

Indian Sudoku Championship 2009

14th-15th March 2009

Instruction Booklet

Logic Masters India
(<http://www.logicmastersindia.com>)

Indian Sudoku Championship 2009

All resident Indian nationals, irrespective of age, can participate in the Indian Sudoku Championship. The Championship will be an online test on 14th -15th March, 2009. The sudoku-solving skills of contestants will be tested through different sudoku variations which appear in the WSCs. Top rankers at the Indian Sudoku Championship will be eligible to represent India at the 4th World Sudoku Championship to be held in Zilina in April 2009.

Rules and Regulations

The Indian Sudoku Championship will consist of 3 parts each of 45 minutes. All three parts of the test will be held twice on 14th and 15th March 2009 to account for network problems for the participants. The better of two scores for each part across both days will be counted in the final score for each participant. It is not necessary to participate on both days. You can also selectively participate in particular rounds on either of the day as long as you participate in all 3 rounds at least once (e.g. You can participate in round 1 and round 3 on day1 and round 2 on day 2.)

However to increase your chances of scoring higher we would advice everybody to participate on both days.

The schedule is as follows:

Day1 - 14th March

14:00 - 14:45 Classic Sudoku

15:00 - 15:45 Basic variants relay

16:00 - 16:45 New variants

Day2 - 15th March

10:00 - 10:45 Classic Sudoku

11:00 - 11:45 Basic variants relay

12:00 - 12:45 New variants

Register

For participating in the ISC you should register on the site at the following link:

<http://www.logicmastersindia.com/login.html>

You need not register again if you already have registered on the site. This login will be required for submitting answers.

Download

Download the password protected puzzle booklets from the following link:

<http://www.logicmastersindia.com/ISC2009downloads.asp>

The pdf files are meant for all solvers who prefer to solve the test on paper. The test files can be opened during the test with the password which will appear on the site at the start of the test. We have also provided a flash solving format for all solvers who are comfortable solving online. Such solvers will save time required to print the pages and final submitting the answers. However, from previous experience we have noticed that the sudokus can be solved much faster on paper and would advice all solvers to take printouts.

Password

The passwords for each part of the test will be displayed at the starting time of that part at the following link:

<http://www.logicmastersindia.com/ISC2009passwords.asp>

You can copy paste the password to the password protected puzzle pdf file to open the file.

Answer Format

The answer pages for each part of the test will be displayed at the following link: <http://www.logicmastersindia.com/ISC2009answers.asp>

For solvers who will solve in the flash format, open the answer page 15 minutes before the test so that all sudokus are fully loaded when you start solving.

While submitting the answer, it is not necessary to type all the digits. Before submitting, for a particular Sudoku, click the **Show Cells to Fill** option within the flash format for the particular sudoku. This button will be active from the start of the test. Only the highlighted cells need to be submitted.

Late submission of answers after 45 minutes will not be accepted. The server time mentioned on the answer page is solely for your convenience. Participants are solely responsible for submission of answers on time.

Ranking will be done on the basis of total score. Ties will be broken using the following rules in order:

- Fewest number of incorrect answers (blank answers are ignored)
- Earliest time stamp

External help of any kind is not permitted. This means no assistance of any kind from any other person, also any books, calculators, computers or tools other than the item explicitly permitted. Writing instruments of any shape or design, erasers, rulers and paper are allowed.

Results Page

The results will be displayed after the championship at the following link:
<http://www.logicmastersindia.com/ISC2009results.asp>

Questions

Questions can be asked at <http://www.logicmastersindia.com/forum/default.asp>

Some pointers for using flash answer format:

- It is suggested that you familiarize yourself with the flash format by solving the mock tests at <http://www.logicmastersindia.com/mock11/mock11R1.asp>
- If "Move as you type" is selected, cursor will move automatically to next cell after you type.
- If "Move as you type" is not selected, cursor will not move to the next cell automatically. Use arrow keys/mouse to move around the grid.
- "Save Locally" button is provided for each puzzle. The puzzle status (all filled cells) will be saved locally on your computer. The saved puzzle status will be restored in case the browser crashes / closes / refreshes. Note that pencil marks are not saved / restored.
- Don't refresh / close the browser before submitting.

Points Distribution

The tables below indicate the points awarded for correctly solving the sudokus which will appear in the ISC 2009. The points are applicable for all rounds on both the days of the event. Points are generally indicative of the difficulty of the sudoku and time required to solve it. However your personal experience and preference might be different.

Round 1 : Classics (600 points)	
Classic # 1	30
Classic # 2	30
Classic # 3	30
Classic # 4	35
Classic # 5	35
Classic # 6	35
Classic # 7	35
Classic # 8	40
Classic # 9	40
Classic # 10	40
Classic # 11	40
Classic # 12	45
Classic # 13	45
Classic # 14	50
Classic # 15	70

Round 2 : Relay (700 points)	
Odd/Even	60
Sudoku XV	70
Diagonal	80
Extra Region	90
Consecutive	110
Irregular	130
Frame	160

Round 3 : New Variants (700 points)	
Blackout	125
Dan Sudoku	110
Odd/ Even Neighbors	80
Odd/Even Skyscrapers	125
Repeated Neighbors	95
Toroidal	90
Sum 16	75

Round 1
Classic Sudoku (45 minutes)
600 points

This part will consist of 15 classic sudokus, with a range of difficulties from very easy to difficult.

Classic Sudoku

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9.

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

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

Round 2
Relay (45 minutes)
700 points

This part consists of seven standard variation puzzles which are arranged in a manner so that each preceding sudoku must be solved completely to transfer clues to the next sudoku.

Without the transferred digits each subsequent sudoku does not have a unique solution. For each of the sudokus from 2 to 6 a few of the cells will be marked with rectangles. These cells with rectangles contain digits from the corresponding positions in the previous Sudoku.

Solve the sudokus in a sequential manner as it is highly unlikely that you will be able to solve the sudokus in any other order.

Points will be awarded only if the solution matches the expected solution.

The puzzles will appear in the following order:

1. Odd/Even Sudoku
2. Sudoku XV
3. Diagonal
4. Extra Region
5. Consecutive
6. Irregular
7. Frame

Odd/Even Sudoku

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9. Shaded cells contain the even digits while the others contain the odd digits.

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

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

Sudoku XV

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9. All the adjacent cell pairs (sharing an edge) with two digits summing to 5 are marked by V, while those summing to 10 are marked by X.

			6	X	V			
		X		V			X	
<input type="text"/>	X			X				6
			V	V	X			
X	V	X	V					V
			X					
2	X			X	X	X		<input type="text"/>
	X	V						
		X						
			5	X	X			

8	9	2	7	6	X	4	V	1	3	5	
1	6	X	4	5	2	V	3	8	X	7	9
<input type="text"/>	5	7	X	3	8	1	X	9	4	2	6
7	5	8	1	V	4	X	6	2	9	3	
6	2	1	3	9	7	5	4	8			
X	V	X	V					V			
4	3	9	2	X	8	5	6	1	7		
2	X	8	7	6	3	1	X	9	5	<input type="text"/>	
9	X	1	5	4	X	7	8	3	6	2	
3	4	X	6	9	5	2	X	X	7	8	1

In the example above for XV, 2 cells marked by squares are copied from the solution of Odd/Even Sudoku. These 2 cells are Row3Column1 and Row7Column9.

Diagonal Sudoku

Fill in the grid so that every row, every column, every diagonal and every 3x3 box contains the digits 1 through 9.

		2	9	1	5	7				
			3	8	6					
2	<input type="text"/>			6					9	
4	1							2	5	
8				5				<input type="text"/>	7	
			6	3	4					
		8	5	2	7	3				

5	3	9	7	4	2	1	6	8		
6	8	2	9	1	5	7	4	3		
7	4	1	3	8	6	9	5	2		
2	<input type="text"/>	7	4	6	1	8	3	9		
4	1	3	8	7	9	6	2	5		
8	9	6	2	5	3	4	<input type="text"/>	1	7	
9	7	5	6	3	4	2	8	1		
1	6	8	5	2	7	3	9	4		
3	2	4	1	9	8	5	7	6		

Extra Region Sudoku

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9. Each group of nine like colored cells must also contain the digits 1 through 9.

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

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

Consecutive Sudoku

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9. Neighboring cells which contain consecutive digits are separated by white bars.

	1					2	
		5				7	
							5
		4				9	
	5		7			1	

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

Irregular Sudoku

Fill in the grid so that every row, every column and every outlined region of nine cells contains the digits 1 through 9.

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

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

Frame Sudoku

Fill in the grid so that every row, every column and every 3x3 box contains the digits 1 through 9. The numbers outside the grid represent the sum of first 3 digits inside the grid in the corresponding direction.

16 16 13 24 6 15 10 18 17

21 10

15 14

9 21

9 20

16 18

20 7

13 4 11

15 22

17 12

15 17 13 10 17 18 14 18 13

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

16 16 13 24 6 15 10 18 17

21 10

15 14

9 21

9 20

16 18

20 7

13 11

15 22

17 12

15 17 13 10 17 18 14 18 13

Round 3
Variants (45 minutes)
700 points

Blackout

Fill in the grid from 1 through 9 so that every row, every column and every 3X3 box contains distinct digits. Shaded cells don't contain any digits.

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

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

Dan Sudoku

Fill in the grid so that every row, every column and the 3x3 boxes contain the digits 1 through 9. The marked cells contain 7 different digits.

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

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

Odd Even Neighbors

Fill in the grid so that every row, every column and the 3x3 boxes contain the digits 1 through 9. The cells having equal number of odd neighbors (cells sharing an edge) and even neighbors are marked. If the cell is not marked, the number of odd neighbors is not equal to the number of even neighbors.

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

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

Odd Even Skyscraper

Fill in the grid so that every row, every column and the 3x3 boxes contain the digits 1 through 9. The cells outside indicate the number of skyscrapers seen from the corresponding direction, with white indicating odd number of skyscrapers and grey indicating even number of skyscrapers.

				2					
			2		8				
		5				1			
			5		6				
				3					

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

[It is not necessary to fill the digits outside the 9X9 grid.]

Repeated Neighbors

Fill in the grid so that every row, every column and the 3x3 boxes contain the digits 1 through 9. The cells having repeated neighbors (cells sharing an edge) are marked. Cells which are not marked cannot contain repeated neighbors.

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

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

Toroidal

Fill in the grid with digits from 1 through 8 so that every row, every column and every outlined region contains distinct digits. Some of the outlined regions will wrap between the top and bottom edges, and/or the left and right edges of the grid.

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

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

Sum16

Fill in the grid so that every row, every column and the 3x3 boxes contain the digits 1 through 9. If the sum of digits in neighboring cells (sharing edge) of a cell is 16, then the cell is marked. If the cell is not marked, the sum of digits in the neighboring cells can't be 16.

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

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