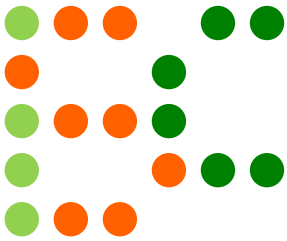
sudoku mahabharat



Episode – 7
12th – 15th February 2016

Converse Variations by Harmeet Singh, Rakesh Rai

Sudoku Mahabharat rounds will also serve as qualifiers for Indian Sudoku Championship for year 2016. Please check http://logicmastersindia.com/SM/2015-16.asp **for details.**

Important Links

Submission Page : http://logicmastersindia.com/SM/?test=SM201602

Discussion Thread : http://logicmastersindia.com/t/?tid=1230

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

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

About this Episode

Apart from classic Sudokus of different sizes, this episode has five variants

- Consecutive Sudoku
- Kropki Sudoku
- X Sum Frame Sudoku
- QuadMax 4Odd 4Even Sudoku
- Average Sudoku

Converse rules apply to all the variants. Read the variant rules for more details.

Acknowledgements

We thank Rishi Puri for testing the sudoku grids in this contest.

How to participate?

- Understand the rules of different Sudokus that will appear in this episode. This Instruction Booklet has rules 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 after 12th February (but before 15th February), login at the submission page using your LMI userid and password. **The test duration is 90 minutes.**
- 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 .

If you want to clarify rules or ask questions, please post details in the discussion forum for this test.

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.

Standard 6X6	1, 1, 1, 2
Standard 8X8	4
Standard 9X9	4, 5, 4
Consecutive Sudoku 6X6, 9X9	1, 12
Kropki Sudoku 6X6, 9X9	3, 16
X Sum Frame 6X6, 9X9	3, 9
QuadMax 4Odd 4Even 6X6, 9X9	2, 16
Average Sudoku 6X6, 9X9	3, 13

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.

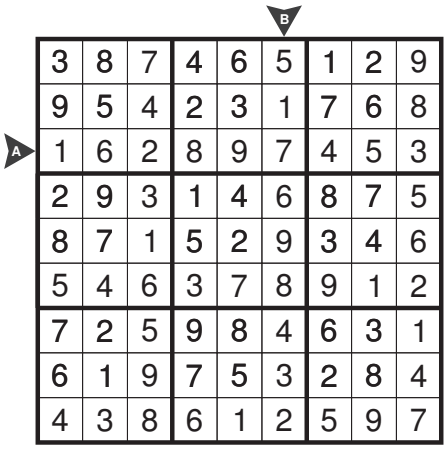
Bonus

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 the 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

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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 exactly like next 8 pages in this instruction booklet. The font sizes, cell sizes, colors, borders, shading, margin will be identical. We recommend you to print few pages of this instruction booklet. You can avoid any last minute surprise during the test.

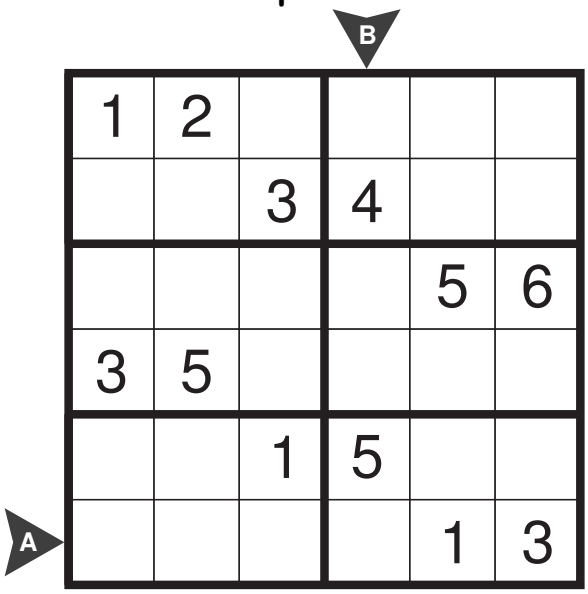
Also, we strongly advise you to save the pdf file on your computer, open the pdf (with the password) using Adobe Acrobat Reader and then print. If you print directly from the browser (for example Google Chrome), unintentional printing problems may arise.

(See this post for details http://logicmastersindia.com/t/?tid=1189).

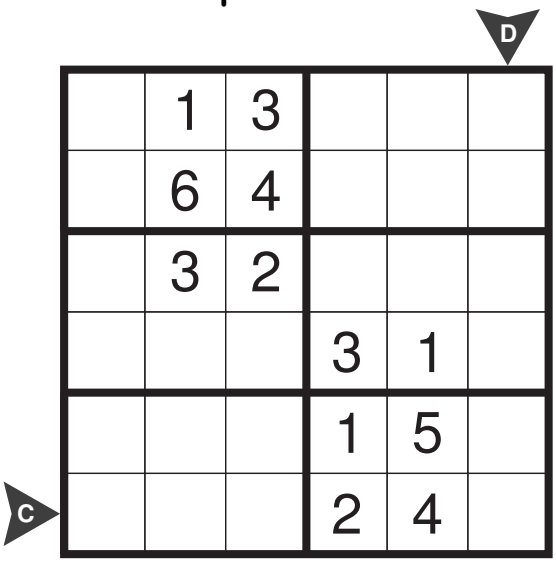
Standard Sudoku

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.

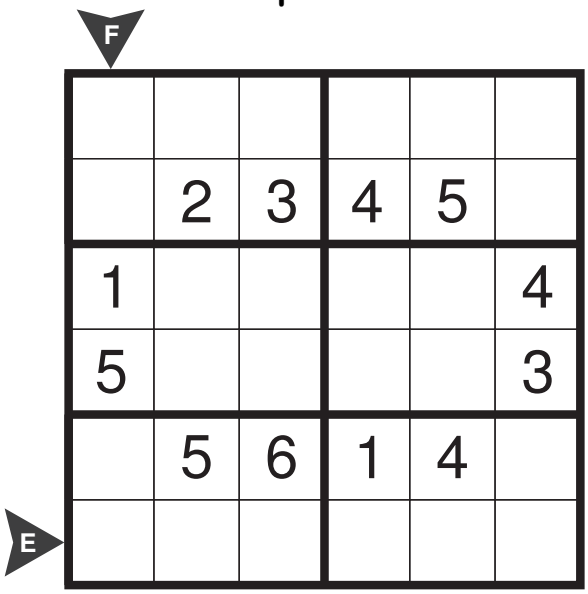
1 point



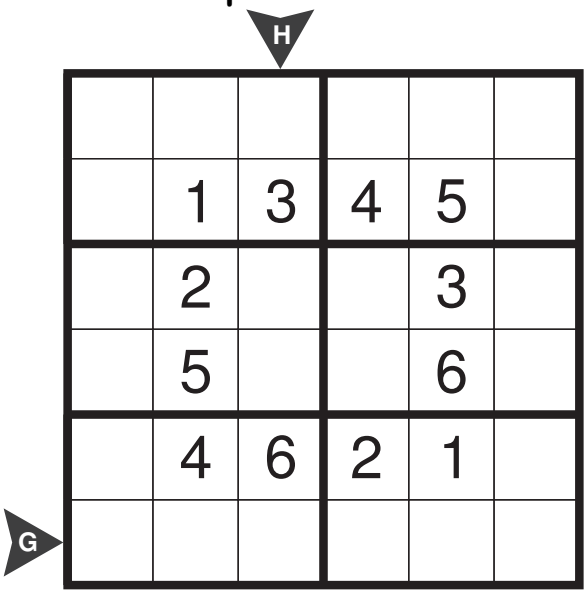
1 point



1 point



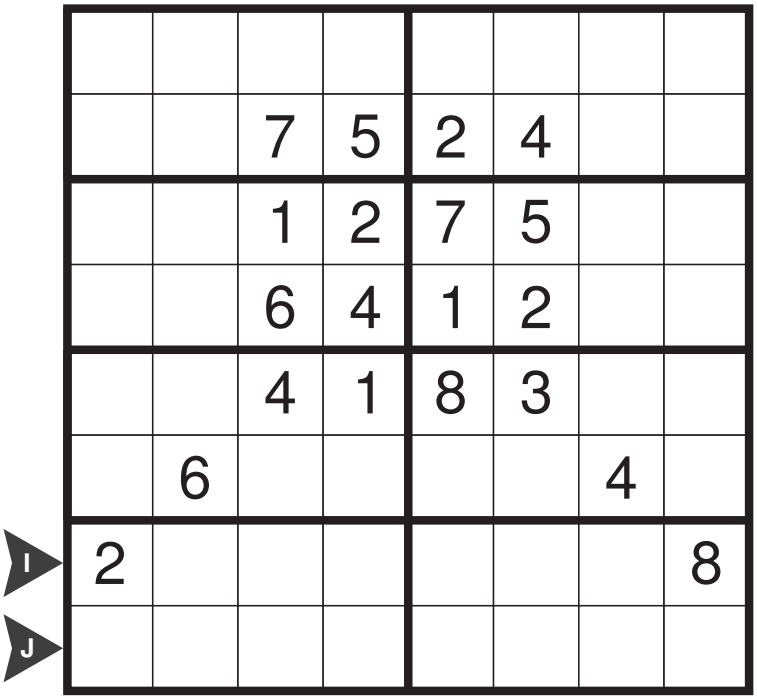
2 points



Standard Sudoku

4 points

Place a digit from 1 to 8 in each empty cell so that each digit appears exactly once in each row, column and 2X4 box.

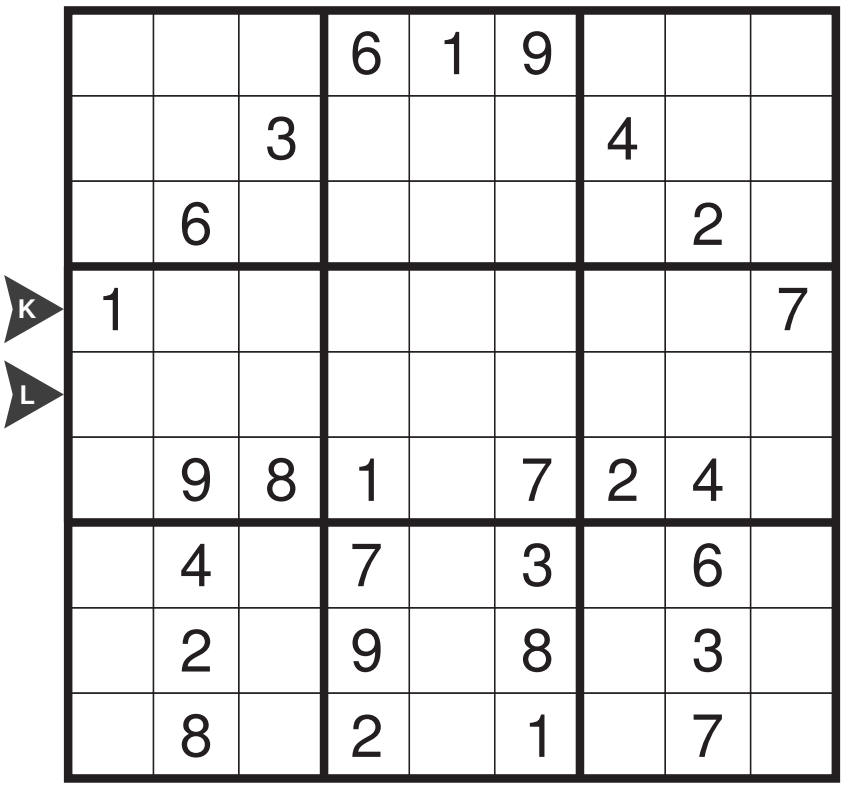


		7	5	2	4		
		1	2	7	5		
		6	4	1	2		
		4	1	8	3		
	6					4	
2							8

Standard Sudoku - 1

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.



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

Standard Sudoku - 2

5 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.

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	

M

N

Standard Sudoku - 3

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.

	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	

O

P

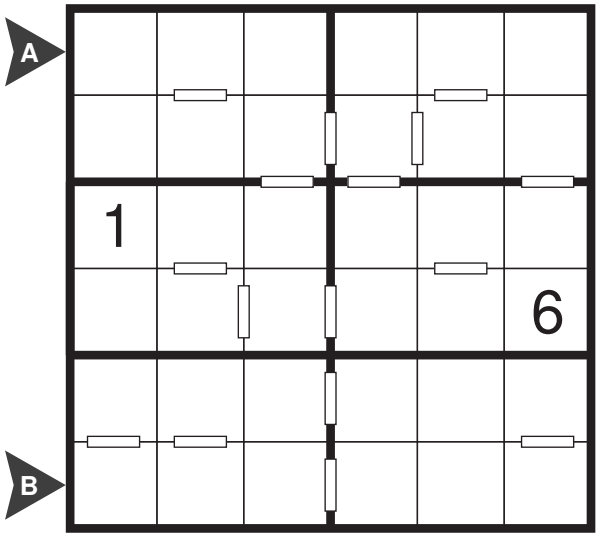
Consecutive Sudoku

1 points

Apply standard Sudoku rules.

Orthogonally adjacent cells containing consecutive numbers are separated by bars.

All possible bars are marked.



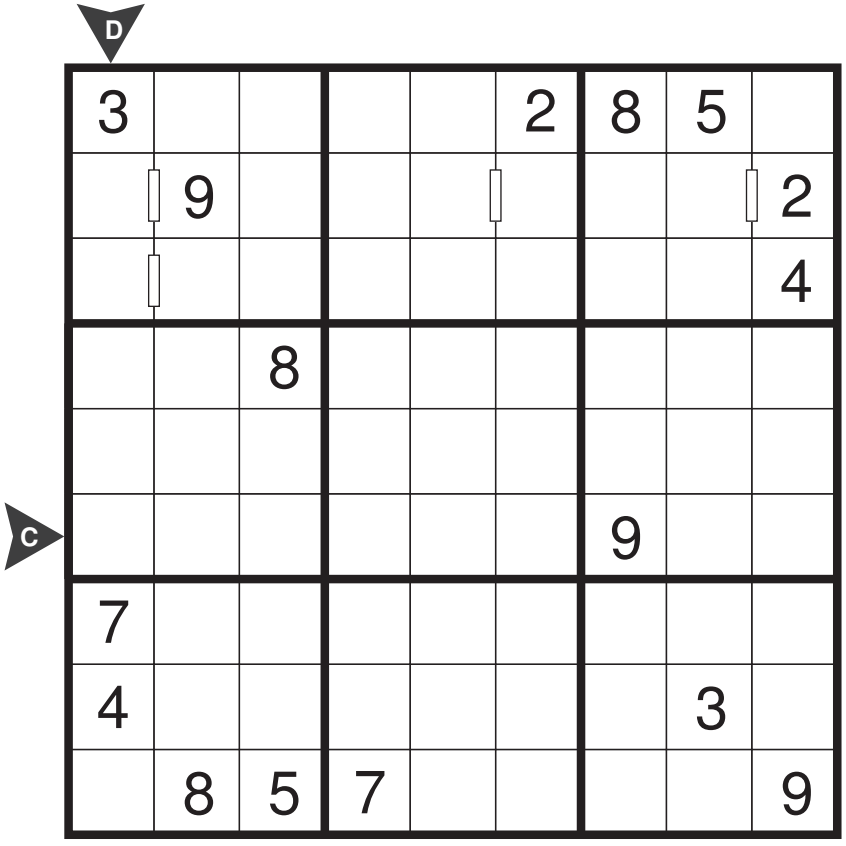
Consecutive Sudoku

12 points

Apply standard Sudoku rules.

Orthogonally adjacent cells containing consecutive numbers are separated by bars.

All possible bars are marked.



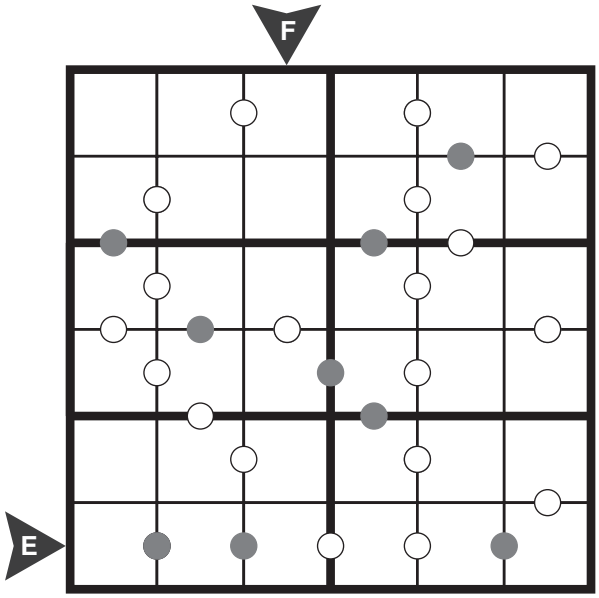
Kropki Sudoku

3 points

Apply standard Sudoku rules.

If the difference between digits in orthogonally adjacent cells is 1, then they are separated by a white dot. If the digit in a cell is half of the digit in an orthogonally adjacent cell, then they are separated by a black dot. The dot between '1' and '2' can have any of these dots.

All possible dots are marked.



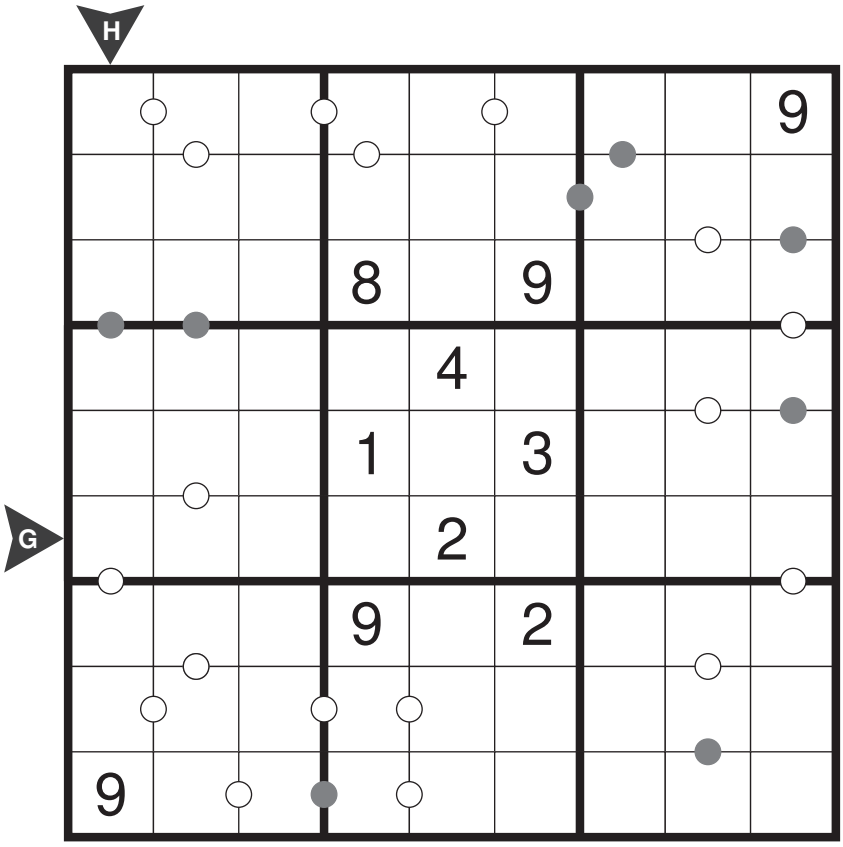
Kropki Sudoku

16 points

Apply standard Sudoku rules.

If the difference between digits in orthogonally adjacent cells is 1, then they are separated by a white dot. If the digit in a cell is half of the digit in an orthogonally adjacent cell, then they are separated by a black dot. The dot between '1' and '2' can have any of these dots.

All possible dots are marked.



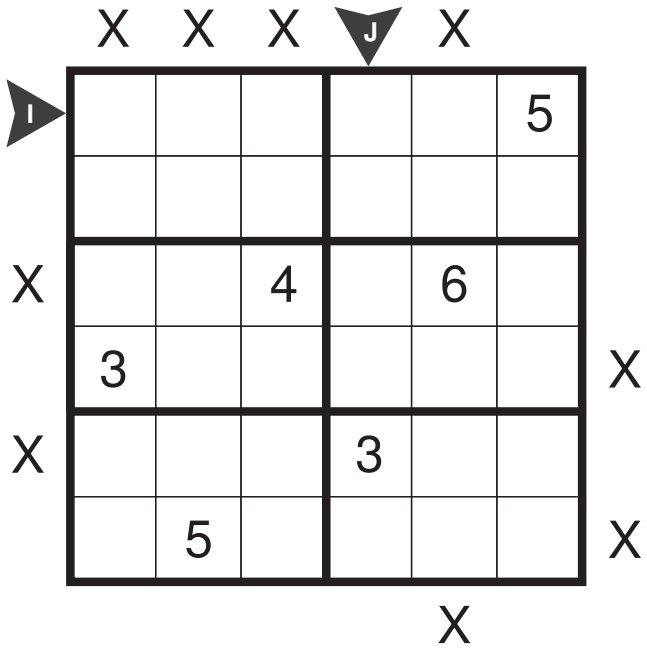
X Sum Frame Sudoku

3 points

Apply standard Sudoku rules.

The letter 'X' indicates the sum of the numbers appearing in the first box in that particular row/ column seen from that direction (first three numbers for rows, and first two numbers for columns). X is to be determined as part of solving.

All rows/columns, where the sum is X, are marked. If there is no X marked for a row/column, the sum cannot be X.



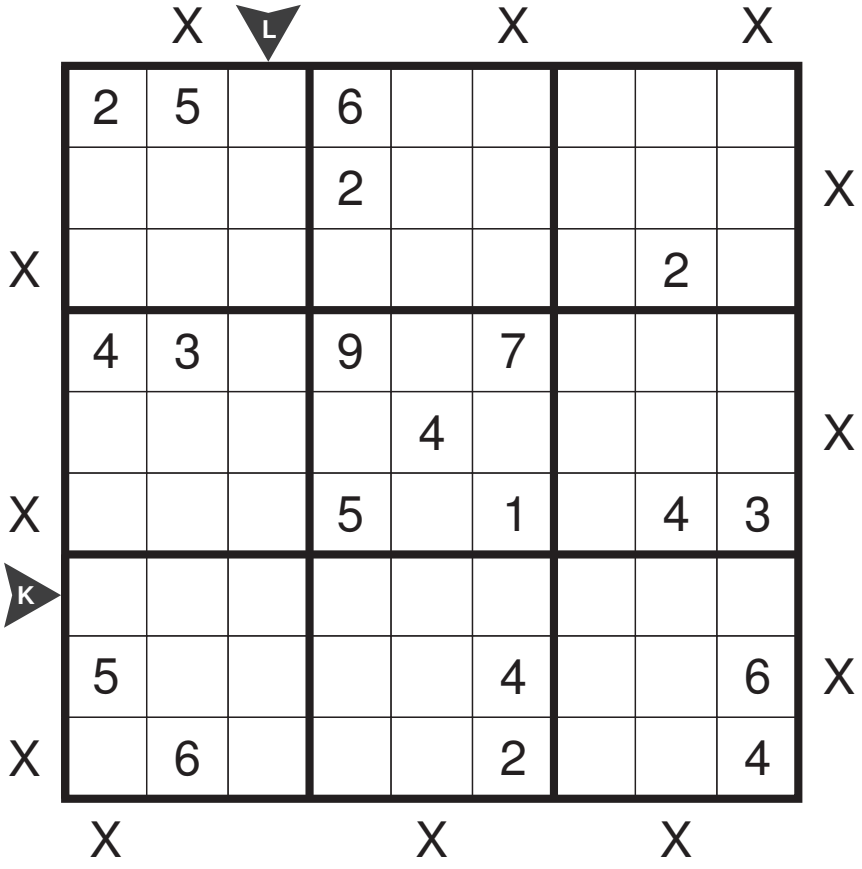
X Sum Frame Sudoku

9 points

Apply standard Sudoku rules.

The letter 'X' indicates the sum of the numbers appearing in the first box in that particular row/ column seen from that direction (first three numbers). X is to be determined as part of solving.

All rows/columns, where the sum is X, are marked. If there is no X marked for a row/column, the sum cannot be X.



QuadMax 4Odd 4Even Sudoku

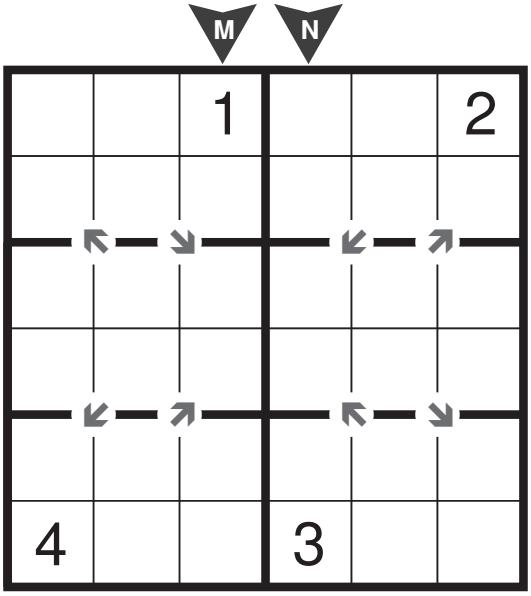
2 points

Apply standard Sudoku rules.

The 2x2 boxes where an arrow points to the cell(s) with the biggest digit contain either ALL even numbers or ALL odd numbers.

All arrows are indicated.

If there is no arrow in a 2x2 area, the 4 cells do not all have the same parity.



QuadMax 4Odd 4Even Sudoku

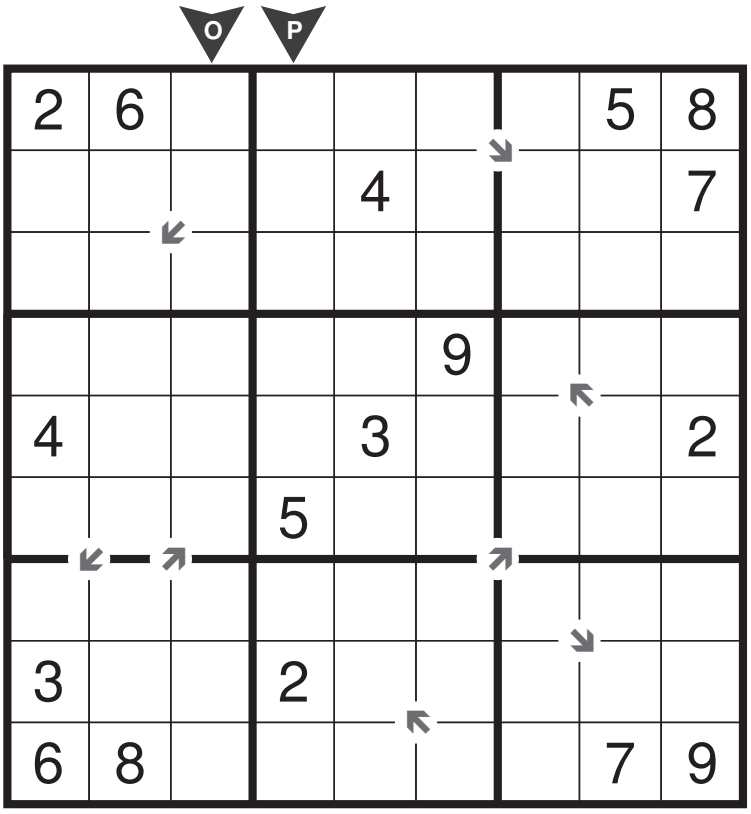
16 points

Apply standard Sudoku rules.

The 2x2 boxes where an arrow points to the cell(s) with the biggest digit contain either ALL even numbers or ALL odd numbers.

All arrows are indicated.

If there is no arrow in a 2x2 area, the 4 cells do not all have the same parity.



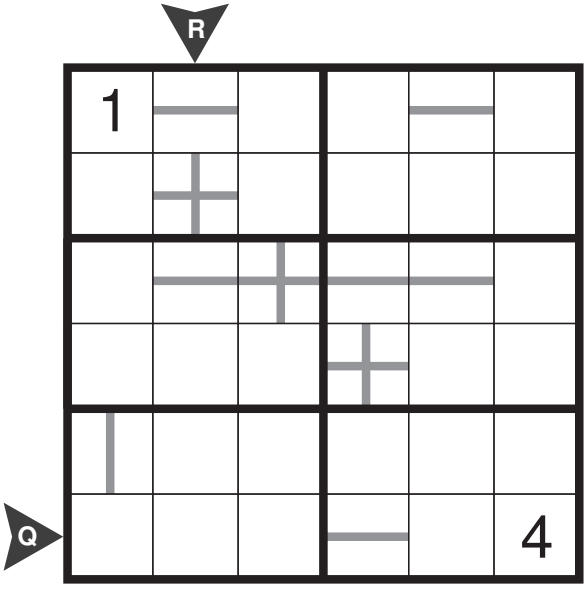
Average Sudoku

3 points

Apply standard Sudoku rules.

If the number in a cell equals the average of its two horizontal neighbours then the cell is marked with a horizontal line. If the number in a cell equals the average of its two vertical neighbours then the cell is marked with a vertical line.

All possible lines are marked.



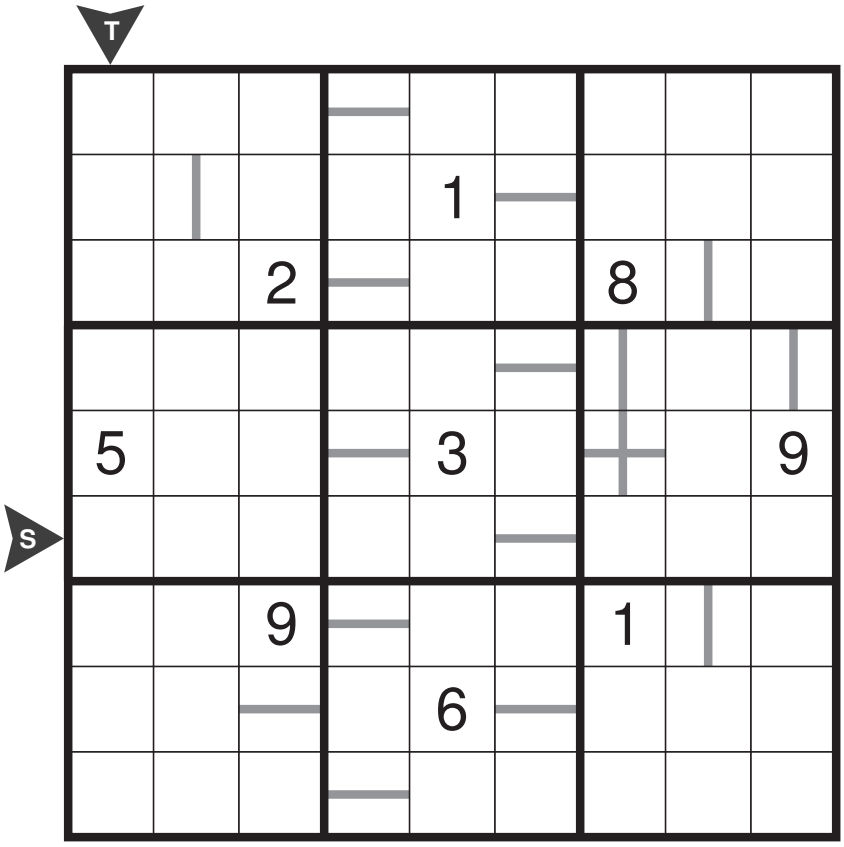
Average Sudoku

13 points

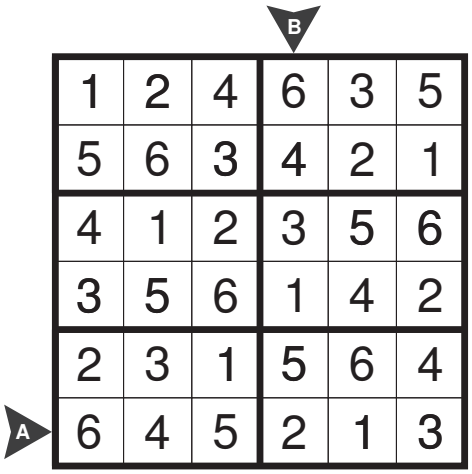
Apply standard Sudoku rules.

If the number in a cell equals the average of its two horizontal neighbours then the cell is marked with a horizontal line. If the number in a cell equals the average of its two vertical neighbours then the cell is marked with a vertical line.

All possible lines are marked.

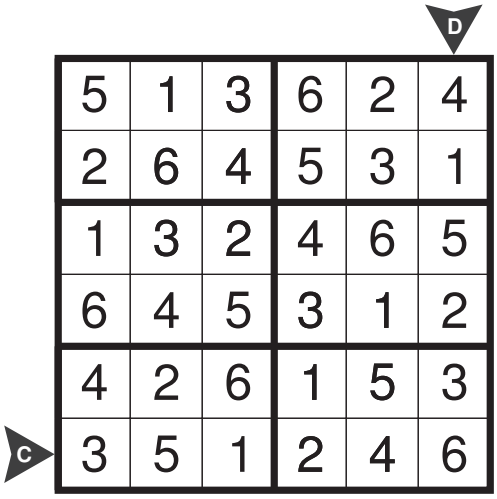


Standard 6x6



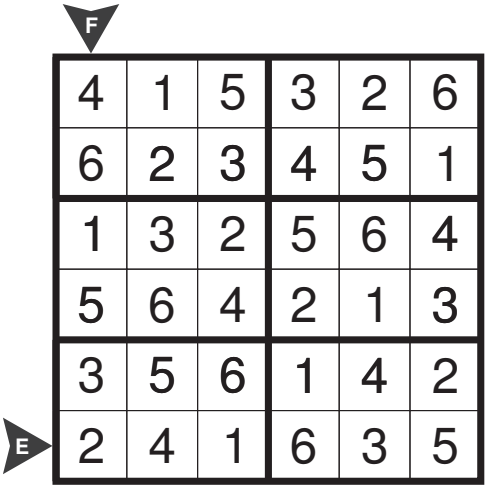
1	2	4	6	3	5
5	6	3	4	2	1
4	1	2	3	5	6
3	5	6	1	4	2
2	3	1	5	6	4
6	4	5	2	1	3

Standard 6x6



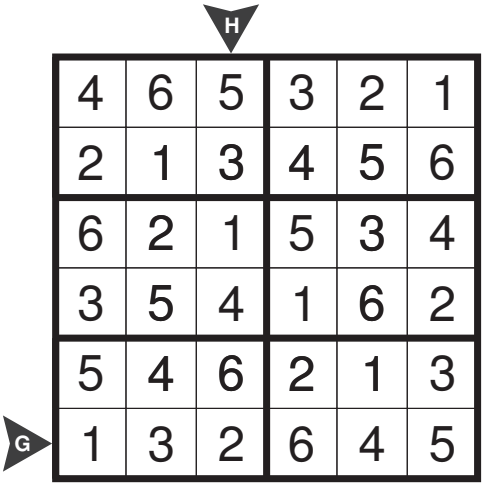
5	1	3	6	2	4
2	6	4	5	3	1
1	3	2	4	6	5
6	4	5	3	1	2
4	2	6	1	5	3
3	5	1	2	4	6

Standard 6x6



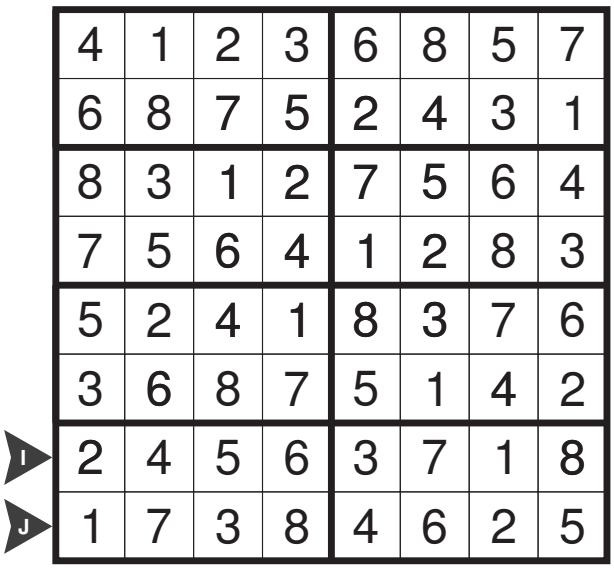
4	1	5	3	2	6
6	2	3	4	5	1
1	3	2	5	6	4
5	6	4	2	1	3
3	5	6	1	4	2
2	4	1	6	3	5

Standard 6x6



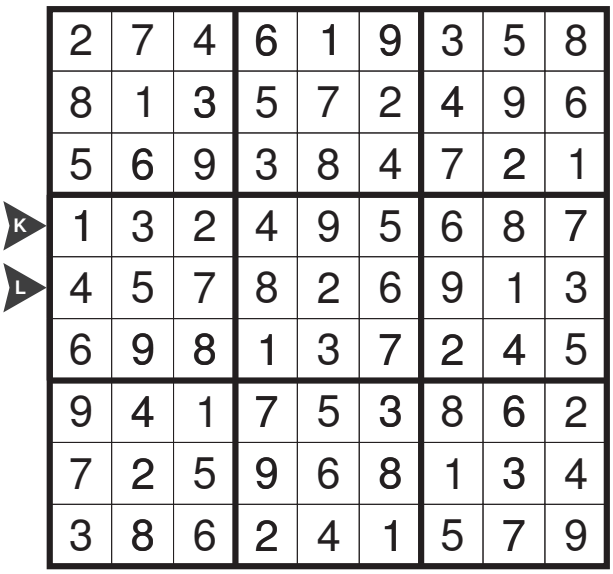
4	6	5	3	2	1
2	1	3	4	5	6
6	2	1	5	3	4
3	5	4	1	6	2
5	4	6	2	1	3
1	3	2	6	4	5

Standard 8x8



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

Standard 9x9



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

Standard 9x9

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
M 2	9	3	1	4	6	8	7	5
N 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

Standard 9x9

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

Consecutive 6x6

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

Kropki 6x6

		F				
	6	4	3	1	2	5
	2	1	5	3	4	6
	4	3	1	6	5	2
	5	6	2	4	3	1
	3	5	6	2	1	4
E	1	2	4	5	6	3

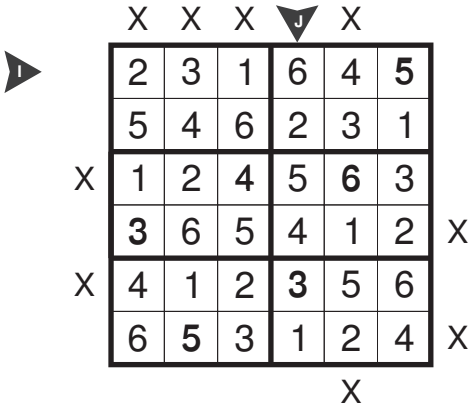
Consecutive 9x9

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

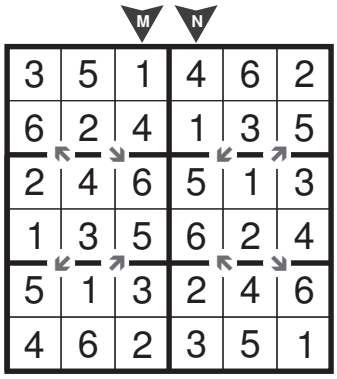
Kropki 9x9

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

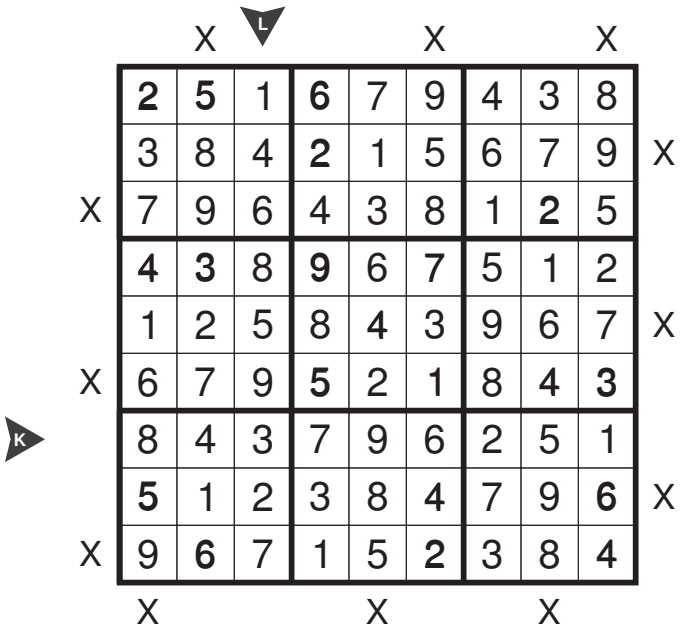
X Sum Frame 6x6



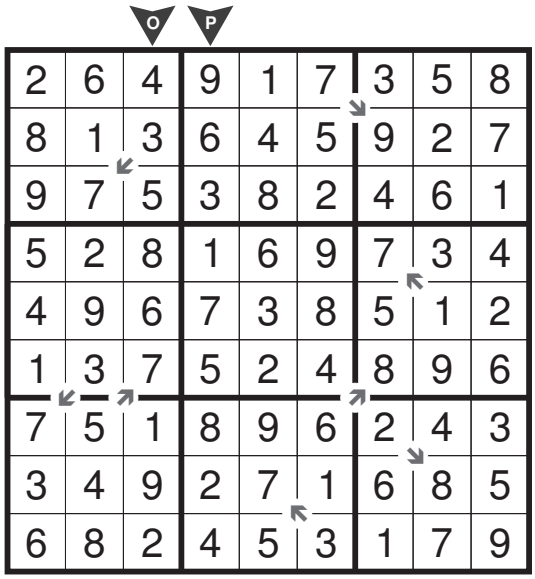
QuadMax 4Odd 4Even 6x6



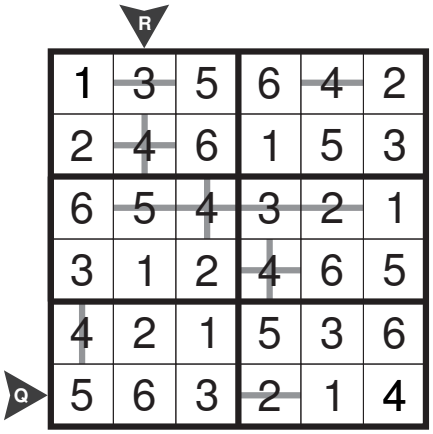
X Sum Frame 9x9



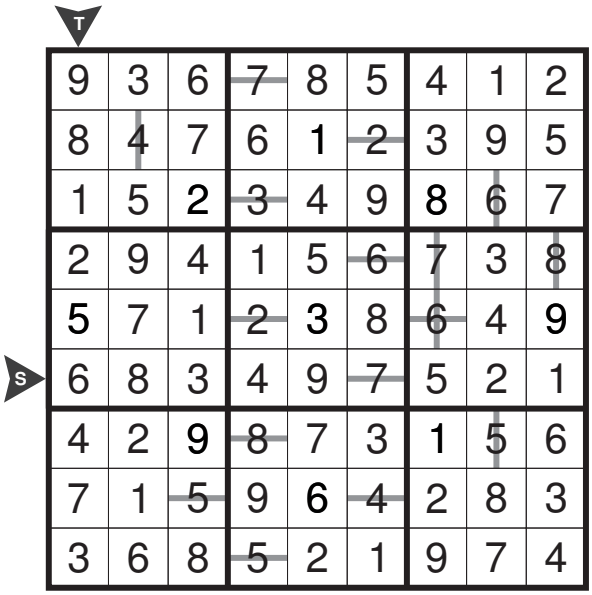
QuadMax 4Odd 4Even 9x9



Average 6x6



Average 9x9



sudoku mahabharat

Converse Variations