Indian Sudoku Championship 2011 - Finals

11-Jun-2011, Bangalore

Round	Minutes	Total Points	Start Time	Bonus
Linked Classics	40	400	11:00 AM	10 points p.m.
Odd Even	60	600	11:50 AM	10 points p.m.
Neighbours	60	600	14:00 PM	10 points p.m.
Classic Twins	50	500	15:10 PM	10 points p.m.

Round1 – Linked Classics

This round will have Sudokus of different sizes.
They will also be 'linked' by a certain rule.
Note that partial points will be awarded only if the
solution matches with the overall solution satisfying
all grids.

	Any 1 Grid	Any 2 Grids	Any 3 Grids	All 4 Grids
4X4X4	5	10	15	25
4X6X6	15	30	50	85
4X9X9	60	120	190	290

Round2 – Odd Even

All Sudokus in this round will be related to Odd
(13579) and Even (2468) digits

Irregular Odd Even Sudoku	40
Odd Even View Sudoku	140
Odd Sudoku	45
Odd Even Count Sudoku	70
Odd Even Frame Sudoku	115
Odd Length Sudoku	115
Odd "PLUS" Sudoku	75

Round3 – Neighbours

In all Sudokus in this round, orthogonally or
diagonally adjacent digits will be related in certain
way. Converse rule applies in all Sudokus in this
round, which means absence of a clue indicates
absence of that relationship.

Multiple Sudoku	60
Sudoku XV	50
Kropki Sudoku	40
Equal Sum Sudoku	140
Small Neighbours Sudoku	55
Multiplication Table Sudoku	140
Average Sudoku	115

Round4 – Classic Twins

In this round, there will be 2 grids per puzzle. One
grid will have a special rule, and the other grid will
be a classic Sudoku. Grids will not be marked, and
identifying the non-classic Sudoku is part of solving.
Partial points will be awarded only if solution
matches with overall solution satisfying both grids.

	Classic	Variant
Classic + Diagonal	40	70
Classic + Anti Knight	50	45
Classic + Touchy	70	110
Classic + Number Search	55	60

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Each round will have 10 points per minute as time bonus. Time bonus will be awarded if all Sudokus in the round are solved correctly.

WSC style checking will be followed. Points will be awarded only if all cells have exactly 1 digit clearly written.

Ties will be broken using following rules:
  i)   Maximum points in Round2 (including bonus points in Round2)
  ii)   Maximum points in Round3 (including bonus points in Round3)
  iii)   Maximum points in Round4 (including bonus points in Round4)
If there is still a tie to determine the top 3 positions, tie-breaker puzzles will be used.

Points are generally indicative of the difficulty of the Sudokus and time required to solve it. However, your personal experience and preference might differ.

Printout of this booklet will not be provided at the event. Participants have to carry on their own, if they need it.
Participants are expected to carry writing materials (e.g. their lucky pencil, eraser, writing pad etc)
Any kind of external help (e.g. calculators, multiplication table) is not allowed.

Place digits 1-4 in each blank cell so that every row, every column, and every 2X2 box must have distinct digits.
Additionally, no digit occupies the same grid position more than once across all grids.

Place digits 1-6 in each blank cell so that every row, every column, and every outlined region must have distinct digits.
Additionally, no digit occupies the same grid position more than once across all grids

Answer to 4X6X6

Grid 1 (top-left):

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

Grid 2 (top-right):

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

Grid 3 (bottom-left):

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

Grid 4 (bottom-right):

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

Linked 4X9X9   *Round – 1*

Place digits 1-9 in each blank cell so that every row, every column, and every 3X3 box must have distinct digits.
Additionally, no digit occupies the same grid position more than once across all grids

Place digits 1-8 in each blank cell so that every row, every column, and every outlined region must have distinct digits.
Additionally, all shaded cells must have even digits, and all unshaded cells must have odd digits.

	4	3					
				5			
		6					
				2	1		

▶

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
Odd digits outside the grid represent the first odd digit that can be seen from the corresponding direction.
Even digits outside the grid represent the first even digit that can be seen digit from the corresponding direction.

Puzzle (left):

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

Solution (right):

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

▶

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
Additionally, all shaded cells must have odd digits.

Puzzle (left):

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

Solution (right):

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
An even digit inside a shaded cell represents the number of cells with even digits in the surrounding 8 cells. An Odd digit inside a shaded cell represents the number of cells with odd digits in surrounding 8 cells.

Puzzle (left):

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

Solution (right):

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
Numbers outside the grid equal the sum of all the odd digits or all the even digits appearing in the first three cells in the row or column in the corresponding direction.

Puzzle grid (left):

	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	

Solution grid (right):

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
Numbers outside the grid equal the maximum length of consecutive odd digits in the corresponding row or column.

Puzzle grid (left):

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

Solution grid (right):

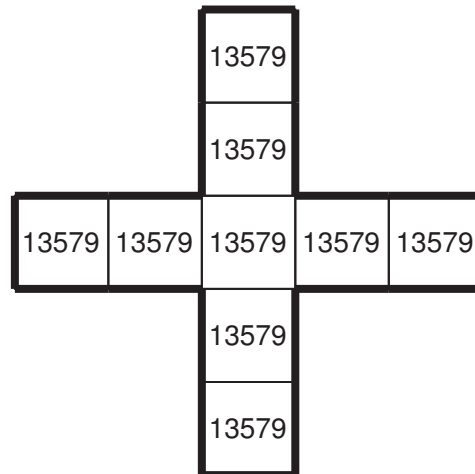|	4		1				4		1
	2	7	9	6	1	8	4	5	3
	6	1	4	9	5	3	2	7	8
	3	8	5	7	4	2	9	6	1
	4	5	2	3	7	9	8	1	6
	1	6	3	5	8	4	7	2	9
	7	9	8	1	2	6	5	3	4
	9	2	7	8	6	1	3	4	5
3	5	3	6	4	9	7	1	8	2
	8	4	1	2	3	5	6	9	7

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
There must be at least one group of 9 cells forming a PLUS sign as shown below all having odd digits.

		13579		
		13579		
13579	13579	13579	13579	13579
		13579		
		13579		

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

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
<u>All</u> orthogonally adjacent cells with "both digits being greater than 1" and "one being multiple of another" are marked.

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
<u>All</u> orthogonally adjacent cells with two digits summing to 5 are marked by V, while those summing to 10 are marked by X.

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
All orthogonally adjacent cells with absolute difference between two digits being 1 have a white dot between them. All orthogonally adjacent cells with one digits being double of another have a black dot between them. The dot between '1' and '2' can be of any color.
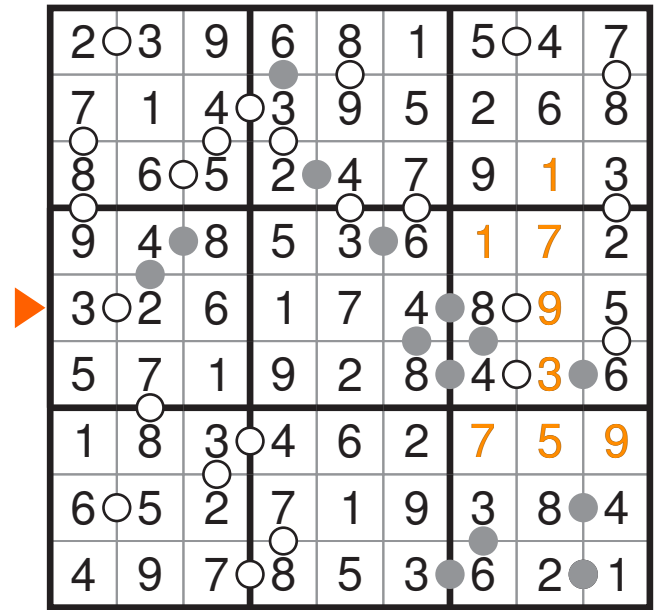
Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
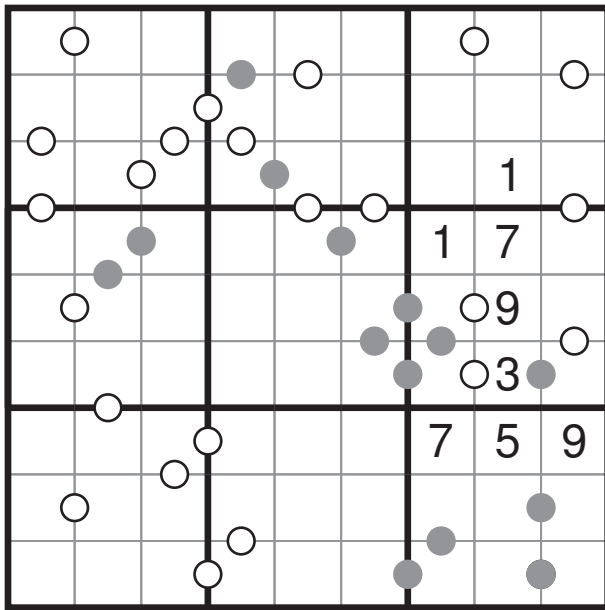Every 2X2 region "where the sums of digits in the diagonally opposite cells are equal" is marked.

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.

<u>All</u> cells where the digit is greater than all its orthogonal neighbours are shaded. Cells with digit 9 are never shaded.

Puzzle (left):

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

Solution (right):

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

Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.

<u>Every</u> 2X2 region "where the product of digits in top row is equal to the 2-digit number (left-to-right) in the bottom row" is marked.

Puzzle (left):

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

Solution (right):

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

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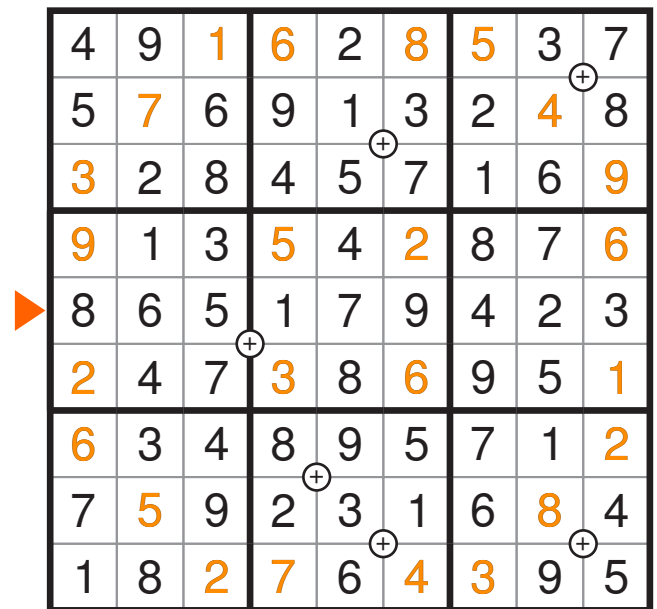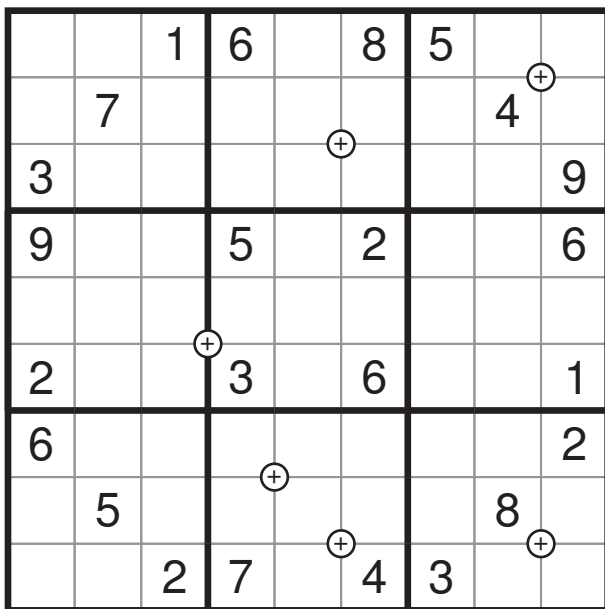
Place digits 1-9 in each blank cell so that every row, every column, and every box must have distinct digits.
<u>All</u> cells where the digit is average of horizontally adjacent cells have a horizontal line. <u>All</u> cells where the digit is average of vertically adjacent cells have a vertical line.

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

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

One of the grids below is a Classic Sudoku. The other grid is a Diagonal Sudoku. Identifying the Classic Sudoku is part of solving.

Diagonal Sudoku Rule: Apply Classic Sudoku rules. Additionally, every main diagonal must have digits 1~9. (Diagonals will not be marked)

Top-left puzzle grid

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

Top-right puzzle grid

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

Bottom-left solution grid

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

Bottom-right solution grid

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

One of the grids below is a Classic Sudoku. The other grid is an AntiKnight Sudoku. Identifying the Classic Sudoku is part of solving.

AntiKnight Sudoku Rule: Apply Classic Sudoku rules. Additionally, no cell that is a knight-step away can contain the same digit.

Top puzzle grid (left):

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

Top puzzle grid (right):

9					4		6		7

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

Bottom solved grid (left):

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

Bottom solved grid (right):

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

One of the grids below is a Classic Sudoku. The other grid is a Touchy Sudoku. Identifying the Classic Sudoku is part of solving.

Touchy Sudoku Rule: Apply Classic Sudoku rules. Additionally, Each digit touches, vertically or horizontally at least one consecutive digit.

Top-left puzzle:

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

Top-right puzzle:

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

Bottom-left solution:

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

Bottom-right solution:

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

One of the grids below is a Classic Sudoku. The other grid is a Number Search Sudoku. Identifying the Classic Sudoku is part of solving.

Number Search Sudoku Rule: Apply Classic Sudoku rules. Additionally, the numbers given must be found on the grid, horizontally (left-to-right or right-to-left), or vertically (top-to-bottom or bottom-to-top).

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

| 1 | 3 | 7 | 9 | | 5 | 7 | 3 | 9 | | 1 | 2 | 7 | 4 |

Top-left grid (puzzle):

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

Top-right grid (puzzle):

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

Bottom-left grid (solution):

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

Bottom-right grid (solution):

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