^{143} + x^{140} + x^{136} + x^{135} + x^{134} + x^{133} + x^{131} \\
& + x^{128} + x^{127} + x^{125} + x^{119} + x^{118} + x^{114} + x^{111} + x^{109} + x^{108} \\
& + x^{107} + x^{106} + x^{105} + x^{102} + x^{101} + x^{100} + x^{98} + x^{81} + x^{79} + x^{73} \\
& + x^{72} + x^{68} + x^{62} + x^{61} + x^{60} + x^{59} + x^{54} + x^{51} + x^{48} + x^{46} + x^{45} \\
& + x^{42} + x^{38} + x^{37} + x^{36} + x^{35} + x^{33} + x^{31} + x^{30} + x^{27} + x^{25} + x^{22} \\
& + x^{21} + x^{20} + x^{18}, \\
p_6(x) &= x^{154} + x^{142} + x^{138} + x^{136} + x^{134} + x^{132} + x^{124} + x^{120} + x^{116} + x^{114} \\
& + x^{112} + x^{110} + x^{108} + x^{106} + x^{104} + x^{102} + x^{100} + x^{94} + x^{92} + x^{88} \\
& + x^{84} + x^{80} + x^{68} + x^{64} + x^{58} + x^{52} + x^{48} + x^{46} + x^{40} + x^{32} + x^{28} \\
& + x^{18} + x^{16} + x^{12}, \\
p_9(x) &= x^{155} + x^{153} + x^{151} + x^{149} + x^{147} + x^{146} + x^{143} + x^{139} + x^{138} + x^{136} \\
& + x^{134} + x^{133} + x^{132} + x^{131} + x^{126} + x^{123} + x^{120} + x^{119} + x^{118} \\
& + x^{117} + x^{115} + x^{114} + x^{111} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} \\
& + x^{100} + x^{98} + x^{95} + x^{94} + x^{90} + x^{87} + x^{84} + x^{82} + x^{79} + x^{78} + x^{75}
\end{aligned}$$

$$\begin{aligned}
& + x^{74} + x^{73} + x^{69} + x^{68} + x^{67} + x^{62} + x^{57} + x^{56} + x^{54} + x^{43} + x^{41} \\
& + x^{39} + x^{37} + x^{35} + x^{34} + x^{31} + x^{27} + x^{26} + x^{24} + x^{22} + x^{21} + x^{20} \\
& + x^{19} + x^{14} + x^9 + x^8 + x^6, \\
p_{12}(x) = & x^{156} + x^{152} + x^{148} + x^{140} + x^{136} + x^{132} + x^{124} + x^{120} + x^{116} + x^{112} \\
& + x^{80} + x^{76} + x^{72} + x^{68} + x^{64} + x^{48} + x^{44} + x^{40} + x^{36} + x^{28} + x^{24} \\
& + x^{20} + 1,
\end{aligned}$$

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

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

$$\begin{aligned}
p_0(x) = & x^{147} + x^{142} + x^{140} + x^{139} + x^{137} + x^{133} + x^{132} + x^{130} + x^{129} + x^{128} \\
& + x^{124} + x^{123} + x^{122} + x^{120} + x^{119} + x^{118} + x^{116} + x^{114} + x^{113} \\
& + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{102} + x^{99} + x^{98} + x^{92} + x^{91} \\
& + x^{90} + x^{89} + x^{88} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} \\
& + x^{78} + x^{76} + x^{74} + x^{71} + x^{67} + x^{64} + x^{63} + x^{61} + x^{53} + x^{51} + x^{50} \\
& + x^{47} + x^{46} + x^{43} + x^{42}, \\
p_3(x) = & x^{146} + x^{144} + x^{141} + x^{140} + x^{139} + x^{136} + x^{135} + x^{133} + x^{131} + x^{130} \\
& + x^{128} + x^{126} + x^{125} + x^{124} + x^{122} + x^{121} + x^{120} + x^{118} + x^{117} \\
& + x^{112} + x^{110} + x^{106} + x^{105} + x^{104} + x^{103} + x^{101} + x^{98} + x^{96} + x^{95} \\
& + x^{94} + x^{93} + x^{92} + x^{89} + x^{88} + x^{87} + x^{85} + x^{83} + x^{82} + x^{79} + x^{76} \\
& + x^{73} + x^{72} + x^{70} + x^{69} + x^{65} + x^{64} + x^{63} + x^{61} + x^{59} + x^{58} + x^{57} \\
& + x^{52} + x^{49} + x^{48} + x^{46} + x^{45} + x^{44} + x^{41} + x^{40} + x^{39} + x^{38} + x^{36} \\
& + x^{34} + x^{32} + x^{30} + x^{27} + x^{26} + x^{25} + x^{23} + x^{22}, \\
p_6(x) = & x^{146} + x^{144} + x^{140} + x^{135} + x^{134} + x^{131} + x^{130} + x^{129} + x^{127} + x^{126} \\
& + x^{122} + x^{118} + x^{117} + x^{116} + x^{114} + x^{108} + x^{106} + x^{105} + x^{104} \\
& + x^{103} + x^{101} + x^{99} + x^{97} + x^{94} + x^{92} + x^{90} + x^{87} + x^{81} + x^{80} + x^{76} \\
& + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{69} + x^{67} + x^{66} + x^{65} + x^{64} + x^{61} \\
& + x^{60} + x^{59} + x^{57} + x^{55} + x^{53} + x^{51} + x^{49} + x^{47} + x^{46} + x^{45} + x^{43} \\
& + x^{42} + x^{41} + x^{37} + x^{34} + x^{33} + x^{32} + x^{30} + x^{25} + x^{24} + x^{23} + x^{22} \\
& + x^{21} + x^{18} + x^{14} + x^{13} + x^{11} + x^{10} + x^8 + x^6 + x^5 + x^4 + x^3 + x^2 + 1, \\
p_9(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{141} + x^{139} + x^{138} + x^{136} + x^{126} + x^{125} \\
& + x^{124} + x^{123} + x^{122} + x^{120} + x^{114} + x^{113} + x^{112} + x^{111} + x^{109} \\
& + x^{107} + x^{106} + x^{104} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{92} + x^{82} + x^{81} \\
& + x^{80} + x^{79} + x^{78} + x^{76} + x^{62} + x^{61} + x^{60} + x^{59} + x^{58} + x^{56} + x^{34} \\
& + x^{33} + x^{32} + x^{31} + x^{29} + x^{27} + x^{26} + x^{24} + x^{14} + x^{13} + x^{12} + x^{11} \\
& + x^{10} + x^8, \\
p_{12}(x) = & x^{146} + x^{145} + x^{144} + x^{143} + x^{142} + x^{140} + x^{138} + x^{137} + x^{136} + x^{135}
\end{aligned}$$

$$\begin{aligned}
& + x^{133} + x^{131} + x^{129} + x^{127} + x^{126} + x^{124} + x^{118} + x^{117} + x^{116} \\
& + x^{115} + x^{113} + x^{111} + x^{110} + x^{108} + x^{106} + x^{105} + x^{104} + x^{103} \\
& + x^{101} + x^{99} + x^{98} + x^{96} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{84} + x^{74} \\
& + x^{73} + x^{72} + x^{71} + x^{70} + x^{68} + x^{66} + x^{65} + x^{64} + x^{63} + x^{62} + x^{60} \\
& + x^{54} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} \\
& + x^{28} + x^{26} + x^{25} + x^{24} + x^{23} + x^{21} + x^{19} + x^{17} + x^{15} + x^{14} + x^{12} \\
& + x^6 + x^5 + x^4 + x^3 + x^2 + 1,
\end{aligned}$$

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

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

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]	1432	[2137, 2138]	2864	[3536, 3537]	4296	[2128, 4729]
1	[3, 4]	1433	[2139, 2140]	2865	[3468, 3538]	4297	[3913, 2439]
2	[5, 6]	1434	[2141, 1265]	2866	[2610, 3539]	4298	[4730, 3912]
3	[7, 8]	1435	[2142, 2143]	2867	[930, 3540]	4299	[4731, 3804]
4	[9, 10]	1436	[2144, 2145]	2868	[3541, 3542]	4300	[4732, 4733]
5	[11, 12]	1437	[2146, 286]	2869	[3543, 3544]	4301	[4734, 4735]
6	[13, 14]	1438	[2147, 2148]	2870	[3545, 3546]	4302	[4736, 4737]
7	[15, 16]	1439	[2149, 2150]	2871	[3547, 3548]	4303	[4738, 2127]
8	[17, 18]	1440	[2151, 2152]	2872	[1259, 3549]	4304	[2555, 4022]
9	[19, 20]	1441	[2153, 2154]	2873	[1175, 3550]	4305	[4739, 2349]
10	[21, 22]	1442	[1076, 849]	2874	[255, 1166]	4306	[3725, 762]
11	[23, 24]	1443	[1067, 2155]	2875	[2344, 2323]	4307	[4740, 4741]
12	[25, 26]	1444	[2156, 317]	2876	[3551, 1189]	4308	[259, 3859]
13	[27, 28]	1445	[2157, 2158]	2877	[3552, 3553]	4309	[1185, 3996]
14	[29, 30]	1446	[2159, 2160]	2878	[2000, 3554]	4310	[4742, 4743]
15	[31, 32]	1447	[417, 2161]	2879	[3555, 2287]	4311	[363, 331]
16	[33, 34]	1448	[2162, 2163]	2880	[1121, 2513]	4312	[2232, 4673]
17	[35, 36]	1449	[364, 332]	2881	[2438, 1996]	4313	[998, 780]
18	[37, 38]	1450	[2164, 2165]	2882	[3556, 2578]	4314	[4744, 3641]
19	[39, 40]	1451	[2166, 2167]	2883	[342, 3557]	4315	[3747, 3783]
20	[41, 42]	1452	[2168, 2169]	2884	[2672, 3558]	4316	[4704, 4745]
21	[43, 44]	1453	[2170, 2171]	2885	[3559, 3560]	4317	[4746, 4747]
22	[45, 46]	1454	[771, 2172]	2886	[2581, 2097]	4318	[2803, 4625]
23	[47, 48]	1455	[2165, 2173]	2887	[2290, 1206]	4319	[3707, 4748]
24	[49, 50]	1456	[2174, 2004]	2888	[3561, 3562]	4320	[4749, 4750]
25	[51, 52]	1457	[2175, 2176]	2889	[3563, 3564]	4321	[4751, 3682]
26	[53, 54]	1458	[2177, 2178]	2890	[3565, 2263]	4322	[2732, 4659]
27	[55, 56]	1459	[2179, 2180]	2891	[3566, 3567]	4323	[4752, 2320]
28	[57, 58]	1460	[2181, 2182]	2892	[1195, 423]	4324	[2010, 4753]
29	[59, 60]	1461	[2183, 2184]	2893	[3568, 3569]	4325	[4754, 4755]

30	[61, 62]	1462	[2185, 2186]	2894	[3570, 3571]	4326	[414, 4756]
31	[63, 64]	1463	[2187, 2188]	2895	[291, 814]	4327	[4757, 2185]
32	[65, 66]	1464	[2189, 2190]	2896	[3523, 3572]	4328	[4758, 4759]
33	[67, 68]	1465	[2191, 2192]	2897	[2199, 930]	4329	[4760, 4761]
34	[69, 66]	1466	[2193, 2166]	2898	[3573, 3574]	4330	[4762, 3773]
35	[70, 71]	1467	[2194, 2195]	2899	[3575, 2581]	4331	[2735, 410]
36	[72, 73]	1468	[2196, 2197]	2900	[2231, 3576]	4332	[4763, 3829]
37	[74, 75]	1469	[2198, 2199]	2901	[3577, 759]	4333	[2119, 4764]
38	[76, 77]	1470	[2200, 2201]	2902	[1151, 3578]	4334	[4752, 4765]
39	[78, 79]	1471	[2026, 2202]	2903	[3579, 2457]	4335	[4766, 4767]
40	[80, 81]	1472	[65, 314]	2904	[3580, 3581]	4336	[4768, 4769]
41	[82, 83]	1473	[2203, 2163]	2905	[3582, 2064]	4337	[958, 859]
42	[84, 85]	1474	[2204, 2205]	2906	[386, 3583]	4338	[4770, 3983]
43	[86, 87]	1475	[2206, 2207]	2907	[3584, 3536]	4339	[4771, 4772]
44	[88, 89]	1476	[2208, 2209]	2908	[3585, 2623]	4340	[829, 2784]
45	[90, 91]	1477	[2210, 2211]	2909	[410, 3586]	4341	[766, 2444]
46	[92, 93]	1478	[2212, 2213]	2910	[3587, 2363]	4342	[3726, 3831]
47	[94, 95]	1479	[2214, 345]	2911	[3588, 2217]	4343	[4773, 1946]
48	[96, 97]	1480	[2215, 1050]	2912	[3589, 3590]	4344	[4774, 821]
49	[98, 99]	1481	[2216, 2217]	2913	[3591, 3592]	4345	[4775, 904]
50	[100, 101]	1482	[409, 2218]	2914	[3593, 3594]	4346	[2121, 2651]
51	[102, 103]	1483	[2219, 2220]	2915	[3595, 2649]	4347	[3711, 4730]
52	[104, 105]	1484	[2221, 2222]	2916	[3596, 2011]	4348	[4776, 4777]
53	[106, 107]	1485	[2223, 1950]	2917	[3597, 1141]	4349	[4778, 114]
54	[108, 84]	1486	[2224, 2225]	2918	[3598, 3599]	4350	[2352, 1245]
55	[109, 110]	1487	[2226, 2227]	2919	[3600, 1122]	4351	[4779, 2129]
56	[111, 112]	1488	[884, 874]	2920	[3601, 2407]	4352	[4780, 2069]
57	[113, 114]	1489	[1144, 2228]	2921	[1942, 120]	4353	[4781, 4782]
58	[115, 116]	1490	[2229, 88]	2922	[3602, 82]	4354	[3586, 2674]
59	[117, 118]	1491	[2230, 1013]	2923	[3603, 1991]	4355	[4783, 2223]
60	[119, 120]	1492	[2231, 2232]	2924	[3604, 2368]	4356	[64, 1015]
61	[121, 122]	1493	[2233, 89]	2925	[2783, 830]	4357	[3643, 4119]
62	[123, 124]	1494	[908, 2234]	2926	[3605, 1073]	4358	[800, 3872]
63	[125, 126]	1495	[293, 2235]	2927	[3606, 3607]	4359	[3828, 4784]
64	[127, 128]	1496	[1128, 890]	2928	[3608, 2571]	4360	[4785, 2729]
65	[129, 130]	1497	[71, 2087]	2929	[390, 3609]	4361	[4786, 4787]
66	[131, 132]	1498	[2236, 252]	2930	[3610, 3611]	4362	[4788, 1001]
67	[133, 134]	1499	[2237, 2238]	2931	[1001, 3612]	4363	[2502, 254]
68	[135, 136]	1500	[2239, 2172]	2932	[1113, 2701]	4364	[64, 4789]
69	[137, 138]	1501	[2240, 284]	2933	[3613, 2686]	4365	[4790, 1242]
70	[139, 140]	1502	[2244, 2241]	2934	[2062, 3614]	4366	[4791, 4792]
71	[141, 142]	1503	[2242, 2243]	2935	[2461, 3615]	4367	[4793, 2697]
72	[143, 144]	1504	[2244, 2245]	2936	[3616, 3617]	4368	[2748, 3997]
73	[45, 145]	1505	[2246, 336]	2937	[3618, 1023]	4369	[4794, 4795]

74	[146, 147]	1506	[2247, 1122]	2938	[3619, 2738]	4370	[4796, 1289]
75	[148, 149]	1507	[2248, 2249]	2939	[2337, 1282]	4371	[3565, 3717]
76	[150, 151]	1508	[2250, 2251]	2940	[2797, 245]	4372	[4797, 4798]
77	[152, 153]	1509	[2252, 2105]	2941	[3620, 3621]	4373	[4799, 956]
78	[154, 155]	1510	[2253, 2254]	2942	[3622, 3623]	4374	[16, 4800]
79	[156, 157]	1511	[2255, 257]	2943	[3624, 3467]	4375	[1275, 4801]
80	[158, 159]	1512	[2256, 1995]	2944	[3625, 3626]	4376	[4802, 4162]
81	[160, 161]	1513	[2257, 2258]	2945	[3627, 1061]	4377	[4803, 4804]
82	[162, 149]	1514	[2182, 2259]	2946	[3628, 3629]	4378	[4805, 356]
83	[163, 164]	1515	[2260, 2261]	2947	[3630, 1991]	4379	[4806, 3515]
84	[42, 165]	1516	[2262, 1110]	2948	[1252, 3508]	4380	[4807, 1103]
85	[166, 162]	1517	[2171, 2263]	2949	[3631, 3632]	4381	[4808, 387]
86	[167, 168]	1518	[2264, 769]	2950	[3633, 3634]	4382	[4809, 4810]
87	[169, 170]	1519	[2265, 406]	2951	[3635, 2372]	4383	[4811, 365]
88	[171, 172]	1520	[2266, 2267]	2952	[3636, 2504]	4384	[2633, 2213]
89	[173, 33]	1521	[2268, 2269]	2953	[3637, 3638]	4385	[4715, 4703]
90	[174, 168]	1522	[2270, 2018]	2954	[3639, 308]	4386	[4812, 4813]
91	[175, 176]	1523	[1961, 2271]	2955	[1234, 267]	4387	[287, 4814]
92	[177, 178]	1524	[2103, 1174]	2956	[3640, 3641]	4388	[4815, 4816]
93	[179, 180]	1525	[2272, 21]	2957	[3642, 2040]	4389	[4817, 4818]
94	[181, 182]	1526	[2273, 2274]	2958	[3643, 2363]	4390	[4626, 4819]
95	[183, 184]	1527	[2275, 2276]	2959	[3644, 3645]	4391	[4820, 4821]
96	[185, 186]	1528	[1238, 247]	2960	[3646, 3647]	4392	[4822, 4823]
97	[187, 188]	1529	[2097, 2013]	2961	[3648, 2371]	4393	[4824, 2481]
98	[189, 190]	1530	[2277, 2278]	2962	[3649, 950]	4394	[4825, 3861]
99	[191, 192]	1531	[2279, 2280]	2963	[2691, 1011]	4395	[3487, 438]
100	[193, 194]	1532	[2281, 2282]	2964	[3650, 3651]	4396	[3868, 2362]
101	[195, 196]	1533	[2283, 2284]	2965	[3652, 3543]	4397	[4826, 4827]
102	[197, 198]	1534	[2285, 848]	2966	[3653, 3654]	4398	[4828, 3822]
103	[199, 200]	1535	[2286, 2287]	2967	[3655, 2655]	4399	[4829, 842]
104	[11, 201]	1536	[2288, 2289]	2968	[3656, 831]	4400	[4830, 2424]
105	[202, 203]	1537	[2290, 840]	2969	[3657, 3658]	4401	[2688, 4831]
106	[129, 204]	1538	[2291, 2292]	2970	[3659, 3660]	4402	[3752, 4832]
107	[205, 165]	1539	[2293, 951]	2971	[3661, 3557]	4403	[4833, 4834]
108	[206, 166]	1540	[2219, 2294]	2972	[3662, 2057]	4404	[2296, 4835]
109	[207, 208]	1541	[2295, 2296]	2973	[2582, 1070]	4405	[23, 123]
110	[209, 210]	1542	[1265, 2297]	2974	[2287, 3663]	4406	[2199, 4836]
111	[211, 212]	1543	[2298, 2299]	2975	[3664, 768]	4407	[4837, 4838]
112	[213, 214]	1544	[2300, 2301]	2976	[3665, 2443]	4408	[4839, 4840]
113	[215, 216]	1545	[2302, 275]	2977	[3666, 3534]	4409	[4841, 2554]
114	[217, 218]	1546	[2303, 2304]	2978	[3667, 2593]	4410	[4842, 4843]
115	[219, 220]	1547	[2305, 2306]	2979	[996, 2454]	4411	[3922, 1230]
116	[221, 222]	1548	[2307, 2308]	2980	[3668, 3669]	4412	[4778, 4844]
117	[223, 224]	1549	[2309, 2310]	2981	[3670, 3671]	4413	[4845, 3722]

118	[225, 226]	1550	[2311, 1195]	2982	[3672, 3673]	4414	[4846, 4847]
119	[227, 149]	1551	[2312, 2313]	2983	[1102, 3674]	4415	[4848, 4849]
120	[228, 229]	1552	[2295, 2314]	2984	[3519, 814]	4416	[1126, 4850]
121	[230, 231]	1553	[877, 2315]	2985	[2417, 1057]	4417	[4851, 4852]
122	[232, 233]	1554	[1059, 2038]	2986	[3675, 3676]	4418	[4853, 4046]
123	[234, 235]	1555	[2316, 1948]	2987	[2634, 3668]	4419	[4854, 3655]
124	[48, 236]	1556	[2317, 2318]	2988	[836, 838]	4420	[4855, 4856]
125	[237, 238]	1557	[2319, 2320]	2989	[3677, 3678]	4421	[2743, 1946]
126	[239, 240]	1558	[2211, 303]	2990	[3679, 3680]	4422	[259, 4857]
127	[241, 242]	1559	[2275, 2321]	2991	[3681, 3682]	4423	[2390, 4858]
128	[243, 244]	1560	[2322, 2323]	2992	[3683, 3684]	4424	[3744, 4859]
129	[245, 246]	1561	[2324, 1954]	2993	[1149, 1239]	4425	[4860, 2676]
130	[107, 247]	1562	[869, 2325]	2994	[783, 3685]	4426	[4861, 2537]
131	[248, 249]	1563	[2326, 2327]	2995	[3686, 3496]	4427	[108, 1188]
132	[250, 251]	1564	[2328, 2329]	2996	[3687, 1042]	4428	[298, 2074]
133	[252, 253]	1565	[2330, 802]	2997	[2495, 2344]	4429	[3792, 4862]
134	[254, 255]	1566	[956, 890]	2998	[3688, 26]	4430	[4863, 4101]
135	[256, 257]	1567	[2331, 2332]	2999	[397, 2419]	4431	[4864, 4865]
136	[258, 259]	1568	[2333, 1081]	3000	[118, 2629]	4432	[4866, 4060]
137	[260, 261]	1569	[893, 2334]	3001	[3689, 995]	4433	[382, 4867]
138	[262, 263]	1570	[2335, 1063]	3002	[792, 1186]	4434	[4868, 4869]
139	[264, 265]	1571	[2336, 116]	3003	[3690, 3691]	4435	[3917, 4870]
140	[266, 267]	1572	[2337, 1246]	3004	[3692, 3693]	4436	[4871, 3626]
141	[268, 64]	1573	[2338, 2339]	3005	[3694, 3695]	4437	[2416, 2321]
142	[269, 270]	1574	[2340, 2341]	3006	[3696, 3697]	4438	[1116, 3834]
143	[271, 272]	1575	[2342, 2343]	3007	[3698, 3699]	4439	[4872, 2486]
144	[273, 274]	1576	[2183, 1932]	3008	[2381, 3700]	4440	[256, 4873]
145	[275, 276]	1577	[253, 2344]	3009	[3701, 3702]	4441	[4874, 363]
146	[277, 278]	1578	[2345, 2346]	3010	[3703, 3704]	4442	[4054, 2394]
147	[279, 280]	1579	[2347, 2348]	3011	[888, 377]	4443	[2495, 2322]
148	[281, 282]	1580	[2202, 2349]	3012	[3705, 3706]	4444	[4875, 4876]
149	[283, 284]	1581	[2350, 2351]	3013	[3707, 3708]	4445	[4877, 4878]
150	[285, 286]	1582	[2352, 1048]	3014	[110, 3709]	4446	[4879, 3903]
151	[287, 288]	1583	[378, 2353]	3015	[2357, 3710]	4447	[2343, 4880]
152	[289, 290]	1584	[2354, 2355]	3016	[3711, 3651]	4448	[4634, 1161]
153	[291, 70]	1585	[2356, 2357]	3017	[2451, 3712]	4449	[4881, 1150]
154	[292, 293]	1586	[2358, 2359]	3018	[1032, 2150]	4450	[4882, 4883]
155	[294, 295]	1587	[2360, 2361]	3019	[320, 2687]	4451	[4884, 2411]
156	[296, 297]	1588	[2362, 2315]	3020	[3713, 3714]	4452	[121, 4885]
157	[298, 299]	1589	[380, 892]	3021	[3455, 3715]	4453	[2574, 2442]
158	[300, 301]	1590	[2145, 364]	3022	[3716, 892]	4454	[4886, 3619]
159	[302, 303]	1591	[2351, 778]	3023	[2171, 3717]	4455	[267, 3888]
160	[304, 305]	1592	[2363, 2364]	3024	[3718, 3719]	4456	[4141, 4887]
161	[306, 307]	1593	[2365, 2187]	3025	[3720, 3721]	4457	[4888, 4033]

162	[308, 309]	1594	[2366, 936]	3026	[2769, 384]	4458	[4091, 4889]
163	[75, 310]	1595	[2367, 2368]	3027	[3521, 918]	4459	[4890, 1041]
164	[311, 312]	1596	[2369, 2289]	3028	[3581, 3722]	4460	[4891, 2474]
165	[247, 313]	1597	[2370, 2371]	3029	[344, 952]	4461	[4892, 4893]
166	[314, 283]	1598	[2372, 992]	3030	[3723, 765]	4462	[4894, 2228]
167	[315, 316]	1599	[2373, 2374]	3031	[3724, 3725]	4463	[4895, 1939]
168	[317, 270]	1600	[2375, 2376]	3032	[3726, 799]	4464	[4005, 2338]
169	[318, 319]	1601	[2377, 253]	3033	[2638, 3727]	4465	[4896, 4897]
170	[320, 321]	1602	[2378, 1281]	3034	[3728, 3729]	4466	[4898, 4899]
171	[322, 323]	1603	[2379, 2254]	3035	[3730, 3731]	4467	[4630, 3819]
172	[324, 325]	1604	[2380, 2381]	3036	[3732, 3733]	4468	[1283, 4900]
173	[326, 327]	1605	[2382, 2383]	3037	[3734, 3735]	4469	[2018, 4870]
174	[328, 68]	1606	[2358, 2384]	3038	[1216, 3736]	4470	[4901, 4902]
175	[329, 330]	1607	[1043, 1054]	3039	[3737, 3608]	4471	[4903, 117]
176	[331, 332]	1608	[2385, 2386]	3040	[817, 3738]	4472	[4904, 4905]
177	[333, 334]	1609	[2387, 2388]	3041	[3739, 2396]	4473	[3957, 2538]
178	[335, 336]	1610	[2389, 1123]	3042	[3740, 3741]	4474	[3919, 1089]
179	[337, 338]	1611	[2390, 2391]	3043	[3742, 3743]	4475	[4906, 4907]
180	[339, 340]	1612	[389, 2392]	3044	[3744, 1285]	4476	[4908, 243]
181	[6, 341]	1613	[2393, 2394]	3045	[2252, 1959]	4477	[4909, 86]
182	[342, 343]	1614	[2395, 1215]	3046	[3745, 3746]	4478	[4910, 4911]
183	[344, 345]	1615	[2396, 2397]	3047	[3747, 3733]	4479	[4912, 4913]
184	[346, 347]	1616	[2398, 1263]	3048	[1204, 3720]	4480	[4914, 2535]
185	[348, 349]	1617	[2399, 1050]	3049	[3748, 264]	4481	[3963, 2490]
186	[350, 351]	1618	[2400, 2401]	3050	[2053, 3749]	4482	[4915, 4006]
187	[352, 353]	1619	[1963, 2402]	3051	[3750, 3751]	4483	[4916, 4917]
188	[354, 323]	1620	[238, 2403]	3052	[3752, 297]	4484	[4918, 4919]
189	[355, 356]	1621	[2404, 2405]	3053	[3753, 2318]	4485	[3498, 2548]
190	[357, 358]	1622	[2406, 2407]	3054	[3754, 2670]	4486	[3721, 2752]
191	[359, 360]	1623	[2408, 2409]	3055	[2713, 3487]	4487	[4920, 4122]
192	[361, 362]	1624	[2180, 2410]	3056	[3755, 3756]	4488	[3702, 3554]
193	[363, 364]	1625	[2411, 2412]	3057	[3757, 2758]	4489	[4921, 4922]
194	[365, 366]	1626	[2413, 2414]	3058	[2646, 3498]	4490	[3889, 4700]
195	[367, 368]	1627	[2415, 2416]	3059	[2041, 3758]	4491	[3685, 964]
196	[369, 370]	1628	[2417, 2418]	3060	[3759, 3760]	4492	[94, 3751]
197	[371, 372]	1629	[341, 2419]	3061	[3608, 2048]	4493	[4923, 2121]
198	[373, 374]	1630	[2398, 2420]	3062	[3454, 1155]	4494	[4924, 391]
199	[375, 376]	1631	[2421, 2422]	3063	[3761, 2220]	4495	[4925, 4926]
200	[377, 378]	1632	[2423, 2424]	3064	[3762, 941]	4496	[4927, 2480]
201	[379, 75]	1633	[2179, 2425]	3065	[391, 3763]	4497	[3931, 4928]
202	[380, 381]	1634	[2426, 2427]	3066	[3764, 840]	4498	[1191, 4929]
203	[382, 383]	1635	[2428, 2429]	3067	[3765, 3766]	4499	[271, 4930]
204	[384, 385]	1636	[2430, 2431]	3068	[3767, 2355]	4500	[4923, 1998]
205	[386, 387]	1637	[2432, 2433]	3069	[3768, 3769]	4501	[4168, 2579]

206	[246, 308]	1638	[2434, 2435]	3070	[3770, 3771]	4502	[4931, 3921]
207	[388, 389]	1639	[2436, 2437]	3071	[3772, 3773]	4503	[922, 4932]
208	[390, 391]	1640	[920, 828]	3072	[3774, 2543]	4504	[4933, 4934]
209	[392, 393]	1641	[2438, 2439]	3073	[3775, 274]	4505	[2568, 4935]
210	[394, 395]	1642	[2440, 2441]	3074	[1929, 3776]	4506	[4076, 4936]
211	[396, 397]	1643	[1939, 2442]	3075	[1189, 1223]	4507	[4937, 2793]
212	[398, 399]	1644	[2443, 2444]	3076	[2308, 3614]	4508	[4938, 4939]
213	[400, 99]	1645	[2396, 2445]	3077	[3777, 2128]	4509	[2671, 3578]
214	[401, 402]	1646	[2446, 2447]	3078	[850, 3778]	4510	[4940, 2226]
215	[403, 404]	1647	[827, 921]	3079	[3520, 3779]	4511	[3897, 4941]
216	[405, 406]	1648	[797, 986]	3080	[2287, 3611]	4512	[4668, 3720]
217	[407, 408]	1649	[2428, 264]	3081	[2604, 2479]	4513	[4942, 4943]
218	[409, 410]	1650	[2388, 2448]	3082	[3780, 3781]	4514	[4944, 4945]
219	[411, 242]	1651	[2449, 2142]	3083	[1249, 3782]	4515	[3767, 4946]
220	[412, 413]	1652	[254, 1165]	3084	[3732, 3783]	4516	[4947, 759]
221	[414, 415]	1653	[299, 2450]	3085	[3784, 3785]	4517	[4948, 4949]
222	[416, 417]	1654	[2451, 2452]	3086	[3786, 2388]	4518	[4950, 1198]
223	[418, 88]	1655	[1044, 2453]	3087	[3769, 21]	4519	[4696, 1222]
224	[419, 420]	1656	[2014, 2454]	3088	[3787, 3788]	4520	[897, 2025]
225	[421, 301]	1657	[2353, 2455]	3089	[3676, 3789]	4521	[2353, 1256]
226	[422, 423]	1658	[2456, 967]	3090	[120, 2528]	4522	[4951, 4952]
227	[387, 424]	1659	[1227, 2457]	3091	[3790, 3791]	4523	[2050, 4014]
228	[425, 426]	1660	[2013, 2458]	3092	[3773, 1966]	4524	[2699, 3669]
229	[427, 413]	1661	[416, 2459]	3093	[3792, 2332]	4525	[4953, 2744]
230	[428, 429]	1662	[2460, 2027]	3094	[3793, 3794]	4526	[4954, 2083]
231	[430, 431]	1663	[2461, 1270]	3095	[3795, 3796]	4527	[4955, 4956]
232	[432, 433]	1664	[2462, 2463]	3096	[3797, 3798]	4528	[4957, 4772]
233	[434, 435]	1665	[2464, 2465]	3097	[3799, 3800]	4529	[4958, 3780]
234	[436, 437]	1666	[2466, 2467]	3098	[3801, 1988]	4530	[4959, 4960]
235	[438, 385]	1667	[2468, 2000]	3099	[66, 283]	4531	[4961, 4962]
236	[95, 439]	1668	[2469, 2001]	3100	[3802, 2400]	4532	[4940, 4798]
237	[440, 441]	1669	[2470, 2471]	3101	[3803, 3804]	4533	[4963, 4964]
238	[171, 442]	1670	[2472, 2473]	3102	[3805, 3806]	4534	[2686, 321]
239	[443, 444]	1671	[967, 2474]	3103	[3786, 3807]	4535	[4965, 2545]
240	[445, 446]	1672	[2467, 2475]	3104	[3808, 3809]	4536	[4966, 263]
241	[447, 448]	1673	[2476, 2477]	3105	[3810, 3811]	4537	[4967, 3673]
242	[449, 450]	1674	[2478, 2479]	3106	[1209, 91]	4538	[4740, 1203]
243	[451, 452]	1675	[2480, 2481]	3107	[3812, 2620]	4539	[4968, 3658]
244	[453, 454]	1676	[2482, 2483]	3108	[2368, 3813]	4540	[3501, 4969]
245	[54, 204]	1677	[2425, 2410]	3109	[3814, 3511]	4541	[4970, 378]
246	[455, 456]	1678	[2484, 1234]	3110	[3815, 3816]	4542	[4971, 2745]
247	[204, 206]	1679	[2485, 2222]	3111	[3817, 1053]	4543	[112, 3892]
248	[457, 458]	1680	[2486, 1067]	3112	[3818, 2046]	4544	[3601, 4972]
249	[459, 460]	1681	[791, 2487]	3113	[3819, 3820]	4545	[2292, 4973]

250	[209, 159]	1682	[1201, 2488]	3114	[3821, 3822]	4546	[4974, 4975]
251	[461, 222]	1683	[2489, 2416]	3115	[3823, 3824]	4547	[4976, 1242]
252	[462, 141]	1684	[2341, 2054]	3116	[3825, 3826]	4548	[4684, 4671]
253	[463, 226]	1685	[2145, 331]	3117	[3827, 1148]	4549	[4977, 2034]
254	[464, 465]	1686	[2490, 2491]	3118	[988, 2282]	4550	[1197, 4978]
255	[466, 132]	1687	[2492, 2115]	3119	[3828, 3829]	4551	[4979, 4980]
256	[467, 468]	1688	[2493, 2269]	3120	[2437, 2402]	4552	[4981, 2197]
257	[469, 470]	1689	[2494, 325]	3121	[3830, 1233]	4553	[2357, 2623]
258	[471, 472]	1690	[2377, 2495]	3122	[798, 3831]	4554	[4982, 4749]
259	[473, 474]	1691	[2496, 2497]	3123	[1222, 1190]	4555	[4983, 291]
260	[475, 476]	1692	[2498, 2499]	3124	[3588, 3832]	4556	[4984, 2382]
261	[477, 478]	1693	[2500, 1956]	3125	[2497, 875]	4557	[4985, 4986]
262	[479, 220]	1694	[2501, 824]	3126	[3833, 3834]	4558	[3560, 4935]
263	[480, 481]	1695	[2502, 2503]	3127	[3835, 2799]	4559	[3830, 2484]
264	[482, 483]	1696	[2076, 2504]	3128	[3836, 3837]	4560	[839, 4987]
265	[484, 485]	1697	[2505, 2506]	3129	[3838, 3839]	4561	[2245, 959]
266	[37, 486]	1698	[2507, 2508]	3130	[3840, 3576]	4562	[4988, 3571]
267	[157, 487]	1699	[2509, 1167]	3131	[3841, 3708]	4563	[980, 4074]
268	[488, 489]	1700	[2510, 2511]	3132	[3842, 1175]	4564	[90, 436]
269	[490, 491]	1701	[2512, 79]	3133	[3661, 343]	4565	[325, 4989]
270	[492, 493]	1702	[954, 2513]	3134	[3843, 2115]	4566	[19, 3685]
271	[494, 147]	1703	[2514, 878]	3135	[756, 3844]	4567	[323, 836]
272	[53, 495]	1704	[2515, 2516]	3136	[3845, 3846]	4568	[243, 2186]
273	[496, 497]	1705	[2517, 1288]	3137	[3847, 3848]	4569	[431, 4990]
274	[498, 499]	1706	[2518, 2519]	3138	[3849, 3850]	4570	[4991, 4992]
275	[500, 501]	1707	[2520, 2521]	3139	[3851, 925]	4571	[4993, 1235]
276	[502, 503]	1708	[2522, 2523]	3140	[3852, 826]	4572	[3723, 4994]
277	[504, 505]	1709	[2524, 2525]	3141	[3853, 3854]	4573	[401, 3779]
278	[506, 210]	1710	[438, 2526]	3142	[3855, 245]	4574	[4914, 4995]
279	[507, 508]	1711	[938, 2527]	3143	[2306, 3856]	4575	[3962, 4996]
280	[509, 510]	1712	[864, 1069]	3144	[2345, 1291]	4576	[2062, 4699]
281	[511, 512]	1713	[2528, 312]	3145	[3857, 3856]	4577	[2436, 1963]
282	[513, 514]	1714	[2529, 2530]	3146	[3858, 3859]	4578	[4953, 2291]
283	[130, 206]	1715	[2531, 327]	3147	[3860, 3861]	4579	[4997, 4956]
284	[515, 516]	1716	[1120, 2532]	3148	[3862, 2662]	4580	[4998, 4999]
285	[517, 518]	1717	[2533, 795]	3149	[3863, 3724]	4581	[2049, 2208]
286	[519, 520]	1718	[2534, 2535]	3150	[3864, 515]	4582	[367, 3788]
287	[521, 489]	1719	[2536, 2537]	3151	[2096, 2012]	4583	[2218, 3586]
288	[522, 523]	1720	[900, 1227]	3152	[3865, 3866]	4584	[4791, 3634]
289	[524, 448]	1721	[2538, 785]	3153	[2190, 3867]	4585	[814, 2086]
290	[525, 526]	1722	[397, 1295]	3154	[3868, 877]	4586	[4808, 3583]
291	[527, 528]	1723	[873, 989]	3155	[3554, 330]	4587	[4894, 1145]
292	[529, 530]	1724	[2539, 2540]	3156	[2341, 87]	4588	[5000, 839]
293	[531, 32]	1725	[2541, 1193]	3157	[3869, 1066]	4589	[5001, 5002]

294	[532, 533]	1726	[2542, 2543]	3158	[3870, 3871]	4590	[1069, 1131]
295	[534, 535]	1727	[2544, 2545]	3159	[3872, 889]	4591	[5003, 2514]
296	[536, 537]	1728	[2546, 2547]	3160	[3873, 1240]	4592	[5004, 2518]
297	[538, 539]	1729	[1210, 2548]	3161	[3874, 1179]	4593	[5005, 5006]
298	[540, 168]	1730	[2143, 2549]	3162	[3875, 963]	4594	[5007, 5008]
299	[541, 542]	1731	[879, 2550]	3163	[3876, 3877]	4595	[5009, 2031]
300	[543, 544]	1732	[2551, 2552]	3164	[3878, 2277]	4596	[3698, 5010]
301	[545, 546]	1733	[2553, 434]	3165	[3459, 3879]	4597	[5011, 2067]
302	[547, 194]	1734	[2554, 2555]	3166	[3515, 2235]	4598	[2164, 3958]
303	[221, 548]	1735	[2556, 2557]	3167	[3880, 1074]	4599	[4955, 5012]
304	[549, 550]	1736	[2190, 1138]	3168	[2531, 1993]	4600	[5013, 5014]
305	[14, 551]	1737	[2105, 1960]	3169	[1979, 2360]	4601	[4812, 4905]
306	[552, 36]	1738	[1253, 2558]	3170	[3881, 3882]	4602	[4062, 5015]
307	[553, 59]	1739	[2559, 2560]	3171	[3765, 3883]	4603	[5016, 280]
308	[204, 42]	1740	[2561, 2562]	3172	[3884, 3885]	4604	[3553, 908]
309	[456, 554]	1741	[2563, 1977]	3173	[3886, 918]	4605	[4707, 3476]
310	[555, 227]	1742	[2564, 2565]	3174	[3887, 3709]	4606	[3583, 2456]
311	[149, 556]	1743	[2566, 2567]	3175	[838, 3840]	4607	[4795, 4876]
312	[42, 166]	1744	[2568, 2569]	3176	[119, 1090]	4608	[4127, 4975]
313	[165, 227]	1745	[2570, 2452]	3177	[3888, 3889]	4609	[5017, 5018]
314	[557, 515]	1746	[2047, 2571]	3178	[3890, 2708]	4610	[3852, 5019]
315	[558, 559]	1747	[2516, 2572]	3179	[3891, 249]	4611	[5020, 320]
316	[560, 561]	1748	[2573, 869]	3180	[2443, 767]	4612	[4100, 5021]
317	[562, 563]	1749	[1159, 2519]	3181	[2293, 3892]	4613	[345, 4087]
318	[564, 565]	1750	[2574, 1940]	3182	[3893, 3894]	4614	[5022, 84]
319	[566, 567]	1751	[2203, 2575]	3183	[3895, 3896]	4615	[5023, 5024]
320	[167, 568]	1752	[2576, 2577]	3184	[2713, 2769]	4616	[5025, 1099]
321	[569, 570]	1753	[2578, 2579]	3185	[27, 2187]	4617	[2720, 2551]
322	[571, 572]	1754	[2580, 2581]	3186	[3897, 2653]	4618	[5026, 2437]
323	[225, 573]	1755	[2582, 2583]	3187	[2621, 3898]	4619	[5027, 3932]
324	[574, 575]	1756	[1985, 2584]	3188	[2517, 3899]	4620	[2268, 5028]
325	[173, 576]	1757	[2585, 250]	3189	[3900, 3901]	4621	[5029, 5030]
326	[577, 578]	1758	[362, 2586]	3190	[3902, 3903]	4622	[3566, 1191]
327	[579, 580]	1759	[2587, 2588]	3191	[3577, 763]	4623	[5031, 2389]
328	[581, 582]	1760	[2589, 2590]	3192	[3904, 3905]	4624	[5032, 1401]
329	[583, 584]	1761	[2591, 2182]	3193	[3906, 2650]	4625	[4350, 2921]
330	[585, 586]	1762	[2592, 2593]	3194	[3544, 2610]	4626	[5033, 4348]
331	[587, 31]	1763	[2594, 2595]	3195	[293, 3516]	4627	[5034, 8]
332	[588, 145]	1764	[2596, 2597]	3196	[2503, 255]	4628	[5035, 127]
333	[589, 590]	1765	[2598, 2599]	3197	[3907, 2584]	4629	[4418, 1818]
334	[591, 592]	1766	[2600, 1952]	3198	[3908, 1020]	4630	[3206, 1737]
335	[593, 594]	1767	[2601, 2109]	3199	[3909, 3910]	4631	[5036, 5037]
336	[595, 596]	1768	[2602, 2036]	3200	[2025, 3911]	4632	[5038, 1814]
337	[597, 598]	1769	[2603, 288]	3201	[3651, 3912]	4633	[5039, 1832]

338	[599, 600]	1770	[2604, 2605]	3202	[3913, 1996]	4634	[4471, 553]
339	[601, 10]	1771	[2606, 2607]	3203	[3914, 3538]	4635	[5040, 4504]
340	[602, 603]	1772	[2608, 812]	3204	[3915, 3769]	4636	[5041, 2825]
341	[12, 604]	1773	[1106, 1143]	3205	[2009, 3567]	4637	[146, 3204]
342	[605, 606]	1774	[2609, 2610]	3206	[1150, 2671]	4638	[5042, 5043]
343	[607, 608]	1775	[2611, 295]	3207	[3916, 2071]	4639	[2889, 5044]
344	[609, 610]	1776	[2612, 393]	3208	[2017, 3917]	4640	[5045, 3180]
345	[611, 478]	1777	[2091, 2613]	3209	[1186, 1016]	4641	[1315, 1903]
346	[612, 613]	1778	[2614, 2615]	3210	[3918, 923]	4642	[3132, 1352]
347	[614, 615]	1779	[2616, 2617]	3211	[3919, 3920]	4643	[5046, 3183]
348	[616, 617]	1780	[2618, 2619]	3212	[3921, 2467]	4644	[577, 2960]
349	[618, 619]	1781	[1968, 2620]	3213	[3922, 3923]	4645	[4194, 1580]
350	[620, 621]	1782	[2621, 2622]	3214	[3924, 2003]	4646	[5047, 1506]
351	[622, 623]	1783	[1276, 2351]	3215	[3925, 3926]	4647	[4408, 1608]
352	[624, 625]	1784	[2623, 2624]	3216	[2008, 2552]	4648	[2918, 218]
353	[626, 465]	1785	[2625, 1271]	3217	[3927, 2378]	4649	[5048, 5049]
354	[627, 628]	1786	[2626, 2627]	3218	[3462, 938]	4650	[1697, 231]
355	[629, 630]	1787	[2628, 801]	3219	[3928, 1949]	4651	[649, 5050]
356	[631, 632]	1788	[2629, 1173]	3220	[3929, 2722]	4652	[5051, 1428]
357	[633, 634]	1789	[2630, 944]	3221	[3930, 2245]	4653	[5052, 4325]
358	[635, 636]	1790	[2631, 1171]	3222	[2229, 2233]	4654	[4603, 4534]
359	[637, 590]	1791	[2248, 2632]	3223	[3884, 805]	4655	[5053, 3388]
360	[638, 639]	1792	[2273, 1958]	3224	[3931, 3932]	4656	[4443, 4254]
361	[640, 641]	1793	[2633, 2634]	3225	[3917, 3933]	4657	[4229, 56]
362	[642, 643]	1794	[2635, 1152]	3226	[927, 3934]	4658	[3311, 1331]
363	[644, 588]	1795	[2636, 1147]	3227	[933, 3935]	4659	[1668, 1643]
364	[645, 646]	1796	[2637, 2638]	3228	[3936, 3937]	4660	[5054, 3273]
365	[625, 647]	1797	[2639, 934]	3229	[2468, 3702]	4661	[3277, 2868]
366	[465, 164]	1798	[261, 1969]	3230	[3938, 112]	4662	[1696, 3196]
367	[648, 649]	1799	[2640, 2641]	3231	[3939, 1233]	4663	[5055, 747]
368	[650, 651]	1800	[2642, 2047]	3232	[3940, 3941]	4664	[5056, 5057]
369	[652, 653]	1801	[2643, 2136]	3233	[3942, 3943]	4665	[5058, 3332]
370	[654, 31]	1802	[2644, 2645]	3234	[3944, 2775]	4666	[4395, 1443]
371	[655, 656]	1803	[2646, 1210]	3235	[3945, 3946]	4667	[5059, 1578]
372	[657, 658]	1804	[2647, 2648]	3236	[3947, 2767]	4668	[5060, 143]
373	[659, 660]	1805	[2649, 2383]	3237	[3948, 63]	4669	[1373, 4333]
374	[661, 662]	1806	[2650, 998]	3238	[3949, 3950]	4670	[1462, 4561]
375	[663, 664]	1807	[1998, 2651]	3239	[3951, 3699]	4671	[2979, 4541]
376	[556, 665]	1808	[2652, 2653]	3240	[3952, 3953]	4672	[4280, 1898]
377	[666, 485]	1809	[2654, 2304]	3241	[2429, 265]	4673	[550, 640]
378	[667, 668]	1810	[278, 2655]	3242	[1976, 3954]	4674	[1751, 4567]
379	[669, 670]	1811	[2656, 2657]	3243	[106, 1238]	4675	[2834, 5061]
380	[671, 466]	1812	[2658, 2659]	3244	[3955, 3880]	4676	[5062, 3122]
381	[672, 40]	1813	[2660, 886]	3245	[3956, 800]	4677	[4523, 200]

382	[673, 134]	1814	[2661, 1009]	3246	[770, 2239]	4678	[649, 1656]
383	[560, 674]	1815	[1928, 2662]	3247	[1000, 3812]	4679	[5063, 1722]
384	[675, 456]	1816	[1280, 2663]	3248	[3957, 784]	4680	[5064, 4258]
385	[166, 227]	1817	[2664, 2665]	3249	[3958, 2173]	4681	[5054, 1900]
386	[676, 149]	1818	[2666, 2511]	3250	[3959, 3960]	4682	[1889, 3143]
387	[557, 516]	1819	[2667, 2668]	3251	[3961, 3962]	4683	[3135, 2930]
388	[677, 678]	1820	[2669, 2404]	3252	[3963, 2525]	4684	[3348, 1796]
389	[552, 679]	1821	[2670, 2671]	3253	[2162, 2575]	4685	[5065, 1422]
390	[31, 680]	1822	[1011, 2453]	3254	[3964, 3965]	4686	[5066, 4614]
391	[681, 682]	1823	[2672, 2201]	3255	[3966, 3967]	4687	[5067, 498]
392	[683, 684]	1824	[2673, 2674]	3256	[3968, 3969]	4688	[5068, 1812]
393	[685, 686]	1825	[2675, 386]	3257	[3970, 3877]	4689	[5069, 1305]
394	[687, 688]	1826	[2676, 1078]	3258	[2774, 3971]	4690	[5070, 4195]
395	[689, 690]	1827	[2677, 2471]	3259	[2729, 3972]	4691	[5071, 614]
396	[218, 691]	1828	[2678, 2679]	3260	[3973, 3974]	4692	[5072, 5073]
397	[692, 649]	1829	[2020, 2680]	3261	[1287, 3899]	4693	[5074, 2818]
398	[693, 694]	1830	[2681, 122]	3262	[3975, 2791]	4694	[5075, 5076]
399	[695, 535]	1831	[2682, 2683]	3263	[3976, 2384]	4695	[5077, 1861]
400	[696, 697]	1832	[2684, 2685]	3264	[3977, 2288]	4696	[202, 1823]
401	[698, 699]	1833	[2686, 2687]	3265	[3978, 3979]	4697	[1863, 5061]
402	[453, 700]	1834	[1167, 2538]	3266	[3980, 108]	4698	[5078, 4205]
403	[701, 691]	1835	[2688, 2143]	3267	[2454, 3981]	4699	[5079, 1857]
404	[702, 703]	1836	[2689, 2690]	3268	[3982, 3983]	4700	[4248, 640]
405	[704, 705]	1837	[2691, 1044]	3269	[3984, 3985]	4701	[4255, 1876]
406	[534, 706]	1838	[965, 2692]	3270	[2003, 3986]	4702	[1598, 4351]
407	[707, 179]	1839	[822, 2693]	3271	[1190, 3987]	4703	[4248, 3288]
408	[708, 709]	1840	[2694, 2445]	3272	[3988, 3989]	4704	[5080, 1385]
409	[710, 711]	1841	[1942, 1090]	3273	[2050, 2209]	4705	[3051, 4415]
410	[712, 713]	1842	[2695, 871]	3274	[3817, 1293]	4706	[1521, 3253]
411	[714, 715]	1843	[2696, 2003]	3275	[3550, 3990]	4707	[5081, 3050]
412	[716, 688]	1844	[2697, 2698]	3276	[3991, 1285]	4708	[5082, 5083]
413	[195, 161]	1845	[2634, 2699]	3277	[3992, 3993]	4709	[5084, 1768]
414	[38, 550]	1846	[2700, 2701]	3278	[3994, 3995]	4710	[5085, 4353]
415	[717, 718]	1847	[2702, 1291]	3279	[3996, 3997]	4711	[5086, 201]
416	[719, 720]	1848	[2703, 2138]	3280	[3998, 2140]	4712	[3033, 537]
417	[721, 722]	1849	[2704, 2705]	3281	[3999, 4000]	4713	[5087, 595]
418	[723, 173]	1850	[2706, 2707]	3282	[2158, 2622]	4714	[4430, 3139]
419	[724, 725]	1851	[281, 2708]	3283	[4001, 3494]	4715	[1654, 4566]
420	[726, 727]	1852	[2709, 2710]	3284	[4002, 4003]	4716	[5088, 3301]
421	[728, 729]	1853	[2711, 2638]	3285	[3950, 2555]	4717	[5089, 5037]
422	[730, 452]	1854	[2193, 2483]	3286	[4004, 3883]	4718	[5090, 634]
423	[731, 615]	1855	[91, 437]	3287	[2618, 2207]	4719	[3078, 4333]
424	[149, 456]	1856	[2712, 2713]	3288	[2074, 2450]	4720	[748, 5044]
425	[732, 733]	1857	[1169, 2714]	3289	[3762, 2155]	4721	[5091, 1844]

426	[734, 45]	1858	[2099, 990]	3290	[3810, 416]	4722	[564, 179]
427	[735, 220]	1859	[2715, 2716]	3291	[252, 2495]	4723	[5092, 1600]
428	[736, 737]	1860	[2717, 1139]	3292	[4005, 4006]	4724	[4341, 1562]
429	[738, 739]	1861	[2718, 106]	3293	[4007, 1942]	4725	[2844, 1403]
430	[740, 741]	1862	[2719, 2720]	3294	[91, 4008]	4726	[3154, 2948]
431	[742, 743]	1863	[2721, 2722]	3295	[4009, 4010]	4727	[5093, 3423]
432	[540, 568]	1864	[2723, 1990]	3296	[4011, 4012]	4728	[4327, 1441]
433	[744, 226]	1865	[17, 1966]	3297	[4013, 1200]	4729	[555, 162]
434	[745, 746]	1866	[2724, 2725]	3298	[2208, 4014]	4730	[4223, 4243]
435	[747, 748]	1867	[2726, 2727]	3299	[4015, 81]	4731	[4517, 1345]
436	[749, 446]	1868	[2728, 2729]	3300	[3865, 4016]	4732	[5094, 3011]
437	[750, 751]	1869	[2730, 1938]	3301	[4017, 4018]	4733	[5072, 5095]
438	[752, 753]	1870	[2731, 2176]	3302	[4019, 3758]	4734	[1840, 3091]
439	[182, 754]	1871	[2732, 2733]	3303	[362, 2080]	4735	[5096, 5097]
440	[755, 756]	1872	[2734, 844]	3304	[3822, 4020]	4736	[5098, 4493]
441	[757, 758]	1873	[995, 2014]	3305	[4021, 4022]	4737	[5099, 1717]
442	[759, 760]	1874	[2735, 2218]	3306	[3781, 3819]	4738	[4356, 1316]
443	[761, 762]	1875	[2736, 797]	3307	[1187, 1017]	4739	[752, 1558]
444	[763, 760]	1876	[2737, 2738]	3308	[4023, 4024]	4740	[5100, 743]
445	[764, 765]	1877	[2739, 101]	3309	[4025, 2192]	4741	[3230, 4453]
446	[766, 767]	1878	[297, 2740]	3310	[3589, 3846]	4742	[5101, 3388]
447	[768, 769]	1879	[2741, 2056]	3311	[4026, 334]	4743	[3064, 3295]
448	[770, 771]	1880	[2742, 983]	3312	[2264, 4027]	4744	[5102, 2855]
449	[772, 773]	1881	[2743, 258]	3313	[4028, 4029]	4745	[5103, 5104]
450	[774, 775]	1882	[2744, 2292]	3314	[4030, 4031]	4746	[5105, 2954]
451	[776, 383]	1883	[2745, 2720]	3315	[4032, 2199]	4747	[3446, 3352]
452	[777, 778]	1884	[2746, 783]	3316	[371, 4033]	4748	[4558, 3442]
453	[779, 780]	1885	[2747, 2748]	3317	[4034, 3800]	4749	[12, 1882]
454	[781, 782]	1886	[2749, 2271]	3318	[4035, 4036]	4750	[5106, 5107]
455	[783, 20]	1887	[2750, 2751]	3319	[4037, 4038]	4751	[5108, 1428]
456	[784, 785]	1888	[834, 2752]	3320	[4039, 2051]	4752	[5109, 1679]
457	[786, 787]	1889	[2753, 2754]	3321	[3584, 4040]	4753	[1328, 3418]
458	[788, 789]	1890	[96, 2755]	3322	[4041, 4042]	4754	[4448, 1702]
459	[790, 791]	1891	[419, 987]	3323	[4043, 2710]	4755	[4170, 3107]
460	[792, 793]	1892	[2217, 2756]	3324	[245, 3639]	4756	[4227, 1753]
461	[794, 795]	1893	[2757, 2758]	3325	[4044, 2372]	4757	[5110, 3279]
462	[796, 797]	1894	[2051, 2759]	3326	[4045, 4046]	4758	[5111, 5112]
463	[798, 799]	1895	[2760, 2761]	3327	[4047, 1210]	4759	[4371, 4590]
464	[800, 801]	1896	[81, 2762]	3328	[3898, 4048]	4760	[5113, 1823]
465	[802, 803]	1897	[2763, 24]	3329	[1273, 2116]	4761	[2945, 5114]
466	[804, 805]	1898	[2764, 2765]	3330	[4049, 4050]	4762	[3336, 37]
467	[806, 807]	1899	[2766, 2767]	3331	[4051, 4052]	4763	[5115, 3427]
468	[808, 809]	1900	[2768, 2769]	3332	[4053, 2277]	4764	[729, 3201]
469	[810, 811]	1901	[2770, 2055]	3333	[4054, 3703]	4765	[4435, 600]

470	[812, 813]	1902	[2484, 266]	3334	[4055, 4056]	4766	[5116, 5117]
471	[814, 71]	1903	[2771, 2527]	3335	[4057, 1101]	4767	[5118, 5119]
472	[815, 816]	1904	[2772, 2773]	3336	[4058, 76]	4768	[5120, 660]
473	[817, 818]	1905	[2774, 2714]	3337	[4059, 4060]	4769	[5121, 1720]
474	[819, 820]	1906	[2775, 2776]	3338	[1029, 2234]	4770	[5122, 4377]
475	[821, 822]	1907	[2777, 1267]	3339	[4061, 2051]	4771	[5123, 1535]
476	[823, 824]	1908	[2778, 2779]	3340	[2372, 4062]	4772	[1387, 2946]
477	[825, 826]	1909	[2496, 874]	3341	[2133, 2465]	4773	[5124, 630]
478	[827, 828]	1910	[2370, 2780]	3342	[2073, 299]	4774	[5125, 1305]
479	[829, 830]	1911	[2781, 2574]	3343	[2045, 4063]	4775	[3156, 2994]
480	[831, 832]	1912	[2782, 2709]	3344	[900, 3579]	4776	[5126, 3293]
481	[833, 834]	1913	[388, 261]	3345	[2063, 4064]	4777	[5127, 3390]
482	[835, 836]	1914	[2783, 2784]	3346	[4065, 2001]	4778	[4579, 721]
483	[837, 838]	1915	[2785, 832]	3347	[4066, 2703]	4779	[4234, 138]
484	[839, 77]	1916	[2786, 2787]	3348	[4067, 4068]	4780	[5128, 5129]
485	[840, 841]	1917	[2307, 2062]	3349	[4069, 251]	4781	[5130, 3332]
486	[842, 843]	1918	[2788, 2789]	3350	[4070, 2690]	4782	[5131, 5105]
487	[844, 845]	1919	[2790, 2791]	3351	[3994, 2376]	4783	[5132, 4302]
488	[846, 847]	1920	[2792, 2793]	3352	[877, 4071]	4784	[3000, 4180]
489	[848, 849]	1921	[2794, 2775]	3353	[3872, 4072]	4785	[1885, 502]
490	[850, 851]	1922	[2795, 2796]	3354	[2412, 4073]	4786	[5133, 5134]
491	[773, 852]	1923	[2797, 2798]	3355	[4074, 4075]	4787	[4213, 3118]
492	[853, 854]	1924	[2799, 2800]	3356	[3583, 424]	4788	[5135, 560]
493	[855, 856]	1925	[2801, 2802]	3357	[4076, 4077]	4789	[5136, 1602]
494	[857, 858]	1926	[2803, 2404]	3358	[2753, 758]	4790	[5137, 1623]
495	[859, 860]	1927	[28, 2188]	3359	[4078, 4079]	4791	[5138, 2838]
496	[861, 862]	1928	[2804, 2805]	3360	[4080, 2142]	4792	[4174, 4541]
497	[863, 864]	1929	[2806, 1324]	3361	[1046, 4081]	4793	[4172, 1828]
498	[865, 866]	1930	[1911, 2807]	3362	[4082, 67]	4794	[188, 2817]
499	[810, 867]	1931	[612, 585]	3363	[982, 4083]	4795	[2907, 1308]
500	[868, 869]	1932	[2808, 1373]	3364	[4084, 3536]	4796	[5139, 5140]
501	[870, 871]	1933	[2809, 2810]	3365	[2102, 82]	4797	[5141, 5142]
502	[872, 873]	1934	[2811, 2812]	3366	[4085, 4042]	4798	[49, 4536]
503	[874, 875]	1935	[1887, 2813]	3367	[2323, 4086]	4799	[5143, 3420]
504	[876, 877]	1936	[2814, 2815]	3368	[952, 4087]	4800	[32, 4356]
505	[822, 878]	1937	[158, 210]	3369	[3558, 4088]	4801	[3162, 5144]
506	[879, 880]	1938	[1314, 1902]	3370	[4089, 2447]	4802	[5145, 5146]
507	[881, 882]	1939	[1886, 568]	3371	[2766, 4090]	4803	[5147, 4493]
508	[883, 884]	1940	[2808, 1690]	3372	[3702, 329]	4804	[5148, 5149]
509	[885, 886]	1941	[2816, 228]	3373	[4091, 4024]	4805	[5150, 473]
510	[887, 888]	1942	[1479, 1809]	3374	[4092, 2050]	4806	[5151, 3042]
511	[801, 889]	1943	[1741, 2817]	3375	[2070, 1172]	4807	[5152, 5043]
512	[890, 891]	1944	[2818, 2819]	3376	[2247, 916]	4808	[3431, 1809]
513	[892, 893]	1945	[2820, 2821]	3377	[4093, 1026]	4809	[2999, 4566]

514	[312, 376]	1946	[2822, 1571]	3378	[3838, 3530]	4810	[1838, 2934]
515	[515, 515]	1947	[2823, 2824]	3379	[4094, 3664]	4811	[4618, 1651]
516	[894, 366]	1948	[1734, 1906]	3380	[1033, 3706]	4812	[5153, 2935]
517	[895, 896]	1949	[1798, 235]	3381	[3677, 791]	4813	[3000, 4460]
518	[897, 898]	1950	[2825, 1573]	3382	[422, 1196]	4814	[4598, 454]
519	[899, 900]	1951	[1802, 466]	3383	[4095, 2799]	4815	[5154, 522]
520	[901, 902]	1952	[2826, 2827]	3384	[2677, 4096]	4816	[1772, 4322]
521	[903, 904]	1953	[2828, 1412]	3385	[4097, 4098]	4817	[5155, 5156]
522	[905, 906]	1954	[1623, 170]	3386	[4099, 1005]	4818	[2943, 4317]
523	[907, 908]	1955	[2829, 2830]	3387	[4100, 4101]	4819	[5157, 5158]
524	[909, 910]	1956	[2831, 2832]	3388	[3907, 1986]	4820	[5159, 4528]
525	[911, 324]	1957	[2833, 1842]	3389	[4102, 4103]	4821	[5160, 5161]
526	[912, 913]	1958	[1506, 1538]	3390	[4104, 4105]	4822	[3022, 2962]
527	[914, 915]	1959	[2834, 1864]	3391	[4106, 4107]	4823	[3171, 1596]
528	[916, 917]	1960	[1303, 1598]	3392	[2583, 1071]	4824	[3221, 5061]
529	[322, 835]	1961	[2835, 1822]	3393	[4108, 2716]	4825	[5162, 3330]
530	[918, 919]	1962	[2836, 2837]	3394	[3479, 4109]	4826	[5163, 1743]
531	[920, 921]	1963	[1553, 36]	3395	[4110, 4111]	4827	[4594, 5104]
532	[922, 923]	1964	[2838, 1806]	3396	[4112, 4113]	4828	[4454, 4344]
533	[924, 925]	1965	[2839, 647]	3397	[3742, 92]	4829	[5164, 726]
534	[926, 927]	1966	[1873, 1591]	3398	[959, 4114]	4830	[5165, 3171]
535	[928, 72]	1967	[2840, 2841]	3399	[2800, 4010]	4831	[4197, 5166]
536	[929, 930]	1968	[563, 1822]	3400	[4115, 4116]	4832	[493, 4586]
537	[931, 932]	1969	[2842, 2843]	3401	[4117, 4118]	4833	[5167, 152]
538	[933, 934]	1970	[2844, 144]	3402	[3587, 4119]	4834	[5168, 171]
539	[935, 936]	1971	[1541, 1621]	3403	[4120, 2391]	4835	[1512, 1648]
540	[937, 938]	1972	[2845, 2846]	3404	[4121, 4122]	4836	[4512, 4224]
541	[939, 940]	1973	[2847, 1512]	3405	[4123, 238]	4837	[5169, 3374]
542	[941, 942]	1974	[2848, 741]	3406	[2055, 2099]	4838	[3294, 3065]
543	[943, 944]	1975	[2849, 2850]	3407	[4124, 4125]	4839	[5170, 668]
544	[945, 946]	1976	[2851, 2852]	3408	[3687, 4116]	4840	[3418, 4358]
545	[947, 948]	1977	[1916, 1339]	3409	[2138, 2110]	4841	[5171, 5172]
546	[949, 950]	1978	[1557, 753]	3410	[3505, 1249]	4842	[5173, 5174]
547	[112, 951]	1979	[2853, 1637]	3411	[2512, 369]	4843	[5175, 1443]
548	[952, 953]	1980	[1884, 2835]	3412	[4126, 1213]	4844	[5176, 4291]
549	[954, 955]	1981	[1383, 2854]	3413	[4127, 819]	4845	[3155, 3150]
550	[956, 957]	1982	[2855, 2856]	3414	[67, 3568]	4846	[5177, 5134]
551	[958, 959]	1983	[2857, 2858]	3415	[2155, 942]	4847	[5178, 4278]
552	[960, 961]	1984	[2859, 2860]	3416	[3761, 2294]	4848	[5179, 1790]
553	[962, 963]	1985	[2861, 1478]	3417	[2256, 4128]	4849	[4183, 1521]
554	[20, 964]	1986	[1300, 1426]	3418	[4129, 864]	4850	[4326, 718]
555	[965, 966]	1987	[2862, 653]	3419	[4130, 4131]	4851	[5180, 1438]
556	[424, 967]	1988	[2863, 2864]	3420	[4132, 4133]	4852	[5181, 5182]
557	[353, 894]	1989	[1420, 489]	3421	[3727, 4134]	4853	[3109, 1423]

558	[968, 969]	1990	[498, 153]	3422	[2500, 4135]	4854	[5183, 4261]
559	[970, 971]	1991	[2865, 1442]	3423	[4136, 4137]	4855	[5184, 3358]
560	[972, 973]	1992	[1374, 1736]	3424	[2169, 1272]	4856	[1716, 5185]
561	[974, 975]	1993	[2827, 54]	3425	[3840, 2232]	4857	[5186, 5187]
562	[976, 977]	1994	[1669, 497]	3426	[4138, 302]	4858	[5188, 561]
563	[978, 420]	1995	[522, 170]	3427	[4139, 4140]	4859	[558, 2962]
564	[979, 339]	1996	[1357, 1491]	3428	[4141, 2089]	4860	[5189, 5117]
565	[980, 981]	1997	[565, 2866]	3429	[2554, 4021]	4861	[5190, 5191]
566	[982, 983]	1998	[495, 130]	3430	[4142, 4143]	4862	[5103, 4595]
567	[984, 971]	1999	[163, 511]	3431	[4144, 3811]	4863	[5192, 5112]
568	[985, 986]	2000	[1312, 1493]	3432	[4145, 1994]	4864	[2890, 5193]
569	[987, 988]	2001	[1437, 546]	3433	[4146, 4147]	4865	[5096, 199]
570	[989, 990]	2002	[448, 2867]	3434	[4148, 1143]	4866	[5194, 642]
571	[991, 992]	2003	[1671, 465]	3435	[2330, 1978]	4867	[4256, 551]
572	[993, 994]	2004	[2868, 2869]	3436	[2367, 4149]	4868	[5195, 1481]
573	[995, 996]	2005	[2870, 2871]	3437	[4150, 103]	4869	[3302, 490]
574	[997, 998]	2006	[2872, 1840]	3438	[2569, 4151]	4870	[3073, 751]
575	[999, 1000]	2007	[2873, 161]	3439	[4152, 4153]	4871	[5196, 5156]
576	[1001, 316]	2008	[2874, 2875]	3440	[4154, 4155]	4872	[5197, 1434]
577	[1002, 1003]	2009	[2876, 1531]	3441	[4156, 756]	4873	[5198, 188]
578	[1004, 1005]	2010	[2877, 1585]	3442	[4157, 1978]	4874	[3237, 587]
579	[1006, 1007]	2011	[2878, 442]	3443	[4158, 272]	4875	[3425, 4566]
580	[1008, 1009]	2012	[2879, 144]	3444	[4159, 4160]	4876	[2817, 4567]
581	[1010, 1011]	2013	[2880, 1878]	3445	[4161, 1254]	4877	[5199, 1801]
582	[1012, 1013]	2014	[2881, 446]	3446	[1259, 2441]	4878	[5168, 1323]
583	[1014, 1015]	2015	[2882, 1752]	3447	[4162, 3544]	4879	[5200, 1417]
584	[1016, 1017]	2016	[624, 228]	3448	[4163, 3969]	4880	[5201, 5187]
585	[1018, 1019]	2017	[174, 568]	3449	[4164, 3524]	4881	[5202, 541]
586	[1020, 1021]	2018	[2883, 1377]	3450	[2174, 3986]	4882	[5203, 5076]
587	[1022, 1023]	2019	[2884, 690]	3451	[4165, 1294]	4883	[4305, 5204]
588	[1024, 347]	2020	[2874, 10]	3452	[4166, 862]	4884	[5205, 3171]
589	[1025, 1026]	2021	[2885, 1778]	3453	[4167, 4168]	4885	[4363, 1382]
590	[1027, 1028]	2022	[591, 520]	3454	[4169, 4170]	4886	[5206, 2942]
591	[907, 1029]	2023	[2886, 235]	3455	[3121, 1640]	4887	[3025, 4305]
592	[1030, 1031]	2024	[2887, 2888]	3456	[1381, 673]	4888	[5207, 1434]
593	[1007, 1032]	2025	[227, 675]	3457	[4171, 621]	4889	[5208, 5209]
594	[957, 891]	2026	[455, 556]	3458	[3191, 2850]	4890	[644, 45]
595	[1033, 1034]	2027	[1377, 1892]	3459	[4172, 1356]	4891	[1738, 1749]
596	[1035, 1036]	2028	[1680, 703]	3460	[4173, 610]	4892	[5210, 4212]
597	[1037, 1038]	2029	[1922, 1828]	3461	[4174, 2980]	4893	[5178, 5211]
598	[1039, 1040]	2030	[708, 192]	3462	[4175, 680]	4894	[5212, 143]
599	[928, 1041]	2031	[1494, 1560]	3463	[4176, 544]	4895	[5213, 3011]
600	[1042, 1043]	2032	[2889, 2890]	3464	[4177, 705]	4896	[5214, 5049]
601	[1044, 1045]	2033	[2891, 2892]	3465	[1391, 1450]	4897	[4485, 5204]

602	[1046, 1047]	2034	[1902, 2893]	3466	[728, 3154]	4898	[5215, 717]
603	[1048, 1049]	2035	[2894, 1508]	3467	[3405, 539]	4899	[4500, 5216]
604	[24, 124]	2036	[2895, 1675]	3468	[698, 528]	4900	[1580, 495]
605	[1050, 1051]	2037	[2896, 1689]	3469	[2902, 570]	4901	[1299, 625]
606	[1052, 1053]	2038	[1668, 1339]	3470	[4178, 195]	4902	[514, 4194]
607	[1054, 1055]	2039	[2897, 1519]	3471	[3366, 2807]	4903	[5217, 225]
608	[1056, 1057]	2040	[1837, 1792]	3472	[3287, 1906]	4904	[5218, 5142]
609	[1058, 1059]	2041	[467, 1585]	3473	[3087, 1501]	4905	[4398, 1869]
610	[1060, 1061]	2042	[2898, 1700]	3474	[3020, 3010]	4906	[5219, 3021]
611	[1062, 1063]	2043	[2899, 2854]	3475	[4179, 198]	4907	[4533, 4604]
612	[1064, 1065]	2044	[182, 2900]	3476	[4180, 4181]	4908	[5220, 453]
613	[1066, 1067]	2045	[1393, 565]	3477	[4182, 3162]	4909	[5221, 2909]
614	[1068, 1069]	2046	[2901, 686]	3478	[4183, 3252]	4910	[5222, 5223]
615	[1070, 1071]	2047	[451, 711]	3479	[4184, 3164]	4911	[3355, 5224]
616	[392, 1072]	2048	[2902, 2903]	3480	[4185, 4186]	4912	[5225, 4493]
617	[1073, 1074]	2049	[2904, 578]	3481	[4187, 619]	4913	[4265, 3095]
618	[1075, 1076]	2050	[2905, 1877]	3482	[4188, 1369]	4914	[5226, 595]
619	[1077, 1078]	2051	[1806, 2906]	3483	[742, 3391]	4915	[5227, 5083]
620	[1079, 1001]	2052	[2907, 1883]	3484	[3430, 1637]	4916	[5228, 5229]
621	[1080, 1081]	2053	[2908, 1510]	3485	[4189, 1382]	4917	[5118, 5230]
622	[1082, 1083]	2054	[2909, 700]	3486	[3176, 665]	4918	[5231, 5174]
623	[1084, 1085]	2055	[2910, 214]	3487	[205, 166]	4919	[5232, 3338]
624	[1086, 1087]	2056	[2911, 1795]	3488	[4190, 1374]	4920	[5233, 1502]
625	[1088, 1089]	2057	[160, 196]	3489	[2929, 4191]	4921	[2839, 229]
626	[1090, 311]	2058	[2912, 2913]	3490	[2838, 1826]	4922	[5234, 1666]
627	[1091, 948]	2059	[2914, 745]	3491	[4192, 40]	4923	[4461, 4250]
628	[1092, 1093]	2060	[2915, 2868]	3492	[4193, 1568]	4924	[3142, 1536]
629	[1094, 1095]	2061	[2916, 1561]	3493	[1670, 3204]	4925	[5235, 1544]
630	[1096, 1097]	2062	[1600, 1377]	3494	[3055, 4194]	4926	[5038, 4507]
631	[1098, 1099]	2063	[2917, 654]	3495	[3236, 1412]	4927	[3128, 1817]
632	[1100, 1101]	2064	[2918, 2815]	3496	[1741, 1751]	4928	[5236, 5237]
633	[1102, 1103]	2065	[2919, 484]	3497	[4195, 674]	4929	[4564, 2864]
634	[1104, 1105]	2066	[2920, 2921]	3498	[2950, 1480]	4930	[5238, 1920]
635	[1106, 960]	2067	[2922, 1306]	3499	[3141, 1627]	4931	[4586, 5239]
636	[866, 1107]	2068	[576, 34]	3500	[1779, 1363]	4932	[5240, 5241]
637	[1108, 1109]	2069	[1676, 2852]	3501	[1619, 542]	4933	[5242, 1763]
638	[887, 1110]	2070	[1404, 1560]	3502	[1356, 1829]	4934	[5243, 4549]
639	[1111, 1112]	2071	[2923, 539]	3503	[4196, 499]	4935	[5244, 1883]
640	[843, 1113]	2072	[697, 1784]	3504	[1483, 2836]	4936	[3262, 5245]
641	[1114, 1115]	2073	[2924, 750]	3505	[3404, 684]	4937	[4567, 3150]
642	[1116, 1117]	2074	[2925, 1541]	3506	[1598, 2921]	4938	[4217, 476]
643	[1118, 1119]	2075	[2926, 2927]	3507	[4197, 3180]	4939	[5246, 218]
644	[1120, 275]	2076	[2928, 1838]	3508	[196, 4198]	4940	[5247, 2935]
645	[1121, 955]	2077	[2929, 2930]	3509	[4199, 492]	4941	[5176, 3306]

646	[1122, 917]	2078	[1825, 1806]	3510	[4200, 4201]	4942	[5248, 5249]
647	[1087, 1123]	2079	[2931, 1902]	3511	[1857, 1476]	4943	[3386, 3061]
648	[1124, 1093]	2080	[641, 2932]	3512	[4202, 4203]	4944	[5250, 3374]
649	[892, 1125]	2081	[2933, 1585]	3513	[4204, 3049]	4945	[5127, 4226]
650	[1126, 1127]	2082	[2934, 1501]	3514	[4205, 2856]	4946	[5251, 5073]
651	[1128, 957]	2083	[2935, 2936]	3515	[3443, 3143]	4947	[4247, 1303]
652	[1129, 1032]	2084	[2937, 2938]	3516	[1486, 2819]	4948	[5252, 8]
653	[1130, 1131]	2085	[2939, 674]	3517	[4206, 1310]	4949	[3450, 3018]
654	[1132, 65]	2086	[2940, 1403]	3518	[4207, 4208]	4950	[5253, 1875]
655	[1133, 1134]	2087	[1377, 668]	3519	[2847, 141]	4951	[5254, 5255]
656	[1135, 1136]	2088	[2941, 2942]	3520	[4209, 1512]	4952	[5256, 5230]
657	[1137, 1138]	2089	[2943, 1726]	3521	[3409, 1510]	4953	[5257, 2887]
658	[1139, 435]	2090	[2944, 2945]	3522	[3282, 4210]	4954	[1616, 1546]
659	[1140, 1141]	2091	[1816, 2946]	3523	[3197, 1882]	4955	[5258, 5129]
660	[1142, 821]	2092	[230, 1698]	3524	[1924, 4191]	4956	[4537, 490]
661	[284, 815]	2093	[638, 1587]	3525	[4211, 4212]	4957	[5259, 5191]
662	[1143, 961]	2094	[2928, 134]	3526	[4213, 4214]	4958	[457, 216]
663	[1144, 1145]	2095	[1297, 1753]	3527	[4215, 3162]	4959	[5260, 1529]
664	[1146, 1147]	2096	[652, 720]	3528	[4216, 1781]	4960	[2996, 603]
665	[284, 1148]	2097	[1635, 1648]	3529	[4217, 733]	4961	[5261, 5262]
666	[1149, 843]	2098	[2947, 126]	3530	[1708, 1606]	4962	[4392, 5263]
667	[1150, 1151]	2099	[645, 485]	3531	[4218, 1611]	4963	[5138, 1825]
668	[1152, 1153]	2100	[729, 2948]	3532	[4219, 3447]	4964	[4360, 1363]
669	[1154, 1155]	2101	[2949, 1767]	3533	[1653, 720]	4965	[5264, 4319]
670	[1156, 1157]	2102	[2915, 1804]	3534	[2842, 1562]	4966	[5105, 688]
671	[1158, 1159]	2103	[2950, 1809]	3535	[4196, 153]	4967	[5055, 518]
672	[1160, 1161]	2104	[2951, 1303]	3536	[1353, 746]	4968	[5265, 3378]
673	[1162, 851]	2105	[2865, 575]	3537	[3058, 717]	4969	[497, 1562]
674	[1163, 1164]	2106	[2952, 1677]	3538	[3284, 1339]	4970	[3365, 1334]
675	[1165, 1166]	2107	[152, 499]	3539	[1723, 4220]	4971	[5266, 1444]
676	[1167, 784]	2108	[1500, 2874]	3540	[1527, 4221]	4972	[1924, 2930]
677	[1168, 1169]	2109	[2825, 2953]	3541	[475, 733]	4973	[3274, 5267]
678	[1170, 1171]	2110	[2954, 2955]	3542	[213, 460]	4974	[5268, 4600]
679	[1172, 1173]	2111	[2956, 2957]	3543	[1926, 1610]	4975	[4277, 5211]
680	[82, 1174]	2112	[2958, 50]	3544	[3130, 1723]	4976	[5269, 5270]
681	[1175, 915]	2113	[2959, 2807]	3545	[4222, 3228]	4977	[1501, 2875]
682	[1176, 1177]	2114	[1424, 2960]	3546	[4223, 4224]	4978	[5271, 4526]
683	[1178, 1179]	2115	[1382, 1838]	3547	[4225, 3063]	4979	[5272, 1763]
684	[1180, 1181]	2116	[2961, 2962]	3548	[3389, 4226]	4980	[5273, 5161]
685	[1182, 1183]	2117	[2963, 563]	3549	[4227, 3074]	4981	[1674, 1329]
686	[1184, 1185]	2118	[2964, 729]	3550	[3075, 1350]	4982	[5274, 5106]
687	[1186, 1187]	2119	[1490, 1358]	3551	[3208, 2946]	4983	[5275, 139]
688	[1188, 85]	2120	[2965, 1804]	3552	[4228, 1631]	4984	[5276, 5277]
689	[1189, 1190]	2121	[2905, 138]	3553	[3364, 585]	4985	[5278, 3391]

690	[1191, 1192]	2122	[2966, 195]	3554	[2883, 667]	4986	[3223, 5166]
691	[1193, 1194]	2123	[2811, 2967]	3555	[4229, 1564]	4987	[5279, 615]
692	[1195, 1196]	2124	[2968, 2969]	3556	[4230, 1325]	4988	[5280, 4310]
693	[1197, 1198]	2125	[2970, 2880]	3557	[1400, 686]	4989	[5281, 5282]
694	[1199, 1200]	2126	[2971, 2972]	3558	[4231, 651]	4990	[4323, 5267]
695	[1201, 1202]	2127	[505, 2973]	3559	[1690, 1549]	4991	[494, 3204]
696	[789, 1203]	2128	[2974, 130]	3560	[1821, 2994]	4992	[5283, 2827]
697	[1204, 833]	2129	[147, 2975]	3561	[3341, 1702]	4993	[5284, 1875]
698	[1205, 1127]	2130	[2976, 231]	3562	[4232, 4233]	4994	[1682, 3442]
699	[1206, 841]	2131	[2977, 641]	3563	[2835, 2994]	4995	[5285, 5286]
700	[18, 1207]	2132	[1860, 1503]	3564	[1663, 1429]	4996	[3162, 5282]
701	[1077, 1208]	2133	[2978, 678]	3565	[4234, 1877]	4997	[5287, 225]
702	[1209, 436]	2134	[2979, 2980]	3566	[4235, 1825]	4998	[5288, 1401]
703	[1210, 1211]	2135	[2981, 684]	3567	[3136, 588]	4999	[5289, 5290]
704	[1212, 1213]	2136	[2982, 1460]	3568	[4231, 682]	5000	[5291, 5262]
705	[1214, 1215]	2137	[716, 2954]	3569	[134, 1577]	5001	[5292, 3332]
706	[1216, 1217]	2138	[2810, 1902]	3570	[4236, 4195]	5002	[5121, 3338]
707	[824, 1218]	2139	[2983, 1297]	3571	[3424, 3200]	5003	[5293, 203]
708	[1219, 812]	2140	[2984, 2985]	3572	[3169, 1429]	5004	[4566, 5294]
709	[1220, 1221]	2141	[2986, 1436]	3573	[3215, 466]	5005	[5295, 681]
710	[1222, 1223]	2142	[689, 2987]	3574	[3298, 4194]	5006	[5296, 5114]
711	[1224, 1225]	2143	[194, 2988]	3575	[4237, 2879]	5007	[4439, 721]
712	[1226, 1227]	2144	[154, 1446]	3576	[650, 682]	5008	[4367, 478]
713	[1228, 22]	2145	[1525, 1824]	3577	[3054, 590]	5009	[2924, 3073]
714	[1229, 1230]	2146	[185, 1441]	3578	[613, 2864]	5010	[4304, 3026]
715	[1231, 1232]	2147	[1559, 713]	3579	[1406, 38]	5011	[5297, 576]
716	[1233, 1234]	2148	[1331, 1620]	3580	[4238, 3446]	5012	[657, 5298]
717	[1235, 1236]	2149	[2879, 1403]	3581	[1705, 3349]	5013	[5299, 5174]
718	[1237, 1238]	2150	[478, 1650]	3582	[3367, 155]	5014	[5300, 471]
719	[1239, 1113]	2151	[2989, 2990]	3583	[131, 1749]	5015	[2906, 4583]
720	[370, 1240]	2152	[462, 1512]	3584	[2933, 468]	5016	[4445, 2998]
721	[1241, 106]	2153	[2991, 2992]	3585	[4239, 1392]	5017	[5301, 4170]
722	[1242, 1019]	2154	[1633, 1371]	3586	[666, 646]	5018	[5302, 5209]
723	[1243, 67]	2155	[1412, 44]	3587	[1435, 3137]	5019	[3177, 4473]
724	[1244, 1245]	2156	[1321, 2824]	3588	[4240, 715]	5020	[5303, 569]
725	[1246, 1247]	2157	[2993, 1878]	3589	[4176, 4241]	5021	[4330, 5237]
726	[1248, 1249]	2158	[563, 2994]	3590	[748, 2890]	5022	[1378, 664]
727	[1250, 1251]	2159	[2995, 705]	3591	[4242, 4243]	5023	[5304, 5106]
728	[101, 1252]	2160	[1343, 2996]	3592	[196, 3275]	5024	[5305, 4501]
729	[1253, 1254]	2161	[2880, 487]	3593	[4190, 1735]	5025	[605, 1345]
730	[1255, 1256]	2162	[1665, 40]	3594	[2895, 470]	5026	[1583, 2813]
731	[767, 1257]	2163	[1652, 227]	3595	[4244, 1611]	5027	[5306, 4589]
732	[1258, 1259]	2164	[2997, 1824]	3596	[4245, 1483]	5028	[2872, 5107]
733	[1260, 1261]	2165	[2998, 486]	3597	[4246, 1668]	5029	[5307, 445]

734	[1262, 1263]	2166	[2999, 1655]	3598	[3323, 502]	5030	[4552, 1818]
735	[1264, 1265]	2167	[1427, 3000]	3599	[3326, 1395]	5031	[34, 1711]
736	[411, 1266]	2168	[3001, 1776]	3600	[4247, 1508]	5032	[3930, 958]
737	[1267, 1268]	2169	[125, 1331]	3601	[38, 4248]	5033	[2289, 5308]
738	[1269, 1270]	2170	[55, 1564]	3602	[4249, 4250]	5034	[2115, 4809]
739	[1271, 1272]	2171	[2974, 204]	3603	[2976, 1698]	5035	[5309, 5310]
740	[1273, 855]	2172	[3002, 751]	3604	[3320, 1735]	5036	[5311, 5312]
741	[1274, 1275]	2173	[588, 46]	3605	[4251, 3385]	5037	[5313, 5314]
742	[1276, 777]	2174	[3003, 1651]	3606	[4252, 3293]	5038	[5315, 5316]
743	[1277, 1278]	2175	[3004, 3005]	3607	[4253, 4254]	5039	[2609, 5317]
744	[1279, 880]	2176	[631, 3006]	3608	[3012, 666]	5040	[2005, 914]
745	[1280, 1281]	2177	[3007, 1535]	3609	[4255, 136]	5041	[4965, 5318]
746	[1282, 1247]	2178	[1871, 3008]	3610	[1808, 1480]	5042	[5319, 394]
747	[1283, 1284]	2179	[3009, 1912]	3611	[1564, 1666]	5043	[5320, 5321]
748	[1285, 1286]	2180	[1482, 575]	3612	[4256, 1927]	5044	[898, 3911]
749	[1287, 1288]	2181	[593, 641]	3613	[4257, 1732]	5045	[876, 2362]
750	[1289, 1290]	2182	[2805, 3010]	3614	[1561, 2843]	5046	[5322, 5323]
751	[1291, 1292]	2183	[1629, 1493]	3615	[4189, 673]	5047	[5324, 5325]
752	[1052, 1293]	2184	[3011, 1439]	3616	[3105, 184]	5048	[5326, 2037]
753	[1294, 395]	2185	[3012, 484]	3617	[4258, 4259]	5049	[5327, 5328]
754	[341, 1295]	2186	[3013, 523]	3618	[3296, 1728]	5050	[1093, 4969]
755	[1296, 1297]	2187	[1615, 1338]	3619	[4260, 3053]	5051	[3625, 2131]
756	[1298, 60]	2188	[56, 3014]	3620	[3253, 4261]	5052	[4166, 5329]
757	[1299, 228]	2189	[3015, 1515]	3621	[4262, 3117]	5053	[5330, 3850]
758	[1300, 1301]	2190	[1750, 2817]	3622	[4263, 4264]	5054	[5331, 5332]
759	[1302, 172]	2191	[3016, 1694]	3623	[4265, 3359]	5055	[5333, 3946]
760	[1303, 1304]	2192	[1910, 1823]	3624	[543, 4241]	5056	[4749, 5334]
761	[1305, 1306]	2193	[59, 1427]	3625	[4266, 1860]	5057	[5335, 1031]
762	[1307, 1308]	2194	[3017, 1723]	3626	[4260, 3299]	5058	[4766, 5336]
763	[1309, 1310]	2195	[641, 3018]	3627	[4267, 670]	5059	[5337, 1118]
764	[1311, 729]	2196	[2959, 1912]	3628	[3452, 1413]	5060	[5338, 2098]
765	[685, 526]	2197	[3019, 592]	3629	[537, 3421]	5061	[5339, 240]
766	[1312, 1313]	2198	[2886, 1528]	3630	[4268, 1374]	5062	[2403, 5340]
767	[175, 483]	2199	[3020, 3021]	3631	[4269, 4270]	5063	[2489, 2275]
768	[1314, 1315]	2200	[3022, 559]	3632	[1471, 4194]	5064	[5341, 1255]
769	[1316, 1317]	2201	[135, 1876]	3633	[1530, 2813]	5065	[5342, 2377]
770	[1318, 598]	2202	[675, 556]	3634	[4271, 1461]	5066	[240, 5343]
771	[1319, 1320]	2203	[3023, 1336]	3635	[4272, 1595]	5067	[5344, 810]
772	[1321, 1322]	2204	[3024, 1860]	3636	[4273, 1416]	5068	[5345, 4845]
773	[1323, 172]	2205	[3025, 3026]	3637	[4274, 3342]	5069	[2204, 4818]
774	[662, 1324]	2206	[1555, 585]	3638	[4205, 4275]	5070	[4920, 1163]
775	[1325, 1326]	2207	[3027, 1643]	3639	[1478, 753]	5071	[2362, 4071]
776	[1327, 582]	2208	[495, 204]	3640	[4276, 3116]	5072	[2514, 2693]
777	[1328, 1310]	2209	[578, 3028]	3641	[4277, 4278]	5073	[4753, 3504]

778	[1329, 681]	2210	[3029, 221]	3642	[4279, 1861]	5074	[2630, 3473]
779	[1330, 584]	2211	[3030, 1706]	3643	[4280, 4281]	5075	[5346, 2774]
780	[1331, 1332]	2212	[3031, 508]	3644	[4282, 3395]	5076	[5347, 5348]
781	[1333, 1334]	2213	[459, 214]	3645	[3234, 1905]	5077	[4971, 2719]
782	[727, 1335]	2214	[1318, 2969]	3646	[4283, 508]	5078	[5349, 761]
783	[164, 1336]	2215	[3032, 159]	3647	[4284, 588]	5079	[2556, 5350]
784	[1337, 165]	2216	[3033, 448]	3648	[1727, 3297]	5080	[5351, 5352]
785	[1338, 511]	2217	[1899, 1358]	3649	[4285, 3053]	5081	[5353, 2231]
786	[1339, 1340]	2218	[463, 573]	3650	[4286, 3181]	5082	[5354, 5355]
787	[692, 1341]	2219	[3034, 1804]	3651	[4287, 3415]	5083	[5356, 5357]
788	[1342, 533]	2220	[579, 1920]	3652	[4288, 3130]	5084	[4866, 2462]
789	[1343, 602]	2221	[3035, 2821]	3653	[4289, 2879]	5085	[5358, 5359]
790	[1344, 1345]	2222	[1628, 1671]	3654	[4290, 4291]	5086	[5324, 4926]
791	[1346, 501]	2223	[3036, 50]	3655	[3338, 1721]	5087	[5360, 3561]
792	[710, 452]	2224	[3037, 2824]	3656	[4292, 4293]	5088	[2189, 1137]
793	[1347, 1348]	2225	[1773, 1675]	3657	[4294, 694]	5089	[5361, 3887]
794	[1349, 649]	2226	[234, 1528]	3658	[3340, 602]	5090	[3556, 4168]
795	[203, 1350]	2227	[2935, 1326]	3659	[3444, 3137]	5091	[268, 1014]
796	[1351, 1352]	2228	[3038, 600]	3660	[4295, 1395]	5092	[5362, 5363]
797	[1353, 1354]	2229	[3039, 1499]	3661	[1718, 3149]	5093	[5364, 3507]
798	[1355, 1356]	2230	[2934, 2874]	3662	[3092, 3099]	5094	[3666, 5365]
799	[1357, 1358]	2231	[2922, 2938]	3663	[4296, 554]	5095	[4697, 2325]
800	[1359, 512]	2232	[3040, 136]	3664	[2911, 2972]	5096	[3567, 4929]
801	[1337, 166]	2233	[3041, 1310]	3665	[4297, 4298]	5097	[3911, 2202]
802	[1360, 456]	2234	[585, 2864]	3666	[4299, 2880]	5098	[3802, 4847]
803	[1338, 164]	2235	[3042, 1840]	3667	[4300, 726]	5099	[3845, 3590]
804	[1361, 508]	2236	[3043, 2913]	3668	[2998, 38]	5100	[2146, 5366]
805	[1362, 1363]	2237	[3044, 1369]	3669	[214, 1681]	5101	[5360, 3785]
806	[1364, 1365]	2238	[3045, 3046]	3670	[4301, 4302]	5102	[1292, 3523]
807	[1366, 1367]	2239	[3047, 460]	3671	[1868, 4303]	5103	[5367, 2125]
808	[1368, 1369]	2240	[3048, 647]	3672	[1380, 1441]	5104	[2206, 2619]
809	[1370, 1371]	2241	[187, 1741]	3673	[739, 1587]	5105	[1290, 940]
810	[730, 711]	2242	[1639, 3049]	3674	[4304, 4305]	5106	[5368, 3790]
811	[1372, 1373]	2243	[3050, 2900]	3675	[7, 2830]	5107	[2628, 3872]
812	[1302, 442]	2244	[3051, 2858]	3676	[4287, 1529]	5108	[4805, 5369]
813	[1374, 1375]	2245	[164, 512]	3677	[3148, 1719]	5109	[5370, 5371]
814	[1376, 1377]	2246	[3052, 3053]	3678	[4306, 3253]	5110	[2635, 3749]
815	[1378, 1379]	2247	[3054, 1575]	3679	[3378, 1684]	5111	[5372, 2256]
816	[516, 515]	2248	[1563, 56]	3680	[1392, 1451]	5112	[5373, 5374]
817	[1380, 186]	2249	[3055, 1569]	3681	[4307, 1908]	5113	[2114, 5375]
818	[1381, 1382]	2250	[1579, 1478]	3682	[2984, 3435]	5114	[3626, 2132]
819	[1383, 1384]	2251	[1919, 580]	3683	[4308, 1836]	5115	[5376, 5377]
820	[1385, 1386]	2252	[1574, 590]	3684	[1520, 3252]	5116	[2423, 5378]
821	[1387, 1388]	2253	[3056, 1446]	3685	[625, 229]	5117	[5379, 5380]

822	[1389, 550]	2254	[3038, 1532]	3686	[4309, 4310]	5118	[5381, 2412]
823	[1390, 533]	2255	[3057, 3058]	3687	[1755, 36]	5119	[5382, 1112]
824	[1391, 1392]	2256	[2896, 444]	3688	[3070, 1564]	5120	[5372, 1994]
825	[1393, 179]	2257	[696, 1510]	3689	[4311, 482]	5121	[308, 4922]
826	[1394, 1395]	2258	[3059, 450]	3690	[597, 2969]	5122	[5383, 5384]
827	[1396, 699]	2259	[3060, 3061]	3691	[4271, 3208]	5123	[4713, 2288]
828	[731, 1397]	2260	[3062, 3063]	3692	[1655, 4312]	5124	[5385, 2137]
829	[1398, 1399]	2261	[3064, 3065]	3693	[4313, 3356]	5125	[5386, 3619]
830	[1400, 526]	2262	[3066, 666]	3694	[4314, 4264]	5126	[5017, 4012]
831	[531, 680]	2263	[1564, 3014]	3695	[4315, 3403]	5127	[2296, 1970]
832	[1401, 551]	2264	[3067, 1819]	3696	[3098, 1316]	5128	[3843, 846]
833	[1402, 1320]	2265	[3068, 3069]	3697	[208, 3151]	5129	[5387, 5388]
834	[143, 1403]	2266	[3070, 56]	3698	[4316, 1325]	5130	[5389, 273]
835	[1404, 713]	2267	[3071, 3072]	3699	[1725, 4317]	5131	[859, 4114]
836	[628, 1405]	2268	[1826, 2906]	3700	[606, 3216]	5132	[5390, 2636]
837	[1406, 486]	2269	[2818, 1487]	3701	[4318, 737]	5133	[1140, 5391]
838	[573, 1407]	2270	[1847, 3073]	3702	[3198, 585]	5134	[5392, 5393]
839	[1408, 725]	2271	[1890, 3074]	3703	[4274, 1702]	5135	[4667, 974]
840	[1409, 1354]	2272	[2997, 1455]	3704	[4319, 4320]	5136	[1941, 119]
841	[1410, 576]	2273	[188, 1751]	3705	[4321, 1923]	5137	[5394, 907]
842	[1411, 1412]	2274	[3075, 1456]	3706	[4322, 470]	5138	[5395, 5396]
843	[726, 446]	2275	[3076, 1824]	3707	[1896, 1356]	5139	[4061, 5397]
844	[1346, 1413]	2276	[3077, 1602]	3708	[2901, 526]	5140	[5398, 5399]
845	[697, 1414]	2277	[3078, 1549]	3709	[208, 1612]	5141	[5400, 412]
846	[1415, 1416]	2278	[3079, 3080]	3710	[4323, 2892]	5142	[5401, 5402]
847	[1417, 1308]	2279	[3081, 533]	3711	[4324, 4325]	5143	[5403, 5404]
848	[1418, 648]	2280	[1894, 3082]	3712	[4326, 2837]	5144	[3798, 975]
849	[492, 1419]	2281	[1756, 38]	3713	[4327, 186]	5145	[3639, 4921]
850	[1420, 1421]	2282	[727, 3083]	3714	[562, 2835]	5146	[847, 4810]
851	[1422, 1373]	2283	[3084, 2990]	3715	[4170, 1915]	5147	[4826, 3526]
852	[1423, 493]	2284	[2914, 1409]	3716	[4328, 3309]	5148	[4785, 5405]
853	[1424, 578]	2285	[1550, 2824]	3717	[4296, 665]	5149	[5406, 5407]
854	[1425, 1426]	2286	[3085, 52]	3718	[4329, 4232]	5150	[5408, 5409]
855	[1298, 1427]	2287	[148, 675]	3719	[4330, 4331]	5151	[3739, 2694]
856	[1428, 1429]	2288	[3086, 1571]	3720	[2910, 460]	5152	[5410, 5411]
857	[1430, 160]	2289	[595, 2888]	3721	[1647, 142]	5153	[5412, 5413]
858	[1431, 1432]	2290	[1498, 1740]	3722	[3446, 2973]	5154	[5414, 5415]
859	[1360, 556]	2291	[3087, 2874]	3723	[4332, 544]	5155	[5416, 5417]
860	[512, 514]	2292	[2887, 596]	3724	[1548, 4333]	5156	[5418, 5419]
861	[1433, 1423]	2293	[1855, 1447]	3725	[1389, 4248]	5157	[5420, 353]
862	[519, 592]	2294	[2827, 495]	3726	[3264, 3240]	5158	[5421, 913]
863	[571, 725]	2295	[3088, 699]	3727	[1448, 2988]	5159	[3869, 2486]
864	[1434, 128]	2296	[1347, 542]	3728	[4334, 689]	5160	[2652, 4941]
865	[1435, 1436]	2297	[1436, 3089]	3729	[3131, 2967]	5161	[5422, 2422]

866	[1437, 567]	2298	[3090, 3091]	3730	[4335, 4336]	5162	[3510, 5423]
867	[1438, 1439]	2299	[3092, 1316]	3731	[4337, 3267]	5163	[3504, 5424]
868	[1440, 1441]	2300	[3093, 1715]	3732	[4338, 4339]	5164	[5425, 766]
869	[619, 1442]	2301	[3094, 3095]	3733	[4295, 1469]	5165	[3970, 5426]
870	[1443, 235]	2302	[3096, 3097]	3734	[4340, 4208]	5166	[2716, 1251]
871	[1444, 474]	2303	[3098, 3099]	3735	[3189, 745]	5167	[5427, 5428]
872	[1445, 1446]	2304	[461, 548]	3736	[4341, 2843]	5168	[5429, 324]
873	[1402, 1447]	2305	[3100, 1534]	3737	[4342, 617]	5169	[5430, 4759]
874	[1448, 1449]	2306	[3101, 3053]	3738	[1734, 233]	5170	[2106, 5431]
875	[1450, 1451]	2307	[443, 1689]	3739	[2904, 2960]	5171	[4044, 991]
876	[1452, 1453]	2308	[1330, 140]	3740	[1826, 1807]	5172	[5432, 5433]
877	[1454, 1455]	2309	[566, 546]	3741	[4195, 561]	5173	[5434, 4629]
878	[203, 1456]	2310	[1356, 3102]	3742	[4343, 4344]	5174	[5435, 358]
879	[1457, 1458]	2311	[3103, 3104]	3743	[4345, 4346]	5175	[2202, 5436]
880	[1459, 1460]	2312	[3105, 3106]	3744	[4347, 4348]	5176	[2031, 5437]
881	[1461, 1388]	2313	[1914, 3107]	3745	[4349, 1640]	5177	[5438, 268]
882	[1462, 1463]	2314	[1820, 1541]	3746	[4232, 1744]	5178	[3610, 3663]
883	[1464, 1465]	2315	[3002, 3108]	3747	[524, 537]	5179	[4146, 4632]
884	[1466, 1450]	2316	[3109, 492]	3748	[3066, 484]	5180	[2074, 5439]
885	[1467, 697]	2317	[2971, 1795]	3749	[4350, 4351]	5181	[2533, 5440]
886	[1468, 1469]	2318	[1781, 1747]	3750	[4352, 4353]	5182	[4040, 3537]
887	[1470, 711]	2319	[3110, 458]	3751	[3356, 4354]	5183	[3864, 3864]
888	[139, 584]	2320	[1362, 1780]	3752	[4355, 4339]	5184	[5337, 4893]
889	[512, 1471]	2321	[1552, 1620]	3753	[4356, 3099]	5185	[5441, 415]
890	[1472, 206]	2322	[2940, 144]	3754	[4357, 1365]	5186	[5442, 4890]
891	[130, 42]	2323	[226, 2841]	3755	[2815, 4293]	5187	[3837, 867]
892	[1359, 1336]	2324	[2851, 1677]	3756	[1644, 4358]	5188	[3484, 3901]
893	[1473, 516]	2325	[518, 748]	3757	[4359, 2818]	5189	[1079, 315]
894	[41, 206]	2326	[3111, 1657]	3758	[3019, 520]	5190	[3893, 2762]
895	[1474, 135]	2327	[3112, 1432]	3759	[4173, 1453]	5191	[5443, 2386]
896	[1475, 1476]	2328	[3113, 733]	3760	[4360, 1780]	5192	[4825, 5444]
897	[1477, 1478]	2329	[3114, 1780]	3761	[4361, 4250]	5193	[5445, 5446]
898	[1479, 1480]	2330	[626, 1338]	3762	[1678, 542]	5194	[4117, 2667]
899	[724, 572]	2331	[3115, 3116]	3763	[680, 4356]	5195	[4093, 5447]
900	[1481, 667]	2332	[3117, 3118]	3764	[4362, 1410]	5196	[5448, 4069]
901	[1482, 1442]	2333	[3119, 1790]	3765	[637, 1575]	5197	[5449, 2295]
902	[1483, 717]	2334	[1336, 1471]	3766	[4363, 673]	5198	[2266, 5450]
903	[1484, 1485]	2335	[2981, 3097]	3767	[4364, 2909]	5199	[5451, 5452]
904	[1486, 1487]	2336	[3120, 688]	3768	[4365, 1679]	5200	[3982, 5453]
905	[1488, 1489]	2337	[3039, 1740]	3769	[4284, 45]	5201	[5454, 3542]
906	[1490, 1491]	2338	[3121, 3049]	3770	[4366, 461]	5202	[2581, 2012]
907	[1492, 1493]	2339	[3122, 3123]	3771	[3346, 3212]	5203	[2592, 5455]
908	[1494, 713]	2340	[3124, 3125]	3772	[3031, 3350]	5204	[4022, 2027]
909	[1495, 1450]	2341	[3126, 750]	3773	[4367, 1649]	5205	[2305, 3857]

910	[1496, 1497]	2342	[3127, 2992]	3774	[3410, 3349]	5206	[5456, 3662]
911	[1498, 1499]	2343	[622, 3046]	3775	[1688, 444]	5207	[5457, 5458]
912	[1500, 1501]	2344	[141, 1648]	3776	[2805, 3021]	5208	[5459, 5460]
913	[1502, 1503]	2345	[3128, 1637]	3777	[3379, 147]	5209	[2270, 3917]
914	[1504, 1505]	2346	[1843, 1769]	3778	[1845, 1439]	5210	[5389, 3775]
915	[1506, 62]	2347	[3129, 3130]	3779	[3013, 170]	5211	[4835, 1971]
916	[1507, 563]	2348	[3131, 2812]	3780	[35, 679]	5212	[5461, 5336]
917	[1508, 1304]	2349	[556, 554]	3781	[721, 1680]	5213	[843, 2700]
918	[1509, 1358]	2350	[3132, 1329]	3782	[1489, 4368]	5214	[5434, 5462]
919	[1510, 1414]	2351	[2878, 172]	3783	[4369, 3178]	5215	[2485, 5463]
920	[1511, 1512]	2352	[1349, 1341]	3784	[4370, 4336]	5216	[2662, 3776]
921	[1513, 499]	2353	[1334, 680]	3785	[4371, 3160]	5217	[5464, 422]
922	[1514, 1515]	2354	[3133, 3125]	3786	[4372, 4241]	5218	[5465, 5466]
923	[1516, 1517]	2355	[1733, 1905]	3787	[4373, 604]	5219	[2113, 5467]
924	[1518, 1519]	2356	[3134, 741]	3788	[3040, 1876]	5220	[2429, 781]
925	[1520, 1521]	2357	[3045, 623]	3789	[2830, 4374]	5221	[3773, 18]
926	[1522, 1427]	2358	[1396, 528]	3790	[1875, 136]	5222	[4891, 5468]
927	[1523, 1524]	2359	[1372, 1690]	3791	[1751, 3155]	5223	[2693, 5469]
928	[1525, 1455]	2360	[1917, 1624]	3792	[4375, 2855]	5224	[4921, 309]
929	[1526, 1527]	2361	[1923, 3135]	3793	[447, 537]	5225	[2539, 4883]
930	[1528, 1529]	2362	[3136, 45]	3794	[1625, 2890]	5226	[4150, 5470]
931	[1530, 1531]	2363	[538, 178]	3795	[3416, 1485]	5227	[4860, 1077]
932	[599, 1532]	2364	[3137, 1730]	3796	[3135, 4191]	5228	[3681, 5471]
933	[1533, 1499]	2365	[3138, 3139]	3797	[4376, 4377]	5229	[5472, 5473]
934	[1367, 639]	2366	[3140, 1571]	3798	[3397, 1546]	5230	[1980, 2361]
935	[662, 472]	2367	[1859, 231]	3799	[4378, 2945]	5231	[5326, 1059]
936	[1534, 236]	2368	[1746, 1624]	3800	[635, 3008]	5232	[387, 2456]
937	[1535, 1536]	2369	[2806, 472]	3801	[2970, 157]	5233	[5430, 2640]
938	[1537, 1538]	2370	[3141, 2860]	3802	[4379, 3165]	5234	[3847, 5474]
939	[1539, 483]	2371	[2826, 1580]	3803	[4380, 1719]	5235	[5475, 5476]
940	[126, 1332]	2372	[1874, 2906]	3804	[191, 709]	5236	[5477, 3801]
941	[1540, 722]	2373	[3142, 3143]	3805	[4381, 3307]	5237	[3914, 3469]
942	[1541, 1542]	2374	[3144, 3145]	3806	[8, 4382]	5238	[5478, 3666]
943	[1543, 1544]	2375	[3146, 1436]	3807	[3252, 4383]	5239	[2374, 4800]
944	[1545, 1546]	2376	[449, 1460]	3808	[4384, 2892]	5240	[5479, 2417]
945	[1547, 1535]	2377	[3088, 528]	3809	[1685, 4385]	5241	[5480, 362]
946	[1548, 1549]	2378	[1880, 628]	3810	[4365, 721]	5242	[4841, 3950]
947	[1550, 1322]	2379	[3147, 587]	3811	[1872, 2880]	5243	[260, 389]
948	[619, 575]	2380	[3148, 3149]	3812	[3327, 1862]	5244	[3713, 1020]
949	[640, 594]	2381	[1509, 1491]	3813	[1735, 1375]	5245	[2262, 888]
950	[473, 1551]	2382	[547, 3150]	3814	[4386, 61]	5246	[5481, 1193]
951	[1552, 1332]	2383	[1611, 3151]	3815	[4387, 1407]	5247	[4744, 1981]
952	[1553, 679]	2384	[1438, 1846]	3816	[1864, 1463]	5248	[333, 5482]
953	[610, 1554]	2385	[3152, 1465]	3817	[4388, 1453]	5249	[5483, 5484]

954	[1555, 613]	2386	[3153, 1895]	3818	[4389, 1458]	5250	[3718, 3731]
955	[169, 523]	2387	[2964, 3154]	3819	[478, 1844]	5251	[5485, 3790]
956	[54, 130]	2388	[500, 1413]	3820	[1680, 3243]	5252	[4775, 5486]
957	[228, 647]	2389	[3155, 194]	3821	[3194, 179]	5253	[2731, 5487]
958	[39, 1556]	2390	[3156, 1822]	3822	[1827, 501]	5254	[2757, 5488]
959	[1557, 1558]	2391	[1401, 1927]	3823	[4390, 4391]	5255	[5489, 5490]
960	[1559, 1560]	2392	[678, 1857]	3824	[4392, 4393]	5256	[4078, 5445]
961	[1561, 1562]	2393	[3157, 3158]	3825	[4394, 660]	5257	[5330, 1035]
962	[1563, 1564]	2394	[3159, 3160]	3826	[4395, 234]	5258	[3998, 5491]
963	[1565, 626]	2395	[3161, 3162]	3827	[4396, 1749]	5259	[2292, 2020]
964	[1336, 514]	2396	[1671, 1338]	3828	[4397, 48]	5260	[2103, 83]
965	[511, 1336]	2397	[513, 1471]	3829	[4398, 4303]	5261	[3902, 5492]
966	[1566, 164]	2398	[3163, 3164]	3830	[4399, 37]	5262	[5493, 5494]
967	[516, 516]	2399	[1720, 1658]	3831	[3195, 4210]	5263	[5495, 813]
968	[1567, 1568]	2400	[1742, 2854]	3832	[1696, 4210]	5264	[2410, 5496]
969	[1471, 1569]	2401	[3165, 3166]	3833	[4400, 1410]	5265	[4881, 2670]
970	[1570, 1571]	2402	[2863, 586]	3834	[4322, 1675]	5266	[2529, 2312]
971	[1572, 1573]	2403	[441, 3135]	3835	[4401, 4201]	5267	[1973, 996]
972	[1574, 1575]	2404	[1783, 567]	3836	[4402, 4186]	5268	[4976, 1018]
973	[1576, 1354]	2405	[606, 3167]	3837	[1830, 666]	5269	[3686, 5497]
974	[1577, 1501]	2406	[3168, 1306]	3838	[4403, 1856]	5270	[5498, 5499]
975	[1578, 643]	2407	[3169, 1664]	3839	[4404, 1662]	5271	[5500, 3574]
976	[1579, 1557]	2408	[3170, 729]	3840	[486, 550]	5272	[5346, 1169]
977	[1569, 1580]	2409	[2982, 450]	3841	[3163, 3240]	5273	[4144, 416]
978	[1581, 151]	2410	[1329, 650]	3842	[4405, 1506]	5274	[1984, 2628]
979	[1582, 602]	2411	[133, 1838]	3843	[4406, 4407]	5275	[1233, 266]
980	[1583, 1531]	2412	[3171, 3145]	3844	[1297, 3074]	5276	[5022, 1188]
981	[1319, 1447]	2413	[3172, 505]	3845	[3170, 3154]	5277	[3609, 3763]
982	[1584, 1585]	2414	[3173, 3174]	3846	[1673, 192]	5278	[947, 1224]
983	[1586, 1587]	2415	[3175, 212]	3847	[4408, 1778]	5279	[306, 5501]
984	[1588, 472]	2416	[734, 588]	3848	[3368, 1662]	5280	[2709, 5502]
985	[1589, 648]	2417	[3023, 512]	3849	[4409, 4410]	5281	[5503, 5504]
986	[1352, 650]	2418	[3176, 554]	3850	[4180, 1788]	5282	[4122, 1164]
987	[1590, 483]	2419	[2939, 561]	3851	[4411, 1861]	5283	[2245, 859]
988	[151, 1591]	2420	[3177, 3178]	3852	[4389, 4344]	5284	[5386, 2737]
989	[587, 1334]	2421	[3179, 3180]	3853	[4412, 1314]	5285	[2125, 5505]
990	[214, 1592]	2422	[3181, 1686]	3854	[1431, 4413]	5286	[1125, 2334]
991	[1593, 1594]	2423	[3182, 3183]	3855	[4414, 4415]	5287	[5506, 5507]
992	[1595, 1596]	2424	[1475, 3184]	3856	[1534, 1618]	5288	[3493, 5508]
993	[1597, 648]	2425	[3185, 1864]	3857	[3288, 594]	5289	[5509, 2713]
994	[1508, 1598]	2426	[3186, 184]	3858	[4416, 196]	5290	[4798, 2227]
995	[527, 699]	2427	[3165, 3187]	3859	[472, 1497]	5291	[4156, 5510]
996	[482, 176]	2428	[1470, 452]	3860	[4417, 1776]	5292	[4796, 2098]
997	[1599, 1421]	2429	[2881, 727]	3861	[4418, 519]	5293	[2696, 2174]

998	[1600, 667]	2430	[3188, 2846]	3862	[4419, 4420]	5294	[1958, 4674]
999	[1601, 491]	2431	[3189, 1409]	3863	[4421, 1305]	5295	[3688, 5511]
1000	[1352, 681]	2432	[3190, 2992]	3864	[4396, 132]	5296	[5512, 4900]
1001	[1602, 60]	2433	[3191, 3192]	3865	[4422, 2871]	5297	[1132, 69]
1002	[1603, 480]	2434	[2861, 1557]	3866	[1700, 1834]	5298	[5513, 2776]
1003	[1604, 1605]	2435	[514, 1569]	3867	[4423, 2930]	5299	[4951, 4816]
1004	[215, 458]	2436	[3193, 2838]	3868	[2968, 598]	5300	[20, 5514]
1005	[509, 1606]	2437	[611, 1649]	3869	[4424, 656]	5301	[5515, 5516]
1006	[1607, 1608]	2438	[3194, 565]	3870	[4425, 4426]	5302	[5517, 4939]
1007	[1609, 478]	2439	[3195, 3196]	3871	[4427, 687]	5303	[2055, 989]
1008	[219, 1610]	2440	[3197, 604]	3872	[2860, 664]	5304	[4661, 5518]
1009	[1611, 1612]	2441	[717, 2837]	3873	[4428, 646]	5305	[5519, 386]
1010	[1613, 1614]	2442	[3011, 1846]	3874	[4429, 1444]	5306	[5520, 5521]
1011	[1615, 465]	2443	[3198, 613]	3875	[4430, 52]	5307	[5522, 5523]
1012	[1616, 1617]	2444	[749, 727]	3876	[4431, 4420]	5308	[5186, 5524]
1013	[48, 1618]	2445	[2960, 3028]	3877	[3256, 3006]	5309	[5525, 712]
1014	[1619, 1348]	2446	[3199, 2927]	3878	[4432, 2945]	5310	[5526, 5527]
1015	[126, 1620]	2447	[1516, 3200]	3879	[2920, 4351]	5311	[5528, 5294]
1016	[1333, 31]	2448	[3154, 3201]	3880	[4381, 2955]	5312	[5529, 199]
1017	[128, 1621]	2449	[3202, 1706]	3881	[4433, 2987]	5313	[5530, 4264]
1018	[1622, 725]	2450	[750, 3108]	3882	[472, 3392]	5314	[5148, 5531]
1019	[1623, 523]	2451	[3203, 1807]	3883	[232, 1906]	5315	[714, 4339]
1020	[490, 1624]	2452	[1752, 3074]	3884	[4434, 2998]	5316	[4496, 192]
1021	[747, 1625]	2453	[3204, 2975]	3885	[4435, 1532]	5317	[1901, 5532]
1022	[1626, 1627]	2454	[1512, 142]	3886	[4436, 1399]	5318	[5236, 4331]
1023	[1628, 626]	2455	[2836, 718]	3887	[4437, 1721]	5319	[5533, 4312]
1024	[1629, 1313]	2456	[3205, 753]	3888	[486, 4248]	5320	[5534, 3358]
1025	[1630, 1631]	2457	[667, 1892]	3889	[4438, 3145]	5321	[5535, 5531]
1026	[1366, 739]	2458	[144, 3080]	3890	[4192, 1556]	5322	[5536, 5249]
1027	[1632, 621]	2459	[3206, 44]	3891	[4439, 1679]	5323	[1683, 5532]
1028	[1633, 1634]	2460	[1803, 1680]	3892	[3077, 59]	5324	[5537, 3020]
1029	[744, 573]	2461	[1533, 1740]	3893	[4440, 1551]	5325	[4613, 4277]
1030	[1323, 442]	2462	[471, 1324]	3894	[4441, 3372]	5326	[5538, 1771]
1031	[518, 1625]	2463	[642, 1819]	3895	[4442, 3063]	5327	[5539, 660]
1032	[1635, 142]	2464	[3113, 476]	3896	[4443, 4444]	5328	[5131, 687]
1033	[1636, 1637]	2465	[3207, 3208]	3897	[4445, 37]	5329	[5540, 5541]
1034	[1638, 188]	2466	[1794, 2972]	3898	[33, 1524]	5330	[5542, 1641]
1035	[1639, 1640]	2467	[1722, 1527]	3899	[3272, 1900]	5331	[549, 4248]
1036	[1641, 1642]	2468	[3209, 583]	3900	[4446, 1923]	5332	[5543, 2819]
1037	[1643, 530]	2469	[536, 448]	3901	[1905, 233]	5333	[5544, 560]
1038	[1644, 1645]	2470	[3210, 1329]	3902	[4447, 4407]	5334	[5543, 1487]
1039	[1646, 1465]	2471	[1586, 639]	3903	[1857, 3184]	5335	[4206, 3418]
1040	[695, 706]	2472	[3211, 1781]	3904	[4448, 3342]	5336	[5545, 1773]
1041	[1647, 1648]	2473	[3173, 3212]	3905	[3122, 4259]	5337	[5546, 1743]

1042	[654, 1334]	2474	[456, 665]	3906	[4449, 1600]	5338	[5547, 445]
1043	[1649, 1650]	2475	[1316, 2832]	3907	[4450, 4415]	5339	[2916, 497]
1044	[57, 1651]	2476	[1739, 1499]	3908	[4451, 747]	5340	[5548, 5549]
1045	[1652, 162]	2477	[1818, 592]	3909	[4452, 596]	5341	[5550, 2836]
1046	[1653, 653]	2478	[3213, 2907]	3910	[4441, 4453]	5342	[5551, 712]
1047	[553, 1602]	2479	[1700, 1851]	3911	[1478, 1558]	5343	[497, 2843]
1048	[1654, 1655]	2480	[574, 1442]	3912	[3181, 4385]	5344	[5552, 1438]
1049	[1341, 1656]	2481	[441, 1924]	3913	[4454, 1458]	5345	[4383, 5553]
1050	[1657, 690]	2482	[3214, 2962]	3914	[4209, 141]	5346	[5554, 4391]
1051	[1658, 1659]	2483	[1417, 1883]	3915	[4455, 458]	5347	[5555, 4426]
1052	[1660, 598]	2484	[719, 653]	3916	[2908, 697]	5348	[5232, 1720]
1053	[1661, 1662]	2485	[3215, 131]	3917	[583, 140]	5349	[5556, 1654]
1054	[1334, 32]	2486	[223, 1412]	3918	[4456, 1768]	5350	[665, 1671]
1055	[1663, 1664]	2487	[1345, 3216]	3919	[4457, 3077]	5351	[5557, 14]
1056	[1665, 1556]	2488	[1921, 2819]	3920	[4404, 1888]	5352	[5305, 5216]
1057	[56, 1666]	2489	[3217, 3077]	3921	[3241, 1316]	5353	[5558, 650]
1058	[1667, 1668]	2490	[3218, 34]	3922	[4458, 1502]	5354	[5559, 5140]
1059	[1669, 1561]	2491	[2817, 3155]	3923	[4459, 4460]	5355	[5056, 5560]
1060	[1670, 147]	2492	[3219, 1417]	3924	[4461, 4270]	5356	[5561, 4426]
1061	[1565, 1671]	2493	[3220, 1594]	3925	[4462, 1722]	5357	[5175, 234]
1062	[1672, 502]	2494	[3221, 1864]	3926	[3112, 4413]	5358	[5562, 5270]
1063	[1673, 709]	2495	[712, 1560]	3927	[4463, 1916]	5359	[4505, 5263]
1064	[1674, 1352]	2496	[3222, 3046]	3928	[4464, 2825]	5360	[5563, 4232]
1065	[469, 1675]	2497	[3223, 3180]	3929	[4465, 2957]	5361	[4191, 3399]
1066	[1676, 1677]	2498	[3224, 3063]	3930	[1477, 1557]	5362	[5564, 569]
1067	[1434, 1541]	2499	[3225, 3226]	3931	[4466, 4205]	5363	[5251, 5095]
1068	[1678, 1348]	2500	[3227, 3228]	3932	[3266, 4467]	5364	[5565, 474]
1069	[151, 1405]	2501	[3229, 3230]	3933	[4468, 1554]	5365	[678, 3285]
1070	[1679, 1680]	2502	[1757, 466]	3934	[1427, 4469]	5366	[5540, 1700]
1071	[460, 1681]	2503	[3231, 1651]	3935	[4470, 3434]	5367	[1452, 610]
1072	[1682, 608]	2504	[1428, 1664]	3936	[2899, 1384]	5368	[4488, 1751]
1073	[1683, 1684]	2505	[3232, 3233]	3937	[3261, 1642]	5369	[5050, 5286]
1074	[1685, 1686]	2506	[3234, 1734]	3938	[4471, 3077]	5370	[5566, 1916]
1075	[1687, 492]	2507	[3235, 1369]	3939	[4283, 3350]	5371	[4516, 1323]
1076	[745, 1354]	2508	[2849, 3192]	3940	[4472, 4281]	5372	[5567, 5255]
1077	[1688, 1689]	2509	[1879, 2860]	3941	[4369, 4473]	5373	[5568, 5174]
1078	[1422, 1690]	2510	[3236, 224]	3942	[4474, 4243]	5374	[4427, 5105]
1079	[1691, 1692]	2511	[1801, 1690]	3943	[1450, 3328]	5375	[5569, 3335]
1080	[1693, 1694]	2512	[3237, 654]	3944	[4245, 3058]	5376	[4346, 5146]
1081	[1695, 1696]	2513	[2909, 454]	3945	[4475, 1692]	5377	[4313, 5224]
1082	[1697, 1698]	2514	[1305, 2938]	3946	[3434, 2985]	5378	[1760, 5570]
1083	[1699, 1700]	2515	[3238, 1856]	3947	[4446, 441]	5379	[5571, 5572]
1084	[1701, 1702]	2516	[3076, 1455]	3948	[4476, 127]	5380	[5573, 5574]
1085	[1641, 1703]	2517	[3239, 3240]	3949	[4477, 1481]	5381	[581, 1416]

1086	[1704, 480]	2518	[3241, 3099]	3950	[1411, 224]	5382	[1597, 1769]
1087	[1705, 1706]	2519	[1657, 2987]	3951	[4478, 4479]	5383	[3178, 4607]
1088	[1707, 212]	2520	[3242, 1340]	3952	[4480, 634]	5384	[5575, 1713]
1089	[1708, 510]	2521	[702, 3243]	3953	[3429, 3304]	5385	[5107, 5223]
1090	[1472, 42]	2522	[3244, 1345]	3954	[3361, 570]	5386	[5576, 1572]
1091	[1687, 1423]	2523	[2923, 178]	3955	[4481, 1685]	5387	[5577, 5572]
1092	[1709, 444]	2524	[3245, 1767]	3956	[4482, 3297]	5388	[4529, 3319]
1093	[127, 1541]	2525	[1595, 3145]	3957	[3231, 58]	5389	[5578, 5229]
1094	[1710, 1711]	2526	[3246, 1810]	3958	[3382, 1405]	5390	[5579, 5580]
1095	[1712, 1713]	2527	[680, 3241]	3959	[4483, 4484]	5391	[5256, 5119]
1096	[1714, 1715]	2528	[3205, 1558]	3960	[4485, 4486]	5392	[5581, 4426]
1097	[1716, 1717]	2529	[3247, 1914]	3961	[4487, 3162]	5393	[5300, 662]
1098	[1718, 1719]	2530	[3248, 3249]	3962	[1791, 1654]	5394	[5582, 1494]
1099	[1468, 1395]	2531	[3250, 3251]	3963	[4488, 2817]	5395	[5583, 498]
1100	[1720, 1721]	2532	[3252, 3253]	3964	[4489, 4490]	5396	[5545, 4322]
1101	[1722, 1723]	2533	[201, 604]	3965	[3400, 4491]	5397	[1504, 1594]
1102	[1724, 1534]	2534	[3254, 3255]	3966	[4492, 4493]	5398	[5584, 5572]
1103	[1725, 1726]	2535	[3256, 632]	3967	[4315, 4494]	5399	[4548, 5585]
1104	[1727, 1728]	2536	[3257, 1535]	3968	[4495, 4281]	5400	[5044, 3354]
1105	[1729, 54]	2537	[3258, 3259]	3969	[4496, 709]	5401	[5586, 4264]
1106	[1709, 1689]	2538	[2860, 1379]	3970	[4497, 2805]	5402	[5099, 5185]
1107	[1436, 1730]	2539	[3260, 3261]	3971	[4498, 1439]	5403	[5587, 4484]
1108	[1731, 1732]	2540	[3262, 3263]	3972	[502, 4368]	5404	[3248, 4354]
1109	[1733, 1734]	2541	[3264, 3164]	3973	[4499, 1924]	5405	[1419, 4346]
1110	[1376, 667]	2542	[193, 3150]	3974	[4500, 4501]	5406	[2937, 1306]
1111	[1576, 746]	2543	[2810, 1315]	3975	[3147, 654]	5407	[5106, 1840]
1112	[1735, 1736]	2544	[3265, 3158]	3976	[1511, 141]	5408	[5588, 4258]
1113	[1412, 1737]	2545	[3266, 3267]	3977	[4502, 3255]	5409	[5589, 5245]
1114	[1738, 132]	2546	[3268, 1861]	3978	[4503, 4504]	5410	[2930, 5277]
1115	[165, 162]	2547	[3269, 1696]	3979	[4505, 4393]	5411	[5575, 3159]
1116	[1739, 1740]	2548	[3270, 514]	3980	[3048, 229]	5412	[5590, 1914]
1117	[1638, 1741]	2549	[2987, 3271]	3981	[446, 1335]	5413	[5589, 3263]
1118	[1742, 1384]	2550	[3272, 3273]	3982	[4506, 1578]	5414	[5591, 541]
1119	[1743, 1744]	2551	[3274, 2892]	3983	[1813, 4507]	5415	[5592, 5593]
1120	[1488, 502]	2552	[161, 3275]	3984	[1626, 2860]	5416	[5594, 5239]
1121	[1745, 1313]	2553	[3276, 747]	3985	[4508, 3335]	5417	[5529, 5097]
1122	[1746, 491]	2554	[1782, 2852]	3986	[1566, 511]	5418	[5595, 1715]
1123	[480, 1747]	2555	[1481, 1377]	3987	[1822, 4509]	5419	[5535, 5149]
1124	[1748, 497]	2556	[3277, 1804]	3988	[648, 1341]	5420	[5143, 2957]
1125	[466, 1749]	2557	[1425, 1301]	3989	[4438, 1596]	5421	[3310, 1546]
1126	[1750, 1751]	2558	[1925, 510]	3990	[1807, 4313]	5422	[5596, 1449]
1127	[1752, 1753]	2559	[3278, 3279]	3991	[4510, 1921]	5423	[5597, 1761]
1128	[1754, 138]	2560	[618, 574]	3992	[4511, 221]	5424	[5548, 5290]
1129	[1755, 679]	2561	[3280, 741]	3993	[4219, 1605]	5425	[5598, 175]

1130	[1756, 486]	2562	[1370, 1634]	3994	[4495, 1898]	5426	[5285, 3266]
1131	[128, 1542]	2563	[2828, 224]	3995	[1375, 3273]	5427	[5599, 731]
1132	[1757, 131]	2564	[3281, 553]	3996	[4512, 4243]	5428	[5181, 5600]
1133	[1758, 1759]	2565	[3207, 1461]	3997	[1315, 2893]	5429	[4362, 173]
1134	[1760, 1761]	2566	[1344, 606]	3998	[4513, 4514]	5430	[5601, 3343]
1135	[1762, 1763]	2567	[3282, 3196]	3999	[4515, 1623]	5431	[5279, 1397]
1136	[1764, 1765]	2568	[1861, 1485]	4000	[4516, 171]	5432	[5602, 3317]
1137	[1766, 1767]	2569	[1792, 1655]	4001	[4267, 1614]	5433	[1764, 5574]
1138	[1768, 1664]	2570	[3283, 1505]	4002	[4517, 606]	5434	[5603, 5604]
1139	[1418, 1769]	2571	[3284, 1643]	4003	[3059, 1460]	5435	[5605, 5606]
1140	[1770, 1771]	2572	[1856, 3285]	4004	[4518, 1508]	5436	[5607, 1666]
1141	[1772, 1773]	2573	[3276, 518]	4005	[4519, 3122]	5437	[3073, 3108]
1142	[1774, 1775]	2574	[3286, 3073]	4006	[1787, 4181]	5438	[5608, 5604]
1143	[1776, 226]	2575	[3204, 1810]	4007	[2956, 3420]	5439	[4520, 3424]
1144	[1777, 1778]	2576	[1584, 468]	4008	[4520, 1554]	5440	[3380, 62]
1145	[1779, 1780]	2577	[3287, 233]	4009	[4521, 1456]	5441	[3168, 2938]
1146	[506, 159]	2578	[3288, 641]	4010	[134, 2934]	5442	[4237, 143]
1147	[1781, 481]	2579	[1325, 2936]	4011	[4522, 1786]	5443	[5609, 3223]
1148	[206, 165]	2580	[2885, 1608]	4012	[4523, 4524]	5444	[5610, 5057]
1149	[1782, 1677]	2581	[156, 2880]	4013	[4525, 201]	5445	[5244, 1308]
1150	[1492, 1313]	2582	[3289, 1320]	4014	[3270, 1471]	5446	[32, 3241]
1151	[541, 1348]	2583	[43, 1737]	4015	[3406, 1658]	5447	[5592, 5611]
1152	[1783, 546]	2584	[554, 626]	4016	[3314, 4526]	5448	[4473, 4490]
1153	[1510, 1784]	2585	[3290, 461]	4017	[4527, 4528]	5449	[5612, 1347]
1154	[1785, 1786]	2586	[3060, 3291]	4018	[4529, 4530]	5450	[5283, 1580]
1155	[1787, 1788]	2587	[3292, 3293]	4019	[3057, 1483]	5451	[5613, 1347]
1156	[1789, 1790]	2588	[3294, 3295]	4020	[179, 2866]	5452	[5526, 5614]
1157	[1791, 1792]	2589	[3296, 3297]	4021	[1865, 140]	5453	[5066, 4277]
1158	[1793, 1657]	2590	[3298, 1569]	4022	[224, 1737]	5454	[677, 1856]
1159	[1794, 1795]	2591	[3052, 3299]	4023	[4531, 4410]	5455	[5615, 658]
1160	[211, 1796]	2592	[3300, 3301]	4024	[199, 4524]	5456	[5616, 5193]
1161	[477, 1649]	2593	[3302, 1917]	4025	[4532, 1790]	5457	[5617, 2902]
1162	[1797, 1331]	2594	[3303, 1775]	4026	[2894, 1303]	5458	[5618, 5182]
1163	[1798, 1528]	2595	[3258, 3304]	4027	[4533, 4534]	5459	[5212, 2879]
1164	[1502, 1799]	2596	[1707, 1796]	4028	[4535, 3293]	5460	[3448, 3208]
1165	[1473, 515]	2597	[3305, 3306]	4029	[3375, 3438]	5461	[5619, 1422]
1166	[465, 511]	2598	[688, 3307]	4030	[4361, 4270]	5462	[5610, 5560]
1167	[464, 1338]	2599	[690, 3271]	4031	[4194, 2827]	5463	[5620, 1301]
1168	[1800, 1801]	2600	[3308, 3309]	4032	[2958, 4536]	5464	[5621, 731]
1169	[150, 628]	2601	[3310, 1617]	4033	[4537, 1917]	5465	[5622, 5553]
1170	[1802, 131]	2602	[589, 1575]	4034	[4538, 4539]	5466	[1712, 3159]
1171	[1729, 495]	2603	[3311, 126]	4035	[1361, 3350]	5467	[5198, 1741]
1172	[1803, 722]	2604	[3312, 3313]	4036	[4540, 4541]	5468	[5234, 3014]
1173	[226, 1407]	2605	[3314, 3315]	4037	[3150, 2988]	5469	[550, 3288]

1174	[1804, 1805]	2606	[3316, 3317]	4038	[1527, 4220]	5470	[5208, 5623]
1175	[1806, 1807]	2607	[3318, 3319]	4039	[4542, 2907]	5471	[5624, 5158]
1176	[1808, 1809]	2608	[3320, 1374]	4040	[1589, 1769]	5472	[5625, 1763]
1177	[147, 1810]	2609	[3321, 3010]	4041	[4543, 175]	5473	[3318, 4530]
1178	[1811, 1812]	2610	[2954, 3307]	4042	[738, 1367]	5474	[5626, 1606]
1179	[1813, 1814]	2611	[3322, 3230]	4043	[4544, 2996]	5475	[1524, 5580]
1180	[1815, 634]	2612	[3323, 1489]	4044	[4545, 1850]	5476	[4262, 4491]
1181	[1816, 1388]	2613	[3079, 3324]	4045	[2823, 1322]	5477	[4235, 2838]
1182	[1636, 1817]	2614	[3325, 694]	4046	[739, 639]	5478	[732, 476]
1183	[1818, 520]	2615	[1466, 1392]	4047	[4546, 3251]	5479	[3085, 3139]
1184	[1443, 1528]	2616	[1311, 3154]	4048	[2994, 4262]	5480	[4285, 3299]
1185	[1578, 1819]	2617	[3326, 1469]	4049	[4547, 4528]	5481	[1355, 1828]
1186	[1820, 128]	2618	[1745, 1493]	4050	[4548, 4549]	5482	[1699, 5541]
1187	[484, 646]	2619	[569, 2903]	4051	[4550, 4551]	5483	[3186, 3106]
1188	[663, 1379]	2620	[681, 651]	4052	[4552, 519]	5484	[1743, 4233]
1189	[1821, 1822]	2621	[3327, 1485]	4053	[4553, 4539]	5485	[3245, 1842]
1190	[1823, 1350]	2622	[3144, 1596]	4054	[4554, 4319]	5486	[3042, 5107]
1191	[1454, 1824]	2623	[601, 2875]	4055	[3175, 1796]	5487	[5050, 3266]
1192	[1825, 1826]	2624	[1392, 3328]	4056	[4299, 157]	5488	[5627, 5241]
1193	[1827, 1413]	2625	[3329, 3330]	4057	[3032, 210]	5489	[5628, 4528]
1194	[1828, 1829]	2626	[3331, 3332]	4058	[4555, 152]	5490	[5573, 1765]
1195	[1830, 484]	2627	[661, 471]	4059	[4556, 3005]	5491	[5624, 5629]
1196	[1513, 153]	2628	[672, 1556]	4060	[2822, 3360]	5492	[5597, 5570]
1197	[1831, 1832]	2629	[224, 44]	4061	[4557, 3313]	5493	[5630, 3317]
1198	[1833, 1834]	2630	[3333, 3020]	4062	[3218, 1524]	5494	[5243, 5585]
1199	[1835, 1836]	2631	[3308, 2821]	4063	[4558, 608]	5495	[1309, 3418]
1200	[1837, 1654]	2632	[3334, 3335]	4064	[4290, 3306]	5496	[5281, 5144]
1201	[673, 1838]	2633	[3336, 2998]	4065	[4355, 715]	5497	[2949, 1842]
1202	[1839, 1840]	2634	[3289, 1447]	4066	[4559, 2810]	5498	[5631, 5572]
1203	[1841, 1659]	2635	[3337, 1399]	4067	[4560, 487]	5499	[5160, 5632]
1204	[1607, 1778]	2636	[3338, 1658]	4068	[1864, 4561]	5500	[3035, 3309]
1205	[1766, 1842]	2637	[3339, 1465]	4069	[4437, 1658]	5501	[4568, 1332]
1206	[1843, 648]	2638	[3340, 2996]	4070	[4562, 694]	5502	[5201, 5524]
1207	[1649, 1844]	2639	[1904, 173]	4071	[1453, 3424]	5503	[2857, 4415]
1208	[1845, 1846]	2640	[3341, 3342]	4072	[4563, 3028]	5504	[1580, 54]
1209	[1847, 750]	2641	[3343, 3187]	4073	[1838, 1577]	5505	[4573, 3108]
1210	[162, 675]	2642	[3344, 2902]	4074	[3047, 214]	5506	[5633, 139]
1211	[578, 1848]	2643	[1672, 1489]	4075	[4564, 586]	5507	[5634, 5527]
1212	[1849, 1850]	2644	[3345, 208]	4076	[4565, 182]	5508	[3334, 5635]
1213	[1833, 1851]	2645	[3346, 3174]	4077	[4305, 4486]	5509	[4482, 1728]
1214	[1852, 1853]	2646	[3347, 578]	4078	[1535, 3143]	5510	[2961, 559]
1215	[1695, 1854]	2647	[3348, 212]	4079	[1792, 4566]	5511	[5238, 580]
1216	[1855, 1320]	2648	[3114, 1363]	4080	[4567, 194]	5512	[4465, 3420]
1217	[1856, 1857]	2649	[3030, 3349]	4081	[4568, 1620]	5513	[2963, 2835]

1218	[1841, 1858]	2650	[2947, 1331]	4082	[4569, 1759]	5514	[5636, 1848]
1219	[1859, 1698]	2651	[1804, 2869]	4083	[4570, 4203]	5515	[5637, 33]
1220	[1588, 1324]	2652	[507, 3350]	4084	[4571, 3058]	5516	[5296, 5638]
1221	[1860, 1799]	2653	[217, 2815]	4085	[4572, 4298]	5517	[4403, 678]
1222	[1861, 1862]	2654	[3351, 1795]	4086	[144, 3324]	5518	[5569, 5635]
1223	[1537, 62]	2655	[505, 3352]	4087	[4573, 751]	5519	[4328, 2821]
1224	[1863, 1864]	2656	[3353, 3354]	4088	[60, 4469]	5520	[5639, 5172]
1225	[1423, 1419]	2657	[3355, 3356]	4089	[4574, 1752]	5521	[5615, 5298]
1226	[1865, 584]	2658	[3357, 3358]	4090	[4470, 4203]	5522	[5640, 583]
1227	[628, 1591]	2659	[3094, 3359]	4091	[4575, 1641]	5523	[5641, 5611]
1228	[1679, 722]	2660	[1398, 190]	4092	[4193, 3251]	5524	[3519, 70]
1229	[1866, 1867]	2661	[3120, 2954]	4093	[4576, 1494]	5525	[2239, 5642]
1230	[1868, 1869]	2662	[3086, 3360]	4094	[4577, 1314]	5526	[2785, 5643]
1231	[1870, 1305]	2663	[3361, 2903]	4095	[4578, 61]	5527	[5644, 2403]
1232	[1871, 636]	2664	[3362, 621]	4096	[4570, 3434]	5528	[255, 5645]
1233	[1872, 157]	2665	[3363, 743]	4097	[4204, 1640]	5529	[1272, 2148]
1234	[1873, 1405]	2666	[2952, 2852]	4098	[4319, 1386]	5530	[5412, 4897]
1235	[1874, 1807]	2667	[183, 3106]	4099	[4579, 1679]	5531	[5646, 5647]
1236	[1875, 1876]	2668	[3261, 1703]	4100	[4580, 3343]	5532	[2670, 1151]
1237	[137, 1877]	2669	[3244, 606]	4101	[4337, 4467]	5533	[2240, 3827]
1238	[1627, 1379]	2670	[3364, 613]	4102	[1539, 176]	5534	[4124, 4787]
1239	[1590, 176]	2671	[2925, 128]	4103	[4581, 1857]	5535	[2616, 5648]
1240	[157, 1878]	2672	[1522, 60]	4104	[4582, 651]	5536	[4123, 5644]
1241	[1879, 1627]	2673	[3365, 31]	4105	[1807, 4583]	5537	[4676, 5649]
1242	[1880, 151]	2674	[573, 2841]	4106	[4584, 3106]	5538	[2075, 1205]
1243	[1881, 135]	2675	[671, 131]	4107	[1385, 4320]	5539	[5438, 63]
1244	[201, 1882]	2676	[496, 1561]	4108	[4585, 614]	5540	[5650, 281]
1245	[1307, 1883]	2677	[3366, 1912]	4109	[4345, 4586]	5541	[5651, 900]
1246	[1884, 563]	2678	[3367, 1446]	4110	[4587, 1684]	5542	[3537, 2440]
1247	[1410, 33]	2679	[3368, 1888]	4111	[161, 4198]	5543	[2717, 434]
1248	[1885, 1489]	2680	[690, 3369]	4112	[4588, 4589]	5544	[4636, 5652]
1249	[545, 567]	2681	[3370, 1735]	4113	[3159, 4590]	5545	[5653, 2480]
1250	[1886, 168]	2682	[3371, 623]	4114	[4563, 1848]	5546	[2040, 2568]
1251	[614, 1397]	2683	[3230, 3372]	4115	[1609, 1649]	5547	[4108, 1250]
1252	[194, 1449]	2684	[3373, 3374]	4116	[4428, 485]	5548	[4092, 2208]
1253	[1887, 1531]	2685	[3375, 3226]	4117	[4591, 3261]	5549	[944, 3474]
1254	[1661, 1888]	2686	[3126, 3073]	4118	[3356, 3249]	5550	[1241, 1237]
1255	[1889, 1536]	2687	[3027, 1339]	4119	[493, 4346]	5551	[253, 2322]
1256	[1890, 1753]	2688	[3376, 2888]	4120	[1484, 1862]	5552	[1007, 2149]
1257	[613, 586]	2689	[3377, 3378]	4121	[4592, 1867]	5553	[2525, 2491]
1258	[1891, 1892]	2690	[3153, 3082]	4122	[3036, 4536]	5554	[4082, 328]
1259	[1769, 649]	2691	[3379, 3204]	4123	[2853, 1817]	5555	[5654, 2650]
1260	[1893, 705]	2692	[2868, 1805]	4124	[4593, 3165]	5556	[2746, 19]
1261	[1894, 1895]	2693	[3380, 1538]	4125	[4594, 4595]	5557	[2721, 5655]

1262	[1896, 1828]	2694	[3003, 58]	4126	[4596, 1595]	5558	[74, 1176]
1263	[1394, 1469]	2695	[3381, 50]	4127	[4597, 1385]	5559	[2446, 5656]
1264	[1897, 1898]	2696	[2965, 2868]	4128	[4598, 700]	5560	[5657, 902]
1265	[1899, 1491]	2697	[177, 539]	4129	[627, 151]	5561	[4916, 5396]
1266	[1375, 1900]	2698	[1828, 3102]	4130	[4599, 4600]	5562	[1212, 5658]
1267	[1901, 1684]	2699	[3382, 1591]	4131	[3117, 4214]	5563	[5659, 4682]
1268	[1902, 1903]	2700	[1540, 1680]	4132	[4601, 201]	5564	[1029, 5660]
1269	[1904, 1410]	2701	[446, 3083]	4133	[3269, 1854]	5565	[2736, 985]
1270	[1905, 1906]	2702	[3383, 1923]	4134	[2996, 4602]	5566	[4041, 5661]
1271	[488, 1421]	2703	[735, 1610]	4135	[4603, 4604]	5567	[4633, 5662]
1272	[1776, 573]	2704	[3384, 3385]	4136	[4605, 3374]	5568	[2625, 2169]
1273	[1907, 1908]	2705	[3386, 3291]	4137	[4253, 4444]	5569	[5663, 4115]
1274	[1909, 1853]	2706	[3387, 3388]	4138	[4606, 4607]	5570	[5664, 775]
1275	[1910, 203]	2707	[3389, 3390]	4139	[4608, 1715]	5571	[5520, 4869]
1276	[1911, 1912]	2708	[2960, 1848]	4140	[3402, 4494]	5572	[5665, 4719]
1277	[1913, 1384]	2709	[3363, 3391]	4141	[4609, 1572]	5573	[5478, 3533]
1278	[1914, 1915]	2710	[1496, 3392]	4142	[4610, 3104]	5574	[4, 5666]
1279	[707, 565]	2711	[3393, 3223]	4143	[4187, 574]	5575	[79, 3873]
1280	[1622, 572]	2712	[2859, 1627]	4144	[4455, 216]	5576	[4698, 3637]
1281	[1916, 1643]	2713	[676, 675]	4145	[4611, 522]	5577	[3823, 4878]
1282	[1917, 491]	2714	[1801, 1373]	4146	[4612, 2887]	5578	[3835, 5667]
1283	[1918, 228]	2715	[3394, 3395]	4147	[4613, 4614]	5579	[1238, 1965]
1284	[1919, 1920]	2716	[3286, 750]	4148	[1748, 1561]	5580	[68, 3569]
1285	[1602, 1427]	2717	[1440, 186]	4149	[1507, 2835]	5581	[5354, 5030]
1286	[1921, 1487]	2718	[3396, 1728]	4150	[4615, 3050]	5582	[3769, 1228]
1287	[1922, 1356]	2719	[3397, 1617]	4151	[2994, 4509]	5583	[5668, 5669]
1288	[1459, 450]	2720	[1444, 1551]	4152	[3110, 216]	5584	[4716, 842]
1289	[1599, 489]	2721	[1918, 625]	4153	[4616, 3208]	5585	[5670, 3680]
1290	[445, 727]	2722	[1569, 2827]	4154	[4436, 190]	5586	[4680, 5404]
1291	[1409, 746]	2723	[1797, 126]	4155	[4306, 4383]	5587	[5654, 997]
1292	[1923, 1924]	2724	[3398, 3399]	4156	[4617, 4514]	5588	[5671, 5672]
1293	[1925, 1606]	2725	[3400, 3117]	4157	[4618, 58]	5589	[5673, 5674]
1294	[1926, 220]	2726	[3401, 3358]	4158	[4619, 670]	5590	[5675, 5676]
1295	[14, 1927]	2727	[3402, 3403]	4159	[4620, 3181]	5591	[436, 4008]
1296	[1928, 1929]	2728	[3404, 3097]	4160	[2831, 1317]	5592	[4120, 4858]
1297	[1930, 999]	2729	[3405, 178]	4161	[4621, 1825]	5593	[2346, 1292]
1298	[1931, 1932]	2730	[3406, 1721]	4162	[687, 2954]	5594	[1188, 5677]
1299	[1933, 1934]	2731	[3407, 642]	4163	[3146, 3137]	5595	[5408, 3960]
1300	[1935, 1936]	2732	[521, 1421]	4164	[1769, 1341]	5596	[4811, 894]
1301	[1937, 1938]	2733	[3408, 2903]	4165	[4622, 689]	5597	[5678, 4645]
1302	[1939, 1940]	2734	[3409, 697]	4166	[3037, 1322]	5598	[323, 837]
1303	[1941, 1942]	2735	[2919, 666]	4167	[4623, 4479]	5599	[1143, 5679]
1304	[1943, 1944]	2736	[3009, 2807]	4168	[3101, 3299]	5600	[3714, 1021]
1305	[1945, 65]	2737	[2977, 594]	4169	[4624, 2785]	5601	[1247, 2621]

1306	[1946, 259]	2738	[1572, 2953]	4170	[2669, 4625]	5602	[5358, 4000]
1307	[1947, 1948]	2739	[3410, 1706]	4171	[4626, 2773]	5603	[3945, 5680]
1308	[1949, 1950]	2740	[537, 2867]	4172	[4627, 3805]	5604	[5681, 5682]
1309	[1951, 1952]	2741	[3411, 160]	4173	[4628, 4629]	5605	[4942, 4949]
1310	[1953, 1954]	2742	[3412, 1483]	4174	[3780, 4630]	5606	[5683, 3465]
1311	[1955, 1956]	2743	[3413, 473]	4175	[3748, 2429]	5607	[2144, 363]
1312	[1957, 1958]	2744	[1545, 1617]	4176	[4631, 4632]	5608	[4643, 5381]
1313	[1959, 1960]	2745	[1577, 2874]	4177	[4633, 1235]	5609	[4732, 2506]
1314	[1961, 1962]	2746	[2816, 625]	4178	[4634, 306]	5610	[5684, 5685]
1315	[1963, 1964]	2747	[3414, 1315]	4179	[4635, 1280]	5611	[4149, 3813]
1316	[1965, 313]	2748	[1528, 3415]	4180	[120, 311]	5612	[1067, 941]
1317	[1966, 1207]	2749	[3416, 1862]	4181	[1041, 73]	5613	[261, 2392]
1318	[1967, 1968]	2750	[3417, 1650]	4182	[4636, 3671]	5614	[4675, 1992]
1319	[389, 1969]	2751	[3418, 1645]	4183	[4637, 2162]	5615	[5406, 5332]
1320	[1970, 1971]	2752	[460, 1592]	4184	[4638, 2306]	5616	[2528, 375]
1321	[1972, 1973]	2753	[3419, 3420]	4185	[3803, 4639]	5617	[2416, 2276]
1322	[1974, 1975]	2754	[554, 1671]	4186	[4640, 4641]	5618	[5662, 1236]
1323	[1976, 1977]	2755	[1773, 470]	4187	[4642, 999]	5619	[5686, 5687]
1324	[1978, 803]	2756	[448, 3421]	4188	[4643, 2411]	5620	[4035, 5688]
1325	[1979, 1980]	2757	[3422, 3423]	4189	[4644, 4645]	5621	[249, 1070]
1326	[1981, 1982]	2758	[3424, 1517]	4190	[4646, 3866]	5622	[365, 5689]
1327	[1983, 977]	2759	[3425, 1655]	4191	[2798, 3639]	5623	[1931, 2184]
1328	[1984, 800]	2760	[2862, 720]	4192	[4647, 4648]	5624	[5690, 2203]
1329	[1985, 1986]	2761	[610, 3424]	4193	[4649, 2530]	5625	[4961, 4834]
1330	[1987, 1988]	2762	[1658, 1858]	4194	[891, 108]	5626	[3793, 5316]
1331	[1989, 1990]	2763	[3426, 3427]	4195	[4650, 3594]	5627	[5691, 2330]
1332	[1991, 1992]	2764	[3428, 2945]	4196	[2566, 2381]	5628	[3978, 5371]
1333	[326, 1993]	2765	[3429, 3259]	4197	[4161, 2558]	5629	[5692, 1185]
1334	[1994, 1995]	2766	[3430, 1817]	4198	[368, 4651]	5630	[4635, 2378]
1335	[1996, 1997]	2767	[1367, 1587]	4199	[4652, 855]	5631	[5000, 76]
1336	[816, 1115]	2768	[3431, 1480]	4200	[4653, 4654]	5632	[5693, 3592]
1337	[1998, 1999]	2769	[1627, 664]	4201	[4655, 4656]	5633	[1290, 5694]
1338	[1148, 816]	2770	[3432, 587]	4202	[4657, 2417]	5634	[5695, 2095]
1339	[2000, 329]	2771	[1823, 1456]	4203	[4658, 4659]	5635	[5696, 3697]
1340	[2001, 2002]	2772	[3433, 1921]	4204	[3460, 3691]	5636	[337, 3760]
1341	[2003, 2004]	2773	[3434, 3435]	4205	[4002, 4660]	5637	[1022, 5697]
1342	[2005, 1175]	2774	[1408, 572]	4206	[4661, 3632]	5638	[4060, 2463]
1343	[1943, 2006]	2775	[1601, 1624]	4207	[1264, 4662]	5639	[4988, 5698]
1344	[2007, 2008]	2776	[3058, 2836]	4208	[3710, 2624]	5640	[2437, 1964]
1345	[2009, 1191]	2777	[3436, 643]	4209	[4663, 3738]	5641	[5510, 3844]
1346	[2010, 2011]	2778	[3437, 3388]	4210	[3491, 2692]	5642	[1453, 1554]
1347	[793, 1187]	2779	[3225, 3438]	4211	[4051, 4664]	5643	[5188, 674]
1348	[2012, 2013]	2780	[3439, 3072]	4212	[4665, 4666]	5644	[3041, 3418]
1349	[1973, 2014]	2781	[3440, 3233]	4213	[4157, 802]	5645	[5699, 2869]

1350	[381, 1125]	2782	[3441, 2992]	4214	[4116, 1043]	5646	[4373, 1882]
1351	[2015, 1126]	2783	[1467, 1510]	4215	[4667, 3798]	5647	[576, 1524]
1352	[2016, 1128]	2784	[607, 3442]	4216	[4668, 833]	5648	[5700, 3178]
1353	[2017, 2018]	2785	[3443, 1536]	4217	[4669, 4670]	5649	[5302, 5623]
1354	[973, 994]	2786	[3444, 1436]	4218	[2564, 4671]	5650	[3347, 2960]
1355	[2019, 2020]	2787	[525, 686]	4219	[4672, 866]	5651	[1581, 628]
1356	[2021, 928]	2788	[3445, 3446]	4220	[3576, 4673]	5652	[4459, 4180]
1357	[1082, 2022]	2789	[1604, 3447]	4221	[2274, 4674]	5653	[3383, 441]
1358	[2023, 2024]	2790	[3056, 155]	4222	[3603, 4675]	5654	[5701, 4551]
1359	[2025, 2026]	2791	[3448, 1461]	4223	[2515, 426]	5655	[5702, 5703]
1360	[1011, 1045]	2792	[3202, 3349]	4224	[2185, 244]	5656	[5240, 5704]
1361	[2027, 2028]	2793	[3130, 1527]	4225	[4676, 4677]	5657	[3185, 5061]
1362	[2029, 2030]	2794	[2877, 468]	4226	[795, 4678]	5658	[5271, 3315]
1363	[432, 2031]	2795	[3449, 1685]	4227	[2285, 1076]	5659	[5705, 3135]
1364	[98, 2032]	2796	[3450, 2932]	4228	[2302, 2532]	5660	[5706, 1826]
1365	[2033, 2034]	2797	[3451, 1478]	4229	[4679, 2466]	5661	[5641, 5593]
1366	[2035, 2036]	2798	[1754, 1877]	4230	[4680, 3616]	5662	[1593, 1505]
1367	[2037, 2038]	2799	[1382, 134]	4231	[304, 2085]	5663	[1445, 155]
1368	[1133, 896]	2800	[61, 1538]	4232	[2257, 4681]	5664	[3140, 3360]
1369	[2039, 2040]	2801	[2986, 3137]	4233	[4682, 4683]	5665	[5707, 5606]
1370	[2041, 2042]	2802	[3452, 501]	4234	[4684, 2565]	5666	[8, 4374]
1371	[2043, 2044]	2803	[3453, 3149]	4235	[4685, 2676]	5667	[1415, 582]
1372	[2045, 2046]	2804	[3454, 3455]	4236	[3874, 4686]	5668	[5708, 482]
1373	[2047, 2048]	2805	[1947, 3456]	4237	[4687, 273]	5669	[5634, 5614]
1374	[2049, 2050]	2806	[249, 2583]	4238	[3891, 2582]	5670	[5709, 2955]
1375	[2051, 2052]	2807	[3457, 3458]	4239	[2158, 3898]	5671	[5710, 1792]
1376	[2053, 1152]	2808	[3459, 2309]	4240	[4688, 2719]	5672	[2945, 5638]
1377	[86, 2054]	2809	[3460, 3461]	4241	[4689, 2595]	5673	[4457, 553]
1378	[872, 2055]	2810	[3462, 2771]	4242	[2379, 3500]	5674	[5246, 2815]
1379	[2056, 2057]	2811	[3463, 2409]	4243	[2152, 2296]	5675	[5711, 3042]
1380	[2058, 2059]	2812	[2299, 768]	4244	[3575, 2096]	5676	[5289, 5549]
1381	[2060, 965]	2813	[3464, 3465]	4245	[4690, 3496]	5677	[3246, 2975]
1382	[2061, 2062]	2814	[3466, 3467]	4246	[4691, 4692]	5678	[3250, 1568]
1383	[2063, 2064]	2815	[3468, 3469]	4247	[4693, 1943]	5679	[5079, 3285]
1384	[2065, 793]	2816	[3470, 427]	4248	[75, 1177]	5680	[5157, 5629]
1385	[318, 2066]	2817	[353, 365]	4249	[4694, 4118]	5681	[5712, 3317]
1386	[2067, 2068]	2818	[3471, 3472]	4250	[4695, 4696]	5682	[5273, 5632]
1387	[2069, 2070]	2819	[3473, 3474]	4251	[868, 4697]	5683	[5713, 3069]
1388	[2071, 2072]	2820	[3475, 3476]	4252	[4698, 4113]	5684	[3283, 1594]
1389	[2073, 2074]	2821	[3477, 3478]	4253	[2308, 4699]	5685	[1768, 1429]
1390	[2075, 1126]	2822	[3479, 2697]	4254	[2068, 4700]	5686	[5714, 453]
1391	[2076, 2077]	2823	[3480, 3481]	4255	[2156, 269]	5687	[5618, 5600]
1392	[981, 2078]	2824	[3482, 3483]	4256	[1968, 4701]	5688	[4616, 1461]
1393	[2079, 2080]	2825	[3484, 3485]	4257	[300, 4702]	5689	[5699, 1805]

1394	[2081, 901]	2826	[2187, 3486]	4258	[1279, 2550]	5690	[669, 1614]
1395	[2082, 2083]	2827	[3487, 384]	4259	[1255, 2455]	5691	[4414, 2858]
1396	[2084, 2085]	2828	[3488, 2022]	4260	[3940, 3660]	5692	[3381, 4536]
1397	[2086, 2087]	2829	[855, 3489]	4261	[762, 4703]	5693	[235, 3415]
1398	[2088, 2089]	2830	[1987, 3490]	4262	[420, 988]	5694	[5136, 59]
1399	[2090, 2091]	2831	[3491, 966]	4263	[4704, 4131]	5695	[4273, 582]
1400	[2092, 2093]	2832	[265, 782]	4264	[4705, 898]	5696	[3351, 2972]
1401	[2094, 2095]	2833	[3492, 2396]	4265	[2801, 4706]	5697	[5620, 1426]
1402	[2096, 2097]	2834	[3493, 3494]	4266	[4707, 2242]	5698	[5627, 5704]
1403	[2098, 1290]	2835	[3495, 2107]	4267	[4708, 4677]	5699	[2678, 5715]
1404	[873, 2099]	2836	[3496, 3497]	4268	[4709, 2190]	5700	[5716, 5685]
1405	[948, 1225]	2837	[3498, 1211]	4269	[4710, 4077]	5701	[4727, 2101]
1406	[2016, 956]	2838	[3499, 1105]	4270	[4711, 3684]	5702	[5717, 5718]
1407	[301, 2100]	2839	[2253, 3500]	4271	[4712, 3628]	5703	[5719, 4747]
1408	[2101, 1944]	2840	[1092, 3501]	4272	[4713, 2369]	5704	[5720, 1221]
1409	[2069, 118]	2841	[799, 3502]	4273	[4714, 2249]	5705	[3555, 3610]
1410	[2102, 2103]	2842	[1250, 3503]	4274	[3653, 4648]	5706	[853, 5721]
1411	[2104, 2105]	2843	[2011, 3504]	4275	[761, 4715]	5707	[3605, 3880]
1412	[2106, 2107]	2844	[757, 2754]	4276	[4716, 1149]	5708	[3554, 5722]
1413	[2108, 2109]	2845	[3505, 3506]	4277	[959, 860]	5709	[2121, 1999]
1414	[2110, 1268]	2846	[3507, 3508]	4278	[2459, 2161]	5710	[976, 5723]
1415	[2111, 783]	2847	[3509, 269]	4279	[3928, 2223]	5711	[1951, 5724]
1416	[2112, 2024]	2848	[3510, 3511]	4280	[4717, 2744]	5712	[4780, 117]
1417	[2113, 1065]	2849	[2092, 3512]	4281	[4718, 4719]	5713	[5020, 2686]
1418	[2114, 969]	2850	[3513, 3514]	4282	[2335, 4720]	5714	[3801, 3490]
1419	[2115, 847]	2851	[3515, 3516]	4283	[4721, 4164]	5715	[5626, 510]
1420	[2116, 856]	2852	[3517, 852]	4284	[4722, 92]	5716	[3203, 2906]
1421	[2117, 1000]	2853	[3518, 3519]	4285	[4154, 844]	5717	[1660, 2969]
1422	[2118, 2119]	2854	[3520, 402]	4286	[3725, 4715]	5718	[2814, 218]
1423	[2120, 2121]	2855	[3521, 3522]	4287	[69, 314]	5719	[479, 1610]
1424	[2122, 2123]	2856	[3523, 3524]	4288	[2770, 873]	5720	[1570, 3360]
1425	[2124, 2125]	2857	[3525, 3526]	4289	[4723, 4052]	5721	[665, 626]
1426	[2126, 2127]	2858	[3527, 1275]	4290	[2516, 4724]	5722	[5706, 1806]
1427	[2128, 2129]	2859	[3528, 1146]	4291	[4725, 3981]	5723	[5702, 3072]
1428	[2130, 1111]	2860	[3529, 3530]	4292	[997, 779]	5724	[3439, 5703]
1429	[2131, 2132]	2861	[3531, 3532]	4293	[3467, 4726]		
1430	[2133, 2134]	2862	[3533, 3534]	4294	[4727, 1943]		
1431	[2135, 2136]	2863	[1024, 3535]	4295	[4728, 1030]		

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	955	0	1910	1	2865	0	3820	0	4775	1
1	0	956	0	1911	1	2866	1	3821	0	4776	1
2	0	957	1	1912	1	2867	1	3822	0	4777	1

3	0	958	1	1913	0	2868	1	3823	0	4778	1
4	1	959	0	1914	1	2869	1	3824	1	4779	0
5	0	960	0	1915	0	2870	1	3825	0	4780	1
6	0	961	0	1916	1	2871	1	3826	0	4781	1
7	0	962	1	1917	1	2872	1	3827	1	4782	1
8	1	963	0	1918	1	2873	0	3828	1	4783	1
9	1	964	1	1919	0	2874	0	3829	1	4784	0
10	0	965	1	1920	1	2875	1	3830	0	4785	0
11	0	966	0	1921	1	2876	1	3831	1	4786	0
12	0	967	1	1922	1	2877	1	3832	1	4787	1
13	0	968	0	1923	0	2878	1	3833	1	4788	0
14	0	969	0	1924	0	2879	0	3834	0	4789	0
15	0	970	0	1925	0	2880	0	3835	1	4790	0
16	0	971	1	1926	1	2881	0	3836	1	4791	1
17	1	972	1	1927	0	2882	0	3837	1	4792	1
18	0	973	0	1928	0	2883	1	3838	1	4793	0
19	1	974	0	1929	0	2884	0	3839	1	4794	0
20	1	975	1	1930	1	2885	1	3840	0	4795	1
21	0	976	1	1931	1	2886	0	3841	0	4796	1
22	1	977	1	1932	0	2887	1	3842	0	4797	1
23	0	978	0	1933	1	2888	1	3843	1	4798	0
24	0	979	0	1934	0	2889	1	3844	1	4799	1
25	0	980	1	1935	0	2890	0	3845	1	4800	0
26	0	981	0	1936	0	2891	0	3846	0	4801	0
27	0	982	0	1937	1	2892	1	3847	0	4802	1
28	0	983	0	1938	1	2893	1	3848	0	4803	1
29	0	984	1	1939	0	2894	1	3849	1	4804	0
30	0	985	0	1940	0	2895	1	3850	1	4805	1
31	0	986	0	1941	0	2896	0	3851	1	4806	0
32	0	987	1	1942	1	2897	1	3852	0	4807	0
33	0	988	0	1943	1	2898	1	3853	1	4808	1
34	1	989	1	1944	0	2899	0	3854	0	4809	1
35	1	990	0	1945	1	2900	1	3855	1	4810	1
36	1	991	1	1946	1	2901	1	3856	1	4811	1
37	0	992	1	1947	0	2902	0	3857	1	4812	1
38	1	993	1	1948	1	2903	0	3858	1	4813	0
39	1	994	1	1949	1	2904	0	3859	1	4814	1
40	1	995	1	1950	0	2905	0	3860	1	4815	1
41	1	996	1	1951	1	2906	0	3861	1	4816	0
42	1	997	1	1952	1	2907	1	3862	1	4817	0
43	0	998	1	1953	1	2908	0	3863	0	4818	1
44	1	999	1	1954	1	2909	1	3864	1	4819	1
45	1	1000	0	1955	1	2910	0	3865	0	4820	1
46	0	1001	1	1956	0	2911	1	3866	1	4821	0

47	0	1002	1	1957	1	2912	0	3867	1	4822	1
48	0	1003	1	1958	1	2913	1	3868	1	4823	0
49	0	1004	0	1959	1	2914	1	3869	1	4824	0
50	0	1005	1	1960	0	2915	0	3870	1	4825	0
51	0	1006	1	1961	1	2916	0	3871	0	4826	1
52	0	1007	0	1962	1	2917	1	3872	0	4827	0
53	0	1008	0	1963	0	2918	1	3873	1	4828	1
54	0	1009	1	1964	1	2919	0	3874	1	4829	0
55	0	1010	1	1965	0	2920	1	3875	0	4830	1
56	1	1011	1	1966	1	2921	1	3876	0	4831	1
57	0	1012	0	1967	1	2922	1	3877	0	4832	1
58	0	1013	0	1968	0	2923	1	3878	0	4833	1
59	0	1014	0	1969	0	2924	0	3879	1	4834	0
60	0	1015	1	1970	1	2925	1	3880	1	4835	0
61	0	1016	1	1971	1	2926	1	3881	1	4836	0
62	1	1017	0	1972	1	2927	0	3882	1	4837	0
63	0	1018	0	1973	0	2928	1	3883	1	4838	0
64	1	1019	1	1974	0	2929	0	3884	1	4839	0
65	0	1020	0	1975	0	2930	0	3885	0	4840	0
66	1	1021	1	1976	0	2931	1	3886	1	4841	1
67	0	1022	1	1977	1	2932	0	3887	1	4842	0
68	0	1023	1	1978	0	2933	1	3888	0	4843	1
69	1	1024	0	1979	1	2934	1	3889	0	4844	0
70	1	1025	0	1980	0	2935	0	3890	0	4845	1
71	1	1026	1	1981	1	2936	0	3891	0	4846	1
72	1	1027	0	1982	0	2937	0	3892	0	4847	0
73	1	1028	1	1983	0	2938	0	3893	0	4848	1
74	0	1029	1	1984	0	2939	1	3894	0	4849	0
75	1	1030	0	1985	1	2940	0	3895	0	4850	1
76	1	1031	0	1986	0	2941	0	3896	1	4851	1
77	1	1032	1	1987	0	2942	1	3897	1	4852	1
78	1	1033	0	1988	0	2943	1	3898	0	4853	1
79	0	1034	1	1989	0	2944	0	3899	0	4854	1
80	1	1035	0	1990	0	2945	0	3900	1	4855	0
81	1	1036	0	1991	0	2946	0	3901	0	4856	0
82	1	1037	0	1992	0	2947	0	3902	0	4857	0
83	1	1038	0	1993	0	2948	0	3903	1	4858	0
84	1	1039	0	1994	1	2949	0	3904	0	4859	0
85	0	1040	1	1995	0	2950	0	3905	0	4860	1
86	0	1041	0	1996	0	2951	0	3906	0	4861	0
87	0	1042	0	1997	1	2952	0	3907	0	4862	0
88	1	1043	1	1998	1	2953	1	3908	0	4863	0
89	1	1044	0	1999	1	2954	1	3909	0	4864	0
90	1	1045	0	2000	1	2955	1	3910	0	4865	1

91	0	1046	0	2001	0	2956	1	3911	1	4866	0
92	0	1047	1	2002	1	2957	0	3912	0	4867	0
93	0	1048	1	2003	1	2958	1	3913	1	4868	1
94	0	1049	1	2004	1	2959	0	3914	1	4869	1
95	0	1050	1	2005	1	2960	1	3915	1	4870	0
96	0	1051	1	2006	1	2961	0	3916	0	4871	1
97	0	1052	0	2007	0	2962	1	3917	0	4872	0
98	0	1053	1	2008	0	2963	0	3918	1	4873	1
99	0	1054	1	2009	1	2964	0	3919	1	4874	0
100	0	1055	0	2010	1	2965	0	3920	1	4875	0
101	0	1056	0	2011	1	2966	1	3921	0	4876	0
102	0	1057	1	2012	0	2967	1	3922	1	4877	1
103	0	1058	0	2013	0	2968	1	3923	0	4878	0
104	0	1059	1	2014	0	2969	1	3924	1	4879	1
105	0	1060	1	2015	0	2970	1	3925	1	4880	0
106	0	1061	0	2016	0	2971	0	3926	0	4881	0
107	0	1062	1	2017	1	2972	0	3927	0	4882	0
108	0	1063	0	2018	1	2973	1	3928	0	4883	0
109	0	1064	1	2019	0	2974	1	3929	0	4884	0
110	0	1065	0	2020	0	2975	1	3930	0	4885	0
111	1	1066	1	2021	1	2976	1	3931	1	4886	1
112	1	1067	0	2022	1	2977	1	3932	1	4887	0
113	0	1068	1	2023	0	2978	1	3933	1	4888	1
114	1	1069	0	2024	1	2979	1	3934	1	4889	1
115	0	1070	1	2025	0	2980	1	3935	1	4890	0
116	1	1071	1	2026	0	2981	0	3936	0	4891	0
117	0	1072	1	2027	0	2982	0	3937	1	4892	1
118	0	1073	0	2028	0	2983	1	3938	0	4893	0
119	0	1074	1	2029	1	2984	0	3939	1	4894	1
120	1	1075	0	2030	1	2985	1	3940	0	4895	0
121	0	1076	0	2031	0	2986	0	3941	0	4896	0
122	1	1077	0	2032	1	2987	1	3942	1	4897	0
123	1	1078	0	2033	0	2988	1	3943	1	4898	1
124	0	1079	1	2034	1	2989	1	3944	0	4899	1
125	0	1080	0	2035	1	2990	1	3945	0	4900	1
126	1	1081	0	2036	1	2991	0	3946	0	4901	1
127	1	1082	0	2037	0	2992	0	3947	1	4902	1
128	0	1083	0	2038	0	2993	1	3948	0	4903	0
129	0	1084	0	2039	1	2994	0	3949	0	4904	0
130	0	1085	0	2040	0	2995	1	3950	0	4905	1
131	1	1086	0	2041	0	2996	1	3951	0	4906	0
132	0	1087	0	2042	1	2997	1	3952	1	4907	1
133	0	1088	0	2043	0	2998	1	3953	1	4908	0
134	0	1089	0	2044	1	2999	1	3954	0	4909	0

135	0	1090	0	2045	1	3000	0	3955	0	4910	0
136	0	1091	0	2046	1	3001	0	3956	1	4911	1
137	1	1092	1	2047	0	3002	1	3957	1	4912	1
138	0	1093	1	2048	0	3003	0	3958	0	4913	0
139	1	1094	0	2049	0	3004	0	3959	0	4914	1
140	0	1095	0	2050	0	3005	0	3960	0	4915	1
141	1	1096	0	2051	0	3006	1	3961	0	4916	0
142	0	1097	0	2052	1	3007	1	3962	1	4917	1
143	1	1098	0	2053	0	3008	1	3963	0	4918	1
144	1	1099	0	2054	1	3009	1	3964	0	4919	0
145	1	1100	0	2055	0	3010	1	3965	0	4920	0
146	0	1101	1	2056	1	3011	1	3966	0	4921	0
147	0	1102	1	2057	1	3012	1	3967	1	4922	0
148	1	1103	1	2058	0	3013	1	3968	0	4923	1
149	0	1104	0	2059	1	3014	0	3969	1	4924	1
150	1	1105	1	2060	0	3015	1	3970	1	4925	0
151	0	1106	1	2061	0	3016	1	3971	0	4926	0
152	1	1107	1	2062	1	3017	1	3972	1	4927	1
153	1	1108	0	2063	1	3018	1	3973	1	4928	0
154	1	1109	0	2064	1	3019	0	3974	1	4929	1
155	0	1110	0	2065	0	3020	1	3975	1	4930	1
156	0	1111	0	2066	1	3021	0	3976	1	4931	1
157	1	1112	1	2067	1	3022	1	3977	1	4932	1
158	1	1113	0	2068	1	3023	1	3978	0	4933	1
159	1	1114	0	2069	1	3024	1	3979	1	4934	1
160	1	1115	1	2070	1	3025	0	3980	1	4935	1
161	0	1116	0	2071	1	3026	1	3981	1	4936	1
162	1	1117	1	2072	1	3027	0	3982	1	4937	0
163	1	1118	1	2073	0	3028	0	3983	0	4938	0
164	0	1119	0	2074	1	3029	0	3984	1	4939	0
165	1	1120	0	2075	1	3030	0	3985	0	4940	0
166	0	1121	0	2076	1	3031	1	3986	0	4941	0
167	0	1122	0	2077	0	3032	1	3987	1	4942	0
168	1	1123	1	2078	0	3033	0	3988	0	4943	1
169	0	1124	0	2079	1	3034	1	3989	0	4944	1
170	0	1125	0	2080	0	3035	0	3990	1	4945	1
171	1	1126	1	2081	1	3036	0	3991	0	4946	1
172	1	1127	0	2082	1	3037	0	3992	1	4947	0
173	1	1128	1	2083	0	3038	0	3993	1	4948	1
174	1	1129	1	2084	0	3039	1	3994	0	4949	0
175	0	1130	1	2085	1	3040	0	3995	0	4950	1
176	1	1131	0	2086	0	3041	0	3996	0	4951	0
177	0	1132	0	2087	0	3042	1	3997	0	4952	1
178	0	1133	0	2088	0	3043	1	3998	0	4953	0

179	0	1134	0	2089	1	3044	1	3999	1	4954	0
180	0	1135	0	2090	0	3045	1	4000	0	4955	0
181	0	1136	0	2091	0	3046	1	4001	0	4956	1
182	1	1137	0	2092	0	3047	1	4002	1	4957	1
183	0	1138	0	2093	1	3048	1	4003	0	4958	1
184	1	1139	1	2094	1	3049	0	4004	1	4959	0
185	0	1140	0	2095	1	3050	0	4005	0	4960	1
186	1	1141	0	2096	1	3051	1	4006	1	4961	0
187	0	1142	1	2097	1	3052	1	4007	1	4962	1
188	0	1143	1	2098	0	3053	1	4008	0	4963	1
189	0	1144	0	2099	0	3054	1	4009	1	4964	0
190	1	1145	1	2100	0	3055	0	4010	0	4965	1
191	0	1146	0	2101	0	3056	0	4011	0	4966	1
192	0	1147	0	2102	0	3057	1	4012	0	4967	1
193	0	1148	0	2103	0	3058	0	4013	0	4968	0
194	0	1149	1	2104	0	3059	0	4014	1	4969	1
195	0	1150	1	2105	0	3060	1	4015	0	4970	0
196	1	1151	0	2106	0	3061	1	4016	0	4971	0
197	0	1152	1	2107	1	3062	0	4017	0	4972	0
198	0	1153	0	2108	1	3063	0	4018	1	4973	1
199	0	1154	1	2109	0	3064	1	4019	1	4974	1
200	1	1155	1	2110	1	3065	0	4020	0	4975	0
201	1	1156	0	2111	1	3066	0	4021	1	4976	1
202	0	1157	1	2112	1	3067	0	4022	1	4977	1
203	1	1158	0	2113	0	3068	1	4023	0	4978	0
204	1	1159	1	2114	1	3069	0	4024	0	4979	1
205	0	1160	1	2115	0	3070	1	4025	0	4980	1
206	0	1161	1	2116	0	3071	1	4026	1	4981	1
207	0	1162	1	2117	0	3072	1	4027	1	4982	0
208	0	1163	1	2118	0	3073	0	4028	1	4983	0
209	0	1164	0	2119	1	3074	0	4029	1	4984	1
210	0	1165	1	2120	0	3075	0	4030	0	4985	1
211	1	1166	1	2121	0	3076	0	4031	0	4986	1
212	0	1167	0	2122	1	3077	0	4032	1	4987	0
213	1	1168	0	2123	0	3078	0	4033	1	4988	0
214	0	1169	1	2124	1	3079	1	4034	0	4989	0
215	0	1170	1	2125	1	3080	1	4035	0	4990	1
216	0	1171	1	2126	0	3081	0	4036	0	4991	1
217	1	1172	0	2127	0	3082	1	4037	1	4992	0
218	1	1173	0	2128	1	3083	1	4038	0	4993	0
219	0	1174	0	2129	0	3084	0	4039	0	4994	1
220	0	1175	0	2130	1	3085	1	4040	0	4995	1
221	1	1176	0	2131	1	3086	1	4041	1	4996	0
222	1	1177	0	2132	1	3087	0	4042	1	4997	1

223	0	1178	0	2133	1	3088	1	4043	1	4998	1
224	1	1179	0	2134	1	3089	1	4044	1	4999	1
225	0	1180	0	2135	0	3090	1	4045	0	5000	1
226	0	1181	0	2136	0	3091	1	4046	1	5001	1
227	0	1182	0	2137	0	3092	0	4047	1	5002	1
228	1	1183	0	2138	0	3093	1	4048	0	5003	0
229	1	1184	0	2139	1	3094	1	4049	1	5004	1
230	0	1185	1	2140	0	3095	0	4050	0	5005	1
231	1	1186	0	2141	0	3096	1	4051	0	5006	0
232	1	1187	0	2142	0	3097	1	4052	1	5007	0
233	0	1188	0	2143	0	3098	1	4053	1	5008	0
234	1	1189	0	2144	1	3099	1	4054	0	5009	0
235	0	1190	0	2145	1	3100	0	4055	1	5010	0
236	0	1191	0	2146	0	3101	0	4056	1	5011	0
237	0	1192	0	2147	0	3102	1	4057	1	5012	0
238	1	1193	0	2148	0	3103	1	4058	0	5013	0
239	1	1194	0	2149	0	3104	0	4059	1	5014	1
240	1	1195	1	2150	0	3105	0	4060	1	5015	0
241	1	1196	1	2151	1	3106	0	4061	1	5016	1
242	1	1197	0	2152	0	3107	1	4062	0	5017	1
243	0	1198	1	2153	0	3108	0	4063	0	5018	1
244	0	1199	1	2154	1	3109	1	4064	0	5019	0
245	0	1200	0	2155	0	3110	0	4065	1	5020	0
246	0	1201	1	2156	1	3111	1	4066	0	5021	0
247	1	1202	0	2157	1	3112	0	4067	0	5022	1
248	1	1203	1	2158	0	3113	0	4068	1	5023	1
249	0	1204	1	2159	1	3114	0	4069	1	5024	1
250	0	1205	0	2160	1	3115	0	4070	0	5025	1
251	0	1206	0	2161	0	3116	0	4071	0	5026	1
252	0	1207	1	2162	0	3117	1	4072	1	5027	0
253	0	1208	1	2163	0	3118	0	4073	1	5028	1
254	0	1209	0	2164	1	3119	1	4074	1	5029	1
255	0	1210	1	2165	1	3120	1	4075	1	5030	1
256	0	1211	0	2166	1	3121	0	4076	1	5031	1
257	0	1212	0	2167	1	3122	0	4077	0	5032	0
258	0	1213	1	2168	0	3123	1	4078	1	5033	0
259	0	1214	0	2169	0	3124	1	4079	0	5034	0
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531	1	1486	0	2441	0	3396	1	4351	0	5306	0
532	0	1487	1	2442	1	3397	1	4352	1	5307	1
533	0	1488	0	2443	0	3398	0	4353	1	5308	0
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535	1	1490	1	2445	1	3400	0	4355	1	5310	0
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537	0	1492	1	2447	0	3402	0	4357	1	5312	1
538	0	1493	0	2448	1	3403	0	4358	0	5313	1
539	1	1494	0	2449	1	3404	1	4359	1	5314	0
540	1	1495	1	2450	1	3405	1	4360	0	5315	0
541	0	1496	1	2451	1	3406	0	4361	0	5316	1
542	1	1497	1	2452	0	3407	1	4362	0	5317	0
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544	0	1499	1	2454	0	3409	0	4364	1	5319	1
545	1	1500	1	2455	1	3410	1	4365	0	5320	1
546	0	1501	1	2456	1	3411	0	4366	1	5321	1
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548	0	1503	0	2458	1	3413	0	4368	1	5323	0
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550	0	1505	1	2460	0	3415	0	4370	1	5325	1
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554	1	1509	1	2464	0	3419	0	4374	0	5329	0
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557	0	1512	0	2467	1	3422	0	4377	1	5332	1
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560	1	1515	0	2470	1	3425	0	4380	0	5335	1
561	0	1516	0	2471	0	3426	1	4381	1	5336	0
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566	0	1521	1	2476	0	3431	1	4386	1	5341	0
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569	1	1524	0	2479	1	3434	0	4389	0	5344	0
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800	0	1755	1	2710	1	3665	1	4620	1	5575	0
801	1	1756	1	2711	0	3666	1	4621	1	5576	0
802	1	1757	0	2712	0	3667	1	4622	0	5577	0
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804	0	1759	0	2714	1	3669	0	4624	0	5579	1
805	1	1760	0	2715	1	3670	0	4625	0	5580	0
806	0	1761	1	2716	1	3671	1	4626	0	5581	0
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815	1	1770	0	2725	0	3680	0	4635	1	5590	1
816	1	1771	0	2726	0	3681	0	4636	1	5591	1
817	0	1772	0	2727	0	3682	0	4637	0	5592	0
818	0	1773	1	2728	1	3683	0	4638	1	5593	0
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821	1	1776	1	2731	1	3686	1	4641	0	5596	1
822	0	1777	0	2732	0	3687	1	4642	0	5597	0
823	1	1778	1	2733	1	3688	1	4643	1	5598	0
824	1	1779	1	2734	0	3689	0	4644	1	5599	1
825	1	1780	0	2735	0	3690	0	4645	0	5600	1
826	1	1781	0	2736	1	3691	0	4646	1	5601	0
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918	1	1873	1	2828	1	3783	0	4738	1	5693	0
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937	1	1892	0	2847	0	3802	0	4757	1	5712	1
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