2024 Indian Sudoku Championship

Instructions Booklet

11th August 2024, Bangalore

& sudoku mahabharat

Round Composition at a glance (puzzle names are in bold):

Round 1:

The Classic Begins

10 puzzles

30 minutes

Points: 300

Puzzles	Points
Classic 1	10
Classic 2	20
Classic 3	20
Classic 4	25
Classic 5	25
Classic 6	25
Classic 7	35
Classic 8	40
Classic 9	50
Classic 10	50
Total	300

Round 2:

The Usuals

8 puzzles

60 minutes

Points: 600

Puzzles	Points
Diagonal	80
Irregular	45
Pointing Evens	90
Little Killer & Kropki Pairs	100
Killer	80
Odd Even Count	70
Skyscraper	50
X-Y Differences	85
Total	600

Round 3:

Aim for the Target

9 puzzles

70 minutes

Points: 700

Puzzles	Points
1 Grid	200
2 Grids	+75
3 Grids	+75
4 Grids	+75
5 Grids	+75
6 Grids	+50
7 Grids	+50
8 Grids	+50
9 Grids	+50
Total	700

Round 4:

The Unusual?

12 puzzles

70 minutes

Points: 700

Puzzles	Points
Arrow	60
Thermo	85
Renban	50
German Whispers	50
Anti-Knight	35
Self-Joint	40
Sum Frame	60
X-Sums	55
Three is a Crowd	85
The First Five	75
159	35
Slot Machine	70
Total	700

Acknowledgments:

LMI Thanks the following puzzlers for their involvement in putting this competition together

Authors:

Ashish Kumar (India)

Clover (USA)

James Peter (India)

Sam Cappleman-Lynes (The UK)

Sed Holaysen (The Philippines)

Wessel Strijkstra (The Netherlands)

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Testers: **Chiel Beenhakker (The Netherlands), Tantan Dai (China), TiiT Vunk (Estonia), Matteo Fedeli (Italy)**

Tie Breakers & Bonus Points:

- In case of a tie, the participant with the higher score in Round 4 will rank higher. If there is still a tie, we will look at Round 2, then Round 1. If there is still a tie, a tie-breaker puzzle will be used if the position in question is relevant to the team selection positions or the Sudoku Mahabharat playoffs.
- If all puzzles are solved correctly in a round, the participant will score an additional 10 points per minutes saved.

Schedule

Time	Activity
9:00-9:30	Completing registration
9:30-10:00	Q & A
10:15-10:45	Round 1
11:00-12:00	Round 2
12:00-13:20	Lunch
13:20-14:30	Round 3
14:45-15:55	Round 4
16:15-16:45	Fun Event
17:00-17:30	PR Playoffs
17:30-18:00	Results & Prize Distribution

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30 minutes

300 points

Round 1

The Classic begins

This round will have 12 classic Sudokus, of varying difficulties. They will be sorted in order of points.

10 X 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 3X3 box.

Points – 10 + 20 + 20 + 25 + 25 +
25 + 35 + 40 + 50 + 50

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

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

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60 minutes

600 points

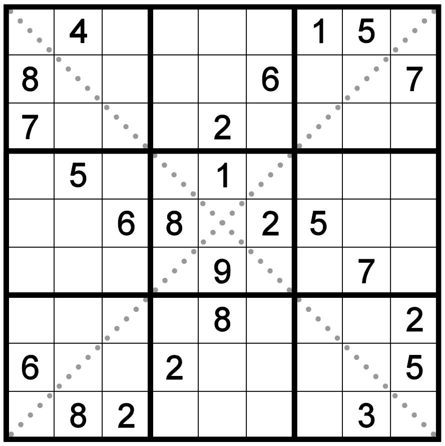
Round 2

The Usuals

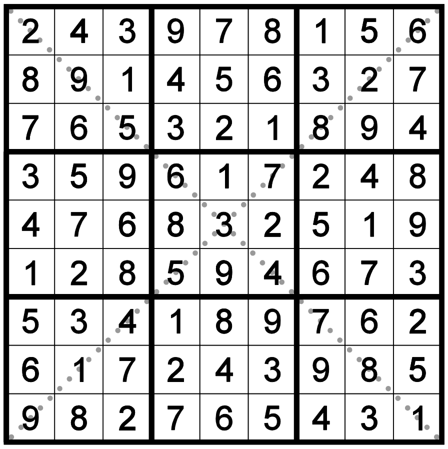
This round will have 8 well known variants.

Diagonal Sudoku (80 points)

Apply Classic Sudoku rules. Additionally, Each main diagonal contains each digit from 1 to 9.



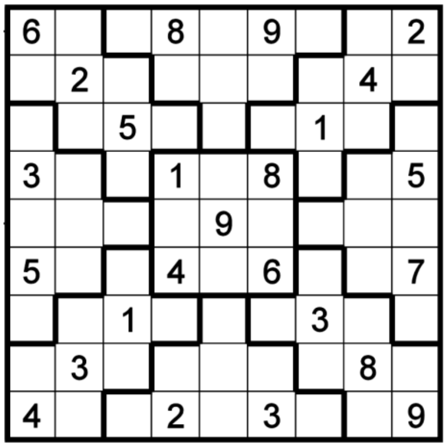
	4					1	5	
8					6			7
7				2				
	5			1				
		6	8		2	5		
				9			7	
				8				2
6			2					5
	8	2					3	



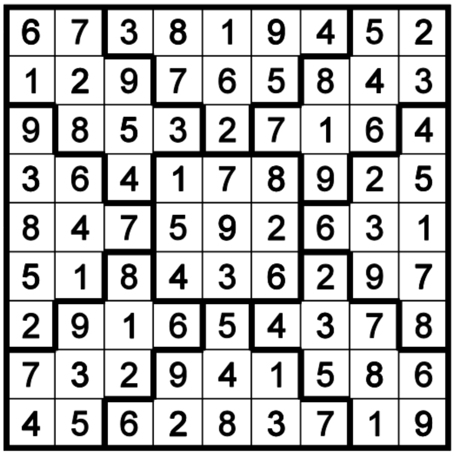
2	4	3	9	7	8	1	5	6
8	9	1	4	5	6	3	2	7
7	6	5	3	2	1	8	9	4
3	5	9	6	1	7	2	4	8
4	7	6	8	3	2	5	1	9
1	2	8	5	9	4	6	7	3
5	3	4	1	8	9	7	6	2
6	1	7	2	4	3	9	8	5
9	8	2	7	6	5	4	3	1

Irregular Sudoku (45 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 outlined region.



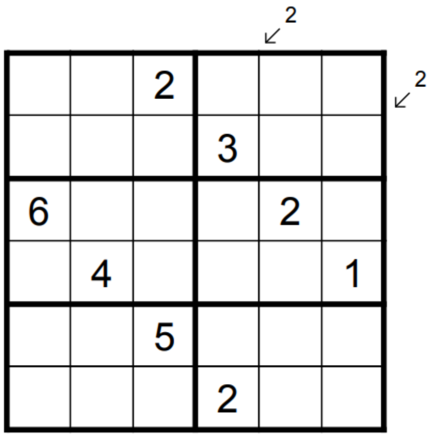
6			8		9			2
	2						4	
		5				1		
3			1		8			5
				9				
5			4		6			7
		1				3		
	3						8	
4			2		3			9



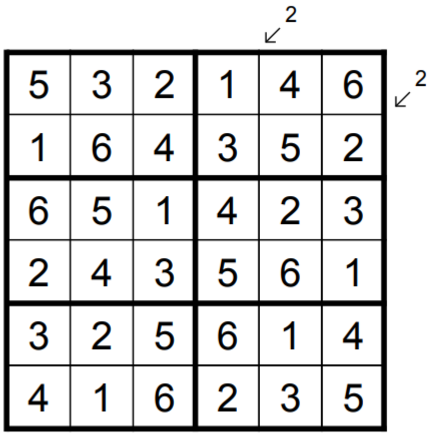
6	7	3	8	1	9	4	5	2
1	2	9	7	6	5	8	4	3
9	8	5	3	2	7	1	6	4
3	6	4	1	7	8	9	2	5
8	4	7	5	9	2	6	3	1
5	1	8	4	3	6	2	9	7
2	9	1	6	5	4	3	7	8
7	3	2	9	4	1	5	8	6
4	5	6	2	8	3	7	1	9

Pointing Evens Sudoku (90 points)

Each row, column and region must contain the digits from 1 to 6. Clues outside the grid correspond to the number of even digits in the diagonal indicated by the arrow.



		2			
			3		
6				2	
	4				1
		5			
			2		



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

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60 minutes

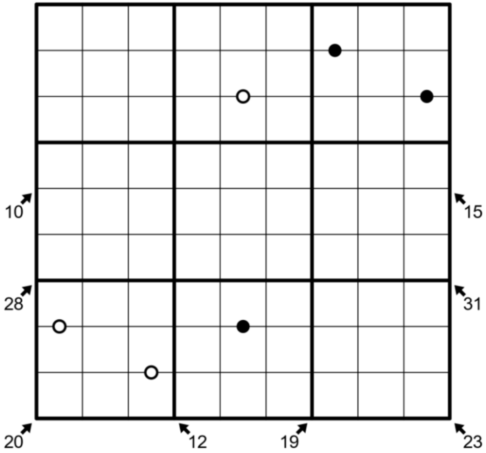
600 points

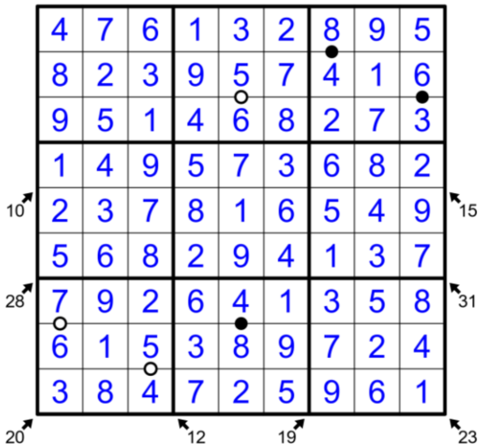
Round 2

The Usuals

Little Killer & Kropki Pairs Sudoku (100 points)

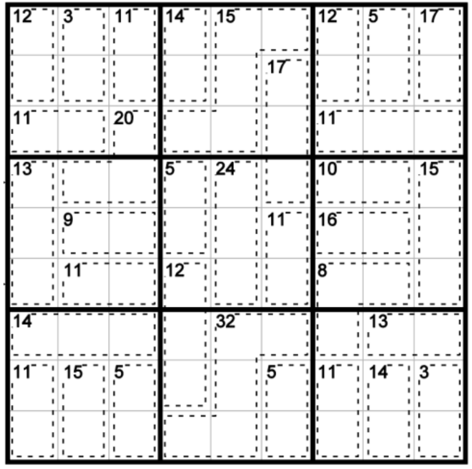
Apply Classic Sudoku rules. Adjacent cells marked with a white circle contain consecutive digits. Adjacent cells marked with a black circle contains digits where one digit is double of the other digit. The circle between 1 and 2 can be of either colour. All possible circles are NOT marked. Each number outside the grid is the sum of digits in the direction pointed by its arrow.

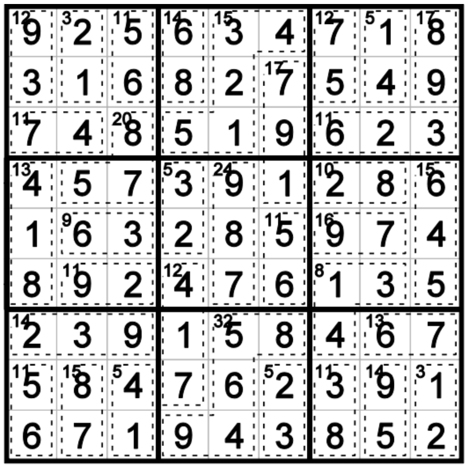




Killer Sudoku (80 points)

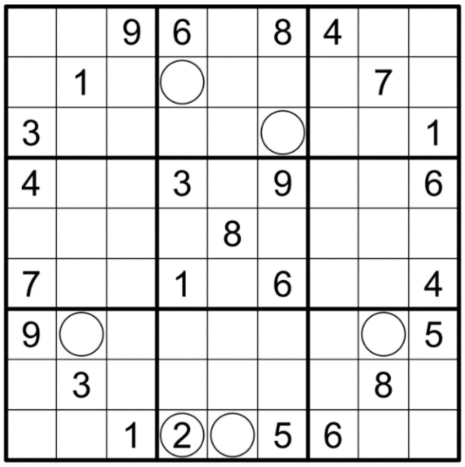
Apply Classic Sudoku rules. The sum of digits in cells inside every cage must equal the total given for the cage at the upper left cell. Digits do not repeat inside a cage.

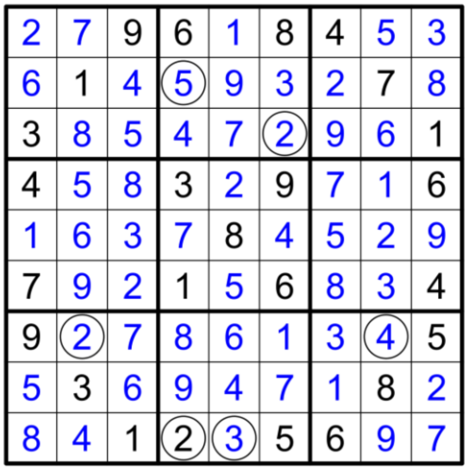




Odd Even Count Sudoku (70 points)

Apply Classic Sudoku rules. The digit in each circled cell is the number of digits in the 8 surrounding cells that have the same parity (odd/even) as that digit. NOT ALL CIRCLES ARE GIVEN.





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60 minutes

600 points

The Usuals

Skyscraper Sudoku (50 points)

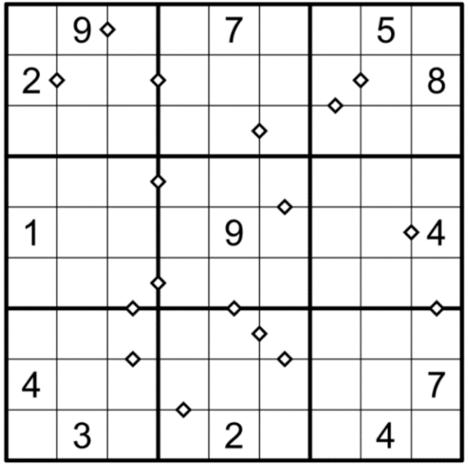
Apply Classic Sudoku rules. Each digit inside the grid represents the height of a skyscraper in that cell. Each number outside the grid represents the number of skyscrapers that can be seen in the corresponding row or column. Taller skyscrapers hide shorter ones.

			6		5					
3										
										7
										7
4										4
4										4
7										
										7
									7	

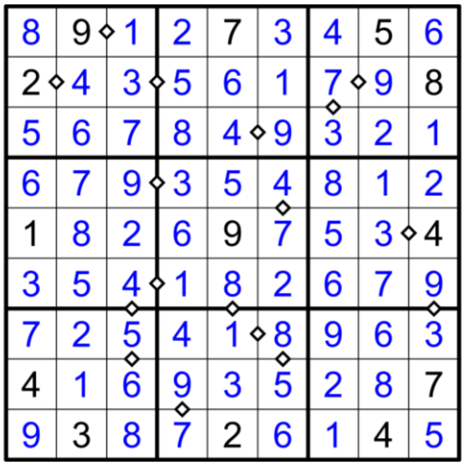
			6		5					
3	7	5	2	4	3	8	6	1	9	
	9	8	1	7	2	6	5	4	3	7
	4	6	3	5	1	9	2	7	8	
	5	1	6	3	4	2	9	8	7	
	8	9	7	1	6	5	4	3	2	7
4	2	3	4	9	8	7	1	5	6	4
4	3	4	8	2	9	1	7	6	5	4
7	1	2	5	6	7	3	8	9	4	
	6	7	9	8	5	4	3	2	1	7
									7	

X-Y Differences Sudoku (85 points)

Apply Classic Sudoku rules. Horizontally adjacent cells marked by a diamond contain digits whose difference is equal to the first (leftmost) digit of the corresponding row. Vertically adjacent cells marked by a diamond contain digits whose difference is equal to the first (topmost) digit of the corresponding column. All such diamonds are marked.



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



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

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70 minutes

700 points

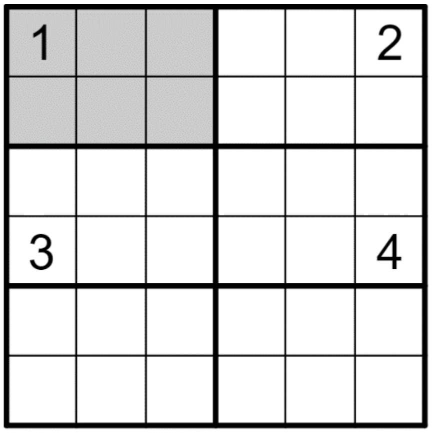
Round 3

Aim for the Target

This round consists of 9 9*9 grids that follow classic Sudoku rules.

One of these grids, marked with one shaded box, is the "target grid". Other than the shaded box, it shares a different box with each other grid in the exact same position, where digits must be in the same positions as well. The 9 grids may not be unique independently, but there is one unique solution considering the linking rule.

The example below shows 6 6*6 grids following the same properties described above.



1					2
3					4

5					
		3	2		
4					1
	3			6	
		6			

2		6			
			5		
				4	
					5
	2				
					2

1					
		3	5		
		5	3		
	6			1	
					5

	6			3	
					4
	1			4	
		5	2		
					1

3				4	
			5		
		5			
			2		
		6			
	4				2

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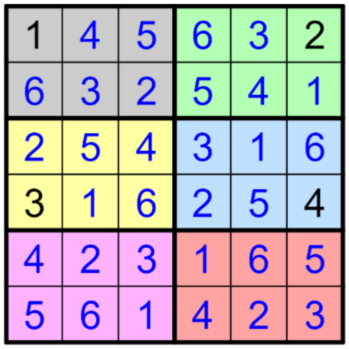
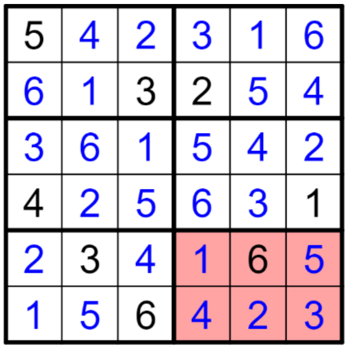
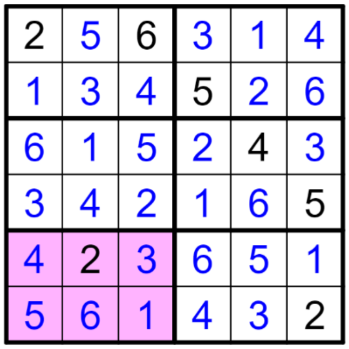
70 minutes **700 points** **Aim for the Target**



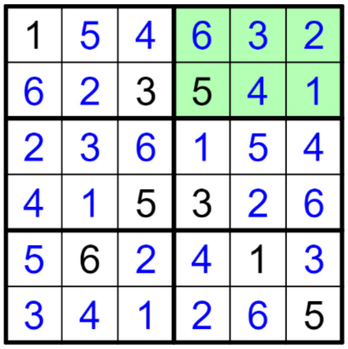
1	4	5	6	3	2
6	3	2	5	4	1
2	5	4	3	1	6
3	1	6	2	5	4
4	2	3	1	6	5
5	6	1	4	2	3



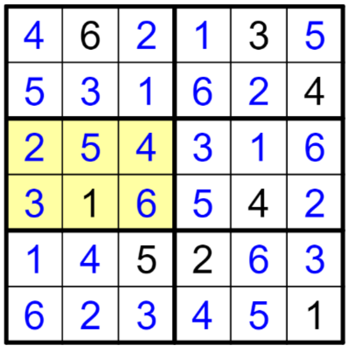
5	4	2	3	1	6
6	1	3	2	5	4
3	6	1	5	4	2
4	2	5	6	3	1
2	3	4	1	6	5
1	5	6	4	2	3



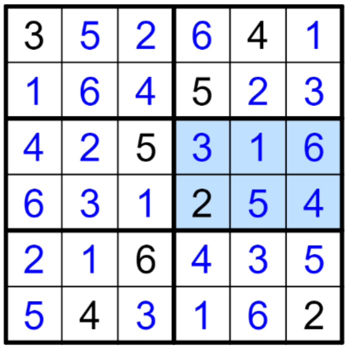
2	5	6	3	1	4
1	3	4	5	2	6
6	1	5	2	4	3
3	4	2	1	6	5
4	2	3	6	5	1
5	6	1	4	3	2



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



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



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

Scoring will be done according to the number of grids solved within the duration of the round, which correctly match the unique linked solution.

1 grid correctly solved - 200 points
2 grids correctly solved - 275 points
3 grids correctly solved - 350 points
4 grids correctly solved - 425 points
5 grids correctly solved - 500 points
6 grids correctly solved - 550 points
7 grids correctly solved 600 points
8 grids correctly solved 650 points

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70 minutes

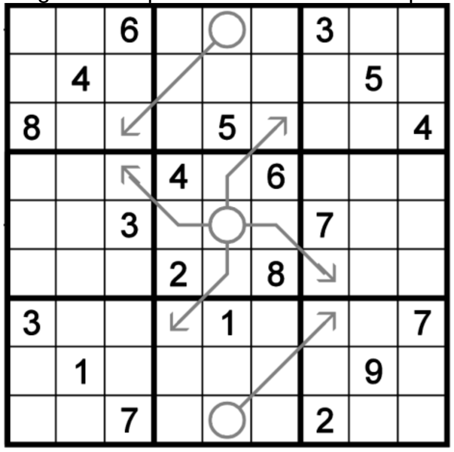
700 points

Round 4

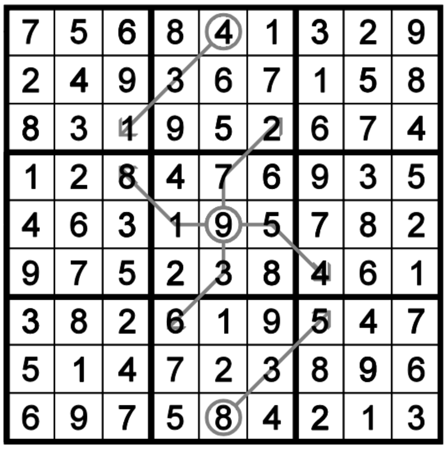
The Unusual?

Arrow Sudoku (60 points)

Apply Classic Sudoku rules. Additionally, the sum of the digits along the path of each arrow must equal the digit in the circled cell. Digits can repeat within an arrow shape.



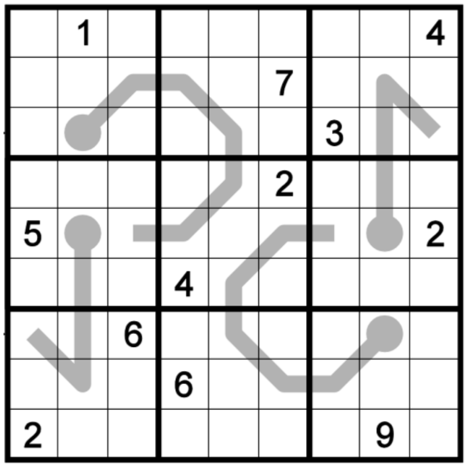
		6				3		
	4						5	
8				5				4
			4		6			
		3				7		
			2		8			
3				1				7
	1						9	
		7				2		



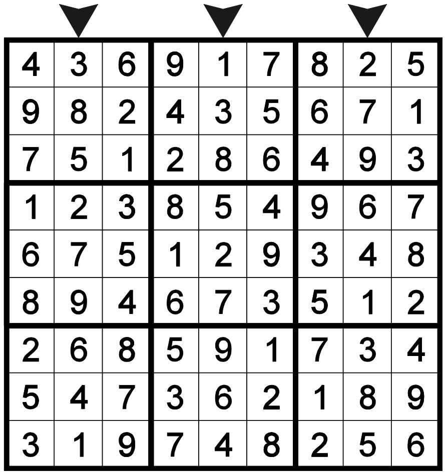
7	5	6	8	4	1	3	2	9
2	4	9	3	6	7	1	5	8
8	3	1	9	5	2	6	7	4
1	2	8	4	7	6	9	3	5
4	6	3	1	9	5	7	8	2
9	7	5	2	3	8	4	6	1
3	8	2	6	1	9	5	4	7
5	1	4	7	2	3	8	9	6
6	9	7	5	8	4	2	1	3

Thermo Sudoku (85 points)

Apply Classic Sudoku rules. Additionally, the digits in each “thermometer” shaped region must be strictly increasing from the circular “bulb” to the other end(s).



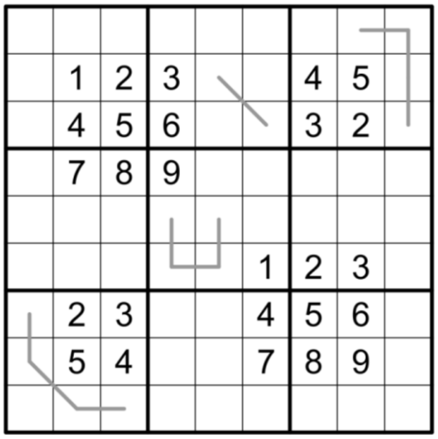
	1							4
					7			
						3		
					2			
5								2
			4					
		6						
			6					
2							9	



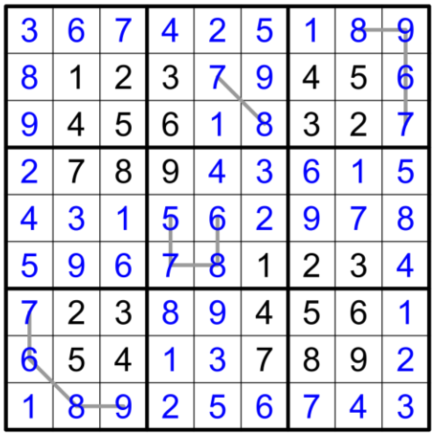
4	3	6	9	1	7	8	2	5
9	8	2	4	3	5	6	7	1
7	5	1	2	8	6	4	9	3
1	2	3	8	5	4	9	6	7
6	7	5	1	2	9	3	4	8
8	9	4	6	7	3	5	1	2
2	6	8	5	9	1	7	3	4
5	4	7	3	6	2	1	8	9
3	1	9	7	4	8	2	5	6

Renban Sudoku (50 points)

Apply Classic Sudoku rules. Each marked line contains a set of consecutive digits. Digits do not repeat within a line.



	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	



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

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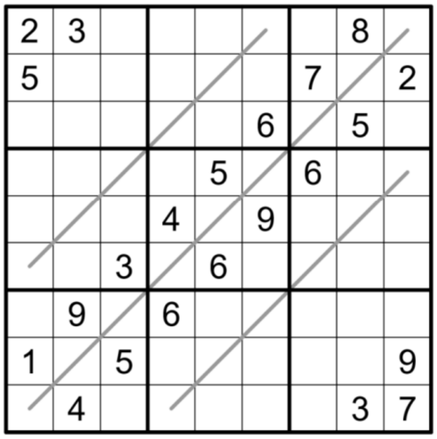
70 minutes

700 points

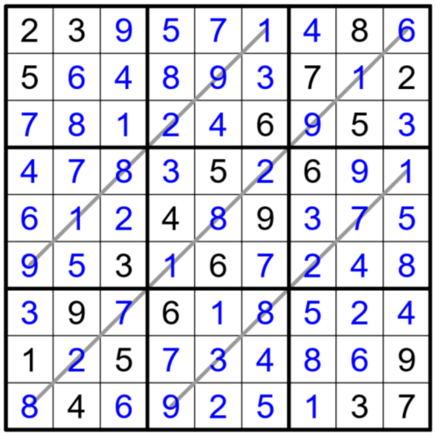
The Unusual?

German Whispers Sudoku (50 points)

Apply Classic Sudoku rules. Adjacent digits along the marked grey lines have a difference of at least 5.



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



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

Anti-knight Sudoku (35 points)

Apply Classic Sudoku rules. No cell that is a knight-step away can contain the same digit. A knight's move is 2 in a line and 1 to the side, as in chess.

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

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

Self-joint Sudoku (40 points)

Apply Classic Sudoku rules. if a number has the same numerical value as its position in any region, the cell is marked with gray, otherwise, it's white. All gray cells are given.

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

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

sudoku mahabharat

70 minutes

700 points

The Unusual?

Sum frame Sudoku (60 points)

Apply Classic Sudoku rules. Each number outside the grid is the sum of the digits within the first box in the corresponding direction.

	17		7	11		14	21		15	
13										19
12										15
14										15
										10
12										20
14										12
										13
13										20
	18		21	23		10	6		17	

	17		7	11		14	21		15	
13	5	6	2	4	8	1	9	3	7	19
	9	7	4	5	3	6	8	1	2	
12	3	8	1	2	9	7	4	5	6	15
14	2	9	3	7	5	4	6	8	1	15
	7	4	8	1	6	9	5	2	3	10
12	1	5	6	3	2	8	7	4	9	20
14	8	1	5	9	7	3	2	6	4	12
	6	3	9	8	4	2	1	7	5	13
13	4	2	7	6	1	5	3	9	8	20
	18		21	23		10	6		17	

X-Sums Sudoku (55 points)

Apply Classic Sudoku rules. Additionally, the clues outside the grid indicate the sum of the first X numbers placed in the corresponding direction, where X is equal to the first number placed in that direction.

	45		19		6		17		10	
45										15
12										33
32										1
				8		1				
13					5					39
				4		2				
40										23
1										17
7										43
		24		10	31	34		1		

	45		19		6		17		10	
45	9	7	5	1	2	6	4	8	3	15
12	3	1	8	7	4	5	2	9	6	33
32	6	4	2	9	8	3	5	7	1	1
	5	9	3	8	7	1	6	4	2	
13	4	2	1	6	5	9	8	3	7	39
	7	8	6	4	3	2	1	5	9	
40	8	3	9	2	1	4	7	6	5	23
1	1	6	7	5	9	8	3	2	4	17
7	2	5	4	3	6	7	9	1	8	43
		24		10	31	34		1		

Three is a Crowd Sudoku (85 points)

Apply Classic Sudoku rules. Clues outside the grid show the three numbers that have to be placed in the first three cells from that side. However, exactly one digit of each triplet is wrong. On each side of the grid (top, bottom, left, right) all of the wrong clues are different.

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

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

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70 minutes | **700 points** | **The Unusual?**

The First Five Sudoku (75 points)

Apply Classic Sudoku rules. Each digit outside the grid appears within the first five cells in the corresponding direction.

		23	34	45	56	67	78	91		
3					5					1
7				3		4				1
			2				6			
2		1						7		5
3	9								8	8
5		4						3		2
8										9
	1				8				4	

		23	34	45	56	67	78	91		
	5	8	1	9	6	7	3	4	2	
3	6	3	4	8	5	2	7	9	1	1
7	7	2	9	3	1	4	8	6	5	1
	4	7	2	5	9	8	6	1	3	
2	8	1	3	4	2	6	5	7	9	5
3	9	5	6	7	3	1	4	2	8	8
5	1	4	5	6	8	9	2	3	7	2
	3	9	7	2	4	5	1	8	6	
8	2	6	8	1	7	3	9	5	4	9
	1				8				4	

159 Sudoku (35 points)

Apply Classic Sudoku rules. Digits in column 1 indicate the column in which the digit 1 appears in that row. The same applies to columns 5 and 9, with the digits 5 and 9 respectively.

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

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

Slot Machine Sudoku (70 points)

Apply Classic Sudoku rules. Columns 1, 5 and 9 are silmilar to a slot machine: they contain numbers with the same sequence. In the example puzzle it is columns 2, 5 and 8.

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

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