सुदोकु
महाभारत

Episode – 3
6th – 11th March 2020

Irregular and Outside Variations
By
Gaurav Kumar Jain

Sudoku Mahabharat rounds will also serve as qualifiers for Indian Sudoku Championship for year 2020. Please check http://logicmastersindia.com/SM/2020sm.asp **for details.**

About this Episode

This episode has the following Sudokus
- Mini Classic Sudoku (4)
- Classic Sudoku (4)
- Irregular Sudoku (2)
- Toroidal Sudoku (2)
- Skyscraper Sudoku (2)
- 234 Outside Sudoku (2)
- Unordered Distances Sudoku (2)

How to participate?

- Understand the rules of different Sudokus that will appear in this episode. 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 6th March (but on or before 11th March), 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 confirmation that the solution is correct or sudoku's potential score. The first, second, third, and fourth incorrect submissions reduce the potential score to 90%, 70%, 40%, and 0% respectively.

Mini Classic 1-6	1, 1, 1, 1
Classic 1-9	6, 3, 5, 4
Irregular 1-6, 1-9	2, 9
Toroidal 1-6,1-9	5, 10
Skyscraper 1-6,1-9	2, 12
234 Outside 1-6,1-9	2, 16
Unordered Distances 1-6,1-9	1, 19

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.

1-4 Mini Classic Sudoku
1+1+1+1 points

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.
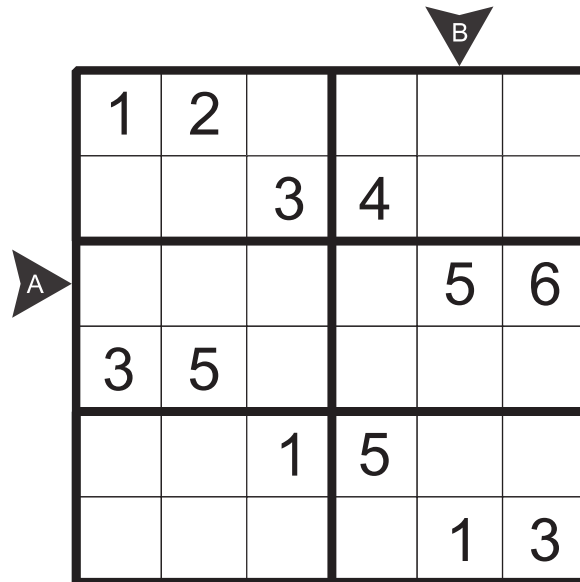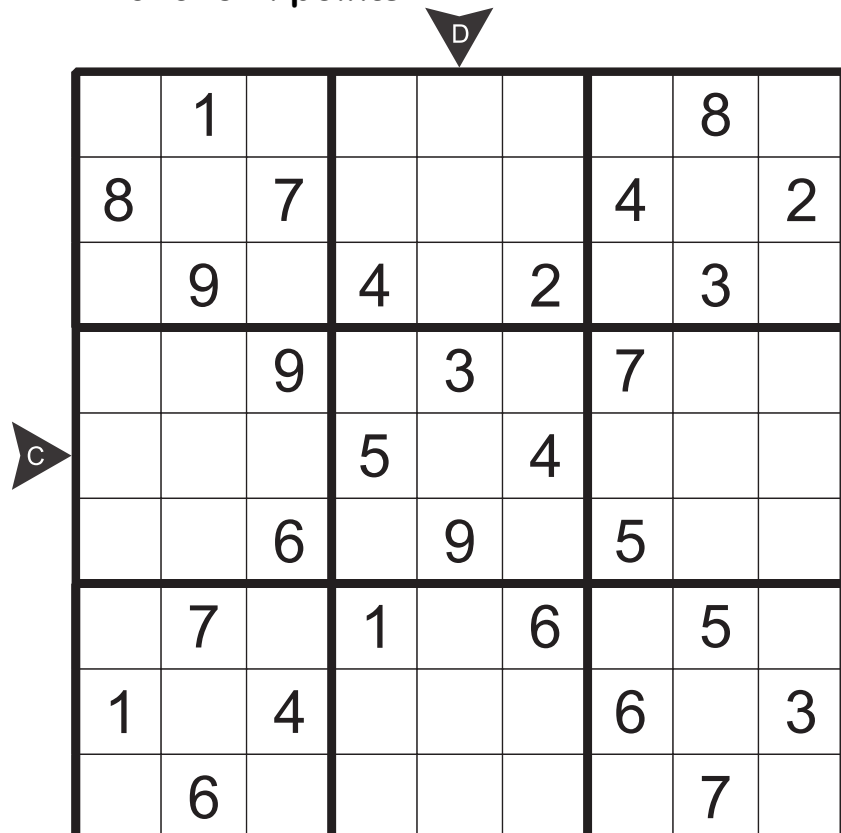

5-8 Classic Sudoku
6+3+5+4 points

Classic Sudoku

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.
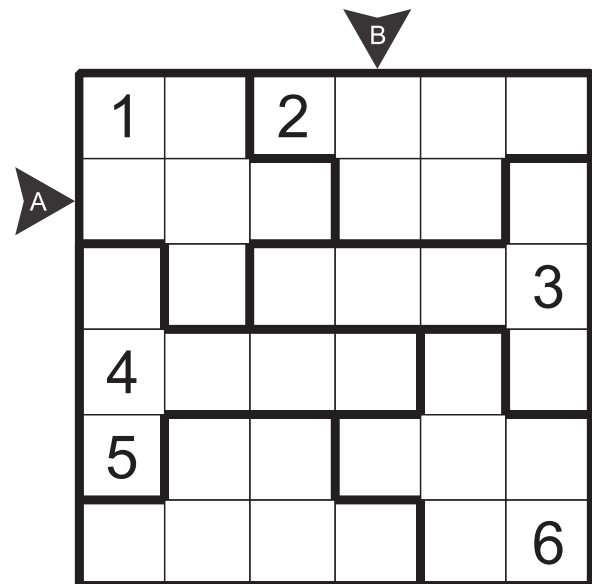
Irregular Sudoku - 1

2 points

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

Each outlined region is marked by thick borders.

Irregular Sudoku - 2

9 points

Place a digit from 1 to 9 in each empty cell so that each digit appears exactly once in each row, column and outlined region.

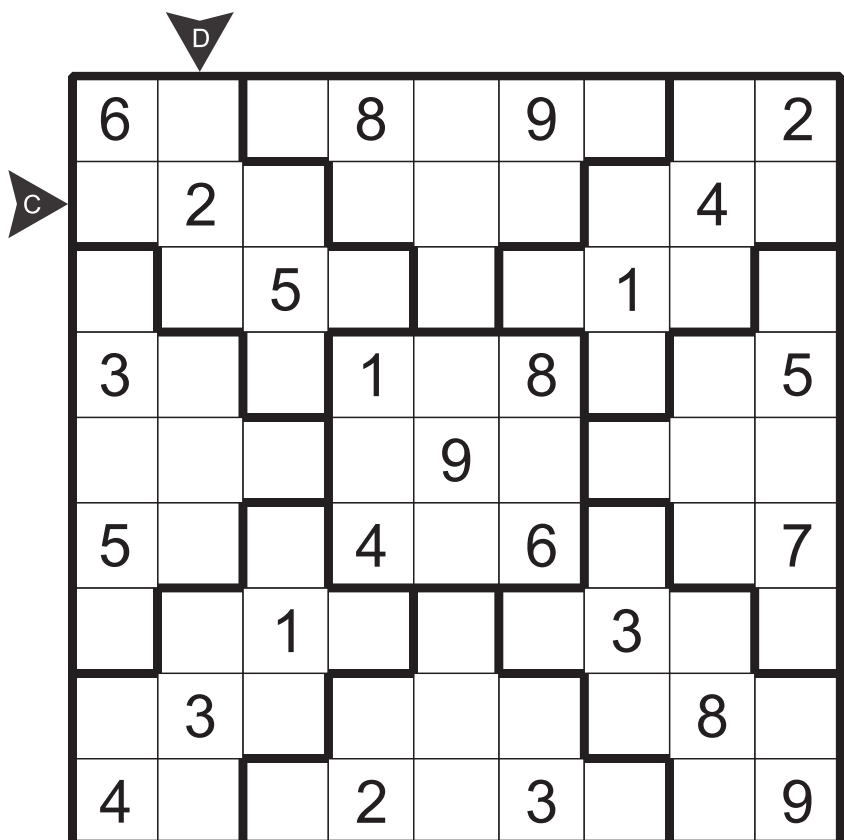**Each outlined region is marked by thick borders.**

Toroidal Sudoku - 1

5 points

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

Some of the outlined regions wrap between the top and bottom edges, and/or the left and right edges of the grid.
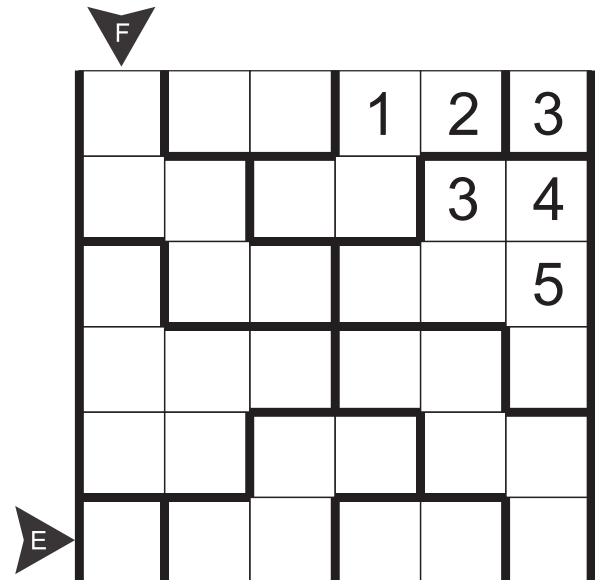
Toroidal Sudoku - 2

10 points

Place a digit from 1 to 9 in each empty cell so that each digit appears exactly once in each row, column and outlined region.

Some of the outlined regions wrap between the top and bottom edges, and/or the left and right edges of the grid.
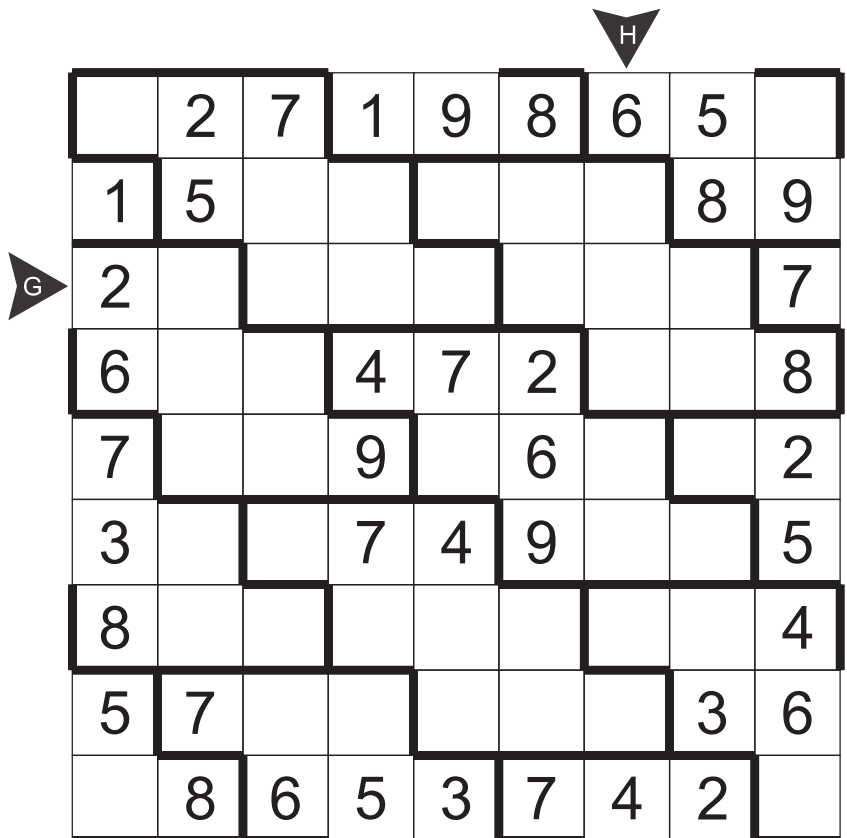
Skyscraper Sudoku - 1

2 points

Apply mini classic sudoku rules.

Consider each number to be the height of a building. The numbers outside the grid indicate how many buildings can be seen when looking in that direction (taller buildings conceal smaller buildings behind them).
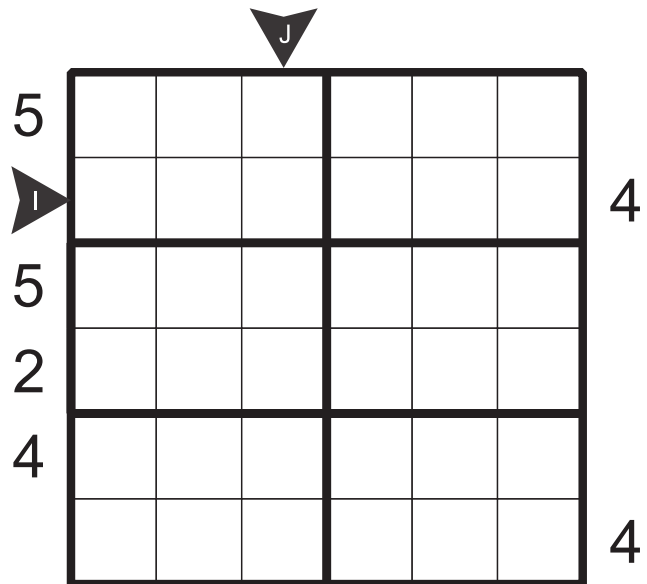
Skyscraper Sudoku - 2

12 points

Apply classic sudoku rules.

Consider each number to be the height of a building. The numbers outside the grid indicate how many buildings can be seen when looking in that direction (taller buildings conceal smaller buildings behind them).
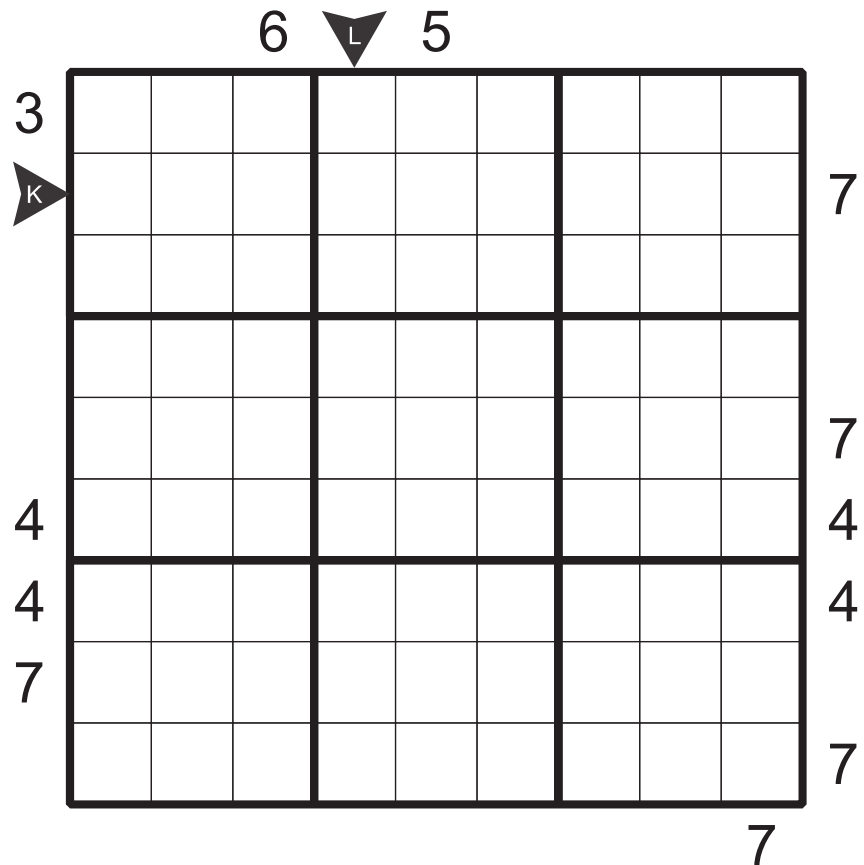
234 Outside Sudoku - 1

2 points

Apply mini classic Sudoku rules.

Additionally, the digits outside the grid must appear in the 2nd or 3rd or 4th cell of the grid from the corresponding direction.

234 Outside Sudoku - 2

16 points

Apply classic Sudoku rules.

Additionally, the digits outside the grid must appear in the 2nd or 3rd or 4th cell of the grid from the corresponding direction.

Unordered Distances Sudoku - 1

1 point

Apply mini classic Sudoku rules.

Outside some rows and columns, the distance between two digits in that row or column is given.

The order of the two digits is NOT given and is to be determined as part of solving.

Top (columns): 1-4:3   2-4:4   R▶   3-4:2   1-3:2   1-6:5

Right (rows): 1-2:5   4-6:4   4-5:1   2-3:3   3-6:5

Left: ▶Q

Unordered Distances Sudoku - 2

19 points

Apply classic Sudoku rules.

Outside some rows and columns, the distance between two digits in that row or column is given.

The order of the two digits is NOT given and is to be determined as part of solving.

Top (columns): 4-9:2   3-6:1   6-9:4   2-7:5   4-6:4   4-8:6   3-7:3   2-4:6   3-5:4

Right (rows): 1-6:8   6-9:4   2-4:2   6-7:5   4-5:4   4-5:7   6-7:6   4-6:6   5-7:5

Left arrows: ▶S , ▶T

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

Mini Classic

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

Classic

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

Irregular - 1

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

Toroidal – 1

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

Irregular – 2

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

Toroidal – 2

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

Skyscraper - 1

5	1	2	3	4	6	5	
▶ I	4	5	6	3	2	1	4
5	2	3	4	1	5	6	
2	5	6	1	2	3	4	
4	3	4	5	6	1	2	
	6	1	2	5	4	3	4

(top clue J above column 4)

234 Outside - 1

Top clues: col1: 3/6, col2: 2/4, N (col3), col5: 1/4, col6: 3/5

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

Left clues: row3 M, row4: 2, row6: 1 3
Bottom clues: col2: 2/4, col3: 3/6, col5: 3/5, col6: 6/1

Skyscraper – 2

Top clues: 6, L (col4), 5

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

(right bottom clue: 7)

234 Outside - 2

Top clues: col1: 2/7/9, col2: 1/7/8, col3: 3/6/4, P (col4), col6: 4/5/6, col7: 2/5/9, col8: 3/1/8

126	5	6	2	1	3	9	7	8	4	789
148	7	1	4	8	2	5	6	9	3	569
348	9	8	3	4	6	7	5	2	1	275
	2	7	6	9	1	3	4	5	8	
▶ O	4	5	1	2	8	6	3	7	9	
	3	9	8	7	5	4	1	6	2	
457	8	4	7	5	9	1	2	3	6	123
396	1	3	9	6	7	2	8	4	5	248
352	6	2	5	3	4	8	9	1	7	918

Bottom clues: col1: 1/3/8, col2: 3/4/9, col3: 7/8/9, col6: 2/1/8, col7: 4/3/6, col8: 2/6/5

Unordered Distances – 1

Top clues: col1: 1-4:3, col2: 2-4:4, R (col3), col4: 3-4:2, col5: 1-3:2, col6: 1-6:5

2	4	3	5	6	1	1-2:5
1	6	5	3	2	4	4-6:4
5	3	4	6	1	2	
6	1	2	4	5	3	4-5:1
4	2	6	1	3	5	2-3:3
3	5	1	2	4	6	3-6:5

(left clue ▶ Q at row5)

Unordered Distances – 2

Top clues: col1: 4-9:2, col2: 3-6:1, col3: 6-9:4, col4: 2-7:5, col5: 4-6:4, col6: 4-8:6, col7: 3-7:3, col8: 2-4:6, col9: 3-5:4

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

(left clues ▶ S at row3, ▶ T at row7)

sudoku mahabharat