



Indian Round
of
WPF Sudoku Grand Prix 2013
at
Logic Masters India
(<http://logicmastersindia.com/2013/02S/>)

Dates : 9th Feb – 11th Feb

Sudokus by Deb Mohanty



WPF Sudoku Grand Prix

This competition will be used as Indian round of WPF Sudoku Grand Prix (Sudoku GP). You can read more about the GP at WPF website (<http://www.worldpuzzle.org/sudokugp/>). If you want your results to be considered for Sudoku GP, you must have yourself registered at the same page, if you have not done so earlier.

This competition will also be used as LMI February monthly Sudoku test. You have the option for participating only for the Sudoku GP, and not for LMI ratings.

How to participate?

This instruction booklet lists all the Sudoku types that will appear in the competition. It is most important to read and understand the rules of all the types. If you have any questions, please ask the organizers at <http://logicmastersindia.com/t/?tid=571>, preferably before the competition starts.

If you are participating at LMI for first time, you must check the F.A.Q. at <http://logicmastersindia.com/t/?tid=381>.

List of Sudoku types

The list of Sudoku types are shown in the right and the rules are explained in next pages. You will have 120 minutes (2 hours) to solve as many sudokus as possible.

Points assignment and bonus formula will be announced few days before the competition. Please note that Sudoku GP considers only your rank (and not your score).

Classics 1	Classics 2
Sudoku XV	Diagonal Sudoku
Toroidal Sudoku 8X8	Killer Sudoku
Odd Sudoku	Renban Groups
Coded Pair	Quad Sum Sudoku
Repeated Neighbours	Braille Sudoku 6X6
Thermo Sudoku	Magic Square Sudoku
Odd Even Big Small 8X8	Disjoint Group
Odd Even Frame	Outside Or Skyscraper
Point To Next	Linked Classics 2X9X9

Size of the grid specified, if it is not 9X9

General Rules

To make the rules less repetitive, you will see following line “Apply standard Sudoku rules” in most Sudoku rules. This means “Place a digit from 1 to N, where N is the size of the grid, in each empty cell so that each digit appears exactly once in each row, column and outlined region.”

Each Sudoku will be marked with, at max, 2 lettered arrows. If you are solving on paper, you need to submit the digits in these arrows, in order, including the givens. For example, the answer key for the Sudoku at the right is 162897453, 517698432.

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

Play Fair

Outside help of any kind for solving is not permitted. This includes but is not limited to: assistance of any kind from any other person; prepared notes, books, calculators, computers, mobiles / handheld devices or tools other than items explicitly permitted below.

You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, tape, and LMI's flash solving interface.

All entries and scores are subject to review for compliance of rules. The organizers reserve the right to disqualify any contestant if, in their sole judgment, they believe the rules have been violated.

In case of a dispute, protest, or other judgment, the decision of the organizers is final.



Classic Sudoku

Place a digit from 1 to 9 in each empty cell so that each digit appears exactly once in each row, column and outlined region.

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

Classic Sudoku

Place a digit from 1 to 9 in each empty cell so that each digit appears exactly once in each row, column and outlined region.

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

Sudoku XV

Apply standard Sudoku rules.

Adjacent cells with two digits summing to 5 are marked by V, while those summing to 10 are marked by X. All possible X and V are marked.

5			x	4		x	7
		v	x			v	
			x				
				v		x	
2				x			3
					v		
			x				x
x			x				
						x	x
	v			v			
8				6			4

Diagonal Sudoku

Apply standard Sudoku rules.

Additionally, digits do not repeat across main (marked) diagonals.

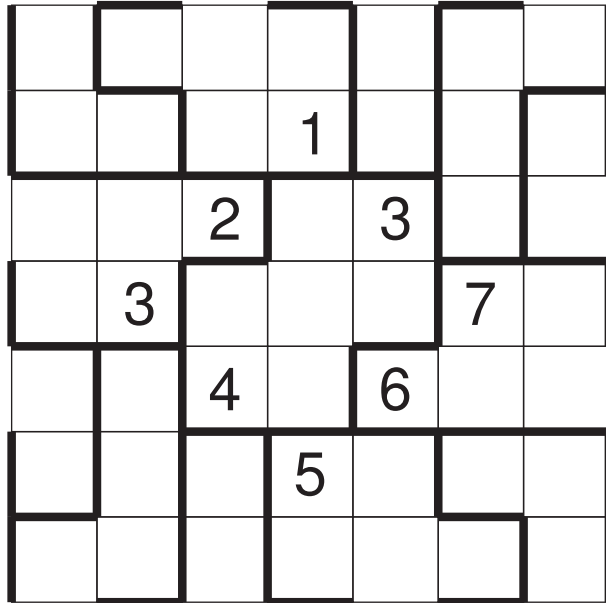
	4					1	5
8					6		7
7				2			
	5			1			
		6	8		2	5	
				9			7
				8			2
6			2				5
	8	2					3

Toroidal Sudoku

Apply standard Sudoku rules.

Some of the outlined regions wrap around the top and bottom edges, and/or the left and right edges of the grid.

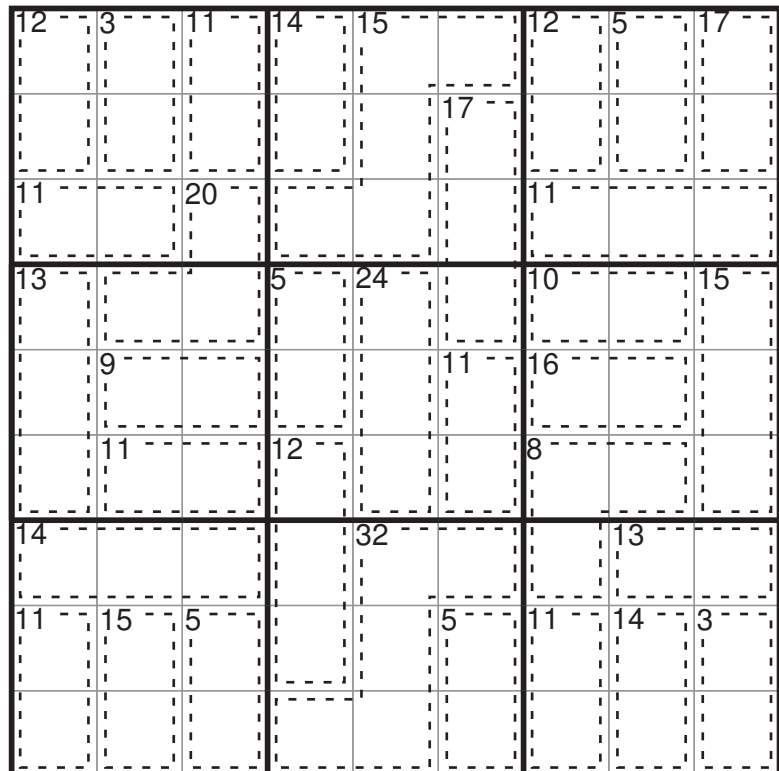
(The example uses 1 to 7)



Killer Sudoku

Apply standard Sudoku rules.

The sum of digits in cells inside every cage must equal the total given for the cage at the upper left cell. Each digit in the cage must be unique.



Odd Sudoku

Apply standard Sudoku rules.

Additionally, shaded cells must contain odd (1 3 5 7 9) digits.

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

7

Renban Groups

Apply standard Sudoku rules.

Additionally, shaded cells in each 3X3 box must contain consecutive digits.

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

8

Coded Pair

Apply standard Sudoku rules.

Some letters are given between two adjacent cells. Same letter represents same pair of digits across the grid. Different letters must represent different pairs. Ordering of digits inside the pair does not matter.

	1	2	3			4	5	
	4	5	6		A	3	2	
	7	8	9					
		C			D			A
					1	2	3	
	2	3			A	4	5	6
	5	4			7	8	9	
	A			D			B	

Quad Sum Sudoku

Apply standard Sudoku rules.

A circle at a corner implies that one digit is sum of remaining 3 digits at that corner.

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

Repeated Neighbours

Apply standard Sudoku rules.

Each shaded cell must have repeating orthogonal neighbours (neighbours sharing an edge). White cells must have distinct orthogonal neighbours.

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

Braille Sudoku

Apply standard Sudoku rules, except that 6 of 1-9 will be used in the grid. It is part of solving to figure out the 6 digits.

The Braille digits for 1 to 9 are given. Form the digits in Braille by adding dots to the diagram as needed. An extra work grid is provided.

1	2	3	4	5	6	7	8	9
⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠	⠠

⠠	⠠	⠠				⠠		
⠠	⠠	⠠				⠠		⠠
⠠						⠠		⠠
							⠠	⠠
	⠠	⠠		⠠	⠠	⠠	⠠	⠠
⠠	⠠							

Thermo Sudoku

Apply standard Sudoku rules.

The digits in each “thermometer” shaped region must be strictly increasing from the circular “bulb” to the other end(s).

4								2
9		2	5				4	
	4				5	2		9
2								4

Magic Square Sudoku

Apply standard Sudoku rules.

Additionally, one of the given 3X3 boxes is a perfect magic square. It is part of solving to determine the 3X3 box. In a magic square, the sum of digits in all rows, all columns, and all diagonals is 15. (See example below for one possible configuration.)

8	3	4
1	5	9
6	7	2

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

Odd Even Big Small

Apply standard
Sudoku rules.

Four different symbols
outside the grid
indicate four different
properties of the first
two cells in the along
that row or column.

The properties are
odd (1 3 5 7)
even (2 4 6 8)
big (5 6 7 8)
small (1 2 3 4).

1								
	2							
		3						
	6		4					
				5		4		
					6			
						7		
								8

奇
odd

大
big

小
small

大 偶
big even

小
small

小 奇
small odd

奇
odd

偶
even

奇
odd

Disjoint Groups

Apply standard
Sudoku rules.

Additionally, no digit
can appear in the
same position in
different 3X3 boxes.

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

Odd Even Frame

Apply standard Sudoku rules.

Clue outside is either the sum of all odd digits in the first 3 cells or sum of all even digits in the first 3 cells.

	12	10		10	13	5		2	8	
12										6
11										14
			9	4	1	8	5			
12			7				9			8
15			5				8			3
8			6				7			13
			2	8	4	3	1			
10										14
10										5
	9	13		8	12	19		8	9	

Outside Or Skyscraper

Apply standard Sudoku rules to both the grids.

Digits inside the grid represent height of skyscraper. The digits outside the grid are either skyscraper clues (i.e. they indicate the number of skyscrapers seen from the corresponding direction) OR are outside clues (i.e. they appear in the first 3 cells in the corresponding direction.)

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

Point To Next

Apply standard Sudoku rules.

If digit 'n' is placed in a cell with arrow, digit 'n+1' must be placed in one of the cells pointed by the arrow.

				→	←			
	1	2	3			4	5	
	4	5	6			3	2	
	7	8	9				↑	↓
↓	→						↑	↑
↑	→				1	2	3	
	2	3			4	5	6	
	5	4			7	8	9	
				→	←			

Linked Classics

Apply standard Sudoku rules.

The two grids are linked: every row has an exact duplicate in the other grid.

(The example uses 6X6 grid.)

					5
				1	
			5		4
		4		3	
	2		4		

1					
	4				
3		5			
	6		2		
		3		2	

Classic 1

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

Classic 2

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

Sudoku XV

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

Diagonal Sudoku

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

Toroidal

3	2	5	4	7	1	6
2	7	6	1	4	3	5
7	4	2	6	3	5	1
6	3	1	2	5	7	4
5	1	4	7	6	2	3
1	6	3	5	2	4	7
4	5	7	3	1	6	2

Killer Sudoku

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

Odd Sudoku

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

Renban Groups

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

Coded Pair

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

Quad Sum

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

Repeated Neighbours

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

Braille Sudoku

7	6	4	5	9	8
9	8	5	4	7	6
6	4	7	9	8	5
5	9	8	6	4	7
8	5	9	7	6	4
4	7	6	8	5	9

Thermo Sudoku

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

Magic Square

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

Odd Even Big Small

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

Disjoint Groups

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

Odd Even Frame

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

Outside Or Skyscraper

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

Point To Next

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

Linked Classics

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

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