

**Part 4 : New Advanced Study of Magic Squares and Cubes**  
**Chapter 4 : Commentary Articles No.2 by Kanji Setsuda:**

“Various Arts and Tools for Studying Magic Squares”

**Section 11-3 : Compose “Euler Type” of Simultaneous MS77:  
 Both Self-complementary and Pan-diagonal; by the 7-th  
 Increment Number System and New Euler’s Method**

**0.** I would report here about my new challenge and its result of composing all the standard solutions of the “Euler Type” of Simultaneous Magic Squares of Order 7: Self-complementary and Pan-diagonal; by the Positional Number System of the base 7, i.e. the 7-th Increment Number System, and New Euler’s Method.

I would continue the same discussion as the first case I composed all the Magic Squares of Order 4 by the 4-th Increment System. If you have not yet read my article of them in the Section 7-4, Chapter 4, please read it before all, will you? I re-defined the words “Euler Squares” and “Non-Euler Type” at the end.

**1.** We know this type has the 3456 solutions in all for the ‘Complete Euler Squares’ of Order 7 built by the ‘Greco-Latinian Method’ with the 7-th Increment Number System. I wrote about it in the Section 11, Chapter 4 of Part 4.

We always had to obey the beautiful ‘Latin Condition’ there.

This rule is dictated that we must use every number of (0, 1, 2, 3, 4, 5 and 6) strictly once to make each of the essential parts of Decomposed Units: their rows, columns and pan-diagonals. We must not un-use any number of them in each part. Neither duplication nor lack of any number is allowed there strictly.

As a consequence, every sum of row, column and pan-diagonal is calculated after the only pattern 0+1+2+3+4+5+6 and is always equal to the constant 21. Combine any two of those Units to compose the whole object by multiplication and addition, and you should surely have those miraculous 3456 solutions.

Now let’s not follow the Latin Condition and define no content patterns of rows, columns or pan-diagonals in each Unit this time. But, let’s keep defining every sum of them to be simply equal to the constant sum 21.

Lets not stop using our “New Euler’s Method” to compose our objects, either.

[Conceptual Diagrams of “New Euler’s Method”: Bi-directional Symmetrical Method of Decomposition and Composition by the 7-th Increment Number System]

/C1s					/Mth					/D7i:					High Rw C1\P1/P2					Low Rw C1\P1/P2									
1	48	11	26	41	5	43	0	47	10	25	40	4	42	0	6	1	3	5	0	6	21 21 21 21	0	5	3	4	5	4	0	21 21 21 21
47	6	29	33	22	34	4	46	5	28	32	21	33	3	6	0	4	4	3	4	0	21 21 21 21	4	5	0	4	0	5	3	21 21 21 21
37	14	38	20	8	35	23	36	13	37	19	7	34	22	5	1	5	2	1	4	3	21 21 21 21	1	6	2	5	0	6	1	21 21 21 21
10	31	18	25	32	19	40	9	30	17	24	31	18	39	1	4	2	3	4	2	5	21 21 21 21	2	2	3	3	3	4	4	21 21 21 21
27	15	42	30	12	36	13	26	14	41	29	11	35	12	3	2	5	4	1	5	1	21 21 21 21	5	0	6	1	4	0	5	21 21 21 21
46	16	28	17	21	44	3	45	15	27	16	20	43	2	6	2	3	2	2	6	0	21 21 21 21	3	1	6	2	6	1	2	21 21 21 21
7	45	9	24	39	2	49	6	44	8	23	38	1	48	0	6	1	3	5	0	6	21 21 21 21	6	2	1	2	3	1	6	21 21 21 21

[Decomposition: /Classical – 1 = /Mathematical; Every number/Math is divided by 7:

The integer part of quotient is put into High/D7i and the remainder into the Low/D7i]

Euler Unit: H Rw C1\P1/P2					Low Rw C1\P1/P2					/Mth					/C1s												
0	6	1	3	5	0	6	0	5	3	4	5	4	0	0	47	10	25	40	4	42	1	48	11	26	41	5	43
6	0	4	4	3	4	0	4	5	0	4	0	5	3	46	5	28	32	21	33	3	47	6	29	33	22	34	4
5	1	5	2	1	4	3	1	6	2	5	0	6	1	36	13	37	19	7	34	22	37	14	38	20	8	35	23
1	4	2	3	4	2	5	2	2	3	3	3	4	4	9	30	17	24	31	18	39	10	31	18	25	32	19	40
3	2	5	4	1	5	1	5	0	6	1	4	0	5	26	14	41	29	11	35	12	27	15	42	30	12	36	13
6	2	3	2	2	6	0	3	1	6	2	6	1	2	45	15	27	16	20	43	2	46	16	28	17	21	44	3
0	6	1	3	5	0	6	6	2	1	2	3	1	6	6	44	8	23	38	1	48	7	45	9	24	39	2	49

[Composition: Every number/HighUnit x 7 + En/Low = Sol/Math; S/Math + 1 = S/Classcl]

Those diagrams above are illustrated for our **New Euler's Method**. They show its bi-directional symmetrical processes of Decomposition and Composition by the 7-th Increment Number System. A pair of two little Units between them is very important. They are the decomposed result of division and subtraction, but on the other side they are the material components of multiplication and addition to reconstruct the whole object. They have been called the "Latin Units", whenever they should be produced under the Latin Condition.

But, let's stop calling Latin Units for them, since we have decided not to follow the Latin Condition primarily any longer. Now let's call them "**Euler Units**" instead, because we want to build the "Euler Squares" in a new broad sense.

## 2. How do we have to define our new Euler Units, then?

First of all we have to study about the old original definition of our whole object, because we want the new one defined in a similar way as much as possible.

```
//
/** Basic Conditions for Rows and Columns: C=175 **
// n1+n2+n3+n4+n5+n6+n7=C ... rw1; | n1+n8+n15+n22+n29+n36+n43=C ... c1;
// n8+n9+n10+n11+n12+n13+n14=C ... rw2; | n2+n9+n16+n23+n30+n37+n44=C ... c2;
// n15+n16+n17+n18+n19+n20+n21=C ... rw3; | n3+n10+n17+n24+n31+n38+n45=C ... c3;
// n22+n23+n24+n25+n26+n27+n28=C ... rw4; | n4+n11+n18+n25+n32+n39+n46=C ... c4;
// n29+n30+n31+n32+n33+n34+n35=C ... rw5; | n5+n12+n19+n26+n33+n40+n47=C ... c5;
// n36+n37+n38+n39+n40+n41+n42=C ... rw6; | n6+n13+n20+n27+n34+n41+n48=C ... c6;
// n43+n44+n45+n46+n47+n48+n49=C ... rw7; | n7+n14+n21+n28+n35+n42+n49=C ... c7;
/** Pan-diagonal Conditions: C=175 **
// n1+n9+n17+n25+n33+n41+n49=C ... pd1; | n1+n14+n20+n26+n32+n38+n44=C ... pb1;
// n2+n10+n18+n26+n34+n42+n43=C ... pd2; | n2+n8+n21+n27+n33+n39+n45=C ... pb2;
// n3+n11+n19+n27+n35+n36+n44=C ... pd3; | n3+n9+n15+n28+n34+n40+n46=C ... pb3;
// n4+n12+n20+n28+n29+n37+n45=C ... pd4; | n4+n10+n16+n22+n35+n41+n47=C ... pb4;
// n5+n13+n21+n22+n30+n38+n46=C ... pd5; | n5+n11+n17+n23+n29+n42+n48=C ... pb5;
// n6+n14+n15+n23+n31+n39+n47=C ... pd6; | n6+n12+n18+n24+n30+n36+n49=C ... pb6;
// n7+n8+n16+n24+n32+n40+n48=C ... pd7; | n7+n13+n19+n25+n31+n37+n43=C ... pb7;
/** Self-Complementary Conditions: CC=50 **
// n1+n49=n2+n48=n3+n47=n4+n46=n5+n45=n6+n44=n7+n43=
// n8+n42=n9+n41=n10+n40=n11+n39=n12+n38=n13+n37=n14+n36=
// n15+n35=n16+n34=n17+n33=n18+n32=n19+n31=n20+n30=n21+n29=
// n22+n28=n23+n27=n24+n26=n25+n25==CC ... scc
/** List Forming Inequality Conditions: **
// n1<n7; n1+n43; n1<n49; and n7>n43;
//[Basic Form]
//
// 2 3 4 5 6 7 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 2 3 4 5 6
// 9 10 11 12 13 14 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 8 9 10 11 12 13
// 16 17 18 19 20 21 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 15 16 17 18 19 20
// 23 24 25 26 27 28 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 22 23 24 25 26 27
// 30 31 32 33 34 35 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 29 30 31 32 33 34
// 37 38 39 40 41 42 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 36 37 38 39 40 41
// 44 45 46 47 48 49 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 43 44 45 46 47 48
//
//[New Definition of Euler Units]
/** Conditions for Rows and Columns: C=21 **
// n1+n2+n3+n4+n5+n6+n7=C ... rw1 | n1+n8+n15+n22+n29+n36+n43=C ... c1
// n8+n9+n10+n11+n12+n13+n14=C ... rw2 | n2+n9+n16+n23+n30+n37+n44=C ... c2
// n15+n16+n17+n18+n19+n20+n21=C ... rw3 | n3+n10+n17+n24+n31+n38+n45=C ... c3
// n22+n23+n24+n25+n26+n27+n28=C ... rw4 | n4+n11+n18+n25+n32+n39+n46=C ... c4
// n29+n30+n31+n32+n33+n34+n35=C ... rw5 | n5+n12+n19+n26+n33+n40+n47=C ... c5
```

```

// n36+n37+n38+n39+n40+n41+n42=C ... rw6 | n6+n13+n20+n27+n34+n41+n48=C ... cl6
// n43+n44+n45+n46+n47+n48+n49=C ... rw7 | n7+n14+n21+n28+n35+n42+n49=C ... cl7
/** Pan-diagonal Conditions: C=21 **
// n1+n9+n17+n25+n33+n41+n49=C ... pd1 | n1+n14+n20+n26+n32+n38+n44=C ... pd8
// n2+n10+n18+n26+n34+n42+n43=C ... pd2 | n2+n8+n21+n27+n33+n39+n45=C ... pd9
// n3+n11+n19+n27+n35+n36+n44=C ... pd3 | n3+n9+n15+n28+n34+n40+n46=C ... pd10
// n4+n12+n20+n28+n29+n37+n45=C ... pd4 | n4+n10+n16+n22+n35+n41+n47=C ... pd11
// n5+n13+n21+n22+n30+n38+n46=C ... pd5 | n5+n11+n17+n23+n29+n42+n48=C ... pd12
// n6+n14+n15+n23+n31+n39+n47=C ... pd6 | n6+n12+n18+n24+n30+n36+n49=C ... pd13
// n7+n8+n16+n24+n32+n40+n48=C ... pd7 | n7+n13+n19+n25+n31+n37+n43=C ... pd14
/** Self-complementary Conditions: SC=6 **
// n1+n49=n2+n48=n3+n47=n4+n46=n5+n45=n6+n44=n7+n43=n8+n42=n9+n41=
// n10+n40=n11+n39=n12+n38=n13+n37=n14+n36=n15+n35=n16+n34=n17+n33=n18+n32=
// n19+n31=n20+n30=n21+n29=n22+n28=n23+n27=n24+n26=n25+n25=SC ... scc
/** List Forming Inequality Conditions: **
// n1<n7; n1+n43; n1<n49; and n7>n43;
//

```

Watch the two lists of definitions above and study about them, please. They look quite similar to each other, don't they? Almost the same!

Yes. This similar structure between the whole object and its Euler Units is what we really want to have. It is the necessary attribute of our "Euler Squares".

On top of that we must add one more important rule to our list: We must use any number of (0, 1, 2, 3, 4, 5 and 6) just 7 times to compose each Unit as often as the others. We must not use it more or less often than 7 times.

This rule is logically equivalent to that one of whole object: We must use every number of (1, 2, 3, 4, ..., 47, 48, 49) strictly once. Neither duplication nor lack of any number is allowed. It is one of the oldest promises we should always obey.

3. Let's build our Program in 'C' under these definitions now. It will make the actual Euler Units and we can pick up any two of them to combine and compose our new objects "Euler Squares" of Order 7 by calculations.

```

/** New 'Euler Squares' of Order 7 for the Simultaneous Type: **
/** Both Self-complementary and Pan-diagonal; Reconstructed by **
/** the 7-th Increment Number System and 'New Euler's Method' **
/** 'NESmLMS77ScPd.c' Dictated by Kanji Setsuda in 2006, 2010, **
/** Revised on Mar.10, 2012 with MacOSX 10.7.3 and Xcode 4.2.1 **
//
#include <stdio.h>
//
long int ecnt, cnt;
long cntr[10], ucnt[2][2];
short int cnt1, ocnt1, cnt2, cnt3;
short SC, LSM, S6N;
short nm[50], uflg[50];
short dn[10][50];
long u1, u2;
short teu[392737][50];
//
void sstp01(void), sstp02(void), sstp03(void), sstp04(void), sstp05(void);
void sstp06(void), sstp07(void), sstp08(void), sstp09(void), sstp10(void);
void sstp11(void), sstp12(void), sstp13(void), sstp14(void), sstp15(void);
void sstp16(void), sstp17(void), sstp18(void), sstp19(void), sstp20(void);
void sstp21(void), sstp22(void), sstp23(void), sstp24(void), sstp25(void);
void eurecord(void);
void preunit(short x);
short chkmtc(long x, long y);
void cmbcmp(void), recsol(void);
void pr2sol(short x);
//

```

```

/* Main Program *
int main(){
short n;
printf("\n");
printf("*** New 'Euler Squares' of Order 7 for the Simultaneous Type: **\n");
printf("*** Both Self-complementary and Pan-diagonal; Reconstructed by **\n");
printf("*** the 7-th Increment Number System and 'New Euler's Method' **\n");
printf(" [List of Euler Units]\n");
for(n=0;n<50;n++){nm[n]=0; uflg[n]=0;}
SC=6; LSM=21; S6N=18; ecnt=0; cnt3=0;
nm[25]=3; uflg[3]=1;
sstp01(); // Make the Euler Units
if(cnt3>0){preunit(cnt3);}
printf(" [Count of Euler Units = %ld]\n",ecnt);
LSM=175; cnt=0; cnt1=0; ocnt1=0; cnt3=0;
printf("\n");
printf("*** Simultaneous MS77: Both Self-Complementary and Pan-diagonal:\n");
printf(" Reconstructed by the 7-th Increment System and New Euler's Method **\n");
printf(" ** List of the Standard Solutions of 'Euler Squares' of Order 7 **\n");
printf(" [Euler Units: High/ Low/; Solution Counts: [n1==1] All#;]\n");
cmbcmp(); // Combine and Compose
if(cnt3>0){pr2sol(cnt3);} // Print The Rest One
printf(" [Count of Solutions: [n1==1] All# = [%d] %ld#]\n",cnt1,cnt);
printf(" [OK!]\n");
printf("*** Calculated and Listed by Kanji Setsuda\n");
printf(" on Mar.10, 2012 with MacOSX 10.7.3 and Xcode 4.2.1 **\n");
printf("\n");
return 0;
}
//
/** The Program Modules for 'New Euler Squares' of Order 7 **
/* Make the Euler Units *
//Level #1:
//Set n1 & n49
void sstp01(){
short a,b;
for(a=0;a<7;a++){b=SC-a;
if((uflg[a]<7)&&(uflg[b]<7)){
nm[1]=a; nm[49]=b;
uflg[a]++; uflg[b]++;
sstp02();
uflg[b]--; uflg[a]--;}
}
}
//Set n7 & n43
void sstp02(){
short a,b;
for(a=6;a>=0;a--){b=SC-a;
if((uflg[a]<7)&&(uflg[b]<7)){cnt2=0;
nm[7]=a; nm[43]=b;
uflg[a]++; uflg[b]++;
sstp03();
uflg[b]--; uflg[a]--;}
}
}
//Set n2 & n48
void sstp03(){
short a,b;
for(a=6;a>=0;a--){b=SC-a;
if((uflg[a]<7)&&(uflg[b]<7)){
nm[2]=a; nm[48]=b;
uflg[a]++; uflg[b]++;
sstp04();
uflg[b]--; uflg[a]--;}
}
}

```

```

}
//Set n6 & n44
void sstp04(){
  short a,b;
  for(a=0;a<7;a++){b=SC-a;
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[6]=a; nm[44]=b;
      uflg[a]++; uflg[b]++;
      sstp05();
      uflg[b]--; uflg[a]--;}
  }
}
//Set n3 & n47
void sstp05(){
  short a,b;
  for(a=0;a<7;a++){b=SC-a;
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[3]=a; nm[47]=b;
      uflg[a]++; uflg[b]++;
      sstp06();
      uflg[b]--; uflg[a]--;}
  }
}
//Set n5 & n45
void sstp06(){
  short a,b;
  for(a=6;a>=0;a--){b=SC-a;
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[5]=a; nm[45]=b;
      uflg[a]++; uflg[b]++;
      sstp07();
      uflg[b]--; uflg[a]--;}
  }
}
//Set n4=LSM-n1-n2-n3-n5-n6-n7 & n46
void sstp07(){
  short a,b;
  a=LSM-nm[1]-nm[2]-nm[3]-nm[5]-nm[6]-nm[7];
  b=LSM-nm[49]-nm[48]-nm[47]-nm[45]-nm[44]-nm[43];
  if((0<=a)&&(a<7)&&(a+b==SC)){
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[4]=a; nm[46]=b;
      uflg[a]++; uflg[b]++;
      sstp08();
      uflg[b]--; uflg[a]--;}}
}
//Level #2:
//Set n8 & n42
void sstp08(){
  short a,b;
  for(a=6;a>=0;a--){b=SC-a;
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[8]=a; nm[42]=b;
      uflg[a]++; uflg[b]++;
      sstp09();
      uflg[b]--; uflg[a]--;}
  }
}
//Set n36 & n14
void sstp09(){
  short a,b;
  for(a=6;a>=0;a--){b=SC-a;
    if((uflg[a]<7)&&(uflg[b]<7)){
      nm[36]=a; nm[14]=b;
      uflg[a]++; uflg[b]++;

```

```

        sstp10();
        uflg[b]--; uflg[a]--;}
    }
}
//Set n15 & n35
void sstp10(){
    short a,b;
    for(a=0;a<7;a++){b=SC-a;
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[15]=a; nm[35]=b;
            uflg[a]++; uflg[b]++;
            sstp11();
            uflg[b]--; uflg[a]--;}
        }
}
//Set n29 & n21
void sstp11(){
    short a,b;
    for(a=0;a<7;a++){b=SC-a;
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[29]=a; nm[21]=b;
            uflg[a]++; uflg[b]++;
            sstp12();
            uflg[b]--; uflg[a]--;}
        }
}
//Set n22=LSM-n1-n8-n15-n29-n36-n43 & n28
void sstp12(){
    short a,b;
    a=LSM-nm[1]-nm[8]-nm[15]-nm[29]-nm[36]-nm[43];
    b=LSM-nm[49]-nm[42]-nm[35]-nm[21]-nm[14]-nm[7];
    if((0<=a)&&(a<7)&&(a+b==SC)){
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[22]=a; nm[28]=b;
            uflg[a]++; uflg[b]++;
            sstp13();
            uflg[b]--; uflg[a]--;}}
    }
}
//Level #3:
//Set n9=S6N-n1-n2-n3-n8-n15 & n
void sstp13(){
    short a,b;
    a=S6N-nm[1]-nm[2]-nm[3]-nm[8]-nm[15];
    b=S6N-nm[49]-nm[48]-nm[47]-nm[42]-nm[35];
    if((0<=a)&&(a<7)&&(a+b==SC)){
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[9]=a; nm[41]=b;
            uflg[a]++; uflg[b]++;
            sstp14();
            uflg[b]--; uflg[a]--;}}
    }
}
//Set n13=S6N-n5-n6-n7-n14-n21 & n37
void sstp14(){
    short a,b;
    a=S6N-nm[5]-nm[6]-nm[7]-nm[14]-nm[21];
    b=S6N-nm[45]-nm[44]-nm[43]-nm[36]-nm[29];
    if((0<=a)&&(a<7)&&(a+b==SC)){
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[13]=a; nm[37]=b;
            uflg[a]++; uflg[b]++;
            sstp15();
            uflg[b]--; uflg[a]--;}}
    }
}
//Set n10 & n40
void sstp15(){

```

```

short a,b;
for(a=0;a<7;a++){b=SC-a;
if((uflg[a]<7)&&(uflg[b]<7)){
nm[10]=a; nm[40]=b;
uflg[a]++; uflg[b]++;
sstp16();
uflg[b]--; uflg[a]--;}
}
}
//Set n16=LSM-n4-n10-n22-n35-n41-n47 & n
void sstp16(){
short a,b;
a=LSM-nm[4]-nm[10]-nm[22]-nm[35]-nm[41]-nm[47];
b=LSM-nm[46]-nm[40]-nm[28]-nm[15]-nm[9]-nm[3];
if((0<=a)&&(a<7)&&(a+b==SC)){
if((uflg[a]<7)&&(uflg[b]<7)){
nm[16]=a; nm[34]=b;
uflg[a]++; uflg[b]++;
sstp17();
uflg[b]--; uflg[a]--;}}
}
}
//Set n12 & n38
void sstp17(){
short a,b;
for(a=0;a<7;a++){b=SC-a;
if((uflg[a]<7)&&(uflg[b]<7)){
nm[12]=a; nm[38]=b;
uflg[a]++; uflg[b]++;
sstp18();
uflg[b]--; uflg[a]--;}
}
}
}
//Set n20=LSM-n4-n12-n28-n29-n37-n45 & n30
void sstp18(){
short a,b;
a=LSM-nm[4]-nm[12]-nm[28]-nm[29]-nm[37]-nm[45];
b=LSM-nm[46]-nm[38]-nm[22]-nm[21]-nm[13]-nm[5];
if((0<=a)&&(a<7)&&(a+b==SC)){
if((uflg[a]<7)&&(uflg[b]<7)){
nm[20]=a; nm[30]=b;
uflg[a]++; uflg[b]++;
sstp19();
uflg[b]--; uflg[a]--;}}
}
}
//Level #3:
//Set n11=LSM-n8-n9-n10-n12-n13-n14 & n39
void sstp19(){
short a,b;
a=LSM-nm[8]-nm[9]-nm[10]-nm[12]-nm[13]-nm[14];
b=LSM-nm[42]-nm[41]-nm[40]-nm[38]-nm[37]-nm[36];
if((0<=a)&&(a<7)&&(a+b==SC)){
if((uflg[a]<7)&&(uflg[b]<7)){
nm[11]=a; nm[39]=b;
uflg[a]++; uflg[b]++;
sstp20();
uflg[b]--; uflg[a]--;}}
}
}
//Set n23=LSM-n2-n9-n16-n30-n37-n44 & n27
void sstp20(){
short a,b;
a=LSM-nm[2]-nm[9]-nm[16]-nm[30]-nm[37]-nm[44];
b=LSM-nm[48]-nm[41]-nm[34]-nm[20]-nm[13]-nm[6];
if((0<=a)&&(a<7)&&(a+b==SC)){
if((uflg[a]<7)&&(uflg[b]<7)){
nm[23]=a; nm[27]=b;

```

```

        uflg[a]++; uflg[b]++;
        sstp21();
        uflg[b]--; uflg[a]--;}}
}
//Set n17=LSM-n5-n11-n23-n29-n42-n48 & n33
void sstp21(){
short a,b;
a=LSM-nm[5]-nm[11]-nm[23]-nm[29]-nm[42]-nm[48];
b=LSM-nm[45]-nm[39]-nm[27]-nm[21]-nm[8]-nm[2];
if((0<=a)&&(a<7)&&(a+b==SC)){
    if((uflg[a]<7)&&(uflg[b]<7)){
        nm[17]=a; nm[33]=b;
        uflg[a]++; uflg[b]++;
        if(nm[1]+nm[9]+nm[17]+nm[25]+nm[33]+nm[41]+nm[49]==LSM){sstp22();}
        uflg[b]--; uflg[a]--;}}
}
//Set n19=LSM-n3-n11-n27-n35-n36-n44 & n31
void sstp22(){
short a,b;
a=LSM-nm[3]-nm[11]-nm[27]-nm[35]-nm[36]-nm[44];
b=LSM-nm[47]-nm[39]-nm[23]-nm[15]-nm[14]-nm[6];
if((0<=a)&&(a<7)&&(a+b==SC)){
    if((uflg[a]<7)&&(uflg[b]<7)){
        nm[19]=a; nm[31]=b;
        uflg[a]++; uflg[b]++;
        if(nm[7]+nm[13]+nm[19]+nm[25]+nm[31]+nm[37]+nm[43]==LSM){sstp23();}
        uflg[b]--; uflg[a]--;}}
}
//Set n18=LSM-n15-n16-n17-n19-n20-n21 & n32
void sstp23(){
short a,b;
a=LSM-nm[15]-nm[16]-nm[17]-nm[19]-nm[20]-nm[21];
b=LSM-nm[35]-nm[34]-nm[33]-nm[31]-nm[30]-nm[29];
if((0<=a)&&(a<7)&&(a+b==SC)){
    if((uflg[a]<7)&&(uflg[b]<7)){
        nm[18]=a; nm[32]=b;
        uflg[a]++; uflg[b]++;
        if(nm[4]+nm[11]+nm[18]+nm[25]+nm[32]+nm[39]+nm[46]==LSM){sstp24();}
        uflg[b]--; uflg[a]--;}}
}
//Set n24=LSM-n3-n10-n17-n31-n38-n45 & n26
void sstp24(){
short a,b,c,d;
a=LSM-nm[3]-nm[10]-nm[17]-nm[31]-nm[38]-nm[45];
b=LSM-nm[47]-nm[40]-nm[33]-nm[19]-nm[12]-nm[5];
c=LSM-nm[6]-nm[12]-nm[18]-nm[30]-nm[36]-nm[49];
d=LSM-nm[44]-nm[38]-nm[32]-nm[20]-nm[14]-nm[1];
if((0<=a)&&(a<7)){
    if((a==c)&&(b==d)&&(a+b==SC)){
        if((uflg[a]<7)&&(uflg[b]<7)){
            nm[24]=a; nm[26]=b;
            uflg[a]++; uflg[b]++;
            sstp25();
            uflg[b]--; uflg[a]--;}}}}
}
/** Check the Rest Sums *
void sstp25(){
short a,b,c;
a=nm[22]+nm[23]+nm[24]+nm[25]+nm[26]+nm[27]+nm[28];
b=nm[2]+nm[10]+nm[18]+nm[26]+nm[34]+nm[42]+nm[43];
c=nm[48]+nm[40]+nm[32]+nm[24]+nm[16]+nm[8]+nm[7];
if((a==LSM)&&(b==LSM)&&(c==LSM)){eurecord();}
}
//
/** Record Each of the Euler Units *

```



```

void eurecord(){
short n;
teu[ecnt][0]=ecnt+1;
for(n=1;n<50;n++){teu[ecnt][n]=nm[n];}
ecnt++; cnt2++;
if(cnt2==1){
cntr[cnt3]=ecnt;
for(n=1;n<50;n++){dn[cnt3][n]=nm[n];}
cnt3++;
if(cnt3==10){preunit(cnt3); cnt3=0;}
}
}
//
/* Print the Euler Units
void preunit(short x){
short l,l7,m,n;
for(m=0;m<x;m++){printf("%8ld/",cntr[m]);}
printf("\n");
for(l=0;l<7;l++){l7=l*7;
for(m=0;m<x;m++){printf(" ");
for(n=1;n<8;n++){printf("%d",dn[m][l7+n]);}}
printf("\n");
}
printf("\n");
}
//
/* Refer the Matching *
short chkmtc(long x, long y){
short m,n;
m=0;
for(n=1;n<50;n++){if(teu[x][n]==teu[y][n]){m++;}}
return m;
}
//
/* Combine and Compose *
void cmbcmp(){
short n,d,d2,fc;
for(u1=0;u1<(ecnt/2);u1++){d=teu[u1][1]; d2=teu[u1][43];
if((d<=d2)&&(d2<=teu[u1][7])&&(d<=teu[u1][49])){
for(u2=0;u2<ecnt;u2++){
if(chkmtc(u1,u2)<=7){
for(n=1;n<50;n++){uflg[n]=0;}
for(n=1;n<50;n++){
d=teu[u1][n]*7+teu[u2][n]+1;
nm[n]=d; uflg[d]++;
}
fc=0;
for(n=1;n<50;n++){if(uflg[n]==1){fc++;}else{break;}}
if(fc==49){
if((nm[1]<nm[43])&&(nm[43]<nm[7])&&(nm[1]<nm[49])){recsol();}
}
}
}
}
}
//
/* Record Each of the Solutions *
void recsol(){
short n;
cnt++; if(nm[1]==1){cnt1++;}
if(cnt1!=ocnt1){ocnt1=cnt1;
if(cnt1%50==1){
cntr[cnt3]=cnt; dn[cnt3][0]=cnt1;
for(n=1;n<50;n++){dn[cnt3][n]=nm[n];}
}
}
}
}

```

```

        ucnt[cnt3][0]=u1+1; ucnt[cnt3][1]=u2+1;
        cnt3++; if(cnt3==2){pr2sol(cnt3); cnt3=0;}
    }}
}
//
/** Print 2 Pieces with Full Information *
void pr2sol(short x){
    long eu1,eu2;
    short l,l7,m,n;
    printf(" ");
    for(m=0;m<x;m++){
        printf("%7ld/%7ld/ [%5d]%12ld#",ucnt[m][0],ucnt[m][1],dn[m][0],cntr[m]);
        if(m+1<x){printf(" ");}
    }
    printf("\n");
    for(l=0;l<7;l++){l7=l*7;
        printf(" ");
        for(m=0;m<x;m++){
            eu1=ucnt[m][0]-1; eu2=ucnt[m][1]-1;
            printf(" ");
            for(n=1;n<8;n++){printf("%d",teu[eu1][l7+n]);}
            printf(" ");
            for(n=1;n<8;n++){printf("%d",teu[eu2][l7+n]);}
            printf(" ");
            for(n=1;n<8;n++){printf("%3d",dn[m][l7+n]);}
            if(m<1){printf(" ");}
        }
        printf("\n");
    }
}
}

```

#### 4. The following lists show the recent results of my computation.

\*\* New 'Euler Squares' of Order 7 for the Simultaneous Type: \*\*  
 \*\* Both Self-complementary and Pan-diagonal; Reconstructed \*\*

##### [List 1: Euler Units]

1/	1653/	3855/	5723/	7009/	8080/	8783/	9029/	11154/	12981/
0604506	0504606	0405606	0315606	0216606	0126606	0045606	0604605	0505605	0406605
6134241	6441141	6433131	6354120	6452031	5561130	5361213	6233151	6244230	6432042
5163132	3054351	4155042	5024154	5135232	5124243	6225222	4254141	5052144	4155231
1223445	2432334	2123454	2433324	1223445	2323434	3113553	0233346	1333335	1133355
4353051	5132163	4261152	2152461	4341351	3242451	4441440	5252142	2254161	5341152
5242350	5255220	5353320	6452130	5364120	6355011	3545031	5153340	6342240	4264320
0612606	0602616	0601626	0601536	0600546	0600456	0601266	1602606	1601616	1600626
14915/	16208/	17396/	18047/	18455/	20404/	22564/	24173/	25499/	26561/
0316605	0226605	0136605	0046605	0605604	0506604	0416604	0326604	0236604	0146604
6245121	6452031	6353220	6351312	5243250	6225123	6145221	6143322	6441051	6530331
6134034	4015353	5124045	5144124	5151243	5054133	6042135	6162114	3216252	2145054
1223445	2543214	2413524	3203643	0343236	2143254	1333335	1113555	1533315	4413522
2362350	3131562	1262451	2452251	3245151	3352161	1354260	2554050	4140543	2161254
5451240	5364120	6443130	4535130	6143241	3451440	5441250	4433250	5165220	5336310
1600536	1600446	1600356	1600266	2601606	2600616	2600526	2600436	2600346	2600256
27397/	27819/	29426/	31020/	32491/	33135/	34167/	34819/	35203/	37162/
0056604	0606603	0516603	0426603	0336603	0246603	0156603	0066603	0616602	0526602
5540331	5234241	6135042	6234051	6225114	6043413	6153222	6242313	5314251	6035232
3225054	5051244	5124243	4215153	4016154	6152115	5104245	4115145	3143064	5032245
4413522	1353135	0453126	0543216	4453122	2213544	2633304	4523412	2453124	1553115
2161443	2245161	3242451	3151542	2150562	1554150	1242651	1251552	2063253	1244361
5336211	5242341	4261350	5162340	2551440	3523260	4443150	3534240	5142531	4341360
2600166	3600606	3600516	3600426	3600336	3600246	3600156	3600066	4600506	4600416
39237/	40806/	42166/	43271/	44110/	44567/	46598/	48381/	50362/	51692/
0436602	0346602	0256602	0166602	0066612	0626601	0536601	0446601	0356601	0266601
6132045	6231450	6232251	6051423	6251412	6113352	6213252	6311352	6121542	6220533
4125531	3252045	3315054	5132325	4132236	3162144	2134164	1144164	3262035	2153145
1463025	1513515	1623405	2523414	3513513	1443225	2653104	3643203	2413524	4523412
5311452	1264143	2161533	1434351	0344352	2254053	2052354	2052255	1364043	1253154
1264350	6125340	5144340	3425160	4525140	4133550	4143540	4135530	4215450	3316440
4600326	4600236	4600146	4600056	4500066	5600406	5600316	5600226	5600136	5600046

52985/	53688/	53993/	55646/	57775/	59614/	61014/	62172/	62852/	63021/
0166611	0066621	0636600	0546600	0456600	0366600	0266610	0166620	0066630	1602606
6241431	6432222	5112453	6112353	6112443	5121552	6311433	6321144	6531213	6332241
3232146	2315055	3161244	2143254	2143155	3342045	1244055	2526132	1224255	2155161
2613504	3513513	2453124	2653104	3643203	2523414	4523412	1313535	4523412	2343234
0254343	1161534	2245053	2143254	1153254	1264233	1162245	4350414	1142445	5051154
5325240	4444320	3124551	3134550	3224550	4115451	3325530	2255430	3545310	5244330
5500056	5400066	6600306	6600216	6600126	6600036	6500046	6400056	6300066	0604605
64841/	66643/	68449/	69859/	71115/	71956/	72447/	74064/	75302/	76716/
1503606	1404606	1305606	1206606	1116606	1026606	1603605	1504605	1405605	1306605
6432141	6531132	6344211	5553120	5463111	5561211	6332250	6342042	6245220	6432132
2146161	2056251	5054034	5034144	6024234	5034234	2154162	3035451	5043045	4165122
2343234	3243243	2123454	2233344	2233344	3223443	1443225	1463025	1333335	1023465
5050254	5140164	2362161	2252361	2342460	2342361	4052154	5121363	1263261	4451052
5254320	4355310	5542230	6453111	5553021	5545011	6144330	4264230	6441240	4354320
0603615	0602625	0601635	0600645	0600555	0600465	1603605	1602615	1601625	1600635
77866/	78929/	79563/	80123/	81812/	83177/	84419/	85496/	86474/	87221/
1216605	1126605	1036605	1604604	1505604	1406604	1316604	1226604	1136604	1046604
6254013	6542220	6450231	6215133	6422250	6332034	6532140	6531150	6450150	6350421
6025323	3035055	4245123	3146052	2164053	4055421	2035164	2236053	3225243	4153125
1243245	3423423	1203645	2253144	1333335	1153155	2543214	1423425	0523416	2303634
3431460	1161363	3451242	4160253	3162054	5421162	2051364	3160344	3241443	1453152
3562140	6444210	5346120	3351540	6144420	2364330	6254310	6155310	6156120	5426130
1600545	1600455	1600365	2602605	2601615	2600625	2600535	2600445	2600355	2600265
87839/	95047/	102763/	110439/	119865/	129229/	136945/	143893/	150033/	156981/
1605603	1606602	1616601	1626600	2601606	2602605	2603604	2604603	2605602	2606601
6125241	5323251	6114243	5113362	6143241	6045231	6312243	6213153	6213153	5214252
4153044	3052254	3053244	3252144	3245151	4134153	1166151	2256141	2155242	3153144
0343236	1463025	1463025	0453126	0343236	0453126	2253144	0253146	0363036	0363036
2263152	2144163	2243163	2254143	5151243	3152352	5150055	5250144	4241154	2253153
5241450	5143431	3242550	4033551	5243250	5341260	3244530	3153540	3153540	4142541
3601605	4600605	5600505	6600405	0605604	1604604	2603604	3602604	4601604	5600604
164697/	174061/	181445/	188653/	194793/	197945/	204085/	211293/	218677/	228041/
2625600	3600606	3601605	3602604	3604503	3604602	3614601	3615600	4600506	4600605
5113362	5242341	6124323	6231351	5215341	5312262	4312461	4114452	5134431	5143431
2243154	2245161	2156052	1164252	2044065	1255152	1253064	3252045	2145063	2144163
0563016	1353135	2253144	0453126	2563014	0363036	1463025	0363036	2453124	1463025
2153244	5051244	4160154	4142055	1062264	4151145	2063145	1264143	3061254	3052254
4033551	5234241	3432450	5135340	5231541	4044531	5024532	4122552	5322351	5323251
6601404	0606603	1605603	2604603	3612603	4602603	5602503	6601503	0616602	1606602
235757/	242705/	248845/	255793/	263509/	272873/	282299/	289975/	297691/	304899/
4601604	4602603	4605402	4605501	4624500	5600406	5600505	5600604	5602503	5603502
4053531	4044531	5005254	4104354	2014653	5033541	5032443	4142541	5024532	2223651
4151244	4151145	3155223	3264123	4351035	2164143	2265231	2253153	2063145	3261045
0363036	0363036	0363036	0163056	1263045	1443225	0253146	0363036	1463025	1263045
2245152	1255152	3441153	3452043	1365132	3252054	5341044	3153144	1253064	1265043
5313162	5312262	2141661	2132652	3102564	5213361	3224361	5214252	4312461	5103444
2605602	3604602	4621602	5611602	6612402	0626601	1616601	2606601	3614601	4613601
312615/	320291/	329717/	338745/	348171/	357535/	364919/	374283/	383709/	
5614401	5613510	6600306	6600405	6601404	6601503	6612402	6603411	6611520	
2015562	5004444	3124551	4033551	4033551	4122552	3102564	2214561	2123643	
4342035	1264134	2245053	2254143	2153244	1264143	1365132	2352045	2461134	
0363036	0363036	2453124	0453126	0563016	0363036	1263045	0363036	0163056	
1364232	2352045	3161244	3252144	2243154	3252045	4351035	1264134	2355024	
4011564	2222661	5112453	5113362	5113362	4114452	2014653	5012544	3203454	
5622501	6513501	0636600	1626600	2625600	3615600	4624500	5523600	6415500	

[Total Count of Euler Units = 392736]

How many! I was terribly surprised at the big count of Euler Units at first. It tells us we should have  $392736^2$  cases at most to combine any two Units to compose our whole objects and examine them for the correct solutions.

It seemed too many for me, but I tried to invent some arts and skills to help my programming and I could have successfully got all the results I have wanted.

The next list shows the final result of my recent computation.

Though I listed out only the solutions when  $n1=1$ , I counted all the standard solutions on their background and reported about them at the list end.

\*\* Simultaneous MS77: Both Self-Complementary and Pan-diagonal;

List 2: the Standard Solutions of 'Euler Squares' of Order 7 \*\*

[Euler Units: High/ Low/; Solution Counts: [n1=1] All#; Sum Errors:|Row|C|m\Pd1/Pd2|]

2/ 59017/ [1]	1# R C\P/P	4/ 31372/ [2]	5# R C\P/P
0604506 0446250 1 47 5 35 38 6 43	0 0 0 0 0	0604506 0452613 1 47 6 31 42 2 46	0 0 0 0 0
5342160 4125153 40 23 31 20 9 48 4	0 0 0 0 0	5144151 5240613 41 10 33 29 14 37 11	0 0 0 0 0
4143351 5540403 34 13 33 22 26 36 11	0 0 0 0 0	6243231 2051364 45 15 34 23 18 28 12	0 0 0 0 0
1443225 0303636 8 32 29 25 21 18 42	0 0 0 0 0	0233346 6543210 7 20 26 25 24 30 43	0 0 0 0 0
5133252 3626211 39 14 24 28 17 37 16	0 0 0 0 0	5343240 2035164 38 22 32 27 16 35 5	0 0 0 0 0
6054231 3151452 46 2 41 30 19 27 10	0 0 0 0 0	5152251 3506241 39 13 36 21 17 40 9	0 0 0 0 0
0612606 6140226 7 44 12 15 45 3 49	0 0 0 0 0	0612606 3504126 4 48 8 19 44 3 49	0 0 0 0 0
6/ 37920/ [3]	7# R C\P/P	8/ 38745/ [5]	12# R C\P/P
0604506 0562422 1 48 7 31 40 3 45	0 0 0 0 0	0604506 0533352 1 48 4 32 39 6 45	0 0 0 0 0
5243052 6012552 42 15 30 24 6 41 17	0 0 0 0 0	5422143 4416411 40 33 16 21 12 30 23	0 0 0 0 0
5134440 1453053 37 12 27 32 29 34 4	0 0 0 0 0	3055350 2250066 24 3 41 36 22 42 7	0 0 0 0 0
1353135 3603603 11 28 36 25 14 22 39	0 0 0 0 0	4253142 6413520 35 19 37 25 13 31 15	0 0 0 0 0
6222351 3163125 46 16 21 18 23 38 13	0 0 0 0 0	6131163 0066144 43 8 28 14 9 47 26	0 0 0 0 0
4163241 4114560 33 9 44 26 20 35 8	0 0 0 0 0	3254421 5520522 27 20 38 29 34 17 10	0 0 0 0 0
0612606 4424016 5 47 10 19 43 2 49	0 0 0 0 0	0612606 4133316 5 44 11 18 46 2 49	0 0 0 0 0
25/ 14421/ [9]	34# R C\P/P	39/ 16131/ [17]	56# R C\P/P
0612606 0416145 1 47 9 21 44 5 48	0 0 0 0 0	0613506 0360255 1 46 14 22 38 6 48	0 0 0 0 0
5152251 1625232 37 14 38 20 17 39 10	0 0 0 0 0	5152260 1363422 37 11 42 18 19 45 3	0 0 0 0 0
5343240 6250323 42 24 34 22 18 31 4	0 0 0 0 0	5242341 5500452 41 20 29 15 26 34 10	0 0 0 0 0
0233346 6013560 7 15 23 25 27 35 43	0 0 0 0 0	0433326 6413520 7 33 23 25 27 17 43	0 0 0 0 0
6243231 3436140 46 19 32 28 16 26 8	0 0 0 0 0	5234241 4126611 40 16 24 35 21 30 9	0 0 0 0 0
5144151 4341405 40 11 33 30 12 36 13	0 0 0 0 0	6044151 4423035 47 5 31 32 8 39 13	0 0 0 0 0
0604506 1250526 2 45 6 29 41 3 49	0 0 0 0 0	0613506 1146036 2 44 12 28 36 4 49	0 0 0 0 0
74/ 58710/ [33]	97# R C\P/P	139/ 58641/ [65]	173# R C\P/P
0615306 0454440 1 47 13 40 26 5 43	0 0 0 0 0	0631506 0444540 1 47 26 12 41 5 43	0 0 0 0 0
2432262 5403054 20 33 22 18 15 48 19	0 0 0 0 0	4044324 4503045 33 6 29 32 22 19 34	0 0 0 0 0
5032551 0516261 36 6 23 21 38 42 9	0 0 0 0 0	5114361 1626150 37 14 10 35 23 48 8	0 0 0 0 0
5463021 3533313 39 34 46 25 4 16 11	0 0 0 0 0	5463021 3133353 39 30 46 25 4 20 11	0 0 0 0 0
5114361 5040516 41 8 12 29 27 44 14	0 0 0 0 0	5032551 6150405 42 2 27 15 40 36 13	0 0 0 0 0
4044324 2163621 31 2 35 32 28 17 30	0 0 0 0 0	2432262 1263612 16 31 28 18 21 44 17	0 0 0 0 0
0631506 6222126 7 45 24 10 37 3 49	0 0 0 0 0	0615306 6212226 7 45 9 38 24 3 49	0 0 0 0 0
298/ 30908/ [129]	361# R C\P/P	579/ 60106/ [257]	778# R C\P/P
0612516 0530463 1 48 11 15 40 14 46	0 0 0 0 0	0640416 0365430 1 46 35 6 33 11 43	0 0 0 0 0
6133215 1545312 44 13 26 27 18 9 38	0 0 0 0 0	3131643 5221416 27 10 24 9 47 30 28	0 0 0 0 0
4064430 4620162 33 7 45 29 30 28 3	0 0 0 0 0	4462140 2051634 31 29 48 16 14 32 5	0 0 0 0 0
4143252 5023461 34 8 31 25 19 42 16	0 0 0 0 0	5113551 6543210 42 13 12 25 38 37 8	0 0 0 0 0
6322062 4056402 47 22 20 21 5 43 17	0 0 0 0 0	6254022 2305164 45 18 36 34 2 21 19	0 0 0 0 0
1543350 4531215 12 41 32 23 24 37 6	0 0 0 0 0	3205353 0525441 22 20 3 41 26 40 23	0 0 0 0 0
0514506 3026316 4 36 10 35 39 2 49	0 0 0 0 0	0526206 6321036 7 39 17 44 15 4 49	0 0 0 0 0
919/ 43393/ [513]	1560# R C\P/P	1834/ 30679/ [1025]	3131# R C\P/P
0642126 0166512 1 44 35 21 13 16 45	0 0 0 0 0	0523506 0524253 1 41 17 26 38 6 46	0 0 0 0 0
5014245 3224316 39 3 10 33 18 30 42	0 0 0 0 0	5044251 6126105 42 2 31 35 16 36 13	0 0 0 0 0
3135540 6415023 28 12 23 41 36 31 4	0 0 0 0 0	6434031 4061613 47 29 28 30 7 23 11	0 0 0 0 0
6633300 5023461 48 43 24 25 26 7 2	0 0 0 0 0	0213546 4323432 5 18 10 25 40 32 45	0 0 0 0 0
6211353 3461520 46 19 14 9 27 38 22	0 0 0 0 0	5362320 3505062 39 27 43 20 22 21 3	0 0 0 0 0
1242561 0532443 8 20 32 17 40 47 11	0 0 0 0 0	5142261 1650450 37 14 34 15 19 48 8	0 0 0 0 0
0454206 4510056 5 34 37 29 15 6 49	0 0 0 0 0	0613416 3142416 4 44 12 24 33 9 49	0 0 0 0 0
3838/ 13396/ [2001]	6150# R C\P/P	5978/ 62223/ [3001]	9334# R C\P/P
0522066 0414615 1 40 16 19 7 44 48	0 0 0 0 0	0355206 0156630 1 23 41 42 21 4 43	0 0 0 0 0
2435223 5346201 20 32 26 42 17 15 23	0 0 0 0 0	3142254 6432042 28 12 32 17 15 40 31	0 0 0 0 0
5350521 5023065 41 22 38 4 36 21 13	0 0 0 0 0	6104631 2515143 45 13 2 34 44 26 11	0 0 0 0 0
6103650 4343232 47 11 5 25 45 39 3	0 0 0 0 0	5643201 0413526 36 47 30 25 20 3 14	0 0 0 0 0
5416131 1063461 37 29 14 46 12 28 9	0 0 0 0 0	5302650 3251514 39 24 6 16 48 37 5	0 0 0 0 0
3441324 5640231 27 35 33 8 24 18 30	0 0 0 0 0	2144253 4264320 19 10 35 33 18 38 22	0 0 0 0 0
0064416 1502526 2 6 43 31 34 10 49	0 0 0 0 0	0641136 6300156 7 46 29 8 9 27 49	0 0 0 0 0
8106/ 54394/ [4001]	12556# R C\P/P	10140/ 35175/ [5001]	17304# R C\P/P
0136506 0615630 1 14 23 48 42 4 43	0 0 0 0 0	0640425 0064353 1 43 35 5 32 20 39	0 0 0 0 0
3551214 4532151 26 41 39 10 16 13 30	0 0 0 0 0	1252434 6442005 14 19 40 17 29 22 34	0 0 0 0 0
6024432 2240463 45 3 19 29 33 28 18	0 0 0 0 0	5311560 2215632 38 24 9 13 42 46 3	0 0 0 0 0
6143250 1463025 44 12 35 25 15 38 6	0 0 0 0 0	6363030 5513511 48 27 44 25 6 23 2	0 0 0 0 0
4322460 3026244 32 22 17 21 31 47 5	0 0 0 0 0	6015531 4301544 47 4 8 37 41 26 12	0 0 0 0 0
2545113 5154312 20 37 34 40 11 9 24	0 0 0 0 0	2324145 1664220 16 28 21 33 10 31 36	0 0 0 0 0
0610356 6301506 7 46 8 2 27 36 49	0 0 0 0 0	1426206 3132066 11 30 18 45 15 7 49	0 0 0 0 0

12208/	5590/	[6001]	23570# R C\P P	14220/	58654/	[7001]	29944# R C\P P
0513435	0432156	1 40 11 24 30 27 42	0 0 0 0	0426135	0445440	1 33 19 48 12 26 36	0 0 0 0
6225006	3265140	46 17 21 41 2 5 43	0 0 0 0	4514340	3621054	32 42 10 30 22 34 5	0 0 0 0
4155420	6410532	35 12 37 36 34 18 3	0 0 0 0	3061245	1313661	23 4 44 11 21 35 37	0 0 0 0
4033362	2503614	31 6 22 25 28 44 19	0 0 0 0	6503610	4563012	47 41 7 25 43 9 3	0 0 0 0
6421152	4316520	47 32 16 14 13 38 15	0 0 0 0	1245063	5003535	13 15 29 39 6 46 27	0 0 0 0
0661440	6251043	7 45 48 9 29 33 4	0 0 0 0	6232512	2165403	45 16 28 20 40 8 18	0 0 0 0
1323516	0154326	8 23 20 26 39 10 49	0 0 0 0	1350426	6221226	14 24 38 2 31 17 49	0 0 0 0
16068/	49595/	[8001]	36171# R C\P P	18069/	10031/	[9001]	42439# R C\P P
0335055	0462441	1 26 28 38 5 40 37	0 0 0 0	0055605	0624225	1 7 38 40 45 3 41	0 0 0 0
2446122	5035341	20 29 32 48 11 19 16	0 0 0 0	4352403	6115350	35 23 37 20 32 6 22	0 0 0 0
6110634	3612054	46 14 9 3 43 27 33	0 0 0 0	6224034	3162144	46 16 21 31 2 26 33	0 0 0 0
6523410	1603605	44 42 15 25 35 8 6	0 0 0 0	5113551	3603603	39 14 8 25 42 36 11	0 0 0 0
2306550	2164503	17 23 7 47 41 36 4	0 0 0 0	2362440	2254053	17 24 48 19 29 34 4	0 0 0 0
4450224	5231361	34 31 39 2 18 21 30	0 0 0 0	3624132	6131550	28 44 18 30 13 27 15	0 0 0 0
1161336	5224026	13 10 45 12 22 24 49	0 0 0 0	1601166	1442406	9 47 5 10 12 43 49	0 0 0 0
20151/	34613/	[10001]	48809# R C\P P	22199/	53986/	[11001]	54882# R C\P P
0630354	0154443	1 44 27 5 26 40 32	0 0 0 0	0523254	0064461	1 36 21 26 19 42 30	0 0 0 0
2156124	2653410	17 14 41 46 12 16 29	0 0 0 0	6036024	2661213	45 7 28 44 3 16 32	0 0 0 0
6501540	4310166	47 39 2 8 37 35 7	0 0 0 0	5352501	4510533	40 27 37 15 41 4 11	0 0 0 0
3243243	6413520	28 19 30 25 20 31 22	0 0 0 0	1203645	4213542	12 17 2 25 48 33 38	0 0 0 0
6215610	0056532	43 15 13 42 48 11 3	0 0 0 0	5614131	3316512	39 46 9 35 13 23 10	0 0 0 0
2450154	6523104	21 34 38 4 9 36 33	0 0 0 0	2460360	3545004	18 34 47 6 22 43 5	0 0 0 0
2136306	3222156	18 10 24 45 23 6 49	0 0 0 0	2143416	5022066	20 8 31 24 29 14 49	0 0 0 0
24429/	19441/	[12001]	61339# R C\P P	26139/	43230/	[13001]	67632# R C\P P
0365304	0606234	1 28 43 42 24 4 33	0 0 0 0	0245334	0260562	1 17 35 36 27 28 31	0 0 0 0
1240455	2615250	10 21 30 6 31 41 36	0 0 0 0	4226025	3560313	32 20 21 43 4 16 39	0 0 0 0
6212631	4150254	47 16 13 15 45 27 12	0 0 0 0	6516111	2621451	45 42 10 44 12 13 9	0 0 0 0
6453120	5333331	48 32 39 25 11 18 2	0 0 0 0	3003663	4213542	26 3 2 25 48 47 24	0 0 0 0
5304540	2146152	38 23 5 35 37 34 3	0 0 0 0	5550510	5125404	41 37 38 6 40 8 5	0 0 0 0
1126245	6141504	14 9 19 44 20 29 40	0 0 0 0	1460442	3536013	11 34 46 7 29 30 18	0 0 0 0
2631036	2340606	17 46 26 8 7 22 49	0 0 0 0	2331246	4016046	19 22 23 14 15 33 49	0 0 0 0
28754/	23043/	[14001]	73886# R C\P P	33713/	11064/	[15001]	80238# R C\P P
0602643	0452514	1 47 6 17 48 30 26	0 0 0 0	0263433	0602265	1 21 43 24 31 28 27	0 0 0 0
5533104	0361542	36 39 28 23 13 5 31	0 0 0 0	5520252	4634022	40 42 18 5 15 38 17	0 0 0 0
2162451	6400362	21 12 43 15 32 42 10	0 0 0 0	0526161	2151651	3 37 20 44 14 48 9	0 0 0 0
4053162	5353131	34 4 41 25 9 46 16	0 0 0 0	4503612	5333331	34 39 4 25 46 11 16	0 0 0 0
5124054	4036620	40 8 18 35 7 38 29	0 0 0 0	5050416	5105154	41 2 36 6 30 13 47	0 0 0 0
2653311	4215036	19 45 37 27 22 11 14	0 0 0 0	4146411	4462302	33 12 35 45 32 8 10	0 0 0 0
3204606	2514126	24 20 2 33 44 3 49	0 0 0 0	3323046	1044606	23 22 19 26 7 29 49	0 0 0 0

[Counts of Solutions: [n1=1] All# = [15316] 150552#] OK!

\*\* Calculated and Listed by Kanji Setsuda

on Mar.10 and Mar.21, 2012 with MacOSX 10.7.3 and Xcode 4.2.1 \*\*

What a hard job it was! It took more than three hours to finish.

I was extremely surprised at the small count of solutions. How few!

You might think so many when you compare to the 3456 solutions of **Complete Euler Type** of Simultaneous MS77. When  $n1=1$ , they only count 384.

But, this time I have actually examined more than 77 hundred million cases to find those correct answers. They counted as few as only 0.0002% of all.

Thus, these 150552 solutions of **Euler Type** of Simultaneous MS77 prove to be rare and precious enough to be thought as jewels, while those 3456 of **Complete Euler Type** must be treasured as the most beautiful and precious diamonds.

5. The next problem we must clarify is whether the 3456 solutions of **Complete Euler Squares** are really included in the 150552 solutions of **Euler Type** or not.

Remember our **Euler Type** is composed under the more tolerant definitions than those of **Complete Euler Type**. We only want each **Euler Unit** to have the similar structure to the whole object such as the constant sums of every row, column, pan-diagonal and of every **Self-complementary pair** in the symmetrical positions.

But, we do not care anything about the content patterns of them. They always pass, if they should simply be equal to the same constant sums.

We do not always obey the Latin Condition, but we do not reject it at all. For the Latin Condition itself is included as a part of our definitions of Euler Type.

We can guess the set of 3456 Complete Euler Squares should be included in the set of 150552 Euler Squares as a subset of the latter. We have to check the actual relation between those two sets by verifying the former is included in the latter. Let's try to pick up the C.E.S. solutions one by one out of our Euler Squares.

The next list demonstrates the individual solutions of Complete Euler Squares found and picked up out of our solution set of 150552 Euler Squares.

**\*\* Simultaneous MS77: Both Self-Complementary and Pan-diagonal:  
List of the 'Complete Euler Squares' picked up out of Euler Squares \*\***

[Euler\_Units: H/L/; So]\_Count: [CES] Euler#; Sum\_Errors: |Row|C|m\Pd1/Pd2|;]

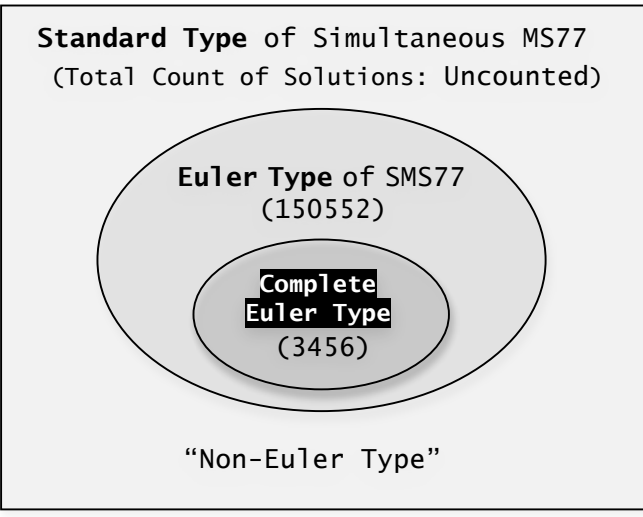
9958/ 13538/ [1]	16549# R C\P/P	9958/ 14214/ [2]	16550# R C\P/P
0614325 0432615 1 47 11 31 28 16 41 0 0 0 0	0614325 0426135 1 47 10 35 23 18 41 0 0 0 0	2506143 6135042 21 37 4 48 8 33 24 0 0 0 0	4325061 6150432 35 23 20 36 5 46 10 0 0 0 0
2506143 3261504 18 38 7 44 13 29 26 0 0 0 0	4325061 5042613 34 22 19 38 7 44 11 0 0 0 0	6143250 2613504 45 14 30 25 20 36 5 0 0 0 0	5061432 4326150 40 4 45 14 30 27 15 0 0 0 0
4325061 6150432 35 23 20 36 5 46 10 0 0 0 0	6143250 2613504 45 14 30 25 20 36 5 0 0 0 0	3250614 2615043 24 21 37 6 43 12 32 0 0 0 0	3250614 4261350 26 17 42 2 46 13 29 0 0 0 0
6143250 5043261 48 8 33 25 17 42 2 0 0 0 0	5061432 3504261 39 6 43 12 31 28 16 0 0 0 0	1432506 1504326 9 34 22 19 39 3 49 0 0 0 0	1432506 1350426 9 32 27 15 40 3 49 0 0 0 0
5061432 4326150 40 4 45 14 30 27 15 0 0 0 0	3250614 4261350 26 17 42 2 46 13 29 0 0 0 0		
3250614 2615043 24 21 37 6 43 12 32 0 0 0 0			
1432506 1504326 9 34 22 19 39 3 49 0 0 0 0			
9958/ 15686/ [3]	16553# R C\P/P	9958/ 16513/ [5]	16555# R C\P/P
0614325 0361425 1 46 14 30 26 17 41 0 0 0 0	0614325 0234615 1 45 11 33 28 16 41 0 0 0 0	2506143 3461502 18 40 7 44 13 29 24 0 0 0 0	4325061 6150234 35 23 20 36 3 46 12 0 0 0 0
2506143 4250361 19 38 6 43 11 35 23 0 0 0 0	4325061 6150234 35 23 20 36 3 46 12 0 0 0 0	6143250 5023461 48 8 31 25 19 42 2 0 0 0 0	5061432 2346150 38 4 47 14 30 27 15 0 0 0 0
4325061 3614250 32 28 16 40 3 48 8 0 0 0 0	6143250 5023461 48 8 31 25 19 42 2 0 0 0 0	3250614 5036142 27 15 39 7 44 12 31 0 0 0 0	3250614 4615023 26 21 37 6 43 10 32 0 0 0 0
6143250 2503614 45 13 29 25 21 37 5 0 0 0 0	5061432 2346150 38 4 47 14 30 27 15 0 0 0 0	1432506 1425036 9 33 24 20 36 4 49 0 0 0 0	1432506 1502346 9 34 22 17 39 5 49 0 0 0 0
5061432 6142503 42 2 47 10 34 22 18 0 0 0 0	3250614 4615023 26 21 37 6 43 10 32 0 0 0 0		
3250614 5036142 27 15 39 7 44 12 31 0 0 0 0			
1432506 1425036 9 33 24 20 36 4 49 0 0 0 0			
9958/ 24662/ [9]	16559# R C\P/P	9958/ 43628/ [17]	16570# R C\P/P
0614325 0362514 1 46 14 31 27 16 40 0 0 0 0	0614325 0156432 1 44 13 35 26 18 38 0 0 0 0	2506143 6432015 21 40 4 45 8 30 27 0 0 0 0	4325061 2015643 31 22 16 41 7 47 11 0 0 0 0
2506143 5140362 20 37 5 43 11 35 24 0 0 0 0	4325061 2015643 31 22 16 41 7 47 11 0 0 0 0	6143250 5643201 48 14 33 25 17 36 2 0 0 0 0	5061432 3201564 39 3 43 9 34 28 19 0 0 0 0
4325061 3625140 32 28 17 41 2 47 8 0 0 0 0	6143250 5643201 48 14 33 25 17 36 2 0 0 0 0	3250614 4036251 26 15 39 7 45 13 30 0 0 0 0	3250614 1564320 23 20 42 5 46 10 29 0 0 0 0
6143250 1403625 44 12 29 25 21 38 6 0 0 0 0	5061432 3201564 39 3 43 9 34 28 19 0 0 0 0	1432506 2514036 10 34 23 19 36 4 49 0 0 0 0	1432506 4320156 12 32 24 15 37 6 49 0 0 0 0
5061432 6251403 42 3 48 9 33 22 18 0 0 0 0	3250614 1564320 23 20 42 5 46 10 29 0 0 0 0		
3250614 4036251 26 15 39 7 45 13 30 0 0 0 0			
1432506 2514036 10 34 23 19 36 4 49 0 0 0 0			
9958/ 84546/ [33]	16606# R C\P/P	9958/ 164091/ [65]	16669# R C\P/P
0614325 1352604 2 46 13 31 28 15 40 0 0 0 0	0614325 2064531 3 43 14 33 27 18 37 0 0 0 0	2506143 4531206 19 41 4 44 10 29 28 0 0 0 0	4325061 1206453 30 24 15 42 5 48 11 0 0 0 0
2506143 6041352 21 36 5 44 11 34 24 0 0 0 0	4325061 1206453 30 24 15 42 5 48 11 0 0 0 0	6143250 0413526 43 12 30 25 20 38 7 0 0 0 0	6143250 6453120 49 12 34 25 16 38 1 0 0 0 0
4325061 3526041 32 27 17 42 1 47 9 0 0 0 0	6143250 6453120 49 12 34 25 16 38 1 0 0 0 0	5061432 5260413 41 3 49 8 33 23 18 0 0 0 0	5061432 3120645 39 2 45 8 35 26 20 0 0 0 0
6143250 0413526 43 12 30 25 20 38 7 0 0 0 0	5061432 3120645 39 2 45 8 35 26 20 0 0 0 0	3250614 4135260 26 16 39 6 45 14 29 0 0 0 0	3250614 0645312 22 21 40 6 46 9 31 0 0 0 0
5061432 5260413 41 3 49 8 33 23 18 0 0 0 0	3250614 0645312 22 21 40 6 46 9 31 0 0 0 0	1432506 2604135 10 35 22 19 37 4 48 0 0 0 0	1432506 5312064 13 32 23 17 36 7 47 0 0 0 0
3250614 4135260 26 16 39 6 45 14 29 0 0 0 0	1432506 5312064 13 32 23 17 36 7 47 0 0 0 0		
1432506 2604135 10 35 22 19 37 4 48 0 0 0 0			
9958/ 350824/ [129]	16802# R C\P/P	10648/ 311739/ [257]	19350# R C\P/P
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2506143 5146302 20 37 5 49 11 29 24 0 0 0 0	4506123 1432506 30 40 4 45 13 15 28 0 0 0 0	2345061 2506143 17 27 29 42 2 47 11 0 0 0 0	5061234 3250614 39 3 48 8 21 23 33 0 0 0 0
4325061 3025146 32 22 17 41 2 47 14 0 0 0 0	6123450 6143250 49 9 19 25 31 41 1 0 0 0 0	3450612 0614325 22 35 37 5 46 10 20 0 0 0 0	1234506 4325061 12 18 24 34 36 7 44 0 0 0 0
6143250 1463025 44 12 35 25 15 38 6 0 0 0 0	5061234 3250614 39 3 48 8 21 23 33 0 0 0 0		
5061432 0251463 36 3 48 9 33 28 18 0 0 0 0	3450612 0614325 22 35 37 5 46 10 20 0 0 0 0		
3250614 4630251 26 21 39 1 45 13 30 0 0 0 0	1234506 4325061 12 18 24 34 36 7 44 0 0 0 0		
1432506 2514630 10 34 23 19 42 4 43 0 0 0 0			
14214/ 232159/ [513]	29799# R C\P/P	17029/ 41913/ [1025]	39019# R C\P/P
0426135 4321065 5 32 17 44 8 28 41 0 0 0 0	0246135 0364152 1 18 35 47 9 27 38 0 0 0 0	6135024 1520364 44 13 24 36 4 21 33 0 0 0 0	5024613 3641520 39 7 19 30 48 10 22 0 0 0 0
6135042 0654321 43 14 27 40 4 31 16 0 0 0 0	6135024 1520364 44 13 24 36 4 21 33 0 0 0 0	4613502 5203641 34 45 8 25 42 5 16 0 0 0 0	3502461 6415203 28 40 2 20 31 43 11 0 0 0 0
5042613 3210654 39 3 30 15 49 13 26 0 0 0 0	5024613 3641520 39 7 19 30 48 10 22 0 0 0 0	2461350 2036415 17 29 46 14 26 37 6 0 0 0 0	1350246 4152036 12 23 41 3 15 32 49 0 0 0 0
2613504 6543210 21 48 12 25 38 2 29 0 0 0 0	4613502 5203641 34 45 8 25 42 5 16 0 0 0 0		
3504261 2106543 24 37 1 35 20 47 11 0 0 0 0	3502461 6415203 28 40 2 20 31 43 11 0 0 0 0		
4261350 5432106 34 19 46 10 23 36 7 0 0 0 0	2461350 2036415 17 29 46 14 26 37 6 0 0 0 0		
1350426 1065432 9 22 42 6 33 18 45 0 0 0 0	1350246 4152036 12 23 41 3 15 32 49 0 0 0 0		

21284/ 275398/ [1537]	52134# R C\P P	26867/ 83052/ [2049]	69512# R C\P P
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3162405 1036542 23 8 46 21 34 5 38 0 0 0 0		3562401 6415203 28 40 44 20 31 1 11 0 0 0 0	
6240531 6542103 49 20 33 3 37 22 11 0 0 0 0		6240135 0364152 43 18 35 5 9 27 38 0 0 0 0	
4053162 2103654 31 2 36 25 14 48 19 0 0 0 0		4013562 5203641 34 3 8 25 42 47 16 0 0 0 0	
5316240 3654210 39 28 13 47 17 30 1 0 0 0 0		1356240 4152036 12 23 41 45 15 32 7 0 0 0 0	
1624053 4210365 12 45 16 29 4 42 27 0 0 0 0		5624013 3641520 39 49 19 30 6 10 22 0 0 0 0	
2405316 0365421 15 32 7 41 26 10 44 0 0 0 0		2401356 2036415 17 29 4 14 26 37 48 0 0 0 0	
80998/ 310777/ [2561]	98077# R C\P P	85476/ 121671/ [3073]	113013# R C\P P
1605234 5140362 13 44 5 36 18 28 31 0 0 0 0		1352064 2531406 10 27 39 16 5 43 35 0 0 0 0	
5234160 6251403 42 17 27 30 12 43 4 0 0 0 0		0641352 3140625 4 44 33 8 28 38 20 0 0 0 0	
4160523 0362514 29 11 49 3 41 16 26 0 0 0 0		3520641 4062531 26 36 21 3 48 32 9 0 0 0 0	
0523416 1403625 2 40 15 25 35 10 48 0 0 0 0		6413520 6253140 49 31 13 25 37 19 1 0 0 0 0	
3416052 2514036 24 34 9 47 1 39 21 0 0 0 0		5206413 5314062 41 18 2 47 29 14 24 0 0 0 0	
6052341 3625140 46 7 38 20 23 33 8 0 0 0 0		4135206 1406253 30 12 22 42 17 6 46 0 0 0 0	
2341605 4036251 19 22 32 14 45 6 37 0 0 0 0		2064135 0625314 15 7 45 34 11 23 40 0 0 0 0	
87670/ 382089/ [3455]	120044# R C\P P	87670/ 382779/ [3456]	120045# R C\P P
1065234 6054321 14 1 48 40 18 24 30 0 0 0 0		1065234 6052341 14 1 48 38 18 26 30 0 0 0 0	
5234106 2160543 38 16 28 29 13 5 46 0 0 0 0		5234106 4160523 40 16 28 29 13 3 46 0 0 0 0	
4106523 4321605 33 11 3 44 42 15 27 0 0 0 0		4106523 2341605 31 11 5 44 42 15 27 0 0 0 0	
6523410 0543216 43 41 19 25 31 9 7 0 0 0 0		6523410 0523416 43 41 17 25 33 9 7 0 0 0 0	
3410652 1605432 23 35 8 6 47 39 17 0 0 0 0		3410652 1605234 23 35 8 6 45 39 19 0 0 0 0	
0652341 3216054 4 45 37 21 22 34 12 0 0 0 0		0652341 3416052 4 47 37 21 22 34 10 0 0 0 0	
2341065 5432160 20 26 32 10 2 49 36 0 0 0 0		2341065 5234160 20 24 32 12 2 49 36 0 0 0 0	

[Count of Solutions: [CES] Euler# = [3456] 150552#]  
 [OK!]

\*\* Calculated and Listed by Kanji Setsuda  
 on Mar.24, 2012 with MacOSX 10.7.3 and Xcode 4.2.1 \*\*

They prove the solution set of Complete Euler Squares is certainly included in the set of Euler Type as a subset of the latter.  
 The relation among the three sets of solutions should be illustrated as follows.



6. What do we have to think of the place of “Non-Euler Type”?  
 It should naturally be put at the most outside in the set diagram on the left as you see.  
 It has long been thought to be placed simply to the outside of the set of C.E.S. Type. But now that we know the existence of those Euler Squares as many as 150552, we should put the “Non-Euler Type” on the most outside.  
 But, what do we have to think of the concept of Non-Euler Types?

I think it is natural to define that they don’t perfectly have those “similar structures” between their Euler Units and the whole objects themselves.

Let me show you some examples of Non-Euler Type as follows. I listed out the composition of objects by our ordinary method and put the Decomposed Units with their precise check-sums. This list includes our Euler Type in it.

\*\* Simultaneous Magic Squares 7x7: Both Self-Complementary and Pan-Diagonal; \*\*  
 \*\* List of Standard Solutions with Decomposed Units by /D7i \*\*

[Counts: [Euler] All#; /D7i: H(igh), L(ow); Check Sums: |Row|C1m\Pd1/Pd2|]

		1# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	6 27 46 9 38	175 175 175 175	0 6 0 3 6 1 5	21 22 21 20	0 5 5 5 3 1 2	21 14 21 28
47	5	34 39 17 19 14	175 175 175 175	6 0 4 5 2 2 1	20 21 20 20	4 4 5 3 2 4 6	28 21 28 28
43	8	37 15 18 30 24	175 175 175 175	6 1 5 2 2 4 3	23 21 20 21	0 0 1 0 3 1 2	7 21 28 21
10	22	29 25 21 28 40	175 175 175 175	1 3 4 3 2 3 5	21 21 21 21	2 0 0 3 6 6 4	21 21 21 21
26	20	32 35 13 42 7	175 175 175 175	3 2 4 4 1 5 0	19 21 21 22	4 5 3 6 5 6 6	35 21 21 14
36	31	33 11 16 45 3	175 175 175 175	5 4 4 1 2 6 0	22 21 22 22	0 2 4 3 1 2 2	14 21 14 14
12	41	4 23 44 2 49	175 175 175 175	1 5 0 3 6 0 6	21 20 22 21	4 5 3 1 1 1 6	21 28 14 21

		2# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	6 31 42 10 37	175 175 175 175	0 6 0 4 5 1 5	21 21 21 22	0 5 5 2 6 2 1	21 21 21 14
47	5	35 32 12 28 16	175 175 175 175	6 0 4 4 1 3 2	20 21 19 21	4 4 6 3 4 6 1	28 21 35 21
43	9	39 14 30 23 17	175 175 175 175	6 1 5 1 4 3 2	22 21 20 21	0 1 3 6 1 1 2	14 21 28 21
4	24	29 25 21 26 46	175 175 175 175	0 3 4 3 2 3 6	21 21 22 21	3 2 0 3 6 4 3	21 21 14 21
33	27	20 36 11 41 7	175 175 175 175	4 3 2 5 1 5 0	20 21 20 21	4 5 5 0 3 5 6	28 21 28 21
34	22	38 18 15 45 3	175 175 175 175	4 3 5 2 2 6 0	22 21 22 20	5 0 2 3 0 2 2	14 21 14 28
13	40	8 19 44 2 49	175 175 175 175	1 5 1 2 6 0 6	21 21 23 21	5 4 0 4 1 1 6	21 21 7 21

		3# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	6 35 39 12 34	175 175 175 175	0 6 0 4 5 1 4	20 22 21 21	0 5 5 6 3 4 5	28 14 21 21
47	5	32 40 9 29 13	175 175 175 175	6 0 4 5 1 4 1	21 21 20 21	4 4 3 4 1 0 5	21 21 28 21
43	8	33 14 28 26 23	175 175 175 175	6 1 4 1 3 3 3	21 21 20 21	0 0 4 6 6 4 1	21 21 28 21
4	31	30 25 20 19 46	175 175 175 175	0 4 4 3 2 2 6	21 21 20 21	3 2 1 3 5 4 3	21 21 28 21
27	24	22 36 17 42 7	175 175 175 175	3 3 3 5 2 5 0	21 21 22 21	5 2 0 0 2 6 6	21 21 14 21
37	21	41 10 18 45 3	175 175 175 175	5 2 5 1 2 6 0	21 21 22 21	1 6 5 2 3 2 2	21 21 14 21
16	38	11 15 44 2 49	175 175 175 175	2 5 1 2 6 0 6	22 20 22 21	1 2 3 0 1 1 6	14 28 14 21

		4# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 20 41 14 44	175 175 175 175	0 6 0 2 5 1 6	20 21 21 21	0 5 6 5 5 6 1	28 21 21 21
47	5	34 40 11 26 12	175 175 175 175	6 0 4 5 1 3 1	20 21 21 21	4 4 5 4 3 4 4	28 21 21 21
42	21	33 23 15 28 13	175 175 175 175	5 2 4 3 2 3 1	20 20 22 21	6 6 4 1 0 6 5	28 28 14 21
4	19	18 25 32 31 46	175 175 175 175	0 2 2 3 4 4 6	21 21 21 21	3 4 3 3 2 3 2	21 21 21 21
37	22	35 27 17 29 8	175 175 175 175	5 3 4 3 2 4 1	22 22 21 21	1 0 6 5 2 0 0	14 14 21 21
38	24	39 10 16 45 3	175 175 175 175	5 3 5 1 2 6 0	22 21 20 21	2 2 3 2 1 2 2	14 21 28 21
6	36	9 30 43 2 49	175 175 175 175	0 5 1 4 6 0 6	22 21 21 21	5 0 1 1 0 1 6	14 21 21 21

		5# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 28 40 13 38	175 175 175 175	0 6 0 3 5 1 5	20 21 21 22	0 5 6 6 4 5 2	28 21 21 14
47	5	31 35 4 23 30	175 175 175 175	6 0 4 4 0 3 4	21 21 21 21	4 4 2 6 3 1 1	21 21 21 21
42	11	33 26 36 21 6	175 175 175 175	5 1 4 3 5 2 0	20 20 21 20	6 3 4 4 0 6 5	28 28 21 28
9	18	34 25 16 32 41	175 175 175 175	1 2 4 3 2 4 5	21 21 20 22	1 3 5 3 1 3 5	21 21 28 14
44	29	14 24 17 39 8	175 175 175 175	6 4 1 3 2 5 1	22 22 22 21	1 0 6 2 2 3 0	14 14 14 21
20	27	46 15 19 45 3	175 175 175 175	2 3 6 2 2 6 0	21 21 21 20	5 5 3 0 4 2 2	21 21 21 28
12	37	10 22 43 2 49	175 175 175 175	1 5 1 3 6 0 6	22 21 21 21	4 1 2 0 0 1 6	14 21 21 21

		6# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 36 38 19 26	175 175 175 175	0 6 0 5 5 2 3	21 21 21 23	0 5 6 0 2 4 4	21 21 21 7
47	5	20 46 6 18 33	175 175 175 175	6 0 2 6 0 2 4	20 20 21 21	4 4 5 3 5 3 4	28 28 21 21
42	13	41 21 27 15 16	175 175 175 175	5 1 5 2 3 2 2	20 20 21 20	6 5 5 6 5 0 1	28 28 21 28
10	11	28 25 22 39 40	175 175 175 175	1 1 3 3 3 5 5	21 21 21 22	2 3 6 3 0 3 4	21 21 21 14
34	35	23 29 9 37 8	175 175 175 175	4 4 3 4 1 5 1	22 22 21 21	5 6 1 0 1 1 0	14 14 21 21
17	32	44 4 30 45 3	175 175 175 175	2 4 6 0 4 6 0	22 22 21 19	2 3 1 3 1 2 2	14 14 21 35
24	31	12 14 43 2 49	175 175 175 175	3 4 1 1 6 0 6	21 21 21 21	2 2 4 6 0 1 6	21 21 21 21

		7# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 28 33 27 31	175 175 175 175	0 6 0 3 4 3 4	20 21 21 23	0 5 6 6 4 5 2	28 21 21 7
47	5	30 44 4 16 29	175 175 175 175	6 0 4 6 0 2 4	22 20 21 20	4 4 1 1 3 1 0	14 28 21 28
42	12	39 13 40 15 14	175 175 175 175	5 1 5 1 5 2 1	20 21 21 20	6 4 3 5 4 0 6	28 21 21 28
9	18	26 25 24 32 41	175 175 175 175	1 2 3 3 3 4 5	21 21 21 22	1 3 4 3 2 3 5	21 21 21 14
36	35	10 37 11 38 8	175 175 175 175	5 4 1 5 1 5 1	22 21 21 22	0 6 2 1 3 2 0	14 21 21 14
21	34	46 6 20 45 3	175 175 175 175	2 4 6 0 2 6 0	20 22 21 19	6 5 3 5 5 2 2	28 14 21 35
19	23	17 22 43 2 49	175 175 175 175	2 3 2 3 6 0 6	22 21 21 21	4 1 2 0 0 1 6	14 21 21 21

		8# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 38 29 16 36	175 175 175 175	0 6 0 5 4 2 5	22 20 21 22	0 5 6 2 0 1 0	14 28 21 14
47	5	26 39 4 31 23	175 175 175 175	6 0 3 5 0 4 3	21 20 21 20	4 4 4 3 3 2 1	21 28 21 28
42	6	37 18 40 17 15	175 175 175 175	5 0 5 2 5 2 2	21 20 20 20	6 5 1 3 4 2 0	21 28 28 28
9	30	28 25 22 20 41	175 175 175 175	1 4 3 3 3 2 5	21 21 20 22	1 1 6 3 0 5 5	21 21 28 14
35	33	10 32 13 44 8	175 175 175 175	4 4 1 4 1 6 1	21 22 22 22	6 4 2 3 5 1 0	21 14 14 14
27	19	46 11 24 45 3	175 175 175 175	3 2 6 1 3 6 0	21 22 22 20	5 4 3 3 2 2 2	21 14 14 28
14	34	21 12 43 2 49	175 175 175 175	1 4 2 1 6 0 6	20 22 21 21	6 5 6 4 0 1 6	28 14 21 21

		9# Row C1m\Pd1/Pd2	/D7i:	H Rw C1\P1/P2	L Rw C1\P1/P2		
1	48	7 37 24 18 40	175 175 175 175	0 6 0 5 3 2 5	21 22 21 21	0 5 6 1 2 3 4	21 14 21 21



47 5 21 44 4 34 20	175 175 175 175	6 0 2 6 0 4 2	20 20 21 20	4 4 6 1 3 5 5	28 28 21 28
42 12 39 22 31 15 14	175 175 175 175	5 1 5 3 4 2 1	21 20 22 20	6 4 3 0 2 0 6	21 28 14 28
9 27 17 25 33 23 41	175 175 175 175	1 3 2 3 4 3 5	21 21 22 22	1 5 2 3 4 1 5	21 21 14 14
36 35 19 28 11 38 8	175 175 175 175	5 4 2 3 1 5 1	21 22 20 22	0 6 4 6 3 2 0	21 14 28 14
30 16 46 6 29 45 3	175 175 175 175	4 2 6 0 4 6 0	22 22 20 21	1 1 3 5 0 2 2	14 14 28 21
10 32 26 13 43 2 49	175 175 175 175	1 4 3 1 6 0 6	21 20 21 21	2 3 4 5 0 1 6	21 28 21 21
	10# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 8 19 44 16 39	175 175 175 175	0 6 1 2 6 2 5	22 21 21 22	0 5 0 4 1 1 3	14 21 21 14
47 5 43 32 14 22 12	175 175 175 175	6 0 6 4 1 3 1	21 19 22 21	4 4 0 3 6 0 4	21 35 14 21
41 13 35 10 30 29 17	175 175 175 175	5 1 4 1 4 4 2	21 21 22 21	5 5 6 2 1 0 2	21 21 14 21
4 26 27 25 23 24 46	175 175 175 175	0 3 3 3 3 3 6	21 21 20 21	3 4 5 3 1 2 3	21 21 28 21
33 21 20 40 15 37 9	175 175 175 175	4 2 2 5 2 5 1	21 21 22 21	4 6 5 4 0 1 1	21 21 14 21
38 28 36 18 7 45 3	175 175 175 175	5 3 5 2 0 6 0	21 23 20 20	2 6 0 3 6 2 2	21 7 28 28
11 34 6 31 42 2 49	175 175 175 175	1 4 0 4 5 0 6	20 21 20 21	3 5 5 2 6 1 6	28 21 28 21
. . . . .					
	27# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 11 30 37 7 41	175 175 175 175	0 6 1 4 5 0 5	21 21 21 23	0 5 3 1 1 6 5	21 21 21 7
47 5 26 36 4 28 29	175 175 175 175	6 0 3 5 0 3 4	21 21 21 20	4 4 4 0 3 6 0	21 21 21 28
38 6 23 35 34 31 8	175 175 175 175	5 0 3 4 4 4 1	21 21 21 21	2 5 1 6 5 2 0	21 21 21 21
17 32 40 25 10 18 33	175 175 175 175	2 4 5 3 1 2 4	21 21 21 21	2 3 4 3 2 3 4	21 21 21 21
42 19 16 15 27 44 12	175 175 175 175	5 2 2 2 3 6 1	21 21 21 22	6 4 1 0 5 1 4	21 21 21 14
21 22 46 14 24 45 3	175 175 175 175	2 3 6 1 3 6 0	21 21 21 19	6 0 3 6 2 2 2	21 21 21 35
9 43 13 20 39 2 49	175 175 175 175	1 6 1 2 5 0 6	21 21 21 21	1 0 5 5 3 1 6	21 21 21 21
	54# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 15 26 46 12 27	175 175 175 175	0 6 2 3 6 1 3	21 21 21 21	0 5 0 4 3 4 5	21 21 21 21
47 5 37 30 10 28 18	175 175 175 175	6 0 5 4 1 3 2	21 21 21 21	4 4 1 1 2 6 3	21 21 21 21
34 9 21 17 36 39 19	175 175 175 175	4 1 2 2 5 2	21 21 23 21	5 1 6 2 0 3 4	21 21 7 21
7 42 44 25 6 8 43	175 175 175 175	0 5 6 3 0 1 6	21 21 22 21	6 6 1 3 5 0 0	21 21 14 21
31 11 14 33 29 41 16	175 175 175 175	4 1 1 4 4 5 2	21 21 20 21	2 3 6 4 0 5 1	21 21 28 21
32 22 40 20 13 45 3	175 175 175 175	4 3 5 2 1 6 0	21 21 19 21	3 0 4 5 5 2 2	21 21 35 21
23 38 4 24 35 2 49	175 175 175 175	3 5 0 3 4 0 6	21 21 21 21	1 2 3 2 6 1 6	21 21 21 21
[ 1 ]	63# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 15 14 26 29 42	175 175 175 175	0 6 2 1 3 4 5	21 21 21 21	0 5 0 6 4 0 6	21 21 21 21
47 5 37 27 10 32 17	175 175 175 175	6 0 5 3 1 4 2	21 21 21 21	4 4 1 5 2 3 2	21 21 21 21
34 22 41 12 43 19 4	175 175 175 175	4 3 5 1 6 2 0	21 21 21 21	5 0 5 4 0 4 3	21 21 21 21
6 30 11 25 39 20 44	175 175 175 175	0 4 1 3 5 2 6	21 21 21 21	5 1 3 3 3 5 1	21 21 21 21
46 31 7 38 9 28 16	175 175 175 175	6 4 0 5 1 3 2	21 21 21 21	3 2 6 2 1 6 1	21 21 21 21
33 18 40 23 13 45 3	175 175 175 175	4 2 5 3 1 6 0	21 21 21 21	4 3 4 1 5 2 2	21 21 21 21
8 21 24 36 35 2 49	175 175 175 175	1 2 3 5 4 0 6	21 21 21 21	0 6 2 0 6 1 6	21 21 21 21
	72# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 17 15 46 14 34	175 175 175 175	0 6 2 2 6 1 4	21 22 21 22	0 5 2 0 3 6 5	21 14 21 14
47 5 28 42 7 26 20	175 175 175 175	6 0 3 5 0 3 2	19 21 21 21	4 4 6 6 4 5 35	21 21 21
32 27 13 38 11 44 10	175 175 175 175	4 3 1 5 1 6 1	21 21 21 21	3 5 5 2 3 1 2	21 21 21 21
9 29 31 25 19 21 41	175 175 175 175	1 4 4 3 2 2 5	21 21 21 21	1 0 2 3 4 6 5	21 21 21 21
40 6 39 12 37 23 18	175 175 175 175	5 0 5 1 5 3 2	21 21 21 21	4 5 3 4 1 1 3	21 21 21 21
30 24 43 8 22 45 3	175 175 175 175	4 3 6 1 3 6 0	23 21 21 20	1 2 0 0 0 2 2	7 21 21 28
16 36 4 35 33 2 49	175 175 175 175	2 5 0 4 4 0 6	21 20 21 21	1 0 3 6 4 1 6	21 28 21 21
	93# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 20 17 43 11 35	175 175 175 175	0 6 2 2 6 1 4	21 22 21 21	0 5 5 2 0 3 6	21 14 21 21
47 5 38 10 22 26 27	175 175 175 175	6 0 5 1 3 3 3	21 20 21 21	4 4 2 2 0 4 5	21 28 21 21
29 6 41 14 46 31 8	175 175 175 175	4 0 5 1 6 4 1	21 20 21 21	0 5 5 6 3 2 0	21 28 21 21
18 34 37 25 13 16 32	175 175 175 175	2 4 5 3 1 2 4	21 21 21 21	3 5 1 3 5 1 3	21 21 21 21
42 19 4 36 9 44 21	175 175 175 175	5 2 0 5 1 6 2	21 22 21 21	6 4 3 0 1 1 6	21 14 21 21
23 24 28 40 12 45 3	175 175 175 175	3 3 3 5 1 6 0	21 22 21 21	1 2 6 4 4 2 2	21 14 21 21
15 39 7 33 30 2 49	175 175 175 175	2 5 0 4 4 0 6	21 20 21 21	0 3 6 4 1 1 6	21 28 21 21
	143# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 31 7 30 12 46	175 175 175 175	0 6 4 0 4 1 6	21 21 21 21	0 5 2 6 1 4 3	21 21 21 21
47 5 15 23 29 34 22	175 175 175 175	6 0 2 3 4 4 3	22 22 21 19	4 4 0 1 0 5 0	14 14 21 35
18 24 37 39 9 42 6	175 175 175 175	2 3 5 5 1 5 0	21 21 21 21	3 2 1 3 1 6 5	21 21 21 21
33 36 10 25 40 14 17	175 175 175 175	4 5 1 3 5 1 2	21 21 21 21	4 0 2 3 4 6 2	21 21 21 21
44 8 41 11 13 26 32	175 175 175 175	6 1 5 1 1 3 4	21 21 21 23	1 0 5 3 5 4 3	21 21 21 7
28 16 21 27 35 45 3	175 175 175 175	3 2 2 3 4 6 0	20 20 21 21	6 1 6 5 6 2 2	28 28 21 21
4 38 20 43 19 2 49	175 175 175 175	0 5 2 6 2 0 6	21 21 21 21	3 2 5 0 4 1 6	21 21 21 21
	158# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 37 10 19 26 34	175 175 175 175	0 6 5 1 2 3 4	21 21 21 22	0 5 1 2 4 4 5	21 21 21 14
47 5 4 33 30 27 29	175 175 175 175	6 0 0 4 4 3 4	21 21 21 22	4 4 3 4 1 5 0	21 21 21 14
12 22 41 32 14 39 15	175 175 175 175	1 3 5 4 1 5 2	21 21 21 20	4 0 5 3 6 3 0	21 21 21 28
43 42 6 25 44 8 7	175 175 175 175	6 5 0 3 6 1 0	21 21 21 22	0 6 5 3 1 0 6	21 21 21 14

35 11 36 18 9 28 38	175 175 175 175	4 1 5 2 1 3 5	21 21 21 20	6 3 0 3 1 6 2	21 21 21 28
21 23 20 17 46 45 3	175 175 175 175	2 3 2 2 6 6 0	21 21 21 20	6 1 5 2 3 2 2	21 21 21 28
16 24 31 40 13 2 49	175 175 175 175	2 3 4 5 1 0 6	21 21 21 21	1 2 2 4 5 1 6	21 21 21 21
	190# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 10 13 46 26 31	175 175 175 175	0 6 1 1 6 3 4	21 21 21 21	0 5 2 5 3 4 2	21 21 21 21
47 6 43 39 15 8 17	175 175 175 175	6 0 6 5 2 1 2	22 20 21 21	4 5 0 3 0 0 2	14 28 21 21
38 14 34 5 30 32 22	175 175 175 175	5 1 4 0 4 4 3	21 21 21 21	2 6 5 4 1 3 0	21 21 21 21
9 23 29 25 21 27 41	175 175 175 175	1 3 4 3 2 3 5	21 21 20 21	1 1 0 3 6 5 5	21 21 28 21
28 18 20 45 16 36 12	175 175 175 175	3 2 2 6 2 5 1	21 21 22 21	6 3 5 2 1 0 4	21 21 14 21
33 42 35 11 7 44 3	175 175 175 175	4 5 4 1 0 6 0	20 22 21 21	4 6 6 3 6 1 2	28 14 21 21
19 24 4 37 40 2 49	175 175 175 175	2 3 0 5 5 0 6	21 21 21 21	4 2 3 1 4 1 6	21 21 21 21
[ 2]	196# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 11 26 41 5 43	175 175 175 175	0 6 1 3 5 0 6	21 21 21 21	0 5 3 4 5 4 0	21 21 21 21
47 6 29 33 22 34 4	175 175 175 175	6 0 4 4 3 4 0	21 21 21 21	4 5 0 4 0 5 3	21 21 21 21
37 14 38 20 8 35 23	175 175 175 175	5 1 5 2 1 4 3	21 21 21 21	1 6 2 5 0 6 1	21 21 21 21
10 31 18 25 32 19 40	175 175 175 175	1 4 2 3 4 2 5	21 21 21 21	2 2 3 3 3 4 4	21 21 21 21
27 15 42 30 12 36 13	175 175 175 175	3 2 5 4 1 5 1	21 21 21 21	5 0 6 1 4 0 5	21 21 21 21
46 16 28 17 21 44 3	175 175 175 175	6 2 3 2 2 6 0	21 21 21 21	3 1 6 2 6 1 2	21 21 21 21
7 45 9 24 39 2 49	175 175 175 175	0 6 1 3 5 0 6	21 21 21 21	6 2 1 2 3 1 6	21 21 21 21
[ 3]	197# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 11 22 41 7 45	175 175 175 175	0 6 1 3 5 0 6	21 21 21 21	0 5 3 0 5 6 2	21 21 21 21
47 6 31 33 24 30 4	175 175 175 175	6 0 4 4 3 4 0	21 21 21 21	4 5 2 4 2 1 3	21 21 21 21
37 14 40 18 8 35 23	175 175 175 175	5 1 5 2 1 4 3	21 21 21 21	1 6 4 3 0 6 1	21 21 21 21
12 29 16 25 34 21 38	175 175 175 175	1 4 2 3 4 2 5	21 21 21 21	4 0 1 3 5 6 2	21 21 21 21
27 15 42 32 10 36 13	175 175 175 175	3 2 5 4 1 5 1	21 21 21 21	5 0 6 3 2 0 5	21 21 21 21
46 20 26 17 19 44 3	175 175 175 175	6 2 3 2 2 6 0	21 21 21 21	3 5 4 2 4 1 2	21 21 21 21
5 43 9 28 39 2 49	175 175 175 175	0 6 1 3 5 0 6	21 21 21 21	4 0 1 6 3 1 6	21 21 21 21
	201# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 13 27 46 8 32	175 175 175 175	0 6 1 3 6 1 4	21 20 21 21	0 5 5 5 3 0 3	21 28 21 21
47 6 31 40 16 24 11	175 175 175 175	6 0 4 5 2 3 1	21 19 21 21	4 5 2 4 1 2 3	21 35 21 21
35 7 22 20 17 45 29	175 175 175 175	4 0 3 2 2 6 4	21 21 21 21	6 6 0 5 2 2 0	21 21 21 21
14 41 38 25 12 9 36	175 175 175 175	1 5 5 3 1 1 5	21 21 21 21	6 5 2 3 4 1 0	21 21 21 21
21 5 33 30 28 43 15	175 175 175 175	2 0 4 4 3 6 2	21 21 21 21	6 4 4 1 6 0 0	21 21 21 21
39 26 34 10 19 44 3	175 175 175 175	5 3 4 1 2 6 0	21 23 21 21	3 4 5 2 4 1 2	21 7 21 21
18 42 4 23 37 2 49	175 175 175 175	2 5 0 3 5 0 6	21 22 21 21	3 6 3 1 1 1 6	21 14 21 21
	231# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 15 26 28 23 34	175 175 175 175	0 6 2 3 3 3 4	21 21 21 21	0 5 0 4 6 1 5	21 21 21 21
47 6 9 46 7 29 31	175 175 175 175	6 0 1 6 0 4 4	21 20 21 21	4 5 1 3 6 0 2	21 28 21 21
33 30 40 37 12 18 5	175 175 175 175	4 4 5 5 1 2 0	21 23 21 21	4 1 4 1 4 3 4	21 7 21 21
14 11 8 25 42 39 36	175 175 175 175	1 1 1 3 5 5 5	21 21 21 21	6 3 0 3 6 3 0	21 21 21 21
45 32 38 13 10 20 17	175 175 175 175	6 4 5 1 1 2 2	21 19 21 21	2 3 2 5 2 5 2	21 35 21 21
19 21 43 4 41 44 3	175 175 175 175	2 2 6 0 5 6 0	21 22 21 21	4 6 0 3 5 1 2	21 14 21 21
16 27 22 24 35 2 49	175 175 175 175	2 3 3 3 4 0 6	21 21 21 21	1 5 0 2 6 1 6	21 21 21 21
[ 4]	233# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 15 38 26 13 34	175 175 175 175	0 6 2 5 3 1 4	21 21 21 21	0 5 0 2 4 5 5	21 21 21 21
47 6 5 41 10 23 43	175 175 175 175	6 0 0 5 1 3 6	21 21 21 21	4 5 4 5 2 1 0	21 21 21 21
33 4 42 36 30 19 11	175 175 175 175	4 0 5 5 4 2 1	21 21 21 21	4 3 6 0 1 4 3	21 21 21 21
32 22 29 25 21 28 18	175 175 175 175	4 3 4 3 2 3 2	21 21 21 21	3 0 0 3 6 6 3	21 21 21 21
39 31 20 14 8 46 17	175 175 175 175	5 4 2 1 1 6 2	21 21 21 21	3 2 5 6 0 3 2	21 21 21 21
7 27 40 9 45 44 3	175 175 175 175	0 3 5 1 6 6 0	21 21 21 21	6 5 4 1 2 1 2	21 21 21 21
16 37 24 12 35 2 49	175 175 175 175	2 5 3 1 4 0 6	21 21 21 21	1 1 2 4 6 1 6	21 21 21 21
	237# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 16 40 26 5 39	175 175 175 175	0 6 2 5 3 0 5	21 21 21 21	0 5 1 4 4 4 3	21 21 21 21
47 6 4 43 17 37 21	175 175 175 175	6 0 0 6 2 5 2	21 20 21 21	4 5 3 0 2 1 6	21 28 21 21
32 8 38 36 9 30 22	175 175 175 175	4 1 5 5 1 4 3	23 21 23 21	3 0 2 0 1 1 0	7 21 7 21
27 35 19 25 31 15 23	175 175 175 175	3 4 2 3 4 2 3	21 21 21 21	5 6 4 3 2 0 1	21 21 21 21
28 20 41 14 12 42 18	175 175 175 175	3 2 5 1 1 5 2	19 21 21 21	6 5 5 6 4 6 3	35 21 21 21
29 13 33 7 46 44 3	175 175 175 175	4 1 4 0 6 6 0	21 22 19 21	0 5 4 6 3 1 2	21 14 35 21
11 45 24 10 34 2 49	175 175 175 175	1 6 3 1 4 0 6	21 21 21 21	3 2 2 2 5 1 6	21 21 21 21
	259# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2		L Rw Cl\P1/P2
1 48 21 16 40 12 37	175 175 175 175	0 6 2 2 5 1 5	21 21 21 21	0 5 6 1 4 4 1	21 21 21 21
47 6 30 19 26 43 4	175 175 175 175	6 0 4 2 3 6 0	21 20 21 21	4 5 1 4 4 0 3	21 28 21 21
27 28 42 18 11 35 14	175 175 175 175	3 3 5 2 1 4 1	19 21 21 20	5 6 6 3 3 6 6	35 21 21 28
5 33 9 25 41 17 45	175 175 175 175	0 4 1 3 5 2 6	21 21 21 22	4 4 1 3 5 2 2	21 21 21 14
36 15 39 32 8 22 23	175 175 175 175	5 2 5 4 1 3 3	23 21 21 21	0 0 3 3 0 0 2	7 21 21 21
46 7 24 31 20 44 3	175 175 175 175	6 0 3 4 2 6 0	21 22 21 21	3 6 2 2 5 1 2	21 14 21 21
13 38 10 34 29 2 49	175 175 175 175	1 5 1 4 4 0 6	21 21 21 21	5 2 2 5 0 1 6	21 21 21 21

264#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	22	10	46	11	37	175	175	175	175	0	6	3	1	6	1	5	22	21	21	21	0	5	0	2	3	3	1	14	21	21	21
47	6	33	20	29	35	5	175	175	175	175	6	0	4	2	4	0	20	21	21	21	4	5	4	5	0	6	4	28	21	21	21	
26	27	38	19	7	42	16	175	175	175	175	3	3	5	2	0	5	20	21	21	21	4	5	2	4	6	6	1	28	21	21	21	
9	32	14	25	36	18	41	175	175	175	175	1	4	1	3	5	2	5	21	21	21	21	1	3	6	3	0	3	5	21	21	21	
34	8	43	31	12	23	24	175	175	175	175	4	1	6	4	1	3	3	22	21	21	21	5	0	0	2	4	1	2	14	21	21	21
45	15	21	30	17	44	3	175	175	175	175	6	2	2	4	2	6	0	22	21	21	21	2	0	6	1	2	1	2	14	21	21	21
13	39	4	40	28	2	49	175	175	175	175	1	5	0	5	3	0	6	20	21	21	21	5	3	3	4	6	1	6	28	21	21	21
267#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	26	12	36	21	31	175	175	175	175	0	6	3	1	5	2	4	21	21	21	21	0	5	4	4	0	6	2	21	21	21	21
47	6	15	40	37	7	23	175	175	175	175	6	0	2	5	5	0	3	21	22	21	20	4	5	0	4	1	6	1	21	14	21	28
22	11	46	17	5	42	32	175	175	175	175	3	1	6	2	0	5	4	21	21	20	21	0	3	3	2	4	6	3	21	21	28	21
41	30	16	25	34	20	9	175	175	175	175	5	4	2	3	4	2	1	21	21	21	21	5	1	1	3	5	5	1	21	21	21	21
18	8	45	33	4	39	28	175	175	175	175	2	1	6	4	0	5	3	21	21	21	22	3	0	2	4	3	3	6	21	21	21	14
27	43	13	10	35	44	3	175	175	175	175	3	6	1	1	4	6	0	21	20	22	21	5	0	5	2	6	1	2	21	28	14	21
19	29	14	38	24	2	49	175	175	175	175	2	4	1	5	3	0	6	21	21	21	21	4	0	6	2	2	1	6	21	21	21	21
303#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	35	10	24	19	38	175	175	175	175	0	6	4	1	3	2	5	21	20	21	21	0	5	6	2	2	4	2	21	28	21	21
47	6	14	18	30	43	17	175	175	175	175	6	0	1	2	4	6	2	21	20	21	21	4	5	6	3	1	0	2	21	28	21	21
13	27	42	29	16	39	9	175	175	175	175	1	3	5	4	2	5	1	21	19	21	21	5	5	6	0	1	3	1	21	35	21	21
28	45	4	25	46	5	22	175	175	175	175	3	6	0	3	6	0	3	21	21	21	21	6	2	3	3	4	0	21	21	21	21	
41	11	34	21	8	23	37	175	175	175	175	5	1	4	2	1	3	5	21	21	23	21	5	3	5	6	0	1	1	21	7	21	21
33	7	20	32	36	44	3	175	175	175	175	4	0	2	4	5	6	0	21	22	21	21	4	6	5	3	0	1	2	21	14	21	21
12	31	26	40	15	2	49	175	175	175	175	1	4	3	5	2	0	6	21	22	21	21	4	2	4	4	0	1	6	21	14	21	21
321#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	9	22	32	23	40	175	175	175	175	0	6	1	3	4	3	5	22	21	21	21	0	5	1	0	3	1	4	14	21	21	21
47	7	36	44	16	21	4	175	175	175	175	6	0	5	6	2	2	0	21	21	21	21	4	6	0	1	1	6	3	21	21	21	21
38	8	35	5	26	33	30	175	175	175	175	5	1	4	0	3	4	4	21	21	21	20	2	0	6	4	4	4	1	21	21	21	28
13	39	19	25	31	11	37	175	175	175	175	1	5	2	3	4	1	5	21	21	22	22	5	3	4	3	2	3	1	21	21	14	14
20	17	24	45	15	42	12	175	175	175	175	2	2	3	6	2	5	1	21	21	20	21	5	2	2	2	0	6	4	21	21	28	21
46	29	34	6	14	43	3	175	175	175	175	6	4	4	0	1	6	0	21	21	21	21	3	0	5	5	6	0	2	21	21	21	21
10	27	18	28	41	2	49	175	175	175	175	1	3	2	3	5	0	6	20	21	21	21	2	5	3	6	5	1	6	28	21	21	21
331#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	10	34	28	8	46	175	175	175	175	0	6	1	4	3	1	6	21	22	21	21	0	5	2	5	6	0	3	21	14	21	21
47	7	24	36	5	39	17	175	175	175	175	6	0	3	5	0	5	2	21	19	21	21	4	6	2	0	4	3	2	21	35	21	21
37	6	27	31	32	30	12	175	175	175	175	5	0	3	4	4	4	1	21	22	21	21	1	5	5	2	3	1	4	21	14	21	21
15	41	29	25	31	9	35	175	175	175	175	2	5	4	3	2	1	4	21	21	21	21	0	5	0	3	6	1	6	21	21	21	21
38	20	18	19	23	44	13	175	175	175	175	5	2	2	2	3	6	1	21	20	21	21	2	5	3	4	1	1	5	21	28	21	21
33	11	45	14	26	43	3	175	175	175	175	4	1	6	1	3	6	0	21	23	21	21	4	3	2	6	4	0	2	21	7	21	21
4	42	22	16	40	2	49	175	175	175	175	0	5	3	2	5	0	6	21	20	21	21	3	6	0	1	4	1	6	21	28	21	21
339#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	11	32	38	5	40	175	175	175	175	0	6	1	4	5	0	5	21	21	21	21	0	5	3	3	2	4	4	21	21	21	21
47	7	30	23	9	44	15	175	175	175	175	6	0	4	3	1	6	2	22	20	21	21	4	6	1	1	1	0	14	28	21	21	
36	13	33	26	31	28	8	175	175	175	175	5	1	4	3	4	3	1	21	21	21	21	0	5	4	4	2	6	0	21	21	21	21
4	34	29	25	21	16	46	175	175	175	175	0	4	4	3	2	2	6	21	21	20	21	3	5	0	3	6	1	3	21	21	28	21
42	22	19	24	17	37	14	175	175	175	175	5	3	2	3	2	5	1	21	21	22	21	6	0	4	2	2	1	6	21	21	14	21
35	6	41	27	20	43	3	175	175	175	175	4	0	5	3	2	6	0	20	22	21	21	6	5	5	5	0	2	28	14	21	21	
10	45	12	18	39	2	49	175	175	175	175	1	6	1	2	5	0	6	21	21	21	21	2	2	4	3	3	1	6	21	21	21	21
341#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	11	17	34	22	42	175	175	175	175	0	6	1	2	4	3	5	21	22	21	21	0	5	3	2	5	0	6	21	14	21	21
47	7	26	37	10	30	18	175	175	175	175	6	0	3	5	1	4	2	21	20	21	21	4	6	4	1	2	1	3	21	28	21	21
36	31	41	27	15	21	4	175	175	175	175	5	4	5	3	2	2	0	21	20	21	21	0	2	5	5	0	6	3	21	28	21	21
5	12	6	25	44	38	45	175	175	175	175	0	1	0	3	6	5	6	21	21	21	21	4	4	5	3	1	2	2	21	21	21	21
46	29	35	23	9	19	14	175	175	175	175	6	4	4	3	1	2	1	21	22	21	21	3	0	6	1	1	4	6	21	14	21	21
32	20	40	13	24	43	3	175	175	175	175	4	2	5	1	3	6	0	21	22	21	21	3	5	4	5	2	0	2	21	14	21	21
8	28	16	33	39	2	49	175	175	175	175	1	3	2	4	5	0	6	21	20	21	21	0	6	1	4	3	1	6	21	28	21	21
346#	Row	Clm	Pd1	Pd2	/D7i:	H	Rw	Cl	P1	P2	L	Rw	Cl	P1	P2																	
1	48	12	11	33	26	44	175	175	175	175	0	6	1	1	4	3	6	21	21	21	21	0	5	4	3	4	4	1	21	21	21	21
47	7	36	42	9	29	5	175	175	175	175	6	0	5	5	1	4	0	21	20	21	21	4	6	0	6	1	0	4	21	28	21	21
35	28	27	20	18	34	13	175	175	175	175	4	3	3	2	2	4	1	19</														

33	9	23	42	12	40	16	175 175 175 175	4	1	3	5	1	5	2	21 21 21 19	4	1	1	6	4	4	1	21 21 21 35
26	37	28	25	22	13	24	175 175 175 175	3	5	3	3	1	3	21 21 21 23	4	1	6	3	0	5	2	21 21 21  7	
34	10	38	8	27	41	17	175 175 175 175	4	1	5	1	3	5	2	21 21 21 22	5	2	2	0	5	5	2	21 21 21 14
30	19	39	6	35	43	3	175 175 175 175	4	2	5	0	4	6	0	21 21 21 20	1	4	3	5	6	0	2	21 21 21 28
4	45	18	21	36	2	49	175 175 175 175	0	6	2	2	5	0	6	21 21 21 21	3	2	3	6	0	1	6	21 21 21 21
364# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	15	16	46	13	36	175 175 175 175	0	6	2	2	6	1	5	22 20 21 21	0	5	0	1	3	5	0	14 28 21 21
47	7	26	39	9	30	17	175 175 175 175	6	0	3	5	1	4	2	21 21 20 21	4	6	4	3	1	1	2	21 21 28 21
32	31	21	38	5	40	8	175 175 175 175	4	4	2	5	0	5	1	21 21 21 21	3	2	6	2	4	4	0	21 21 21 21
6	22	23	25	27	28	44	175 175 175 175	0	3	3	3	3	6	21 21 21 21	5	0	1	3	5	6	1	21 21 21 21	
42	10	45	12	29	19	18	175 175 175 175	5	1	6	1	4	2	21 21 21 21	6	2	2	4	0	4	3	21 21 21 21	
33	20	41	11	24	43	3	175 175 175 175	4	2	5	1	3	6	0	21 21 21 21	4	5	5	3	2	0	2	21 21 21 21
14	37	4	34	35	2	49	175 175 175 175	1	5	0	4	4	0	6	20 22 22 21	6	1	3	5	6	1	6	28 14 14 21
387# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	18	6	42	15	45	175 175 175 175	0	6	2	0	5	2	6	21 22 21 21	0	5	3	5	6	0	2	21 14 21 21
47	7	22	36	26	10	27	175 175 175 175	6	0	3	5	3	1	3	21 19 21 21	4	6	0	0	4	2	5	21 35 21 21
29	20	41	33	4	37	11	175 175 175 175	4	2	5	4	0	5	1	21 22 21 21	0	5	5	4	3	1	3	21 14 21 21
31	12	16	25	34	38	19	175 175 175 175	4	1	2	3	4	5	2	21 21 21 21	2	4	1	3	5	2	4	21 21 21 21
39	13	46	17	9	30	21	175 175 175 175	5	1	6	2	1	4	2	21 20 21 21	3	5	3	2	1	1	6	21 28 21 21
23	40	24	14	28	43	3	175 175 175 175	3	5	3	1	3	6	0	21 23 21 21	1	4	2	6	6	0	2	21  7 21 21
5	35	8	44	32	2	49	175 175 175 175	0	4	1	6	4	0	6	21 20 21 21	4	6	0	1	3	1	6	21 28 21 21
401# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	20	14	12	34	46	175 175 175 175	0	6	2	1	1	4	6	20 21 21 21	0	5	5	6	4	5	3	28 21 21 21
47	7	24	40	17	19	21	175 175 175 175	6	0	3	5	2	2	2	20 21 21 21	4	6	2	4	2	4	6	28 21 21 21
27	6	41	13	42	28	18	175 175 175 175	3	0	5	1	5	3	2	19 21 21 21	5	5	5	5	6	6	3	35 21 21 21
35	45	11	25	39	5	15	175 175 175 175	4	6	1	3	5	0	2	21 21 21 21	6	2	3	3	3	4	0	21 21 21 21
32	22	8	37	9	44	23	175 175 175 175	4	3	1	5	1	6	3	23 21 21 21	3	0	0	1	1	1	1	7 21 21 21
29	31	33	10	26	43	3	175 175 175 175	4	4	4	1	3	6	0	22 21 21 21	0	2	4	2	4	0	2	14 21 21 21
4	16	38	36	30	2	49	175 175 175 175	0	2	5	5	4	0	6	22 21 21 21	3	1	2	0	1	1	6	14 21 21 21
[ 5]	470# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2										
1	48	11	24	44	13	34	175 175 175 175	0	6	1	3	6	1	4	21 21 21 21	0	5	3	2	1	5	5	21 21 21 21
47	8	33	41	10	31	5	175 175 175 175	6	1	4	5	1	4	0	21 21 21 21	4	0	4	5	2	2	4	21 21 21 21
35	18	20	22	14	43	23	175 175 175 175	4	2	2	3	1	6	3	21 21 21 21	6	3	5	0	6	0	1	21 21 21 21
4	38	29	25	21	12	46	175 175 175 175	0	5	4	3	2	1	6	21 21 21 21	3	2	0	3	6	4	3	21 21 21 21
27	7	36	28	30	32	15	175 175 175 175	3	0	5	3	4	2	2	21 21 21 21	5	6	0	6	1	3	0	21 21 21 21
45	19	40	9	17	42	3	175 175 175 175	6	2	5	1	2	5	0	21 21 21 21	2	4	4	1	2	6	2	21 21 21 21
16	37	6	26	39	2	49	175 175 175 175	2	5	0	3	5	0	6	21 21 21 21	1	1	5	4	3	1	6	21 21 21 21
476# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	11	31	28	24	32	175 175 175 175	0	6	1	4	3	3	4	21 20 21 21	0	5	3	2	6	2	3	21 28 21 21
47	8	14	45	4	13	44	175 175 175 175	6	1	1	6	0	1	6	21 21 21 21	4	0	6	2	3	5	1	21 21 21 21
35	7	40	29	38	17	9	175 175 175 175	4	0	5	4	5	2	1	21 21 21 22	6	6	4	0	2	2	1	21 21 21 14
27	16	30	25	20	34	23	175 175 175 175	3	2	4	3	2	4	3	21 21 22 20	5	1	1	3	5	5	1	21 21 14 28
41	33	12	21	10	43	15	175 175 175 175	5	4	1	2	1	6	2	21 21 20 21	5	4	4	6	2	0	0	21 21 28 21
6	37	46	5	36	42	3	175 175 175 175	0	5	6	0	5	5	0	21 21 21 21	5	1	3	4	0	6	2	21 21 21 21
18	26	22	19	39	2	49	175 175 175 175	2	3	3	2	5	0	6	21 22 21 21	3	4	0	4	3	1	6	21 14 21 21
[ 6]	479# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2										
1	48	12	9	45	14	46	175 175 175 175	0	6	1	1	6	1	6	21 21 21 21	0	5	4	1	2	6	3	21 21 21 21
47	8	39	35	23	10	13	175 175 175 175	6	1	5	4	3	1	1	21 21 21 21	4	0	3	6	1	2	5	21 21 21 21
34	7	32	17	19	44	22	175 175 175 175	4	0	4	2	2	6	3	21 21 21 21	5	6	3	2	4	1	0	21 21 21 21
24	30	29	25	21	20	26	175 175 175 175	3	4	4	3	2	2	3	21 21 21 21	2	1	0	3	6	5	4	21 21 21 21
28	6	31	33	18	43	16	175 175 175 175	3	0	4	4	2	6	2	21 21 21 21	6	5	2	4	3	0	1	21 21 21 21
37	40	27	15	11	42	3	175 175 175 175	5	5	3	2	1	5	0	21 21 21 21	1	4	5	0	3	6	2	21 21 21 21
4	36	5	41	38	2	49	175 175 175 175	0	5	0	5	5	0	6	21 21 21 21	3	0	4	5	2	1	6	21 21 21 21
489# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	13	31	41	7	34	175 175 175 175	0	6	1	4	5	0	4	20 21 21 21	0	5	5	2	5	6	5	28 21 21 21
47	8	20	39	29	22	10	175 175 175 175	6	1	2	5	4	3	1	22 21 21 21	4	0	5	3	0	0	2	14 21 21 21
33	4	44	15	5	38	36	175 175 175 175	4	0	6	2	0	5	5	22 21 21 21	4	3	1	0	4	2	0	14 21 21 21
24	32	23	25	27	18	26	175 175 175 175	3	4	3	3	3	2	3	21 21 21 21	2	3	1	3	5	3	4	21 21 21 21
14	12	45	35	6	46	17	175 175 175 175	1	1	6	4	0	6	2	20 21 21 21	6	4	2	6	5	3	2	28 21 21 21
40	28	21	11	30	42	3	175 175 175 175	5	3	2	1	4	5	0	20 21 21 21	4	6	6	3	1	6	2	28 21 21 21
16	43	9	19	37	2	49	175 175 175 175	2	6	1	2	5	0	6	22 21 21 21	1	0	1	4	1	1	6	14 21 21 21
490# Row C1m\Pd1/Pd2								/D7i: H Rw C1\P1/P2				L Rw C1\P1/P2											
1	48	13	26	41	12	34	175 175 175 175	0	6	1	3	5	1	4	20 21 21 21	0	5	5	4	5	4	5	28 21 21 21
47	8	30	40	23	22	5	175 175 175 175	6	1	4	5	3	3	0	22 21 21 21	4	0	1	4	1	0	4	14 21 21 21
33	4	32	11	15	44	36	175 175 175 175	4	0	4	1	2	6	5	22 21 21 21	4	3	3	3	0	1	0	14 21 21 21
19	43	29	25	21	7	31	175 175 175 175	2	6	4	3	2	0	4	21 21 21 21	4	0	0	3	6	6	2	21 21 21 21
14	6	35	39	18	46	17	175 175 175 175	1	0	4	5	2	6	2	20 21 21 21	6	5	6	3	3	3	2	28 21 21 21

45 28 27 10 20 42 3	175 175 175 175	6 3 3 1 2 5 0	20 21 21 21	2 6 5 2 5 6 2	28 21 21 21
16 38 9 24 37 2 49	175 175 175 175	2 5 1 3 5 0 6	22 21 21 21	1 2 1 2 1 1 6	14 21 21 21
[ 7 ]	501# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 14 39 30 6 37	175 175 175 175	0 6 1 5 4 0 5	21 21 21 21	0 5 6 3 1 5 1	21 21 21 21
47 8 9 33 5 38 35	175 175 175 175	6 1 1 4 0 5 4	21 21 21 21	4 0 1 4 4 2 6	21 21 21 21
32 10 34 43 28 24 4	175 175 175 175	4 1 4 6 3 3 0	21 21 21 21	3 2 5 0 6 2 3	21 21 21 21
21 27 31 25 19 23 29	175 175 175 175	2 3 4 3 2 3 4	21 21 21 21	6 5 2 3 4 1 0	21 21 21 21
46 26 22 7 16 40 18	175 175 175 175	6 3 3 0 2 5 2	21 21 21 21	3 4 0 6 1 4 3	21 21 21 21
15 12 45 17 41 42 3	175 175 175 175	2 1 6 2 5 5 0	21 21 21 21	0 4 2 2 5 6 2	21 21 21 21
13 44 20 11 36 2 49	175 175 175 175	1 6 2 1 5 0 6	21 21 21 21	5 1 5 3 0 1 6	21 21 21 21
	503# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 14 44 20 11 37	175 175 175 175	0 6 1 6 2 1 5	21 21 21 21	0 5 6 1 5 3 1	21 21 21 21
47 8 12 33 9 45 21	175 175 175 175	6 1 1 4 1 6 2	21 21 20 21	4 0 4 4 1 2 6	21 21 28 21
32 4 40 26 35 22 16	175 175 175 175	4 0 5 3 4 3 2	21 21 20 21	3 3 4 4 6 0 1	21 21 28 21
19 43 23 25 27 7 31	175 175 175 175	2 6 3 3 3 0 4	21 21 22 21	4 0 1 3 5 6 2	21 21 14 21
34 28 15 24 10 46 18	175 175 175 175	4 3 2 3 1 6 2	21 21 20 21	5 6 0 2 2 3 3	21 21 28 21
29 5 41 17 38 42 3	175 175 175 175	4 0 5 2 5 5 0	21 21 22 21	0 4 5 2 2 6 2	21 21 14 21
13 39 30 6 36 2 49	175 175 175 175	1 5 4 0 5 0 6	21 21 22 21	5 3 1 5 0 1 6	21 21 14 21
[ 8 ]	535# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 19 34 35 9 29	175 175 175 175	0 6 2 4 4 1 4	21 21 21 21	0 5 4 5 6 1 0	21 21 21 21
47 8 4 40 12 20 44	175 175 175 175	6 1 0 5 1 2 6	21 21 21 21	4 0 3 4 4 5 1	21 21 21 21
27 5 32 43 22 33 13	175 175 175 175	3 0 4 6 3 4 1	21 21 21 21	5 4 3 0 0 4 5	21 21 21 21
36 26 39 25 11 24 14	175 175 175 175	5 3 5 3 1 3 1	21 21 21 21	0 4 3 3 3 2 6	21 21 21 21
37 17 28 7 18 45 23	175 175 175 175	5 2 3 0 2 6 3	21 21 21 21	1 2 6 6 3 2 1	21 21 21 21
6 30 38 10 46 42 3	175 175 175 175	0 4 5 1 6 5 0	21 21 21 21	5 1 2 2 3 6 2	21 21 21 21
21 41 15 16 31 2 49	175 175 175 175	2 5 2 2 4 0 6	21 21 21 21	6 5 0 1 2 1 6	21 21 21 21
	536# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 19 15 32 20 40	175 175 175 175	0 6 2 2 4 2 5	21 21 21 22	0 5 4 0 3 5 4	21 21 21 14
47 8 26 33 12 44 5	175 175 175 175	6 1 3 4 1 6 0	21 21 22 21	4 0 4 4 1 4 1	21 21 14 21
27 34 28 29 11 37 9	175 175 175 175	3 4 3 4 1 5 1	21 20 21 21	5 5 6 0 3 1 1	21 28 21 21
4 36 7 25 43 14 46	175 175 175 175	0 5 0 3 6 1 6	21 21 21 21	3 0 6 3 0 6 3	21 21 21 21
41 13 39 21 22 16 23	175 175 175 175	5 1 5 2 3 2 3	21 22 21 21	5 5 3 6 0 1 1	21 14 21 21
45 6 38 17 24 42 3	175 175 175 175	6 0 5 2 3 5 0	21 21 21 20	2 5 2 2 2 6 2	21 21 21 28
10 30 18 35 31 2 49	175 175 175 175	1 4 2 4 4 0 6	21 21 20 21 21	3 6 2 1 6	21 21 28 21
[ 9 ]	547# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 27 29 40 4 26	175 175 175 175	0 6 3 4 5 0 3	21 21 21 21	0 5 5 0 4 3 4	21 21 21 21
47 8 17 12 20 36 35	175 175 175 175	6 1 2 1 2 5 4	21 21 21 21	4 0 2 4 5 0 6	21 21 21 21
19 5 34 32 37 39 9	175 175 175 175	2 0 4 4 5 1 1	21 21 21 21	4 4 5 3 1 3 1	21 21 21 21
28 43 44 25 6 7 22	175 175 175 175	3 6 6 3 0 0 3	21 21 21 21	6 0 1 3 5 6 0	21 21 21 21
41 11 13 18 16 45 31	175 175 175 175	5 1 1 2 2 6 4	21 21 21 21	5 3 5 3 1 2 2	21 21 21 21
15 14 30 38 33 42 3	175 175 175 175	2 1 4 5 4 5 0	21 21 21 21	0 6 1 2 4 6 2	21 21 21 21
24 46 10 21 23 2 49	175 175 175 175	3 6 1 2 3 0 6	21 21 21 21	2 3 2 6 1 1 6	21 21 21 21
[ 10 ]	548# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 27 22 30 21 26	175 175 175 175	0 6 3 3 4 2 3	21 21 21 21	0 5 5 0 1 6 4	21 21 21 21
47 8 11 41 10 44 14	175 175 175 175	6 1 1 5 1 6 1	21 21 21 21	4 0 3 5 2 1 6	21 21 21 21
19 33 18 38 7 45 15	175 175 175 175	2 4 2 5 0 6 2	21 21 21 21	4 4 3 2 6 2 0	21 21 21 21
13 46 16 25 34 4 37	175 175 175 175	1 6 2 3 4 0 5	21 21 21 21	5 3 1 3 5 3 1	21 21 21 21
35 5 43 12 32 17 31	175 175 175 175	4 0 6 1 4 2 4	21 21 21 21	6 4 0 4 3 2 2	21 21 21 21
36 6 40 9 39 42 3	175 175 175 175	5 0 5 1 5 5 0	21 21 21 21	0 5 4 1 3 6 2	21 21 21 21
24 29 20 28 23 2 49	175 175 175 175	3 4 2 3 3 0 6	21 21 21 21	2 0 5 6 1 1 6	21 21 21 21
	556# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 29 13 40 18 26	175 175 175 175	0 6 4 1 5 2 3	21 21 21 21	0 5 0 5 4 3 4	21 21 21 21
47 8 12 34 23 7 44	175 175 175 175	6 1 1 4 3 0 6	21 22 21 21	4 0 4 5 1 6 1	21 14 21 21
17 9 30 36 22 46 15	175 175 175 175	2 1 4 5 3 6 2	23 21 21 22	2 1 1 0 0 3 0	7 21 21 14
45 31 39 25 11 19 5	175 175 175 175	6 4 5 3 1 2 0	21 21 21 20	2 2 3 3 3 4 4	21 21 21 28
35 4 28 14 20 41 33	175 175 175 175	4 0 3 1 2 5 4	19 21 21 21	6 3 6 6 5 5 4	35 21 21 21
6 43 27 16 38 42 3	175 175 175 175	0 6 3 2 5 5 0	21 20 21 21	5 0 5 1 2 6 2	21 28 21 21
24 32 10 37 21 2 49	175 175 175 175	3 4 1 5 2 0 6	21 21 21 21	2 3 2 1 6 1 6	21 21 21 21
. . . . .					
[ 20 ]	1417# Row Clm\Pd1/Pd2	/D7i:	H Rw Cl\P1/P2	L Rw Cl\P1/P2	
1 48 7 24 31 20 44	175 175 175 175	0 6 0 3 4 2 6	21 21 21 21	0 5 6 2 2 5 1	21 21 21 21
47 18 15 39 5 34 17	175 175 175 175	6 2 2 5 0 4 2	21 21 21 21	4 3 0 3 4 5 2	21 21 21 21
29 27 40 38 9 28 4	175 175 175 175	4 3 5 5 1 3 0	21 21 21 21	0 5 4 2 1 6 3	21 21 21 21
13 14 8 25 42 36 37	175 175 175 175	1 1 1 3 5 5 5	21 21 21 21	5 6 0 3 6 0 1	21 21 21 21
46 22 41 12 10 23 21	175 175 175 175	6 3 5 1 1 3 2	21 21 21 21	3 0 5 4 2 1 6	21 21 21 21
33 16 45 11 35 32 3	175 175 175 175	4 2 6 1 4 4 0	21 21 21 21	4 1 2 3 6 3 2	21 21 21 21
6 30 19 26 43 2 49	175 175 175 175	0 4 2 3 6 0 6	21 21 21 21	5 1 4 4 0 1 6	21 21 21 21
. . . . .					

```
[333]          30649#|Row|C1m\Pd1/Pd2|      /D7i:      H|Rw|C1\P1/P2|      L|Rw|C1\P1/P2|
  1 48 14 22 32 21 37|175|175|175|175|      0 6 1 3 4 2 5|21|21|21|21|      0 5 6 0 3 6 1|21|21|21|21|
 34 10 23 39 24  3 42|175|175|175|175|      4 1 3 5 3 0 5|21|21|21|21|      5 2 1 3 2 2 6|21|21|21|21|
 43  6 46 12 33 20 15|175|175|175|175|      6 0 6 1 4 2 2|21|21|21|21|      0 5 3 4 4 5 0|21|21|21|21|
 41  5 31 25 19 45  9|175|175|175|175|      5 0 4 3 2 6 1|21|21|21|21|      5 4 2 3 4 2 1|21|21|21|21|
 35 30 17 38  4 44  7|175|175|175|175|      4 4 2 5 0 6 0|21|21|21|21|      6 1 2 2 3 1 6|21|21|21|21|
  8 47 26 11 27 40 16|175|175|175|175|      1 6 3 1 3 5 2|21|21|21|21|      0 4 4 3 5 4 1|21|21|21|21|
 13 29 18 28 36  2 49|175|175|175|175|      1 4 2 3 5 0 6|21|21|21|21|      5 0 3 6 0 1 6|21|21|21|21|
. . . . .
```

```
[Solution Counts([Euler] All#) = [1000+] 93938+#] [OK!]
** Calculated and Listed by Kanji Setsuda
   on Mar.26, 2012 with MacOSX 10.7.3 & Xcode 4.2.1 **
```

These are the original facts which we have to face and start our study about. You might be surprised how many “Non-Euler Squares” there are. Yes, far more than Euler Types. There are too many for us to count through in a short time.

Let’s study about the next example of Non-Euler Type here. Watch the third pan-diagonal of type 1 colored yellow there, and find how the constant sum of it is realized in the whole object.

```
[Count/Classical; /Mathematical; /D7i H(igh), L(ow); Check Sums: |Rw|C1\P1/P2|]
          54/C1s|Row|C1m\Pd1/Pd2|      /Mth|Row|C1m\Pd1/Pd2|
  1 48 15 26 46 12 27|175|175|175|175|      0 47 14 25 45 11 26|168|168|168|168|
 47  5 37 30 10 28 18|175|175|175|175|      46  4 36 29  9 27 17|168|168|168|168|
 34  9 21 17 36 39 19|175|175|175|175|      33  8 20 16 35 38 18|168|168|168|168|
  7 42 44 25  6  8 43|175|175|175|175|      6 41 43 24  5  7 42|168|168|168|168|
 31 11 14 33 29 41 16|175|175|175|175|      30 10 13 32 28 40 15|168|168|168|168|
 32 22 40 20 13 45  3|175|175|175|175|      31 21 39 19 12 44  2|168|168|168|168|
 23 38  4 24 35  2 49|175|175|175|175|      22 37  3 23 34  1 48|168|168|168|168|

/D7i:      H|Rw|C1\P1/P2|      L|Rw|C1\P1/P2|
 0 6 2 3 6 1 3|21|21|21|21|      0 5 0 4 3 4 5|21|21|21|21|
 6 0 5 4 1 3 2|21|21|21|21|      4 4 1 1 2 6 3|21|21|21|21|
 4 1 2 2 5 5 2|21|21|23|21|      5 1 6 2 0 3 4|21|21| 7|21|
 0 5 6 3 0 1 6|21|21|22|21|      6 6 1 3 5 0 0|21|21|14|21|
 4 1 1 4 4 5 2|21|21|20|21|      2 3 6 4 0 5 1|21|21|28|21|
 4 3 5 2 1 6 0|21|21|19|21|      3 0 4 5 5 2 2|21|21|35|21|
 3 5 0 3 4 0 6|21|21|21|21|      1 2 3 2 6 1 6|21|21|21|21|
```

$$[2+4+5+1+2+4+5] \times 7 + [0+1+0+0+1+3+2] = [23] \times 7 + [7] = 161 + 7 = 168$$

```
** Possible Value Combinations: [High] and [Low]
   for the Constant Sum of Rows, Columns and Pan-diagonals **
(1) [18] x 7 + [42] = 168;   (2) [19] x 7 + [35] = 168;   (3) [20] x 7 + [28] = 168;
(4) [21] x 7 + [21] = 168;   (5) [22] x 7 + [14] = 168;   (6) [23] x 7 + [7] = 168;
(7) [24] x 7 + [0] = 168;
* Case Counts = 7 *
```

You may neglect the case (1) and (7) above. None of them can appear. (4) is the only case for our “Euler Type”.

This list explains about the inner structure of Non-Euler Type, doesn’t it?

**7. How impressive those inner structures are of the three types: (1) Standard Type of Simultaneous MS77, (2) Euler Type, and (3) Complete Euler Type!**

They might not be clarified like this, if we did not have their Decomposed Units by the 7-th Increment Number System and our New Euler’s Method.

Let me add one more note to the end of this article. I always wonder how many solutions there are in all for the Standard Type of Simultaneous MS77: both Self-complementary and Pan-diagonal.

When I once tried to count them in vain, I could not finish my counting in a short time. I could not imagine how long a time it should take, either.

If I only knew about the approximate count of solutions, how happy I would be!

Can't we guess how it should be by any proportional calculation?

Now I have got the data: 1000 solutions of Euler Type found in 93938 solutions of Standard type. And we come to know 150552 solutions in all of Euler Type.

I set up the next proportional expression for the total count of Standard type.

$$x : 93938 = 150552 : 1000$$

The Standard Type might have about 14 million solutions in all, I guess.

Since I have got the reference data only 0.66% of all, I might fail in having a very little error. But I wish I could have known approximately how big it should be.

What a scale it might be! Comparing to the only 16 solutions of Simultaneous Magic Squares of Order 5: both Self-complementary and Pan-diagonal, this vast count of 14 million solutions for our Simultaneous MS77 surely demonstrates an example of notorious "Inflation of High Orders".

Original Japanese Version was written on March 16, 2012;

English Version on March 27, 2012 with MacOSX 10.7.3 and Xcode 4.2.1

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