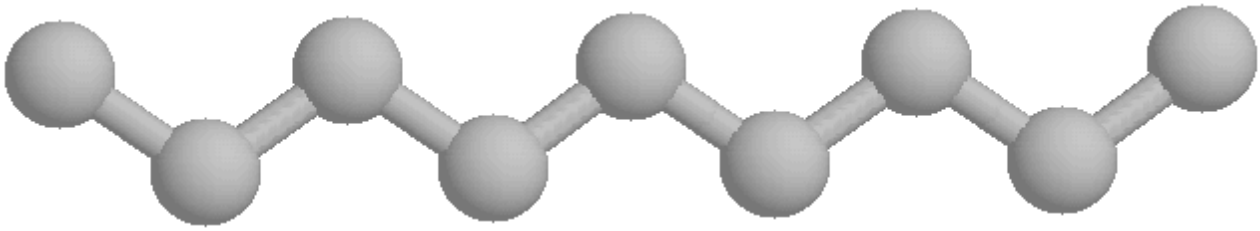
Characteristic and Counting Polynomials of Nonane Isomers



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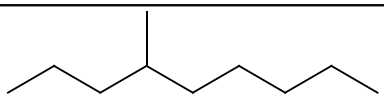
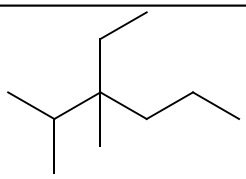
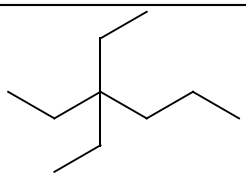
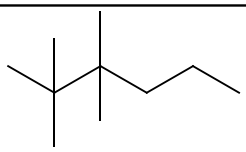
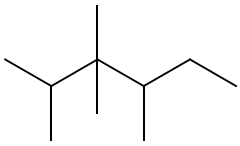
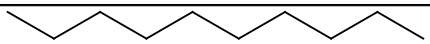
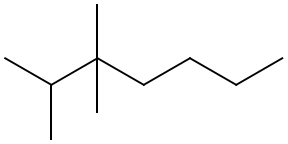
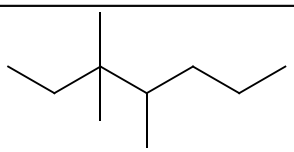
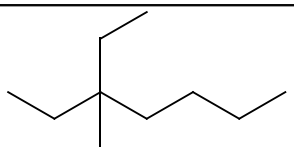
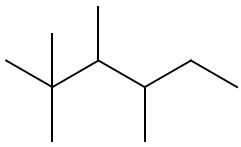
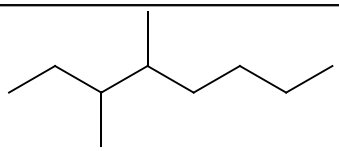
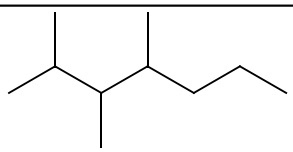
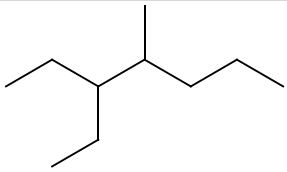
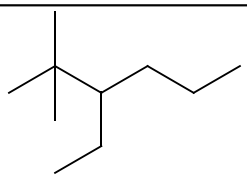
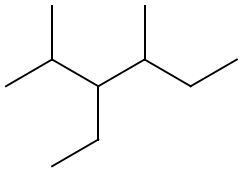
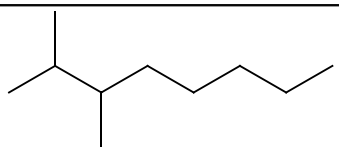
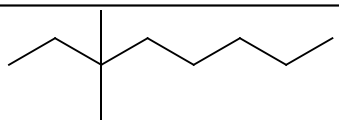
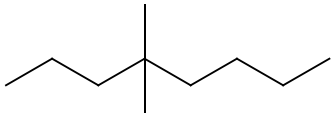
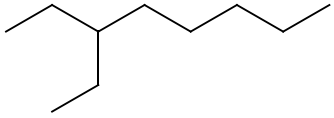
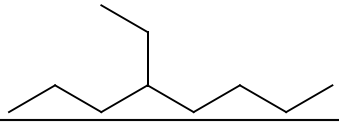
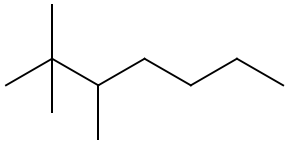
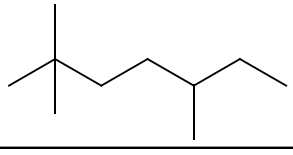
Nonane Isomers

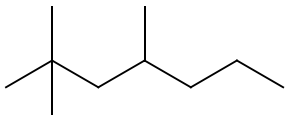
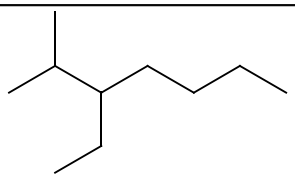
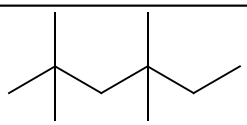
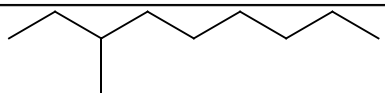
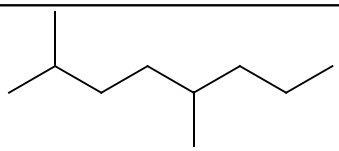
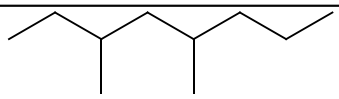
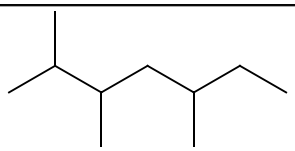
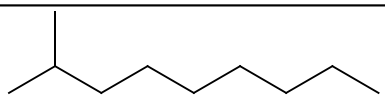
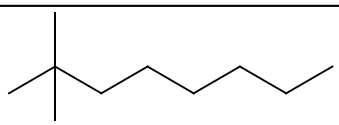
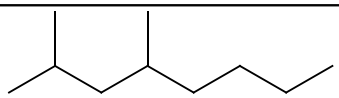
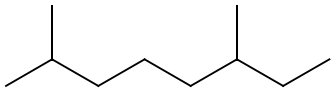
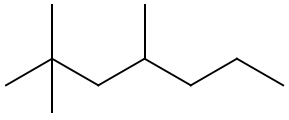
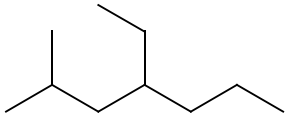
Nonane is the alcane hydrocarbon with the chemical formula $CH_3(CH_2)_7CH_3$. It has 35 isomers.

Following table depicts structural formulas for nonane isomers. Note that the representation from table 1 is a graph represenation, which depicts only carbon atoms as vertices, and bonds between them as edges.

Table 1. Structural formulas of nonane isomers

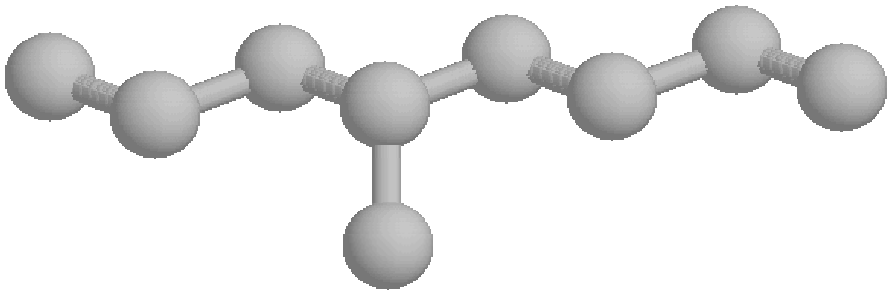
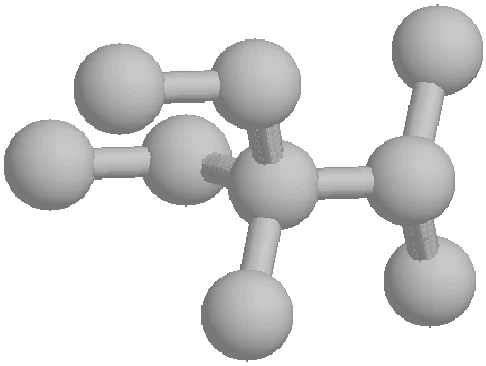
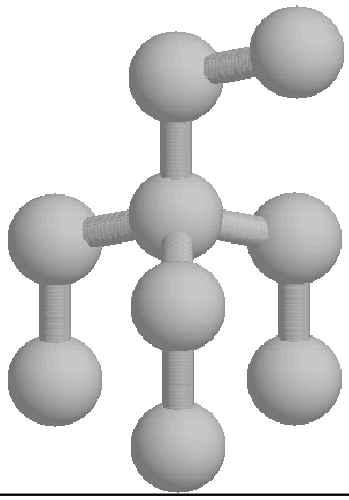
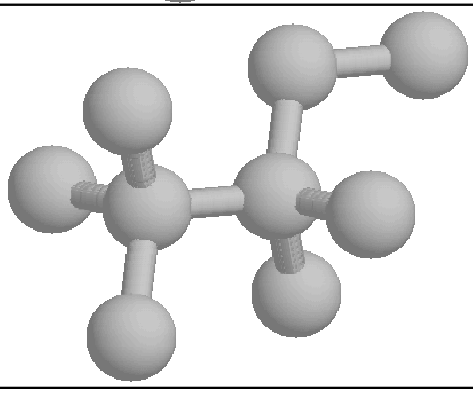
Nr	Name	Nickname	Structural formula
1	4-methyloctane	4mc8	
2	3-ethyl-2,3-dimethylpentane	3e23mc5	
3	3,3-diethylpentane	33ec5	
4	2,2,3,3-tetramethyl-pentane	2233mc5	
5	2,3,3,4-tetramethylpentane	2334mc5	
6	Nonane	c9	
7	2,3,3-trimethylhexane	233mc6	
8	3,3,4-trimethylhexane	334mc6	
9	3-ethyl-3-methylhexane	3e3mc6	

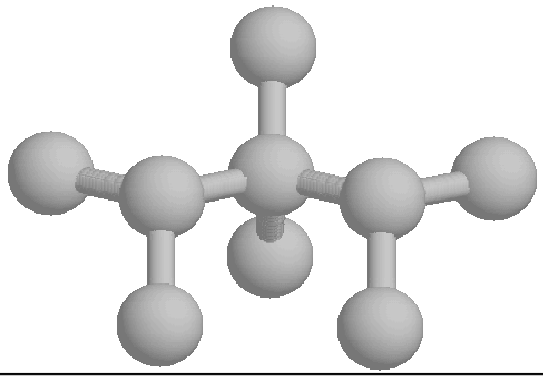
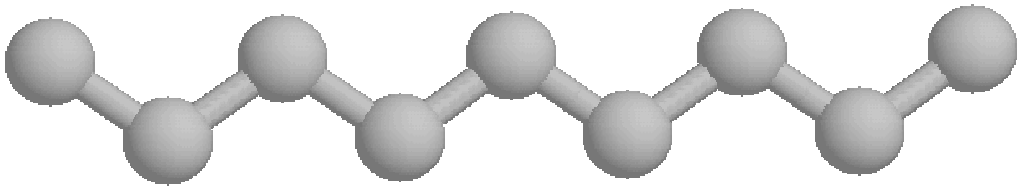
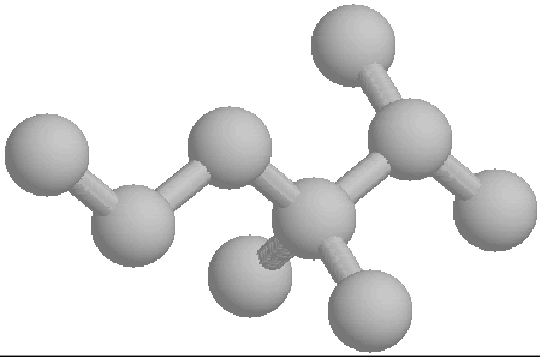
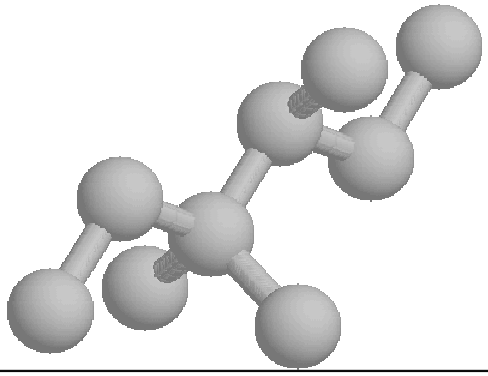
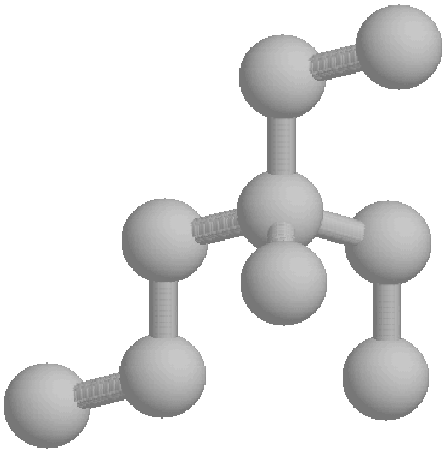
10	2,2,3,4-tetramethylpentane	2234mc5	
11	3,4-dimethylheptane	34mc7	
12	2,3,4-trimethylhexane	234mc6	
13	3-ethyl-4methylhexane	3e4mc6	
14	3-ethyl-2,2-dimethylpentane	3e22mc5	
15	3-ethyl-2,4-dimethylpentane	3e24mc5	
16	2,3-dimethylheptane	23mc7	
17	3,3-dimethylheptane	33mc7	
18	4,4-dimethylheptane	44mc7	
19	3-ethylheptane	3ec7	
20	4-ethylheptane	4ec7	
21	2,2,3-trimethylhexane	223mc6	
22	2,2,5-trimethylhexane	225mc6	

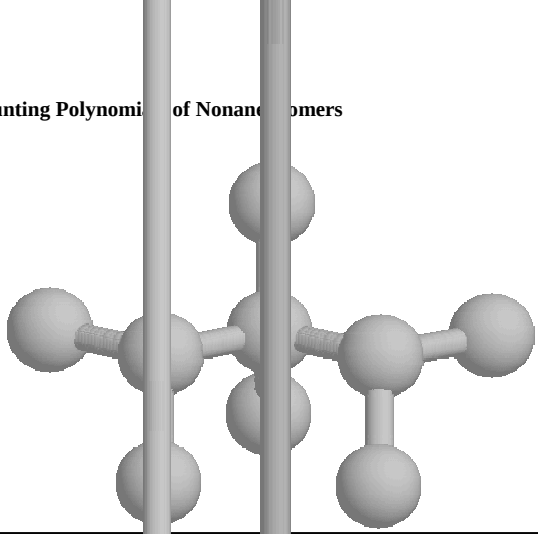
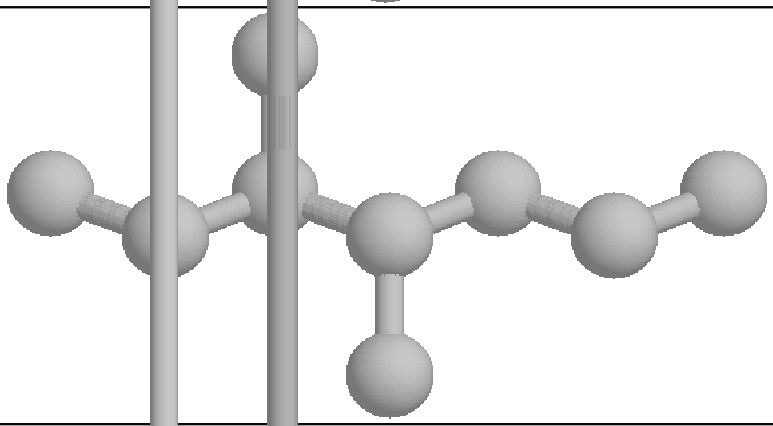
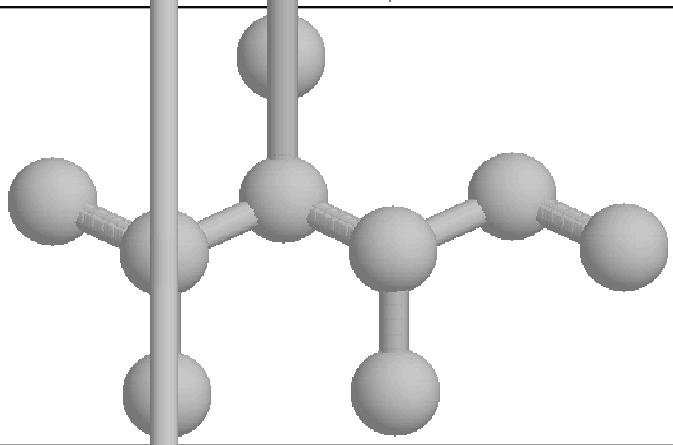
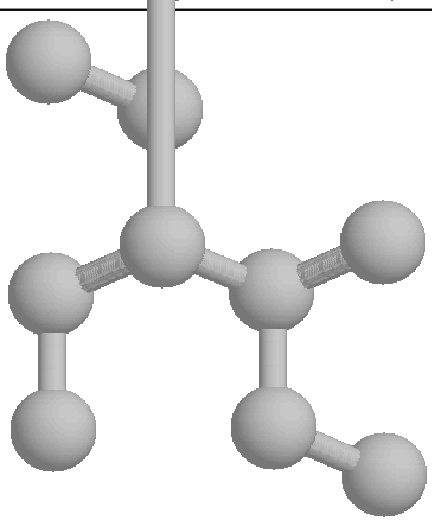
23	2,4,4-trimethylhexane	244mc6	
24	3-ethyl-2-methylhexane	3e2mc6	
25	2,2,4,4-tetramethylpentane	2244mc5	
26	3-methyloctane	3mc8	
27	2,5-dimethylheptane	25mc7	
28	3,5-dimethylheptane	35mc7	
29	2,3,5-trimethylhexane	235mc6	
30	2-methyloctane	2mc8	
31	2,2-dimethylheptane	22mc7	
32	2,4-dimethylheptane	24mc7	
33	2,6-dimethylheptane	26mc7	
34	2,2,4-trimethyl-hexane	224mc6	
35	4-ethyl-2-methylhexane	4e2mc6	

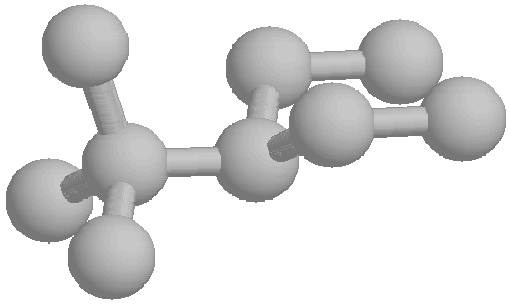
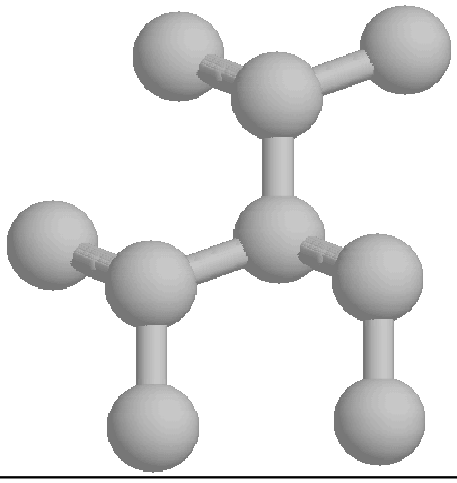
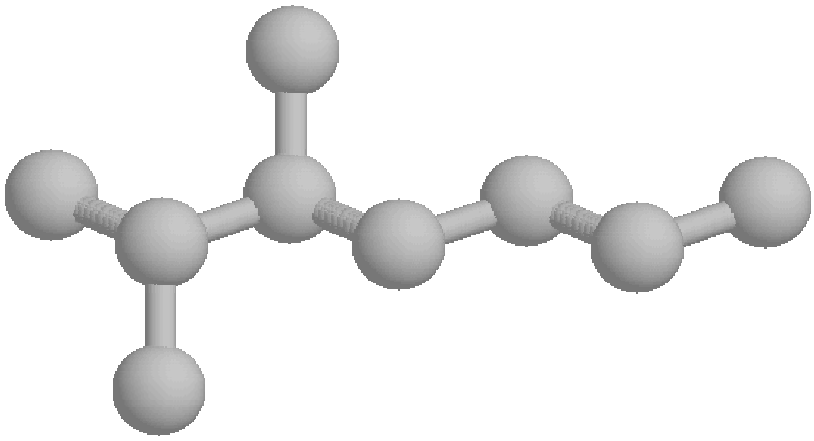
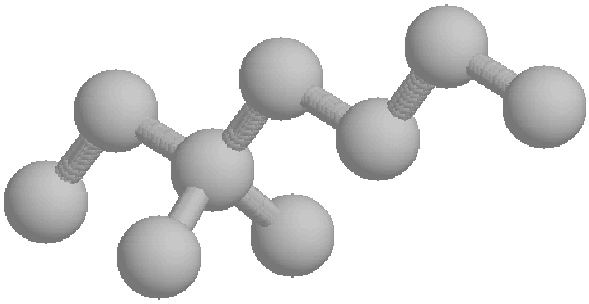
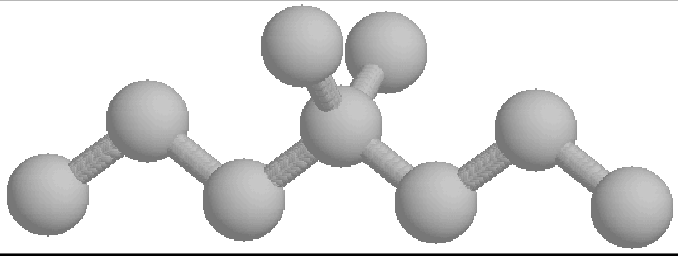
In the following table the 3D plots of nonane isomers are given. The 3D structures are geometrically optimized. Note that same as in table 1, only carbon atoms are depicted.

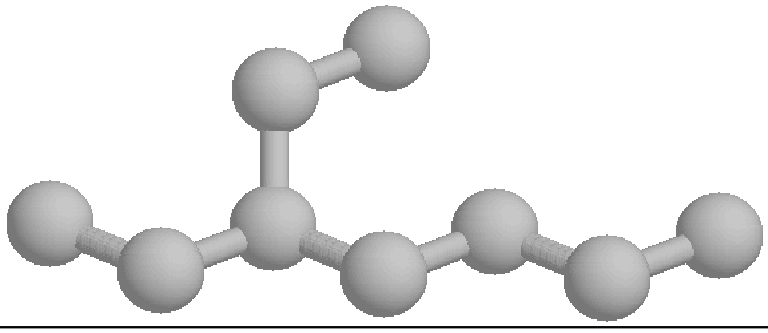
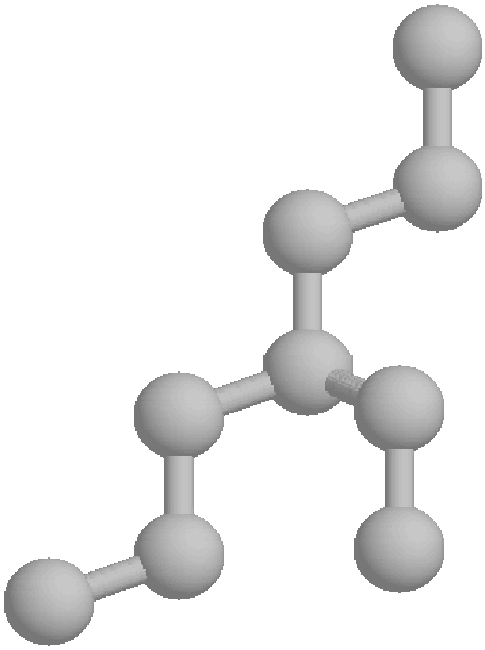
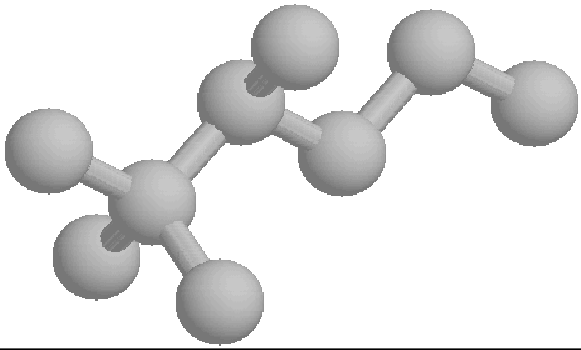
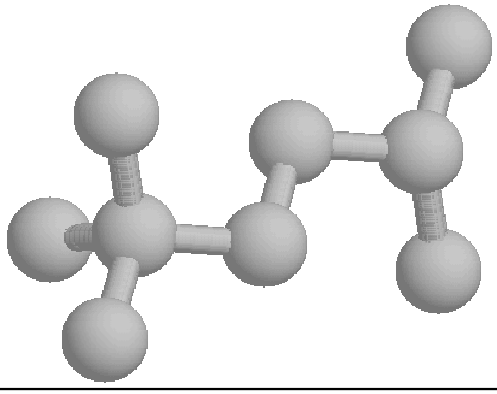
Table 2. 3D plots of nonane isomers

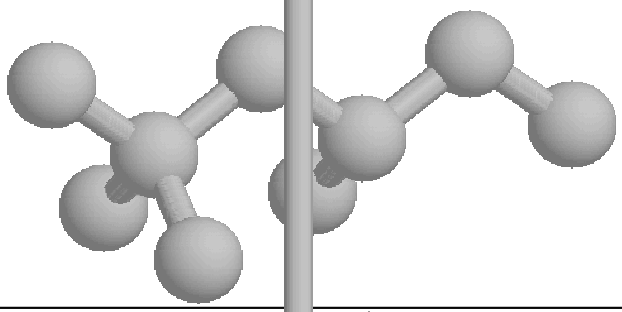
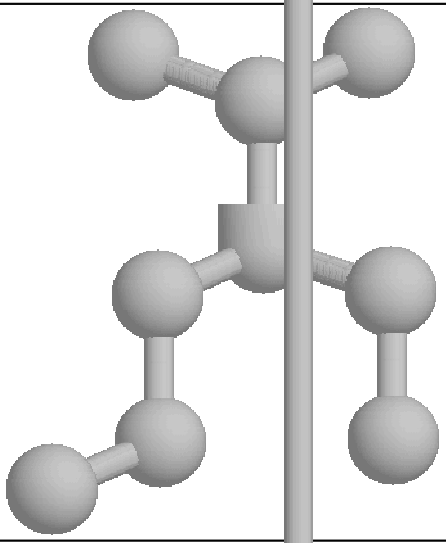
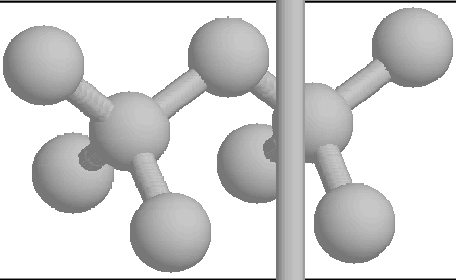
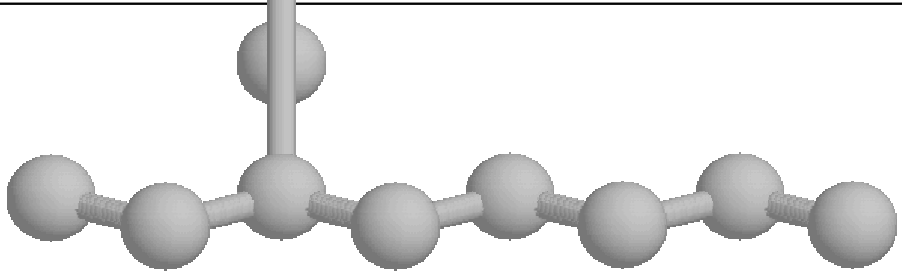
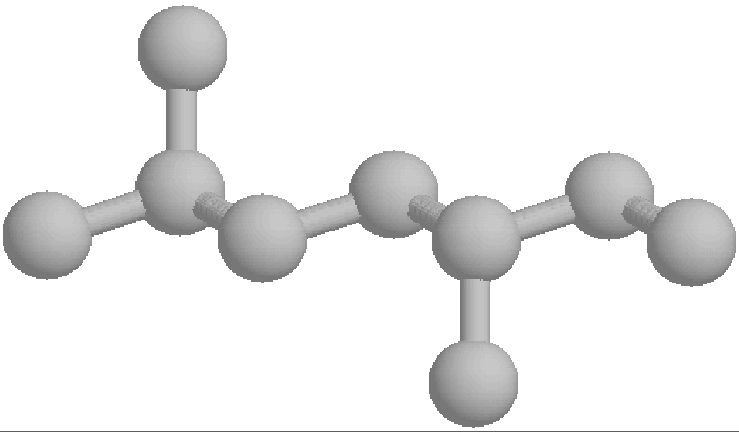
Nr	Nickname	3D view
1	4mc8	
2	3e23mc5	
3	33ec5	
4	2233mc5	

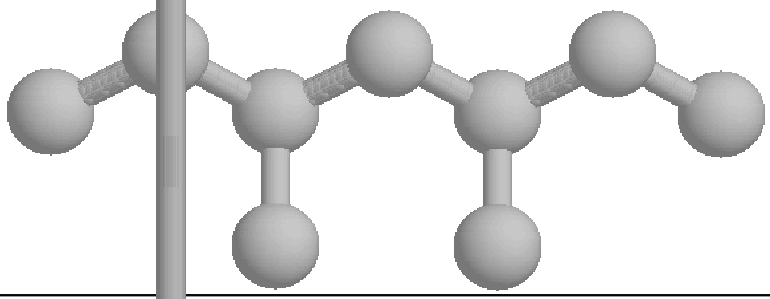
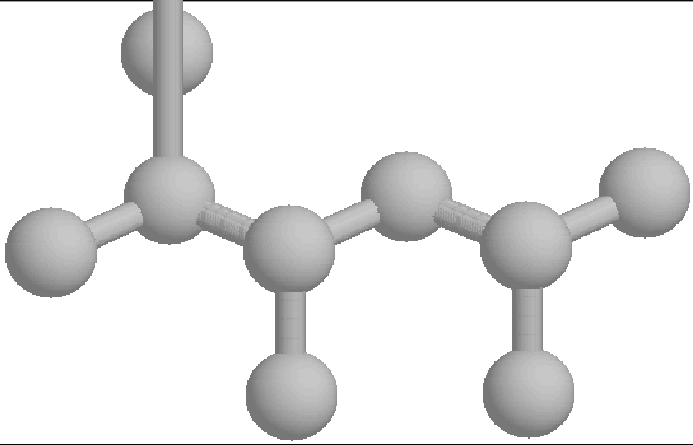
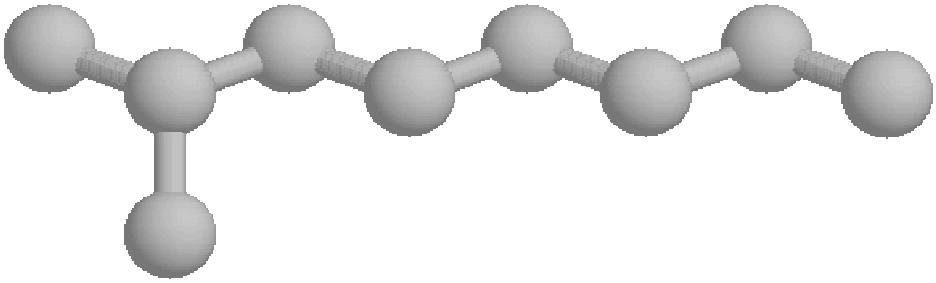
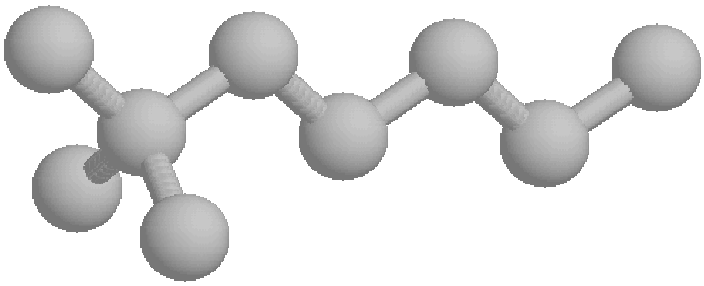
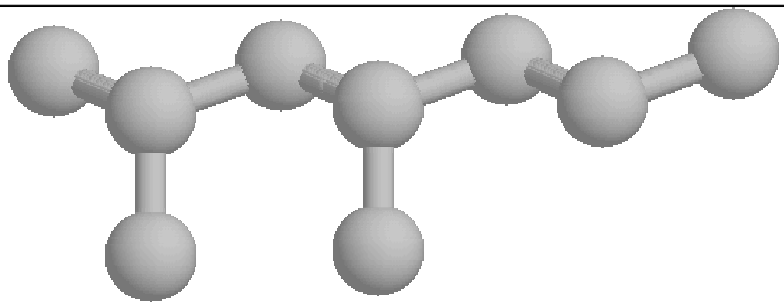
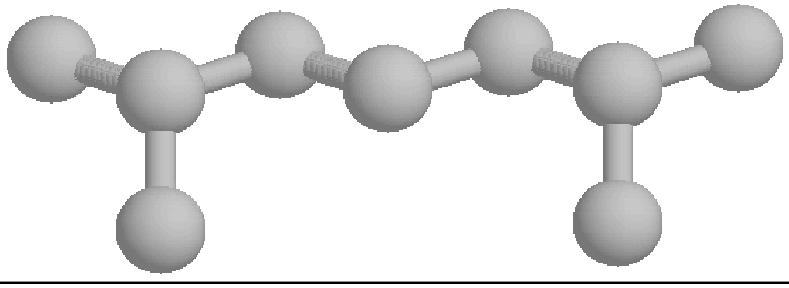
5	2334mc5	
6	c9	
7	233mc6	
8	334mc6	
9	3e3mc6	

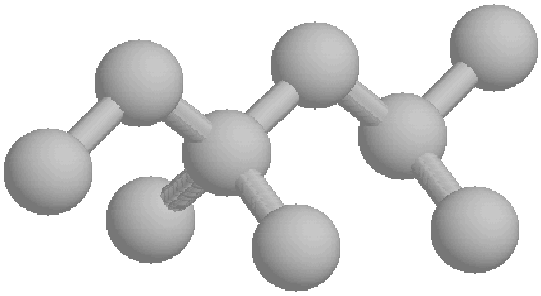
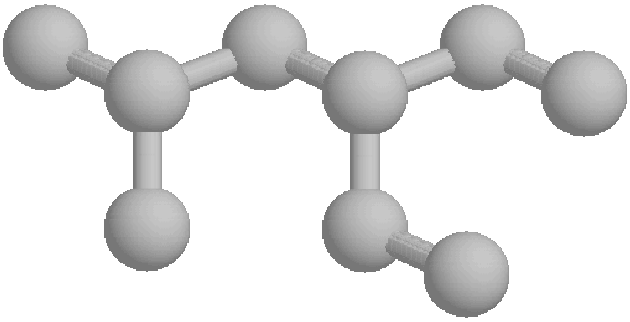
10	2234mc5	
11	34mc7	
12	234mc6	
13	3e4mc6	

14	3e22mc5	
15	3e24mc5	
16	23mc7	
17	33mc7	
18	44mc7	

19	3ec7	
20	4ec7	
21	223mc6	
22	225mc6	

23	244mc6	
24	3e2mc6	
25	2244mc5	
26	3mc8	
27	25mc7	

28	35mc7	
29	235mc6	
30	2mc8	
31	22mc7	
32	24mc7	
33	26mc7	

34	224mc6	
35	4e2mc6	

Polynomials

The characteristic polynomial (φ) can be defined as:

$$\varphi(G,X) = \det[XI - A(G)]$$

The general formula of a counting polynomial (Γ) is:

$$\Gamma(G,M,X) = \sum_{k\geq 0} a_k X^k,\ a_k = |\{M_{i,j}, |M_{i,j}| = k\}|$$

where:

- G is a unoriented graph having vertices (V) and edges (E);
- X is the independent variable (random variable);
- I is identity matrix ($I_{r,c} = 1$ for r = c, and $I_{r,c} = 0$ otherwise;
- A(G) is the adjacency matrix of graph G = G(V,E): $A(G)_{i,j} = 1$ if $(i,j) \in E$, and 0 otherwise;
- M(G): $\{1, \ldots, n\}\times\{1, \ldots, n\} \rightarrow \{0, \ldots, n\}$ a square matrix defined on graph G;

Remarks:

- $|V| = n$; I, A : $\{1, \ldots, n\}\times\{1, \ldots, n\} \rightarrow \{0,1\}$
- $|E| = m$; $0 \leq m \leq n(n-1)/2$
- φ(G,X) formula is a polynomial on X;
- φ(G,X) depends on chousing of G;
- φ(G,X) is independent of indexing (i.e. all isomorfisms of G has same polynomial);
- If $M_{i,j}$ counts substructures from G, then $0 \leq M_{i,j} \leq n$;
- Γ(G,M,X) acts as a global descriptor; it is also independent of indexing;

Following matrices stands for M (see definitions on the next page):

- Distance counting matrix, $CDi(G)_{i,j} = |V(DiF(G)_{i,j})|$
- Szeged fragments counting matrix, $CSz(G)_{i,j} = |V(SzF(G)_{i,j})|$
- Maximal fragments counting matrix, $CMa(G)_{i,j} = |V(MaF(G)_{i,j})|$

- Complement of maximal fragments counting matrix, $CcM(G)_{i,j} = |V(cMF(G)_{i,j})|$

Important Square Matrices Collecting Vertices from a Graph

Let be $\wp(G)$ the set of paths from G. Let be $\wp(G)_{i,j}$ a path from i to j.

Let be D(G) being the distance matrix; thus $D(G)_{i,j} = |p|$, $p \in \wp(G)_{i,j}$.

Followings are defined:

- $DiF(G)_{i,j} = p \mid p \in \wp(G)_{i,j}$
- $SzF(G)_{i,j} = \{V(SzF(G)_{i,j}), E(SzF(G)_{i,j})\}$

  $V(SzF(G)_{i,j}) = \{s \in V(G) \mid D(G)_{s,i} < D(G)_{s,j}\}$

  $E(SzF(G)_{i,j}) = \{(s,t) \in E(G) \mid s,t \in V(SzF(G)_{i,j})\}$
- $MaxF(G)_{i,j} = \{V(MaxF(G)_{i,j}), E(MaxF(G)_{i,j})\}$

  $Temp(G)_{i,j} = \{VTemp(G)_{i,j}, ETemp(G)_{i,j}\}$

  $VTemp(G)_{i,j} = \{s \in V(G) \mid s \neq j\}$

  $ETemp(G)_{i,j} = \{(u,v) \in E(G) \mid u,v \neq j\}$

  $V(MaxF(G)_{i,j}) = \{s \in VTemp(G)_{i,j} \mid D(VTemp(G)_{i,j})_{s,i} < \infty\}$

  $E(MaxF(G)_{i,j}) = \{(s,t) \in E(G) \mid s,t \in V(MaxF(G)_{i,j})\}$
- $CMaxF(G)_{i,j} = (V(CMaxF(G)_{i,j}), E(CMaxF(G)_{i,j}))$

  $V(CMaxF(G)_{i,j}) = \{s \in V(G) \mid s \notin V(MaxF(G)_{i,j})\}$

  $E(CMaxF(G)_{i,j}) = \{(s,t) \in E(G) \mid s,t \in V(CMaxF(G)_{i,j})\}$
- $MinF(G)_{i,j} = (\{i\},\varnothing)$
- $CjF(G)_{i,j,p} = SzF(G_p)_{i,j}$

  G_p is obtained from G by deleting the path p with exception of its endpoints

Remarks:

- Note that the chousing of *p* from $\wp(G)_{i,j}$ is, generally speaking, not unique; but $|p|$ is (i.e. $CDi(G)_{i,j}$);
- $V(MaxF(G)_{i,j}) \cup V(CMaxF(G)_{i,j}) = V(G)\ \forall\ i \neq j \in V(G)$;

- Even if definition of MinF is a trivial one, it is important, even if this may be the single reason;
- $CjF(G)_{i,j}$ can be defined as: $CjF(G)_{i,j} = \{CjF(G)_{i,j,p} \mid p \in \wp(G)_{i,j}\}$

Square Matrices Collecting Vertices from C9 Isomers

Following chemical graphs were used:

2233mc5, 2234mc5, 223mc6, 2244mc5, 224mc6, 225mc6, 22mc7, 2334mc5, 233mc6, 234mc6, 235mc6, 23mc7, 244mc6, 24mc7, 25mc7, 26mc7, 2mc8, 334mc6, 33ec5, 33mc7, 34mc7, 35mc7, 3e22mc5, 3e23mc5, 3e24mc5, 3e2mc6, 3e3mc6, 3e4mc6, 3ec7, 3mc8, 44mc7, 4e2mc6, 4ec7, 4mc8, c9.

Results on these graphs are given in alphabelically order.

Following matrices are calculated:

[Ch] - The characteristic matrix;

[Di] - The distance matrix;

[Mx] - The maximal fragments matrix;

[cM] - The complement of maximal fragments matrix;

[Sz] - The Szeged fragments matrix;

[Cf] - The Cluj fragmental fragments matrix.

2233mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	-1	0	0
3	0	-1	X	-1	0	0	0	-1	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	2	3	3
2	1	0	1	2	3	1	1	2	2
3	2	1	0	1	2	2	2	1	1
4	3	2	1	0	1	3	3	2	2
5	4	3	2	1	0	4	4	3	3
6	2	1	2	3	4	0	2	3	3
7	2	1	2	3	4	2	0	3	3
8	3	2	1	2	3	3	3	0	2
9	3	2	1	2	3	3	3	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 8 9		1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 8 9	4 5		1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 8 9	4 5	5		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	6	1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	7	1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 8 9	8	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 8 9	9	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 8 9	4 5	5	6	7	8	9
2	1		3 4 5 8 9	4 5	5	6	7	8	9
3	1	1 2 6 7		4 5	5	6	7	8	9
4	1	1 2 6 7	1 2 3 6 7 8 9		5	6	7	8	9
5	1	1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 6 7 8 9		6	7	8	9
6	1	1 2 3 4 5 7 8 9	3 4 5 8 9	4 5	5		7	8	9
7	1	1 2 3 4 5 6 8 9	3 4 5 8 9	4 5	5	6		8	9
8	1	1 2 6 7	1 2 3 4 5 6 7 9	4 5	5	6	7		9
9	1	1 2 6 7	1 2 3 4 5 6 7 8	4 5	5	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 6 7	1 2 6 7	1	1	1 2 6 7	1 2 6 7
2	2 3 4 5 6 7 8 9		1 2 6 7	1 2 6 7	1 2 3 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 6 7	1 2 6 7
3	3 4 5 8 9	3 4 5 8 9		1 2 3 6 7 8 9	1 2 3 6 7 8 9	3 4 5 8 9	3 4 5 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	3 4 5 8 9	4 5	4 5		1 2 3 4 6 7 8 9	3 4 5 8 9	3 4 5 8 9	4 5	4 5
5	4 5	4 5	5	5		4 5	4 5	4 5	4 5
6	6	6	6	1 2 6 7	1 2 6 7		6	1 2 6 7	1 2 6 7
7	7	7	7	1 2 6 7	1 2 6 7	7		1 2 6 7	1 2 6 7
8	3 4 5 8 9	8	8	8	1 2 3 6 7 8 9	3 4 5 8 9	3 4 5 8 9		8
9	3 4 5 8 9	9	9	9	1 2 3 6 7 8 9	3 4 5 8 9	3 4 5 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6 7	1 2 6 7	1 2 6 7	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 6 7	1 2 6 7
3	3 4 5 8 9	3 4 5 8 9		1 2 3 6 7 8 9	1 2 3 6 7 8 9	3 4 5 8 9	3 4 5 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	4 5	4 5	4 5		1 2 3 4 6 7 8 9	4 5	4 5	4 5	4 5
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

2234mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	-1	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	2	3	4
2	1	0	1	2	3	1	1	2	3
3	2	1	0	1	2	2	2	1	2
4	3	2	1	0	1	3	3	2	1
5	4	3	2	1	0	4	4	3	2
6	2	1	2	3	4	0	2	3	4
7	2	1	2	3	4	2	0	3	4
8	3	2	1	2	3	3	3	0	3
9	4	3	2	1	2	4	4	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1267	123678	12346789	12345789	12345689	12345679	12345678
2	23456789		1267	123678	12346789	12345789	12345689	12345679	12345678
3	23456789	34589		123678	12346789	12345789	12345689	12345679	12345678
4	23456789	34589	459		12346789	12345789	12345689	12345679	12345678
5	23456789	34589	459	5		12345789	12345689	12345679	12345678
6	23456789	6	1267	123678	12346789		12345689	12345679	12345678
7	23456789	7	1267	123678	12346789	12345789		12345679	12345678
8	23456789	34589	8	123678	12346789	12345789	12345689		12345678
9	23456789	34589	459	9	12346789	12345789	12345689	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	34589	459	5	6	7	8	9
2	1		34589	459	5	6	7	8	9
3	1	1267		459	5	6	7	8	9
4	1	1267	123678		5	6	7	8	9
5	1	1267	123678	12346789		6	7	8	9
6	1	12345789	34589	459	5		7	8	9
7	1	12345689	34589	459	5	6		8	9
8	1	1267	12345679	459	5	6	7		9
9	1	1267	123678	12345678	5	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1267	1267	1	1	1267	1267
2	23456789		1267	1267	123678	12345789	12345689	1267	123678
3	34589	34589		123678	123678	34589	34589	12345679	123678
4	34589	459	459		12346789	34589	34589	459	12345678
5	459	459	5	5		459	459	459	5
6	6	6	6	1267	1267		6	1267	1267
7	7	7	7	1267	1267	7		1267	1267
8	34589	8	8	8	123678	34589	34589		123678
9	459	459	9	9	9	459	459	459	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6 7	1 2 6 7	1 2 6 7	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 6 7	1 2 6 7
3	3 4 5 8 9	3 4 5 8 9		1 2 3 6 7 8	1 2 3 6 7 8	3 4 5 8 9	3 4 5 8 9	1 2 3 4 5 6 7 9	1 2 3 6 7 8
4	4 5 9	4 5 9	4 5 9		1 2 3 4 6 7 8 9	4 5 9	4 5 9	4 5 9	1 2 3 4 5 6 7 8
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

223mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	-1	0
3	0	-1	X	-1	0	0	0	0	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	2	3
2	1	0	1	2	3	4	1	1	2
3	2	1	0	1	2	3	2	2	1
4	3	2	1	0	1	2	3	3	2
5	4	3	2	1	0	1	4	4	3
6	5	4	3	2	1	0	5	5	4
7	2	1	2	3	4	5	0	2	3
8	2	1	2	3	4	5	2	0	3
9	3	2	1	2	3	4	3	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1278	123789	1234789	12345789	12345689	12345679	12345678
2	23456789		1278	123789	1234789	12345789	12345689	12345679	12345678
3	23456789	34569		123789	1234789	12345789	12345689	12345679	12345678
4	23456789	34569	456		1234789	12345789	12345689	12345679	12345678
5	23456789	34569	456	56		12345789	12345689	12345679	12345678
6	23456789	34569	456	56	6		12345689	12345679	12345678
7	23456789	7	1278	123789	1234789	12345789		12345679	12345678
8	23456789	8	1278	123789	1234789	12345789	12345689		12345678
9	23456789	34569	9	123789	1234789	12345789	12345689	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	34569	456	56	6	7	8	9
2	1		34569	456	56	6	7	8	9
3	1	1278		456	56	6	7	8	9
4	1	1278	123789		56	6	7	8	9
5	1	1278	123789	1234789		6	7	8	9
6	1	1278	123789	1234789	12345789		7	8	9
7	1	12345689	34569	456	56	6		8	9
8	1	12345679	34569	456	56	6	7		9
9	1	1278	12345678	456	56	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1278	1278	123789	1	1	1278
2	23456789		1278	1278	123789	123789	12345689	12345679	1278
3	34569	34569		123789	123789	1234789	34569	34569	12345678
4	34569	456	456		1234789	1234789	34569	34569	456
5	456	456	56	56		12345789	456	456	456
6	456	56	56	6	6		456	456	56
7	7	7	7	1278	1278	123789		7	1278
8	8	8	8	1278	1278	123789	8		1278
9	34569	9	9	9	123789	123789	34569	34569	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 7 8	1 2 7 8	1 2 7 8	1 2 7 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 7 8
3	3 4 5 6 9	3 4 5 6 9		1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 7 8 9	3 4 5 6 9	3 4 5 6 9	1 2 3 4 5 6 7 8
4	4 5 6	4 5 6	4 5 6		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6	4 5 6	4 5 6
5	5 6	5 6	5 6	5 6		1 2 3 4 5 7 8 9	5 6	5 6	5 6
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

2244mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	-1	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	-1	-1
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	0	-1	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	2	4	4
2	1	0	1	2	3	1	1	3	3
3	2	1	0	1	2	2	2	2	2
4	3	2	1	0	1	3	3	1	1
5	4	3	2	1	0	4	4	2	2
6	2	1	2	3	4	0	2	4	4
7	2	1	2	3	4	2	0	4	4
8	4	3	2	1	2	4	4	0	2
9	4	3	2	1	2	4	4	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1267	12367	123467 89	123457 89	123456 89	123456 79	123456 78
2	234567 89		1267	12367	123467 89	123457 89	123456 89	123456 79	123456 78
3	234567 89	3458 9		12367	123467 89	123457 89	123456 89	123456 79	123456 78
4	234567 89	3458 9	458 9		123467 89	123457 89	123456 89	123456 79	123456 78
5	234567 89	3458 9	458 9	5		123457 89	123456 89	123456 79	123456 78
6	234567 89	6	1267	12367	123467 89		123456 89	123456 79	123456 78
7	234567 89	7	1267	12367	123467 89	123457 89		123456 79	123456 78
8	234567 89	3458 9	458 9	8	123467 89	123457 89	123456 89		123456 78
9	234567 89	3458 9	458 9	9	123467 89	123457 89	123456 89	123456 79	

[cM]	1	2	3	4	5	6	7	8	9
1		234567 89	3458 9	458 9	5	6	7	8	9
2	1		3458 9	458 9	5	6	7	8	9
3	1	1267		458 9	5	6	7	8	9
4	1	1267	12367		5	6	7	8	9
5	1	1267	12367	123467 89		6	7	8	9
6	1	123457 89	3458 9	458 9	5		7	8	9
7	1	123456 89	3458 9	458 9	5	6		8	9
8	1	1267	12367	123457 89	5	6	7		9
9	1	1267	12367	123456 78	5	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1267	1267	1	1	1267	1267
2	234567 89		1267	1267	12367	123457 89	123456 89	12367	12367
3	3458 9	3458 9		12367	12367	3458 9	3458 9	12367	12367
4	3458 9	458 9	458 9		123467 89	3458 9	3458 9	123456 79	123456 78
5	458 9	458 9	5	5		458 9	458 9	5	5
6	6	6	6	1267	1267		6	1267	1267
7	7	7	7	1267	1267	7		1267	1267
8	458 9	458 9	8	8	8	458 9	458 9		8
9	458 9	458 9	9	9	9	458 9	458 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6 7	1 2 6 7	1 2 6 7	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 6 7	1 2 6 7
3	3 4 5 8 9	3 4 5 8 9		1 2 3 6 7	1 2 3 6 7	3 4 5 8 9	3 4 5 8 9	1 2 3 6 7	1 2 3 6 7
4	4 5 8 9	4 5 8 9	4 5 8 9		1 2 3 4 6 7 8 9	4 5 8 9	4 5 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

224mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	-1	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	2	4
2	1	0	1	2	3	4	1	1	3
3	2	1	0	1	2	3	2	2	2
4	3	2	1	0	1	2	3	3	1
5	4	3	2	1	0	1	4	4	2
6	5	4	3	2	1	0	5	5	3
7	2	1	2	3	4	5	0	2	4
8	2	1	2	3	4	5	2	0	4
9	4	3	2	1	2	3	4	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1278	12378	1234789	12345789	12345689	12345679	12345678
2	23456789		1278	12378	1234789	12345789	12345689	12345679	12345678
3	23456789	34569		12378	1234789	12345789	12345689	12345679	12345678
4	23456789	34569	4569		1234789	12345789	12345689	12345679	12345678
5	23456789	34569	4569	56		12345789	12345689	12345679	12345678
6	23456789	34569	4569	56	6		12345689	12345679	12345678
7	23456789	7	1278	12378	1234789	12345789		12345679	12345678
8	23456789	8	1278	12378	1234789	12345789	12345689		12345678
9	23456789	34569	4569	9	1234789	12345789	12345689	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	34569	4569	56	6	7	8	9
2	1		34569	4569	56	6	7	8	9
3	1	1278		4569	56	6	7	8	9
4	1	1278	12378		56	6	7	8	9
5	1	1278	12378	1234789		6	7	8	9
6	1	1278	12378	1234789	12345789		7	8	9
7	1	12345689	34569	4569	56	6		8	9
8	1	12345679	34569	4569	56	6	7		9
9	1	1278	12378	12345678	56	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1278	1278	12378	1	1	1278
2	23456789		1278	1278	12378	12378	12345689	12345679	12378
3	34569	34569		12378	12378	1234789	34569	34569	12378
4	34569	4569	4569		1234789	1234789	34569	34569	12345678
5	4569	4569	56	56		12345789	4569	4569	56
6	4569	56	56	6	6		4569	4569	56
7	7	7	7	1278	1278	12378		7	1278
8	8	8	8	1278	1278	12378	8		1278
9	4569	4569	9	9	9	1234789	4569	4569	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 7 8	1 2 7 8	1 2 7 8	1 2 7 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 7 8
3	3 4 5 6 9	3 4 5 6 9		1 2 3 7 8	1 2 3 7 8	1 2 3 7 8	3 4 5 6 9	3 4 5 6 9	1 2 3 7 8
4	4 5 6 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	1 2 3 4 5 6 7 8
5	5 6	5 6	5 6	5 6		1 2 3 4 5 7 8 9	5 6	5 6	5 6
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

225mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	-1	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	-1
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	0	0	-1	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	2	5
2	1	0	1	2	3	4	1	1	4
3	2	1	0	1	2	3	2	2	3
4	3	2	1	0	1	2	3	3	2
5	4	3	2	1	0	1	4	4	1
6	5	4	3	2	1	0	5	5	2
7	2	1	2	3	4	5	0	2	5
8	2	1	2	3	4	5	2	0	5
9	5	4	3	2	1	2	5	5	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1278	12378	123478	123457 89	123456 89	123456 79	123456 78
2	234567 89		1278	12378	123478	123457 89	123456 89	123456 79	123456 78
3	234567 89	34569		12378	123478	123457 89	123456 89	123456 79	123456 78
4	234567 89	34569	4569		123478	123457 89	123456 89	123456 79	123456 78
5	234567 89	34569	4569	569		123457 89	123456 89	123456 79	123456 78
6	234567 89	34569	4569	569	6		123456 89	123456 79	123456 78
7	234567 89	7	1278	12378	123478	123457 89		123456 79	123456 78
8	234567 89	8	1278	12378	123478	123457 89	123456 89		123456 78
9	234567 89	34569	4569	569	9	123457 89	123456 89	123456 79	

[cM]	1	2	3	4	5	6	7	8	9
1		234567 89	34569	4569	569	6	7	8	9
2	1		34569	4569	569	6	7	8	9
3	1	1278		4569	569	6	7	8	9
4	1	1278	12378		569	6	7	8	9
5	1	1278	12378	123478		6	7	8	9
6	1	1278	12378	123478	123457 89		7	8	9
7	1	123456 89	34569	4569	569	6		8	9
8	1	123456 79	34569	4569	569	6	7		9
9	1	1278	12378	123478	123456 78	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1278	1278	12378	1	1	12378
2	234567 89		1278	1278	12378	12378	123456 89	123456 79	12378
3	34569	34569		12378	12378	123478	34569	34569	123478
4	34569	4569	4569		123478	123478	34569	34569	123478
5	4569	4569	569	569		123457 89	4569	4569	123456 78
6	4569	569	569	6	6		4569	4569	6
7	7	7	7	1278	1278	12378		7	12378
8	8	8	8	1278	1278	12378	8		12378
9	4569	569	569	9	9	9	4569	4569	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		1278	1278	1278	1278	12345689	12345679	1278
3	34569	34569		12378	12378	12378	34569	34569	12378
4	4569	4569	4569		123478	123478	4569	4569	123478
5	569	569	569	569		12345789	569	569	12345678
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

22mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	-1	-1
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	-1	0	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	2	2
2	1	0	1	2	3	4	5	1	1
3	2	1	0	1	2	3	4	2	2
4	3	2	1	0	1	2	3	3	3
5	4	3	2	1	0	1	2	4	4
6	5	4	3	2	1	0	1	5	5
7	6	5	4	3	2	1	0	6	6
8	2	1	2	3	4	5	6	0	2
9	2	1	2	3	4	5	6	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1289	12389	123489	1234589	12345689	12345679	12345678
2	23456789		1289	12389	123489	1234589	12345689	12345679	12345678
3	23456789	34567		12389	123489	1234589	12345689	12345679	12345678
4	23456789	34567	4567		123489	1234589	12345689	12345679	12345678
5	23456789	34567	4567	567		1234589	12345689	12345679	12345678
6	23456789	34567	4567	567	67		12345689	12345679	12345678
7	23456789	34567	4567	567	67	7		12345679	12345678
8	23456789	8	1289	12389	123489	1234589	12345689		12345678
9	23456789	9	1289	12389	123489	1234589	12345689	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	34567	4567	567	67	7	8	9
2	1		34567	4567	567	67	7	8	9
3	1	1289		4567	567	67	7	8	9
4	1	1289	12389		567	67	7	8	9
5	1	1289	12389	123489		67	7	8	9
6	1	1289	12389	123489	1234589		7	8	9
7	1	1289	12389	123489	1234589	12345689		8	9
8	1	12345679	34567	4567	567	67	7		9
9	1	12345678	34567	4567	567	67	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1289	1289	12389	12389	1	1
2	23456789		1289	1289	12389	12389	123489	12345679	12345678
3	34567	34567		12389	12389	123489	123489	34567	34567
4	34567	4567	4567		123489	123489	1234589	34567	34567
5	4567	4567	567	567		1234589	1234589	4567	4567
6	4567	567	567	67	67		12345689	4567	4567
7	567	567	67	67	7	7		567	567
8	8	8	8	1289	1289	12389	12389		8
9	9	9	9	1289	1289	12389	12389	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	234567 89		1289	1289	1289	1289	1289	12345679	12345678
3	34567	34567		12389	12389	12389	12389	34567	34567
4	4567	4567	4567		123489	123489	123489	4567	4567
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

2334mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	0	0	0
3	0	-1	X	-1	0	0	0	-1	-1
4	0	0	-1	X	-1	0	-1	0	0
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	0	0	-1	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	4	3	3
2	1	0	1	2	3	1	3	2	2
3	2	1	0	1	2	2	2	1	1
4	3	2	1	0	1	3	1	2	2
5	4	3	2	1	0	4	2	3	3
6	2	1	2	3	4	0	4	3	3
7	4	3	2	1	2	4	0	3	3
8	3	2	1	2	3	3	3	0	2
9	3	2	1	2	3	3	3	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 6	1 2 3 6 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 6	1 2 3 6 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 7 8 9		1 2 3 6 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 7 8 9	4 5 7		1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 7 8 9	4 5 7	5		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	6	1 2 6	1 2 3 6 8 9	1 2 3 4 6 7 8 9		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 7 8 9	4 5 7	7	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 7 8 9	8	1 2 3 6 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 7 8 9	9	1 2 3 6 8 9	1 2 3 4 6 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 7 8 9	4 5 7	5	6	7	8	9
2	1		3 4 5 7 8 9	4 5 7	5	6	7	8	9
3	1	1 2 6		4 5 7	5	6	7	8	9
4	1	1 2 6	1 2 3 6 8 9		5	6	7	8	9
5	1	1 2 6	1 2 3 6 8 9	1 2 3 4 6 7 8 9		6	7	8	9
6	1	1 2 3 4 5 7 8 9	3 4 5 7 8 9	4 5 7	5		7	8	9
7	1	1 2 6	1 2 3 6 8 9	1 2 3 4 5 6 8 9	5	6		8	9
8	1	1 2 6	1 2 3 4 5 6 7 9	4 5 7	5	6	7		9
9	1	1 2 6	1 2 3 4 5 6 7 8	4 5 7	5	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 6	1 2 6	1	1 2 6	1 2 6	1 2 6
2	2 3 4 5 6 7 8 9		1 2 6	1 2 6	1 2 3 6 8 9	1 2 3 4 5 7 8 9	1 2 3 6 8 9	1 2 6	1 2 6
3	3 4 5 7 8 9	3 4 5 7 8 9		1 2 3 6 8 9	1 2 3 6 8 9	3 4 5 7 8 9	1 2 3 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	3 4 5 7 8 9	4 5 7	4 5 7		1 2 3 4 6 7 8 9	3 4 5 7 8 9	1 2 3 4 5 6 8 9	4 5 7	4 5 7
5	4 5 7	4 5 7	5	5		4 5 7	5	4 5 7	4 5 7
6	6	6	6	1 2 6	1 2 6		1 2 6	1 2 6	1 2 6
7	4 5 7	4 5 7	7	7	7	4 5 7		4 5 7	4 5 7
8	3 4 5 7 8 9	8	8	8	1 2 3 6 8 9	3 4 5 7 8 9	1 2 3 6 8 9		8
9	3 4 5 7 8 9	9	9	9	1 2 3 6 8 9	3 4 5 7 8 9	1 2 3 6 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6	1 2 6	1 2 6	1 2 3 4 5 7 8 9	1 2 6	1 2 6	1 2 6
3	3 4 5 7 8 9	3 4 5 7 8 9		1 2 3 6 8 9	1 2 3 6 8 9	3 4 5 7 8 9	1 2 3 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	4 5 7	4 5 7	4 5 7		1 2 3 4 6 7 8 9	4 5 7	1 2 3 4 5 6 8 9	4 5 7	4 5 7
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

233mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	0	0
3	0	-1	X	-1	0	0	0	-1	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	3	3
2	1	0	1	2	3	4	1	2	2
3	2	1	0	1	2	3	2	1	1
4	3	2	1	0	1	2	3	2	2
5	4	3	2	1	0	1	4	3	3
6	5	4	3	2	1	0	5	4	4
7	2	1	2	3	4	5	0	3	3
8	3	2	1	2	3	4	3	0	2
9	3	2	1	2	3	4	3	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 7	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 7	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 8 9		1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6		1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6	5 6		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6	5 6	6		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	7	1 2 7	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 8 9	8	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 8 9	9	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6	5 6	6	7	8	9
2	1		3 4 5 6 8 9	4 5 6	5 6	6	7	8	9
3	1	1 2 7		4 5 6	5 6	6	7	8	9
4	1	1 2 7	1 2 3 7 8 9		5 6	6	7	8	9
5	1	1 2 7	1 2 3 7 8 9	1 2 3 4 7 8 9		6	7	8	9
6	1	1 2 7	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		7	8	9
7	1	1 2 3 4 5 6 8 9	3 4 5 6 8 9	4 5 6	5 6	6		8	9
8	1	1 2 7	1 2 3 4 5 6 7 9	4 5 6	5 6	6	7		9
9	1	1 2 7	1 2 3 4 5 6 7 8	4 5 6	5 6	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 7	1 2 7	1 2 3 7 8 9	1	1 2 7	1 2 7
2	2 3 4 5 6 7 8 9		1 2 7	1 2 7	1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 4 5 6 8 9	1 2 7	1 2 7
3	3 4 5 6 8 9	3 4 5 6 8 9		1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 4 7 8 9	3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	3 4 5 6 8 9	4 5 6	4 5 6		1 2 3 4 7 8 9	1 2 3 4 7 8 9	3 4 5 6 8 9	4 5 6	4 5 6
5	4 5 6	4 5 6	5 6	5 6		1 2 3 4 5 7 8 9	4 5 6	4 5 6	4 5 6
6	4 5 6	5 6	5 6	6	6		4 5 6	5 6	5 6
7	7	7	7	1 2 7	1 2 7	1 2 3 7 8 9		1 2 7	1 2 7
8	3 4 5 6 8 9	8	8	8	1 2 3 7 8 9	1 2 3 7 8 9	3 4 5 6 8 9		8
9	3 4 5 6 8 9	9	9	9	1 2 3 7 8 9	1 2 3 7 8 9	3 4 5 6 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		127	127	127	127	12345689	127	127
3	345689	345689		123789	123789	123789	345689	12345679	12345678
4	456	456	456		1234789	1234789	456	456	456
5	56	56	56	56		12345789	56	56	56
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

234mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	3	4
2	1	0	1	2	3	4	1	2	3
3	2	1	0	1	2	3	2	1	2
4	3	2	1	0	1	2	3	2	1
5	4	3	2	1	0	1	4	3	2
6	5	4	3	2	1	0	5	4	3
7	2	1	2	3	4	5	0	3	4
8	3	2	1	2	3	4	3	0	3
9	4	3	2	1	2	3	4	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 7	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 7	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 8 9		1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6	6		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	7	1 2 7	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 8 9	8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6	6	7	8	9
2	1		3 4 5 6 8 9	4 5 6 9	5 6	6	7	8	9
3	1	1 2 7		4 5 6 9	5 6	6	7	8	9
4	1	1 2 7	1 2 3 7 8		5 6	6	7	8	9
5	1	1 2 7	1 2 3 7 8	1 2 3 4 7 8 9		6	7	8	9
6	1	1 2 7	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		7	8	9
7	1	1 2 3 4 5 6 8 9	3 4 5 6 8 9	4 5 6 9	5 6	6		8	9
8	1	1 2 7	1 2 3 4 5 6 7 9	4 5 6 9	5 6	6	7		9
9	1	1 2 7	1 2 3 7 8	1 2 3 4 5 6 7 8	5 6	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 7	1 2 7	1 2 3 7 8	1	1 2 7	1 2 7
2	2 3 4 5 6 7 8 9		1 2 7	1 2 7	1 2 3 7 8	1 2 3 7 8	1 2 3 4 5 6 8 9	1 2 7	1 2 3 7 8
3	3 4 5 6 8 9	3 4 5 6 8 9		1 2 3 7 8	1 2 3 7 8	1 2 3 4 7 8 9	3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 7 8
4	3 4 5 6 8 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 7 8 9	3 4 5 6 8 9	4 5 6 9	1 2 3 4 5 6 7 8
5	4 5 6 9	4 5 6 9	5 6	5 6		1 2 3 4 5 7 8 9	4 5 6 9	4 5 6 9	5 6
6	4 5 6 9	5 6	5 6	6	6		4 5 6 9	5 6	5 6
7	7	7	7	1 2 7	1 2 7	1 2 3 7 8		1 2 7	1 2 7
8	3 4 5 6 8 9	8	8	8	1 2 3 7 8	1 2 3 7 8	3 4 5 6 8 9		1 2 3 7 8
9	4 5 6 9	4 5 6 9	9	9	9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		127	127	127	127	12345689	127	127
3	345689	345689		12378	12378	12378	345689	12345679	12378
4	4569	4569	4569		1234789	1234789	4569	4569	12345678
5	56	56	56	56		12345789	56	56	56
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

235mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	-1
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	0	-1	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	3	5
2	1	0	1	2	3	4	1	2	4
3	2	1	0	1	2	3	2	1	3
4	3	2	1	0	1	2	3	2	2
5	4	3	2	1	0	1	4	3	1
6	5	4	3	2	1	0	5	4	2
7	2	1	2	3	4	5	0	3	5
8	3	2	1	2	3	4	3	0	4
9	5	4	3	2	1	2	5	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 7	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 7	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 8 9		1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9		1 2 3 4 7 8	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6 9		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6 9	6		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	7	1 2 7	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 8 9	8	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6 9	9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 8 9	4 5 6 9	5 6 9	6	7	8	9
2	1		3 4 5 6 8 9	4 5 6 9	5 6 9	6	7	8	9
3	1	1 2 7		4 5 6 9	5 6 9	6	7	8	9
4	1	1 2 7	1 2 3 7 8		5 6 9	6	7	8	9
5	1	1 2 7	1 2 3 7 8	1 2 3 4 7 8		6	7	8	9
6	1	1 2 7	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 7 8 9		7	8	9
7	1	1 2 3 4 5 6 8 9	3 4 5 6 8 9	4 5 6 9	5 6 9	6		8	9
8	1	1 2 7	1 2 3 4 5 6 7 9	4 5 6 9	5 6 9	6	7		9
9	1	1 2 7	1 2 3 7 8	1 2 3 4 7 8	1 2 3 4 5 6 7 8	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 7	1 2 7	1 2 3 7 8	1	1 2 7	1 2 3 7 8
2	2 3 4 5 6 7 8 9		1 2 7	1 2 7	1 2 3 7 8	1 2 3 7 8	1 2 3 4 5 6 8 9	1 2 7	1 2 3 7 8
3	3 4 5 6 8 9	3 4 5 6 8 9		1 2 3 7 8	1 2 3 7 8	1 2 3 4 7 8	3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 7 8
4	3 4 5 6 8 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8	1 2 3 4 7 8	3 4 5 6 8 9	4 5 6 9	1 2 3 4 7 8
5	4 5 6 9	4 5 6 9	5 6 9	5 6 9		1 2 3 4 5 7 8 9	4 5 6 9	4 5 6 9	1 2 3 4 5 6 7 8
6	4 5 6 9	5 6 9	5 6 9	6	6		4 5 6 9	5 6 9	6
7	7	7	7	1 2 7	1 2 7	1 2 3 7 8		1 2 7	1 2 3 7 8
8	3 4 5 6 8 9	8	8	8	1 2 3 7 8	1 2 3 7 8	3 4 5 6 8 9		1 2 3 7 8
9	4 5 6 9	5 6 9	5 6 9	9	9	9	4 5 6 9	5 6 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		127	127	127	127	12345689	127	127
3	345689	345689		12378	12378	12378	345689	12345679	12378
4	4569	4569	4569		123478	123478	4569	4569	123478
5	569	569	569	569		12345789	569	569	12345678
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

23mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	-1	0
3	0	-1	X	-1	0	0	0	0	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	2	3
2	1	0	1	2	3	4	5	1	2
3	2	1	0	1	2	3	4	2	1
4	3	2	1	0	1	2	3	3	2
5	4	3	2	1	0	1	2	4	3
6	5	4	3	2	1	0	1	5	4
7	6	5	4	3	2	1	0	6	5
8	2	1	2	3	4	5	6	0	3
9	3	2	1	2	3	4	5	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	128	12389	123489	1234589	12345689	123456789	12345678
2	23456789		128	12389	123489	1234589	12345689	123456789	12345678
3	23456789	345679		12389	123489	1234589	12345689	123456789	12345678
4	23456789	345679	4567		123489	1234589	12345689	123456789	12345678
5	23456789	345679	4567	567		1234589	12345689	123456789	12345678
6	23456789	345679	4567	567	67		12345689	123456789	12345678
7	23456789	345679	4567	567	67	7		123456789	12345678
8	23456789	8	128	12389	123489	1234589	12345689		12345678
9	23456789	345679	9	12389	123489	1234589	12345689	123456789	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345679	4567	567	67	7	8	9
2	1		345679	4567	567	67	7	8	9
3	1	128		4567	567	67	7	8	9
4	1	128	12389		567	67	7	8	9
5	1	128	12389	123489		67	7	8	9
6	1	128	12389	123489	1234589		7	8	9
7	1	128	12389	123489	1234589	12345689		8	9
8	1	123456789	345679	4567	567	67	7		9
9	1	128	123456789	4567	567	67	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	128	128	12389	12389	1	128
2	23456789		128	128	12389	12389	123489	123456789	128
3	345679	345679		12389	12389	123489	123489	345679	12345678
4	345679	4567	4567		123489	123489	1234589	345679	4567
5	4567	4567	567	567		1234589	1234589	4567	4567
6	4567	567	567	67	67		12345689	4567	567
7	567	567	67	67	7	7		567	567
8	8	8	8	128	128	12389	12389		128
9	345679	9	9	9	12389	12389	123489	345679	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		128	128	128	128	128	123456789	128
3	345679	345679		12389	12389	12389	12389	345679	123456789
4	4567	4567	4567		123489	123489	123489	4567	4567
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		123456789	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

244mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	-1	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	0	-1	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	4	4
2	1	0	1	2	3	4	1	3	3
3	2	1	0	1	2	3	2	2	2
4	3	2	1	0	1	2	3	1	1
5	4	3	2	1	0	1	4	2	2
6	5	4	3	2	1	0	5	3	3
7	2	1	2	3	4	5	0	4	4
8	4	3	2	1	2	3	4	0	2
9	4	3	2	1	2	3	4	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	127	1237	1234789	12345789	123456789	123456789	123456789
2	234567889		127	1237	1234789	12345789	123456789	123456789	123456789
3	234567889	345689		1237	1234789	12345789	123456789	123456789	123456789
4	234567889	345689	45689		1234789	12345789	123456789	123456789	123456789
5	234567889	345689	45689	56		12345789	123456789	123456789	123456789
6	234567889	345689	45689	56	6		123456789	123456789	123456789
7	234567889	7	127	1237	1234789	12345789		123456789	123456789
8	234567889	345689	45689	8	1234789	12345789	123456789		123456789
9	234567889	345689	45689	9	1234789	12345789	123456789	123456789	

[cM]	1	2	3	4	5	6	7	8	9
1		234567889	345689	45689	56	6	7	8	9
2	1		345689	45689	56	6	7	8	9
3	1	127		45689	56	6	7	8	9
4	1	127	1237		56	6	7	8	9
5	1	127	1237	1234789		6	7	8	9
6	1	127	1237	1234789	12345789		7	8	9
7	1	123456889	345689	45689	56	6		8	9
8	1	127	1237	123456789	56	6	7		9
9	1	127	1237	123456788	56	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	127	127	1237	1	127	127
2	234567889		127	127	1237	1237	123456889	1237	1237
3	345689	345689		1237	1237	1234789	345689	1237	1237
4	345689	45689	45689		1234789	1234789	345689	123456789	123456788
5	45689	45689	56	56		12345789	45689	56	56
6	45689	56	56	6	6		45689	56	56
7	7	7	7	127	127	1237		127	127
8	45689	45689	8	8	8	1234789	45689		8
9	45689	45689	9	9	9	1234789	45689	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		127	127	127	127	12345689	127	127
3	345689	345689		1237	1237	1237	345689	1237	1237
4	45689	45689	45689		1234789	1234789	45689	12345679	12345678
5	56	56	56	56		12345789	56	56	56
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

24mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	-1	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	2	4
2	1	0	1	2	3	4	5	1	3
3	2	1	0	1	2	3	4	2	2
4	3	2	1	0	1	2	3	3	1
5	4	3	2	1	0	1	2	4	2
6	5	4	3	2	1	0	1	5	3
7	6	5	4	3	2	1	0	6	4
8	2	1	2	3	4	5	6	0	4
9	4	3	2	1	2	3	4	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 9		1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9		1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7	6 7	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	8	1 2 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7	6 7	7	8	9
2	1		3 4 5 6 7 9	4 5 6 7 9	5 6 7	6 7	7	8	9
3	1	1 2 8		4 5 6 7 9	5 6 7	6 7	7	8	9
4	1	1 2 8	1 2 3 8		5 6 7	6 7	7	8	9
5	1	1 2 8	1 2 3 8	1 2 3 4 8 9		6 7	7	8	9
6	1	1 2 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9		7	8	9
7	1	1 2 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8	9
8	1	1 2 3 4 5 6 7 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7	6 7	7		9
9	1	1 2 8	1 2 3 8	1 2 3 4 5 6 7 8	5 6 7	6 7	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 8	1 2 8	1 2 3 8	1 2 3 8	1	1 2 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 8	1 2 3 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 5 6 7 9	1 2 3 8
3	3 4 5 6 7 9	3 4 5 6 7 9		1 2 3 8	1 2 3 8	1 2 3 4 8 9	1 2 3 4 8 9	3 4 5 6 7 9	1 2 3 8
4	3 4 5 6 7 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	4 5 6 7 9	4 5 6 7 9	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	4 5 6 7 9	5 6 7
6	4 5 6 7 9	5 6 7	5 6 7	6 7	6 7		1 2 3 4 5 6 8 9	4 5 6 7 9	5 6 7
7	5 6 7	5 6 7	6 7	6 7	7	7		5 6 7	6 7
8	8	8	8	1 2 8	1 2 8	1 2 3 8	1 2 3 8		1 2 8
9	4 5 6 7 9	4 5 6 7 9	9	9	9	1 2 3 4 8 9	1 2 3 4 8 9	4 5 6 7 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		128	128	128	128	128	12345679	128
3	345679	345679		1238	1238	1238	1238	345679	1238
4	45679	45679	45679		123489	123489	123489	45679	12345678
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

25mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	-1	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	-1
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	0	0	-1	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	2	5
2	1	0	1	2	3	4	5	1	4
3	2	1	0	1	2	3	4	2	3
4	3	2	1	0	1	2	3	3	2
5	4	3	2	1	0	1	2	4	1
6	5	4	3	2	1	0	1	5	2
7	6	5	4	3	2	1	0	6	3
8	2	1	2	3	4	5	6	0	5
9	5	4	3	2	1	2	3	5	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 9		1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	8	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7	7	8	9
2	1		3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7	7	8	9
3	1	1 2 8		4 5 6 7 9	5 6 7 9	6 7	7	8	9
4	1	1 2 8	1 2 3 8		5 6 7 9	6 7	7	8	9
5	1	1 2 8	1 2 3 8	1 2 3 4 8		6 7	7	8	9
6	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9		7	8	9
7	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8	9
8	1	1 2 3 4 5 6 7 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7	7		9
9	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 6 7 8	6 7	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 8	1 2 8	1 2 3 8	1 2 3 8	1	1 2 3 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 8	1 2 3 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 6 7 9	1 2 3 8
3	3 4 5 6 7 9	3 4 5 6 7 9		1 2 3 8	1 2 3 8	1 2 3 4 8	1 2 3 4 8	3 4 5 6 7 9	1 2 3 4 8
4	3 4 5 6 7 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 8	1 2 3 4 5 8 9	3 4 5 6 7 9	1 2 3 4 8
5	4 5 6 7 9	4 5 6 7 9	5 6 7 9	5 6 7 9		1 2 3 4 5 8 9	1 2 3 4 5 8 9	4 5 6 7 9	1 2 3 4 5 6 7 8
6	4 5 6 7 9	5 6 7 9	5 6 7 9	6 7	6 7		1 2 3 4 5 6 8 9	4 5 6 7 9	6 7
7	5 6 7 9	5 6 7 9	6 7	6 7	7	7		5 6 7 9	6 7
8	8	8	8	1 2 8	1 2 8	1 2 3 8	1 2 3 8		1 2 3 8
9	4 5 6 7 9	5 6 7 9	5 6 7 9	9	9	9	1 2 3 4 5 8 9	4 5 6 7 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 8	1 2 8	1 2 8	1 2 8	1 2 8	1 2 3 4 5 6 7 9	1 2 8
3	3 4 5 6 7 9	3 4 5 6 7 9		1 2 3 8	1 2 3 8	1 2 3 8	1 2 3 8	3 4 5 6 7 9	1 2 3 8
4	4 5 6 7 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 8	1 2 3 4 8	4 5 6 7 9	1 2 3 4 8
5	5 6 7 9	5 6 7 9	5 6 7 9	5 6 7 9		1 2 3 4 5 8 9	1 2 3 4 5 8 9	5 6 7 9	1 2 3 4 5 6 7 8
6	6 7	6 7	6 7	6 7	6 7		1 2 3 4 5 6 8 9	6 7	6 7
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

26mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	-1	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	-1
7	0	0	0	0	0	-1	X	0	0
8	0	-1	0	0	0	0	0	X	0
9	0	0	0	0	0	-1	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	2	6
2	1	0	1	2	3	4	5	1	5
3	2	1	0	1	2	3	4	2	4
4	3	2	1	0	1	2	3	3	3
5	4	3	2	1	0	1	2	4	2
6	5	4	3	2	1	0	1	5	1
7	6	5	4	3	2	1	0	6	2
8	2	1	2	3	4	5	6	0	6
9	6	5	4	3	2	1	2	6	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 9		1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9		1 2 3 4 5 8	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	8	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9	9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9	7	8	9
2	1		3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9	7	8	9
3	1	1 2 8		4 5 6 7 9	5 6 7 9	6 7 9	7	8	9
4	1	1 2 8	1 2 3 8		5 6 7 9	6 7 9	7	8	9
5	1	1 2 8	1 2 3 8	1 2 3 4 8		6 7 9	7	8	9
6	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8		7	8	9
7	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 8 9		8	9
8	1	1 2 3 4 5 6 7 9	3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7 9	7		9
9	1	1 2 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8	1 2 3 4 5 6 7 8	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2 8	1 2 8	1 2 3 8	1 2 3 8	1	1 2 3 8
2	2 3 4 5 6 7 8 9		1 2 8	1 2 8	1 2 3 8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 6 7 9	1 2 3 4 8
3	3 4 5 6 7 9	3 4 5 6 7 9		1 2 3 8	1 2 3 8	1 2 3 4 8	1 2 3 4 8	3 4 5 6 7 9	1 2 3 4 8
4	3 4 5 6 7 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 8	1 2 3 4 5 8	3 4 5 6 7 9	1 2 3 4 5 8
5	4 5 6 7 9	4 5 6 7 9	5 6 7 9	5 6 7 9		1 2 3 4 5 8	1 2 3 4 5 8	4 5 6 7 9	1 2 3 4 5 8
6	4 5 6 7 9	5 6 7 9	5 6 7 9	6 7 9	6 7 9		1 2 3 4 5 6 8 9	4 5 6 7 9	1 2 3 4 5 6 7 8
7	5 6 7 9	5 6 7 9	6 7 9	6 7 9	7	7		5 6 7 9	7
8	8	8	8	1 2 8	1 2 8	1 2 3 8	1 2 3 8		1 2 3 8
9	5 6 7 9	5 6 7 9	6 7 9	6 7 9	9	9	9	5 6 7 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 8	1 2 8	1 2 8	1 2 8	1 2 8	1 2 3 4 5 6 7 9	1 2 8
3	3 4 5 6 7 9	3 4 5 6 7 9		1 2 3 8	1 2 3 8	1 2 3 8	1 2 3 8	3 4 5 6 7 9	1 2 3 8
4	4 5 6 7 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 8	1 2 3 4 8	4 5 6 7 9	1 2 3 4 8
5	5 6 7 9	5 6 7 9	5 6 7 9	5 6 7 9		1 2 3 4 5 8	1 2 3 4 5 8	5 6 7 9	1 2 3 4 5 8
6	6 7 9	6 7 9	6 7 9	6 7 9	6 7 9		1 2 3 4 5 6 8 9	6 7 9	1 2 3 4 5 6 7 8
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

2mc8

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	-1
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	-1	0	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	2
2	1	0	1	2	3	4	5	6	1
3	2	1	0	1	2	3	4	5	2
4	3	2	1	0	1	2	3	4	3
5	4	3	2	1	0	1	2	3	4
6	5	4	3	2	1	0	1	2	5
7	6	5	4	3	2	1	0	1	6
8	7	6	5	4	3	2	1	0	7
9	2	1	2	3	4	5	6	7	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	129	1239	12349	123459	1234569	12345679	123456789
2	23456789		129	1239	12349	123459	1234569	12345679	123456789
3	23456789	345678		1239	12349	123459	1234569	12345679	123456789
4	23456789	345678	45678		12349	123459	1234569	12345679	123456789
5	23456789	345678	45678	5678		123459	1234569	12345679	123456789
6	23456789	345678	45678	5678	678		1234569	12345679	123456789
7	23456789	345678	45678	5678	678	78		12345679	123456789
8	23456789	345678	45678	5678	678	78	8		123456789
9	23456789	9	129	1239	12349	123459	1234569	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345678	45678	5678	678	78	8	9
2	1		345678	45678	5678	678	78	8	9
3	1	129		45678	5678	678	78	8	9
4	1	129	1239		5678	678	78	8	9
5	1	129	1239	12349		678	78	8	9
6	1	129	1239	12349	123459		78	8	9
7	1	129	1239	12349	123459	1234569		8	9
8	1	129	1239	12349	123459	1234569	12345679		9
9	1	123456789	345678	45678	5678	678	78	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	129	129	1239	1239	12349	1
2	23456789		129	129	1239	1239	12349	12349	123456789
3	345678	345678		1239	1239	12349	12349	123459	345678
4	345678	45678	45678		12349	12349	123459	123459	345678
5	45678	45678	5678	5678		123459	123459	1234569	45678
6	45678	5678	5678	678	678		1234569	1234569	45678
7	5678	5678	678	678	78	78		12345679	5678
8	5678	678	678	78	78	8	8		5678
9	9	9	9	129	129	1239	1239	12349	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		129	129	129	129	129	129	12345678
3	345678	345678		1239	1239	1239	1239	1239	345678
4	45678	45678	45678		12349	12349	12349	12349	45678
5	5678	5678	5678	5678		123459	123459	123459	5678
6	678	678	678	678	678		1234569	1234569	678
7	78	78	78	78	78	78		12345679	78
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

334mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	-1	-1	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	0	-1	0	0	0	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	3	3	4
2	1	0	1	2	3	4	2	2	3
3	2	1	0	1	2	3	1	1	2
4	3	2	1	0	1	2	2	2	1
5	4	3	2	1	0	1	3	3	2
6	5	4	3	2	1	0	4	4	3
7	3	2	1	2	3	4	0	2	3
8	3	2	1	2	3	4	2	0	3
9	4	3	2	1	2	3	3	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6		1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6	6		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	7	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6	6	7	8	9
2	1		3 4 5 6 7 8 9	4 5 6 9	5 6	6	7	8	9
3	1	1 2		4 5 6 9	5 6	6	7	8	9
4	1	1 2	1 2 3 7 8		5 6	6	7	8	9
5	1	1 2	1 2 3 7 8	1 2 3 4 7 8 9		6	7	8	9
6	1	1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		7	8	9
7	1	1 2	1 2 3 4 5 6 8 9	4 5 6 9	5 6	6		8	9
8	1	1 2	1 2 3 4 5 6 7 9	4 5 6 9	5 6	6	7		9
9	1	1 2	1 2 3 7 8	1 2 3 4 5 6 7 8	5 6	6	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 7 8	1 2	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 7 8	1 2 3 7 8	1 2	1 2	1 2 3 7 8
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 7 8
4	3 4 5 6 7 8 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	1 2 3 4 5 6 7 8
5	4 5 6 9	4 5 6 9	5 6	5 6		1 2 3 4 5 7 8 9	4 5 6 9	4 5 6 9	5 6
6	4 5 6 9	5 6	5 6	6	6		5 6	5 6	5 6
7	3 4 5 6 7 8 9	7	7	7	1 2 3 7 8	1 2 3 7 8		7	1 2 3 7 8
8	3 4 5 6 7 8 9	8	8	8	1 2 3 7 8	1 2 3 7 8	8		1 2 3 7 8
9	4 5 6 9	4 5 6 9	9	9	9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		12378	12378	12378	12345689	12345679	12378
4	4569	4569	4569		1234789	1234789	4569	4569	12345678
5	56	56	56	56		12345789	56	56	56
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

33ec5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	-1	0	-1	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	0	0	0	0
6	0	0	-1	0	0	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	-1	0	0	0	0	X	-1
9	0	0	0	0	0	0	0	-1	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	3	4	3	4
2	1	0	1	2	3	2	3	2	3
3	2	1	0	1	2	1	2	1	2
4	3	2	1	0	1	2	3	2	3
5	4	3	2	1	0	3	4	3	4
6	3	2	1	2	3	0	1	2	3
7	4	3	2	3	4	1	0	3	4
8	3	2	1	2	3	2	3	0	1
9	4	3	2	3	4	3	4	1	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	12	1236789	12346789	12345689	12345689	1234567	12345678
2	23456789		12	1236789	12346789	12345689	12345689	1234567	12345678
3	23456789	3456789		1236789	12346789	12345689	12345689	1234567	12345678
4	23456789	3456789	45		12346789	12345689	12345689	1234567	12345678
5	23456789	3456789	45	5		12345689	12345689	1234567	12345678
6	23456789	3456789	67	1236789	12346789		12345689	1234567	12345678
7	23456789	3456789	67	1236789	12346789	7		1234567	12345678
8	23456789	3456789	89	1236789	12346789	12345689	12345689		12345678
9	23456789	3456789	89	1236789	12346789	12345689	12345689	9	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	3456789	45	5	67	7	89	9
2	1		3456789	45	5	67	7	89	9
3	1	12		45	5	67	7	89	9
4	1	12	1236789		5	67	7	89	9
5	1	12	1236789	12346789		67	7	89	9
6	1	12	1234589	45	5		7	89	9
7	1	12	1234589	45	5	12345689		89	9
8	1	12	1234567	45	5	67	7		9
9	1	12	1234567	45	5	67	7	12345678	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	12	12	12	12	12	12
2	23456789		12	12	1236789	12	1234589	12	1234567
3	3456789	3456789		1236789	1236789	1234589	1234589	1234567	1234567
4	3456789	45	45		12346789	45	1234589	45	1234567
5	45	45	5	5		45	45	45	45
6	3456789	67	67	67	1236789		12345689	67	1234567
7	67	67	7	67	67	7		67	67
8	3456789	89	89	89	1236789	89	1234589		12345678
9	89	89	9	89	89	89	89	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2	1 2	1 2	1 2	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 6 7 8 9	1 2 3 6 7 8 9	1 2 3 4 5 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7
4	4 5	4 5	4 5		1 2 3 4 6 7 8 9	4 5	4 5	4 5	4 5
5	5	5	5	5		5	5	5	5
6	6 7	6 7	6 7	6 7	6 7		1 2 3 4 5 6 8 9	6 7	6 7
7	7	7	7	7	7	7		7	7
8	8 9	8 9	8 9	8 9	8 9	8 9	8 9		1 2 3 4 5 6 7 8
9	9	9	9	9	9	9	9	9	

33mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	-1	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	3	3
2	1	0	1	2	3	4	5	2	2
3	2	1	0	1	2	3	4	1	1
4	3	2	1	0	1	2	3	2	2
5	4	3	2	1	0	1	2	3	3
6	5	4	3	2	1	0	1	4	4
7	6	5	4	3	2	1	0	5	5
8	3	2	1	2	3	4	5	0	2
9	3	2	1	2	3	4	5	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7		1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	8	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	9	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7	8	9
2	1		3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7	8	9
3	1	1 2		4 5 6 7	5 6 7	6 7	7	8	9
4	1	1 2	1 2 3 8 9		5 6 7	6 7	7	8	9
5	1	1 2	1 2 3 8 9	1 2 3 4 8 9		6 7	7	8	9
6	1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9		7	8	9
7	1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8	9
8	1	1 2	1 2 3 4 5 6 7 9	4 5 6 7	5 6 7	6 7	7		9
9	1	1 2	1 2 3 4 5 6 7 8	4 5 6 7	5 6 7	6 7	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 8 9	1 2 3 8 9	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9	1 2	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	3 4 5 6 7 8 9	4 5 6 7	4 5 6 7		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	4 5 6 7	4 5 6 7
5	4 5 6 7	4 5 6 7	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	4 5 6 7	4 5 6 7
6	4 5 6 7	5 6 7	5 6 7	6 7	6 7		1 2 3 4 5 6 8 9	5 6 7	5 6 7
7	5 6 7	5 6 7	6 7	6 7	7	7		5 6 7	5 6 7
8	3 4 5 6 7 8 9	8	8	8	1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9		8
9	3 4 5 6 7 8 9	9	9	9	1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		12389	12389	12389	12389	123456 79	123456 78
4	4567	4567	4567		123489	123489	123489	4567	4567
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

34mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	3	4
2	1	0	1	2	3	4	5	2	3
3	2	1	0	1	2	3	4	1	2
4	3	2	1	0	1	2	3	2	1
5	4	3	2	1	0	1	2	3	2
6	5	4	3	2	1	0	1	4	3
7	6	5	4	3	2	1	0	5	4
8	3	2	1	2	3	4	5	0	3
9	4	3	2	1	2	3	4	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	12	1238	123489	1234589	12345689	12345679	12345678
2	23456789		12	1238	123489	1234589	12345689	12345679	12345678
3	23456789	3456789		1238	123489	1234589	12345689	12345679	12345678
4	23456789	3456789	45679		123489	1234589	12345689	12345679	12345678
5	23456789	3456789	45679	567		1234589	12345689	12345679	12345678
6	23456789	3456789	45679	567	67		12345689	12345679	12345678
7	23456789	3456789	45679	567	67	7		12345679	12345678
8	23456789	3456789	8	1238	123489	1234589	12345689		12345678
9	23456789	3456789	45679	9	123489	1234589	12345689	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	3456789	45679	567	67	7	8	9
2	1		3456789	45679	567	67	7	8	9
3	1	12		45679	567	67	7	8	9
4	1	12	1238		567	67	7	8	9
5	1	12	1238	123489		67	7	8	9
6	1	12	1238	123489	1234589		7	8	9
7	1	12	1238	123489	1234589	12345689		8	9
8	1	12	12345679	45679	567	67	7		9
9	1	12	1238	12345678	567	67	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	12	12	1238	1238	12	12
2	23456789		12	12	1238	1238	123489	12	1238
3	3456789	3456789		1238	1238	123489	123489	12345679	1238
4	3456789	45679	45679		123489	123489	1234589	45679	12345678
5	45679	45679	567	567		1234589	1234589	45679	567
6	45679	567	567	67	67		12345689	567	567
7	567	567	67	67	7	7		567	67
8	3456789	8	8	8	1238	1238	123489		1238
9	45679	45679	9	9	9	123489	123489	45679	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		1238	1238	1238	1238	12345679	1238
4	45679	45679	45679		123489	123489	123489	45679	12345678
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

35mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	-1
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	-1	0	0	0	0	X	0
9	0	0	0	0	-1	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	3	5
2	1	0	1	2	3	4	5	2	4
3	2	1	0	1	2	3	4	1	3
4	3	2	1	0	1	2	3	2	2
5	4	3	2	1	0	1	2	3	1
6	5	4	3	2	1	0	1	4	2
7	6	5	4	3	2	1	0	5	3
8	3	2	1	2	3	4	5	0	4
9	5	4	3	2	1	2	3	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9	6 7	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	8	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9	9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9	6 7	7	8	9
2	1		3 4 5 6 7 8 9	4 5 6 7 9	5 6 7 9	6 7	7	8	9
3	1	1 2		4 5 6 7 9	5 6 7 9	6 7	7	8	9
4	1	1 2	1 2 3 8		5 6 7 9	6 7	7	8	9
5	1	1 2	1 2 3 8	1 2 3 4 8		6 7	7	8	9
6	1	1 2	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9		7	8	9
7	1	1 2	1 2 3 8	1 2 3 4 8	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8	9
8	1	1 2	1 2 3 4 5 6 7 9	4 5 6 7 9	5 6 7 9	6 7	7		9
9	1	1 2	1 2 3 8	1 2 3 4 8	1 2 3 4 5 6 7 8	6 7	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 8	1 2 3 8	1 2	1 2 3 8
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 8	1 2 3 8	1 2 3 4 8	1 2	1 2 3 8
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8	1 2 3 8	1 2 3 4 8	1 2 3 4 8	1 2 3 4 5 6 7 9	1 2 3 4 8
4	3 4 5 6 7 8 9	4 5 6 7 9	4 5 6 7 9		1 2 3 4 8	1 2 3 4 8	1 2 3 4 5 8 9	4 5 6 7 9	1 2 3 4 8
5	4 5 6 7 9	4 5 6 7 9	5 6 7 9	5 6 7 9		1 2 3 4 5 8 9	1 2 3 4 5 8 9	4 5 6 7 9	1 2 3 4 5 6 7 8
6	4 5 6 7 9	5 6 7 9	5 6 7 9	6 7	6 7		1 2 3 4 5 6 8 9	5 6 7 9	6 7
7	5 6 7 9	5 6 7 9	6 7	6 7	7	7		5 6 7 9	6 7
8	3 4 5 6 7 8 9	8	8	8	1 2 3 8	1 2 3 8	1 2 3 4 8		1 2 3 8
9	4 5 6 7 9	5 6 7 9	5 6 7 9	9	9	9	1 2 3 4 5 8 9	5 6 7 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		1238	1238	1238	1238	12345679	1238
4	45679	45679	45679		12348	12348	12348	45679	12348
5	5679	5679	5679	5679		1234589	1234589	5679	12345678
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e22mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	0	0	-1
3	0	-1	X	-1	0	0	-1	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	-1	0	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	3	4	2
2	1	0	1	2	3	1	2	3	1
3	2	1	0	1	2	2	1	2	2
4	3	2	1	0	1	3	2	3	3
5	4	3	2	1	0	4	3	4	4
6	2	1	2	3	4	0	3	4	2
7	3	2	1	2	3	3	0	1	3
8	4	3	2	3	4	4	1	0	4
9	2	1	2	3	4	2	3	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1269	1236789	12346789	12345789	1234569	12345679	12345678
2	23456789		1269	1236789	12346789	12345789	1234569	12345679	12345678
3	23456789	34578		1236789	12346789	12345789	1234569	12345679	12345678
4	23456789	34578	45		12346789	12345789	1234569	12345679	12345678
5	23456789	34578	45	5		12345789	1234569	12345679	12345678
6	23456789	6	1269	1236789	12346789		1234569	12345679	12345678
7	23456789	34578	78	1236789	12346789	12345789		12345679	12345678
8	23456789	34578	78	1236789	12346789	12345789	8		12345678
9	23456789	9	1269	1236789	12346789	12345789	1234569	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	34578	45	5	6	78	8	9
2	1		34578	45	5	6	78	8	9
3	1	1269		45	5	6	78	8	9
4	1	1269	1236789		5	6	78	8	9
5	1	1269	1236789	12346789		6	78	8	9
6	1	12345789	34578	45	5		78	8	9
7	1	1269	1234569	45	5	6		8	9
8	1	1269	1234569	45	5	6	12345679		9
9	1	12345678	34578	45	5	6	78	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1269	1269	1	1269	1269	1
2	23456789		1269	1269	1236789	12345789	1269	1234569	12345678
3	34578	34578		1236789	1236789	34578	1234569	1234569	34578
4	34578	45	45		12346789	34578	45	1234569	34578
5	45	45	5	5		45	45	45	45
6	6	6	6	1269	1269		1269	1269	6
7	34578	78	78	78	1236789	34578		12345679	34578
8	78	78	8	78	78	78	8		78
9	9	9	9	1269	1269	9	1269	1269	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6 9	1 2 6 9	1 2 6 9	1 2 3 4 5 7 8 9	1 2 6 9	1 2 6 9	1 2 3 4 5 6 7 8
3	3 4 5 7 8	3 4 5 7 8		1 2 3 6 7 8 9	1 2 3 6 7 8 9	3 4 5 7 8	1 2 3 4 5 6 9	1 2 3 4 5 6 9	3 4 5 7 8
4	4 5	4 5	4 5		1 2 3 4 6 7 8 9	4 5	4 5	4 5	4 5
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e23mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	0	0	0
3	0	-1	X	-1	0	0	-1	0	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	3	4	3
2	1	0	1	2	3	1	2	3	2
3	2	1	0	1	2	2	1	2	1
4	3	2	1	0	1	3	2	3	2
5	4	3	2	1	0	4	3	4	3
6	2	1	2	3	4	0	3	4	3
7	3	2	1	2	3	3	0	1	2
8	4	3	2	3	4	4	1	0	3
9	3	2	1	2	3	3	2	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	126	1236789	12346789	12345789	1234569	12345679	12345678
2	23456789		126	1236789	12346789	12345789	1234569	12345679	12345678
3	23456789	345789		1236789	12346789	12345789	1234569	12345679	12345678
4	23456789	345789	45		12346789	12345789	1234569	12345679	12345678
5	23456789	345789	45	5		12345789	1234569	12345679	12345678
6	23456789	6	126	1236789	12346789		1234569	12345679	12345678
7	23456789	345789	78	1236789	12346789	12345789		12345679	12345678
8	23456789	345789	78	1236789	12346789	12345789	8		12345678
9	23456789	345789	9	1236789	12346789	12345789	1234569	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345789	45	5	6	78	8	9
2	1		345789	45	5	6	78	8	9
3	1	126		45	5	6	78	8	9
4	1	126	1236789		5	6	78	8	9
5	1	126	1236789	12346789		6	78	8	9
6	1	12345789	345789	45	5		78	8	9
7	1	126	1234569	45	5	6		8	9
8	1	126	1234569	45	5	6	12345679		9
9	1	126	12345678	45	5	6	78	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	126	126	1	126	126	126
2	23456789		126	126	1236789	12345789	126	1234569	126
3	345789	345789		1236789	1236789	345789	1234569	1234569	12345678
4	345789	45	45		12346789	345789	45	1234569	45
5	45	45	5	5		45	45	45	45
6	6	6	6	126	126		126	126	126
7	345789	78	78	78	1236789	345789		12345679	78
8	78	78	8	78	78	78	8		78
9	345789	9	9	9	1236789	345789	9	1234569	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6	1 2 6	1 2 6	1 2 3 4 5 7 8 9	1 2 6	1 2 6	1 2 6
3	3 4 5 7 8 9	3 4 5 7 8 9		1 2 3 6 7 8 9	1 2 3 6 7 8 9	3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 8
4	4 5	4 5	4 5		1 2 3 4 6 7 8 9	4 5	4 5	4 5	4 5
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e24mc5

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	-1	0	0	0
3	0	-1	X	-1	0	0	-1	0	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	0	0	0	0
6	0	-1	0	0	0	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	2	3	4	4
2	1	0	1	2	3	1	2	3	3
3	2	1	0	1	2	2	1	2	2
4	3	2	1	0	1	3	2	3	1
5	4	3	2	1	0	4	3	4	2
6	2	1	2	3	4	0	3	4	4
7	3	2	1	2	3	3	0	1	3
8	4	3	2	3	4	4	1	0	4
9	4	3	2	1	2	4	3	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	126	1236 78	1234678 9	12346789	12345789	1234569	12345679	12345678
2	23456789		126	1236 78	1234678 9	12346789	12345789	1234569	12345679	12345678
3	23456789	345789		1236 78	1234678 9	12346789	12345789	1234569	12345679	12345678
4	23456789	345789	459		1234678 9	12346789	12345789	1234569	12345679	12345678
5	23456789	345789	459	5		12345789	1234569	12345679	12345678
6	23456789	6	126	1236 78	1234678 9	12346789		1234569	12345679	12345678
7	23456789	345789	78	1236 78	1234678 9	12346789	12345789		12345679	12345678
8	23456789	345789	78	1236 78	1234678 9	12346789	12345789	8		12345678
9	23456789	345789	459	9	12346789	12345789	1234569	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345789	459	5	6	78	8	9
2	1		345789	459	5	6	78	8	9
3	1	126		459	5	6	78	8	9
4	1	126	123678		5	6	78	8	9
5	1	126	123678	12346789		6	78	8	9
6	1	12345789	345789	459	5		78	8	9
7	1	126	1234569	459	5	6		8	9
8	1	126	1234569	459	5	6	12345679		9
9	1	126	123678	12345678	5	6	78	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	126	126	1	126	126	126
2	23456789		126	126	123678	12345789	126	1234569	123678
3	345789	345789		123678	123678	345789	1234569	1234569	123678
4	345789	459	459		12346789	345789	459	1234569	12345678
5	459	459	5	5		459	459	459	5
6	6	6	6	126	126		126	126	126
7	345789	78	78	78	123678	345789		12345679	123678
8	78	78	8	78	78	78	8		78
9	459	459	9	9	9	459	459	459	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 6	1 2 6	1 2 6	1 2 3 4 5 7 8 9	1 2 6	1 2 6	1 2 6
3	3 4 5 7 8 9	3 4 5 7 8 9		1 2 3 6 7 8	1 2 3 6 7 8	3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 6 7 8
4	4 5 9	4 5 9	4 5 9		1 2 3 4 6 7 8 9	4 5 9	4 5 9	4 5 9	1 2 3 4 5 6 7 8
5	5	5	5	5		5	5	5	5
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e2mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	-1
3	0	-1	X	-1	0	0	-1	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	-1	0	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	3	4	2
2	1	0	1	2	3	4	2	3	1
3	2	1	0	1	2	3	1	2	2
4	3	2	1	0	1	2	2	3	3
5	4	3	2	1	0	1	3	4	4
6	5	4	3	2	1	0	4	5	5
7	3	2	1	2	3	4	0	1	3
8	4	3	2	3	4	5	1	0	4
9	2	1	2	3	4	5	3	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	129	123789	1234789	12345789	1234569	12345679	12345678
2	23456789		129	123789	1234789	12345789	1234569	12345679	12345678
3	23456789	345678		123789	1234789	12345789	1234569	12345679	12345678
4	23456789	345678	456		1234789	12345789	1234569	12345679	12345678
5	23456789	345678	456	56		12345789	1234569	12345679	12345678
6	23456789	345678	456	56	6		1234569	12345679	12345678
7	23456789	345678	78	123789	1234789	12345789		12345679	12345678
8	23456789	345678	78	123789	1234789	12345789	8		12345678
9	23456789	9	129	123789	1234789	12345789	1234569	12345679	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345678	456	56	6	78	8	9
2	1		345678	456	56	6	78	8	9
3	1	129		456	56	6	78	8	9
4	1	129	123789		56	6	78	8	9
5	1	129	123789	1234789		6	78	8	9
6	1	129	123789	1234789	12345789		78	8	9
7	1	129	1234569	456	56	6		8	9
8	1	129	1234569	456	56	6	12345679		9
9	1	12345678	345678	456	56	6	78	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	129	129	123789	129	129	1
2	23456789		129	129	123789	123789	129	1234569	12345678
3	345678	345678		123789	123789	1234789	1234569	1234569	345678
4	345678	456	456		1234789	1234789	456	1234569	345678
5	456	456	56	56		12345789	456	456	456
6	456	56	56	6	6		56	456	456
7	345678	78	78	78	123789	123789		12345679	345678
8	78	78	8	78	78	123789	8		78
9	9	9	9	129	129	123789	129	129	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 3 4 5 6 7 8
3	3 4 5 6 7 8	3 4 5 6 7 8		1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	3 4 5 6 7 8
4	4 5 6	4 5 6	4 5 6		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6	4 5 6	4 5 6
5	5 6	5 6	5 6	5 6		1 2 3 4 5 7 8 9	5 6	5 6	5 6
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e3mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	-1	0	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	3	4	3
2	1	0	1	2	3	4	2	3	2
3	2	1	0	1	2	3	1	2	1
4	3	2	1	0	1	2	2	3	2
5	4	3	2	1	0	1	3	4	3
6	5	4	3	2	1	0	4	5	4
7	3	2	1	2	3	4	0	1	2
8	4	3	2	3	4	5	1	0	3
9	3	2	1	2	3	4	2	3	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6		1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6	5 6		1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6	5 6	6		1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	8		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	9	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6	5 6	6	7 8	8	9
2	1		3 4 5 6 7 8 9	4 5 6	5 6	6	7 8	8	9
3	1	1 2		4 5 6	5 6	6	7 8	8	9
4	1	1 2	1 2 3 7 8 9		5 6	6	7 8	8	9
5	1	1 2	1 2 3 7 8 9	1 2 3 4 7 8 9		6	7 8	8	9
6	1	1 2	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		7 8	8	9
7	1	1 2	1 2 3 4 5 6 9	4 5 6	5 6	6		8	9
8	1	1 2	1 2 3 4 5 6 9	4 5 6	5 6	6	1 2 3 4 5 6 7 9		9
9	1	1 2	1 2 3 4 5 6 7 8	4 5 6	5 6	6	7 8	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 7 8 9	1 2	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 7 8 9	1 2 3 7 8 9	1 2	1 2 3 4 5 6 9	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 4 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 8
4	3 4 5 6 7 8 9	4 5 6	4 5 6		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6	1 2 3 4 5 6 9	4 5 6
5	4 5 6	4 5 6	5 6	5 6		1 2 3 4 5 7 8 9	4 5 6	4 5 6	4 5 6
6	4 5 6	5 6	5 6	6	6		5 6	4 5 6	5 6
7	3 4 5 6 7 8 9	7 8	7 8	7 8	1 2 3 7 8 9	1 2 3 7 8 9		1 2 3 4 5 6 7 9	7 8
8	7 8	7 8	8	7 8	7 8	1 2 3 7 8 9	8		7 8
9	3 4 5 6 7 8 9	9	9	9	1 2 3 7 8 9	1 2 3 7 8 9	9	1 2 3 4 5 6 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2	1 2	1 2	1 2	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 8
4	4 5 6	4 5 6	4 5 6		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6	4 5 6	4 5 6
5	5 6	5 6	5 6	5 6		1 2 3 4 5 7 8 9	5 6	5 6	5 6
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3e4mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	-1	0	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	0	-1	0	0	0	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	3	4	4
2	1	0	1	2	3	4	2	3	3
3	2	1	0	1	2	3	1	2	2
4	3	2	1	0	1	2	2	3	1
5	4	3	2	1	0	1	3	4	2
6	5	4	3	2	1	0	4	5	3
7	3	2	1	2	3	4	0	1	3
8	4	3	2	3	4	5	1	0	4
9	4	3	2	1	2	3	3	4	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6		1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6	6		1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	8		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	9	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 9	5 6	6	7 8	8	9
2	1		3 4 5 6 7 8 9	4 5 6 9	5 6	6	7 8	8	9
3	1	1 2		4 5 6 9	5 6	6	7 8	8	9
4	1	1 2	1 2 3 7 8		5 6	6	7 8	8	9
5	1	1 2	1 2 3 7 8	1 2 3 4 7 8 9		6	7 8	8	9
6	1	1 2	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 7 8 9		7 8	8	9
7	1	1 2	1 2 3 4 5 6 9	4 5 6 9	5 6	6		8	9
8	1	1 2	1 2 3 4 5 6 9	4 5 6 9	5 6	6	1 2 3 4 5 6 7 9		9
9	1	1 2	1 2 3 7 8	1 2 3 4 5 6 7 8	5 6	6	7 8	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 7 8	1 2	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 7 8	1 2 3 7 8	1 2	1 2 3 4 5 6 9	1 2 3 7 8
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8	1 2 3 7 8	1 2 3 4 7 8 9	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 7 8
4	3 4 5 6 7 8 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 8
5	4 5 6 9	4 5 6 9	5 6	5 6		1 2 3 4 5 7 8 9	4 5 6 9	4 5 6 9	5 6
6	4 5 6 9	5 6	5 6	6	6		5 6	4 5 6 9	5 6
7	3 4 5 6 7 8 9	7 8	7 8	7 8	1 2 3 7 8	1 2 3 7 8		1 2 3 4 5 6 7 9	1 2 3 7 8
8	7 8	7 8	8	7 8	7 8	1 2 3 7 8	8		7 8
9	4 5 6 9	4 5 6 9	9	9	9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2	1 2	1 2	1 2	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 7 8	1 2 3 7 8	1 2 3 7 8	1 2 3 4 5 6 9	1 2 3 4 5 6 9	1 2 3 7 8
4	4 5 6 9	4 5 6 9	4 5 6 9		1 2 3 4 7 8 9	1 2 3 4 7 8 9	4 5 6 9	4 5 6 9	1 2 3 4 5 6 7 8
5	5 6	5 6	5 6	5 6		1 2 3 4 5 7 8 9	5 6	5 6	5 6
6	6	6	6	6	6		6	6	6
7	7 8	7 8	7 8	7 8	7 8	7 8		1 2 3 4 5 6 7 9	7 8
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

3ec7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	-1	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	-1	0	0	0	0	X	-1
9	0	0	0	0	0	0	0	-1	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	3	4
2	1	0	1	2	3	4	5	2	3
3	2	1	0	1	2	3	4	1	2
4	3	2	1	0	1	2	3	2	3
5	4	3	2	1	0	1	2	3	4
6	5	4	3	2	1	0	1	4	5
7	6	5	4	3	2	1	0	5	6
8	3	2	1	2	3	4	5	0	1
9	4	3	2	3	4	5	6	1	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7		1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7		1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	8 9	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	8 9	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7	8 9	9
2	1		3 4 5 6 7 8 9	4 5 6 7	5 6 7	6 7	7	8 9	9
3	1	1 2		4 5 6 7	5 6 7	6 7	7	8 9	9
4	1	1 2	1 2 3 8 9		5 6 7	6 7	7	8 9	9
5	1	1 2	1 2 3 8 9	1 2 3 4 8 9		6 7	7	8 9	9
6	1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9		7	8 9	9
7	1	1 2	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8 9	9
8	1	1 2	1 2 3 4 5 6 7	4 5 6 7	5 6 7	6 7	7		9
9	1	1 2	1 2 3 4 5 6 7	4 5 6 7	5 6 7	6 7	7	1 2 3 4 5 6 7 8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 8 9	1 2 3 8 9	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9	1 2	1 2 3 4 5 6 7
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7
4	3 4 5 6 7 8 9	4 5 6 7	4 5 6 7		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	4 5 6 7	1 2 3 4 5 6 7
5	4 5 6 7	4 5 6 7	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	4 5 6 7	4 5 6 7
6	4 5 6 7	5 6 7	5 6 7	6 7	6 7		1 2 3 4 5 6 8 9	5 6 7	4 5 6 7
7	5 6 7	5 6 7	6 7	6 7	7	7		5 6 7	5 6 7
8	3 4 5 6 7 8 9	8 9	8 9	8 9	1 2 3 8 9	1 2 3 8 9	1 2 3 4 8 9		1 2 3 4 5 6 7 8
9	8 9	8 9	9	8 9	8 9	1 2 3 8 9	1 2 3 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		12389	12389	12389	12389	1234567	1234567
4	4567	4567	4567		123489	123489	123489	4567	4567
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	89	89	89	89	89	89	89		12345678
9	9	9	9	9	9	9	9	9	

3mc8

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	0	-1
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	-1	0	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	3
2	1	0	1	2	3	4	5	6	2
3	2	1	0	1	2	3	4	5	1
4	3	2	1	0	1	2	3	4	2
5	4	3	2	1	0	1	2	3	3
6	5	4	3	2	1	0	1	2	4
7	6	5	4	3	2	1	0	1	5
8	7	6	5	4	3	2	1	0	6
9	3	2	1	2	3	4	5	6	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8		1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8		1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8	6 7 8		1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8	6 7 8	7 8		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8	6 7 8	7 8	8		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	9	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8	6 7 8	7 8	8	9
2	1		3 4 5 6 7 8 9	4 5 6 7 8	5 6 7 8	6 7 8	7 8	8	9
3	1	1 2		4 5 6 7 8	5 6 7 8	6 7 8	7 8	8	9
4	1	1 2	1 2 3 9		5 6 7 8	6 7 8	7 8	8	9
5	1	1 2	1 2 3 9	1 2 3 4 9		6 7 8	7 8	8	9
6	1	1 2	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9		7 8	8	9
7	1	1 2	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9		8	9
8	1	1 2	1 2 3 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9		9
9	1	1 2	1 2 3 4 5 6 7 8	4 5 6 7 8	5 6 7 8	6 7 8	7 8	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3 9	1 2 3 9	1 2 3 4 9	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3 9	1 2 3 9	1 2 3 4 9	1 2 3 4 9	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3 9	1 2 3 9	1 2 3 4 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 7 8
4	3 4 5 6 7 8 9	4 5 6 7 8	4 5 6 7 8		1 2 3 4 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 9	4 5 6 7 8
5	4 5 6 7 8	4 5 6 7 8	5 6 7 8	5 6 7 8		1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 6 9	4 5 6 7 8
6	4 5 6 7 8	5 6 7 8	5 6 7 8	6 7 8	6 7 8		1 2 3 4 5 6 9	1 2 3 4 5 6 9	5 6 7 8
7	5 6 7 8	5 6 7 8	6 7 8	6 7 8	7 8	7 8		1 2 3 4 5 6 7 9	5 6 7 8
8	5 6 7 8	6 7 8	6 7 8	7 8	7 8	8	8		6 7 8
9	3 4 5 6 7 8 9	9	9	9	1 2 3 9	1 2 3 9	1 2 3 4 9	1 2 3 4 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		1239	1239	1239	1239	1239	12345678
4	45678	45678	45678		12349	12349	12349	12349	45678
5	5678	5678	5678	5678		123459	123459	123459	5678
6	678	678	678	678	678		1234569	1234569	678
7	78	78	78	78	78	78		12345679	78
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

44mc7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	-1	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	0	-1	0	0	0	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	4	4
2	1	0	1	2	3	4	5	3	3
3	2	1	0	1	2	3	4	2	2
4	3	2	1	0	1	2	3	1	1
5	4	3	2	1	0	1	2	2	2
6	5	4	3	2	1	0	1	3	3
7	6	5	4	3	2	1	0	4	4
8	4	3	2	1	2	3	4	0	2
9	4	3	2	1	2	3	4	2	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	8	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7	8	9
2	1		3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7	8	9
3	1	1 2		4 5 6 7 8 9	5 6 7	6 7	7	8	9
4	1	1 2	1 2 3		5 6 7	6 7	7	8	9
5	1	1 2	1 2 3	1 2 3 4 8 9		6 7	7	8	9
6	1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9		7	8	9
7	1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8	9
8	1	1 2	1 2 3	1 2 3 4 5 6 7 9	5 6 7	6 7	7		9
9	1	1 2	1 2 3	1 2 3 4 5 6 7 8	5 6 7	6 7	7	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3	1 2 3	1 2	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3	1 2 3	1 2 3 4 8 9	1 2 3	1 2 3
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3	1 2 3 4 8 9	1 2 3 4 8 9	1 2 3	1 2 3
4	3 4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	5 6 7	5 6 7
6	4 5 6 7 8 9	5 6 7	5 6 7	6 7	6 7		1 2 3 4 5 6 8 9	5 6 7	5 6 7
7	5 6 7	5 6 7	6 7	6 7	7	7		6 7	6 7
8	4 5 6 7 8 9	4 5 6 7 8 9	8	8	8	1 2 3 4 8 9	1 2 3 4 8 9		8
9	4 5 6 7 8 9	4 5 6 7 8 9	9	9	9	1 2 3 4 8 9	1 2 3 4 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2	1 2	1 2	1 2	1 2
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
4	4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	5 6 7	5 6 7	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	5 6 7	5 6 7
6	6 7	6 7	6 7	6 7	6 7		1 2 3 4 5 6 8 9	6 7	6 7
7	7	7	7	7	7	7		7	7
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

4e2mc6

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	-1	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	-1	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	0	0	0
7	0	-1	0	0	0	0	X	0	0
8	0	0	0	-1	0	0	0	X	-1
9	0	0	0	0	0	0	0	-1	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	2	4	5
2	1	0	1	2	3	4	1	3	4
3	2	1	0	1	2	3	2	2	3
4	3	2	1	0	1	2	3	1	2
5	4	3	2	1	0	1	4	2	3
6	5	4	3	2	1	0	5	3	4
7	2	1	2	3	4	5	0	4	5
8	4	3	2	1	2	3	4	0	1
9	5	4	3	2	3	4	5	1	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	127	1237	1234789	12345789	12345689	1234567	12345678
2	23456789		127	1237	1234789	12345789	12345689	1234567	12345678
3	23456789	345689		1237	1234789	12345789	12345689	1234567	12345678
4	23456789	345689	45689		1234789	12345789	12345689	1234567	12345678
5	23456789	345689	45689	56		12345789	12345689	1234567	12345678
6	23456789	345689	45689	56	6		12345689	1234567	12345678
7	23456789	7	127	1237	1234789	12345789		1234567	12345678
8	23456789	345689	45689	89	1234789	12345789	12345689		12345678
9	23456789	345689	45689	89	1234789	12345789	12345689	9	

[cM]	1	2	3	4	5	6	7	8	9
1		23456789	345689	45689	56	6	7	89	9
2	1		345689	45689	56	6	7	89	9
3	1	127		45689	56	6	7	89	9
4	1	127	1237		56	6	7	89	9
5	1	127	1237	1234789		6	7	89	9
6	1	127	1237	1234789	12345789		7	89	9
7	1	12345689	345689	45689	56	6		89	9
8	1	127	1237	1234567	56	6	7		9
9	1	127	1237	1234567	56	6	7	12345678	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	127	127	1237	1	127	1237
2	23456789		127	127	1237	1237	12345689	1237	1237
3	345689	345689		1237	1237	1234789	345689	1237	1234567
4	345689	45689	45689		1234789	1234789	345689	1234567	1234567
5	45689	45689	56	56		12345789	45689	56	1234567
6	45689	56	56	6	6		45689	56	56
7	7	7	7	127	127	1237		127	1237
8	45689	45689	89	89	89	1234789	45689		12345678
9	45689	89	89	9	89	89	45689	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		127	127	127	127	12345689	127	127
3	345689	345689		1237	1237	1237	345689	1237	1237
4	45689	45689	45689		1234789	1234789	45689	1234567	1234567
5	56	56	56	56		12345789	56	56	56
6	6	6	6	6	6		6	6	6
7	7	7	7	7	7	7		7	7
8	89	89	89	89	89	89	89		12345678
9	9	9	9	9	9	9	9	9	

4ec7

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	-1	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	0	0
8	0	0	0	-1	0	0	0	X	-1
9	0	0	0	0	0	0	0	-1	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	4	5
2	1	0	1	2	3	4	5	3	4
3	2	1	0	1	2	3	4	2	3
4	3	2	1	0	1	2	3	1	2
5	4	3	2	1	0	1	2	2	3
6	5	4	3	2	1	0	1	3	4
7	6	5	4	3	2	1	0	4	5
8	4	3	2	1	2	3	4	0	1
9	5	4	3	2	3	4	5	1	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7		1 2 3 4 5 6 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7		1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9	9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7	8 9	9
2	1		3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	6 7	7	8 9	9
3	1	1 2		4 5 6 7 8 9	5 6 7	6 7	7	8 9	9
4	1	1 2	1 2 3		5 6 7	6 7	7	8 9	9
5	1	1 2	1 2 3	1 2 3 4 8 9		6 7	7	8 9	9
6	1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9		7	8 9	9
7	1	1 2	1 2 3	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 8 9		8 9	9
8	1	1 2	1 2 3	1 2 3 4 5 6 7	5 6 7	6 7	7		9
9	1	1 2	1 2 3	1 2 3 4 5 6 7	5 6 7	6 7	7	1 2 3 4 5 6 7 8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3	1 2 3	1 2	1 2 3
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3	1 2 3	1 2 3 4 8 9	1 2 3	1 2 3
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3	1 2 3 4 8 9	1 2 3 4 8 9	1 2 3	1 2 3 4 5 6 7
4	3 4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 8 9	1 2 3 4 8 9	1 2 3 4 5 8 9	1 2 3 4 5 6 7	1 2 3 4 5 6 7
5	4 5 6 7 8 9	4 5 6 7 8 9	5 6 7	5 6 7		1 2 3 4 5 8 9	1 2 3 4 5 8 9	5 6 7	1 2 3 4 5 6 7
6	4 5 6 7 8 9	5 6 7	5 6 7	6 7	6 7		1 2 3 4 5 6 8 9	5 6 7	5 6 7
7	5 6 7	5 6 7	6 7	6 7	7	7		6 7	5 6 7
8	4 5 6 7 8 9	4 5 6 7 8 9	8 9	8 9	8 9	1 2 3 4 8 9	1 2 3 4 8 9		1 2 3 4 5 6 7 8
9	4 5 6 7 8 9	8 9	8 9	9	8 9	8 9	1 2 3 4 8 9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		123	123	123	123	123	123
4	456789	456789	456789		123489	123489	123489	1234567	1234567
5	567	567	567	567		1234589	1234589	567	567
6	67	67	67	67	67		12345689	67	67
7	7	7	7	7	7	7		7	7
8	89	89	89	89	89	89	89		12345678
9	9	9	9	9	9	9	9	9	

4mc8

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	-1
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	-1	0
8	0	0	0	0	0	0	-1	X	0
9	0	0	0	-1	0	0	0	0	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	4
2	1	0	1	2	3	4	5	6	3
3	2	1	0	1	2	3	4	5	2
4	3	2	1	0	1	2	3	4	1
5	4	3	2	1	0	1	2	3	2
6	5	4	3	2	1	0	1	2	3
7	6	5	4	3	2	1	0	1	4
8	7	6	5	4	3	2	1	0	5
9	4	3	2	1	2	3	4	5	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8		1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	6 7 8		1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	6 7 8	7 8		1 2 3 4 5 6 7 9	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	6 7 8	7 8	8		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	6 7 8	7 8	8	9
2	1		3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	6 7 8	7 8	8	9
3	1	1 2		4 5 6 7 8 9	5 6 7 8	6 7 8	7 8	8	9
4	1	1 2	1 2 3		5 6 7 8	6 7 8	7 8	8	9
5	1	1 2	1 2 3	1 2 3 4 9		6 7 8	7 8	8	9
6	1	1 2	1 2 3	1 2 3 4 9	1 2 3 4 5 9		7 8	8	9
7	1	1 2	1 2 3	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9		8	9
8	1	1 2	1 2 3	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 6 9	1 2 3 4 5 6 7 9		9
9	1	1 2	1 2 3	1 2 3 4 5 6 7 8	5 6 7 8	6 7 8	7 8	8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3	1 2 3	1 2 3 4 9	1 2
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3	1 2 3	1 2 3 4 9	1 2 3 4 9	1 2 3
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3	1 2 3 4 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3
4	3 4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4 9	1 2 3 4 9	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 6 7 8
5	4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8	5 6 7 8		1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 6 9	5 6 7 8
6	4 5 6 7 8 9	5 6 7 8	5 6 7 8	6 7 8	6 7 8		1 2 3 4 5 6 9	1 2 3 4 5 6 9	5 6 7 8
7	5 6 7 8	5 6 7 8	6 7 8	6 7 8	7 8	7 8		1 2 3 4 5 6 7 9	6 7 8
8	5 6 7 8	6 7 8	6 7 8	7 8	7 8	8	8		6 7 8
9	4 5 6 7 8 9	4 5 6 7 8 9	9	9	9	1 2 3 4 9	1 2 3 4 9	1 2 3 4 5 9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		123	123	123	123	123	123
4	456789	456789	456789		12349	12349	12349	12349	12345678
5	5678	5678	5678	5678		123459	123459	123459	5678
6	678	678	678	678	678		1234569	1234569	678
7	78	78	78	78	78	78		12345679	78
8	8	8	8	8	8	8	8		8
9	9	9	9	9	9	9	9	9	

c9

[Ch]	1	2	3	4	5	6	7	8	9
1	X	-1	0	0	0	0	0	0	0
2	-1	X	-1	0	0	0	0	0	0
3	0	-1	X	-1	0	0	0	0	0
4	0	0	-1	X	-1	0	0	0	0
5	0	0	0	-1	X	-1	0	0	0
6	0	0	0	0	-1	X	-1	0	0
7	0	0	0	0	0	-1	X	-1	0
8	0	0	0	0	0	0	-1	X	-1
9	0	0	0	0	0	0	0	-1	X

[Di]	1	2	3	4	5	6	7	8	9
1	0	1	2	3	4	5	6	7	8
2	1	0	1	2	3	4	5	6	7
3	2	1	0	1	2	3	4	5	6
4	3	2	1	0	1	2	3	4	5
5	4	3	2	1	0	1	2	3	4
6	5	4	3	2	1	0	1	2	3
7	6	5	4	3	2	1	0	1	2
8	7	6	5	4	3	2	1	0	1
9	8	7	6	5	4	3	2	1	0

[Mx]	1	2	3	4	5	6	7	8	9
1		1	1 2	1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
2	2 3 4 5 6 7 8 9		1 2	1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
3	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
4	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
5	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9		1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
6	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9		1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
7	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9		1 2 3 4 5 6 7	1 2 3 4 5 6 7 8
8	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9	8 9		1 2 3 4 5 6 7 8
9	2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9	8 9	9	

[cM]	1	2	3	4	5	6	7	8	9
1		2 3 4 5 6 7 8 9	3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9	8 9	9
2	1		3 4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9	8 9	9
3	1	1 2		4 5 6 7 8 9	5 6 7 8 9	6 7 8 9	7 8 9	8 9	9
4	1	1 2	1 2 3		5 6 7 8 9	6 7 8 9	7 8 9	8 9	9
5	1	1 2	1 2 3	1 2 3 4		6 7 8 9	7 8 9	8 9	9
6	1	1 2	1 2 3	1 2 3 4	1 2 3 4 5		7 8 9	8 9	9
7	1	1 2	1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6		8 9	9
8	1	1 2	1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7		9
9	1	1 2	1 2 3	1 2 3 4	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6 7	1 2 3 4 5 6 7 8	

[Sz]	1	2	3	4	5	6	7	8	9
1		1	1	1 2	1 2	1 2 3	1 2 3	1 2 3 4	1 2 3 4
2	2 3 4 5 6 7 8 9		1 2	1 2	1 2 3	1 2 3	1 2 3 4	1 2 3 4	1 2 3 4 5
3	3 4 5 6 7 8 9	3 4 5 6 7 8 9		1 2 3	1 2 3	1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4 5
4	3 4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9		1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5 6
5	4 5 6 7 8 9	4 5 6 7 8 9	5 6 7 8 9	5 6 7 8 9		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5 6	1 2 3 4 5 6
6	4 5 6 7 8 9	5 6 7 8 9	5 6 7 8 9	6 7 8 9	6 7 8 9		1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6 7
7	5 6 7 8 9	5 6 7 8 9	6 7 8 9	6 7 8 9	7 8 9	7 8 9		1 2 3 4 5 6 7	1 2 3 4 5 6 7
8	5 6 7 8 9	6 7 8 9	6 7 8 9	7 8 9	7 8 9	8 9	8 9		1 2 3 4 5 6 7 8
9	6 7 8 9	6 7 8 9	7 8 9	7 8 9	8 9	8 9	9	9	

[Cf]	1	2	3	4	5	6	7	8	9

1		1	1	1	1	1	1	1	1
2	23456789		12	12	12	12	12	12	12
3	3456789	3456789		123	123	123	123	123	123
4	456789	456789	456789		1234	1234	1234	1234	1234
5	56789	56789	56789	56789		12345	12345	12345	12345
6	6789	6789	6789	6789	6789		123456	123456	123456
7	789	789	789	789	789	789		1234567	1234567
8	89	89	89	89	89	89	89		12345678
9	9	9	9	9	9	9	9	9	

Polynomials of Nonane Isomers

$ChP(2233mc5) = + 1X^{9} - 8X^{7} + 15X^{5} - 6X^{3}$

$CDi(2233mc5) = + 6X^{4} + 24X^{3} + 26X^{2} + 16X^{1} + 9X^{0}$

$CMx(2233mc5) = + 48X^{8} + 7X^{7} + 5X^{5} + 4X^{4} + 2X^{2} + 6X^{1} + 9X^{0}$

$CcM(2233mc5) = + 6X^{8} + 2X^{7} + 4X^{5} + 5X^{4} + 7X^{2} + 48X^{1} + 9X^{0}$

$CSz(2233mc5) = + 6X^{8} + 5X^{7} + 13X^{5} + 16X^{4} + 10X^{2} + 22X^{1} + 9X^{0}$

$CCf(2233mc5) = + 6X^{8} + 2X^{7} + 4X^{5} + 5X^{4} + 7X^{2} + 48X^{1} + 9X^{0}$

$ChP(2234mc5) = + 1X^{9} - 8X^{7} + 16X^{5} - 6X^{3}$

$CDi(2234mc5) = + 12X^{4} + 20X^{3} + 24X^{2} + 16X^{1} + 9X^{0}$

$CMx(2234mc5) = + 48X^{8} + 6X^{6} + 5X^{5} + 4X^{4} + 3X^{3} + 6X^{1} + 9X^{0}$

$CcM(2234mc5) = + 6X^{8} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 48X^{1} + 9X^{0}$

$CSz(2234mc5) = + 6X^{8} + 7X^{6} + 10X^{5} + 15X^{4} + 13X^{3} + 21X^{1} + 9X^{0}$

$CCf(2234mc5) = + 6X^{8} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 48X^{1} + 9X^{0}$

$ChP(223mc6) = + 1X^{9} - 8X^{7} + 17X^{5} - 9X^{3}$

$CDi(223mc6) = + 6X^{5} + 10X^{4} + 18X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(223mc6) = + 40X^{8} + 7X^{7} + 6X^{6} + 5X^{5} + 4X^{4} + 3X^{3} + 2X^{2} + 5X^{1} + 9X^{0}$

$CcM(223mc6) = + 5X^{8} + 2X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$CSz(223mc6) = + 5X^{8} + 3X^{7} + 9X^{6} + 10X^{5} + 12X^{4} + 11X^{3} + 5X^{2} + 17X^{1} + 9X^{0}$

$CCf(223mc6) = + 5X^{8} + 2X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$ChP(2244mc5) = + 1X^{9} - 8X^{7} + 15X^{5}$

$CDi(2244mc5) = + 18X^{4} + 12X^{3} + 26X^{2} + 16X^{1} + 9X^{0}$

$CMx(2244mc5) = + 48X^{8} + 10X^{5} + 8X^{4} + 6X^{1} + 9X^{0}$

$CcM(2244mc5) = + 6X^{8} + 8X^{5} + 10X^{4} + 48X^{1} + 9X^{0}$

$CSz(2244mc5) = + 6X^{8} + 14X^{5} + 28X^{4} + 24X^{1} + 9X^{0}$

$CCf(2244mc5) = + 6X^{8} + 8X^{5} + 10X^{4} + 48X^{1} + 9X^{0}$

$ChP(224mc6) = + 1X^{9} - 8X^{7} + 17X^{5} - 7X^{3}$

$CDi(224mc6) = + 6X^{5} + 14X^{4} + 14X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(224mc6) = + 40X^{8} + 7X^{7} + 10X^{5} + 8X^{4} + 2X^{2} + 5X^{1} + 9X^{0}$

$CcM(224mc6) = + 5X^{8} + 2X^{7} + 8X^{5} + 10X^{4} + 7X^{2} + 40X^{1} + 9X^{0}$

$CSz(224mc6) = + 5X^{8} + 4X^{7} + 16X^{5} + 24X^{4} + 6X^{2} + 17X^{1} + 9X^{0}$

$CCf(224mc6) = + 5X^{8} + 2X^{7} + 8X^{5} + 10X^{4} + 7X^{2} + 40X^{1} + 9X^{0}$

$ChP(225mc6) = + 1X^{9} - 8X^{7} + 17X^{5} - 6X^{3}$

$CDi(225mc6) = + 12X^{5} + 10X^{4} + 12X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(225mc6) = + 40X^{8} + 6X^{6} + 10X^{5} + 8X^{4} + 3X^{3} + 5X^{1} + 9X^{0}$

$CcM(225mc6) = + 5X^{8} + 3X^{6} + 8X^{5} + 10X^{4} + 6X^{3} + 40X^{1} + 9X^{0}$

$CSz(225mc6) = + 5X^{8} + 5X^{6} + 18X^{5} + 20X^{4} + 6X^{3} + 18X^{1} + 9X^{0}$

$CCf(225mc6) = + 5X^{8} + 3X^{6} + 8X^{5} + 10X^{4} + 6X^{3} + 40X^{1} + 9X^{0}$

$ChP(22mc7) = + 1X^{9} - 8X^{7} + 18X^{5} - 10X^{3}$

$CDi(22mc7) = + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(22mc7) = + 32X^{8} + 7X^{7} + 6X^{6} + 10X^{5} + 8X^{4} + 3X^{3} + 2X^{2} + 4X^{1} + 9X^{0}$

$CcM(22mc7) = + 4X^{8} + 2X^{7} + 3X^{6} + 8X^{5} + 10X^{4} + 6X^{3} + 7X^{2} + 32X^{1} + 9X^{0}$

$CSz(22mc7) = + 4X^{8} + 3X^{7} + 5X^{6} + 17X^{5} + 17X^{4} + 8X^{3} + 4X^{2} + 14X^{1} + 9X^{0}$

$CCf(22mc7) = + 4X^{8} + 2X^{7} + 3X^{6} + 8X^{5} + 10X^{4} + 6X^{3} + 7X^{2} + 32X^{1} + 9X^{0}$

$ChP(2334mc5) = + 1X^{9} - 8X^{7} + 16X^{5} - 8X^{3}$

$CDi(2334mc5) = + 8X^{4} + 24X^{3} + 24X^{2} + 16X^{1} + 9X^{0}$

$CMx(2334mc5) = + 48X^{8} + 12X^{6} + 6X^{3} + 6X^{1} + 9X^{0}$

$CcM(2334mc5) = + 6X^{8} + 6X^{6} + 12X^{3} + 48X^{1} + 9X^{0}$

$CSz(2334mc5) = + 6X^{8} + 18X^{6} + 28X^{3} + 20X^{1} + 9X^{0}$

$CCf(2334mc5) = + 6X^{8} + 6X^{6} + 12X^{3} + 48X^{1} + 9X^{0}$

$ChP(233mc6) = + 1X^{9} - 8X^{7} + 17X^{5} - 10X^{3}$

$CDi(233mc6) = + 4X^{5} + 10X^{4} + 20X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(233mc6) = + 40X^{8} + 7X^{7} + 12X^{6} + 6X^{3} + 2X^{2} + 5X^{1} + 9X^{0}$

$CcM(233mc6) = + 5X^{8} + 2X^{7} + 6X^{6} + 12X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$CSz(233mc6) = + 5X^{8} + 3X^{7} + 19X^{6} + 23X^{3} + 6X^{2} + 16X^{1} + 9X^{0}$

$CCf(233mc6) = + 5X^{8} + 2X^{7} + 6X^{6} + 12X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$ChP(234mc6) = + 1X^{9} - 8X^{7} + 18X^{5} - 12X^{3} + 2X^{1}$

$CDi(234mc6) = + 4X^{5} + 12X^{4} + 20X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(234mc6) = + 40X^{8} + 7X^{7} + 6X^{6} + 5X^{5} + 4X^{4} + 3X^{3} + 2X^{2} + 5X^{1} + 9X^{0}$

$CcM(234mc6) = + 5X^{8} + 2X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$CSz(234mc6) = + 5X^{8} + 4X^{7} + 7X^{6} + 11X^{5} + 13X^{4} + 11X^{3} + 7X^{2} + 14X^{1} + 9X^{0}$

$CCf(234mc6) = + 5X^{8} + 2X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$ChP(235mc6) = + 1X^{9} - 8X^{7} + 18X^{5} - 10X^{3}$

$CDi(235mc6) = + 8X^{5} + 12X^{4} + 16X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(235mc6) = + 40X^{8} + 12X^{6} + 5X^{5} + 4X^{4} + 6X^{3} + 5X^{1} + 9X^{0}$

CcM(235mc6) = + $5X^{8}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $40X^{1}$ + $9X^{0}$

CSz(235mc6) = + $5X^{8}$ + $12X^{6}$ + $12X^{5}$ + $11X^{4}$ + $17X^{3}$ + $15X^{1}$ + $9X^{0}$

CCf(235mc6) = + $5X^{8}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $40X^{1}$ + $9X^{0}$

ChP(23mc7) = + $1X^{9}$ - $8X^{7}$ + $19X^{5}$ - $14X^{3}$ + $2X^{1}$

CDi(23mc7) = + $4X^{6}$ + $8X^{5}$ + $10X^{4}$ + $16X^{3}$ + $18X^{2}$ + $16X^{1}$ + $9X^{0}$

CMx(23mc7) = + $32X^{8}$ + $7X^{7}$ + $12X^{6}$ + $5X^{5}$ + $4X^{4}$ + $6X^{3}$ + $2X^{2}$ + $4X^{1}$ + $9X^{0}$

CcM(23mc7) = + $4X^{8}$ + $2X^{7}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

CSz(23mc7) = + $4X^{8}$ + $3X^{7}$ + $13X^{6}$ + $10X^{5}$ + $9X^{4}$ + $18X^{3}$ + $4X^{2}$ + $11X^{1}$ + $9X^{0}$

CCf(23mc7) = + $4X^{8}$ + $2X^{7}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

ChP(244mc6) = + $1X^{9}$ - $8X^{7}$ + $17X^{5}$ - $8X^{3}$

CDi(244mc6) = + $4X^{5}$ + $14X^{4}$ + $16X^{3}$ + $22X^{2}$ + $16X^{1}$ + $9X^{0}$

CMx(244mc6) = + $40X^{8}$ + $7X^{7}$ + $6X^{6}$ + $5X^{5}$ + $4X^{4}$ + $3X^{3}$ + $2X^{2}$ + $5X^{1}$ + $9X^{0}$

CcM(244mc6) = + $5X^{8}$ + $2X^{7}$ + $3X^{6}$ + $4X^{5}$ + $5X^{4}$ + $6X^{3}$ + $7X^{2}$ + $40X^{1}$ + $9X^{0}$

CSz(244mc6) = + $5X^{8}$ + $5X^{7}$ + $5X^{6}$ + $13X^{5}$ + $10X^{4}$ + $10X^{3}$ + $8X^{2}$ + $16X^{1}$ + $9X^{0}$

CCf(244mc6) = + $5X^{8}$ + $2X^{7}$ + $3X^{6}$ + $4X^{5}$ + $5X^{4}$ + $6X^{3}$ + $7X^{2}$ + $40X^{1}$ + $9X^{0}$

ChP(24mc7) = + $1X^{9}$ - $8X^{7}$ + $19X^{5}$ - $13X^{3}$

CDi(24mc7) = + $4X^{6}$ + $6X^{5}$ + $14X^{4}$ + $14X^{3}$ + $18X^{2}$ + $16X^{1}$ + $9X^{0}$

CMx(24mc7) = + $32X^{8}$ + $7X^{7}$ + $12X^{6}$ + $5X^{5}$ + $4X^{4}$ + $6X^{3}$ + $2X^{2}$ + $4X^{1}$ + $9X^{0}$

CcM(24mc7) = + $4X^{8}$ + $2X^{7}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

CSz(24mc7) = + $4X^{8}$ + $3X^{7}$ + $12X^{6}$ + $10X^{5}$ + $10X^{4}$ + $17X^{3}$ + $5X^{2}$ + $11X^{1}$ + $9X^{0}$

CCf(24mc7) = + $4X^{8}$ + $2X^{7}$ + $6X^{6}$ + $4X^{5}$ + $5X^{4}$ + $12X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

ChP(25mc7) = + $1X^{9}$ - $8X^{7}$ + $19X^{5}$ - $13X^{3}$ + $2X^{1}$

CDi(25mc7) = + $4X^{6}$ + $10X^{5}$ + $10X^{4}$ + $14X^{3}$ + $18X^{2}$ + $16X^{1}$ + $9X^{0}$

CMx(25mc7) = + $32X^{8}$ + $7X^{7}$ + $6X^{6}$ + $10X^{5}$ + $8X^{4}$ + $3X^{3}$ + $2X^{2}$ + $4X^{1}$ + $9X^{0}$

CcM(25mc7) = + $4X^{8}$ + $2X^{7}$ + $3X^{6}$ + $8X^{5}$ + $10X^{4}$ + $6X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

CSz(25mc7) = + $4X^{8}$ + $4X^{7}$ + $5X^{6}$ + $16X^{5}$ + $20X^{4}$ + $6X^{3}$ + $6X^{2}$ + $11X^{1}$ + $9X^{0}$

CCf(25mc7) = + $4X^{8}$ + $2X^{7}$ + $3X^{6}$ + $8X^{5}$ + $10X^{4}$ + $6X^{3}$ + $7X^{2}$ + $32X^{1}$ + $9X^{0}$

ChP(26mc7) = + $1X^{9}$ - $8X^{7}$ + $19X^{5}$ - $12X^{3}$

CDi(26mc7) = + $8X^{6}$ + $8X^{5}$ + $10X^{4}$ + $12X^{3}$ + $18X^{2}$ + $16X^{1}$ + $9X^{0}$

CMx(26mc7) = + $32X^{8}$ + $12X^{6}$ + $10X^{5}$ + $8X^{4}$ + $6X^{3}$ + $4X^{1}$ + $9X^{0}$

CcM(26mc7) = + $4X^{8}$ + $6X^{6}$ + $8X^{5}$ + $10X^{4}$ + $12X^{3}$ + $32X^{1}$ + $9X^{0}$

CSz(26mc7) = + $4X^{8}$ + $10X^{6}$ + $14X^{5}$ + $20X^{4}$ + $12X^{3}$ + $12X^{1}$ + $9X^{0}$

$CCf(26mc7) = +4X^{8} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 32X^{1} + 9X^{0}$

$ChP(2mc8) = +1X^{9} - 8X^{7} + 20X^{5} - 16X^{3} + 2X^{1}$

$CDi(2mc8) = +4X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 16X^{2} + 16X^{1} + 9X^{0}$

$CMx(2mc8) = +24X^{8} + 7X^{7} + 12X^{6} + 10X^{5} + 8X^{4} + 6X^{3} + 2X^{2} + 3X^{1} + 9X^{0}$

$CcM(2mc8) = +3X^{8} + 2X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 7X^{2} + 24X^{1} + 9X^{0}$

$CSz(2mc8) = +3X^{8} + 3X^{7} + 10X^{6} + 15X^{5} + 17X^{4} + 12X^{3} + 4X^{2} + 8X^{1} + 9X^{0}$

$CCf(2mc8) = +3X^{8} + 2X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 7X^{2} + 24X^{1} + 9X^{0}$

$ChP(334mc6) = +1X^{9} - 8X^{7} + 17X^{5} - 11X^{3} + 2X^{1}$

$CDi(334mc6) = +2X^{5} + 10X^{4} + 22X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(334mc6) = +40X^{8} + 14X^{7} + 5X^{5} + 4X^{4} + 4X^{2} + 5X^{1} + 9X^{0}$

$CcM(334mc6) = +5X^{8} + 4X^{7} + 4X^{5} + 5X^{4} + 14X^{2} + 40X^{1} + 9X^{0}$

$CSz(334mc6) = +5X^{8} + 9X^{7} + 13X^{5} + 13X^{4} + 17X^{2} + 15X^{1} + 9X^{0}$

$CCf(334mc6) = +5X^{8} + 4X^{7} + 4X^{5} + 5X^{4} + 14X^{2} + 40X^{1} + 9X^{0}$

$ChP(33ec5) = +1X^{9} - 8X^{7} + 18X^{5} - 16X^{3} + 5X^{1}$

$CDi(33ec5) = +12X^{4} + 24X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(33ec5) = +32X^{8} + 28X^{7} + 8X^{2} + 4X^{1} + 9X^{0}$

$CcM(33ec5) = +4X^{8} + 8X^{7} + 28X^{2} + 32X^{1} + 9X^{0}$

$CSz(33ec5) = +4X^{8} + 20X^{7} + 40X^{2} + 8X^{1} + 9X^{0}$

$CCf(33ec5) = +4X^{8} + 8X^{7} + 28X^{2} + 32X^{1} + 9X^{0}$

$ChP(33mc7) = +1X^{9} - 8X^{7} + 18X^{5} - 12X^{3} + 2X^{1}$

$CDi(33mc7) = +2X^{6} + 8X^{5} + 10X^{4} + 16X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(33mc7) = +32X^{8} + 14X^{7} + 6X^{6} + 5X^{5} + 4X^{4} + 3X^{3} + 4X^{2} + 4X^{1} + 9X^{0}$

$CcM(33mc7) = +4X^{8} + 4X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$CSz(33mc7) = +4X^{8} + 8X^{7} + 7X^{6} + 10X^{5} + 9X^{4} + 10X^{3} + 12X^{2} + 12X^{1} + 9X^{0}$

$CCf(33mc7) = +4X^{8} + 4X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$ChP(34mc7) = +1X^{9} - 8X^{7} + 19X^{5} - 15X^{3} + 3X^{1}$

$CDi(34mc7) = +2X^{6} + 6X^{5} + 12X^{4} + 18X^{3} + 18X^{2} + 16X^{1} + 9X^{0}$

$CMx(34mc7) = +32X^{8} + 14X^{7} + 6X^{6} + 5X^{5} + 4X^{4} + 3X^{3} + 4X^{2} + 4X^{1} + 9X^{0}$

$CcM(34mc7) = +4X^{8} + 4X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$CSz(34mc7) = +4X^{8} + 7X^{7} + 8X^{6} + 10X^{5} + 11X^{4} + 10X^{3} + 12X^{2} + 10X^{1} + 9X^{0}$

$CCf(34mc7) = +4X^{8} + 4X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$ChP(35mc7) = +1X^{9} - 8X^{7} + 19X^{5} - 14X^{3} + 3X^{1}$

$CDi(35mc7) = + 2X^{6} + 8X^{5} + 12X^{4} + 16X^{3} + 18X^{2} + 16X^{1} + 9X^{0}$

$CMx(35mc7) = + 32X^{8} + 14X^{7} + 10X^{5} + 8X^{4} + 4X^{2} + 4X^{1} + 9X^{0}$

$CcM(35mc7) = + 4X^{8} + 4X^{7} + 8X^{5} + 10X^{4} + 14X^{2} + 32X^{1} + 9X^{0}$

$CSz(35mc7) = + 4X^{8} + 8X^{7} + 16X^{5} + 22X^{4} + 12X^{2} + 10X^{1} + 9X^{0}$

$CCf(35mc7) = + 4X^{8} + 4X^{7} + 8X^{5} + 10X^{4} + 14X^{2} + 32X^{1} + 9X^{0}$

$ChP(3e22mc5) = + 1X^{9} - 8X^{7} + 17X^{5} - 10X^{3}$

$CDi(3e22mc5) = + 14X^{4} + 20X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(3e22mc5) = + 40X^{8} + 14X^{7} + 5X^{5} + 4X^{4} + 4X^{2} + 5X^{1} + 9X^{0}$

$CcM(3e22mc5) = + 5X^{8} + 4X^{7} + 4X^{5} + 5X^{4} + 14X^{2} + 40X^{1} + 9X^{0}$

$CSz(3e22mc5) = + 5X^{8} + 8X^{7} + 10X^{5} + 15X^{4} + 18X^{2} + 16X^{1} + 9X^{0}$

$CCf(3e22mc5) = + 5X^{8} + 4X^{7} + 4X^{5} + 5X^{4} + 14X^{2} + 40X^{1} + 9X^{0}$

$ChP(3e23mc5) = + 1X^{9} - 8X^{7} + 17X^{5} - 12X^{3} + 2X^{1}$

$CDi(3e23mc5) = + 10X^{4} + 24X^{3} + 22X^{2} + 16X^{1} + 9X^{0}$

$CMx(3e23mc5) = + 40X^{8} + 14X^{7} + 6X^{6} + 3X^{3} + 4X^{2} + 5X^{1} + 9X^{0}$

$CcM(3e23mc5) = + 5X^{8} + 4X^{7} + 3X^{6} + 6X^{3} + 14X^{2} + 40X^{1} + 9X^{0}$

$CSz(3e23mc5) = + 5X^{8} + 10X^{7} + 9X^{6} + 14X^{3} + 20X^{2} + 14X^{1} + 9X^{0}$

$CCf(3e23mc5) = + 5X^{8} + 4X^{7} + 3X^{6} + 6X^{3} + 14X^{2} + 40X^{1} + 9X^{0}$

$ChP(3e24mc5) = + 1X^{9} - 8X^{7} + 18X^{5} - 12X^{3}$

$CDi(3e24mc5) = + 16X^{4} + 20X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(3e24mc5) = + 40X^{8} + 7X^{7} + 12X^{6} + 6X^{3} + 2X^{2} + 5X^{1} + 9X^{0}$

$CcM(3e24mc5) = + 5X^{8} + 2X^{7} + 6X^{6} + 12X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$CSz(3e24mc5) = + 5X^{8} + 4X^{7} + 14X^{6} + 26X^{3} + 9X^{2} + 14X^{1} + 9X^{0}$

$CCf(3e24mc5) = + 5X^{8} + 2X^{7} + 6X^{6} + 12X^{3} + 7X^{2} + 40X^{1} + 9X^{0}$

$ChP(3e2mc6) = + 1X^{9} - 8X^{7} + 19X^{5} - 15X^{3} + 2X^{1}$

$CDi(3e2mc6) = + 6X^{5} + 14X^{4} + 18X^{3} + 18X^{2} + 16X^{1} + 9X^{0}$

$CMx(3e2mc6) = + 32X^{8} + 14X^{7} + 12X^{6} + 6X^{3} + 4X^{2} + 4X^{1} + 9X^{0}$

$CcM(3e2mc6) = + 4X^{8} + 4X^{7} + 6X^{6} + 12X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$CSz(3e2mc6) = + 4X^{8} + 7X^{7} + 16X^{6} + 22X^{3} + 13X^{2} + 10X^{1} + 9X^{0}$

$CCf(3e2mc6) = + 4X^{8} + 4X^{7} + 6X^{6} + 12X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$ChP(3e3mc6) = + 1X^{9} - 8X^{7} + 18X^{5} - 14X^{3} + 3X^{1}$

$CDi(3e3mc6) = + 4X^{5} + 12X^{4} + 20X^{3} + 20X^{2} + 16X^{1} + 9X^{0}$

$CMx(3e3mc6) = + 32X^{8} + 21X^{7} + 6X^{6} + 3X^{3} + 6X^{2} + 4X^{1} + 9X^{0}$

CcM(3e3mc6) = + 4X⁸ + 6X⁷ + 3X⁶ + 6X³ + 21X² + 32X¹ + 9X⁰

CSz(3e3mc6) = + 4X⁸ + 13X⁷ + 10X⁶ + 11X³ + 24X² + 10X¹ + 9X⁰

CCf(3e3mc6) = + 4X⁸ + 6X⁷ + 3X⁶ + 6X³ + 21X² + 32X¹ + 9X⁰

ChP(3e4mc6) = + 1X⁹ - 8X⁷ + 19X⁵ - 16X³ + 4X¹

CDi(3e4mc6) = + 4X⁵ + 14X⁴ + 20X³ + 18X² + 16X¹ + 9X⁰

CMx(3e4mc6) = + 32X⁸ + 21X⁷ + 5X⁵ + 4X⁴ + 6X² + 4X¹ + 9X⁰

CcM(3e4mc6) = + 4X⁸ + 6X⁷ + 4X⁵ + 5X⁴ + 21X² + 32X¹ + 9X⁰

CSz(3e4mc6) = + 4X⁸ + 12X⁷ + 11X⁵ + 13X⁴ + 23X² + 9X¹ + 9X⁰

CCf(3e4mc6) = + 4X⁸ + 6X⁷ + 4X⁵ + 5X⁴ + 21X² + 32X¹ + 9X⁰

ChP(3ec7) = + 1X⁹ - 8X⁷ + 20X⁵ - 18X³ + 5X¹

CDi(3ec7) = + 4X⁶ + 8X⁵ + 12X⁴ + 16X³ + 16X² + 16X¹ + 9X⁰

CMx(3ec7) = + 24X⁸ + 21X⁷ + 6X⁶ + 5X⁵ + 4X⁴ + 3X³ + 6X² + 3X¹ + 9X⁰

CcM(3ec7) = + 3X⁸ + 6X⁷ + 3X⁶ + 4X⁵ + 5X⁴ + 6X³ + 21X² + 24X¹ + 9X⁰

CSz(3ec7) = + 3X⁸ + 11X⁷ + 6X⁶ + 10X⁵ + 9X⁴ + 9X³ + 18X² + 6X¹ + 9X⁰

CCf(3ec7) = + 3X⁸ + 6X⁷ + 3X⁶ + 4X⁵ + 5X⁴ + 6X³ + 21X² + 24X¹ + 9X⁰

ChP(3mc8) = + 1X⁹ - 8X⁷ + 20X⁵ - 17X³ + 4X¹

CDi(3mc8) = + 2X⁷ + 6X⁶ + 8X⁵ + 10X⁴ + 14X³ + 16X² + 16X¹ + 9X⁰

CMx(3mc8) = + 24X⁸ + 14X⁷ + 6X⁶ + 10X⁵ + 8X⁴ + 3X³ + 4X² + 3X¹ + 9X⁰

CcM(3mc8) = + 3X⁸ + 4X⁷ + 3X⁶ + 8X⁵ + 10X⁴ + 6X³ + 14X² + 24X¹ + 9X⁰

CSz(3mc8) = + 3X⁸ + 7X⁷ + 5X⁶ + 16X⁵ + 17X⁴ + 7X³ + 10X² + 7X¹ + 9X⁰

CCf(3mc8) = + 3X⁸ + 4X⁷ + 3X⁶ + 8X⁵ + 10X⁴ + 6X³ + 14X² + 24X¹ + 9X⁰

ChP(44mc7) = + 1X⁹ - 8X⁷ + 18X⁵ - 12X³

CDi(44mc7) = + 2X⁶ + 4X⁵ + 14X⁴ + 16X³ + 20X² + 16X¹ + 9X⁰

CMx(44mc7) = + 32X⁸ + 14X⁷ + 12X⁶ + 6X³ + 4X² + 4X¹ + 9X⁰

CcM(44mc7) = + 4X⁸ + 4X⁷ + 6X⁶ + 12X³ + 14X² + 32X¹ + 9X⁰

CSz(44mc7) = + 4X⁸ + 6X⁷ + 18X⁶ + 20X³ + 12X² + 12X¹ + 9X⁰

CCf(44mc7) = + 4X⁸ + 4X⁷ + 6X⁶ + 12X³ + 14X² + 32X¹ + 9X⁰

ChP(4e2mc6) = + 1X⁹ - 8X⁷ + 19X⁵ - 14X³ + 2X¹

CDi(4e2mc6) = + 8X⁵ + 14X⁴ + 16X³ + 18X² + 16X¹ + 9X⁰

CMx(4e2mc6) = + 32X⁸ + 14X⁷ + 6X⁶ + 5X⁵ + 4X⁴ + 3X³ + 4X² + 4X¹ + 9X⁰

CcM(4e2mc6) = + 4X⁸ + 4X⁷ + 3X⁶ + 4X⁵ + 5X⁴ + 6X³ + 14X² + 32X¹ + 9X⁰

CSz(4e2mc6) = + 4X⁸ + 8X⁷ + 5X⁶ + 12X⁵ + 11X⁴ + 8X³ + 14X² + 10X¹ + 9X⁰

$CCf(4e2mc6) = + 4X^{8} + 4X^{7} + 3X^{6} + 4X^{5} + 5X^{4} + 6X^{3} + 14X^{2} + 32X^{1} + 9X^{0}$

$ChP(4ec7) = + 1X^{9} - 8X^{7} + 20X^{5} - 18X^{3} + 4X^{1}$

$CDi(4ec7) = + 2X^{6} + 8X^{5} + 14X^{4} + 16X^{3} + 16X^{2} + 16X^{1} + 9X^{0}$

$CMx(4ec7) = + 24X^{8} + 21X^{7} + 12X^{6} + 6X^{3} + 6X^{2} + 3X^{1} + 9X^{0}$

$CcM(4ec7) = + 3X^{8} + 6X^{7} + 6X^{6} + 12X^{3} + 21X^{2} + 24X^{1} + 9X^{0}$

$CSz(4ec7) = + 3X^{8} + 10X^{7} + 16X^{6} + 20X^{3} + 17X^{2} + 6X^{1} + 9X^{0}$

$CCf(4ec7) = + 3X^{8} + 6X^{7} + 6X^{6} + 12X^{3} + 21X^{2} + 24X^{1} + 9X^{0}$

$ChP(4mc8) = + 1X^{9} - 8X^{7} + 20X^{5} - 17X^{3} + 3X^{1}$

$CDi(4mc8) = + 2X^{7} + 4X^{6} + 8X^{5} + 12X^{4} + 14X^{3} + 16X^{2} + 16X^{1} + 9X^{0}$

$CMx(4mc8) = + 24X^{8} + 14X^{7} + 12X^{6} + 5X^{5} + 4X^{4} + 6X^{3} + 4X^{2} + 3X^{1} + 9X^{0}$

$CcM(4mc8) = + 3X^{8} + 4X^{7} + 6X^{6} + 4X^{5} + 5X^{4} + 12X^{3} + 14X^{2} + 24X^{1} + 9X^{0}$

$CSz(4mc8) = + 3X^{8} + 6X^{7} + 13X^{6} + 9X^{5} + 9X^{4} + 16X^{3} + 9X^{2} + 7X^{1} + 9X^{0}$

$CCf(4mc8) = + 3X^{8} + 4X^{7} + 6X^{6} + 4X^{5} + 5X^{4} + 12X^{3} + 14X^{2} + 24X^{1} + 9X^{0}$

$ChP(c9) = + 1X^{9} - 8X^{7} + 21X^{5} - 20X^{3} + 5X^{1}$

$CDi(c9) = + 2X^{8} + 4X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 14X^{2} + 16X^{1} + 9X^{0}$

$CMx(c9) = + 16X^{8} + 14X^{7} + 12X^{6} + 10X^{5} + 8X^{4} + 6X^{3} + 4X^{2} + 2X^{1} + 9X^{0}$

$CcM(c9) = + 2X^{8} + 4X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 14X^{2} + 16X^{1} + 9X^{0}$

$CSz(c9) = + 2X^{8} + 6X^{7} + 10X^{6} + 14X^{5} + 16X^{4} + 12X^{3} + 8X^{2} + 4X^{1} + 9X^{0}$

$CCf(c9) = + 2X^{8} + 4X^{7} + 6X^{6} + 8X^{5} + 10X^{4} + 12X^{3} + 14X^{2} + 16X^{1} + 9X^{0}$

Henry's Law Constants

The values of Henry's law constants were taken from a previously reported research [Yaws, C.L., Yang, H.-C.: Henry's law constant for compound in water. In: Yaws, C.L. (ed.): Thermodynamic and Physical Property Data. Gulf Publishing Company, Houston, TX (1992) 181–206.].

Table 3. Values of Henry's law constant for nonane isomers

Nr	Nickname	$k_H \cdot 10^6$ [M/atm]
1	4mc8	10
2	3e23mc5	15
3	33ec5	15
4	2233mc5	16
5	2334mc5	16
6	c9	17
7	233mc6	17
8	334mc6	17
9	3e3mc6	17
10	2234mc5	17
11	34mc7	18
12	234mc6	18
13	3e4mc6	18
14	3e22mc5	18
15	3e24mc5	18
16	23mc7	19
17	33mc7	19
18	44mc7	19
19	3ec7	19
20	4ec7	19
21	223mc6	19
22	225mc6	19
23	244mc6	19
24	3e2mc6	19
25	2244mc5	19
26	3mc8	20
27	25mc7	20
28	35mc7	20
29	235mc6	20
30	2mc8	21
31	22mc7	21
32	24mc7	21
33	26mc7	21
34	224mc6	21
35	4e2mc6	21

Factorization of Nonane Polynomials

The characteristic and counting polynomials on the distance matrix (CDi), on the maximal fragments matrix (CMx), on the complementary of the maximal fragments matrix (CcM), and on the Szeged matrix (CSz) for each nonane were calculated. To determine the irreducible or primer factors, the characteristic and counting polynomials obtained as described above were factorized. The generic formulas are described below:

- Characteristic polynomial:

$$P(X)_{ChP} = X^7 \cdot (X^2-8) + X \cdot Q(X)_{ChP}$$

- Counting polynomial on the distance matrix:

$$P(X)_{CDi} = 2 \cdot X^2 \cdot Q(X)_{CDi} + 16 \cdot X + 9$$

- Counting polynomial on the maximal fragments matrix:

$$P(X)_{CMx} = 16 \cdot X^8 + X \cdot Q(X)_{CMx} + 2 \cdot X + 9$$

- Counting polynomial on the complement of the maximal fragments matrix:

$$P(X)_{CcM} = 2 \cdot X^8 + X \cdot Q(X)_{CcM} + 16 \cdot X + 9$$

- Counting polynomial on the Szeged matrix:

$$P(X)_{CSz} = 2 \cdot X^8 + X \cdot Q(X)_{CSz} + 4 \cdot X + 9$$

where $P(X)_{ChP}$, $P(X)_{CDi}$, $P(X)_{CMx}$, $P(X)_{CcM}$, $P(X)_{CSz}$ are the characteristic polynomial and counting polynomials on the: distance matrix, maximal fragments matrix, complementary of the maximal fragments matrix, and on the Szeged matrix, respectively. The Q(X) values for each type of polynomial are presented in next tables.

Table 4. Characteristic polynomials for nonane isomers: the values of the $Q(X)_{ChP}$ terms

Nickname	$Q(X)_{ChP}$
4mc8	$(2X-1)(2X+1)(5X^2-3)$
3e23mc5	$17X^4-12X^2+2$
33ec5	$18X^4-16X^2+5$
2233mc5	$3X^2(5X^2-2)$
2334mc5	$8X^2(2X^2-1)$
c9	$21X^4-20X^2+5$
233mc6	$X^2(17X^2-10)$
334mc6	$17X^4-11X^2+2$
3e3mc6	$18X^4-14X^2+3$
2234mc5	$2X^2(8X^2-3)$
34mc7	$19X^4-15X^2+3$
234mc6	$2(3X^2-1)^2$
3e4mc6	$19X^4-16X^2+4$
3e22mc5	$X^2(17X^2-10)$
3e24mc5	$6X^2(3X^2-2)$
23mc7	$19X^4-14X^2+2$
33mc7	$2(3X^2-1)^2$
44mc7	$6X^2(3X^2-2)$
3ec7	$20X^4-18X^2+5$
4ec7	$2(2X^2-1)(5X^2-2)$
223mc6	$X^2(17X^2-9)$
225mc6	$X^2(17X^2-6)$
244mc6	$X^2(17X^2-8)$
3e2mc6	$19X^4-15X^2+2$
2244mc5	$15X^4$
3mc8	$20X^4-17X^2+4$
25mc7	$19X^4-13X^2+2$
35mc7	$19X^4-14X^2+3$
235mc6	$2X^2(9X^2-5)$
2mc8	$2(10X^4-8X^2+1)$
22mc7	$2X^2(9X^2-5)$
24mc7	$X^2(19X^2-13)$
26mc7	$X^2(19X^2-12)$
224mc6	$X^1(17X^2-7)$
4e2mc6	$19X^4-14X^2+2$

Table 5. CDi counting polynomials for nonane isomers: the values of the $Q(X)_{CDi}$ terms

Nickname	$Q(X)_{CDi}$
4mc8	$X^5+2X^4+4X^3+6X^2+7X+8$
3e23mc5	$5X^2+12X+11$
33ec5	$2(3X^2+6X+5)$
2233mc5	$3X^2+12X+13)$
2334mc5	$4(X^2+3X+3)$
c9	$X^6+2X^5+3X^4+4X^3+5X^2+6X+7$
233mc6	$2X^3+5X^2+10X+11$
334mc6	$X^3+5X^2+11X+11$
3e3mc6	$2(X^3+3X^2+5X+5)$
2234mc5	$2(3X^2+5X+6)$
34mc7	$(X^2+3)(X^2+3X+3)$
234mc6	$2(X^3+3X^2+5X+5)$
3e4mc6	$2X^3+7X^2+10X+9$
3e22mc5	$7X^2+10+11$
3e24mc5	$2(4X^2+5X+5)$
23mc7	$2X^4+4X^3+5X^2+8X+9$
33mc7	$X^4+4X^3+5X^2+8X+10$
44mc7	$X^4+2X^3+7X^2+8X+10$
3ec7	$2(X^4+2X^3+3X^2+4X+4)$
4ec7	$X^4+4X^3+7X^2+8X+8$
223mc6	$3X^3+5X^2+9X+11$
225mc6	$6X^3+5X^2+6X+11$
244mc6	$2X^3+7X^2+8X+11$
3e2mc6	$3X^3+7X^2+9X+9$
2244mc5	$9X^2+6X+13$
3mc8	$X^5+3X^4+4X^3+5X^2+7X+8$
25mc7	$2X^4+5X^3+5X^2+7X+9$
35mc7	$X^4+4X^3+6X^2+8X+9$
235mc6	$2(2X^3+3X^2+4X+5)$
2mc8	$2X^5+3X^4+4X^3+5X^2+6X+8$
22mc7	$3X^4+4X^3+5X^2+6X+10$
24mc7	$2X^4+3X^3+7X^2+7X+9$
26mc7	$4X^4+4X^3+5X^2+6X+9$
224mc6	$3X^3+7X^2+7X+11$
4e2mc6	$4X^3+7X^2+8X+9$

Table 6. CMx counting polynomials for nonane isomers: the values of the $Q(X)_{CMx}$ terms

Nickname	$Q(X)_{CMx}$
4mc8	$8X^7+14X^6+12X^5+5X^4+4X^3+6X^2+4X+1$
3e23mc5	$24X^7+14X^6+6X^5+3X^2+4X+3$
33ec5	$2(8X^7+14X^6+4X+1)$
2233mc5	$32X^7+7X^6+5X^4+4X^3+2X+4$
2334mc5	$2(16X^7+6X^5+3X^2+2)$
c9	$2X(7X^5+6X^4+5X^3+4X^2+3X+2)$
233mc6	$24X^7+7X^6+12X^5+6X^2+2X+3$
334mc6	$24X^7+14X^6+5X^4+4X^3+4X+3$
3e3mc6	$16X^7+21X^6+6X^5+3X^2+6X+2$
2234mc5	$32X^7+6X^5+5X^4+4X^3+3X^2+4$
34mc7	$16X^7+14X^6+6X^5+5X^4+4X^3+3X^2+4X+2$
234mc6	$24X^7+7X^6+6X^5+5X^4+4X^3+3X^2+2X+3$
3e4mc6	$16X^7+21X^6+5X^4+4X^3+6X+2$
3e22mc5	$24X^7+14X^6+5X^4+4X^3+4X+3$
3e24mc5	$24X^7+7X^6+12X^5+6X^2+2X+3$
23mc7	$16X^7+7X^6+12X^5+5X^4+4X^3+6X^2+2X+2$
33mc7	$16X^7+14X^6+6X^5+5X^4+4X^3+3X^2+4X+2$
44mc7	$2(8X^7+7X^6+6X^5+3X^2+2X+1)$
3ec7	$8X^7+21X^6+6X^5+5X^4+4X^3+3X^2+6X+1$
4ec7	$8X^7+21X^6+12X^5+6X^2+6X+1$
223mc6	$24X^7+7X^6+6X^5+5X^4+4X^3+3X^2+2X+3$
225mc6	$24X^7+6X^5+10X^4+8X^3+3X^2+3$
244mc6	$24X^7+7X^6+6X^5+5X^4+4X^3+3X^2+2X+3$
3e2mc6	$2(8X^7+7X^6+6X^5+3X^2+2X+1)$
2244mc5	$2(16X^7+5X^4+4X^3+2)$
3mc8	$8X^7+14X^6+6X^5+10X^4+8X^3+3X^2+4X+1$
25mc7	$16X^7+7X^6+6X^5+10X^4+8X^3+3X^2+2X+2$
35mc7	$2(8X^7+7X^6+5X^4+4X^3+2X+1)$
235mc6	$24X^7+12X^5+5X^4+4X^3+6X^2+3$
2mc8	$8X^7+7X^6+12X^5+10X^4+8X^3+6X^2+2X+1$
22mc7	$16X^7+7X^6+6X^5+10X^4+8X^3+3X^2+2X+2$
24mc7	$16X^7+7X^6+12X^5+5X^4+4X^3+6X^2+2X+2$
26mc7	$2(X^2-X+1)(8X^5+8X^4+6X^3+3X^2+X+1)$
224mc6	$24X^7+7X^6+10X^4+8X^3+2X+3$
4e2mc6	$16X^7+14X^6+6X^5+5X^4+4X^3+3X^2+4X+2$

Table 7. CcM counting polynomials for nonane isomers: the values of the $Q(X)_{CcM}$ terms

Nickname	$Q(X)_{CcM}$
4mc8	$X^7+4X^6+6X^5+4X^4+5X^3+12X^2+14X+8$
3e23mc5	$3X^7+4X^6+3X^5+6X^2+14X+24$
33ec5	$2(X^7+4X^6+14X+8)$
2233mc5	$4X^7+2X^6+4X^4+5X^3+7X+32$
2334mc5	$2(2X^7+3X^5+6X^2+16)$
c9	$2X(2X^5+3X^4+4X^3+5X^2+6X+7)$
233mc6	$3X^7+2X^6+6X^5+12X^2+7X+24$
334mc6	$3X^7+4X^6+4X^4+5X^3+14X+24$
3e3mc6	$2X^7+6X^6+3X^5+6X^2+21X+16$
2234mc5	$4X^7+3X^5+4X^4+5X^3+6X^2+32$
34mc7	$2X^7+4X^6+3X^5+4X^4+5X^3+6X^2+14X+16$
234mc6	$3X^7+2X^6+3X^5+4X^4+5X^3+6X^2+7X+24$
3e4mc6	$2X^7+6X^6+4X^4+5X^3+21X+16$
3e22mc5	$3X^7+4X^6+4X^4+5X^3+14X+24$
3e24mc5	$3X^7+2X^6+6X^5+12X^2+7X+24$
23mc7	$2X^7+2X^6+6X^5+4X^4+5X^3+12X^2+7X+16$
33mc7	$2X^7+4X^6+3X^5+4X^4+5X^3+6X^2+14X+16$
44mc7	$2(X^7+2X^6+3X^5+6X^2+7X+8)$
3ec7	$X^7+6X^6+3X^5+4X^4+5X^3+6X^2+21X+8$
4ec7	$X^7+6X^6+6X^5+12X^2+21X+8$
223mc6	$3X^7+2X^6+3X^5+4X^4+5X^3+6X^2+7X+24$
225mc6	$3X^7+3X^5+8X^4+10X^3+6X^2+24$
244mc6	$3X^7+2X^6+3X^5+4X^4+5X^3+6X^2+7X+24$
3e2mc6	$2\cdot(X^7+2\cdot X^6+3\cdot X^5+6\cdot X^2+7\cdot X+8)$
2244mc5	$2(2X^7+4X^4+5X^3+16)$
3mc8	$X^7+4X^6+3X^5+8X^4+10X^3+6X^2+14X+8$
25mc7	$2X^7+2X^6+3X^5+8X^4+10X^3+6X^2+7X+16$
35mc7	$2(X^7+2X^6+4X^4+5X^3+7X+8)$
235mc6	$3X^7+6X^5+4X^4+5X^3+12X^2+24$
2mc8	$X^7+2X^6+6X^5+8X^4+10X^3+12X^2+7X+8$
22mc7	$2X^7+2X^6+3X^5+8X^4+10X^3+6X^2+7X+16$
24mc7	$2X^7+2X^6+6X^5+4X^4+5X^3+12X^2+7X+16$
26mc7	$2(X^2-X+1)(X^5+X^4+3X^3+6X^2+8X+8)$
224mc6	$3X^7+2X^6+8X^4+10X^3+7X+24$
4e2mc6	$2X^7+4X^6+3X^5+4X^4+5X^3+6X^2+14X+16$

Table 8. CSz counting polynomials for nonane isomers: the values of the $Q(X)_{CSz}$ terms

Nickname	$Q(X)_{CSz}$
4mc8	$X^7+6X^6+13X^5+9X^4+9X^3+16X^2+9X+3$
3e23mc5	$3X^7+10X^6+9X^5+14X^2+20X+10$
33ec5	$2(X^7+10X^6+20X+2)$
2233mc5	$4X^7+5X^6+13X^4+16X^3+10X+18$
2334mc5	$2(2X^7+9X^5+14X^2+8)$
c9	$2X(X^2+X+1)(3X^3+2X^2+2X+4)$
233mc6	$3X^7+3X^6+19X^5+23X^2+6X+12$
334mc6	$(X+1)(3X^6+6X^5-6X^4+19X^3-6X^2+6X+11)$
3e3mc6	$2X^7+13X^6+10X^5+11X^2+24X+6$
2234mc5	$4X^7+7X^5+10X^4+15X^3+13X^2+17$
34mc7	$(X+1)(2X^6+5X^5+3X^4+7X^3+4X^2+6X+6)$
234mc6	$3X^7+4X^6+7X^5+11X^4+13X^3+11X^2+7X+10$
3e4mc6	$2X^7+12X^6+11X^4+13X^3+23X+5$
3e22mc5	$3X^7+8X^6+10X^4+15X^3+18X+12$
3e24mc5	$3X^7+4X^6+14X^5+26X^2+9X+10$
23mc7	$2X^7+3X^6+13X^5+10X^4+9X^3+18X^2+4X+7$
33mc7	$2X^7+8X^6+7X^5+10X^4+9X^3+10X^2+12X+8$
44mc7	$2(X^7+3X^6+9X^5+10X^2+6X+4)$
3ec7	$X^7+11X^6+6X^5+10X^4+9X^3+9X^2+18X+2$
4ec7	$X^7+10X^6+16X^5+20X^2+17X+2$
223mc6	$3X^7+3X^6+9X^5+10X^4+12X^3+11X^2+5X+13$
225mc6	$3X^7+5X^5+18X^4+20X^3+6X^2+14$
244mc6	$3X^7+5X^6+5X^5+13X^4+10X^3+10X^2+8X+12$
3e2mc6	$2X^7+7X^6+16X^5+22X^2+13X+6$
2244mc5	$2(2X^7+7X^4+14X^3+10)$
3mc8	$(X+1)(X^6+6X^5-X^4+17X^3+7X+3)$
25mc7	$(X+1)(2X^6+2X^5+3X^4+13X^3+7X^2-X+7)$
35mc7	$2(X^7+4X^6+8X^4+11X^3+6X+3)$
235mc6	$3X^7+12X^5+12X^4+11X^3+17X^2+11$
2mc8	$X^7+3X^6+10X^5+15X^4+17X^3+12X^2+4X+4$
22mc7	$2X^7+3X^6+5X^5+17X^4+17X^3+8X^2+4X+10$
24mc7	$2X^7+3X^6+12X^5+10X^4+10X^3+17X^2+5X+7$
26mc7	$2(X^7+5X^5+7X^4+10X^3+6X^2+4)$
224mc6	$(X+1)(3X^6+X^5-X^4+17X^3+7X^2-7X+13)$
4e2mc6	$2X^7+8X^6+5X^5+12X^4+11X^3+8X^2+14X+6$

In Place of Conclusions

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