

20th – 24th September 2019

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Important Links

Submission Page : <http://logicmastersindia.com/2019/0952/>

Discussion Thread : <http://logicmastersindia.com/t/?tid=2714>

F. A. Q. : <http://logicmastersindia.com/t/?tid=381>

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

About this Test

This test has fifteen Sudokus, including one mini Sudoku and one classic Sudoku.

How to participate?

- Understand the rules of different Sudokus that will appear in this test. This Instruction Booklet has rules and examples for each Sudoku.
- Download the password protected Sudoku booklet (will be uploaded before the test starts). The Sudoku booklet contains the actual Sudokus to be solved. It is password protected, so you won't be able to open it.
- Any time on or after 20th September (but on or before 24th September), login at the submission page using your LMI userid and password.
- Please check the submission page for exact timing.
- Click on "Start". At this time, password for pdf will be shown and timer will start.
- You can either solve online using flash interface or print the pdf and solve on paper.
- Each Sudoku will be marked with two arrows
- If solving on paper
 - Fill the answer form with digits along the marked arrow(s)
 - Click submit button
- If solving online
 - After solving the Sudoku, click on "Submit" button below the grid
 - Each Sudoku grid has different submit buttons

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

Points Table and Scoring

Points typically indicate difficulty of the Sudokus and time required to solve them. While the organizers have made best efforts to match them, your personal experience and preference may differ.

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

Sudoku	Points
Mini (6x6)	1
Windoku (9x9)	2
Arrow (9x9)	3
Classic (9x9)	4
Diagonal (9x9)	4
Equal Sum Lines (9x9)	5
Odd Even Bridge (9x9)	5
Killer (9x9)	6
Kid (9x9)	8
X Sums (9x9)	8
Unique sums (9x9)	9
Rhombus (9x9)	9
Renban (9x9)	9
Thermo (9x9)	10
Little Killer (9x9)	17
TOTAL	100

Bonus

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

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.” These outlined regions could be 3X3 boxes, or other shapes.

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.

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

About the Sudoku Booklet

The password protected Sudoku booklet will have 8 pages. If you are planning to solve on paper, we advise you to have a printer accessible with enough paper.

The Sudoku booklet will look similar to the next pages in this instruction booklet. The font sizes, cell sizes, colors, borders, shading, margin will be similar. We recommend you to print few pages of this instruction booklet. You can avoid any last minute surprise during the test.

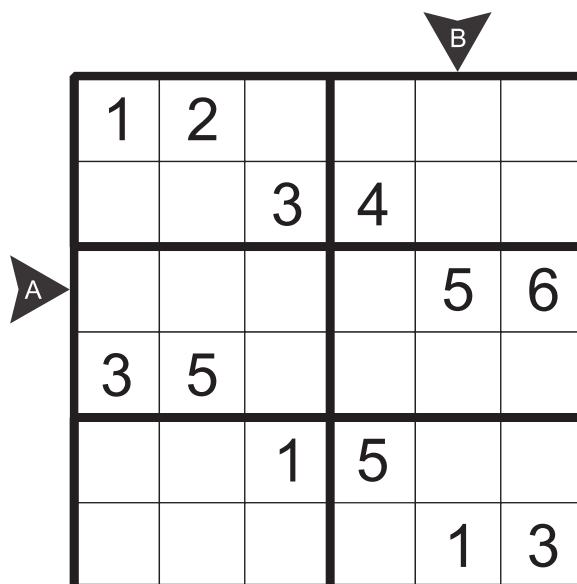
Testing

Thanks to Pranav Kamesh for testing the sudokus and sharing valuable feedback.

01 Mini Classic Sudoku

1 point

Place a digit from 1 to 6 in each empty cell so that each digit appears exactly once in each row, column and 2X3 box.

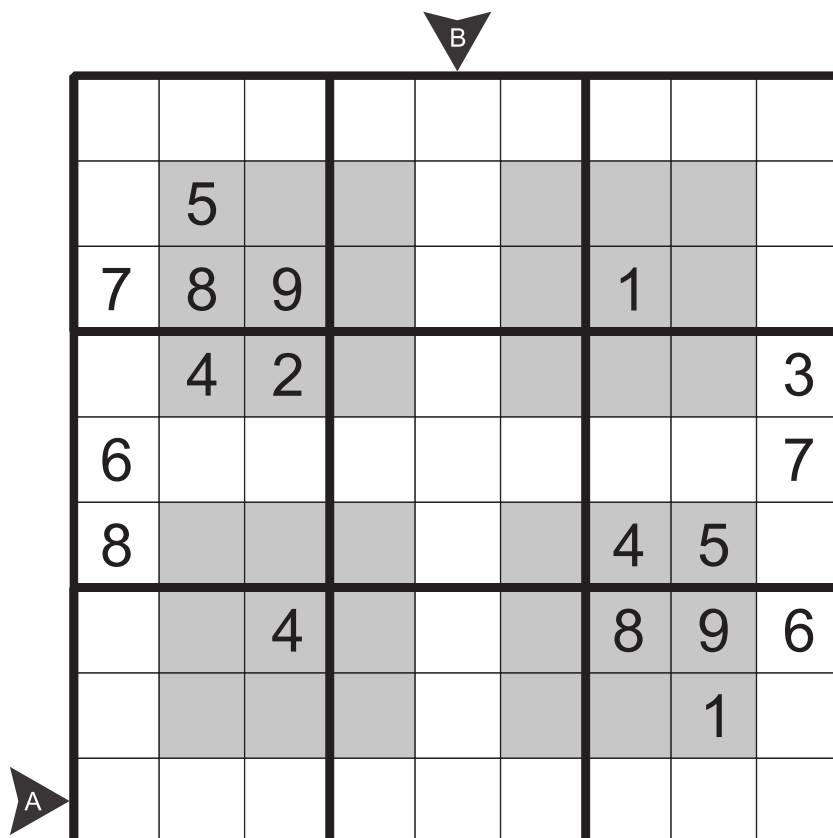


02 Windoku Sudoku

2 points

Apply classic Sudoku rules.

Additionally, each digit appears exactly once in each shaded 3x3 region.



03 Arrow Sudoku

3 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.

A 9x9 grid for an Arrow Sudoku puzzle. The grid contains the following digits:

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

Arrows and circled cells are shown in the grid:

- Arrow A: Starts at the circled cell (row 5, column 5) and moves left to the circled cell (row 5, column 3).
- Arrow B: Starts at the circled cell (row 1, column 5) and moves down to the circled cell (row 5, column 5).
- Arrow C: Starts at the circled cell (row 5, column 5) and moves right to the circled cell (row 5, column 7).
- Arrow D: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow E: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow F: Starts at the circled cell (row 5, column 5) and moves left to the circled cell (row 5, column 3).
- Arrow G: Starts at the circled cell (row 5, column 5) and moves right to the circled cell (row 5, column 7).
- Arrow H: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow I: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow J: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow K: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow L: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow M: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow N: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow O: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow P: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow Q: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow R: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow S: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow T: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow U: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow V: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow W: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow X: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).
- Arrow Y: Starts at the circled cell (row 5, column 5) and moves up to the circled cell (row 2, column 5).
- Arrow Z: Starts at the circled cell (row 5, column 5) and moves down to the circled cell (row 8, column 5).

04 Classic Sudoku

4 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 grid for a Classic Sudoku puzzle. The grid contains the following digits:

	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	

05 Diagonal Sudoku

4 points

Apply classic Sudoku rules.

Additionally, each main diagonal (marked by dotted lines) must contain digits from 1-9.

06 Equal Sum Lines Sudoku

5 points

Apply classic Sudoku rules.

Additionally, all lines have the same sum of digits. Digits may repeat on lines.

07 Odd Even Bridge Sudoku

5 points

Apply classic Sudoku rules.

Additionally, some circled cells are connected by a bridge.

An odd digit in a circle equals the number of odd digits on the bridge.

An even digit in a circle equals the number of even digits on the bridge.

The digits on the circles are not counted.

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

08 Killer Sudoku

6 points

Apply classic Sudoku rules.

Additionally, the number at the top-left corner of each cage equals the sum of digits inside the cage.

Digits do not repeat inside a cage.

12	3	11	14	15		12	5	17
					17			
11		20				11		
13			5	24		10		15
	9				11	16		
	11		12			8		
14				32			13	
11	15	5			5	11	14	3

09 Kid Sudoku

8 points

Apply classic Sudoku rules.

Additionally, each digit in the outside clue indicates the sum of one or more continuous digits from left to right (top to bottom) for the corresponding row (column), with the additional constraint that no sum can exceed 9.

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

8846955
↓

875799 →

878958 →

▲ A

898794 →

▲ B

7693749 →

789975 →

10 X Sums Sudoku

8 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
▲ A				8		1			
13					5				39
▲ B				4		2			
40									23
1									17
7									43
	24		10	31	34		1		

11 Unique Sums Sudoku

9 points

Apply classic Sudoku rules.

Additionally, there are some cages denoted by dotted lines. Digits do not repeat inside a cage. No two cages can have the same sum.

12 Rhombus Sudoku

9 points

Apply classic Sudoku rules.

Additionally, the sum of digits on the vertices of each rhombus is a multiple of the digit at the centre of the rhombus.

13 Renban Sudoku

9 points

Apply classic Sudoku rules.

Additionally, each connected shaded region contains a set of distinct consecutive digits.

A 9x9 grid for a Renban Sudoku puzzle. The grid contains several shaded regions. An arrow labeled 'A' points to the first row of the second shaded region (row 2, columns 2-3). An arrow labeled 'B' points to the first row of the third shaded region (row 1, column 7). The grid contains the following numbers:

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

14 Thermo Sudoku

10 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.

A 9x9 grid for a Thermo Sudoku puzzle. The grid contains several thermometer-shaped regions, each with a circular bulb at one end and a tail at the other. An arrow labeled 'A' points to the bulb of the thermometer in row 2, column 2. An arrow labeled 'B' points to the bulb of the thermometer in row 1, column 7. The grid contains the following numbers:

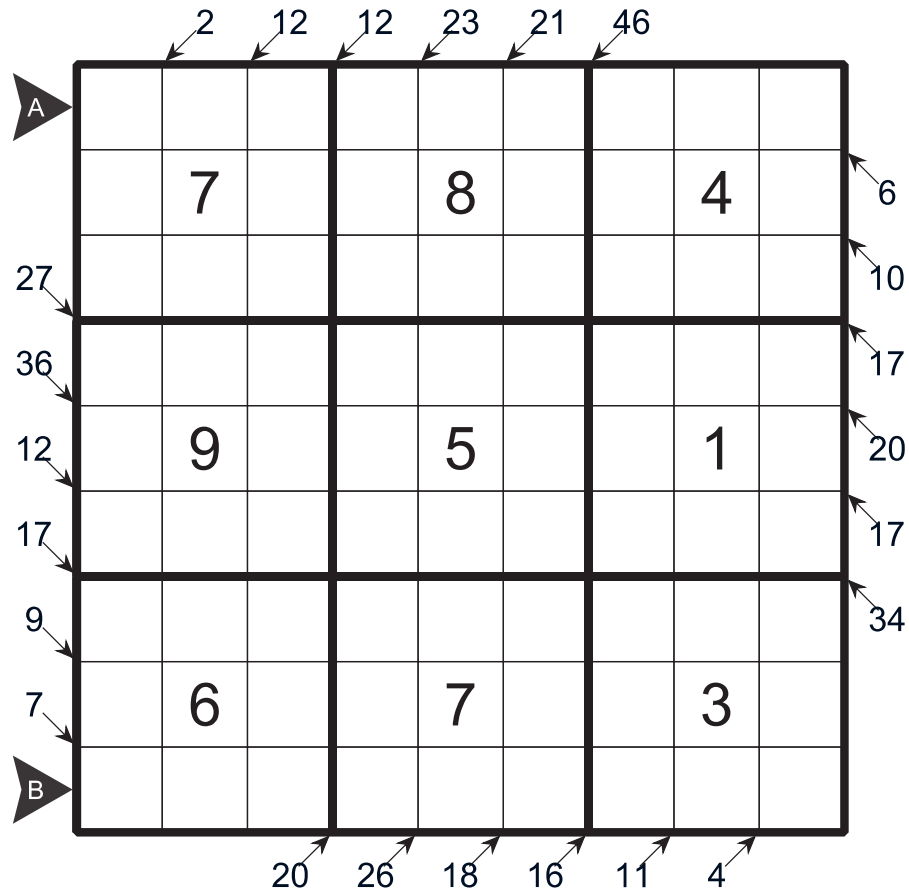
	1							4
					7			
						3		
					2			
5								2
			4					
		6						
			6					
2							9	

15 Little Killer Sudoku

17 points

Apply classic Sudoku rules.

Additionally, numbers with arrows outside the grid indicate the sum of the digits appearing in the cells in the corresponding direction.



Mini Sudoku

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

Windoku Sudoku

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

Arrow Sudoku

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

Classic Sudoku

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

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

Equal Sum Lines Sudoku

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

Odd Even Bridge Sudoku

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

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

Kid Sudoku

875799	8	3	4	5	7	9	2	1	6
878958	2	6	7	3	1	4	9	5	8
1	9	5	2	8	6	3	4	7	
9	7	2	8	4	3	1	6	5	
898794	3	5	8	1	6	2	7	9	4
6	4	1	7	9	5	8	2	3	
4	1	3	6	2	8	5	7	9	
7693749	5	2	6	9	3	7	4	8	1
789975	7	8	9	4	5	1	6	3	2

Unique Sums Sudoku

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

X Sums Sudoku

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

Rhombus Sudoku

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

Renban Sudoku

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

Thermo Sudoku

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

Little Killer Sudoku

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