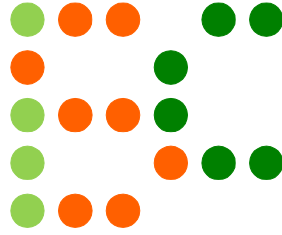


इयवठकय ललहलठलरलत



Episode – 4
30th March – 2nd April 2018
Odd Even & Substitution Variations
By
R Kumaresan and Amit Sowani

Sudoku Mahabharat rounds will also serve as qualifiers for Indian Sudoku Championship for year 2018. Please check <http://logicmastersindia.com/SM/2018sm.asp> for details.

Important Links

Submission Page : <http://logicmastersindia.com/SM/2018032>

Discussion Thread : <http://logicmastersindia.com/t/?tid=1752>

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 the following six variants

- All Odd All Even Sudoku
- 2 Odd 2 Even Sudoku
- Odd Even Bridge Sudoku
- Coded Sudoku
- True or Lie Sudoku
- Substitution Sudoku

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 on or after 30th March (but on or before 2nd April), 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.

Standard 1-6	1, 1
Standard 1-9	6, 5, 4, 4
All Odd All Even 1-6, 1-9	2, 13
2 Odd 2 Even 1-6, 1-9	2, 8
Odd Even Bridge 1-6, 1-9	3, 10
Coded 1-6, 1-9	1, 15
True or Lie 1-6, 1-9	2, 7
Substitution 1-6, 1-9	4, 12

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

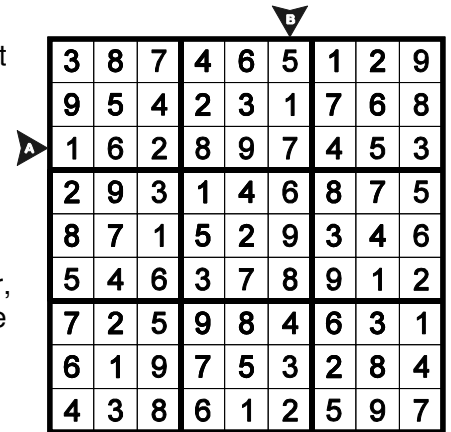
If you submitted all Sudokus correctly, you can have bonus points 1 point per minute saved, computed up to seconds.

General Rules

To make the rules less repetitive, you will see 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 about 9 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 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.

Standard Sudoku 1

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.

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

Standard Sudoku 2

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.

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

Standard Sudoku 3

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.

D

	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	

C

Standard Sudoku 4

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.

F

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	

E

Standard Sudoku 5

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	

Standard Sudoku 6

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.

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

All Odd All Even Sudoku 1

2 points

Apply standard Sudoku rules.

Additionally, the digits in the cells with grey circles are either all odd or all even.

All Odd All Even Sudoku 2

13 points

Apply standard Sudoku rules.

Additionally, the digits in the cells with grey circles are either all odd or all even.

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

2 Odd 2 Even Sudoku 1

2 points

Apply standard Sudoku rules.

There can never be more than 2 consecutive digits of the same parity in a row or column.

E	5				1
		2			
			4		
		6			
			1		
	1				3

2 Odd 2 Even Sudoku 2

8 points

Apply standard Sudoku rules.

There can never be more than 2 consecutive digits of the same parity in a row or column.

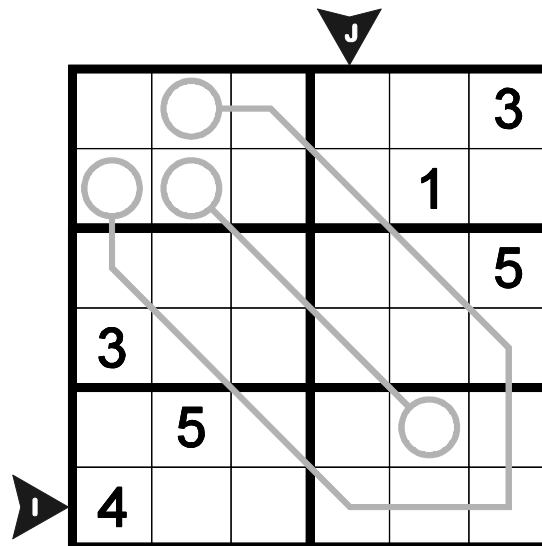
									H
	4	6		1		3		7	
					5			1	
				3	9			5	
	9	4						8	3
G			7		1	5			
		2			7				
		8		5		1		4	6

Odd Even Bridge Sudoku 1

3 points

Apply standard Sudoku rules.

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.

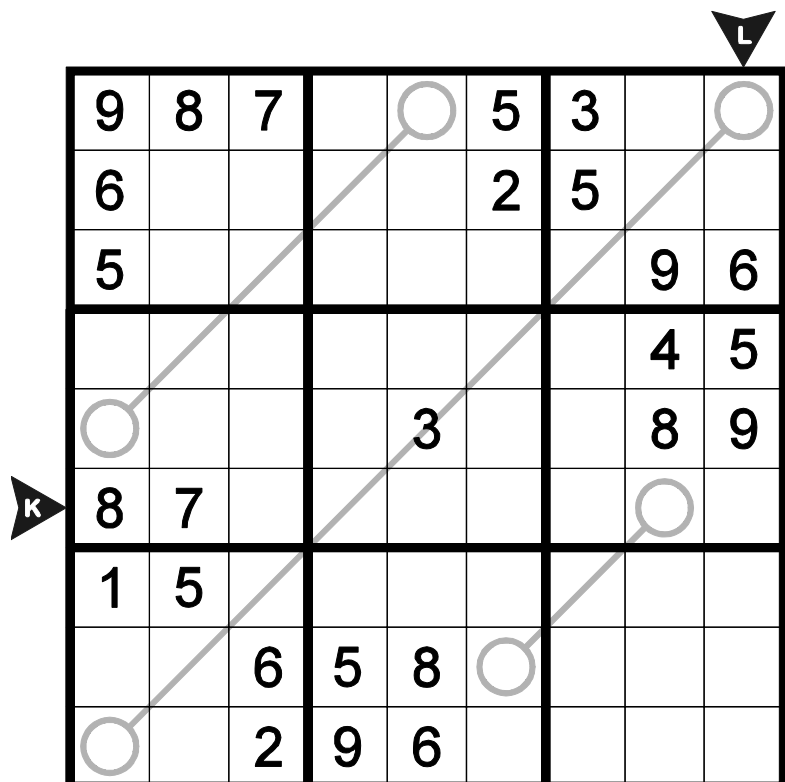


Odd Even Bridge Sudoku 2

10 points

Apply standard Sudoku rules.

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.



Coded Sudoku 1

1 point

Apply standard Sudoku rules.

Some digits have been substituted by letters. All instances of the same letter must be substituted by the same digit and different letters must be substituted by different digits.

N

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

M

Coded Sudoku 2

15 points

Apply standard Sudoku rules.

Some digits have been substituted by letters. All instances of the same letter must be substituted by the same digit and different letters must be substituted by different digits.

P

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

O

True or Lie Sudoku 1

2 points

Apply standard Sudoku rules.

Additionally given clues may be correct or wrong. If the clue is wrong, then the correct digit is either 1 higher or 1 lower.

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

True or Lie Sudoku 2

7 points

Apply standard Sudoku rules.

Additionally given clues may be correct or wrong. If the clue is wrong, then the correct digit is either 1 higher or 1 lower.

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

Substitution Sudoku 1

4 points

Apply standard Sudoku rules.

A cell with an alphabet contains a digit whose mapped word contains the corresponding alphabet.

- 1 : ONE
- 2 : TWO
- 3 : THREE
- 4 : FOUR
- 5 : FIVE
- 6 : SIX

	S	U	O		
R		O		O	
	O		F		H
N		V		I	
	W		E		E
		T	I	R	

Substitution Sudoku 2

12 points

Apply standard Sudoku rules.

A cell with an alphabet contains a digit whose mapped word contains the corresponding alphabet.

- 1 : ONE
- 2 : TWO
- 3 : THREE
- 4 : FOUR
- 5 : FIVE
- 6 : SIX
- 7 : SEVEN
- 8 : EIGHT
- 9 : NINE

H				F		R		
R	F		I	O		O	S	
				S				
S								V
N		T	H	R	E	E		V
N								N
			S				N	
	F			F		O	S	
V	T			V				

Standard - 1

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 - 2

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 - 3

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

Standard - 4

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

Standard - 5

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
7	4	1	6	2	9	3	5	8
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

Standard - 6

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

All Odd All Even -1

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

2 Odd 2 Even -1

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

All Odd All Even -2

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

2 Odd 2 Even -2

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

Odd Even Bridge - 1

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

Odd Even Bridge - 2

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

Coded - 1

True or Lie - 1

N

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

Coded - 2

R

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

True or Lie - 2

P

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

Substitution - 1

T

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

Substitution - 2

V

2	^S 6	^U 4	^O 1	3	5	
^R 3	5	^O 1	4	^O 2	6	
6	^O 4	2	^F 5	1	^H 3	
^N 1	3	^V 5	2	^I 6	4	
4	^W 2	6	^E 3	5	^E 1	
U	5	1	^T 3	^I 6	^R 4	2

X

^H 8	1	6	7	^F 4	2	^R 3	5	9
^R 4	^F 5	7	^I 9	^O 1	3	^O 2	^S 6	8
2	9	3	5	^S 6	8	7	1	4
^S 7	3	4	1	9	6	8	2	^V 5
^N 1	6	^T 2	^H 8	^R 3	^E 5	^E 9	4	^V 7
W	^N 9	8	5	4	2	7	6	^N 1
3	7	1	^S 6	8	4	5	^N 9	2
6	^F 4	8	2	^F 5	9	^O 1	^S 7	3
^V 5	^T 2	9	3	^V 7	1	4	8	6