



&

इयतठक्य
लललललललललललल

Episode – 2
8th – 14th March 2024

Odd Even & Hybrids
by
Akash Douhani, Arun Iyer & Pranav Kamesh S.

Sudoku Mahabharat rounds will also serve as qualifiers for Indian Sudoku Championship for year 2024. Please check <http://logicmastersindia.com/SM/2024sm.asp> for details.

Important Links

Submission Page : <http://logicmastersindia.com/live?contest=SM202402>

Discussion Thread : <http://logicmastersindia.com/t/?tid=3690>

F. A. Q. : <http://logicmastersindia.com/t/?tid=2773>

Registration, if required : <http://logicmastersindia.com/register.asp>

About this Episode

This episode has 18 Sudokus with the following breakdown:

- 2* Classic Sudoku 6x6 and 4* Classic Sudoku 9x9
- 1 each of Pointing Evens Sudoku 6x6 and Pointing Evens Sudoku 9x9
- 1 each of No Three In A Row Sudoku 6x6 and No Three In A Row Sudoku 9x9
- 1 each of Even Sandwich Sudoku 6x6 and Even Sandwich Sudoku 9x9
- 1 each of X-Sums & Odd Sum Pair Sudoku 6x6 and X-Sums & Odd Sum Pair Sudoku 9x9
- 1 each of Kropki Pairs & Little Killer Sudoku 6x6 and Kropki Pairs & Little Killer Sudoku 9x9
- 1 each of Group Sum & Renban Sudoku 6x6 and Group Sum & Renban Sudoku 9x9

How to participate?

- Understand the rules of different variants that will appear in this episode. This Instruction Booklet has rules for each of them.
- Any time on or after 8th Mar (but on or before 14th Mar), login at the submission page using your LMI user-id and password. Please check the submission page for exact timing.
- **If you plan to solve on paper:**
 - a) Download the password protected Puzzle booklet (will be uploaded before the test starts). The Puzzle booklet contains the actual Puzzles to be solved. It is password protected, so you won't be able to open it.
 - b) Click on "Start". At this time, password for pdf will be shown and timer will start. **The contest duration is 90 minutes.**
 - c) The puzzle booklet can be downloaded, printed and solved on paper.
 - d) We advise you to have a printer accessible with enough paper.
 - e) You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, and tape.
- **If you plan to solve on LMI's Penpa-Integrated Interface:**
 - a) Click on this link and understand the instructions - <https://logicmastersindia.com/live/faq-online-solving.asp>
 - b) It is noted on the link too, but we note it here as well to be clear – the participants must still input the answer keys in the boxes below the puzzle and submit them to receive credit as given below.
- Irregular solving help of any kind is not permitted. This includes but is not limited to: assistance of any kind from any other person; prepared notes, books, calculators, computers, or tools other than items explicitly permitted.
- Participants may use both paper solving and online solving, even interchangeably. Eventually our system will only count anything submitted in the submission boxes in either mode.

If you are participating at LMI for first time, it will be useful to check the F.A.Q. at <http://logicmastersindia.com/t/?tid=2773>.

About answer keys and Submission

- After solving the puzzle, you need to submit the puzzle using the answer keys.
 - You may submit the answer keys anytime during the test duration.
 - Answer keys are always to be entered from left to right or top to bottom
 - Don't enter any separator unless specified in the answer key
 - If one row and one column is marked, enter the row first and then the column
 - If multiple rows are marked, enter from top to bottom for marked rows
 - If multiple columns are marked, enter from left to right for marked columns
-

Points Table and Scoring

Points typically indicate difficulty of the Puzzles and time required to solve them. You will get full points if you enter the correct answer key. While the organizers have made best efforts to match them, **your personal experience and preference may differ.**

Classic Sudoku 6x6	1, 1
Classic Sudoku 9x9	5, 5, 4, 8
Pointing Evens Sudoku 6x6 & 9x9	3, 8
No Three In A Row Sudoku 6x6 & 9x9	2, 10
Even Sandwich Sudoku 6x6 & 9x9	4, 13
X-Sums & Odd Sum Pair Sudoku 6x6 & 9x9	2, 8
Kropki Pairs & Little Killer Sudoku 6x6 & 9x9	4, 8
Group Sum & Renban Sudoku 6x6 & 9x9	3, 11

This test uses instant grading where a solver can submit any individual Puzzle and receive confirmation that the solution is correct or not. Each incorrect submission reduces the puzzle's potential score. The first, second, third, and fourth incorrect submissions reduce the potential score to 90%, 70%, 40%, and 0% respectively. A demonstration for this is shown below.

Original points

04 Araf	50 points	4A	Sum should be 10
---------	-----------	----	------------------

Potential points after 1 incorrect submission

04 Araf	45 / 50	4A	1234
---------	---------	----	------

Potential points after 2 incorrect submissions

04 Araf	35 / 50	4A	23311
---------	---------	----	-------

Potential points after 3 incorrect submissions

04 Araf	20 / 50	4A	111111111
---------	---------	----	-----------

Potential points after 4 incorrect submissions

04 Araf	0 / 50	4A	541
---------	--------	----	-----

Bonus and Ranking

If you submitted all Puzzles correctly, you can have bonus points 1 point per minute saved, computed up to seconds.

Ranking will be based on following rules in order:

1. Most total points
2. Earliest final submission time, up to seconds (ignoring incorrect submissions)

Credits

- **Wessel Strijkstra and Botaku** for test solving the puzzles and providing invaluable feedback.
- The original creator **opt-pan** for penpa edit - <https://opt-pan.github.io/penpa-edit/>
- **Swaroop Guggilam** for his recent efforts in adding features to Penpa-edit - <https://swaroopg92.github.io/penpa-edit/> and also working to integrate it with our contest engine.

About the Puzzle Booklet

The password protected Puzzle booklet will have 11 pages. This is relevant only for paper solvers.

Solutions to examples are towards the end of the booklet in the Solutions section.

Some examples have been provided by Akash Douhani, and they are also available to solve on LMI Expo as non-exclusive puzzles. You can find them here:

Kropki Pairs & Little Killer Sudoku 9x9 - <https://logicmastersindia.com/expo/?ppid=wc1-fcs-6fg>

Group Sum & Renban Sudoku 9x9 - <https://logicmastersindia.com/expo/?ppid=7sk-duw-4ve>

Rules Powered by Sudokuib - <https://github.com/vopani/sudokuib>

All answer keys are the same for all puzzles – enter the contents of the marked rows/columns, including given digits, along the direction of the arrow. Ignore outside clues.

1-2 Classic Sudoku 6x6

1 + 1 points

Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Penpa for example:

<https://tinyurl.com/2nvezsrr>

1	2				
		3	4		
				5	6
3	5				
		1	5		
				1	3

3-6 Classic Sudoku 9x9

5 + 5 + 4 + 8 points

Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Penpa for example:

<https://tinyurl.com/333ntt48>

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

7 Pointing Evens Sudoku 6x6

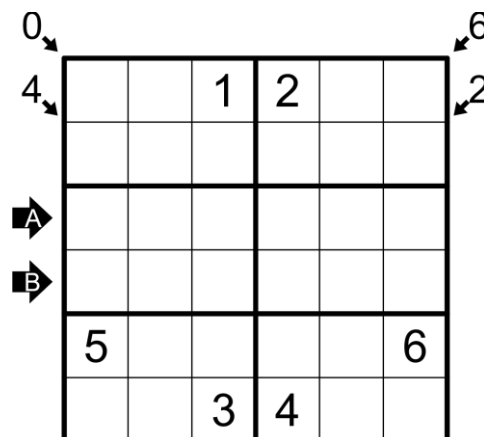
3 points

Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Digits outside the grid indicate the number of even digits in the direction of the arrow.

Penpa for example:

<https://tinyurl.com/2a3ggzgj>



8 Pointing Evens Sudoku 9x9

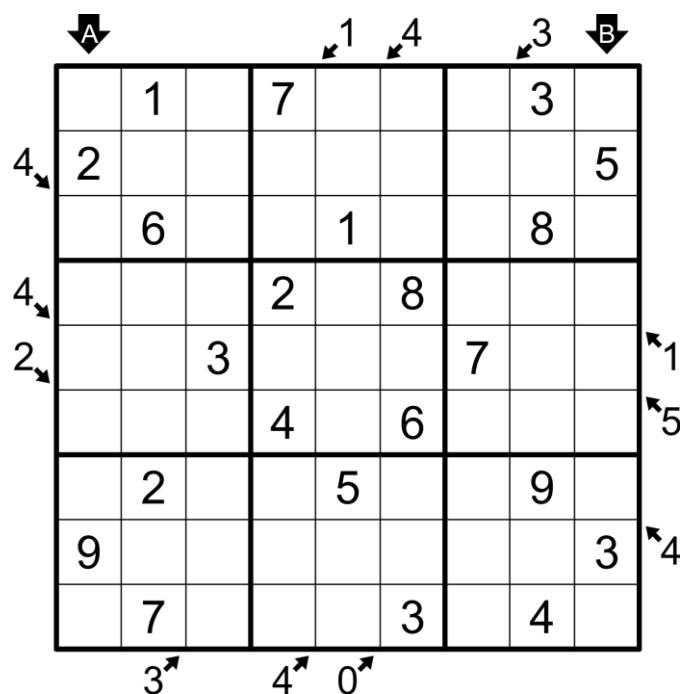
8 points

Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Digits outside the grid indicate the number of even digits in the direction of the arrow.

Penpa for example:

<https://tinyurl.com/29bldqzw>



9 No Three In A Row Sudoku 6x6

2 points

Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Digits in any three consecutive cells in any row or column must not be of the same parity.

Penpa for example:

<https://tinyurl.com/ydynrfal>

5					1
		2			
			4		
		6			
			1		
1					3

10 No Three In A Row Sudoku 9x9

10 points

Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Digits in any three consecutive cells in any row or column must not be of the same parity.

Penpa for example:

<https://tinyurl.com/y9cehz8x>

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

11 Even Sandwich Sudoku 6x6

4 points

Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Each digit outside the grid indicates that the digit is sandwiched between two even digits in its adjacent cells in the corresponding direction. All such digits are given. A “-“ means no such digits exist in that direction.

Penpa for example:

<https://tinyurl.com/yrtww665>

↓A
↓B

13	2	-	-	2	15
3				2	
3	4				
-					
-					
5				6	
5					

12 Even Sandwich Sudoku 9x9

13 points

Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Each digit outside the grid indicates that the digit is sandwiched between two even digits in its adjacent cells in the corresponding direction. All such digits are given. A “-“ means no such digits exist in that direction.

Penpa for example:

<https://tinyurl.com/ynly4v5k>

↓A
↓B

1	35	12	3	46	5	38	15	4
9		7					3	
2	6							4
5								
39				4				
57	3							9
18				2				
7								
48	1							2
13		6					7	

13 X-Sums & Odd Sum Pair Sudoku 6x6

2 points

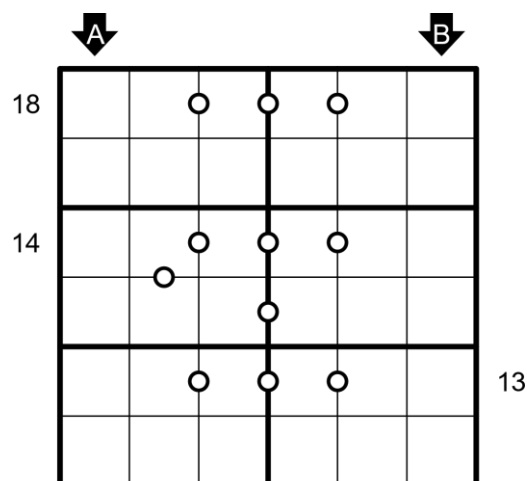
Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Each number outside the grid is the sum of the first X numbers placed in the corresponding direction, where X is the first digit placed in that direction.

Adjacent cells marked by a circle contain digits whose sum is odd.

Penpa for example:

<https://tinyurl.com/ym8ezgcf>



14 X-Sums & Odd Sum Pair Sudoku 9x9

8 points

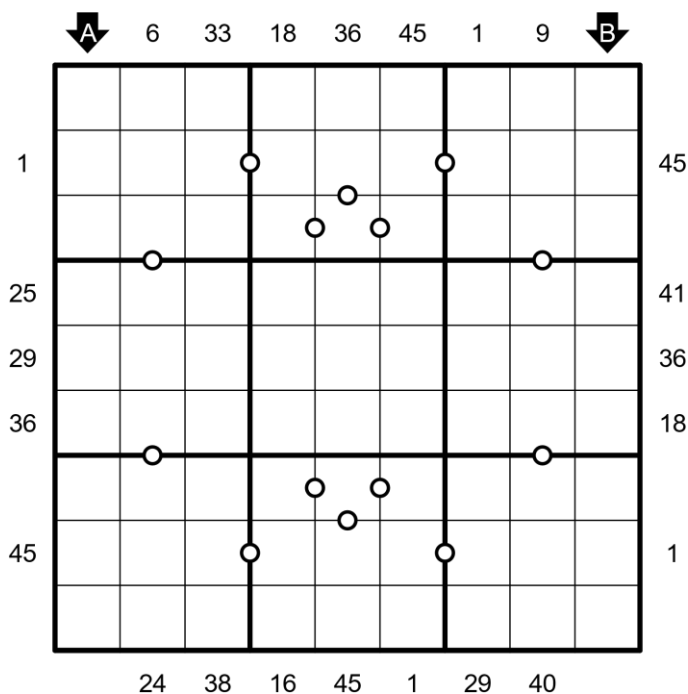
Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Each number outside the grid is the sum of the first X numbers placed in the corresponding direction, where X is the first digit placed in that direction.

Adjacent cells marked by a circle contain digits whose sum is odd.

Penpa for example:

<https://tinyurl.com/yt3k2dpd>



15 Kropki Pairs & Little Killer Sudoku 6x6

4 points

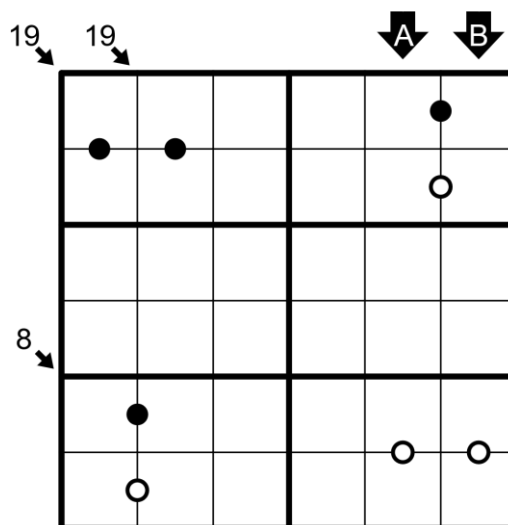
Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Adjacent cells marked with a white circle contain consecutive digits. Adjacent cells marked with a black circle contains digits where one digit is double of the other digit. The circle between 1 and 2 can be of either colour. All possible circles are NOT marked.

Each number outside the grid is the sum of digits in the direction pointed by its arrow.

Penpa for example:

<https://tinyurl.com/yufdn7xh>



16 Kropki Pairs & Little Killer Sudoku 9x9

8 points

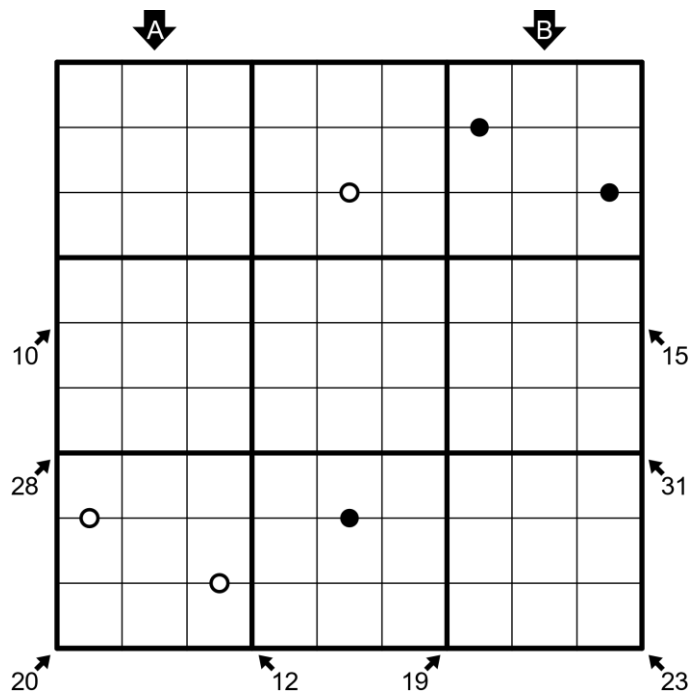
Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Adjacent cells marked with a white circle contain consecutive digits. Adjacent cells marked with a black circle contains digits where one digit is double of the other digit. The circle between 1 and 2 can be of either colour. All possible circles are NOT marked.

Each number outside the grid is the sum of digits in the direction pointed by its arrow.

Penpa for example:

<https://tinyurl.com/ym8q86el>



17 Group Sum & Renban Sudoku 6x6

3 points

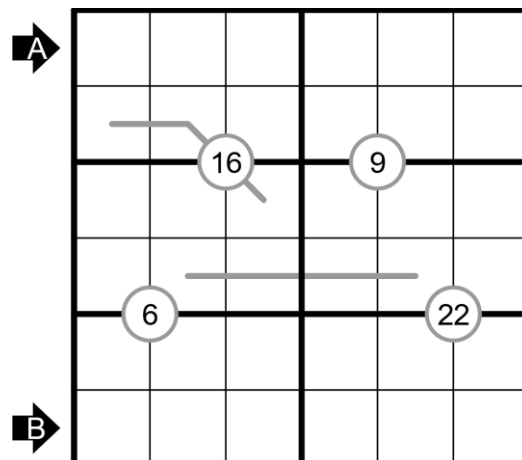
Place a digit from 1 to 6 into each empty cell in the grid so that each digit appears exactly once in each row, column and 2x3 outlined box.

Each number at the intersection of cells is the sum of digits in those cells.

Each marked line contains a set of consecutive digits. Digits do not repeat within a line.

Penpa for example:

<https://tinyurl.com/ymwrywz5>



18 Group Sum & Renban Sudoku 9x9

11 points

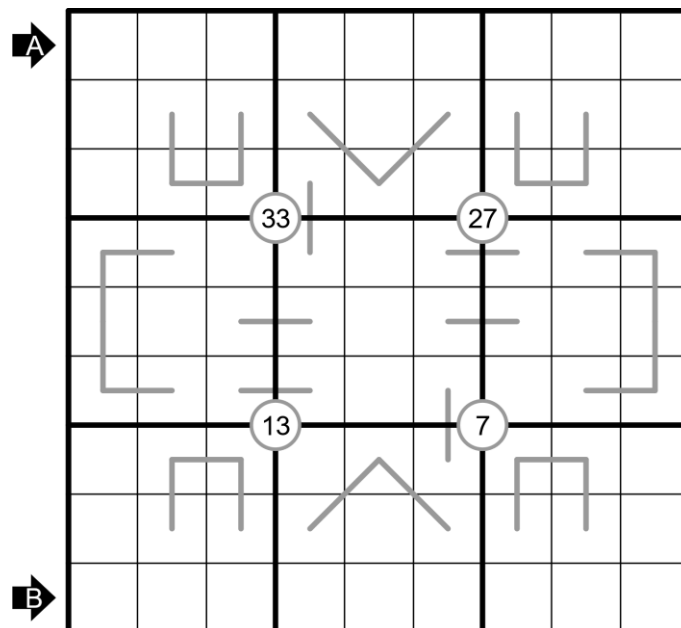
Place a digit from 1 to 9 into each empty cell in the grid so that each digit appears exactly once in each row, column and 3x3 outlined box.

Each number at the intersection of cells is the sum of digits in those cells.

Each marked line contains a set of consecutive digits. Digits do not repeat within a line.

Penpa for example:

<https://tinyurl.com/ystzpepb>



Solutions

Classic Sudoku 6x6

↓ B

1	2	4	6	3	5
5	6	3	4	2	1
4	1	2	3	5	6
3	5	6	1	4	2
2	3	1	5	6	4
6	4	5	2	1	3

→ A

Key: 412356,325461

Classic Sudoku 9x9

↓ B

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

→ A

Key: 781564329,718369254

Pointing Evens Sudoku 6x6

3	6	1	2	5	4
2	5	4	3	6	1
1	2	5	6	4	3
4	3	6	5	1	2
5	4	2	1	3	6
6	1	3	4	2	5

0 ↓ ↓ 6

4 ↓ ↓ 2

→ A

→ B

Key: 125643,436512

Pointing Evens Sudoku 9x9

↓ A ↓ 1 ↓ 4 ↓ 3 ↓ B

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

4 ↓ ↓ 1

4 ↓ ↓ 5

2 ↓ ↓ 4

3 ↓ ↓ 4 ↓ 0

Key: 524167398,657941832

No Three In A Row Sudoku 6x6

5	4	3	6	2	1
6	1	2	5	3	4
3	2	1	4	6	5
4	5	6	3	1	2
2	3	4	1	5	6
1	6	5	2	4	3

Key: 543621,563421

No Three In A Row Sudoku 9x9

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

Key: 237815694,958734162

Even Sandwich Sudoku 6x6

13	2	-	-	2	15	
3	5	1	6	2	3	4
3	2	4	3	6	5	1
-	3	2	5	1	4	6
-	4	6	1	3	2	5
5	1	3	4	5	6	2
5	6	5	2	4	1	3

Key: 635142,261354

Even Sandwich Sudoku 9x9

1	35	12	3	46	5	38	15	4	
9	4	7	5	6	9	2	1	3	8
2	6	2	8	1	3	5	7	9	4
5	9	3	1	7	8	4	5	2	6
39	5	8	6	9	4	3	2	1	7
57	3	1	2	5	6	7	8	4	9
18	7	9	4	8	2	1	6	5	3
7	8	4	7	2	5	9	3	6	1
48	1	5	9	3	7	6	4	8	2
13	2	6	3	4	1	8	9	7	5

Key: 581624793,175286349

X-Sums & Odd Sum Pair Sudoku 6x6

18	4	5	6	3	2	1
	1	2	3	6	4	5
14	3	6	5	4	1	2
	2	1	4	5	3	6
	5	3	2	1	6	4
	6	4	1	2	5	3

Key: 413256,152643

X-Sums & Odd Sum Pair Sudoku 9x9

	6	33	18	36	45	1	9		
1	5	2	7	4	8	9	1	3	6
	1	4	3	6	5	7	8	2	9
	8	6	9	1	2	3	7	4	5
25	4	9	5	7	3	6	2	1	8
29	6	3	2	9	1	8	4	5	7
36	7	8	1	2	4	5	9	6	3
	3	1	6	8	7	4	5	9	2
45	9	7	4	5	6	2	3	8	1
	2	5	8	3	9	1	6	7	4

Key: 518467392,695873214

Kropki Pairs & Little Killer Sudoku 6x6

19	19			A	B
8					

Key: 156432,261354

Kropki Pairs & Little Killer Sudoku 9x9

				A				B
10								15
28								31
20					12		19	23

Key: 725436918,917843526

Group Sum & Renban Sudoku 6x6

A					
		16		9	
	6				22
B					

Key: 351642,546231

Group Sum & Renban Sudoku 9x9

A								
			33		27			
			13		7			
B								

Key: 491675283,728534916