

**Part 3 : New Algebraic Study of Magic Squares: Kanji Setsuda**  
**Chapter 9 : Fundamental Study of Composite Magic Squares:**  
**Section 2-2 : Discover Correspondence between Two Types of**  
**“Composite” Pan-magic Squares of Order 8**

**#0. Two Types of ‘Composite’ Pan-diagonal Magic Squares of Order 8**

In this section let’s study about the special correspondence between the two types of ‘Composite’ Pan-magic squares of Order 8. One is Three-Type Simultaneous Magic Squares 8x8: ‘Composite’, Self-complementary and Pan-diagonal; and the other one is Multiple 4x4x4 Type of ‘Composite and Complete’ Pan-magic Squares 8x8.

Both of them are known to have the same counts of standard solutions: 5760.

Is this only an accidental coincidence? Or is there any special meaning for these same counts? Can we find anything like ‘correspondence’ between them?

**#1. Make the Similar Solution Lists to find any Correspondence between them**

In order to find any correspondence, we need the new similar lists of solutions that have the same style in common. Let’s make two of them actually and compare them to find anything both same and different as easily as possible.

**1-1 Make 3-T Simultaneous MS88: Composite, S-Complementary and Pandiagonal**

**\*\* Basic Form & List of Basic Definitions \*\***

|    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|
| 63 | 64 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 57 | 58 |
| 7  | 8  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 1  | 2  |
| 15 | 16 | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 9  | 10 |
| 23 | 24 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 17 | 18 |
| 31 | 32 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 25 | 26 |
| 39 | 40 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 33 | 34 |
| 47 | 48 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 41 | 42 |
| 55 | 56 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 49 | 50 |
| 63 | 64 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 57 | 58 |
| 7  | 8  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 1  | 2  |

**\*\* Constant Sum of ‘Composite’ Combinations of 4 Numbers: CS=130 \*\***

- |                     |                     |                     |                     |
|---------------------|---------------------|---------------------|---------------------|
| n1+n2+n9+n10=CS;    | n2+n3+n10+n11=CS;   | n3+n4+n11+n12=CS;   | n4+n5+n12+n13=CS;   |
| n5+n6+n13+n14=CS;   | n6+n7+n14+n15=CS;   | n7+n8+n15+n16=CS;   | n8+n1+n16+n9=CS;    |
| n9+n10+n17+n18=CS;  | n10+n11+n18+n19=CS; | n11+n12+n19+n20=CS; | n12+n13+n20+n21=CS; |
| n13+n14+n21+n22=CS; | n14+n15+n22+n23=CS; | n15+n16+n23+n24=CS; | n16+n9+n24+n17=CS;  |
| n17+n18+n25+n26=CS; | n18+n19+n26+n27=CS; | n19+n20+n27+n28=CS; | n20+n21+n28+n29=CS; |
| n21+n22+n29+n30=CS; | n22+n23+n30+n31=CS; | n23+n24+n31+n32=CS; | n24+n17+n32+n25=CS; |
| n25+n26+n33+n34=CS; | n26+n27+n34+n35=CS; | n27+n28+n35+n36=CS; | n28+n29+n36+n37=CS; |
| n29+n30+n37+n38=CS; | n30+n31+n38+n39=CS; | n31+n32+n39+n40=CS; | n32+n25+n40+n33=CS; |
| n33+n34+n41+n42=CS; | n34+n35+n42+n43=CS; | n35+n36+n43+n44=CS; | n36+n37+n44+n45=CS; |
| n37+n38+n45+n46=CS; | n38+n39+n46+n47=CS; | n39+n40+n47+n48=CS; | n40+n33+n48+n41=CS; |
| n41+n42+n49+n50=CS; | n42+n43+n50+n51=CS; | n43+n44+n51+n52=CS; | n44+n45+n52+n53=CS; |
| n45+n46+n53+n54=CS; | n46+n47+n54+n55=CS; | n47+n48+n55+n56=CS; | n48+n41+n56+n49=CS; |
| n49+n50+n57+n58=CS; | n50+n51+n58+n59=CS; | n51+n52+n59+n60=CS; | n52+n53+n60+n61=CS; |
| n53+n54+n61+n62=CS; | n54+n55+n62+n63=CS; | n55+n56+n63+n64=CS; | n56+n49+n64+n57=CS; |
| n57+n58+n1+n2=CS;   | n58+n59+n2+n3=CS;   | n59+n60+n3+n4=CS;   | n60+n61+n4+n5=CS;   |
| n61+n62+n5+n6=CS;   | n62+n63+n6+n7=CS;   | n63+n64+n7+n8=CS;   | n64+n57+n8+n1=CS;   |

```

** Basic Conditions for Rows and Columns: HC=130 **
n1+n2+n3+n4=HC;      n5+n6+n7+n8=HC;      ... row1;
n1+n9+n17+n25=HC;   n33+n41+n49+n57=HC;   ... c1m1;
** Conditions for Pan-Diagonals: C=260 **
n1+n10+n19+n28+n37+n46+n55+n64=C          ... pd1;
n8+n15+n22+n29+n36+n43+n50+n57=C          ... pb8;
** Constant Sum of Symmetrical Self-complementary Combinations: CC=65 **
n1+n64=n2+n63=n3+n62=n4+n61=n5+n60=n6+n59=n7+n58=n8+n57=
n9+n56=n10+n55=n11+n54=n12+n53=n13+n52=n14+n51=n15+n50=n16+n49=
n17+n48=n18+n47=n19+n46=n20+n45=n21+n44=n22+n43=n23+n42=n24+n41=
n25+n40=n26+n39=n27+n38=n28+n37=n29+n36=n30+n35=n31+n34=n32+n33=CC ... scc

```

I am afraid you may think there are too few basic equations for rows, columns and pandiagonals. But they are enough to define everything, because we already have so many equations for the 'Composite' conditions and Self-complementary ones. All of them could make every constant sum of rows, columns and pandiagonals realized.

You may also wonder why my equations about rows and columns only define for the constant sum of 'half-line' of each 4 numbers instead of 'full-line' of 8. I take them for the definition ahead out of the inherent nature of our object.

Let me explain a little about it in algebraic method.

```

n1+n2=n17+n18=n33+n34=n49+n50=P;
n3+n4=n19+n20=n35+n36=n51+n52=Q; --> n1+n2+n3+n4=n49+n50+n51+n52=P+Q
n5+n6=n21+n22=n37+n38=n53+n54=R;
n7+n8=n23+n24=n39+n40=n55+n56=S; --> n5+n6+n7+n8=n53+n54+n55+n56=R+S ...A;

```

By the Equations of Self-Complementary Pairs,

```

(n1+n64)+(n2+n63)+(n3+n62)+(n4+n61)=CC+CC+CC+CC=4*65=260=C
(n1+n2+n3+n4)+(n61+n62+n63+n64)=C ...B;

```

By the Equations of Composite Conditions,

```

(n53+n54+n61+n62)+(n55+n56+n63+n64)=S+S=2*130=260=C
(n53+n54+n55+n56)+(n61+n62+n63+n64)=C ...C;

```

You can say by A, B and C:

```

n1+n2+n3+n4=n5+n6+n7+n8

```

When you define the Constant Sum of Rows and Columns at first like,

```

n1+n2+n3+n4+n5+n6+n7+n8=C=260;

```

you can say  $n1+n2+n3+n4=n5+n6+n7+n8=C/2=130$  ...D;

In the same way  $n1+n9+n17+n25=n33+n41+n49+n57=C/2=130$  ...E;

I just replaced the whole-line definitions for the half-line ones at first.

It is all right. I know it would change nothing about the result, while it could clearly demonstrate that our objects are naturally created as Multiple Type including 4 little squares, which has the same sums of every 4 numbers in 4 rows and 4 columns.

Let me show you my program list written in 'Standard C', but I am sorry to give you only an essential part instead of listing my entire very long program.

```

/* Define Level 0: */
/* Set N1 & n64=CC-N1 & n1<n64 */
void stp01(){
  short a,b;
  for(a=1;a<33;a++){b=CC-a; //CC=65; (a, b) is a Complementary Pair.
    if((uflg[a]==0)&&(uflg[b]==0)){ //Checking if the value is not used.
      nm[1]=a; nm[64]=b; //Set N1 and n64 at the same time.
      uflg[a]=1; uflg[b]=1; //Set the flags for the values as used.
      stp02(); //Call the next Sub-Procedure.
      uflg[b]=0; uflg[a]=0;} //Reset the flags as un-used.
  }
}

```

```

/* Set N2 & n63=CC-N2 */
void stp02(){
  short a,b;
  for(a=64;a>0;a--){b=CC-a;
    if((uflg[a]==0)&&(uflg[b]==0)){
      nm[2]=a; nm[63]=b;
      uflg[a]=1; uflg[b]=1;
      stp03();
      uflg[b]=0; uflg[a]=0;}
  }
}
/* Set N9 & n56=CC-N9 & N9<N2 */
void stp03(){
  short a,b;
  for(a=nm[2]-1;a>0;a--){b=CC-a;
    if((uflg[a]==0)&&(uflg[b]==0)){
      nm[9]=a; nm[56]=b;
      uflg[a]=1; uflg[b]=1; cnt2=0;
      stp04();
      uflg[b]=0; uflg[a]=0;}
  }
}
/* Set n10=SSM-n1-n2-n9 & n55=CC-n10 */
void stp04(){
  short a,b;
  a=SSM-nm[1]-nm[2]-nm[9]; //SSM=130;
  if((0<a)&&(a<65)){
    b=SSM-nm[64]-nm[63]-nm[56];
    if(a+b==CC){ //CC=65;
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[10]=a; nm[55]=b;
        uflg[a]=1; uflg[b]=1;
        stp05();
        uflg[b]=0; uflg[a]=0;}
      }}
}
/* Define Level 1: */
/* Set N3 & n62=CC-N3 */
void stp05(){
  short a,b;
  for(a=1;a<65;a++){b=CC-a;
    if((uflg[a]==0)&&(uflg[b]==0)){
      nm[3]=a; nm[62]=b;
      uflg[a]=1; uflg[b]=1;
      stp06();
      uflg[b]=0; uflg[a]=0;}
  }
}
/* Set n4=HSM-n1-n2-n3 & n61=CC-n4 */
void stp06(){
  short a,b;
  a=HSM-nm[1]-nm[2]-nm[3]; //HSM=130;
  if((0<a)&&(a<65)){
    b=HSM-nm[64]-nm[63]-nm[62];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[4]=a; nm[61]=b;
        uflg[a]=1; uflg[b]=1;
        stp07();
        uflg[b]=0; uflg[a]=0;}
      }}
}
// 63 64 57 58 59 60 61 62 63 64 57 58
// .---.---.---.---.---.---.---.---.---.---.
// 7 8| 1| 2| 3| 4| 5| 6| 7| 8| 1 2
// |---+---+---+---+---+---+---+---+---+---|
// 15 16| 9|10|11|12|13|14|15|16| 9 10
// |---+---+---+---+---+---+---+---+---+---|
// 23 24|17|18|19|20|21|22|23|24|17 18
// |---+---+---+---+---+---+---+---+---+---|
// 31 32|25|26|27|28|29|30|31|32|25 26
// |---+---+---+---+---+---+---+---+---+---|
// 39 40|33|34|35|36|37|38|39|40|33 34
// |---+---+---+---+---+---+---+---+---+---|
// 47 48|41|42|43|44|45|46|47|48|41 42
// |---+---+---+---+---+---+---+---+---+---|
// 55 56|49|50|51|52|53|54|55|56|49 50
// |---+---+---+---+---+---+---+---+---+---|
// 63 64|57|58|59|60|61|62|63|64|57 58
// '---'---'---'---'---'---'---'---'---'---'
// 7 8 1 2 3 4 5 6 7 8 1 2
// ** Basic Form **

```

```

    }}
}
/* Set n11=SSM-n2-n3-n10 & n54=CC-n11 */
void stp07(){
    short a,b;
    a=SSM-nm[2]-nm[3]-nm[10];
    if((0<a)&&(a<65)){
        b=SSM-nm[63]-nm[62]-nm[55];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[11]=a; nm[54]=b;
                uflg[a]=1; uflg[b]=1;
                stp08();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set n12=SSM-n3-n4-n11 & n53=CC-n12 */
void stp08(){
    short a,b;
    a=SSM-nm[3]-nm[4]-nm[11];
    if((0<a)&&(a<65)){
        b=SSM-nm[62]-nm[61]-nm[54];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[12]=a; nm[53]=b;
                uflg[a]=1; uflg[b]=1;
                stp09();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set N17 & n48=CC-N17 */
void stp09(){
    short a,b;
    for(a=1;a<65;a++){b=CC-a;
        if((uflg[a]==0)&&(uflg[b]==0)){
            nm[17]=a; nm[48]=b;
            uflg[a]=1; uflg[b]=1;
            stp10();
            uflg[b]=0; uflg[a]=0;}
        }
}
/* Set n25=SSM-n1-n9-n17 & n40=CC-n25 */
void stp10(){
    short a,b;
    a=SSM-nm[1]-nm[9]-nm[17];
    if((0<a)&&(a<65)){
        b=SSM-nm[64]-nm[56]-nm[48];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[25]=a; nm[40]=b;
                uflg[a]=1; uflg[b]=1;
                stp11();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set n18=SSM-n9-n10-n17 & n47=CC-n18 */
void stp11(){
    short a,b;
    a=SSM-nm[9]-nm[10]-nm[17];
    if((0<a)&&(a<65)){

```

```

    b=SSM-nm[56]-nm[55]-nm[48];
    if(a+b==CC){
        if((uflg[a]==0)&&(uflg[b]==0)){
            nm[18]=a; nm[47]=b;
            uflg[a]=1; uflg[b]=1;
            stp12();
            uflg[b]=0; uflg[a]=0;}
        }}
}
/* Set n19=SSM-n10-n11-n18 & n46=CC-n19 */
void stp12(){
    short a,b;
    a=SSM-nm[10]-nm[11]-nm[18];
    if((0<a)&&(a<65)){
        b=SSM-nm[55]-nm[54]-nm[47];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[19]=a; nm[46]=b;
                uflg[a]=1; uflg[b]=1;
                stp13();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set n20=SSM-n11-n12-n19 & n45=CC-n20 */
void stp13(){
    short a,b;
    a=SSM-nm[11]-nm[12]-nm[19];
    if((0<a)&&(a<65)){
        b=SSM-nm[54]-nm[53]-nm[46];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[20]=a; nm[45]=b;
                uflg[a]=1; uflg[b]=1;
                stp14();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set n26=SSM-n17-n18-n25 & n39=CC-n26 */
void stp14(){
    short a,b;
    a=SSM-nm[17]-nm[18]-nm[25];
    if((0<a)&&(a<65)){
        b=SSM-nm[48]-nm[47]-nm[40];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[26]=a; nm[39]=b;
                uflg[a]=1; uflg[b]=1;
                stp15();
                uflg[b]=0; uflg[a]=0;}
            }}
}
/* Set n27=SSM-n18-n19-n26 & n38=CC-n27 */
void stp15(){
    short a,b;
    a=SSM-nm[18]-nm[19]-nm[26];
    if((0<a)&&(a<65)){
        b=SSM-nm[47]-nm[46]-nm[39];
        if(a+b==CC){
            if((uflg[a]==0)&&(uflg[b]==0)){
                nm[27]=a; nm[38]=b;

```

```

    uflg[a]=1; uflg[b]=1;
    stp16();
    uflg[b]=0; uflg[a]=0;}
  }}
}
/* Set n28=SSM-n19-n20-n27 & n37=CC-n28 */
void stp16(){
  short a,b;
  a=SSM-nm[19]-nm[20]-nm[27];
  if((0<a)&&(a<65)){
    b=SSM-nm[46]-nm[45]-nm[38];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[28]=a; nm[37]=b;
        uflg[a]=1; uflg[b]=1;
        stp17();
        uflg[b]=0; uflg[a]=0;}
      }}
}
/* ..(skip).. */

```

**\*\* Three-type Simultaneous Magic Squares of Order 8: \*\***  
**\*\* 'Composite', Self-Complementary and Pan-Diagonal \*\***  
**\*\* New Solution List of Standard Set with Check-Sums \*\***  
**\*\* Calculated and listed by Kanji Setsuda on Feb.13, 2010 \*\***

| 1/ Row C1m\PD1/PD2   |    |    |    |    |    |    |    |      |  |     |   |     |   |     |    | 25/ Row C1m\PD1/PD2  |    |    |    |    |    |    |      |  |     |   |     |   |     |  |  |
|----------------------|----|----|----|----|----|----|----|------|--|-----|---|-----|---|-----|----|----------------------|----|----|----|----|----|----|------|--|-----|---|-----|---|-----|--|--|
| 1                    | 63 | 6  | 60 | 18 | 48 | 21 | 43 | =260 |  | 260 | \ | 260 | / | 260 | 1  | 63                   | 4  | 62 | 18 | 48 | 19 | 45 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 62                   | 4  | 57 | 7  | 45 | 19 | 42 | 24 | =260 |  | 260 | \ | 260 | / | 260 | 60 | 6                    | 57 | 7  | 43 | 21 | 42 | 24 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 11                   | 53 | 16 | 50 | 28 | 38 | 31 | 33 | =260 |  | 260 | \ | 260 | / | 260 | 13 | 51                   | 16 | 50 | 30 | 36 | 31 | 33 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 56                   | 10 | 51 | 13 | 39 | 25 | 36 | 30 | =260 |  | 260 | \ | 260 | / | 260 | 56 | 10                   | 53 | 11 | 39 | 25 | 38 | 28 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 35                   | 29 | 40 | 26 | 52 | 14 | 55 | 9  | =260 |  | 260 | \ | 260 | / | 260 | 37 | 27                   | 40 | 26 | 54 | 12 | 55 | 9  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 32                   | 34 | 27 | 37 | 15 | 49 | 12 | 54 | =260 |  | 260 | \ | 260 | / | 260 | 32 | 34                   | 29 | 35 | 15 | 49 | 14 | 52 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 41                   | 23 | 46 | 20 | 58 | 8  | 61 | 3  | =260 |  | 260 | \ | 260 | / | 260 | 41 | 23                   | 44 | 22 | 58 | 8  | 59 | 5  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 22                   | 44 | 17 | 47 | 5  | 59 | 2  | 64 | =260 |  | 260 | \ | 260 | / | 260 | 20 | 46                   | 17 | 47 | 3  | 61 | 2  | 64 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 49/ Row C1m\PD1/PD2  |    |    |    |    |    |    |    |      |  |     |   |     |   |     |    | 73/ Row C1m\PD1/PD2  |    |    |    |    |    |    |      |  |     |   |     |   |     |  |  |
| 1                    | 63 | 4  | 62 | 18 | 48 | 19 | 45 | =260 |  | 260 | \ | 260 | / | 260 | 1  | 63                   | 4  | 62 | 10 | 56 | 11 | 53 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 56                   | 10 | 53 | 11 | 39 | 25 | 38 | 28 | =260 |  | 260 | \ | 260 | / | 260 | 48 | 18                   | 45 | 19 | 39 | 25 | 38 | 28 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 13                   | 51 | 16 | 50 | 30 | 36 | 31 | 33 | =260 |  | 260 | \ | 260 | / | 260 | 21 | 43                   | 24 | 42 | 30 | 36 | 31 | 33 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 60                   | 6  | 57 | 7  | 43 | 21 | 42 | 24 | =260 |  | 260 | \ | 260 | / | 260 | 60 | 6                    | 57 | 7  | 51 | 13 | 50 | 16 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 41                   | 23 | 44 | 22 | 58 | 8  | 59 | 5  | =260 |  | 260 | \ | 260 | / | 260 | 49 | 15                   | 52 | 14 | 58 | 8  | 59 | 5  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 32                   | 34 | 29 | 35 | 15 | 49 | 14 | 52 | =260 |  | 260 | \ | 260 | / | 260 | 32 | 34                   | 29 | 35 | 23 | 41 | 22 | 44 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 37                   | 27 | 40 | 26 | 54 | 12 | 55 | 9  | =260 |  | 260 | \ | 260 | / | 260 | 37 | 27                   | 40 | 26 | 46 | 20 | 47 | 17 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 20                   | 46 | 17 | 47 | 3  | 61 | 2  | 64 | =260 |  | 260 | \ | 260 | / | 260 | 12 | 54                   | 9  | 55 | 3  | 61 | 2  | 64 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 97/ Row C1m\PD1/PD2  |    |    |    |    |    |    |    |      |  |     |   |     |   |     |    | 121/ Row C1m\PD1/PD2 |    |    |    |    |    |    |      |  |     |   |     |   |     |  |  |
| 1                    | 63 | 4  | 62 | 10 | 56 | 11 | 53 | =260 |  | 260 | \ | 260 | / | 260 | 1  | 62                   | 4  | 63 | 19 | 48 | 18 | 45 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 32                   | 34 | 29 | 35 | 23 | 41 | 22 | 44 | =260 |  | 260 | \ | 260 | / | 260 | 60 | 7                    | 57 | 6  | 42 | 21 | 43 | 24 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 37                   | 27 | 40 | 26 | 46 | 20 | 47 | 17 | =260 |  | 260 | \ | 260 | / | 260 | 13 | 50                   | 16 | 51 | 31 | 36 | 30 | 33 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 60                   | 6  | 57 | 7  | 51 | 13 | 50 | 16 | =260 |  | 260 | \ | 260 | / | 260 | 56 | 11                   | 53 | 10 | 38 | 25 | 39 | 28 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 49                   | 15 | 52 | 14 | 58 | 8  | 59 | 5  | =260 |  | 260 | \ | 260 | / | 260 | 37 | 26                   | 40 | 27 | 55 | 12 | 54 | 9  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 48                   | 18 | 45 | 19 | 39 | 25 | 38 | 28 | =260 |  | 260 | \ | 260 | / | 260 | 32 | 35                   | 29 | 34 | 14 | 49 | 15 | 52 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 21                   | 43 | 24 | 42 | 30 | 36 | 31 | 33 | =260 |  | 260 | \ | 260 | / | 260 | 41 | 22                   | 44 | 23 | 59 | 8  | 58 | 5  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 12                   | 54 | 9  | 55 | 3  | 61 | 2  | 64 | =260 |  | 260 | \ | 260 | / | 260 | 20 | 47                   | 17 | 46 | 2  | 61 | 3  | 64 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 145/ Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |  |     |   |     |   |     |    | 169/ Row C1m\PD1/PD2 |    |    |    |    |    |    |      |  |     |   |     |   |     |  |  |
| 1                    | 62 | 4  | 63 | 19 | 48 | 18 | 45 | =260 |  | 260 | \ | 260 | / | 260 | 1  | 62                   | 4  | 63 | 11 | 56 | 10 | 53 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 56                   | 11 | 53 | 10 | 38 | 25 | 39 | 28 | =260 |  | 260 | \ | 260 | / | 260 | 48 | 19                   | 45 | 18 | 38 | 25 | 39 | 28 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 13                   | 50 | 16 | 51 | 31 | 36 | 30 | 33 | =260 |  | 260 | \ | 260 | / | 260 | 21 | 42                   | 24 | 43 | 31 | 36 | 30 | 33 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 60                   | 7  | 57 | 6  | 42 | 21 | 43 | 24 | =260 |  | 260 | \ | 260 | / | 260 | 60 | 7                    | 57 | 6  | 50 | 13 | 51 | 16 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 41                   | 22 | 44 | 23 | 59 | 8  | 58 | 5  | =260 |  | 260 | \ | 260 | / | 260 | 49 | 14                   | 52 | 15 | 59 | 8  | 58 | 5  | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 32                   | 35 | 29 | 34 | 14 | 49 | 15 | 52 | =260 |  | 260 | \ | 260 | / | 260 | 32 | 35                   | 29 | 34 | 22 | 41 | 23 | 44 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 37                   | 26 | 40 | 27 | 55 | 12 | 54 | 9  | =260 |  | 260 | \ | 260 | / | 260 | 37 | 26                   | 40 | 27 | 47 | 20 | 46 | 17 | =260 |  | 260 | \ | 260 | / | 260 |  |  |
| 20                   | 47 | 17 | 46 | 2  | 61 | 3  | 64 | =260 |  | 260 | \ | 260 | / | 260 | 12 | 55                   | 9  | 54 | 2  | 61 | 3  | 64 | =260 |  | 260 | \ | 260 | / | 260 |  |  |

193/ Row|C1m\PD1/PD2  
 1 62 4 63 11 56 10 53 =260|260\260/260  
 32 35 29 34 22 41 23 44 =260|260\260/260  
 37 26 40 27 47 20 46 17 =260|260\260/260  
 60 7 57 6 50 13 51 16 =260|260\260/260  
 49 14 52 15 59 8 58 5 =260|260\260/260  
 48 19 45 18 38 25 39 28 =260|260\260/260  
 21 42 24 43 31 36 30 33 =260|260\260/260  
 12 55 9 54 2 61 3 64 =260|260\260/260

241/ Row|C1m\PD1/PD2  
 1 60 6 63 13 56 10 51 =260|260\260/260  
 48 21 43 18 36 25 39 30 =260|260\260/260  
 19 42 24 45 31 38 28 33 =260|260\260/260  
 62 7 57 4 50 11 53 16 =260|260\260/260  
 49 12 54 15 61 8 58 3 =260|260\260/260  
 32 37 27 34 20 41 23 46 =260|260\260/260  
 35 26 40 29 47 22 44 17 =260|260\260/260  
 14 55 9 52 2 59 5 64 =260|260\260/260

289/ Row|C1m\PD1/PD2  
 1 56 10 63 13 60 6 51 =260|260\260/260  
 48 25 39 18 36 21 43 30 =260|260\260/260  
 19 38 28 45 31 42 24 33 =260|260\260/260  
 62 11 53 4 50 7 57 16 =260|260\260/260  
 49 8 58 15 61 12 54 3 =260|260\260/260  
 32 41 23 34 20 37 27 46 =260|260\260/260  
 35 22 44 29 47 26 40 17 =260|260\260/260  
 14 59 5 52 2 55 9 64 =260|260\260/260

337/ Row|C1m\PD1/PD2  
 1 48 18 63 21 60 6 43 =260|260\260/260  
 32 49 15 34 12 37 27 54 =260|260\260/260  
 35 14 52 29 55 26 40 9 =260|260\260/260  
 62 19 45 4 42 7 57 24 =260|260\260/260  
 41 8 58 23 61 20 46 3 =260|260\260/260  
 56 25 39 10 36 13 51 30 =260|260\260/260  
 11 38 28 53 31 50 16 33 =260|260\260/260  
 22 59 5 44 2 47 17 64 =260|260\260/260

481/ Row|C1m\PD1/PD2  
 2 61 3 64 20 47 17 46 =260|260\260/260  
 59 8 58 5 41 22 44 23 =260|260\260/260  
 14 49 15 52 32 35 29 34 =260|260\260/260  
 55 12 54 9 37 26 40 27 =260|260\260/260  
 38 25 39 28 56 11 53 10 =260|260\260/260  
 31 36 30 33 13 50 16 51 =260|260\260/260  
 42 21 43 24 60 7 57 6 =260|260\260/260  
 19 48 18 45 1 62 4 63 =260|260\260/260

649/ Row|C1m\PD1/PD2  
 2 55 9 64 14 59 5 52 =260|260\260/260  
 47 26 40 17 35 22 44 29 =260|260\260/260  
 20 37 27 46 32 41 23 34 =260|260\260/260  
 61 12 54 3 49 8 58 15 =260|260\260/260  
 50 7 57 16 62 11 53 4 =260|260\260/260  
 31 42 24 33 19 38 28 45 =260|260\260/260  
 36 21 43 30 48 25 39 18 =260|260\260/260  
 13 60 6 51 1 56 10 63 =260|260\260/260

721/ Row|C1m\PD1/PD2  
 3 64 5 58 17 46 23 44 =260|260\260/260  
 61 2 59 8 47 20 41 22 =260|260\260/260  
 12 55 14 49 26 37 32 35 =260|260\260/260  
 54 9 52 15 40 27 34 29 =260|260\260/260  
 36 31 38 25 50 13 56 11 =260|260\260/260  
 30 33 28 39 16 51 10 53 =260|260\260/260  
 43 24 45 18 57 6 63 4 =260|260\260/260  
 21 42 19 48 7 60 1 62 =260|260\260/260

217/ Row|C1m\PD1/PD2  
 1 60 6 63 21 48 18 43 =260|260\260/260  
 56 13 51 10 36 25 39 30 =260|260\260/260  
 11 50 16 53 31 38 28 33 =260|260\260/260  
 62 7 57 4 42 19 45 24 =260|260\260/260  
 41 20 46 23 61 8 58 3 =260|260\260/260  
 32 37 27 34 12 49 15 54 =260|260\260/260  
 35 26 40 29 55 14 52 9 =260|260\260/260  
 22 47 17 44 2 59 5 64 =260|260\260/260

265/ Row|C1m\PD1/PD2  
 1 60 6 63 13 56 10 51 =260|260\260/260  
 32 37 27 34 20 41 23 46 =260|260\260/260  
 35 26 40 29 47 22 44 17 =260|260\260/260  
 62 7 57 4 50 11 53 16 =260|260\260/260  
 49 12 54 15 61 8 58 3 =260|260\260/260  
 48 21 43 18 36 25 39 30 =260|260\260/260  
 19 42 24 45 31 38 28 33 =260|260\260/260  
 14 55 9 52 2 59 5 64 =260|260\260/260

313/ Row|C1m\PD1/PD2  
 1 56 10 63 13 60 6 51 =260|260\260/260  
 32 41 23 34 20 37 27 46 =260|260\260/260  
 35 22 44 29 47 26 40 17 =260|260\260/260  
 62 11 53 4 50 7 57 16 =260|260\260/260  
 49 8 58 15 61 12 54 3 =260|260\260/260  
 48 25 39 18 36 21 43 30 =260|260\260/260  
 19 38 28 45 31 42 24 33 =260|260\260/260  
 14 59 5 52 2 55 9 64 =260|260\260/260

361/ Row|C1m\PD1/PD2  
 2 64 5 59 17 47 22 44 =260|260\260/260  
 61 3 58 8 46 20 41 23 =260|260\260/260  
 12 54 15 49 27 37 32 34 =260|260\260/260  
 55 9 52 14 40 26 35 29 =260|260\260/260  
 36 30 39 25 51 13 56 10 =260|260\260/260  
 31 33 28 38 16 50 11 53 =260|260\260/260  
 42 24 45 19 57 7 62 4 =260|260\260/260  
 21 43 18 48 6 60 1 63 =260|260\260/260

577/ Row|C1m\PD1/PD2  
 2 59 5 64 22 47 17 44 =260|260\260/260  
 55 14 52 9 35 26 40 29 =260|260\260/260  
 12 49 15 54 32 37 27 34 =260|260\260/260  
 61 8 58 3 41 20 46 23 =260|260\260/260  
 42 19 45 24 62 7 57 4 =260|260\260/260  
 31 38 28 33 11 50 16 53 =260|260\260/260  
 36 25 39 30 56 13 51 10 =260|260\260/260  
 21 48 18 43 1 60 6 63 =260|260\260/260

697/ Row|C1m\PD1/PD2  
 2 47 17 64 22 59 5 44 =260|260\260/260  
 31 50 16 33 11 38 28 53 =260|260\260/260  
 36 13 51 30 56 25 39 10 =260|260\260/260  
 61 20 46 3 41 8 58 23 =260|260\260/260  
 42 7 57 24 62 19 45 4 =260|260\260/260  
 55 26 40 9 35 14 52 29 =260|260\260/260  
 12 37 27 54 32 49 15 34 =260|260\260/260  
 21 60 6 43 1 48 18 63 =260|260\260/260

1081/ Row|C1m\PD1/PD2  
 4 63 6 57 18 45 24 43 =260|260\260/260  
 62 1 60 7 48 19 42 21 =260|260\260/260  
 11 56 13 50 25 38 31 36 =260|260\260/260  
 53 10 51 16 39 28 33 30 =260|260\260/260  
 35 32 37 26 49 14 55 12 =260|260\260/260  
 29 34 27 40 15 52 9 54 =260|260\260/260  
 44 23 46 17 58 5 64 3 =260|260\260/260  
 22 41 20 47 8 59 2 61 =260|260\260/260

1441/ Row|C1m\PD1/PD2  
 5 64 3 58 17 44 23 46 =260|260\260/260  
 59 2 61 8 47 22 41 20 =260|260\260/260  
 14 55 12 49 26 35 32 37 =260|260\260/260  
 52 9 54 15 40 29 34 27 =260|260\260/260  
 38 31 36 25 50 11 56 13 =260|260\260/260  
 28 33 30 39 16 53 10 51 =260|260\260/260  
 45 24 43 18 57 4 63 6 =260|260\260/260  
 19 42 21 48 7 62 1 60 =260|260\260/260

2089/ Row|C1m\PD1/PD2  
 7 62 4 57 19 42 24 45 =260|260\260/260  
 60 1 63 6 48 21 43 18 =260|260\260/260  
 13 56 10 51 25 36 30 39 =260|260\260/260  
 50 11 53 16 38 31 33 28 =260|260\260/260  
 37 32 34 27 49 12 54 15 =260|260\260/260  
 26 35 29 40 14 55 9 52 =260|260\260/260  
 47 22 44 17 59 2 64 5 =260|260\260/260  
 20 41 23 46 8 61 3 58 =260|260\260/260

2737/ Row|C1m\PD1/PD2  
 9 64 3 54 17 40 27 46 =260|260\260/260  
 55 2 61 12 47 26 37 20 =260|260\260/260  
 14 59 8 49 22 35 32 41 =260|260\260/260  
 52 5 58 15 44 29 34 23 =260|260\260/260  
 42 31 36 21 50 7 60 13 =260|260\260/260  
 24 33 30 43 16 57 6 51 =260|260\260/260  
 45 28 39 18 53 4 63 10 =260|260\260/260  
 19 38 25 48 11 62 1 56 =260|260\260/260

3241/ Row|C1m\PD1/PD2  
 11 62 4 53 19 38 28 45 =260|260\260/260  
 56 1 63 10 48 25 39 18 =260|260\260/260  
 13 60 6 51 21 36 30 43 =260|260\260/260  
 50 7 57 16 42 31 33 24 =260|260\260/260  
 41 32 34 23 49 8 58 15 =260|260\260/260  
 22 35 29 44 14 59 5 52 =260|260\260/260  
 47 26 40 17 55 2 64 9 =260|260\260/260  
 20 37 27 46 12 61 3 54 =260|260\260/260

3745/ Row|C1m\PD1/PD2  
 13 60 6 51 21 36 30 43 =260|260\260/260  
 56 1 63 10 48 25 39 18 =260|260\260/260  
 11 62 4 53 19 38 28 45 =260|260\260/260  
 50 7 57 16 42 31 33 24 =260|260\260/260  
 41 32 34 23 49 8 58 15 =260|260\260/260  
 20 37 27 46 12 61 3 54 =260|260\260/260  
 47 26 40 17 55 2 64 9 =260|260\260/260  
 22 35 29 44 14 59 5 52 =260|260\260/260

4177/ Row|C1m\PD1/PD2  
 15 58 5 52 23 34 29 44 =260|260\260/260  
 54 3 64 9 46 27 40 17 =260|260\260/260  
 12 61 2 55 20 37 26 47 =260|260\260/260  
 49 8 59 14 41 32 35 22 =260|260\260/260  
 43 30 33 24 51 6 57 16 =260|260\260/260  
 18 39 28 45 10 63 4 53 =260|260\260/260  
 48 25 38 19 56 1 62 11 =260|260\260/260  
 21 36 31 42 13 60 7 50 =260|260\260/260

4609/ Row|C1m\PD1/PD2  
 17 64 3 46 33 16 51 30 =260|260\260/260  
 47 2 61 20 31 50 13 36 =260|260\260/260  
 22 59 8 41 38 11 56 25 =260|260\260/260  
 44 5 58 23 28 53 10 39 =260|260\260/260  
 26 55 12 37 42 7 60 21 =260|260\260/260  
 40 9 54 27 24 57 6 43 =260|260\260/260  
 29 52 15 34 45 4 63 18 =260|260\260/260  
 35 14 49 32 19 62 1 48 =260|260\260/260

1765/ Row|C1m\PD1/PD2  
 6 63 4 57 18 43 24 45 =260|260\260/260  
 60 1 62 7 48 21 42 19 =260|260\260/260  
 13 56 11 50 25 36 31 38 =260|260\260/260  
 51 10 53 16 39 30 33 28 =260|260\260/260  
 37 32 35 26 49 12 55 14 =260|260\260/260  
 27 34 29 40 15 54 9 52 =260|260\260/260  
 46 23 44 17 58 3 64 5 =260|260\260/260  
 20 41 22 47 8 61 2 59 =260|260\260/260

2413/ Row|C1m\PD1/PD2  
 8 61 3 58 20 41 23 46 =260|260\260/260  
 59 2 64 5 47 22 44 17 =260|260\260/260  
 14 55 9 52 26 35 29 40 =260|260\260/260  
 49 12 54 15 37 32 34 27 =260|260\260/260  
 38 31 33 28 50 11 53 16 =260|260\260/260  
 25 36 30 39 13 56 10 51 =260|260\260/260  
 48 21 43 18 60 1 63 6 =260|260\260/260  
 19 42 24 45 7 62 4 57 =260|260\260/260

2989/ Row|C1m\PD1/PD2  
 10 63 4 53 18 39 28 45 =260|260\260/260  
 56 1 62 11 48 25 38 19 =260|260\260/260  
 13 60 7 50 21 36 31 42 =260|260\260/260  
 51 6 57 16 43 30 33 24 =260|260\260/260  
 41 32 35 22 49 8 59 14 =260|260\260/260  
 23 34 29 44 15 58 5 52 =260|260\260/260  
 46 27 40 17 54 3 64 9 =260|260\260/260  
 20 37 26 47 12 61 2 55 =260|260\260/260

3493/ Row|C1m\PD1/PD2  
 12 61 3 54 20 37 27 46 =260|260\260/260  
 55 2 64 9 47 26 40 17 =260|260\260/260  
 14 59 5 52 22 35 29 44 =260|260\260/260  
 49 8 58 15 41 32 34 23 =260|260\260/260  
 42 31 33 24 50 7 57 16 =260|260\260/260  
 21 36 30 43 13 60 6 51 =260|260\260/260  
 48 25 39 18 56 1 63 10 =260|260\260/260  
 19 38 28 45 11 62 4 53 =260|260\260/260

3961/ Row|C1m\PD1/PD2  
 14 59 5 52 22 35 29 44 =260|260\260/260  
 55 2 64 9 47 26 40 17 =260|260\260/260  
 12 61 3 54 20 37 27 46 =260|260\260/260  
 49 8 58 15 41 32 34 23 =260|260\260/260  
 42 31 33 24 50 7 57 16 =260|260\260/260  
 19 38 28 45 11 62 4 53 =260|260\260/260  
 48 25 39 18 56 1 63 10 =260|260\260/260  
 21 36 30 43 13 60 6 51 =260|260\260/260

4393/ Row|C1m\PD1/PD2  
 16 57 6 51 24 33 30 43 =260|260\260/260  
 53 4 63 10 45 28 39 18 =260|260\260/260  
 11 62 1 56 19 38 25 48 =260|260\260/260  
 50 7 60 13 42 31 36 21 =260|260\260/260  
 44 29 34 23 52 5 58 15 =260|260\260/260  
 17 40 27 46 9 64 3 54 =260|260\260/260  
 47 26 37 20 55 2 61 12 =260|260\260/260  
 22 35 32 41 14 59 8 49 =260|260\260/260

4753/ Row|C1m\PD1/PD2  
 18 63 4 45 34 15 52 29 =260|260\260/260  
 48 1 62 19 32 49 14 35 =260|260\260/260  
 21 60 7 42 37 12 55 26 =260|260\260/260  
 43 6 57 24 27 54 9 40 =260|260\260/260  
 25 56 11 38 41 8 59 22 =260|260\260/260  
 39 10 53 28 23 58 5 44 =260|260\260/260  
 30 51 16 33 46 3 64 17 =260|260\260/260  
 36 13 50 31 20 61 2 47 =260|260\260/260



|   |   |
|---|---|
| <p>4897/ Row C1m\PD1/PD2</p> <p>19 62 4 45 35 14 52 29 =260 260\260/260</p> <p>48 1 63 18 32 49 15 34 =260 260\260/260</p> <p>21 60 6 43 37 12 54 27 =260 260\260/260</p> <p>42 7 57 24 26 55 9 40 =260 260\260/260</p> <p>25 56 10 39 41 8 58 23 =260 260\260/260</p> <p>38 11 53 28 22 59 5 44 =260 260\260/260</p> <p>31 50 16 33 47 2 64 17 =260 260\260/260</p> <p>36 13 51 30 20 61 3 46 =260 260\260/260</p> <p>5185/ Row C1m\PD1/PD2</p> <p>21 60 6 43 37 12 54 27 =260 260\260/260</p> <p>48 1 63 18 32 49 15 34 =260 260\260/260</p> <p>19 62 4 45 35 14 52 29 =260 260\260/260</p> <p>42 7 57 24 26 55 9 40 =260 260\260/260</p> <p>25 56 10 39 41 8 58 23 =260 260\260/260</p> <p>36 13 51 30 20 61 3 46 =260 260\260/260</p> <p>31 50 16 33 47 2 64 17 =260 260\260/260</p> <p>38 11 53 28 22 59 5 44 =260 260\260/260</p> <p>5401/ Row C1m\PD1/PD2</p> <p>23 58 5 44 39 10 53 28 =260 260\260/260</p> <p>46 3 64 17 30 51 16 33 =260 260\260/260</p> <p>20 61 2 47 36 13 50 31 =260 260\260/260</p> <p>41 8 59 22 25 56 11 38 =260 260\260/260</p> <p>27 54 9 40 43 6 57 24 =260 260\260/260</p> <p>34 15 52 29 18 63 4 45 =260 260\260/260</p> <p>32 49 14 35 48 1 62 19 =260 260\260/260</p> <p>37 12 55 26 21 60 7 42 =260 260\260/260</p> <p>5617/ Row C1m\PD1/PD2</p> <p>25 56 1 48 41 8 49 32 =260 260\260/260</p> <p>39 10 63 18 23 58 15 34 =260 260\260/260</p> <p>28 53 4 45 44 5 52 29 =260 260\260/260</p> <p>38 11 62 19 22 59 14 35 =260 260\260/260</p> <p>30 51 6 43 46 3 54 27 =260 260\260/260</p> <p>36 13 60 21 20 61 12 37 =260 260\260/260</p> <p>31 50 7 42 47 2 55 26 =260 260\260/260</p> <p>33 16 57 24 17 64 9 40 =260 260\260/260</p> <p>5689/ Row C1m\PD1/PD2</p> <p>27 54 3 46 43 6 51 30 =260 260\260/260</p> <p>40 9 64 17 24 57 16 33 =260 260\260/260</p> <p>26 55 2 47 42 7 50 31 =260 260\260/260</p> <p>37 12 61 20 21 60 13 36 =260 260\260/260</p> <p>29 52 5 44 45 4 53 28 =260 260\260/260</p> <p>34 15 58 23 18 63 10 39 =260 260\260/260</p> <p>32 49 8 41 48 1 56 25 =260 260\260/260</p> <p>35 14 59 22 19 62 11 38 =260 260\260/260</p> | <p>5041/ Row C1m\PD1/PD2</p> <p>20 61 3 46 36 13 51 30 =260 260\260/260</p> <p>47 2 64 17 31 50 16 33 =260 260\260/260</p> <p>22 59 5 44 38 11 53 28 =260 260\260/260</p> <p>41 8 58 23 25 56 10 39 =260 260\260/260</p> <p>26 55 9 40 42 7 57 24 =260 260\260/260</p> <p>37 12 54 27 21 60 6 43 =260 260\260/260</p> <p>32 49 15 34 48 1 63 18 =260 260\260/260</p> <p>35 14 52 29 19 62 4 45 =260 260\260/260</p> <p>5293/ Row C1m\PD1/PD2</p> <p>22 59 5 44 38 11 53 28 =260 260\260/260</p> <p>47 2 64 17 31 50 16 33 =260 260\260/260</p> <p>20 61 3 46 36 13 51 30 =260 260\260/260</p> <p>41 8 58 23 25 56 10 39 =260 260\260/260</p> <p>26 55 9 40 42 7 57 24 =260 260\260/260</p> <p>35 14 52 29 19 62 4 45 =260 260\260/260</p> <p>32 49 15 34 48 1 63 18 =260 260\260/260</p> <p>37 12 54 27 21 60 6 43 =260 260\260/260</p> <p>5509/ Row C1m\PD1/PD2</p> <p>24 57 6 43 40 9 54 27 =260 260\260/260</p> <p>45 4 63 18 29 52 15 34 =260 260\260/260</p> <p>19 62 1 48 35 14 49 32 =260 260\260/260</p> <p>42 7 60 21 26 55 12 37 =260 260\260/260</p> <p>28 53 10 39 44 5 58 23 =260 260\260/260</p> <p>33 16 51 30 17 64 3 46 =260 260\260/260</p> <p>31 50 13 36 47 2 61 20 =260 260\260/260</p> <p>38 11 56 25 22 59 8 41 =260 260\260/260</p> <p>5653/ Row C1m\PD1/PD2</p> <p>26 55 2 47 42 7 50 31 =260 260\260/260</p> <p>40 9 64 17 24 57 16 33 =260 260\260/260</p> <p>27 54 3 46 43 6 51 30 =260 260\260/260</p> <p>37 12 61 20 21 60 13 36 =260 260\260/260</p> <p>29 52 5 44 45 4 53 28 =260 260\260/260</p> <p>35 14 59 22 19 62 11 38 =260 260\260/260</p> <p>32 49 8 41 48 1 56 25 =260 260\260/260</p> <p>34 15 58 23 18 63 10 39 =260 260\260/260</p> <p>5725/ Row C1m\PD1/PD2</p> <p>28 53 4 45 44 5 52 29 =260 260\260/260</p> <p>39 10 63 18 23 58 15 34 =260 260\260/260</p> <p>25 56 1 48 41 8 49 32 =260 260\260/260</p> <p>38 11 62 19 22 59 14 35 =260 260\260/260</p> <p>30 51 6 43 46 3 54 27 =260 260\260/260</p> <p>33 16 57 24 17 64 9 40 =260 260\260/260</p> <p>31 50 7 42 47 2 55 26 =260 260\260/260</p> <p>36 13 60 21 20 61 12 37 =260 260\260/260</p> |
|---|---|

[Count = 5760]

The list-forming inequality conditions are:  $n1 < n64$ ,  $n1 < n8$ ,  $n1 < n57$  and  $n2 > n9$ .

## 1-2 Make Multiple 4x4 Type of 'Composite and Complete' Pan-magic Squares 8x8

Let's make another type of 'Composite' Pan-magic Squares of Order 8: 'Composite and Complete' Pan-magic Squares of Order 8 including Multiple little squares 4x4.

We have to change only a little about our definitions for the former type as follows. We must remove the Self-Complementary Conditions and take the next ones instead.

**\*\* Constant sum of 'Complete' type of Complementary Pairs: CC=65 \*\***

$n1+n37=n2+n38=n3+n39=n4+n40=n5+n33=n6+n34=n7+n35=n8+n36=n9+n45=$   
 $n10+n46=n11+n47=n12+n48=n13+n41=n14+n42=n15+n43=n16+n44=n17+n53=n18+n54=$   
 $n19+n55=n20+n56=n21+n49=n22+n50=n23+n51=n24+n52=n25+n61=n26+n62=n27+n63=$   
 $n28+n64=n29+n57=n30+n58=n31+n59=n32+n60=CC \dots scc$

All the rest must be completely the same with the former: 'Composite' Conditions and the Basic Conditions. The next half-sum definitions are absolutely necessary.

$n1+n2+n3+n4=HS(=130) \dots row-1;$   $n1+n9+n17+n25=HS(=130) \dots column-1;$   
 $n1+n10+n19+n28+n37+n46+n55+n64=C(=260) \dots diagonal-1;$

Program should be accordingly changed into the next one as shown below:

```

/* Define Level 0: */
/* Set N1 & n37=CC-N1 */
void stp01(){
  short a,b;
  for(a=1;a<33;a++){b=CC-a; //CC=65; (a, b) is a Complementary Pair.
    if((uflg[a]==0)&&(uflg[b]==0)){ //Checking if the value is not used.
      nm[1]=a; nm[37]=b; //Set N1 and n37 at the same time.
      uflg[a]=1; uflg[b]=1; //Set the flags for the values as used.
      stp02(); //Call the next Sub-Procedure.
      uflg[b]=0; uflg[a]=0;} //Reset the flags as un-used.
    }
}
/* Set N2 & n38=CC-N2 */ // 63 64 57 58 59 60 61 62 63 64 57 58
void stp02(){ // //
  short a,b; // //
  for(a=64;a>0;a--){b=CC-a; // 7 8| 1| 2| 3| 4| 5| 6| 7| 8| 1 2
    if((uflg[a]==0)&&(uflg[b]==0)){ // |---+---+---+---+---+---+
      nm[2]=a; nm[38]=b; // 15 16| 9|10|11|12|13|14|15|16| 9 10
      uflg[a]=1; uflg[b]=1; // |---+---+---+---+---+---+
      stp03(); // 23 24|17|18|19|20|21|22|23|24|17 18
      uflg[b]=0; uflg[a]=0;} // |---+---+---+---+---+---+
    } // 31 32|25|26|27|28|29|30|31|32|25 26
  } // |---+---+---+---+---+---+
} // 39 40|33|34|35|36|37|38|39|40|33 34
/* Set N9 & n45=CC-N9 & N9<N2 */ // |---+---+---+---+---+---+
void stp03(){ // 47 48|41|42|43|44|45|46|47|48|41 42
  short a,b; // |---+---+---+---+---+---+
  for(a=nm[2]-1;a>0;a--){b=CC-a; // 55 56|49|50|51|52|53|54|55|56|49 50
    if((uflg[a]==0)&&(uflg[b]==0)){ // |---+---+---+---+---+---+
      nm[9]=a; nm[45]=b; // 63 64|57|58|59|60|61|62|63|64|57 58
      uflg[a]=1; uflg[b]=1; cnt2=0; // '---'---'---'---'---'---'---'
      stp04(); // 7 8 1 2 3 4 5 6 7 8 1 2
      uflg[b]=0; uflg[a]=0;} //
    } //
  } // ** Basic Form **
}
/* Set n10=SSM-n1-n2-n9 & n46=CC-n10 */
void stp04(){
  short a,b;
  a=SSM-nm[1]-nm[2]-nm[9]; //SSM=130;
  if((0<a)&&(a<65)){
    b=SSM-nm[37]-nm[38]-nm[45];
    if(a+b==CC){ //CC=65;
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[10]=a; nm[46]=b;
        uflg[a]=1; uflg[b]=1;
        stp05();
        uflg[b]=0; uflg[a]=0;}
      }}
}
/* Define Level 1: */
/* Set N3 & n39=CC-N3 */
void stp05(){
  short a,b;

```

```

for(a=1;a<65;a++){b=CC-a;
  if((uflg[a]==0)&&(uflg[b]==0)){
    nm[3]=a; nm[39]=b;
    uflg[a]=1; uflg[b]=1;
    stp06();
    uflg[b]=0; uflg[a]=0;}
}
}
/* Set n4=HSM-n1-n2-n3 & n40=CC-n4 */
void stp06(){
  short a,b;
  a=HSM-nm[1]-nm[2]-nm[3];          //HSM=130;
  if((0<a)&&(a<65)){
    b=HSM-nm[37]-nm[38]-nm[39];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[4]=a; nm[40]=b;
        uflg[a]=1; uflg[b]=1;
        stp07();
        uflg[b]=0; uflg[a]=0;}
    }}
}
/* Set n11=SSM-n2-n3-n10 & n47=CC-n11 */
void stp07(){
  short a,b;
  a=SSM-nm[2]-nm[3]-nm[10];
  if((0<a)&&(a<65)){
    b=SSM-nm[38]-nm[39]-nm[46];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[11]=a; nm[47]=b;
        uflg[a]=1; uflg[b]=1;
        stp08();
        uflg[b]=0; uflg[a]=0;}
    }}
}
/* Set n12=SSM-n3-n4-n11 & n48=CC-n12 */
void stp08(){
  short a,b;
  a=SSM-nm[3]-nm[4]-nm[11];
  if((0<a)&&(a<65)){
    b=SSM-nm[39]-nm[40]-nm[47];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[12]=a; nm[48]=b;
        uflg[a]=1; uflg[b]=1;
        stp09();
        uflg[b]=0; uflg[a]=0;}
    }}
}
/* Set N17 & n53=CC-N17 */
void stp09(){
  short a,b;
  for(a=1;a<65;a++){b=CC-a;
    if((uflg[a]==0)&&(uflg[b]==0)){
      nm[17]=a; nm[53]=b;
      uflg[a]=1; uflg[b]=1;
      stp10();
      uflg[b]=0; uflg[a]=0;}
}
}

```

```

}
/* Set n25=SSM-n1-n9-n17 & n61=CC-n25 */
void stp10(){
short a,b;
a=SSM-nm[1]-nm[9]-nm[17];
if((0<a)&&(a<65)){
b=SSM-nm[37]-nm[45]-nm[53];
if(a+b==CC){
if((uflg[a]==0)&&(uflg[b]==0)){
nm[25]=a; nm[61]=b;
uflg[a]=1; uflg[b]=1;
stp11();
uflg[b]=0; uflg[a]=0;}
}}
}
/* Set n18=SSM-n9-n10-n17 & n54=CC-n18 */
void stp11(){
short a,b;
a=SSM-nm[9]-nm[10]-nm[17];
if((0<a)&&(a<65)){
b=SSM-nm[45]-nm[46]-nm[53];
if(a+b==CC){
if((uflg[a]==0)&&(uflg[b]==0)){
nm[18]=a; nm[54]=b;
uflg[a]=1; uflg[b]=1;
stp12();
uflg[b]=0; uflg[a]=0;}
}}
}
/* Set n19=SSM-n10-n11-n18 & n55=CC-n19 */
void stp12(){
short a,b;
a=SSM-nm[10]-nm[11]-nm[18];
if((0<a)&&(a<65)){
b=SSM-nm[46]-nm[47]-nm[54];
if(a+b==CC){
if((uflg[a]==0)&&(uflg[b]==0)){
nm[19]=a; nm[55]=b;
uflg[a]=1; uflg[b]=1;
stp13();
uflg[b]=0; uflg[a]=0;}
}}
}
/* Set n20=SSM-n11-n12-n19 & n56=CC-n20 */
void stp13(){
short a,b;
a=SSM-nm[11]-nm[12]-nm[19];
if((0<a)&&(a<65)){
b=SSM-nm[47]-nm[48]-nm[55];
if(a+b==CC){
if((uflg[a]==0)&&(uflg[b]==0)){
nm[20]=a; nm[56]=b;
uflg[a]=1; uflg[b]=1;
stp14();
uflg[b]=0; uflg[a]=0;}
}}
}
/* Set n26=SSM-n17-n18-n25 & n62=CC-n26 */
void stp14(){
short a,b;

```

```

a=SSM-nm[17]-nm[18]-nm[25];
if((0<a)&&(a<65)){
  b=SSM-nm[53]-nm[54]-nm[61];
  if(a+b==CC){
    if((uflg[a]==0)&&(uflg[b]==0)){
      nm[26]=a; nm[62]=b;
      uflg[a]=1; uflg[b]=1;
      stp15();
      uflg[b]=0; uflg[a]=0;}
    }}
}
/* Set n27=SSM-n18-n19-n26 & n63=CC-n27 */
void stp15(){
  short a,b;
  a=SSM-nm[18]-nm[19]-nm[26];
  if((0<a)&&(a<65)){
    b=SSM-nm[54]-nm[55]-nm[62];
    if(a+b==CC){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[27]=a; nm[63]=b;
        uflg[a]=1; uflg[b]=1;
        stp16();
        uflg[b]=0; uflg[a]=0;}
      }}
}
/* Set n28=SSM-n19-n20-n27 & n64=CC-n28 & n64>N1 */
void stp16(){
  short a,b;
  a=SSM-nm[19]-nm[20]-nm[27];
  if((0<a)&&(a<65)){
    b=SSM-nm[55]-nm[56]-nm[63];
    if((b>nm[1])&&(a+b==CC)){
      if((uflg[a]==0)&&(uflg[b]==0)){
        nm[28]=a; nm[64]=b;
        uflg[a]=1; uflg[b]=1;
        stp17();
        uflg[b]=0; uflg[a]=0;}
      }}
}
/* ..(skip).. */

```

We must make the similar list of solutions to the preceding one, in order to find any 'correspondence' between them. We want to make the first block of 4x4 on left-top equal to the other type, completely the same with its corresponding solution.

It is why we should carefully take the similar steps in common in our program.

The next list of solutions shows the result of my recent effort.

```

** Multiple 4x4 Type of 'Composite & Complete' Magic Squares 8x8: **
** New Abstract List of Standard Solutions with Check-Sums (Part) **
  ** Calculated and listed by Kanji Setsuda on Feb.14, 2010 **

```

| 1/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |                  |    | 25/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |                  |  |  |
|---------------------|----|----|----|----|----|----|----|------------------|----|----------------------|----|----|----|----|----|----|------------------|--|--|
| 1                   | 63 | 6  | 60 | 22 | 44 | 17 | 47 | =260 260\260/260 | 1  | 63                   | 4  | 62 | 20 | 46 | 17 | 47 | =260 260\260/260 |  |  |
| 62                  | 4  | 57 | 7  | 41 | 23 | 46 | 20 | =260 260\260/260 | 60 | 6                    | 57 | 7  | 41 | 23 | 44 | 22 | =260 260\260/260 |  |  |
| 11                  | 53 | 16 | 50 | 32 | 34 | 27 | 37 | =260 260\260/260 | 13 | 51                   | 16 | 50 | 32 | 34 | 29 | 35 | =260 260\260/260 |  |  |
| 56                  | 10 | 51 | 13 | 35 | 29 | 40 | 26 | =260 260\260/260 | 56 | 10                   | 53 | 11 | 37 | 27 | 40 | 26 | =260 260\260/260 |  |  |
| 43                  | 21 | 48 | 18 | 64 | 2  | 59 | 5  | =260 260\260/260 | 45 | 19                   | 48 | 18 | 64 | 2  | 61 | 3  | =260 260\260/260 |  |  |
| 24                  | 42 | 19 | 45 | 3  | 61 | 8  | 58 | =260 260\260/260 | 24 | 42                   | 21 | 43 | 5  | 59 | 8  | 58 | =260 260\260/260 |  |  |
| 33                  | 31 | 38 | 28 | 54 | 12 | 49 | 15 | =260 260\260/260 | 33 | 31                   | 36 | 30 | 52 | 14 | 49 | 15 | =260 260\260/260 |  |  |
| 30                  | 36 | 25 | 39 | 9  | 55 | 14 | 52 | =260 260\260/260 | 28 | 38                   | 25 | 39 | 9  | 55 | 12 | 54 | =260 260\260/260 |  |  |

49/ =Row|C1m\PD1/PD2  
 1 63 4 62 20 46 17 47 =260|260\260/260  
 56 10 53 11 37 27 40 26 =260|260\260/260  
 13 51 16 50 32 34 29 35 =260|260\260/260  
 60 6 57 7 41 23 44 22 =260|260\260/260  
 45 19 48 18 64 2 61 3 =260|260\260/260  
 28 38 25 39 9 55 12 54 =260|260\260/260  
 33 31 36 30 52 14 49 15 =260|260\260/260  
 24 42 21 43 5 59 8 58 =260|260\260/260

97/ =Row|C1m\PD1/PD2  
 1 63 4 62 12 54 9 55 =260|260\260/260  
 32 34 29 35 21 43 24 42 =260|260\260/260  
 37 27 40 26 48 18 45 19 =260|260\260/260  
 60 6 57 7 49 15 52 14 =260|260\260/260  
 53 11 56 10 64 2 61 3 =260|260\260/260  
 44 22 41 23 33 31 36 30 =260|260\260/260  
 17 47 20 46 28 38 25 39 =260|260\260/260  
 16 50 13 51 5 59 8 58 =260|260\260/260

145/ =Row|C1m\PD1/PD2  
 1 62 4 63 20 47 17 46 =260|260\260/260  
 56 11 53 10 37 26 40 27 =260|260\260/260  
 13 50 16 51 32 35 29 34 =260|260\260/260  
 60 7 57 6 41 22 44 23 =260|260\260/260  
 45 18 48 19 64 3 61 2 =260|260\260/260  
 28 39 25 38 9 54 12 55 =260|260\260/260  
 33 30 36 31 52 15 49 14 =260|260\260/260  
 24 43 21 42 5 58 8 59 =260|260\260/260

193/ =Row|C1m\PD1/PD2  
 1 62 4 63 12 55 9 54 =260|260\260/260  
 32 35 29 34 21 42 24 43 =260|260\260/260  
 37 26 40 27 48 19 45 18 =260|260\260/260  
 60 7 57 6 49 14 52 15 =260|260\260/260  
 53 10 56 11 64 3 61 2 =260|260\260/260  
 44 23 41 22 33 30 36 31 =260|260\260/260  
 17 46 20 47 28 39 25 38 =260|260\260/260  
 16 51 13 50 5 58 8 59 =260|260\260/260

241/ =Row|C1m\PD1/PD2  
 1 60 6 63 14 55 9 52 =260|260\260/260  
 48 21 43 18 35 26 40 29 =260|260\260/260  
 19 42 24 45 32 37 27 34 =260|260\260/260  
 62 7 57 4 49 12 54 15 =260|260\260/260  
 51 10 56 13 64 5 59 2 =260|260\260/260  
 30 39 25 36 17 44 22 47 =260|260\260/260  
 33 28 38 31 46 23 41 20 =260|260\260/260  
 16 53 11 50 3 58 8 61 =260|260\260/260

289/ =Row|C1m\PD1/PD2  
 1 56 10 63 14 59 5 52 =260|260\260/260  
 48 25 39 18 35 22 44 29 =260|260\260/260  
 19 38 28 45 32 41 23 34 =260|260\260/260  
 62 11 53 4 49 8 58 15 =260|260\260/260  
 51 6 60 13 64 9 55 2 =260|260\260/260  
 30 43 21 36 17 40 26 47 =260|260\260/260  
 33 24 42 31 46 27 37 20 =260|260\260/260  
 16 57 7 50 3 54 12 61 =260|260\260/260

337/ =Row|C1m\PD1/PD2  
 1 48 18 63 22 59 5 44 =260|260\260/260  
 32 49 15 34 11 38 28 53 =260|260\260/260  
 35 14 52 29 56 25 39 10 =260|260\260/260  
 62 19 45 4 41 8 58 23 =260|260\260/260  
 43 6 60 21 64 17 47 2 =260|260\260/260  
 54 27 37 12 33 16 50 31 =260|260\260/260  
 9 40 26 55 30 51 13 36 =260|260\260/260  
 24 57 7 42 3 46 20 61 =260|260\260/260

73/ =Row|C1m\PD1/PD2  
 1 63 4 62 12 54 9 55 =260|260\260/260  
 48 18 45 19 37 27 40 26 =260|260\260/260  
 21 43 24 42 32 34 29 35 =260|260\260/260  
 60 6 57 7 49 15 52 14 =260|260\260/260  
 53 11 56 10 64 2 61 3 =260|260\260/260  
 28 38 25 39 17 47 20 46 =260|260\260/260  
 33 31 36 30 44 22 41 23 =260|260\260/260  
 16 50 13 51 5 59 8 58 =260|260\260/260

121/ =Row|C1m\PD1/PD2  
 1 62 4 63 20 47 17 46 =260|260\260/260  
 60 7 57 6 41 22 44 23 =260|260\260/260  
 13 50 16 51 32 35 29 34 =260|260\260/260  
 56 11 53 10 37 26 40 27 =260|260\260/260  
 45 18 48 19 64 3 61 2 =260|260\260/260  
 24 43 21 42 5 58 8 59 =260|260\260/260  
 33 30 36 31 52 15 49 14 =260|260\260/260  
 28 39 25 38 9 54 12 55 =260|260\260/260

169/ =Row|C1m\PD1/PD2  
 1 62 4 63 12 55 9 54 =260|260\260/260  
 48 19 45 18 37 26 40 27 =260|260\260/260  
 21 42 24 43 32 35 29 34 =260|260\260/260  
 60 7 57 6 49 14 52 15 =260|260\260/260  
 53 10 56 11 64 3 61 2 =260|260\260/260  
 28 39 25 38 17 46 20 47 =260|260\260/260  
 33 30 36 31 44 23 41 22 =260|260\260/260  
 16 51 13 50 5 58 8 59 =260|260\260/260

217/ =Row|C1m\PD1/PD2  
 1 60 6 63 22 47 17 44 =260|260\260/260  
 56 13 51 10 35 26 40 29 =260|260\260/260  
 11 50 16 53 32 37 27 34 =260|260\260/260  
 62 7 57 4 41 20 46 23 =260|260\260/260  
 43 18 48 21 64 5 59 2 =260|260\260/260  
 30 39 25 36 9 52 14 55 =260|260\260/260  
 33 28 38 31 54 15 49 12 =260|260\260/260  
 24 45 19 42 3 58 8 61 =260|260\260/260

265/ =Row|C1m\PD1/PD2  
 1 60 6 63 14 55 9 52 =260|260\260/260  
 32 37 27 34 19 42 24 45 =260|260\260/260  
 35 26 40 29 48 21 43 18 =260|260\260/260  
 62 7 57 4 49 12 54 15 =260|260\260/260  
 51 10 56 13 64 5 59 2 =260|260\260/260  
 46 23 41 20 33 28 38 31 =260|260\260/260  
 17 44 22 47 30 39 25 36 =260|260\260/260  
 16 53 11 50 3 58 8 61 =260|260\260/260

313/ =Row|C1m\PD1/PD2  
 1 56 10 63 14 59 5 52 =260|260\260/260  
 32 41 23 34 19 38 28 45 =260|260\260/260  
 35 22 44 29 48 25 39 18 =260|260\260/260  
 62 11 53 4 49 8 58 15 =260|260\260/260  
 51 6 60 13 64 9 55 2 =260|260\260/260  
 46 27 37 20 33 24 42 31 =260|260\260/260  
 17 40 26 47 30 43 21 36 =260|260\260/260  
 16 57 7 50 3 54 12 61 =260|260\260/260

361/ =Row|C1m\PD1/PD2  
 2 64 5 59 21 43 18 48 =260|260\260/260  
 61 3 58 8 42 24 45 19 =260|260\260/260  
 12 54 15 49 31 33 28 38 =260|260\260/260  
 55 9 52 14 36 30 39 25 =260|260\260/260  
 44 22 47 17 63 1 60 6 =260|260\260/260  
 23 41 20 46 4 62 7 57 =260|260\260/260  
 34 32 37 27 53 11 50 16 =260|260\260/260  
 29 35 26 40 10 56 13 51 =260|260\260/260

481/ =Row|C1m\PD1/PD2  
2 61 3 64 19 48 18 45 =260|260\260/260  
59 8 58 5 42 21 43 24 =260|260\260/260  
14 49 15 52 31 36 30 33 =260|260\260/260  
55 12 54 9 38 25 39 28 =260|260\260/260  
46 17 47 20 63 4 62 1 =260|260\260/260  
23 44 22 41 6 57 7 60 =260|260\260/260  
34 29 35 32 51 16 50 13 =260|260\260/260  
27 40 26 37 10 53 11 56 =260|260\260/260

649/ =Row|C1m\PD1/PD2  
2 55 9 64 13 60 6 51 =260|260\260/260  
47 26 40 17 36 21 43 30 =260|260\260/260  
20 37 27 46 31 42 24 33 =260|260\260/260  
61 12 54 3 50 7 57 16 =260|260\260/260  
52 5 59 14 63 10 56 1 =260|260\260/260  
29 44 22 35 18 39 25 48 =260|260\260/260  
34 23 41 32 45 28 38 19 =260|260\260/260  
15 58 8 49 4 53 11 62 =260|260\260/260

721/ =Row|C1m\PD1/PD2  
3 64 5 58 21 42 19 48 =260|260\260/260  
61 2 59 8 43 24 45 18 =260|260\260/260  
12 55 14 49 30 33 28 39 =260|260\260/260  
54 9 52 15 36 31 38 25 =260|260\260/260  
44 23 46 17 62 1 60 7 =260|260\260/260  
22 41 20 47 4 63 6 57 =260|260\260/260  
35 32 37 26 53 10 51 16 =260|260\260/260  
29 34 27 40 11 56 13 50 =260|260\260/260

1441/ =Row|C1m\PD1/PD2  
5 64 3 58 19 42 21 48 =260|260\260/260  
59 2 61 8 45 24 43 18 =260|260\260/260  
14 55 12 49 28 33 30 39 =260|260\260/260  
52 9 54 15 38 31 36 25 =260|260\260/260  
46 23 44 17 60 1 62 7 =260|260\260/260  
20 41 22 47 6 63 4 57 =260|260\260/260  
37 32 35 26 51 10 53 16 =260|260\260/260  
27 34 29 40 13 56 11 50 =260|260\260/260

2161/ =Row|C1m\PD1/PD2  
7 62 4 57 20 41 23 46 =260|260\260/260  
60 1 63 6 47 22 44 17 =260|260\260/260  
13 56 10 51 26 35 29 40 =260|260\260/260  
50 11 53 16 37 32 34 27 =260|260\260/260  
45 24 42 19 58 3 61 8 =260|260\260/260  
18 43 21 48 5 64 2 59 =260|260\260/260  
39 30 36 25 52 9 55 14 =260|260\260/260  
28 33 31 38 15 54 12 49 =260|260\260/260

2881/ =Row|C1m\PD1/PD2  
9 64 3 54 19 38 25 48 =260|260\260/260  
55 2 61 12 45 28 39 18 =260|260\260/260  
14 59 8 49 24 33 30 43 =260|260\260/260  
52 5 58 15 42 31 36 21 =260|260\260/260  
46 27 40 17 56 1 62 11 =260|260\260/260  
20 37 26 47 10 63 4 53 =260|260\260/260  
41 32 35 22 51 6 57 16 =260|260\260/260  
23 34 29 44 13 60 7 50 =260|260\260/260

3457/ =Row|C1m\PD1/PD2  
11 62 4 53 20 37 27 46 =260|260\260/260  
56 1 63 10 47 26 40 17 =260|260\260/260  
13 60 6 51 22 35 29 44 =260|260\260/260  
50 7 57 16 41 32 34 23 =260|260\260/260  
45 28 38 19 54 3 61 12 =260|260\260/260  
18 39 25 48 9 64 2 55 =260|260\260/260  
43 30 36 21 52 5 59 14 =260|260\260/260  
24 33 31 42 15 58 8 49 =260|260\260/260

577/ =Row|C1m\PD1/PD2  
2 59 5 64 21 48 18 43 =260|260\260/260  
55 14 52 9 36 25 39 30 =260|260\260/260  
12 49 15 54 31 38 28 33 =260|260\260/260  
61 8 58 3 42 19 45 24 =260|260\260/260  
44 17 47 22 63 6 60 1 =260|260\260/260  
29 40 26 35 10 51 13 56 =260|260\260/260  
34 27 37 32 53 16 50 11 =260|260\260/260  
23 46 20 41 4 57 7 62 =260|260\260/260

697/ =Row|C1m\PD1/PD2  
2 47 17 64 21 60 6 43 =260|260\260/260  
31 50 16 33 12 37 27 54 =260|260\260/260  
36 13 51 30 55 26 40 9 =260|260\260/260  
61 20 46 3 42 7 57 24 =260|260\260/260  
44 5 59 22 63 18 48 1 =260|260\260/260  
53 28 38 11 34 15 49 32 =260|260\260/260  
10 39 25 56 29 52 14 35 =260|260\260/260  
23 58 8 41 4 45 19 62 =260|260\260/260

1081/ =Row|C1m\PD1/PD2  
4 63 6 57 22 41 20 47 =260|260\260/260  
62 1 60 7 44 23 46 17 =260|260\260/260  
11 56 13 50 29 34 27 40 =260|260\260/260  
53 10 51 16 35 32 37 26 =260|260\260/260  
43 24 45 18 61 2 59 8 =260|260\260/260  
21 42 19 48 3 64 5 58 =260|260\260/260  
36 31 38 25 54 9 52 15 =260|260\260/260  
30 33 28 39 12 55 14 49 =260|260\260/260

1801/ =Row|C1m\PD1/PD2  
6 63 4 57 20 41 22 47 =260|260\260/260  
60 1 62 7 46 23 44 17 =260|260\260/260  
13 56 11 50 27 34 29 40 =260|260\260/260  
51 10 53 16 37 32 35 26 =260|260\260/260  
45 24 43 18 59 2 61 8 =260|260\260/260  
19 42 21 48 5 64 3 58 =260|260\260/260  
38 31 36 25 52 9 54 15 =260|260\260/260  
28 33 30 39 14 55 12 49 =260|260\260/260

2521/ =Row|C1m\PD1/PD2  
8 61 3 58 19 42 24 45 =260|260\260/260  
59 2 64 5 48 21 43 18 =260|260\260/260  
14 55 9 52 25 36 30 39 =260|260\260/260  
49 12 54 15 38 31 33 28 =260|260\260/260  
46 23 41 20 57 4 62 7 =260|260\260/260  
17 44 22 47 6 63 1 60 =260|260\260/260  
40 29 35 26 51 10 56 13 =260|260\260/260  
27 34 32 37 16 53 11 50 =260|260\260/260

3169/ =Row|C1m\PD1/PD2  
10 63 4 53 20 37 26 47 =260|260\260/260  
56 1 62 11 46 27 40 17 =260|260\260/260  
13 60 7 50 23 34 29 44 =260|260\260/260  
51 6 57 16 41 32 35 22 =260|260\260/260  
45 28 39 18 55 2 61 12 =260|260\260/260  
19 38 25 48 9 64 3 54 =260|260\260/260  
42 31 36 21 52 5 58 15 =260|260\260/260  
24 33 30 43 14 59 8 49 =260|260\260/260

3745/ =Row|C1m\PD1/PD2  
12 61 3 54 19 38 28 45 =260|260\260/260  
55 2 64 9 48 25 39 18 =260|260\260/260  
14 59 5 52 21 36 30 43 =260|260\260/260  
49 8 58 15 42 31 33 24 =260|260\260/260  
46 27 37 20 53 4 62 11 =260|260\260/260  
17 40 26 47 10 63 1 56 =260|260\260/260  
44 29 35 22 51 6 60 13 =260|260\260/260  
23 34 32 41 16 57 7 50 =260|260\260/260

|                        |    |    |    |    |    |    |    |      |      |      |     |                        |    |    |    |    |    |    |    |      |      |      |     |
|------------------------|----|----|----|----|----|----|----|------|------|------|-----|------------------------|----|----|----|----|----|----|----|------|------|------|-----|
| 4033/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 4321/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 13                     | 60 | 6  | 51 | 22 | 35 | 29 | 44 | =260 | 260\ | 260/ | 260 | 14                     | 59 | 5  | 52 | 21 | 36 | 30 | 43 | =260 | 260\ | 260/ | 260 |
| 56                     | 1  | 63 | 10 | 47 | 26 | 40 | 17 | =260 | 260\ | 260/ | 260 | 55                     | 2  | 64 | 9  | 48 | 25 | 39 | 18 | =260 | 260\ | 260/ | 260 |
| 11                     | 62 | 4  | 53 | 20 | 37 | 27 | 46 | =260 | 260\ | 260/ | 260 | 12                     | 61 | 3  | 54 | 19 | 38 | 28 | 45 | =260 | 260\ | 260/ | 260 |
| 50                     | 7  | 57 | 16 | 41 | 32 | 34 | 23 | =260 | 260\ | 260/ | 260 | 49                     | 8  | 58 | 15 | 42 | 31 | 33 | 24 | =260 | 260\ | 260/ | 260 |
| 43                     | 30 | 36 | 21 | 52 | 5  | 59 | 14 | =260 | 260\ | 260/ | 260 | 44                     | 29 | 35 | 22 | 51 | 6  | 60 | 13 | =260 | 260\ | 260/ | 260 |
| 18                     | 39 | 25 | 48 | 9  | 64 | 2  | 55 | =260 | 260\ | 260/ | 260 | 17                     | 40 | 26 | 47 | 10 | 63 | 1  | 56 | =260 | 260\ | 260/ | 260 |
| 45                     | 28 | 38 | 19 | 54 | 3  | 61 | 12 | =260 | 260\ | 260/ | 260 | 46                     | 27 | 37 | 20 | 53 | 4  | 62 | 11 | =260 | 260\ | 260/ | 260 |
| 24                     | 33 | 31 | 42 | 15 | 58 | 8  | 49 | =260 | 260\ | 260/ | 260 | 23                     | 34 | 32 | 41 | 16 | 57 | 7  | 50 | =260 | 260\ | 260/ | 260 |
| 4609/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 4897/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 15                     | 58 | 5  | 52 | 21 | 36 | 31 | 42 | =260 | 260\ | 260/ | 260 | 16                     | 57 | 6  | 51 | 22 | 35 | 32 | 41 | =260 | 260\ | 260/ | 260 |
| 54                     | 3  | 64 | 9  | 48 | 25 | 38 | 19 | =260 | 260\ | 260/ | 260 | 53                     | 4  | 63 | 10 | 47 | 26 | 37 | 20 | =260 | 260\ | 260/ | 260 |
| 12                     | 61 | 2  | 55 | 18 | 39 | 28 | 45 | =260 | 260\ | 260/ | 260 | 11                     | 62 | 1  | 56 | 17 | 40 | 27 | 46 | =260 | 260\ | 260/ | 260 |
| 49                     | 8  | 59 | 14 | 43 | 30 | 33 | 24 | =260 | 260\ | 260/ | 260 | 50                     | 7  | 60 | 13 | 44 | 29 | 34 | 23 | =260 | 260\ | 260/ | 260 |
| 44                     | 29 | 34 | 23 | 50 | 7  | 60 | 13 | =260 | 260\ | 260/ | 260 | 43                     | 30 | 33 | 24 | 49 | 8  | 59 | 14 | =260 | 260\ | 260/ | 260 |
| 17                     | 40 | 27 | 46 | 11 | 62 | 1  | 56 | =260 | 260\ | 260/ | 260 | 18                     | 39 | 28 | 45 | 12 | 61 | 2  | 55 | =260 | 260\ | 260/ | 260 |
| 47                     | 26 | 37 | 20 | 53 | 4  | 63 | 10 | =260 | 260\ | 260/ | 260 | 48                     | 25 | 38 | 19 | 54 | 3  | 64 | 9  | =260 | 260\ | 260/ | 260 |
| 22                     | 35 | 32 | 41 | 16 | 57 | 6  | 51 | =260 | 260\ | 260/ | 260 | 21                     | 36 | 31 | 42 | 15 | 58 | 5  | 52 | =260 | 260\ | 260/ | 260 |
| 5185/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 5257/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 17                     | 64 | 3  | 46 | 35 | 14 | 49 | 32 | =260 | 260\ | 260/ | 260 | 18                     | 63 | 4  | 45 | 36 | 13 | 50 | 31 | =260 | 260\ | 260/ | 260 |
| 47                     | 2  | 61 | 20 | 29 | 52 | 15 | 34 | =260 | 260\ | 260/ | 260 | 48                     | 1  | 62 | 19 | 30 | 51 | 16 | 33 | =260 | 260\ | 260/ | 260 |
| 22                     | 59 | 8  | 41 | 40 | 9  | 54 | 27 | =260 | 260\ | 260/ | 260 | 21                     | 60 | 7  | 42 | 39 | 10 | 53 | 28 | =260 | 260\ | 260/ | 260 |
| 44                     | 5  | 58 | 23 | 26 | 55 | 12 | 37 | =260 | 260\ | 260/ | 260 | 43                     | 6  | 57 | 24 | 25 | 56 | 11 | 38 | =260 | 260\ | 260/ | 260 |
| 30                     | 51 | 16 | 33 | 48 | 1  | 62 | 19 | =260 | 260\ | 260/ | 260 | 29                     | 52 | 15 | 34 | 47 | 2  | 61 | 20 | =260 | 260\ | 260/ | 260 |
| 36                     | 13 | 50 | 31 | 18 | 63 | 4  | 45 | =260 | 260\ | 260/ | 260 | 35                     | 14 | 49 | 32 | 17 | 64 | 3  | 46 | =260 | 260\ | 260/ | 260 |
| 25                     | 56 | 11 | 38 | 43 | 6  | 57 | 24 | =260 | 260\ | 260/ | 260 | 26                     | 55 | 12 | 37 | 44 | 5  | 58 | 23 | =260 | 260\ | 260/ | 260 |
| 39                     | 10 | 53 | 28 | 21 | 60 | 7  | 42 | =260 | 260\ | 260/ | 260 | 40                     | 9  | 54 | 27 | 22 | 59 | 8  | 41 | =260 | 260\ | 260/ | 260 |
| 5329/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 5401/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 19                     | 62 | 4  | 45 | 36 | 13 | 51 | 30 | =260 | 260\ | 260/ | 260 | 20                     | 61 | 3  | 46 | 35 | 14 | 52 | 29 | =260 | 260\ | 260/ | 260 |
| 48                     | 1  | 63 | 18 | 31 | 50 | 16 | 33 | =260 | 260\ | 260/ | 260 | 47                     | 2  | 64 | 17 | 32 | 49 | 15 | 34 | =260 | 260\ | 260/ | 260 |
| 21                     | 60 | 6  | 43 | 38 | 11 | 53 | 28 | =260 | 260\ | 260/ | 260 | 22                     | 59 | 5  | 44 | 37 | 12 | 54 | 27 | =260 | 260\ | 260/ | 260 |
| 42                     | 7  | 57 | 24 | 25 | 56 | 10 | 39 | =260 | 260\ | 260/ | 260 | 41                     | 8  | 58 | 23 | 26 | 55 | 9  | 40 | =260 | 260\ | 260/ | 260 |
| 29                     | 52 | 14 | 35 | 46 | 3  | 61 | 20 | =260 | 260\ | 260/ | 260 | 30                     | 51 | 13 | 36 | 45 | 4  | 62 | 19 | =260 | 260\ | 260/ | 260 |
| 34                     | 15 | 49 | 32 | 17 | 64 | 2  | 47 | =260 | 260\ | 260/ | 260 | 33                     | 16 | 50 | 31 | 18 | 63 | 1  | 48 | =260 | 260\ | 260/ | 260 |
| 27                     | 54 | 12 | 37 | 44 | 5  | 59 | 22 | =260 | 260\ | 260/ | 260 | 28                     | 53 | 11 | 38 | 43 | 6  | 60 | 21 | =260 | 260\ | 260/ | 260 |
| 40                     | 9  | 55 | 26 | 23 | 58 | 8  | 41 | =260 | 260\ | 260/ | 260 | 39                     | 10 | 56 | 25 | 24 | 57 | 7  | 42 | =260 | 260\ | 260/ | 260 |
| 5473/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 5545/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 21                     | 60 | 6  | 43 | 38 | 11 | 53 | 28 | =260 | 260\ | 260/ | 260 | 22                     | 59 | 5  | 44 | 37 | 12 | 54 | 27 | =260 | 260\ | 260/ | 260 |
| 48                     | 1  | 63 | 18 | 31 | 50 | 16 | 33 | =260 | 260\ | 260/ | 260 | 47                     | 2  | 64 | 17 | 32 | 49 | 15 | 34 | =260 | 260\ | 260/ | 260 |
| 19                     | 62 | 4  | 45 | 36 | 13 | 51 | 30 | =260 | 260\ | 260/ | 260 | 20                     | 61 | 3  | 46 | 35 | 14 | 52 | 29 | =260 | 260\ | 260/ | 260 |
| 42                     | 7  | 57 | 24 | 25 | 56 | 10 | 39 | =260 | 260\ | 260/ | 260 | 41                     | 8  | 58 | 23 | 26 | 55 | 9  | 40 | =260 | 260\ | 260/ | 260 |
| 27                     | 54 | 12 | 37 | 44 | 5  | 59 | 22 | =260 | 260\ | 260/ | 260 | 28                     | 53 | 11 | 38 | 43 | 6  | 60 | 21 | =260 | 260\ | 260/ | 260 |
| 34                     | 15 | 49 | 32 | 17 | 64 | 2  | 47 | =260 | 260\ | 260/ | 260 | 33                     | 16 | 50 | 31 | 18 | 63 | 1  | 48 | =260 | 260\ | 260/ | 260 |
| 29                     | 52 | 14 | 35 | 46 | 3  | 61 | 20 | =260 | 260\ | 260/ | 260 | 30                     | 51 | 13 | 36 | 45 | 4  | 62 | 19 | =260 | 260\ | 260/ | 260 |
| 40                     | 9  | 55 | 26 | 23 | 58 | 8  | 41 | =260 | 260\ | 260/ | 260 | 39                     | 10 | 56 | 25 | 24 | 57 | 7  | 42 | =260 | 260\ | 260/ | 260 |
| 5617/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     | 5689/ =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |      |      |     |
| 23                     | 58 | 5  | 44 | 37 | 12 | 55 | 26 | =260 | 260\ | 260/ | 260 | 24                     | 57 | 6  | 43 | 38 | 11 | 56 | 25 | =260 | 260\ | 260/ | 260 |
| 46                     | 3  | 64 | 17 | 32 | 49 | 14 | 35 | =260 | 260\ | 260/ | 260 | 45                     | 4  | 63 | 18 | 31 | 50 | 13 | 36 | =260 | 260\ | 260/ | 260 |
| 20                     | 61 | 2  | 47 | 34 | 15 | 52 | 29 | =260 | 260\ | 260/ | 260 | 19                     | 62 | 1  | 48 | 33 | 16 | 51 | 30 | =260 | 260\ | 260/ | 260 |
| 41                     | 8  | 59 | 22 | 27 | 54 | 9  | 40 | =260 | 260\ | 260/ | 260 | 42                     | 7  | 60 | 21 | 28 | 53 | 10 | 39 | =260 | 260\ | 260/ | 260 |
| 28                     | 53 | 10 | 39 | 42 | 7  | 60 | 21 | =260 | 260\ | 260/ | 260 | 27                     | 54 | 9  | 40 | 41 | 8  | 59 | 22 | =260 | 260\ | 260/ | 260 |
| 33                     | 16 | 51 | 30 | 19 | 62 | 1  | 48 | =260 | 260\ | 260/ | 260 | 34                     | 15 | 52 | 29 | 20 | 61 | 2  | 47 | =260 | 260\ | 260/ | 260 |
| 31                     | 50 | 13 | 36 | 45 | 4  | 63 | 18 | =260 | 260\ | 260/ | 260 | 32                     | 49 | 14 | 35 | 46 | 3  | 64 | 17 | =260 | 260\ | 260/ | 260 |
| 38                     | 11 | 56 | 25 | 24 | 57 | 6  | 43 | =260 | 260\ | 260/ | 260 | 37                     | 12 | 55 | 26 | 23 | 58 | 5  | 44 | =260 | 260\ | 260/ | 260 |

[Count = 5760]

The list-forming inequality conditions are:  $n1 < n64$ ,  $n1 < n8$ ,  $n1 < n57$  and  $n2 > n9$ .

## #2. Compare the Contents between the Two Types of 'Composite' PMS88

Now let's compare our two similar lists of solutions piece by piece carefully. I put the first three examples close in the same page to do that easier.



**\*\* Compare These Two Types: Simultaneous and 'C & C' \*\***

|    |    |    |    |     |    |    |    |    |      |    |    |    |    |      |    |    |    |    |    |    |    |    |    |
|----|----|----|----|-----|----|----|----|----|------|----|----|----|----|------|----|----|----|----|----|----|----|----|----|
|    |    |    |    | 1/S |    |    |    |    | 25/S |    |    |    |    | 49/S |    |    |    |    |    |    |    |    |    |
| 1  | 63 | 6  | 60 | 18  | 48 | 21 | 43 | 1  | 63   | 4  | 62 | 18 | 48 | 19   | 45 | 1  | 63 | 4  | 62 | 18 | 48 | 19 | 45 |
| 62 | 4  | 57 | 7  | 45  | 19 | 42 | 24 | 60 | 6    | 57 | 7  | 43 | 21 | 42   | 24 | 56 | 10 | 53 | 11 | 39 | 25 | 38 | 28 |
| 11 | 53 | 16 | 50 | 28  | 38 | 31 | 33 | 13 | 51   | 16 | 50 | 30 | 36 | 31   | 33 | 13 | 51 | 16 | 50 | 30 | 36 | 31 | 33 |
| 56 | 10 | 51 | 13 | 39  | 25 | 36 | 30 | 56 | 10   | 53 | 11 | 39 | 25 | 38   | 28 | 60 | 6  | 57 | 7  | 43 | 21 | 42 | 24 |
| 35 | 29 | 40 | 26 | 52  | 14 | 55 | 9  | 37 | 27   | 40 | 26 | 54 | 12 | 55   | 9  | 41 | 23 | 44 | 22 | 58 | 8  | 59 | 5  |
| 32 | 34 | 27 | 37 | 15  | 49 | 12 | 54 | 32 | 34   | 29 | 35 | 15 | 49 | 14   | 52 | 32 | 34 | 29 | 35 | 15 | 49 | 14 | 52 |
| 41 | 23 | 46 | 20 | 58  | 8  | 61 | 3  | 41 | 23   | 44 | 22 | 58 | 8  | 59   | 5  | 37 | 27 | 40 | 26 | 54 | 12 | 55 | 9  |
| 22 | 44 | 17 | 47 | 5   | 59 | 2  | 64 | 20 | 46   | 17 | 47 | 3  | 61 | 2    | 64 | 20 | 46 | 17 | 47 | 3  | 61 | 2  | 64 |
|    |    |    |    | ◇   |    |    |    |    | ◇    |    |    |    |    | ◇    |    |    |    |    |    |    |    |    |    |
|    |    |    |    | 1/C |    |    |    |    | 25/C |    |    |    |    | 49/C |    |    |    |    |    |    |    |    |    |
| 1  | 63 | 6  | 60 | 22  | 44 | 17 | 47 | 1  | 63   | 4  | 62 | 20 | 46 | 17   | 47 | 1  | 63 | 4  | 62 | 20 | 46 | 17 | 47 |
| 62 | 4  | 57 | 7  | 41  | 23 | 46 | 20 | 60 | 6    | 57 | 7  | 41 | 23 | 44   | 22 | 56 | 10 | 53 | 11 | 37 | 27 | 40 | 26 |
| 11 | 53 | 16 | 50 | 32  | 34 | 27 | 37 | 13 | 51   | 16 | 50 | 32 | 34 | 29   | 35 | 13 | 51 | 16 | 50 | 32 | 34 | 29 | 35 |
| 56 | 10 | 51 | 13 | 35  | 29 | 40 | 26 | 56 | 10   | 53 | 11 | 37 | 27 | 40   | 26 | 60 | 6  | 57 | 7  | 41 | 23 | 44 | 22 |
| 43 | 21 | 48 | 18 | 64  | 2  | 59 | 5  | 45 | 19   | 48 | 18 | 64 | 2  | 61   | 3  | 45 | 19 | 48 | 18 | 64 | 2  | 61 | 3  |
| 24 | 42 | 19 | 45 | 3   | 61 | 8  | 58 | 24 | 42   | 21 | 43 | 5  | 59 | 8    | 58 | 28 | 38 | 25 | 39 | 9  | 55 | 12 | 54 |
| 33 | 31 | 38 | 28 | 54  | 12 | 49 | 15 | 33 | 31   | 36 | 30 | 52 | 14 | 49   | 15 | 33 | 31 | 36 | 30 | 52 | 14 | 49 | 15 |
| 30 | 36 | 25 | 39 | 9   | 55 | 14 | 52 | 28 | 38   | 25 | 39 | 9  | 55 | 12   | 54 | 24 | 42 | 21 | 43 | 5  | 59 | 8  | 58 |

Each two of them are quite similar, aren't they? You can find each block No.1 on left-top of the three corresponding sets has the same content in the same pattern, and each block No.4 on right-down has the same content in the rotated pattern by 180 degrees. The contents of blocks No.2 and 3 are found to be exchanged with each other in the reflected patterns right to left or down to up, aren't they?

### #3. Find Transformation Method between the Two Types of Solutions

I picked the next Transformation Method out of their correspondences, and put it into the conceptual diagrams below and wrote the two sets of transformation rules.

**\*\* Conceptual Diagrams of the Two Transformations \*\***

|    |    |    |    |         |    |    |    |    |     |    |    |    |    |    |    |
|----|----|----|----|---------|----|----|----|----|-----|----|----|----|----|----|----|
|    |    |    |    | 0/S --> |    |    |    |    | 0/C |    |    |    |    |    |    |
| 1  | 2  | 3  | 4  | 5       | 6  | 7  | 8  | 1  | 2   | 3  | 4  | 57 | 58 | 59 | 60 |
| 9  | 10 | 11 | 12 | 13      | 14 | 15 | 16 | 9  | 10  | 11 | 12 | 49 | 50 | 51 | 52 |
| 17 | 18 | 19 | 20 | 21      | 22 | 23 | 24 | 17 | 18  | 19 | 20 | 41 | 42 | 43 | 44 |
| 25 | 26 | 27 | 28 | 29      | 30 | 31 | 32 | 25 | 26  | 27 | 28 | 33 | 34 | 35 | 36 |
| 33 | 34 | 35 | 36 | 37      | 38 | 39 | 40 | 8  | 7   | 6  | 5  | 64 | 63 | 62 | 61 |
| 41 | 42 | 43 | 44 | 45      | 46 | 47 | 48 | 16 | 15  | 14 | 13 | 56 | 55 | 54 | 53 |
| 49 | 50 | 51 | 52 | 53      | 54 | 55 | 56 | 24 | 23  | 22 | 21 | 48 | 47 | 46 | 45 |
| 57 | 58 | 59 | 60 | 61      | 62 | 63 | 64 | 32 | 31  | 30 | 29 | 40 | 39 | 38 | 37 |
|    |    |    |    | 0/C --> |    |    |    |    | 0/S |    |    |    |    |    |    |
| 1  | 2  | 3  | 4  | 5       | 6  | 7  | 8  | 1  | 2   | 3  | 4  | 36 | 35 | 34 | 33 |
| 9  | 10 | 11 | 12 | 13      | 14 | 15 | 16 | 9  | 10  | 11 | 12 | 44 | 43 | 42 | 41 |
| 17 | 18 | 19 | 20 | 21      | 22 | 23 | 24 | 17 | 18  | 19 | 20 | 52 | 51 | 50 | 49 |
| 25 | 26 | 27 | 28 | 29      | 30 | 31 | 32 | 25 | 26  | 27 | 28 | 60 | 59 | 58 | 57 |
| 33 | 34 | 35 | 36 | 37      | 38 | 39 | 40 | 29 | 30  | 31 | 32 | 64 | 63 | 62 | 61 |
| 41 | 42 | 43 | 44 | 45      | 46 | 47 | 48 | 21 | 22  | 23 | 24 | 56 | 55 | 54 | 53 |
| 49 | 50 | 51 | 52 | 53      | 54 | 55 | 56 | 13 | 14  | 15 | 16 | 48 | 47 | 46 | 45 |
| 57 | 58 | 59 | 60 | 61      | 62 | 63 | 64 | 5  | 6   | 7  | 8  | 40 | 39 | 38 | 37 |

/\*\*/

/\* Transformation Rules: From Simultaneous into 'C&C' \*/

```
void trnsf1(void){
    tn[1]=nm[1]; tn[2]=nm[2]; tn[3]=nm[3]; tn[4]=nm[4];
    tn[5]=nm[57]; tn[6]=nm[58]; tn[7]=nm[59]; tn[8]=nm[60];
    tn[9]=nm[9]; tn[10]=nm[10]; tn[11]=nm[11]; tn[12]=nm[12];
    tn[13]=nm[49]; tn[14]=nm[50]; tn[15]=nm[51]; tn[16]=nm[52];
```

```

tn[17]=nm[17]; tn[18]=nm[18]; tn[19]=nm[19]; tn[20]=nm[20];
tn[21]=nm[41]; tn[22]=nm[42]; tn[23]=nm[43]; tn[24]=nm[44];
tn[25]=nm[25]; tn[26]=nm[26]; tn[27]=nm[27]; tn[28]=nm[28];
tn[29]=nm[33]; tn[30]=nm[34]; tn[31]=nm[35]; tn[32]=nm[36];
tn[33]=nm[8]; tn[34]=nm[7]; tn[35]=nm[6]; tn[36]=nm[5];
tn[37]=nm[64]; tn[38]=nm[63]; tn[39]=nm[62]; tn[40]=nm[61];
tn[41]=nm[16]; tn[42]=nm[15]; tn[43]=nm[14]; tn[44]=nm[13];
tn[45]=nm[56]; tn[46]=nm[55]; tn[47]=nm[54]; tn[48]=nm[53];
tn[49]=nm[24]; tn[50]=nm[23]; tn[51]=nm[22]; tn[52]=nm[21];
tn[53]=nm[48]; tn[54]=nm[47]; tn[55]=nm[46]; tn[56]=nm[45];
tn[57]=nm[32]; tn[58]=nm[31]; tn[59]=nm[30]; tn[60]=nm[29];
tn[61]=nm[40]; tn[62]=nm[39]; tn[63]=nm[38]; tn[64]=nm[37];
}
/* Transformation Rules: From 'C&C' into Simultaneous */
void trnsf2(void){
tn[1]=nm[1]; tn[2]=nm[2]; tn[3]=nm[3]; tn[4]=nm[4];
tn[5]=nm[36]; tn[6]=nm[35]; tn[7]=nm[34]; tn[8]=nm[33];
tn[9]=nm[9]; tn[10]=nm[10]; tn[11]=nm[11]; tn[12]=nm[12];
tn[13]=nm[44]; tn[14]=nm[43]; tn[15]=nm[42]; tn[16]=nm[41];
tn[17]=nm[17]; tn[18]=nm[18]; tn[19]=nm[19]; tn[20]=nm[20];
tn[21]=nm[52]; tn[22]=nm[51]; tn[23]=nm[50]; tn[24]=nm[49];
tn[25]=nm[25]; tn[26]=nm[26]; tn[27]=nm[27]; tn[28]=nm[28];
tn[29]=nm[60]; tn[30]=nm[59]; tn[31]=nm[58]; tn[32]=nm[57];
tn[33]=nm[29]; tn[34]=nm[30]; tn[35]=nm[31]; tn[36]=nm[32];
tn[37]=nm[64]; tn[38]=nm[63]; tn[39]=nm[62]; tn[40]=nm[61];
tn[41]=nm[21]; tn[42]=nm[22]; tn[43]=nm[23]; tn[44]=nm[24];
tn[45]=nm[56]; tn[46]=nm[55]; tn[47]=nm[54]; tn[48]=nm[53];
tn[49]=nm[13]; tn[50]=nm[14]; tn[51]=nm[15]; tn[52]=nm[16];
tn[53]=nm[48]; tn[54]=nm[47]; tn[55]=nm[46]; tn[56]=nm[45];
tn[57]=nm[5]; tn[58]=nm[6]; tn[59]=nm[7]; tn[60]=nm[8];
tn[61]=nm[40]; tn[62]=nm[39]; tn[63]=nm[38]; tn[64]=nm[37];
}
/**/

```

This method of transformation we have got is surely enough to change everything of one type into the other. We can repeat applying the same method to any piece of two sets of solutions. At first let's verify that by applying it successively to No.1.

```

** Transformations between 3T Simultaneous and C&C type of MS88 **
** Successive Transformations between the Actual Solutions No.1 **

```

|    |    |    |    |    |    |    |    | 1/S | --> |    |    |    |    |    |    |    |    | 1/C | --> |    |    |    |    |    |    |    |    | 1/S |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|-----|-----|----|----|----|----|----|----|----|----|-----|-----|----|----|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 63 | 6  | 60 | 18 | 48 | 21 | 43 | 1   | 63  | 6  | 60 | 22 | 44 | 17 | 47 | 1  | 63 | 6   | 60  | 18 | 48 | 21 | 43 | 1  | 63 | 6  | 60 | 22  | 44 | 17 | 47 | 1  | 63 | 6  | 60 | 18 | 48 | 21 | 43 |
| 62 | 4  | 57 | 7  | 45 | 19 | 42 | 24 | 62  | 4   | 57 | 7  | 41 | 23 | 46 | 20 | 62 | 4  | 57  | 7   | 45 | 19 | 42 | 24 | 62 | 4  | 57 | 7  | 41  | 23 | 46 | 20 | 62 | 4  | 57 | 7  | 45 | 19 | 42 | 24 |
| 11 | 53 | 16 | 50 | 28 | 38 | 31 | 33 | 11  | 53  | 16 | 50 | 32 | 34 | 27 | 37 | 11 | 53 | 16  | 50  | 28 | 38 | 31 | 33 | 11 | 53 | 16 | 50 | 32  | 34 | 27 | 37 | 11 | 53 | 16 | 50 | 28 | 38 | 31 | 33 |
| 56 | 10 | 51 | 13 | 39 | 25 | 36 | 30 | 56  | 10  | 51 | 13 | 35 | 29 | 40 | 26 | 56 | 10 | 51  | 13  | 39 | 25 | 36 | 30 | 56 | 10 | 51 | 13 | 35  | 29 | 40 | 26 | 56 | 10 | 51 | 13 | 39 | 25 | 36 | 30 |
| 35 | 29 | 40 | 26 | 52 | 14 | 55 | 9  | 43  | 21  | 48 | 18 | 64 | 2  | 59 | 5  | 35 | 29 | 40  | 26  | 52 | 14 | 55 | 9  | 35 | 29 | 40 | 26 | 52  | 14 | 55 | 9  | 35 | 29 | 40 | 26 | 52 | 14 | 55 | 9  |
| 32 | 34 | 27 | 37 | 15 | 49 | 12 | 54 | 24  | 42  | 19 | 45 | 3  | 61 | 8  | 58 | 32 | 34 | 27  | 37  | 15 | 49 | 12 | 54 | 32 | 34 | 27 | 37 | 15  | 49 | 12 | 54 | 32 | 34 | 27 | 37 | 15 | 49 | 12 | 54 |
| 41 | 23 | 46 | 20 | 58 | 8  | 61 | 3  | 33  | 31  | 38 | 28 | 54 | 12 | 49 | 15 | 41 | 23 | 46  | 20  | 58 | 8  | 61 | 3  | 41 | 23 | 46 | 20 | 58  | 8  | 61 | 3  | 41 | 23 | 46 | 20 | 58 | 8  | 61 | 3  |
| 22 | 44 | 17 | 47 | 5  | 59 | 2  | 64 | 30  | 36  | 25 | 39 | 9  | 55 | 14 | 52 | 22 | 44 | 17  | 47  | 5  | 59 | 2  | 64 | 22 | 44 | 17 | 47 | 5   | 59 | 2  | 64 | 22 | 44 | 17 | 47 | 5  | 59 | 2  | 64 |
|    |    |    |    |    |    |    |    | 1/C | --> |    |    |    |    |    |    |    |    | 1/S | --> |    |    |    |    |    |    |    |    | 1/C |    |    |    |    |    |    |    |    |    |    |    |
| 1  | 63 | 6  | 60 | 22 | 44 | 17 | 47 | 1   | 63  | 6  | 60 | 18 | 48 | 21 | 43 | 1  | 63 | 6   | 60  | 22 | 44 | 17 | 47 | 1  | 63 | 6  | 60 | 22  | 44 | 17 | 47 | 1  | 63 | 6  | 60 | 22 | 44 | 17 | 47 |
| 62 | 4  | 57 | 7  | 41 | 23 | 46 | 20 | 62  | 4   | 57 | 7  | 45 | 19 | 42 | 24 | 62 | 4  | 57  | 7   | 41 | 23 | 46 | 20 | 62 | 4  | 57 | 7  | 41  | 23 | 46 | 20 | 62 | 4  | 57 | 7  | 41 | 23 | 46 | 20 |
| 11 | 53 | 16 | 50 | 32 | 34 | 27 | 37 | 11  | 53  | 16 | 50 | 28 | 38 | 31 | 33 | 11 | 53 | 16  | 50  | 32 | 34 | 27 | 37 | 11 | 53 | 16 | 50 | 32  | 34 | 27 | 37 | 11 | 53 | 16 | 50 | 28 | 38 | 31 | 33 |
| 56 | 10 | 51 | 13 | 35 | 29 | 40 | 26 | 56  | 10  | 51 | 13 | 39 | 25 | 36 | 30 | 56 | 10 | 51  | 13  | 35 | 29 | 40 | 26 | 56 | 10 | 51 | 13 | 35  | 29 | 40 | 26 | 56 | 10 | 51 | 13 | 39 | 25 | 36 | 30 |
| 43 | 21 | 48 | 18 | 64 | 2  | 59 | 5  | 35  | 29  | 40 | 26 | 52 | 14 | 55 | 9  | 43 | 21 | 48  | 18  | 64 | 2  | 59 | 5  | 43 | 21 | 48 | 18 | 64  | 2  | 59 | 5  | 43 | 21 | 48 | 18 | 64 | 2  | 59 | 5  |
| 24 | 42 | 19 | 45 | 3  | 61 | 8  | 58 | 32  | 34  | 27 | 37 | 15 | 49 | 12 | 54 | 24 | 42 | 19  | 45  | 3  | 61 | 8  | 58 | 24 | 42 | 19 | 45 | 3   | 61 | 8  | 58 | 24 | 42 | 19 | 45 | 3  | 61 | 8  | 58 |
| 33 | 31 | 38 | 28 | 54 | 12 | 49 | 15 | 41  | 23  | 46 | 20 | 58 | 8  | 61 | 3  | 33 | 31 | 38  | 28  | 54 | 12 | 49 | 15 | 33 | 31 | 38 | 28 | 54  | 12 | 49 | 15 | 33 | 31 | 38 | 28 | 54 | 12 | 49 | 15 |
| 30 | 36 | 25 | 39 | 9  | 55 | 14 | 52 | 22  | 44  | 17 | 47 | 5  | 59 | 2  | 64 | 30 | 36 | 25  | 39  | 9  | 55 | 14 | 52 | 22 | 44 | 17 | 47 | 5   | 59 | 2  | 64 | 30 | 36 | 25 | 39 | 9  | 55 | 14 | 52 |

You now know this method can connect solutions in two-way transformations.  
 It can demonstrate 'one-to-one correspondence' between the two, don't you think?  
 Let's certify this by applying our Transformation method now to the plural Standard  
 Solutions with n1=1 one by one just as shown below.

**\*\* 3-type Simultaneous MS88: 'Composite', Self-Complementary and Pan-Diagonal \*\***  
**\*\* and the Multiple 'Composite & Complete' PMS88 Transformed: with n1=1 \*\***

| 1/S =Row C1m\PD1/PD2 --> |    |    |    |    |    |    |    |      |             |    |    |    | 1/C =Row C1m\PD1/PD2   |    |    |    |    |      |             |  |  |  |  |  |  |
|--------------------------|----|----|----|----|----|----|----|------|-------------|----|----|----|------------------------|----|----|----|----|------|-------------|--|--|--|--|--|--|
| 1                        | 63 | 6  | 60 | 18 | 48 | 21 | 43 | =260 | 260\260/260 | 1  | 63 | 6  | 60                     | 22 | 44 | 17 | 47 | =260 | 260\260/260 |  |  |  |  |  |  |
| 62                       | 4  | 57 | 7  | 45 | 19 | 42 | 24 | =260 | 260\260/260 | 62 | 4  | 57 | 7                      | 41 | 23 | 46 | 20 | =260 | 260\260/260 |  |  |  |  |  |  |
| 11                       | 53 | 16 | 50 | 28 | 38 | 31 | 33 | =260 | 260\260/260 | 11 | 53 | 16 | 50                     | 32 | 34 | 27 | 37 | =260 | 260\260/260 |  |  |  |  |  |  |
| 56                       | 10 | 51 | 13 | 39 | 25 | 36 | 30 | =260 | 260\260/260 | 56 | 10 | 51 | 13                     | 35 | 29 | 40 | 26 | =260 | 260\260/260 |  |  |  |  |  |  |
| 35                       | 29 | 40 | 26 | 52 | 14 | 55 | 9  | =260 | 260\260/260 | 43 | 21 | 48 | 18                     | 64 | 2  | 59 | 5  | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 34 | 27 | 37 | 15 | 49 | 12 | 54 | =260 | 260\260/260 | 24 | 42 | 19 | 45                     | 3  | 61 | 8  | 58 | =260 | 260\260/260 |  |  |  |  |  |  |
| 41                       | 23 | 46 | 20 | 58 | 8  | 61 | 3  | =260 | 260\260/260 | 33 | 31 | 38 | 28                     | 54 | 12 | 49 | 15 | =260 | 260\260/260 |  |  |  |  |  |  |
| 22                       | 44 | 17 | 47 | 5  | 59 | 2  | 64 | =260 | 260\260/260 | 30 | 36 | 25 | 39                     | 9  | 55 | 14 | 52 | =260 | 260\260/260 |  |  |  |  |  |  |
| 25/S =Row C1m\PD1/PD2    |    |    |    |    |    |    |    |      |             |    |    |    | 25/C =Row C1m\PD1/PD2  |    |    |    |    |      |             |  |  |  |  |  |  |
| 1                        | 63 | 4  | 62 | 18 | 48 | 19 | 45 | =260 | 260\260/260 | 1  | 63 | 4  | 62                     | 20 | 46 | 17 | 47 | =260 | 260\260/260 |  |  |  |  |  |  |
| 60                       | 6  | 57 | 7  | 43 | 21 | 42 | 24 | =260 | 260\260/260 | 60 | 6  | 57 | 7                      | 41 | 23 | 44 | 22 | =260 | 260\260/260 |  |  |  |  |  |  |
| 13                       | 51 | 16 | 50 | 30 | 36 | 31 | 33 | =260 | 260\260/260 | 13 | 51 | 16 | 50                     | 32 | 34 | 29 | 35 | =260 | 260\260/260 |  |  |  |  |  |  |
| 56                       | 10 | 53 | 11 | 39 | 25 | 38 | 28 | =260 | 260\260/260 | 56 | 10 | 53 | 11                     | 37 | 27 | 40 | 26 | =260 | 260\260/260 |  |  |  |  |  |  |
| 37                       | 27 | 40 | 26 | 54 | 12 | 55 | 9  | =260 | 260\260/260 | 45 | 19 | 48 | 18                     | 64 | 2  | 61 | 3  | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 34 | 29 | 35 | 15 | 49 | 14 | 52 | =260 | 260\260/260 | 24 | 42 | 21 | 43                     | 5  | 59 | 8  | 58 | =260 | 260\260/260 |  |  |  |  |  |  |
| 41                       | 23 | 44 | 22 | 58 | 8  | 59 | 5  | =260 | 260\260/260 | 33 | 31 | 36 | 30                     | 52 | 14 | 49 | 15 | =260 | 260\260/260 |  |  |  |  |  |  |
| 20                       | 46 | 17 | 47 | 3  | 61 | 2  | 64 | =260 | 260\260/260 | 28 | 38 | 25 | 39                     | 9  | 55 | 12 | 54 | =260 | 260\260/260 |  |  |  |  |  |  |
| 49/S =Row C1m\PD1/PD2    |    |    |    |    |    |    |    |      |             |    |    |    | 49/C =Row C1m\PD1/PD2  |    |    |    |    |      |             |  |  |  |  |  |  |
| 1                        | 63 | 4  | 62 | 18 | 48 | 19 | 45 | =260 | 260\260/260 | 1  | 63 | 4  | 62                     | 20 | 46 | 17 | 47 | =260 | 260\260/260 |  |  |  |  |  |  |
| 56                       | 10 | 53 | 11 | 39 | 25 | 38 | 28 | =260 | 260\260/260 | 56 | 10 | 53 | 11                     | 37 | 27 | 40 | 26 | =260 | 260\260/260 |  |  |  |  |  |  |
| 13                       | 51 | 16 | 50 | 30 | 36 | 31 | 33 | =260 | 260\260/260 | 13 | 51 | 16 | 50                     | 32 | 34 | 29 | 35 | =260 | 260\260/260 |  |  |  |  |  |  |
| 60                       | 6  | 57 | 7  | 43 | 21 | 42 | 24 | =260 | 260\260/260 | 60 | 6  | 57 | 7                      | 41 | 23 | 44 | 22 | =260 | 260\260/260 |  |  |  |  |  |  |
| 41                       | 23 | 44 | 22 | 58 | 8  | 59 | 5  | =260 | 260\260/260 | 45 | 19 | 48 | 18                     | 64 | 2  | 61 | 3  | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 34 | 29 | 35 | 15 | 49 | 14 | 52 | =260 | 260\260/260 | 28 | 38 | 25 | 39                     | 9  | 55 | 12 | 54 | =260 | 260\260/260 |  |  |  |  |  |  |
| 37                       | 27 | 40 | 26 | 54 | 12 | 55 | 9  | =260 | 260\260/260 | 33 | 31 | 36 | 30                     | 52 | 14 | 49 | 15 | =260 | 260\260/260 |  |  |  |  |  |  |
| 20                       | 46 | 17 | 47 | 3  | 61 | 2  | 64 | =260 | 260\260/260 | 24 | 42 | 21 | 43                     | 5  | 59 | 8  | 58 | =260 | 260\260/260 |  |  |  |  |  |  |
| 73/S =Row C1m\PD1/PD2    |    |    |    |    |    |    |    |      |             |    |    |    | 73/C =Row C1m\PD1/PD2  |    |    |    |    |      |             |  |  |  |  |  |  |
| 1                        | 63 | 4  | 62 | 10 | 56 | 11 | 53 | =260 | 260\260/260 | 1  | 63 | 4  | 62                     | 12 | 54 | 9  | 55 | =260 | 260\260/260 |  |  |  |  |  |  |
| 48                       | 18 | 45 | 19 | 39 | 25 | 38 | 28 | =260 | 260\260/260 | 48 | 18 | 45 | 19                     | 37 | 27 | 40 | 26 | =260 | 260\260/260 |  |  |  |  |  |  |
| 21                       | 43 | 24 | 42 | 30 | 36 | 31 | 33 | =260 | 260\260/260 | 21 | 43 | 24 | 42                     | 32 | 34 | 29 | 35 | =260 | 260\260/260 |  |  |  |  |  |  |
| 60                       | 6  | 57 | 7  | 51 | 13 | 50 | 16 | =260 | 260\260/260 | 60 | 6  | 57 | 7                      | 49 | 15 | 52 | 14 | =260 | 260\260/260 |  |  |  |  |  |  |
| 49                       | 15 | 52 | 14 | 58 | 8  | 59 | 5  | =260 | 260\260/260 | 53 | 11 | 56 | 10                     | 64 | 2  | 61 | 3  | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 34 | 29 | 35 | 23 | 41 | 22 | 44 | =260 | 260\260/260 | 28 | 38 | 25 | 39                     | 17 | 47 | 20 | 46 | =260 | 260\260/260 |  |  |  |  |  |  |
| 37                       | 27 | 40 | 26 | 46 | 20 | 47 | 17 | =260 | 260\260/260 | 33 | 31 | 36 | 30                     | 44 | 22 | 41 | 23 | =260 | 260\260/260 |  |  |  |  |  |  |
| 12                       | 54 | 9  | 55 | 3  | 61 | 2  | 64 | =260 | 260\260/260 | 16 | 50 | 13 | 51                     | 5  | 59 | 8  | 58 | =260 | 260\260/260 |  |  |  |  |  |  |
| 97/S =Row C1m\PD1/PD2    |    |    |    |    |    |    |    |      |             |    |    |    | 97/C =Row C1m\PD1/PD2  |    |    |    |    |      |             |  |  |  |  |  |  |
| 1                        | 63 | 4  | 62 | 10 | 56 | 11 | 53 | =260 | 260\260/260 | 1  | 63 | 4  | 62                     | 12 | 54 | 9  | 55 | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 34 | 29 | 35 | 23 | 41 | 22 | 44 | =260 | 260\260/260 | 32 | 34 | 29 | 35                     | 21 | 43 | 24 | 42 | =260 | 260\260/260 |  |  |  |  |  |  |
| 37                       | 27 | 40 | 26 | 46 | 20 | 47 | 17 | =260 | 260\260/260 | 37 | 27 | 40 | 26                     | 48 | 18 | 45 | 19 | =260 | 260\260/260 |  |  |  |  |  |  |
| 60                       | 6  | 57 | 7  | 51 | 13 | 50 | 16 | =260 | 260\260/260 | 60 | 6  | 57 | 7                      | 49 | 15 | 52 | 14 | =260 | 260\260/260 |  |  |  |  |  |  |
| 49                       | 15 | 52 | 14 | 58 | 8  | 59 | 5  | =260 | 260\260/260 | 53 | 11 | 56 | 10                     | 64 | 2  | 61 | 3  | =260 | 260\260/260 |  |  |  |  |  |  |
| 48                       | 18 | 45 | 19 | 39 | 25 | 38 | 28 | =260 | 260\260/260 | 44 | 22 | 41 | 23                     | 33 | 31 | 36 | 30 | =260 | 260\260/260 |  |  |  |  |  |  |
| 21                       | 43 | 24 | 42 | 30 | 36 | 31 | 33 | =260 | 260\260/260 | 17 | 47 | 20 | 46                     | 28 | 38 | 25 | 39 | =260 | 260\260/260 |  |  |  |  |  |  |
| 12                       | 54 | 9  | 55 | 3  | 61 | 2  | 64 | =260 | 260\260/260 | 16 | 50 | 13 | 51                     | 5  | 59 | 8  | 58 | =260 | 260\260/260 |  |  |  |  |  |  |
| 121/S =Row C1m\PD1/PD2   |    |    |    |    |    |    |    |      |             |    |    |    | 121/C =Row C1m\PD1/PD2 |    |    |    |    |      |             |  |  |  |  |  |  |
| 1                        | 62 | 4  | 63 | 19 | 48 | 18 | 45 | =260 | 260\260/260 | 1  | 62 | 4  | 63                     | 20 | 47 | 17 | 46 | =260 | 260\260/260 |  |  |  |  |  |  |
| 60                       | 7  | 57 | 6  | 42 | 21 | 43 | 24 | =260 | 260\260/260 | 60 | 7  | 57 | 6                      | 41 | 22 | 44 | 23 | =260 | 260\260/260 |  |  |  |  |  |  |
| 13                       | 50 | 16 | 51 | 31 | 36 | 30 | 33 | =260 | 260\260/260 | 13 | 50 | 16 | 51                     | 32 | 35 | 29 | 34 | =260 | 260\260/260 |  |  |  |  |  |  |
| 56                       | 11 | 53 | 10 | 38 | 25 | 39 | 28 | =260 | 260\260/260 | 56 | 11 | 53 | 10                     | 37 | 26 | 40 | 27 | =260 | 260\260/260 |  |  |  |  |  |  |
| 37                       | 26 | 40 | 27 | 55 | 12 | 54 | 9  | =260 | 260\260/260 | 45 | 18 | 48 | 19                     | 64 | 3  | 61 | 2  | =260 | 260\260/260 |  |  |  |  |  |  |
| 32                       | 35 | 29 | 34 | 14 | 49 | 15 | 52 | =260 | 260\260/260 | 24 | 43 | 21 | 42                     | 5  | 58 | 8  | 59 | =260 | 260\260/260 |  |  |  |  |  |  |
| 41                       | 22 | 44 | 23 | 59 | 8  | 58 | 5  | =260 | 260\260/260 | 33 | 30 | 36 | 31                     | 52 | 15 | 49 | 14 | =260 | 260\260/260 |  |  |  |  |  |  |
| 20                       | 47 | 17 | 46 | 2  | 61 | 3  | 64 | =260 | 260\260/260 | 28 | 39 | 25 | 38                     | 9  | 54 | 12 | 55 | =260 | 260\260/260 |  |  |  |  |  |  |

|   |  |
|---|--|
| <p>145/S =Row C1m\PD1/PD2 --&gt;</p> <p>1 62 4 63 19 48 18 45 =260 260\260/260</p> <p>56 11 53 10 38 25 39 28 =260 260\260/260</p> <p>13 50 16 51 31 36 30 33 =260 260\260/260</p> <p>60 7 57 6 42 21 43 24 =260 260\260/260</p> <p>41 22 44 23 59 8 58 5 =260 260\260/260</p> <p>32 35 29 34 14 49 15 52 =260 260\260/260</p> <p>37 26 40 27 55 12 54 9 =260 260\260/260</p> <p>20 47 17 46 2 61 3 64 =260 260\260/260</p> <p>169/S =Row C1m\PD1/PD2</p> <p>1 62 4 63 11 56 10 53 =260 260\260/260</p> <p>48 19 45 18 38 25 39 28 =260 260\260/260</p> <p>21 42 24 43 31 36 30 33 =260 260\260/260</p> <p>60 7 57 6 50 13 51 16 =260 260\260/260</p> <p>49 14 52 15 59 8 58 5 =260 260\260/260</p> <p>32 35 29 34 22 41 23 44 =260 260\260/260</p> <p>37 26 40 27 47 20 46 17 =260 260\260/260</p> <p>12 55 9 54 2 61 3 64 =260 260\260/260</p> <p>193/S =Row C1m\PD1/PD2</p> <p>1 62 4 63 11 56 10 53 =260 260\260/260</p> <p>32 35 29 34 22 41 23 44 =260 260\260/260</p> <p>37 26 40 27 47 20 46 17 =260 260\260/260</p> <p>60 7 57 6 50 13 51 16 =260 260\260/260</p> <p>49 14 52 15 59 8 58 5 =260 260\260/260</p> <p>48 19 45 18 38 25 39 28 =260 260\260/260</p> <p>21 42 24 43 31 36 30 33 =260 260\260/260</p> <p>12 55 9 54 2 61 3 64 =260 260\260/260</p> <p>217/S =Row C1m\PD1/PD2</p> <p>1 60 6 63 21 48 18 43 =260 260\260/260</p> <p>56 13 51 10 36 25 39 30 =260 260\260/260</p> <p>11 50 16 53 31 38 28 33 =260 260\260/260</p> <p>62 7 57 4 42 19 45 24 =260 260\260/260</p> <p>41 20 46 23 61 8 58 3 =260 260\260/260</p> <p>32 37 27 34 12 49 15 54 =260 260\260/260</p> <p>35 26 40 29 55 14 52 9 =260 260\260/260</p> <p>22 47 17 44 2 59 5 64 =260 260\260/260</p> <p>241/S =Row C1m\PD1/PD2</p> <p>1 60 6 63 13 56 10 51 =260 260\260/260</p> <p>48 21 43 18 36 25 39 30 =260 260\260/260</p> <p>19 42 24 45 31 38 28 33 =260 260\260/260</p> <p>62 7 57 4 50 11 53 16 =260 260\260/260</p> <p>49 12 54 15 61 8 58 3 =260 260\260/260</p> <p>32 37 27 34 20 41 23 46 =260 260\260/260</p> <p>35 26 40 29 47 22 44 17 =260 260\260/260</p> <p>14 55 9 52 2 59 5 64 =260 260\260/260</p> <p>265/S =Row C1m\PD1/PD2</p> <p>1 60 6 63 13 56 10 51 =260 260\260/260</p> <p>32 37 27 34 20 41 23 46 =260 260\260/260</p> <p>35 26 40 29 47 22 44 17 =260 260\260/260</p> <p>62 7 57 4 50 11 53 16 =260 260\260/260</p> <p>49 12 54 15 61 8 58 3 =260 260\260/260</p> <p>48 21 43 18 36 25 39 30 =260 260\260/260</p> <p>19 42 24 45 31 38 28 33 =260 260\260/260</p> <p>14 55 9 52 2 59 5 64 =260 260\260/260</p> <p>289/S =Row C1m\PD1/PD2</p> <p>1 56 10 63 13 60 6 51 =260 260\260/260</p> <p>48 25 39 18 36 21 43 30 =260 260\260/260</p> <p>19 38 28 45 31 42 24 33 =260 260\260/260</p> <p>62 11 53 4 50 7 57 16 =260 260\260/260</p> <p>49 8 58 15 61 12 54 3 =260 260\260/260</p> <p>32 41 23 34 20 37 27 46 =260 260\260/260</p> <p>35 22 44 29 47 26 40 17 =260 260\260/260</p> <p>14 59 5 52 2 55 9 64 =260 260\260/260</p> | <p>145/C =Row C1m\PD1/PD2</p> <p>1 62 4 63 20 47 17 46 =260 260\260/260</p> <p>56 11 53 10 37 26 40 27 =260 260\260/260</p> <p>13 50 16 51 32 35 29 34 =260 260\260/260</p> <p>60 7 57 6 41 22 44 23 =260 260\260/260</p> <p>45 18 48 19 64 3 61 2 =260 260\260/260</p> <p>28 39 25 38 9 54 12 55 =260 260\260/260</p> <p>33 30 36 31 52 15 49 14 =260 260\260/260</p> <p>24 43 21 42 5 58 8 59 =260 260\260/260</p> <p>169/C =Row C1m\PD1/PD2</p> <p>1 62 4 63 12 55 9 54 =260 260\260/260</p> <p>48 19 45 18 37 26 40 27 =260 260\260/260</p> <p>21 42 24 43 32 35 29 34 =260 260\260/260</p> <p>60 7 57 6 49 14 52 15 =260 260\260/260</p> <p>53 10 56 11 64 3 61 2 =260 260\260/260</p> <p>28 39 25 38 17 46 20 47 =260 260\260/260</p> <p>33 30 36 31 44 23 41 22 =260 260\260/260</p> <p>16 51 13 50 5 58 8 59 =260 260\260/260</p> <p>193/C =Row C1m\PD1/PD2</p> <p>1 62 4 63 12 55 9 54 =260 260\260/260</p> <p>32 35 29 34 21 42 24 43 =260 260\260/260</p> <p>37 26 40 27 48 19 45 18 =260 260\260/260</p> <p>60 7 57 6 49 14 52 15 =260 260\260/260</p> <p>53 10 56 11 64 3 61 2 =260 260\260/260</p> <p>44 23 41 22 33 30 36 31 =260 260\260/260</p> <p>17 46 20 47 28 39 25 38 =260 260\260/260</p> <p>16 51 13 50 5 58 8 59 =260 260\260/260</p> <p>217/C =Row C1m\PD1/PD2</p> <p>1 60 6 63 22 47 17 44 =260 260\260/260</p> <p>56 13 51 10 35 26 40 29 =260 260\260/260</p> <p>11 50 16 53 32 37 27 34 =260 260\260/260</p> <p>62 7 57 4 41 20 46 23 =260 260\260/260</p> <p>43 18 48 21 64 5 59 2 =260 260\260/260</p> <p>30 39 25 36 9 52 14 55 =260 260\260/260</p> <p>33 28 38 31 54 15 49 12 =260 260\260/260</p> <p>24 45 19 42 3 58 8 61 =260 260\260/260</p> <p>241/C =Row C1m\PD1/PD2</p> <p>1 60 6 63 14 55 9 52 =260 260\260/260</p> <p>48 21 43 18 35 26 40 29 =260 260\260/260</p> <p>19 42 24 45 32 37 27 34 =260 260\260/260</p> <p>62 7 57 4 49 12 54 15 =260 260\260/260</p> <p>51 10 56 13 64 5 59 2 =260 260\260/260</p> <p>30 39 25 36 17 44 22 47 =260 260\260/260</p> <p>33 28 38 31 46 23 41 20 =260 260\260/260</p> <p>16 53 11 50 3 58 8 61 =260 260\260/260</p> <p>265/C =Row C1m\PD1/PD2</p> <p>1 60 6 63 14 55 9 52 =260 260\260/260</p> <p>32 37 27 34 19 42 24 45 =260 260\260/260</p> <p>35 26 40 29 48 21 43 18 =260 260\260/260</p> <p>62 7 57 4 49 12 54 15 =260 260\260/260</p> <p>51 10 56 13 64 5 59 2 =260 260\260/260</p> <p>46 23 41 20 33 28 38 31 =260 260\260/260</p> <p>17 44 22 47 30 39 25 36 =260 260\260/260</p> <p>16 53 11 50 3 58 8 61 =260 260\260/260</p> <p>289/C =Row C1m\PD1/PD2</p> <p>1 56 10 63 14 59 5 52 =260 260\260/260</p> <p>48 25 39 18 35 22 44 29 =260 260\260/260</p> <p>19 38 28 45 32 41 23 34 =260 260\260/260</p> <p>62 11 53 4 49 8 58 15 =260 260\260/260</p> <p>51 6 60 13 64 9 55 2 =260 260\260/260</p> <p>30 43 21 36 17 40 26 47 =260 260\260/260</p> <p>33 24 42 31 46 27 37 20 =260 260\260/260</p> <p>16 57 7 50 3 54 12 61 =260 260\260/260</p> |
|---|--|

|  |     |  |
|--|-----|--|
| 313/S =Row C1m\PD1/PD2                   | --> | 313/C =Row C1m\PD1/PD2                   |
| 1 56 10 63 13 60 6 51 =260 260\260/260   |     | 1 56 10 63 14 59 5 52 =260 260\260/260   |
| 32 41 23 34 20 37 27 46 =260 260\260/260 |     | 32 41 23 34 19 38 28 45 =260 260\260/260 |
| 35 22 44 29 47 26 40 17 =260 260\260/260 |     | 35 22 44 29 48 25 39 18 =260 260\260/260 |
| 62 11 53 4 50 7 57 16 =260 260\260/260   |     | 62 11 53 4 49 8 58 15 =260 260\260/260   |
| 49 8 58 15 61 12 54 3 =260 260\260/260   |     | 51 6 60 13 64 9 55 2 =260 260\260/260    |
| 48 25 39 18 36 21 43 30 =260 260\260/260 |     | 46 27 37 20 33 24 42 31 =260 260\260/260 |
| 19 38 28 45 31 42 24 33 =260 260\260/260 |     | 17 40 26 47 30 43 21 36 =260 260\260/260 |
| 14 59 5 52 2 55 9 64 =260 260\260/260    |     | 16 57 7 50 3 54 12 61 =260 260\260/260   |
| 337/S =Row C1m\PD1/PD2                   |     | 337/C =Row C1m\PD1/PD2                   |
| 1 48 18 63 21 60 6 43 =260 260\260/260   |     | 1 48 18 63 22 59 5 44 =260 260\260/260   |
| 32 49 15 34 12 37 27 54 =260 260\260/260 |     | 32 49 15 34 11 38 28 53 =260 260\260/260 |
| 35 14 52 29 55 26 40 9 =260 260\260/260  |     | 35 14 52 29 56 25 39 10 =260 260\260/260 |
| 62 19 45 4 42 7 57 24 =260 260\260/260   |     | 62 19 45 4 41 8 58 23 =260 260\260/260   |
| 41 8 58 23 61 20 46 3 =260 260\260/260   |     | 43 6 60 21 64 17 47 2 =260 260\260/260   |
| 56 25 39 10 36 13 51 30 =260 260\260/260 |     | 54 27 37 12 33 16 50 31 =260 260\260/260 |
| 11 38 28 53 31 50 16 33 =260 260\260/260 |     | 9 40 26 55 30 51 13 36 =260 260\260/260  |
| 22 59 5 44 2 47 17 64 =260 260\260/260   |     | 24 57 7 42 3 46 20 61 =260 260\260/260   |
| 361/S =Row C1m\PD1/PD2                   |     | 361/C =Row C1m\PD1/PD2                   |
| 2 64 5 59 17 47 22 44 =260 260\260/260   |     | 2 64 5 59 21 43 18 48 =260 260\260/260   |
| 61 3 58 8 46 20 41 23 =260 260\260/260   |     | 61 3 58 8 42 24 45 19 =260 260\260/260   |
| 12 54 15 49 27 37 32 34 =260 260\260/260 |     | 12 54 15 49 31 33 28 38 =260 260\260/260 |
| 55 9 52 14 40 26 35 29 =260 260\260/260  |     | 55 9 52 14 36 30 39 25 =260 260\260/260  |
| 36 30 39 25 51 13 56 10 =260 260\260/260 |     | 44 22 47 17 63 1 60 6 =260 260\260/260   |
| 31 33 28 38 16 50 11 53 =260 260\260/260 |     | 23 41 20 46 4 62 7 57 =260 260\260/260   |
| 42 24 45 19 57 7 62 4 =260 260\260/260   |     | 34 32 37 27 53 11 50 16 =260 260\260/260 |
| 21 43 18 48 6 60 1 63 =260 260\260/260   |     | 29 35 26 40 10 56 13 51 =260 260\260/260 |

\*\* Calculated and listed by Kanji Setsuda on Feb.15, 2010 \*\*

Next let's apply our method in the same way to the actual solutions of the opposite type and make them into the original ones by transforming backward.

\*\* Multiple Type of 'Composite & Complete' Pan-magic Squares of Order 8 and \*\*  
 \*\* 3-T Simultaneous Magic Squares 8x8 Transformed from them: with n1=1 \*\*

|  |     |  |
|--|-----|--|
| 1/C =Row C1m\PD1/PD2                     | --> | 1/S =Row C1m\PD1/PD2                     |
| 1 63 6 60 22 44 17 47 =260 260\260/260   |     | 1 63 6 60 18 48 21 43 =260 260\260/260   |
| 62 4 57 7 41 23 46 20 =260 260\260/260   |     | 62 4 57 7 45 19 42 24 =260 260\260/260   |
| 11 53 16 50 32 34 27 37 =260 260\260/260 |     | 11 53 16 50 28 38 31 33 =260 260\260/260 |
| 56 10 51 13 35 29 40 26 =260 260\260/260 |     | 56 10 51 13 39 25 36 30 =260 260\260/260 |
| 43 21 48 18 64 2 59 5 =260 260\260/260   |     | 35 29 40 26 52 14 55 9 =260 260\260/260  |
| 24 42 19 45 3 61 8 58 =260 260\260/260   |     | 32 34 27 37 15 49 12 54 =260 260\260/260 |
| 33 31 38 28 54 12 49 15 =260 260\260/260 |     | 41 23 46 20 58 8 61 3 =260 260\260/260   |
| 30 36 25 39 9 55 14 52 =260 260\260/260  |     | 22 44 17 47 5 59 2 64 =260 260\260/260   |
| 25/C =Row C1m\PD1/PD2                    |     | 25/S =Row C1m\PD1/PD2                    |
| 1 63 4 62 20 46 17 47 =260 260\260/260   |     | 1 63 4 62 18 48 19 45 =260 260\260/260   |
| 60 6 57 7 41 23 44 22 =260 260\260/260   |     | 60 6 57 7 43 21 42 24 =260 260\260/260   |
| 13 51 16 50 32 34 29 35 =260 260\260/260 |     | 13 51 16 50 30 36 31 33 =260 260\260/260 |
| 56 10 53 11 37 27 40 26 =260 260\260/260 |     | 56 10 53 11 39 25 38 28 =260 260\260/260 |
| 45 19 48 18 64 2 61 3 =260 260\260/260   |     | 37 27 40 26 54 12 55 9 =260 260\260/260  |
| 24 42 21 43 5 59 8 58 =260 260\260/260   |     | 32 34 29 35 15 49 14 52 =260 260\260/260 |
| 33 31 36 30 52 14 49 15 =260 260\260/260 |     | 41 23 44 22 58 8 59 5 =260 260\260/260   |
| 28 38 25 39 9 55 12 54 =260 260\260/260  |     | 20 46 17 47 3 61 2 64 =260 260\260/260   |
| 49/C =Row C1m\PD1/PD2                    |     | 49/S =Row C1m\PD1/PD2                    |
| 1 63 4 62 20 46 17 47 =260 260\260/260   |     | 1 63 4 62 18 48 19 45 =260 260\260/260   |
| 56 10 53 11 37 27 40 26 =260 260\260/260 |     | 56 10 53 11 39 25 38 28 =260 260\260/260 |
| 13 51 16 50 32 34 29 35 =260 260\260/260 |     | 13 51 16 50 30 36 31 33 =260 260\260/260 |
| 60 6 57 7 41 23 44 22 =260 260\260/260   |     | 60 6 57 7 43 21 42 24 =260 260\260/260   |
| 45 19 48 18 64 2 61 3 =260 260\260/260   |     | 41 23 44 22 58 8 59 5 =260 260\260/260   |
| 28 38 25 39 9 55 12 54 =260 260\260/260  |     | 32 34 29 35 15 49 14 52 =260 260\260/260 |
| 33 31 36 30 52 14 49 15 =260 260\260/260 |     | 37 27 40 26 54 12 55 9 =260 260\260/260  |
| 24 42 21 43 5 59 8 58 =260 260\260/260   |     | 20 46 17 47 3 61 2 64 =260 260\260/260   |

|   |    |   |    |    |    |    |    |      |             |    |    |    |    |                        |     |    |    |      |             |    |    |    |    |    |    |    |    |      |                        |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
|---|----|---|----|----|----|----|----|------|-------------|----|----|----|----|------------------------|-----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|------------------------|-----------------------|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|---|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|----|----|----|----|------|-------------|----|----|----|----|---|----|---|----|------|-------------|
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 73/C =Row C1m\PD1/PD2  | --> |    |    |      |             |    |    |    |    |    |    |    |    |      |                        | 73/S =Row C1m\PD1/PD2 |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 63 | 4 | 62 | 12 | 54 | 9  | 55 | =260 | 260\260/260 | 1  | 63 | 4  | 62 | 10                     | 56  | 11 | 53 | =260 | 260\260/260 | 48 | 18 | 45 | 19 | 37 | 27 | 40 | 26 | =260 | 260\260/260            | 21                    | 43 | 24 | 42 | 32 | 34 | 29 | 35 | =260 | 260\260/260 | 60 | 6  | 57 | 7  | 49 | 15 | 52 | 14 | =260 | 260\260/260 | 53 | 11 | 56 | 10 | 64 | 2  | 61 | 3  | =260 | 260\260/260 | 49 | 15 | 52 | 14 | 58 | 8  | 59 | 5  | =260 | 260\260/260 | 32 | 34 | 29 | 35 | 23 | 41 | 22 | 44 | =260 | 260\260/260 | 37 | 27 | 40 | 26 | 46 | 20 | 47 | 17 | =260 | 260\260/260 | 16 | 50 | 13 | 51 | 5  | 59 | 8  | 58 | =260 | 260\260/260 | 12 | 54 | 9  | 55 | 3  | 61 | 2  | 64 | =260 | 260\260/260 |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 97/C =Row C1m\PD1/PD2  |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 97/S =Row C1m\PD1/PD2  |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 63 | 4 | 62 | 12 | 54 | 9  | 55 | =260 | 260\260/260 | 32 | 34 | 29 | 35 | 21                     | 43  | 24 | 42 | =260 | 260\260/260 | 37 | 27 | 40 | 26 | 48 | 18 | 45 | 19 | =260 | 260\260/260            | 60                    | 6  | 57 | 7  | 49 | 15 | 52 | 14 | =260 | 260\260/260 | 53 | 11 | 56 | 10 | 64 | 2  | 61 | 3  | =260 | 260\260/260 | 44 | 22 | 41 | 23 | 33 | 31 | 36 | 30 | =260 | 260\260/260 | 17 | 47 | 20 | 46 | 28 | 38 | 25 | 39 | =260 | 260\260/260 | 16 | 50 | 13 | 51 | 5  | 59 | 8  | 58 | =260 | 260\260/260 | 1  | 63 | 4  | 62 | 10 | 56 | 11 | 53 | =260 | 260\260/260 | 32 | 34 | 29 | 35 | 23 | 41 | 22 | 44 | =260 | 260\260/260 | 37 | 27 | 40 | 26 | 46 | 20 | 47 | 17 | =260 | 260\260/260 | 60 | 6  | 57 | 7  | 49 | 15 | 52 | 14 | =260 | 260\260/260 | 49 | 15 | 52 | 14 | 58 | 8  | 59 | 5 | =260 | 260\260/260 | 48 | 18 | 45 | 19 | 39 | 25 | 38 | 28 | =260 | 260\260/260 | 21 | 43 | 24 | 42 | 30 | 36 | 31 | 33 | =260 | 260\260/260 | 12 | 54 | 9  | 55 | 3 | 61 | 2 | 64 | =260 | 260\260/260 |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 121/C =Row C1m\PD1/PD2 |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 121/S =Row C1m\PD1/PD2 |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 62 | 4 | 63 | 20 | 47 | 17 | 46 | =260 | 260\260/260 | 60 | 7  | 57 | 6  | 41                     | 22  | 44 | 23 | =260 | 260\260/260 | 13 | 50 | 16 | 51 | 32 | 35 | 29 | 34 | =260 | 260\260/260            | 56                    | 11 | 53 | 10 | 37 | 26 | 40 | 27 | =260 | 260\260/260 | 45 | 18 | 48 | 19 | 64 | 3  | 61 | 2  | =260 | 260\260/260 | 24 | 43 | 21 | 42 | 5  | 58 | 8  | 59 | =260 | 260\260/260 | 33 | 30 | 36 | 31 | 52 | 15 | 49 | 14 | =260 | 260\260/260 | 28 | 39 | 25 | 38 | 9  | 54 | 12 | 55 | =260 | 260\260/260 | 1  | 62 | 4  | 63 | 19 | 48 | 18 | 45 | =260 | 260\260/260 | 60 | 7  | 57 | 6  | 42 | 21 | 43 | 24 | =260 | 260\260/260 | 13 | 50 | 16 | 51 | 31 | 36 | 30 | 33 | =260 | 260\260/260 | 56 | 11 | 53 | 10 | 38 | 25 | 39 | 28 | =260 | 260\260/260 | 37 | 26 | 40 | 27 | 55 | 12 | 54 | 9 | =260 | 260\260/260 | 32 | 35 | 29 | 34 | 14 | 49 | 15 | 52 | =260 | 260\260/260 | 41 | 22 | 44 | 23 | 59 | 8  | 58 | 5  | =260 | 260\260/260 | 20 | 47 | 17 | 46 | 2 | 61 | 3 | 64 | =260 | 260\260/260 |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 145/C =Row C1m\PD1/PD2 |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 145/S =Row C1m\PD1/PD2 |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 62 | 4 | 63 | 20 | 47 | 17 | 46 | =260 | 260\260/260 | 56 | 11 | 53 | 10 | 37                     | 26  | 40 | 27 | =260 | 260\260/260 | 13 | 50 | 16 | 51 | 32 | 35 | 29 | 34 | =260 | 260\260/260            | 60                    | 7  | 57 | 6  | 41 | 22 | 44 | 23 | =260 | 260\260/260 | 45 | 18 | 48 | 19 | 64 | 3  | 61 | 2  | =260 | 260\260/260 | 28 | 39 | 25 | 38 | 9  | 54 | 12 | 55 | =260 | 260\260/260 | 33 | 30 | 36 | 31 | 52 | 15 | 49 | 14 | =260 | 260\260/260 | 24 | 43 | 21 | 42 | 5  | 58 | 8  | 59 | =260 | 260\260/260 | 1  | 62 | 4  | 63 | 19 | 48 | 18 | 45 | =260 | 260\260/260 | 56 | 11 | 53 | 10 | 38 | 25 | 39 | 28 | =260 | 260\260/260 | 13 | 50 | 16 | 51 | 31 | 36 | 30 | 33 | =260 | 260\260/260 | 60 | 7  | 57 | 6  | 42 | 21 | 43 | 24 | =260 | 260\260/260 | 41 | 22 | 44 | 23 | 59 | 8  | 58 | 5 | =260 | 260\260/260 | 32 | 35 | 29 | 34 | 14 | 49 | 15 | 52 | =260 | 260\260/260 | 37 | 26 | 40 | 27 | 55 | 12 | 54 | 9  | =260 | 260\260/260 | 20 | 47 | 17 | 46 | 2 | 61 | 3 | 64 | =260 | 260\260/260 |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 169/C =Row C1m\PD1/PD2 |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 169/S =Row C1m\PD1/PD2 |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 62 | 4 | 63 | 12 | 55 | 9  | 54 | =260 | 260\260/260 | 48 | 19 | 45 | 18 | 37                     | 26  | 40 | 27 | =260 | 260\260/260 | 21 | 42 | 24 | 43 | 32 | 35 | 29 | 34 | =260 | 260\260/260            | 60                    | 7  | 57 | 6  | 49 | 14 | 52 | 15 | =260 | 260\260/260 | 53 | 10 | 56 | 11 | 64 | 3  | 61 | 2  | =260 | 260\260/260 | 28 | 39 | 25 | 38 | 17 | 46 | 20 | 47 | =260 | 260\260/260 | 33 | 30 | 36 | 31 | 44 | 23 | 41 | 22 | =260 | 260\260/260 | 16 | 51 | 13 | 50 | 5  | 58 | 8  | 59 | =260 | 260\260/260 | 1  | 62 | 4  | 63 | 11 | 56 | 10 | 53 | =260 | 260\260/260 | 48 | 19 | 45 | 18 | 38 | 25 | 39 | 28 | =260 | 260\260/260 | 21 | 42 | 24 | 43 | 31 | 36 | 30 | 33 | =260 | 260\260/260 | 60 | 7  | 57 | 6  | 50 | 13 | 51 | 16 | =260 | 260\260/260 | 49 | 14 | 52 | 15 | 59 | 8  | 58 | 5 | =260 | 260\260/260 | 32 | 35 | 29 | 34 | 22 | 41 | 23 | 44 | =260 | 260\260/260 | 37 | 26 | 40 | 27 | 47 | 20 | 46 | 17 | =260 | 260\260/260 | 12 | 55 | 9  | 54 | 2 | 61 | 3 | 64 | =260 | 260\260/260 |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 193/C =Row C1m\PD1/PD2 |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 193/S =Row C1m\PD1/PD2 |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 62 | 4 | 63 | 12 | 55 | 9  | 54 | =260 | 260\260/260 | 32 | 35 | 29 | 34 | 21                     | 42  | 24 | 43 | =260 | 260\260/260 | 37 | 26 | 40 | 27 | 48 | 19 | 45 | 18 | =260 | 260\260/260            | 60                    | 7  | 57 | 6  | 49 | 14 | 52 | 15 | =260 | 260\260/260 | 53 | 10 | 56 | 11 | 64 | 3  | 61 | 2  | =260 | 260\260/260 | 44 | 23 | 41 | 22 | 33 | 30 | 36 | 31 | =260 | 260\260/260 | 17 | 46 | 20 | 47 | 28 | 39 | 25 | 38 | =260 | 260\260/260 | 16 | 51 | 13 | 50 | 5  | 58 | 8  | 59 | =260 | 260\260/260 | 1  | 62 | 4  | 63 | 11 | 56 | 10 | 53 | =260 | 260\260/260 | 32 | 35 | 29 | 34 | 22 | 41 | 23 | 44 | =260 | 260\260/260 | 37 | 26 | 40 | 27 | 47 | 20 | 46 | 17 | =260 | 260\260/260 | 60 | 7  | 57 | 6  | 50 | 13 | 51 | 16 | =260 | 260\260/260 | 49 | 14 | 52 | 15 | 59 | 8  | 58 | 5 | =260 | 260\260/260 | 48 | 19 | 45 | 18 | 38 | 25 | 39 | 28 | =260 | 260\260/260 | 21 | 42 | 24 | 43 | 31 | 36 | 30 | 33 | =260 | 260\260/260 | 12 | 55 | 9  | 54 | 2 | 61 | 3 | 64 | =260 | 260\260/260 |
|   |    |   |    |    |    |    |    |      |             |    |    |    |    | 217/C =Row C1m\PD1/PD2 |     |    |    |      |             |    |    |    |    |    |    |    |    |      | 217/S =Row C1m\PD1/PD2 |                       |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |   |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |    |    |    |    |      |             |    |    |    |    |   |    |   |    |      |             |
| 1 | 60 | 6 | 63 | 22 | 47 | 17 | 44 | =260 | 260\260/260 | 56 | 13 | 51 | 10 | 35                     | 26  | 40 | 29 | =260 | 260\260/260 | 11 | 50 | 16 | 53 | 32 | 37 | 27 | 34 | =260 | 260\260/260            | 62                    | 7  | 57 | 4  | 41 | 20 | 46 | 23 | =260 | 260\260/260 | 43 | 18 | 48 | 21 | 64 | 5  | 59 | 2  | =260 | 260\260/260 | 30 | 39 | 25 | 36 | 9  | 52 | 14 | 55 | =260 | 260\260/260 | 33 | 28 | 38 | 31 | 54 | 15 | 49 | 12 | =260 | 260\260/260 | 24 | 45 | 19 | 42 | 3  | 58 | 8  | 61 | =260 | 260\260/260 | 1  | 60 | 6  | 63 | 21 | 48 | 18 | 43 | =260 | 260\260/260 | 56 | 13 | 51 | 10 | 36 | 25 | 39 | 30 | =260 | 260\260/260 | 11 | 50 | 16 | 53 | 31 | 38 | 28 | 33 | =260 | 260\260/260 | 62 | 7  | 57 | 4  | 42 | 19 | 45 | 24 | =260 | 260\260/260 | 41 | 20 | 46 | 23 | 61 | 8  | 58 | 3 | =260 | 260\260/260 | 32 | 37 | 27 | 34 | 12 | 49 | 15 | 54 | =260 | 260\260/260 | 35 | 26 | 40 | 29 | 55 | 14 | 52 | 9  | =260 | 260\260/260 | 22 | 47 | 17 | 44 | 2 | 59 | 5 | 64 | =260 | 260\260/260 |

|  |     |  |
|--|-----|--|
| <b>241/C =Row C1m\PD1/PD2</b>            | --> | <b>241/S =Row C1m\PD1/PD2</b>            |
| 1 60 6 63 14 55 9 52 =260 260\260/260    |     | 1 60 6 63 13 56 10 51 =260 260\260/260   |
| 48 21 43 18 35 26 40 29 =260 260\260/260 |     | 48 21 43 18 36 25 39 30 =260 260\260/260 |
| 19 42 24 45 32 37 27 34 =260 260\260/260 |     | 19 42 24 45 31 38 28 33 =260 260\260/260 |
| 62 7 57 4 49 12 54 15 =260 260\260/260   |     | 62 7 57 4 50 11 53 16 =260 260\260/260   |
| 51 10 56 13 64 5 59 2 =260 260\260/260   |     | 49 12 54 15 61 8 58 3 =260 260\260/260   |
| 30 39 25 36 17 44 22 47 =260 260\260/260 |     | 32 37 27 34 20 41 23 46 =260 260\260/260 |
| 33 28 38 31 46 23 41 20 =260 260\260/260 |     | 35 26 40 29 47 22 44 17 =260 260\260/260 |
| 16 53 11 50 3 58 8 61 =260 260\260/260   |     | 14 55 9 52 2 59 5 64 =260 260\260/260    |

|  |     |  |
|--|-----|--|
| <b>265/C =Row C1m\PD1/PD2</b>            | --> | <b>265/S =Row C1m\PD1/PD2</b>            |
| 1 60 6 63 14 55 9 52 =260 260\260/260    |     | 1 60 6 63 13 56 10 51 =260 260\260/260   |
| 32 37 27 34 19 42 24 45 =260 260\260/260 |     | 32 37 27 34 20 41 23 46 =260 260\260/260 |
| 35 26 40 29 48 21 43 18 =260 260\260/260 |     | 35 26 40 29 47 22 44 17 =260 260\260/260 |
| 62 7 57 4 49 12 54 15 =260 260\260/260   |     | 62 7 57 4 50 11 53 16 =260 260\260/260   |
| 51 10 56 13 64 5 59 2 =260 260\260/260   |     | 49 12 54 15 61 8 58 3 =260 260\260/260   |
| 46 23 41 20 33 28 38 31 =260 260\260/260 |     | 48 21 43 18 36 25 39 30 =260 260\260/260 |
| 17 44 22 47 30 39 25 36 =260 260\260/260 |     | 19 42 24 45 31 38 28 33 =260 260\260/260 |
| 16 53 11 50 3 58 8 61 =260 260\260/260   |     | 14 55 9 52 2 59 5 64 =260 260\260/260    |

|  |     |  |
|--|-----|--|
| <b>289/C =Row C1m\PD1/PD2</b>            | --> | <b>289/S =Row C1m\PD1/PD2</b>            |
| 1 56 10 63 14 59 5 52 =260 260\260/260   |     | 1 56 10 63 13 60 6 51 =260 260\260/260   |
| 48 25 39 18 35 22 44 29 =260 260\260/260 |     | 48 25 39 18 36 21 43 30 =260 260\260/260 |
| 19 38 28 45 32 41 23 34 =260 260\260/260 |     | 19 38 28 45 31 42 24 33 =260 260\260/260 |
| 62 11 53 4 49 8 58 15 =260 260\260/260   |     | 62 11 53 4 50 7 57 16 =260 260\260/260   |
| 51 6 60 13 64 9 55 2 =260 260\260/260    |     | 49 8 58 15 61 12 54 3 =260 260\260/260   |
| 30 43 21 36 17 40 26 47 =260 260\260/260 |     | 32 41 23 34 20 37 27 46 =260 260\260/260 |
| 33 24 42 31 46 27 37 20 =260 260\260/260 |     | 35 22 44 29 47 26 40 17 =260 260\260/260 |
| 16 57 7 50 3 54 12 61 =260 260\260/260   |     | 14 59 5 52 2 55 9 64 =260 260\260/260    |

|  |     |  |
|--|-----|--|
| <b>313/C =Row C1m\PD1/PD2</b>            | --> | <b>313/S =Row C1m\PD1/PD2</b>            |
| 1 56 10 63 14 59 5 52 =260 260\260/260   |     | 1 56 10 63 13 60 6 51 =260 260\260/260   |
| 32 41 23 34 19 38 28 45 =260 260\260/260 |     | 32 41 23 34 20 37 27 46 =260 260\260/260 |
| 35 22 44 29 48 25 39 18 =260 260\260/260 |     | 35 22 44 29 47 26 40 17 =260 260\260/260 |
| 62 11 53 4 49 8 58 15 =260 260\260/260   |     | 62 11 53 4 50 7 57 16 =260 260\260/260   |
| 51 6 60 13 64 9 55 2 =260 260\260/260    |     | 49 8 58 15 61 12 54 3 =260 260\260/260   |
| 46 27 37 20 33 24 42 31 =260 260\260/260 |     | 48 25 39 18 36 21 43 30 =260 260\260/260 |
| 17 40 26 47 30 43 21 36 =260 260\260/260 |     | 19 38 28 45 31 42 24 33 =260 260\260/260 |
| 16 57 7 50 3 54 12 61 =260 260\260/260   |     | 14 59 5 52 2 55 9 64 =260 260\260/260    |

|  |     |  |
|--|-----|--|
| <b>337/C =Row C1m\PD1/PD2</b>            | --> | <b>337/S =Row C1m\PD1/PD2</b>            |
| 1 48 18 63 22 59 5 44 =260 260\260/260   |     | 1 48 18 63 21 60 6 43 =260 260\260/260   |
| 32 49 15 34 11 38 28 53 =260 260\260/260 |     | 32 49 15 34 12 37 27 54 =260 260\260/260 |
| 35 14 52 29 56 25 39 10 =260 260\260/260 |     | 35 14 52 29 55 26 40 9 =260 260\260/260  |
| 62 19 45 4 41 8 58 23 =260 260\260/260   |     | 62 19 45 4 42 7 57 24 =260 260\260/260   |
| 43 6 60 21 64 17 47 2 =260 260\260/260   |     | 41 8 58 23 61 20 46 3 =260 260\260/260   |
| 54 27 37 12 33 16 50 31 =260 260\260/260 |     | 56 25 39 10 36 13 51 30 =260 260\260/260 |
| 9 40 26 55 30 51 13 36 =260 260\260/260  |     | 11 38 28 53 31 50 16 33 =260 260\260/260 |
| 24 57 7 42 3 46 20 61 =260 260\260/260   |     | 22 59 5 44 2 47 17 64 =260 260\260/260   |

|  |     |  |
|--|-----|--|
| <b>361/C =Row C1m\PD1/PD2</b>            | --> | <b>361/S =Row C1m\PD1/PD2</b>            |
| 2 64 5 59 21 43 18 48 =260 260\260/260   |     | 2 64 5 59 17 47 22 44 =260 260\260/260   |
| 61 3 58 8 42 24 45 19 =260 260\260/260   |     | 61 3 58 8 46 20 41 23 =260 260\260/260   |
| 12 54 15 49 31 33 28 38 =260 260\260/260 |     | 12 54 15 49 27 37 32 34 =260 260\260/260 |
| 55 9 52 14 36 30 39 25 =260 260\260/260  |     | 55 9 52 14 40 26 35 29 =260 260\260/260  |
| 44 22 47 17 63 1 60 6 =260 260\260/260   |     | 36 30 39 25 51 13 56 10 =260 260\260/260 |
| 23 41 20 46 4 62 7 57 =260 260\260/260   |     | 31 33 28 38 16 50 11 53 =260 260\260/260 |
| 34 32 37 27 53 11 50 16 =260 260\260/260 |     | 42 24 45 19 57 7 62 4 =260 260\260/260   |
| 29 35 26 40 10 56 13 51 =260 260\260/260 |     | 21 43 18 48 6 60 1 63 =260 260\260/260   |

\*\* Calculated and listed by Kanji Setsuda on Feb.15, 2010 \*\*

The list-forming inequality conditions used here are:  $n_1=1$  and  $n_2>n_9$ . As both  $n_2$  and  $n_9$  are located in the first block  $4 \times 4$ ,  $n_2>n_9$  is not affected by the transformation.

If you want to apply our transformation method to all the 5760 standard solutions, you have to be very careful of the list-forming inequality conditions complex. All variables of  $n_1$ ,  $n_8$ ,  $n_{57}$  and  $n_{64}$  should be critically affected by the transformation.

I advise you to use the mother set of 46080 primitive solutions, instead of using the standard set of 5760 solutions, however hard it might look. You had better try to discover the complete 'one-to-one correspondence' between the two sets of 46080 primitive solutions, in order to avoid any unavoidable confusion.

#### #4. Conclusion

As you see, we really found the beautiful 'one-to-one correspondence' between the two sets of solutions of 3-T Simultaneous PMS88: 'Composite', Self-complementary and Pan-diagonal; and of Multiple 'Composite & Complete' PMS88.

We come to know it is our transformation method that could make the beautiful bridges over the two worlds of magic squares and well demonstrate their unique 'one-to-one correspondence' between them. How wonderful it is!

But what makes it possible?

Whenever I touched this kind of correspondences, I would always feel both types of PMS88 are naturally related as both 'sides' of something common. I should say they are the related phenomena of anything original existed in another world.

But what is that original existence, then?

Once I noticed there are mysterious correspondences among the three types of magic things: 'Composite & Complete' Pan-magic Cubes of Order 4, Three-Type Simultaneous PMS88 and Multiple 'Composite & Complete' PMS88, I started my long trip to seek and find anything original in my mathematical study. And I finally reached to the idea of high dimensional extra-cubic magic object.

I have written a lot of articles to report about them in several chapters of Part 4. If you are interested in it, would you please try to read as many articles of mine there as you can? I have tried to explain everything mathematically with my best effort.

Am I too inclined to metaphysics? Don't neglect me for that reason, please.

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(English Version written on March 3, 2010 by Kanji Setsuda with MacOSX & Xcode3.1.2)

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