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ON THE SYMMETRIC BLOCK DESIGN WITH PARAMETERS (231,70,21) ADMITTING A GROUP OF ORDER 23

Menderes Gashi

Department of Mathematics
Faculty of Mathematics and Natural Sciences
University of Prishtina
Avenue Mother Teresa 5, 10000 Prishtina, KOSOVA

Abstract: In this paper we have proved that up to isomorphism there are at least eighty-six orbit structures for a putative symmetric block design $\mathcal{D}$ with parameters (231,70,21), admitting a group G of order 23.

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Key Words: symmetric block design, orbit structure, automorphism group

1. Introduction and Preliminaries

A $2-(v,k,\lambda)$ design $(\mathcal{P},\mathcal{B},I)$ is said to be *symmetric* if the relation $|\mathcal{P}| = |\mathcal{B}| = v$ holds and in that case we often speak of a symmetric design with parameters (v,k,λ). The collection of the parameter sets (v,k,λ) for which a symmetric $2-(v,k,\lambda)$ design exists is often called the "spectrum". The determination of the spectrum for symmetric designs is a widely open problem. For example, a finite projective plane of order n is a symmetric design with parameters $(n^2+n+1, n+1, 1)$ and it is still unknown whether finite projective planes of non–prime–power order may exist at all.

The existence/non-existence of a symmetric design has often required "ad hoc" treatments even for a single parameter set (v,k,λ). The most famous instance of this circumstance is perhaps the non-existence of the projective plane of order 10, see [10].

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It is of interest to study symmetric designs with additional properties, which often involve the assumption that a non–trivial automorphism group acts on the design under consideration, see for instance [4].

Among symmetric block designs of square order, a study of symmetric block designs of order 49 is of a particular interest. There are 15 possible parameters (v, k, λ) for symmetric designs of order 49, but until now only a few results are known (see [5], [7]).

Due to the fact that symmetric designs of order 49 have a big number of points (blocks), the study of sporadic cases is very difficult, except, possibly, when the existence of a collineation group is assumed.

A few methods for the construction of symmetric designs are known and all of them have shown to be effective in certain situations. Here, we shall use the method of tactical decompositions, assuming that a certain automorphism group acts on the design we want to construct, used by Z.Janko in [8]; see also [6].

The present paper is concerned with a symmetric design $\mathcal{D} = (\mathcal{P}, \mathcal{B}, I)$ with parameters $(231, 70, 21)$: the existence/non–existence of such a design is still in doubt as far as we know. We shall further assume that the given design admits a certain automorphism group of order 23. We assume the reader is familiar with the basic facts of design theory, see for instance [2], [3] and [11]. If g is an automorphism of a symmetric design $\mathcal{D}$ with parameters (v, k, λ), then g fixes an equal number of points and blocks, see [11, Theorem 3.1, p.78]. We denote the sets of these fixed elements by $F_{\mathcal{P}}(g)$ and $F_{\mathcal{B}}(g)$ respectively, and their cardinality simply by $|F(g)|$. We shall make use of the following upper bound for the number of fixed points, see [11, Corollary 3.7, p. 82]:

$$|F(g)| \leq k + \sqrt{k - \lambda}. \tag{1}$$

It is also known that an automorphism group G of a symmetric design has the same number of orbits on the set of points $\mathcal{P}$ as on the set of blocks $\mathcal{B}$: [11, Theorem 3.3, p.79]. Denote that number by t.

We adopt the notation and terminology of Section 1 in [4]: we repeat some fundamental relations here for the reader's sake. Let $\mathcal{D}$ be a symmetric design with parameters (v, k, λ) and let G be a subgroup of the automorphism group $Aut\mathcal{D}$ of $\mathcal{D}$. Denote the point orbits of G on $\mathcal{P}$ by $\mathcal{P}_1, \mathcal{P}_2, \dots \mathcal{P}_t$ and the line orbits of G on $\mathcal{B}$ by $\mathcal{B}_1, \mathcal{B}_2, \dots \mathcal{B}_t$. Put $|\mathcal{P}_r| = \omega_r$ and $|\mathcal{B}_i| = \Omega_i$. Obviously,

$$\sum_{r=1}^{t} \omega_r = \sum_{i=1}^{t} \Omega_i = v. \tag{2}$$

Let γ_{ir} be the number of points from $\mathcal{P}_r$, which lie on a line from $\mathcal{B}_i$; clearly this number does not depend on the chosen line. Similarly, let Γ_{js} be the number of lines from $\mathcal{B}_j$ which pass through a point from $\mathcal{P}_s$. Then, obviously,

$$\sum_{r=1}^{t} \gamma_{ir} = k \text{ and } \sum_{j=1}^{t} \Gamma_{js} = k. \tag{3}$$

By [3, Lemma 5.3.1. p.221], the partition of the point set $\mathcal{P}$ and of the block set $\mathcal{B}$ forms a tactical decomposition of the design $\mathcal{D}$ in the sense of [3, p.210]. Thus, the following equations hold:

$$\Omega_i \cdot \gamma_{ir} = \omega_r \cdot \Gamma_{ir}, \tag{4}$$

$$\sum_{r=1}^{t} \gamma_{ir}\Gamma_{jr} = \lambda\Omega_j + \delta_{ij}(k-\lambda), \tag{5}$$

$$\sum_{i=1}^{t} \Gamma_{ir}\gamma_{is} = \lambda\omega_s + \delta_{rs}(k-\lambda), \tag{6}$$

where δ_{ij}, δ_{rs} are the Kronecker symbols.

For a proof of these equations, the reader is referred to [3] and [4]. Equation (5), together with (4) yields

$$\sum_{r=1}^{t} \frac{\Omega_j}{\omega_r}\gamma_{ir}\gamma_{jr} = \lambda\Omega_j + \delta_{ij}(k-\lambda). \tag{7}$$

Definition 1. The $(t \times t)$-matrix (γ_{ir}) is called the orbit structure of the design $\mathcal{D}$.

An automorphism of an orbit structure is a permutation of rows followed by a permutation of columns leaving that matrix unchanged. It is clear that the set of all such automorphisms is a group, which we call the automorphism group of that orbit structure.

The first step in the construction of a design is to find all possible orbit structures. The second step of the construction is usually called indexing. In fact for each coefficient γ_{ir} of the orbit matrix one has to specify which γ_{ir} points of the point orbit $\mathcal{P}_r$ lie on the lines of the block orbit $\mathcal{B}_i$. Of course, it is enough to do this for a representative of each block orbit, as the other lines of that orbit can be obtained by producing all G-images of the given representative.

2. Main Result

Denote $\mathcal{D}$ the symmetric block design with parameters (231,70,21). Since $v = 1 + 10 \cdot 23$, in order to construct the symmetric block design $\mathcal{D}$ we use the the cyclic group $G = \langle \rho | \rho^{23} = 1 \rangle$ of order 23 as a collineation group.

Lemma 2. *Let ρ be an element of G with $o(\rho) = 23$. Then $\langle \rho \rangle$ fixes precisely one point and one block.*

Proof. By [11, Theorem 3.1] the group $\langle \rho \rangle$ fixes the same number of points and blocks. Denote that number by f. Obviously $f \equiv 231 (\text{mod } 23)$, i.e. $f \equiv 1$ (mod 23). The upper bound (1) for the number of fixed points yeilds $f \in \{1, 24, 47, 70\}$. As $o(\rho) > \lambda$, an application of a result of M. Aschbacher [1, Lemma 2.6, p.274] forces the fixed structure to be a subdesign of $\mathcal{D}$. But there is no symmetric design with $v' \in \{24, 47, 70\}$ points and $\lambda = 21$ (there is no $k \in N$ which satisfies $21 \cdot (v' - 1) = k \cdot (k - 1)$). Hence, f is equal to 1. □

We put $\mathcal{P}_I = \{I_0, I_1, \cdots, I_{22}\}$, $I = 1, 2, \cdots 10$, for the non–trivial orbits of the group G. Thus, G acts on these point orbits as a permutation group in a unique way. Hence, for the generator of G we may put

$$\rho = (\infty)(I_0, I_1, \cdots, I_{22}), I = 1, 2, \cdots, 10,$$

where ∞ is the fixed point of collineation, whereas non–trivial $\langle \rho \rangle$-orbits are numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and $\infty, 1_0, 1_1, \cdots, 10_{22}$ are all points of the symmetric block design $\mathcal{D}$.

In what follows, we are going to construct a representative block for each block orbit.

The $\langle \rho \rangle-$fixed block can be written in the form:

$$L_1 = (\infty)(1_0 1_1 \cdots 1_{22})(2_0 2_1 \cdots 2_{22})(3_0 3_1 \cdots 3_{22}),$$

or

$$L_1 = \infty 1_{23} 2_{23} 3_{23}.$$

Let $L_2, L_3, L_4, L_5, L_6, L_7, L_8, L_9, L_{10}, L_{11}$ be the representative blocks for the five non–trivial block orbits.

There are exactly three non-fixed blocks passing through the fixed point ∞. Let them be L_2, L_3, L_4. We write

$$L_2 = \infty 1_{a_1} 2_{a_2} 3_{a_3} 4_{a_4} 5_{a_5} 6_{a_6} 7_{a_7} 8_{a_8} 9_{a_9} 10_{a_{10}},$$

$$L_3 = \infty 1_{b_1} 2_{b_2} 3_{b_3} 4_{b_4} 5_{b_5} 6_{b_6} 7_{b_7} 8_{b_8} 9_{b_9} 10_{b_{10}},$$

$$L_4 = \infty 1_{c_1} 2_{c_2} 3_{c_3} 4_{c_4} 5_{c_5} 6_{c_6} 7_{c_7} 8_{c_8} 9_{c_9} 10_{c_{10}},$$

where a_i, b_i, c_i denote the multiplicities of the appearance of orbit numbers $1, 2, 3, 4, 5, 6, 7, 8, 9, 10$ and 11 in the orbit blocks L_2, L_3, L_4, respectively.

The multiplicities of the appearance of orbit numbers satisfy the following conditions:

$$a_1 + a_2 + a_3 + a_4 + a_5 + a_6 + a_7 + a_8 + a_9 + a_{10} = 69,$$

$$b_1 + b_2 + b_3 + b_4 + b_5 + b_6 + b_7 + b_8 + b_9 + b_{10} = 69,$$

$$c_1 + c_2 + c_3 + c_4 + c_5 + c_6 + c_7 + c_8 + c_9 + c_{10} = 69.$$

Because $|L_i \cap L_1| = 21$, and $\infty \in L_i, , i = 1, 2, 3, 4$ we have $a_1 + a_2 + a_3 = 20, b_1+b_2+b_3 = 20, c_1+c_2+c_3 = 20$, and consequently $a_4+a_5+a_6+a_7+a_8+a_9+a_{10} = 69-20 = 49, b_4+b_5+b_6+b_7+b_8+b_9+b_{10} = 49, c_4+c_5+c_6+c_7+c_8+c_9+c_{10} = 49$. From (7) we have

$[L_2, L_2] = 23/1\cdot 1\cdot 1+23/23\cdot a_1^2+23/23\cdot a_2^2+23/23\cdot a_3^2+23/23\cdot a_4^2+23/23\cdot a_5^2 +23/23\cdot a_6^2+23/23\cdot a_7^2+23/23\cdot a_8^2+23/23\cdot a_9^2+23/23\cdot a_{10}^2 = 21\cdot 23+70-21 = 532$,

$[L_3, L_3] = 23/1\cdot 1\cdot 1+23/23\cdot b_1^2+23/23\cdot b_2^2+23/23\cdot b_3^2+23/23\cdot b_4^2+23/23\cdot b_5^2 +23/23\cdot b_6^2+23/23\cdot b_7^2+23/23\cdot b_8^2+23/23\cdot b_9^2+23/23\cdot b_{10}^2 = 21\cdot 23+70-21 = 532$,

$[L_4, L_4] = 23/1\cdot 1\cdot 1+23/23\cdot c_1^2+23/23\cdot c_2^2+23/23\cdot c_3^2+23/23\cdot c_4^2+23/23\cdot c_5^2 +23/23\cdot c_6^2+23/23\cdot c_7^2+23/23\cdot c_8^2+23/23\cdot c_9^2+23/23\cdot c_{10}^2 = 21\cdot 23+70-21 = 532$,

$[L_3, L_2] = 23/1 \cdot 1 \cdot 1 + 23/23 \cdot b_1 \cdot a_1 + 23/23 \cdot b_2 \cdot a_2 + 23/23 \cdot b_3 \cdot a_3 + 23/23 \cdot b_4 \cdot a_4 + 23/23 \cdot b_5 \cdot a_5 +23/23 \cdot b_6 \cdot a_6 + 23/23 \cdot b_7 \cdot a_7 + +23/23 \cdot b_8 \cdot a_8 + 23/23 \cdot b_9 \cdot a_9 + 23/23 \cdot b_{10} \cdot a_{10} = 21 \cdot 23 = 483$,

$[L_4, L_2] = 23/1 \cdot 1 \cdot 1 + 23/23 \cdot c_1 \cdot a_1 + 23/23 \cdot c_2 \cdot a_2 + 23/23 \cdot c_3 \cdot a_3 + 23/23 \cdot c_4 \cdot a_4 + 23/23 \cdot c_5 \cdot a_5 +23/23 \cdot c_6 \cdot a_6 + 23/23 \cdot c_7 \cdot a_7 + +23/23 \cdot c_8 \cdot a_8 + 23/23 \cdot c_9 \cdot a_9 + 23/23 \cdot c_{10} \cdot a_{10} = 21 \cdot 23 = 483$,

$[L_4, L_3] = 23/1 \cdot 1 \cdot 1 + 23/23 \cdot c_1 \cdot b_1 + 23/23 \cdot c_2 \cdot b_2 + 23/23 \cdot c_3 \cdot b_3 + 23/23 \cdot c_4 \cdot b_4 + 23/23 \cdot b_5 \cdot b_5 +23/23 \cdot c_6 \cdot b_6 + 23/23 \cdot c_7 \cdot b_7 + +23/23 \cdot c_8 \cdot b_8 + 23/23 \cdot c_9 \cdot b_9 + 23/23 \cdot c_{10} \cdot b_{10} = 21 \cdot 23 = 483$,

$[L_2, L_2] = 532$ implies $0 \leq a_i \leq 22, i = 4, 5, \cdots, 10$, whereas $a_1+a_2+a_3 = 21$ implies $0 \leq a_i \leq 21, i = 1, 2, 3$.

In order to reduce isomorphic cases that may appear in the orbit structures at the last stage, without loss of generality, for block L_2, we can use the reduction

$$a_1 \geq a_2 \geq a_3, a_4 \geq a_5 \geq a_6 \geq a_7 \geq a_8 \geq a_9 \geq a_{10}.$$

Using the computer, we have proved that there exist eighty-nine different orbit types for the block L_2 that satisfies the above mentioned conditions:

	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}
1.	11	6	3	7	7	7	7	7	7	7
2.	11	5	4	8	8	7	7	7	6	6
3.	10	7	3	9	8	7	7	6	6	6
4.	10	7	3	9	7	7	7	7	7	5
5.	10	7	3	8	8	8	7	7	6	5
...										
85.	7	7	6	10	9	8	7	6	6	3
86.	7	7	6	10	8	8	8	7	5	3
87.	7	7	6	9	9	9	8	6	4	4
88.	7	7	6	9	9	9	7	7	5	3
89.	7	7	6	9	8	8	8	7	7	2

We find potential candidates for L_3 considering each orbit type for the block L_2. Among the candidates for block L_3 are also blocks L_4. Therefore, for each orbit type of block L_2, from the respective orbit types for block L_3, we choose doubles of blocks $\{L_3, L_4\}$, which meet the condition of intersection in 21 points.

For the first orbit type of block L_2, there are two orbit types for block L_3, which meet the above-mentioned conditions:

	b_1	b_2	b_3	b_4	b_5	b_6	b_7	b_8	b_9	b_{10}
1.	6	3	11	7	7	7	7	7	7	7
2.	3	11	6	7	7	7	7	7	7	7

Acting in the same way for other orbit types of block L_2, we get a huge number of orbit types for L_3. Therefore, we limit the search only to the first orbit type of block L_2. As a result we have one double $\{L_3, L_4\}$, one triple $\{L_2, L_3, L_4\}$, respectively one quadruple $\{L_1, L_2, L_3, L_4\}$:

	1	23	23	23	23	23	23	23	23	23	23
L_1	1	23	23	23	0	0	0	0	0	0	0
L_2	1	11	6	3	7	7	7	7	7	7	7
L_3	1	6	3	11	7	7	7	7	7	7	7
L_4	1	3	11	6	7	7	7	7	7	7	7

The fifth orbit block L_5 has the form:

$$L_5 = 1_{d_1} 2_{d_2} 3_{d_3} 4_{d_4} 5_{d_5} 6_{d_6} 7_{d_7} 8_{d_8} 9_{d_9} 10_{d_{10}}$$

where $d_i, i = 1, 2, \cdots, 10$ are multiplicities of appearance of orbit numbers $1, 2, 3, 4, 5, 6, 7, 8, 9,$ and 10 in the orbit block L_5.

We have: $d_1 + d_2 + d_3 + d_4 + d_5 + d_6 + d_7 + d_8 + d_9 + d_{10} = 70$,

$[L_5, L_5] = 23/23 \cdot d_1^2 + 23/23 \cdot d_2^2 + 23/23 \cdot d_3^2 + 23/23 \cdot d_4^2 + 23/23 \cdot d_5^2 + 23/23 \cdot d_6^2 + 23/23 \cdot d_7^2 + 23/23 \cdot d_8^2 + 23/23 \cdot d_9^2 + 23/23 \cdot d_{10}^2 = 21 \cdot 23 + 70 - 21 = 532$,

$[L_5, L_i] = 21 \cdot 23 = 483, i = 2, 3, 4$.

$[L_5 \cap L_1] = 21$ implies $d_1 + d_2 + d_3 = 21$, therefore $d_4 + d_5 + d_6 + d_7 + d_8 + d_9 + d_{10} = 70 - 21 = 49$.

$[L_5, L_5] = 532$ implies $0 \leq d_i \leq 23, i = 4, 5, \cdots, 10$, whereas $d_1 + d_2 + d_3 = 21$ implies $0 \leq d_i \leq 21, i = 1, 2, 3$.

Using the computer we have proved that there exist 16814 different orbit types for the block L_5 satisfying the above mentioned conditions:

	d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_8	d_9	d_{10}
1.	7	7	7	13	6	6	6	6	6	6
2.	7	7	7	12	9	7	6	5	5	5
3.	7	7	7	12	9	7	5	6	5	5
4.	7	7	7	12	9	7	5	5	6	5
5.	7	7	7	12	9	7	5	5	5	6
...										
16810.	7	7	7	2	5	7	9	9	9	8
16811.	7	7	7	2	5	7	9	9	8	9
16812.	7	7	7	2	5	7	9	8	9	9
16813.	7	7	7	2	5	7	8	9	9	9
16814.	7	7	7	1	8	8	8	8	8	8

Note that in set of possible candidates for the orbit block L_5 are also orbit blocks $L_6, L_7, L_8, L_9, L_{10}$ and L_{11}, because they satisfy the same conditions. Therefore, we investigate septuples of blocks $\{L_5, L_6, L_7, L_8, L_9, L_{10}, L_{11}\}$ such that every couple of them satisfies the intersection in 21 points. Based on this fact we have found that, up to isomorphism, there are eighty-six orbit structures:

OS1.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	13	6	6	6	6	6
	0	7	7	7	6	6	13	6	6	6	6
	0	7	7	7	6	6	6	13	6	6	6
	0	7	7	7	6	6	6	6	13	6	6
	0	7	7	7	6	6	6	6	6	13	6
	0	7	7	7	6	6	6	6	6	6	13

OS2.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	13	6	6	6	6	6
	0	7	7	7	6	6	13	6	6	6	6
	0	7	7	7	6	6	6	13	6	6	6
	0	7	7	7	6	6	6	6	12	9	4
	0	7	7	7	6	6	6	6	9	4	12
	0	7	7	7	6	6	6	6	4	12	9

OS3.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	13	6	6	6	6	6
	0	7	7	7	6	6	12	8	8	5	4
	0	7	7	7	6	6	8	9	2	8	10
	0	7	7	7	6	6	8	2	9	8	10
	0	7	7	7	6	6	5	8	8	12	4
	0	7	7	7	6	6	4	10	10	4	9

OS4.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	9	7	5	5	5
	0	7	7	7	6	9	4	3	9	9	9
	0	7	7	7	6	7	3	12	7	7	7
	0	7	7	7	6	5	9	7	12	5	5
	0	7	7	7	6	5	9	7	5	12	5
	0	7	7	7	6	5	9	7	5	5	12

OS5.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	9	7	5	5	5
	0	7	7	7	6	9	4	3	9	9	9
	0	7	7	7	6	7	3	12	7	7	7
	0	7	7	7	6	5	9	7	11	8	3
	0	7	7	7	6	5	9	7	8	3	11
	0	7	7	7	6	5	9	7	3	11	8

OS6.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	9	7	5	5	5
	0	7	7	7	6	9	3	5	11	8	7
	0	7	7	7	6	7	5	8	3	9	11
	0	7	7	7	6	5	11	3	8	7	9
	0	7	7	7	6	5	8	9	7	11	3
	0	7	7	7	6	5	7	11	9	3	8

OS7.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	9	6	6	6	4
	0	7	7	7	6	9	4	6	6	6	12
	0	7	7	7	6	6	6	12	9	4	6
	0	7	7	7	6	6	6	9	4	12	6
	0	7	7	7	6	6	6	4	12	9	6
	0	7	7	7	6	4	12	6	6	6	9

OS8.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	9	6	6	6	4
	0	7	7	7	6	8	6	8	5	4	12
	0	7	7	7	6	8	2	9	8	10	6
	0	7	7	7	6	6	8	2	8	10	9
	0	7	7	7	6	5	8	8	12	4	6
	0	7	7	7	6	4	10	10	4	9	6

OS9.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	12	8	8	6	5	4
	0	7	7	7	6	8	8	4	5	6	12
	0	7	7	7	6	8	4	5	8	12	6
	0	7	7	7	6	6	5	8	12	4	8
	0	7	7	7	6	5	6	12	4	8	8
	0	7	7	7	6	4	12	6	8	8	5

OS10.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	11	9	9	5	5	4
	0	7	7	7	6	9	5	5	11	4	9
	0	7	7	7	6	9	5	5	4	11	9
	0	7	7	7	6	5	11	4	9	9	5
	0	7	7	7	6	5	4	11	9	9	5
	0	7	7	7	6	4	9	9	5	5	11

OS11.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	11	9	9	5	5	4
	0	7	7	7	6	9	5	5	11	4	9
	0	7	7	7	6	8	7	5	3	9	11
	0	7	7	7	6	7	3	9	8	11	5
	0	7	7	7	6	5	11	4	9	9	5
	0	7	7	7	6	3	8	11	7	5	9

OS12.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	11	9	9	5	5	4
	0	7	7	7	6	9	5	4	11	9	5
	0	7	7	7	6	8	3	9	7	5	11
	0	7	7	7	6	7	8	5	3	11	9
	0	7	7	7	6	5	11	5	9	4	9
	0	7	7	7	6	3	7	11	8	9	5

OS13.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	11	9	8	7	5	3
	0	7	7	7	6	9	5	3	8	11	7
	0	7	7	7	6	8	3	11	5	7	9
	0	7	7	7	6	7	8	5	9	3	11
	0	7	7	7	6	5	11	7	3	9	8
	0	7	7	7	6	3	7	9	11	8	5

OS14.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	10	10	9	6	4	4
	0	7	7	7	6	10	2	8	8	9	6
	0	7	7	7	6	9	8	2	8	6	10
	0	7	7	7	6	6	8	8	2	10	9
	0	7	7	7	6	4	9	6	10	10	4
	0	7	7	7	6	4	6	10	9	4	10

OS15.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	13	6	6	6	6	6	6
	0	7	7	7	6	10	9	8	8	6	2
	0	7	7	7	6	9	2	10	6	8	8
	0	7	7	7	6	8	10	6	2	8	9
	0	7	7	7	6	8	6	2	10	9	8
	0	7	7	7	6	6	8	8	9	2	10
	0	7	7	7	6	2	8	9	8	10	6

OS16.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	4	3	6	9	9	9
	0	7	7	7	7	3	11	8	9	6	5
	0	7	7	7	6	6	8	9	2	8	10
	0	7	7	7	5	9	9	2	8	7	9
	0	7	7	7	5	9	6	8	7	11	3
	0	7	7	7	5	9	5	10	9	3	8

OS17.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	3	6	4	9	9	9
	0	7	7	7	7	6	3	12	7	7	7
	0	7	7	7	6	4	12	9	6	6	6
	0	7	7	7	5	9	7	6	12	5	5
	0	7	7	7	5	9	7	6	5	12	5
	0	7	7	7	5	9	7	6	5	5	12

OS18.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	3	6	4	9	9	9
	0	7	7	7	7	6	3	12	7	7	7
	0	7	7	7	6	4	12	9	6	6	6
	0	7	7	7	5	9	7	6	11	8	3
	0	7	7	7	5	9	7	6	8	3	11
	0	7	7	7	5	9	7	6	3	11	8

OS19.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	3	6	4	9	9	9
	0	7	7	7	7	5	5	12	9	6	5
	0	7	7	7	6	6	8	9	2	8	10
	0	7	7	7	5	11	3	6	8	7	9
	0	7	7	7	5	8	9	6	7	11	3
	0	7	7	7	5	7	11	6	9	3	8

OS20.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	3	5	6	11	8	7
	0	7	7	7	7	6	5	8	3	9	11
	0	7	7	7	6	4	12	9	6	6	6
	0	7	7	7	5	9	9	2	8	7	9
	0	7	7	7	5	9	6	8	7	11	3
	0	7	7	7	5	9	5	10	9	3	8

OS21.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	9	2	6	8	10	8	6
	0	7	7	7	6	9	5	3	8	11	7
	0	7	7	7	6	8	3	11	5	7	9
	0	7	7	7	6	7	8	5	9	3	11
	0	7	7	7	6	5	11	7	3	9	8
	0	7	7	7	4	9	9	9	9	6	3

OS22.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	6	3	5	11	9	7
	0	7	7	7	8	3	7	9	6	5	11
	0	7	7	7	6	7	7	7	3	12	7
	0	7	7	7	6	5	12	5	9	7	5
	0	7	7	7	5	8	6	12	8	6	4
	0	7	7	7	4	11	7	5	7	5	10

OS23.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	6	3	5	11	9	7
	0	7	7	7	8	3	6	11	5	7	9
	0	7	7	7	6	7	9	3	5	8	11
	0	7	7	7	6	5	11	7	8	9	3
	0	7	7	7	5	8	8	8	10	2	8
	0	7	7	7	4	11	5	9	5	9	6

OS24.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	6	3	11	9	7
	0	7	7	7	8	3	7	9	6	5	11
	0	7	7	7	6	8	3	11	9	7	5
	0	7	7	7	6	7	7	7	3	12	7
	0	7	7	7	5	6	12	8	8	6	4
	0	7	7	7	4	11	7	5	7	5	10

OS25.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	6	3	11	9	7
	0	7	7	7	8	2	9	9	5	7	9
	0	7	7	7	6	9	3	7	5	8	11
	0	7	7	7	6	7	5	11	8	9	3
	0	7	7	7	5	8	8	8	10	2	8
	0	7	7	7	4	9	11	5	5	9	6

OS26.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	5	5	11	10	5
	0	7	7	7	8	3	6	11	7	5	9
	0	7	7	7	6	8	5	7	3	11	9
	0	7	7	7	6	7	9	3	8	5	11
	0	7	7	7	5	6	12	8	6	8	4
	0	7	7	7	4	11	5	9	9	5	6

OS27.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	5	5	11	10	5
	0	7	7	7	8	2	9	9	7	5	9
	0	7	7	7	6	9	3	7	8	5	11
	0	7	7	7	6	7	8	5	3	11	9
	0	7	7	7	5	8	6	12	6	8	4
	0	7	7	7	4	9	11	5	9	5	6

OS28.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	3	9	11	7	6
	0	7	7	7	8	3	9	5	7	6	11
	0	7	7	7	6	9	4	5	5	11	9
	0	7	7	7	6	5	9	11	4	9	5
	0	7	7	7	5	8	10	4	10	8	4
	0	7	7	7	4	10	7	9	7	3	9

OS29.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	3	9	11	7	6
	0	7	7	7	8	3	9	5	6	11	7
	0	7	7	7	6	8	7	3	9	5	11
	0	7	7	7	6	5	9	11	5	4	9
	0	7	7	7	5	10	4	8	4	10	8
	0	7	7	7	4	9	10	7	9	7	3

OS30.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	3	9	10	9	5
	0	7	7	7	8	3	9	5	9	5	10
	0	7	7	7	6	9	4	5	5	9	11
	0	7	7	7	6	5	9	11	3	8	7
	0	7	7	7	5	8	10	4	8	10	4
	0	7	7	7	4	10	7	9	9	3	7

OS31.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	8	5	3	9	10	9	5
	0	7	7	7	8	3	9	5	5	10	9
	0	7	7	7	6	8	7	3	11	5	9
	0	7	7	7	6	5	9	11	7	3	8
	0	7	7	7	5	10	4	8	4	8	10
	0	7	7	7	4	9	10	7	7	9	3

SO32.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	7	6	5	5	5
	0	7	7	7	7	7	5	4	11	10	5
	0	7	7	7	7	6	3	12	7	7	7
	0	7	7	7	7	5	8	6	3	11	9
	0	7	7	7	7	3	11	8	9	5	6
	0	7	7	7	6	8	6	5	8	4	12
	0	7	7	7	3	11	9	8	6	7	5

OS33.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	6	6	6	6	4
	0	7	7	7	9	2	9	8	7	5	9
	0	7	7	7	7	6	5	3	8	11	9
	0	7	7	7	6	8	3	11	5	7	9
	0	7	7	7	5	10	8	5	9	3	9
	0	7	7	7	5	8	11	7	3	9	6
	0	7	7	7	5	6	7	9	11	8	3

OS34.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	9	6	6	6	6	4
	0	7	7	7	8	6	8	6	5	4	12
	0	7	7	7	8	2	8	9	6	10	6
	0	7	7	7	6	8	2	6	8	10	9
	0	7	7	7	6	6	9	4	12	6	6
	0	7	7	7	5	8	6	12	8	4	6
	0	7	7	7	4	10	10	6	4	9	6

OS35.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	6	3	7	5	8	11
	0	7	7	7	7	3	6	9	11	8	5
	0	7	7	7	6	5	11	3	7	8	9
	0	7	7	7	5	11	5	5	8	10	5
	0	7	7	7	5	9	7	8	9	2	9
	0	7	7	7	5	7	9	11	3	8	6

OS36.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	5	3	9	5	8	10
	0	7	7	7	7	3	9	4	9	10	7
	0	7	7	7	6	9	5	5	11	4	9
	0	7	7	7	5	11	7	5	4	10	7
	0	7	7	7	5	7	6	11	9	8	3
	0	7	7	7	5	6	11	9	5	4	9

OS37.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	5	3	9	5	8	10
	0	7	7	7	7	3	9	4	9	10	7
	0	7	7	7	6	9	5	5	11	4	9
	0	7	7	7	5	10	9	5	3	8	9
	0	7	7	7	5	9	5	9	8	10	3
	0	7	7	7	5	5	10	11	7	4	7

OS38.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	5	3	8	5	10	9
	0	7	7	7	7	3	9	7	9	4	10
	0	7	7	7	6	9	5	3	11	8	7
	0	7	7	7	5	11	6	9	5	4	9
	0	7	7	7	5	7	11	5	4	10	7
	0	7	7	7	5	6	7	11	9	8	3

OS39.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	5	3	8	5	10	9
	0	7	7	7	7	3	9	7	9	4	10
	0	7	7	7	6	9	5	3	11	8	7
	0	7	7	7	5	10	5	11	7	4	7
	0	7	7	7	5	9	10	5	3	8	9
	0	7	7	7	5	5	9	9	8	10	3

OS40.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	9	5	2	9	7	8	9
	0	7	7	7	7	6	9	3	5	8	11
	0	7	7	7	6	3	9	7	11	8	5
	0	7	7	7	5	11	5	5	8	10	5
	0	7	7	7	5	9	7	8	9	2	9
	0	7	7	7	5	7	9	11	3	8	6

OS41.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	9	2	6	6	8	10
	0	7	7	7	8	2	8	8	5	10	8
	0	7	7	7	6	6	8	9	8	2	10
	0	7	7	7	6	6	5	8	12	8	4
	0	7	7	7	5	8	10	2	8	8	8
	0	7	7	7	4	10	8	10	4	8	5

OS42.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	9	2	6	6	8	10
	0	7	7	7	8	2	6	10	9	6	8
	0	7	7	7	6	6	9	2	10	8	8
	0	7	7	7	6	6	8	8	4	12	5
	0	7	7	7	5	8	10	8	4	4	10
	0	7	7	7	4	10	6	9	10	6	4

OS43.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	8	4	6	5	6	12
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	6	8	6	8	4	12	5
	0	7	7	7	6	8	5	4	12	8	6
	0	7	7	7	5	8	6	12	8	4	6
	0	7	7	7	4	8	12	5	6	6	8

OS44.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	8	4	5	4	10	10
	0	7	7	7	8	4	5	8	10	4	10
	0	7	7	7	6	5	8	12	4	8	6
	0	7	7	7	6	4	10	4	9	10	6
	0	7	7	7	5	10	4	8	10	8	4
	0	7	7	7	4	10	10	6	6	4	9

OS45.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	8	4	5	4	10	10
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	6	8	5	12	6	4	8
	0	7	7	7	6	8	4	6	12	8	5
	0	7	7	7	5	8	10	4	8	4	10
	0	7	7	7	4	8	10	8	5	10	4

OS46.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	8	2	9	6	6	10
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	6	8	8	2	9	6	10
	0	7	7	7	6	8	5	6	8	12	4
	0	7	7	7	5	8	10	8	2	8	8
	0	7	7	7	4	8	8	10	10	4	5

OS47.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	6	8	8	9	2	6	10
	0	7	7	7	6	8	8	2	9	6	10
	0	7	7	7	5	8	8	6	6	12	4
	0	7	7	7	4	8	8	10	10	4	5

OS48.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	8	6	5	8	6	4	12
	0	7	7	7	8	2	6	8	9	10	6
	0	7	7	7	6	10	4	9	4	10	6
	0	7	7	7	6	9	6	2	10	8	8
	0	7	7	7	5	6	12	6	4	8	8
	0	7	7	7	4	8	8	10	10	4	5

OS49.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	12	8	8	6	6	5	4
	0	7	7	7	7	9	5	8	3	6	11
	0	7	7	7	7	7	6	3	7	12	7
	0	7	7	7	7	6	3	11	9	8	5
	0	7	7	7	7	5	7	5	11	4	10
	0	7	7	7	6	3	11	9	5	8	7
	0	7	7	7	3	11	9	7	8	6	5

OS50.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	8	5	5	5	5
	0	7	7	7	10	5	2	8	8	8	8
	0	7	7	7	8	2	11	7	7	7	7
	0	7	7	7	5	8	7	11	9	6	3
	0	7	7	7	5	8	7	9	2	9	9
	0	7	7	7	5	8	7	6	9	3	11
	0	7	7	7	5	8	7	3	9	11	6

OS51.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	8	5	5	5	5
	0	7	7	7	10	5	2	8	8	8	8
	0	7	7	7	8	2	11	7	7	7	7
	0	7	7	7	5	8	7	9	9	9	2
	0	7	7	7	5	8	7	9	9	2	9
	0	7	7	7	5	8	7	9	2	9	9
	0	7	7	7	5	8	7	2	9	9	9

OS52.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	8	5	5	5	5
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	5	8	11	9	6	3
	0	7	7	7	7	5	8	9	2	9	9
	0	7	7	7	7	5	8	6	9	3	11
	0	7	7	7	7	5	8	3	9	11	6
	0	7	7	7	2	11	8	7	7	7	7

OS53.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	8	5	5	5	5
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	5	8	9	9	9	2
	0	7	7	7	7	5	8	9	9	2	9
	0	7	7	7	7	5	8	9	2	9	9
	0	7	7	7	7	5	8	2	9	9	9
	0	7	7	7	2	11	8	7	7	7	7

OS54.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	5	4	4	8	8	10
	0	7	7	7	7	4	10	9	7	3	9
	0	7	7	7	7	4	7	9	9	10	3
	0	7	7	7	5	8	11	3	6	9	7
	0	7	7	7	5	8	5	10	3	9	9
	0	7	7	7	4	10	5	7	11	5	7

OS55.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	5	4	4	8	8	10
	0	7	7	7	7	4	10	7	11	5	5
	0	7	7	7	7	4	9	9	3	10	7
	0	7	7	7	5	8	7	9	6	3	11
	0	7	7	7	5	8	3	10	9	9	5
	0	7	7	7	4	10	9	3	7	9	7

OS56.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	5	4	4	8	8	10
	0	7	7	7	7	4	9	9	10	3	7
	0	7	7	7	7	4	9	9	3	10	7
	0	7	7	7	5	8	10	3	9	9	5
	0	7	7	7	5	8	3	10	9	9	5
	0	7	7	7	4	10	7	7	5	5	11

OS57.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	4	7	3	9	7	9
	0	7	7	7	7	6	3	11	8	5	9
	0	7	7	7	7	4	9	9	3	10	7
	0	7	7	7	5	10	4	5	7	11	7
	0	7	7	7	5	6	9	8	11	7	3
	0	7	7	7	4	9	10	6	6	4	10

OS58.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	4	7	3	9	7	9
	0	7	7	7	7	6	3	9	8	11	5
	0	7	7	7	7	4	9	10	3	7	9
	0	7	7	7	5	10	4	7	7	5	11
	0	7	7	7	5	6	9	9	11	4	5
	0	7	7	7	4	9	10	4	6	10	6

OS59.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	4	6	4	10	6	9
	0	7	7	7	7	7	3	9	4	9	10
	0	7	7	7	7	3	11	9	5	8	6
	0	7	7	7	5	9	8	3	7	11	6
	0	7	7	7	5	7	5	10	11	7	4
	0	7	7	7	4	9	9	7	7	3	10

OS60.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	10	4	6	4	10	6	9
	0	7	7	7	7	7	3	9	4	9	10
	0	7	7	7	7	3	9	10	7	9	4
	0	7	7	7	5	9	8	3	7	11	6
	0	7	7	7	5	7	11	7	5	4	10
	0	7	7	7	4	9	5	9	11	5	6

OS61.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	6	5	4	9	5	11
	0	7	7	7	9	2	8	9	5	9	7
	0	7	7	7	6	8	3	7	9	11	5
	0	7	7	7	5	8	11	3	6	9	7
	0	7	7	7	5	6	9	9	11	4	5
	0	7	7	7	4	9	6	10	4	6	10

OS62.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	6	5	4	9	5	11
	0	7	7	7	9	2	7	9	8	9	5
	0	7	7	7	6	8	5	7	3	11	9
	0	7	7	7	5	8	10	3	9	9	5
	0	7	7	7	5	6	11	9	5	4	9
	0	7	7	7	4	9	4	10	10	6	6

OS63.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	5	5	4	11	9	6
	0	7	7	7	9	3	9	7	4	7	10
	0	7	7	7	6	8	2	10	6	8	9
	0	7	7	7	5	9	8	5	9	3	10
	0	7	7	7	5	5	9	11	9	6	4
	0	7	7	7	4	9	9	5	5	11	6

OS64.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	5	5	4	11	9	6
	0	7	7	7	8	5	9	5	3	9	10
	0	7	7	7	7	3	9	11	8	5	6
	0	7	7	7	6	8	2	10	6	8	9
	0	7	7	7	5	9	8	5	9	3	10
	0	7	7	7	3	9	9	7	7	10	4

OS65.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	4	10	3	7	7	9
	0	7	7	7	9	4	3	10	7	7	9
	0	7	7	7	6	9	4	4	10	10	6
	0	7	7	7	5	6	9	9	11	4	5
	0	7	7	7	5	6	9	9	4	11	5
	0	7	7	7	4	10	7	7	5	5	11

OS66.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	4	10	3	7	7	9
	0	7	7	7	8	5	4	10	8	4	10
	0	7	7	7	7	4	7	9	9	10	3
	0	7	7	7	6	8	5	7	3	11	9
	0	7	7	7	5	10	5	4	11	7	7
	0	7	7	7	3	8	11	9	6	5	7

OS67.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	4	9	5	6	5	11
	0	7	7	7	9	4	5	6	9	11	5
	0	7	7	7	6	9	2	8	8	6	10
	0	7	7	7	5	6	9	9	11	4	5
	0	7	7	7	5	6	8	11	3	9	7
	0	7	7	7	4	10	9	3	7	9	7

OS68.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	4	6	5	11	9	5
	0	7	7	7	8	6	3	9	7	5	11
	0	7	7	7	7	4	9	9	3	10	7
	0	7	7	7	6	9	8	2	6	8	10
	0	7	7	7	5	6	11	8	9	3	7
	0	7	7	7	3	10	5	9	8	9	5

OS69.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	3	9	7	7	4	10
	0	7	7	7	8	4	4	10	8	10	5
	0	7	7	7	7	9	3	4	9	7	10
	0	7	7	7	6	7	9	5	3	11	8
	0	7	7	7	5	7	10	5	11	7	4
	0	7	7	7	3	9	7	11	6	5	8

OS70.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	2	9	8	9	5	7
	0	7	7	7	8	6	7	5	3	9	11
	0	7	7	7	7	6	3	9	8	11	5
	0	7	7	7	6	9	4	6	10	4	10
	0	7	7	7	5	8	10	3	9	9	5
	0	7	7	7	3	8	9	11	5	6	7

OS71.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	10	7	7	5	5	4
	0	7	7	7	9	2	9	7	9	8	5
	0	7	7	7	8	6	7	5	3	9	11
	0	7	7	7	7	6	3	11	8	5	9
	0	7	7	7	6	9	4	4	10	10	6
	0	7	7	7	5	8	10	5	9	3	9
	0	7	7	7	3	8	9	10	5	9	5

OS72.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	7	5	2	8	9	9
	0	7	7	7	8	5	3	11	6	9	7
	0	7	7	7	7	2	11	7	8	7	7
	0	7	7	7	6	8	6	8	9	2	10
	0	7	7	7	5	9	9	7	2	8	9
	0	7	7	7	3	9	7	7	10	9	4

OS73.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	7	2	8	5	9	9
	0	7	7	7	8	2	9	6	8	10	6
	0	7	7	7	7	8	6	3	11	5	9
	0	7	7	7	6	5	8	11	7	3	9
	0	7	7	7	5	9	10	5	3	8	9
	0	7	7	7	3	9	6	9	9	9	4

OS74.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	6	8	3	5	7	11
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	3	8	6	11	9	5
	0	7	7	7	6	5	8	11	7	3	9
	0	7	7	7	5	7	8	9	3	11	6
	0	7	7	7	3	11	8	5	9	6	7

OS75.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	6	8	3	5	7	11
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	3	8	6	11	9	5
	0	7	7	7	6	5	8	11	3	9	7
	0	7	7	7	5	7	8	9	9	2	9
	0	7	7	7	3	11	8	5	7	9	6

OS76.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	5	8	5	3	9	10
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	3	8	6	11	9	5
	0	7	7	7	6	5	8	11	7	3	9
	0	7	7	7	5	10	8	3	9	5	9
	0	7	7	7	3	9	8	9	5	10	5

OS77.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	5	8	3	5	10	9
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	7	5	8	6	11	3	9
	0	7	7	7	6	3	8	11	7	9	5
	0	7	7	7	5	9	8	9	3	5	10
	0	7	7	7	3	10	8	5	9	9	5

OS78.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	5	8	2	7	9	9
	0	7	7	7	8	3	6	11	5	9	7
	0	7	7	7	7	8	2	7	11	7	7
	0	7	7	7	6	6	9	8	8	2	10
	0	7	7	7	5	11	6	7	3	8	9
	0	7	7	7	3	7	10	7	9	9	4

OS79.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	5	3	8	6	11	7
	0	7	7	7	8	8	6	2	9	6	10
	0	7	7	7	7	2	11	7	8	7	7
	0	7	7	7	6	7	5	11	8	3	9
	0	7	7	7	5	9	9	7	2	8	9
	0	7	7	7	3	9	7	7	10	9	4

OS80.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	11	9	8	7	6	5	3
	0	7	7	7	9	3	7	4	10	9	7
	0	7	7	7	8	5	7	9	6	3	11
	0	7	7	7	7	7	7	7	2	11	8
	0	7	7	7	6	8	2	10	9	8	6
	0	7	7	7	5	11	7	3	8	6	9
	0	7	7	7	3	6	11	9	8	7	5

OS81.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	10	10	9	6	6	4	4
	0	7	7	7	10	6	2	9	8	8	6
	0	7	7	7	8	6	8	6	2	10	9
	0	7	7	7	8	4	8	4	10	5	10
	0	7	7	7	5	4	10	10	8	8	4
	0	7	7	7	4	10	6	4	9	10	6
	0	7	7	7	4	9	6	10	6	4	10

OS82.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	10	9	9	8	5	5	3
	0	7	7	7	9	5	5	8	10	3	9
	0	7	7	7	9	5	5	8	3	10	9
	0	7	7	7	8	8	8	1	8	8	8
	0	7	7	7	5	10	3	8	9	9	5
	0	7	7	7	5	3	10	8	9	9	5
	0	7	7	7	3	9	9	8	5	5	10

OS83.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	10	9	8	8	6	6	2
	0	7	7	7	9	6	8	6	8	2	10
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	8	2	8	6	9	10	6
	0	7	7	7	6	10	8	2	6	9	8
	0	7	7	7	6	6	8	10	2	8	9
	0	7	7	7	2	8	8	9	10	6	6

OS84.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	10	8	8	8	8	5	2
	0	7	7	7	8	10	8	5	2	8	8
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	8	5	8	2	10	8	8
	0	7	7	7	8	2	8	10	5	8	8
	0	7	7	7	5	8	8	8	8	2	10
	0	7	7	7	2	8	8	8	8	10	5

OS85.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	10	8	8	8	8	5	2
	0	7	7	7	8	8	8	8	1	8	8
	0	7	7	7	8	8	8	1	8	8	8
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	5	8	8	8	8	2	10
	0	7	7	7	2	8	8	8	8	10	5

OS86.	1	23	23	23	23	23	23	23	23	23	23
	1	23	23	23	0	0	0	0	0	0	0
	1	11	6	3	7	7	7	7	7	7	7
	1	6	3	11	7	7	7	7	7	7	7
	1	3	11	6	7	7	7	7	7	7	7
	0	7	7	7	8	8	8	8	8	8	1
	0	7	7	7	8	8	8	8	8	1	8
	0	7	7	7	8	8	8	8	1	8	8
	0	7	7	7	8	8	8	1	8	8	8
	0	7	7	7	8	8	1	8	8	8	8
	0	7	7	7	8	1	8	8	8	8	8
	0	7	7	7	1	8	8	8	8	8	8

Thus, we have the following

Theorem 3. *Up to isomorphism, there are at least eighty-six orbit structures for the symmetric block design* $\mathcal{D}$ *with parameters* $(231, 70, 21)$ *admitting a group* G *of order* 23.

Remark. The actual indexing of these eighty-six orbit structures in order to produce an example is still an open problem.

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