



Round 4 – Part 2: Variant Categories

Duration: 60 Minutes

Date: 21st January

This round will contain 2 9x9 Classics, and then some variants which are based on different categories of variations. Few of these are repeats from previous rounds, but most will be new. They are similar to concepts used in previous rounds though. The points distribution for the actual round will be released around 1 week prior to the competition. For now, this is just a sample booklet to give an idea of the variants and give some practice to newcomers. The points given along with the Sudokus are just to give an idea of things, and not final in any way.

Sudoku	Points
Classic 9x9 1, 2	8, 13
Pencil Marks Sudoku (6x6 & 9x9)	6, 20
Diagonal Sudoku (6x6 & 9x9)	6, 16
Thermo Sudoku (6x6 & 9x9)	11, 29
Odd Sum Pair Sudoku (6x6 & 9x9)	4, 21
Arrow Sudoku (6x6 & 9x9)	9, 19
No Knight Step Sudoku (6x6 & 9x9)	4, 15
Outside Sudoku (6x6 & 9x9)	5, 14
Total	200

The test can be started any time between 12:01 AM and 11:59 PM on 21st January.

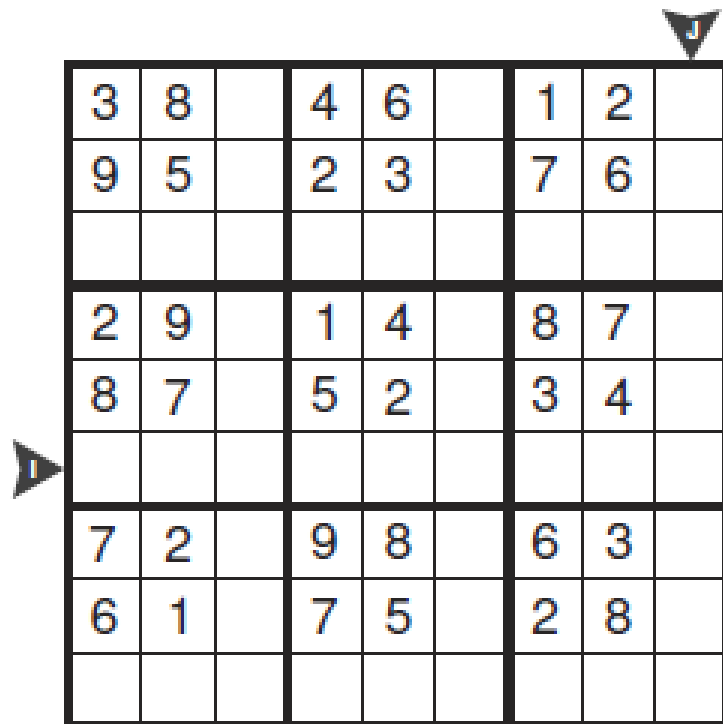
There will be instant grading, i.e., when you submit the answers, you will know if they are right or wrong. You can resubmit solutions for incorrect submissions. However, note that, for 1 incorrect submission 90% points will be awarded for the subsequent correction, and similarly 70% for 2 incorrect, 40% for 3 incorrect and 0% for 4 incorrect submissions respectively.

The Sudokus can be solved in any sequence, and you can attempt in paper or online mode. It is not necessary to enter answers in both modes. You can even enter some in paper mode and some in online mode. It is enough to enter the marked rows/columns correctly in both modes. For any other queries, please mail before taking the contest.

Standard Sudoku

6 points

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.



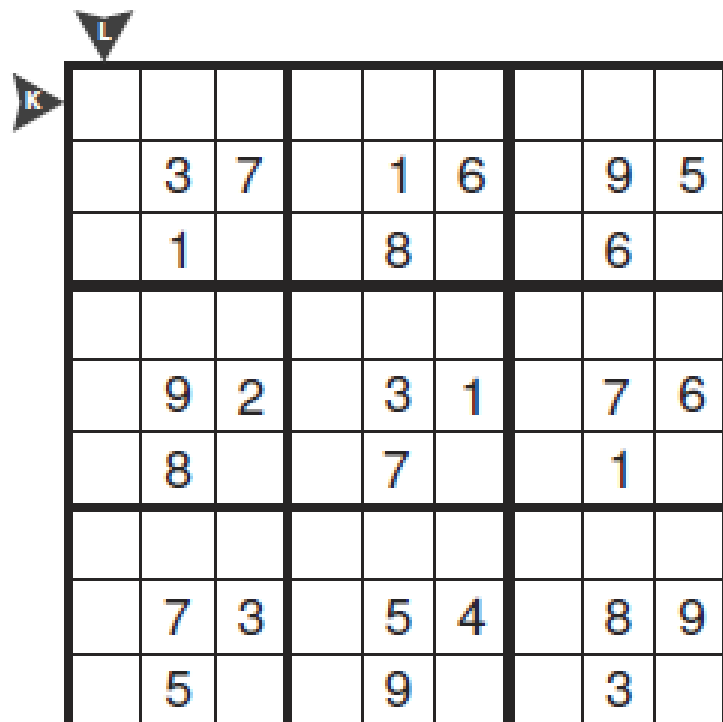
A 9x9 Sudoku grid with a 3x3 subgrid highlighted in the top-left corner. The subgrid is labeled 'J' at the top right and 'I' at the bottom left. The grid contains the following numbers:

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	

Standard Sudoku

7 points

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.



A 9x9 Sudoku grid with a 3x3 subgrid highlighted in the top-left corner. The subgrid is labeled 'L' at the top right and 'K' at the bottom left. The grid contains the following numbers:

	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	

Category: Substitution

Pencil Mark
Sudoku

6 points

Apply standard
Sudoku rules.In some cells you
find all allowed
candidates for the
specific cell.

56					56
		12	12		
	12			12	
16					26
	34			34	
13		45	45		13

Pencil Mark
Sudoku

12 points

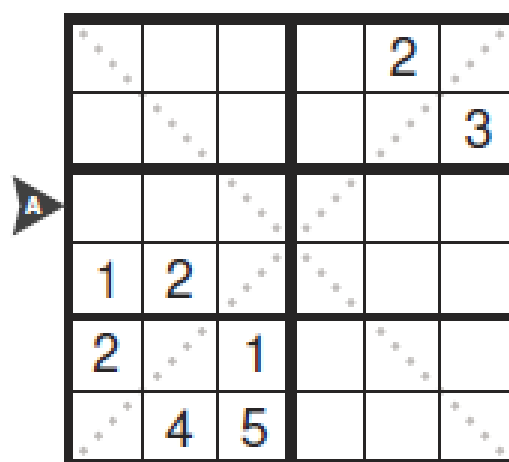
Apply standard
Sudoku rules.In some cells you
find all allowed
candidates for the
specific cell.

	147	569	12	145	69	13	13	
457	234	234	178	589	689	178	368	378
356	127	349	378	248	234	257	467	269
246	145	12	149	378	279	39	348	236
369	346	289	346	24	579	127	238	126
27	67	369	139	167	348	26	568	148
17	258	47	568	369	23	46	47	34
39	235	17	189	456	246	145	49	456
	359	236	137	247	136	149	239	

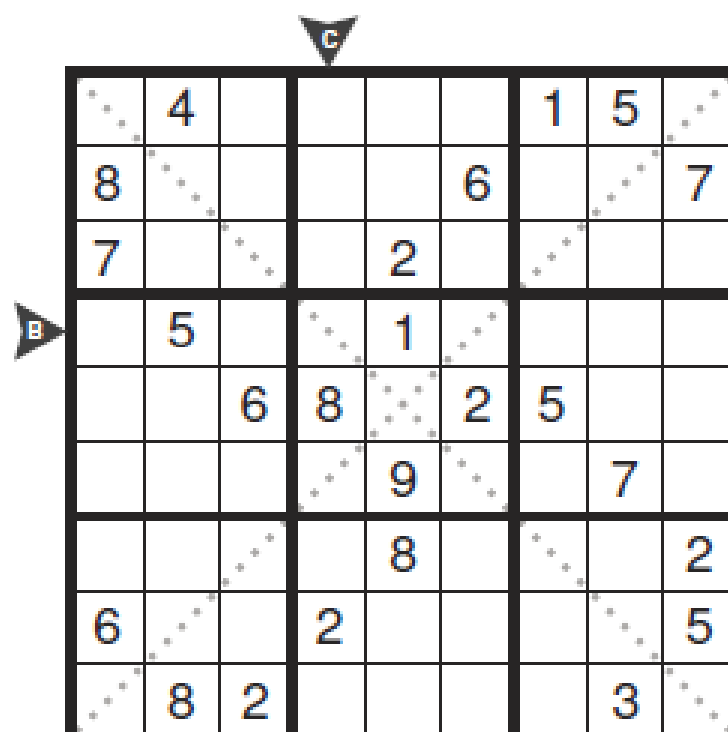
Category: Standard

Diagonal
Sudoku

6 points

Apply standard
Sudoku rules.Additionally, each
extra main diagonal
(marked by a line)
must contain digits
from 1-6.Diagonal
Sudoku

12 points

Apply standard
Sudoku rules.Additionally, each
extra main diagonal
(marked by a line)
must contain digits
from 1-9.

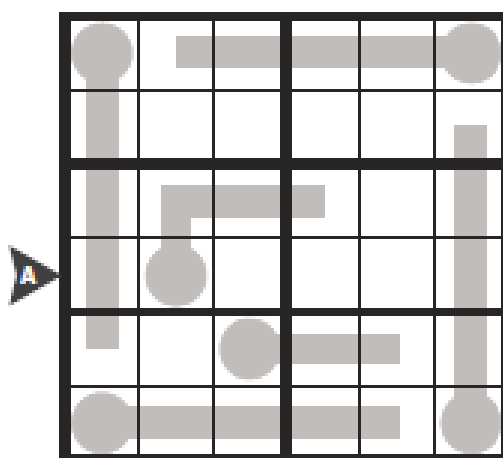
Category: Neighbours

Thermo
Sudoku

2 points

Apply standard
Sudoku rules.

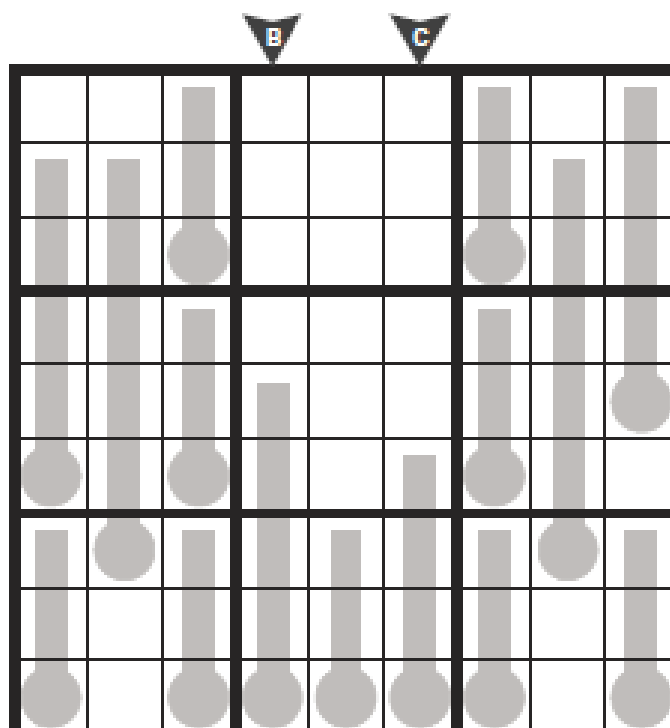
Additionally, the
digits in each
"thermometer"
shaped region must
be strictly
increasing from the
circular "bulb" to
the other end(s).

Thermo
Sudoku

9 points

Apply standard
Sudoku rules.

Additionally, the
digits in each
"thermometer"
shaped region must
be strictly
increasing from the
circular "bulb" to
the other end(s).



Category: Odd Even

Odd Sum Pair
Sudoku

2 points

Apply standard
Sudoku rules.A dot between two
cells implies the
sum of digits in
those 2 cells is odd.

D

		•			6
	1	•			
		2	•		
			•	3	
		•		•	4
2				•	1

Odd Sum Pair
Sudoku

13 points

Apply standard
Sudoku rules.A dot between two
cells implies the
sum of digits in
those 2 cells is odd.

E

F

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

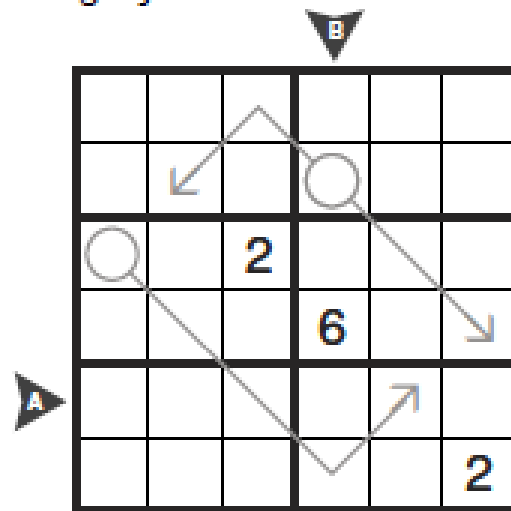
Category: Math

Arrow
Sudoku

7 points

Apply standard
Sudoku rules.

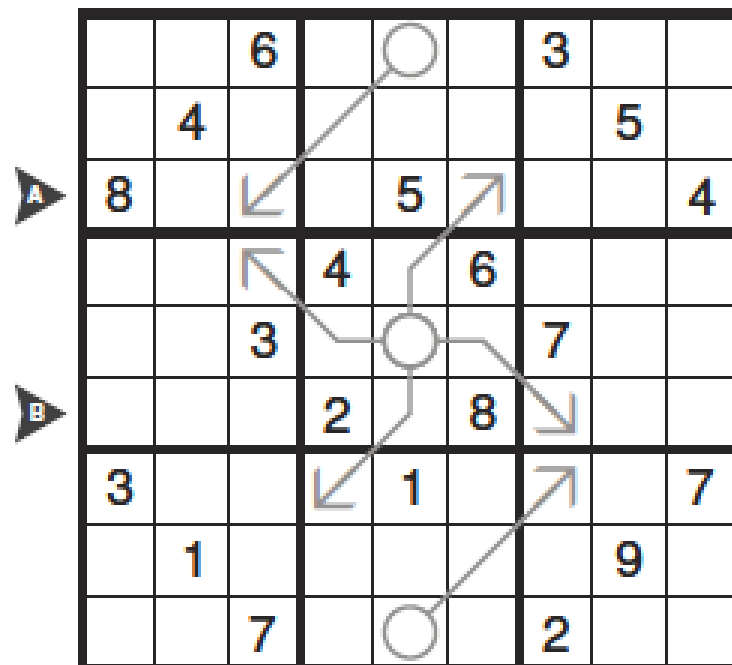
The sum of the
digits along the path
of each arrow must
equal the digit in the
circled cell. Digits
can repeat within an
arrow shape.

Arrow
Sudoku

11 points

Apply standard
Sudoku rules.

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.



Category: Converse

No Knight Step Sudoku

2 points

Apply standard Sudoku rules.

No cell that is a knight-step away can contain the same digit. In chess, a knight moves two squares forward followed by one sideways.

	X		X	
X				X
		•		
X				X
	X		X	

1	2			3	4
5	6			4	1

No Knight Step Sudoku

11 points

Apply standard Sudoku rules.

No cell that is a knight-step away can contain the same digit. In chess, a knight moves two squares forward followed by one sideways.

	X		X	
X				X
		•		
X				X
	X		X	

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

Category: Outside Clues

Outside Sudoku

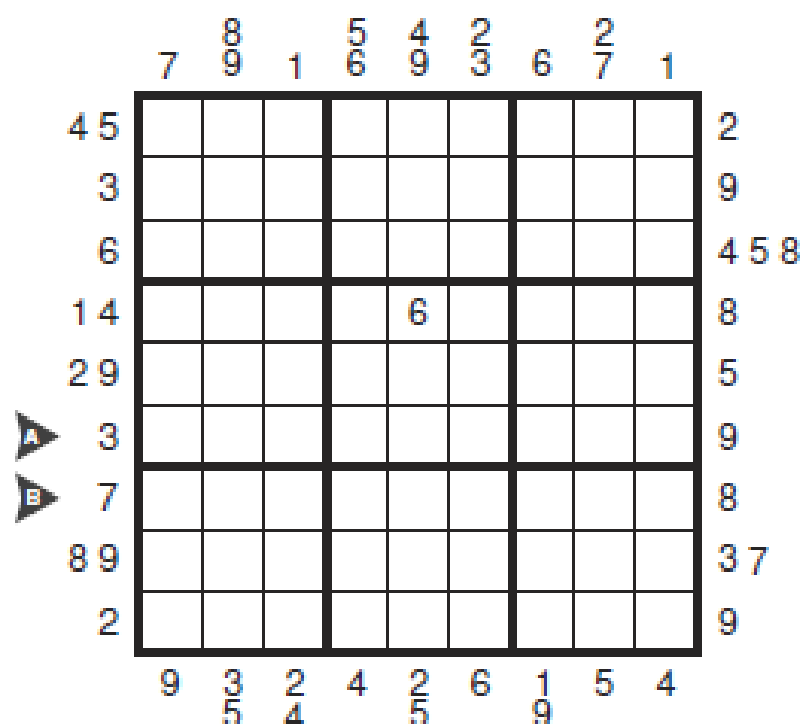
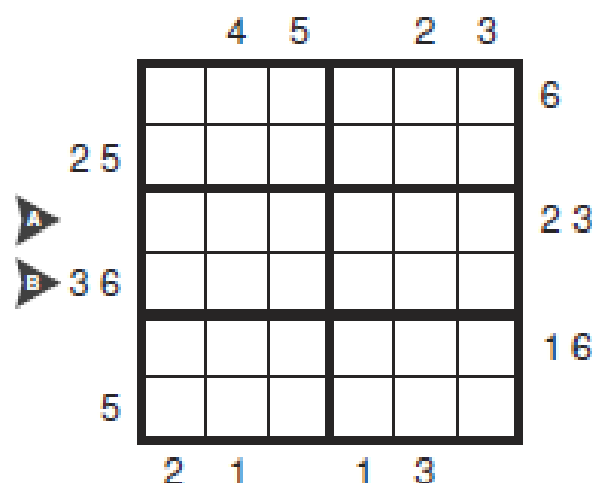
3 points

16 points

Apply standard Sudoku rules to each of the grids.

The digits outside the grid must appear in one of the cells in the first box (till the next bold line) seen from that edge of the grid.

Note: Sudokus taken from Sudoku Mahabharat 'Outside' Round by Rakesh Rai in Dec, 2014.



Pencil Marks

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

Diagonal

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

Pencil Marks

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

Diagonal

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

Thermo

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

Thermo

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

Odd Sum Pair

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

Arrow

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

Odd Sum Pair

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

Arrow

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

No Knight Step

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

No Knight Step

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

Outside Sudoku

			4	5		2	3			
			1	4	3	6	2	5	6	
2	5		6	2	5	4	1	3		
A			4	5	1	3	6	2	2	3
B	3	6								
			2	3	4	1	5	6	1	6
5			5	1	6	2	3	4		
			2	1		1	3			

Outside Sudoku

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