## Indian Sudoku Championship 2015

28-June-2015 http://logicmastersindia.com/2015/ISC/

## Important Links

Submission: http://logicmastersindia.com/2015/ISC/
Discussion: http://logicmastersindia.com/t/?tid=972
Results: http://logicmastersindia.com/2015/ISC/score.asp
F.A.Q: http://logicmastersindia.com/t/?tid=381

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

## About Indian Sudoku Championship (ISC) 2015

The Indian Sudoku Championship 2015 will be held online on $28^{\text {th }}$ June, 2015. Participation is free of cost and everyone is invited to participate in the event irrespective of age. There are no prerequisites/requirements for participation. All you will need to do is register at Logic Masters India (LMI).

## How to participate?

- Participants must be a registered member at http://logicmastersindia.com (LMI)
- Understand the rules of different Sudokus that will appear in the championship
- Download the password protected Sudoku booklet (will be uploaded before ISC starts)
- This booklet contains the actual Sudokus that will appear in ISC. It is password protected, so you won't be able to open it.
- On $28^{\text {th }}$ June at 14:00 IST, Login at the submission page using your LMI user-id and password
- Click on "Start ISC". 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 a row and a column
- If solving on paper
- Fill the answer form with digits from marked row and column
- Click submit button (there is only 1 submit button for all Sudokus)
- If solving online
- After solving the Sudoku, click on "Submit" button below the grid
- Each Sudoku grid has different submit buttons

The Sudoku booklet will have approximately 12 pages. If you are planning to solve on paper, we advise you to have a printer accessible with enough paper.

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

## Timings

The length of the championship is 150 minutes. So, after getting the password, you have 150 minutes to print the Sudokus, solve them, find the answer keys and submit your answers. Submissions will not be accepted after 150 minutes.

ISC 2015 will start on $28^{\text {th }}$ June at 14:00 hours IST. Answer submissions will not be accepted after 16:45 hours (or 150 minutes after you start, whichever is earlier). You must start accordingly to allow yourself full solving time.

## International Participation

ISC will be open for a longer period (approximate for 72 additional hours) for international players to participate at their own convenience. Indians participating out of the official period will not be considered for official Indian rankings.

## Outside Help

Outside solving help of any kind is not permitted. This includes but is not limited to: assistance of any kind from any other person; prepared notes, books, calculators, computers, or tools other than items explicitly permitted.

You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, tape, and LMI's flash solving interface.

All entries and scores are subject to review for rules compliance. Winners may be asked to sign an affidavit confirming that they did, in fact, abide by the rules of the competition. The organizers reserve the right to disqualify any contestant if, in their sole judgment, they believe the rules have been violated.

In case of a dispute, protest, or other judgment, the decision of the judges is final.

## Only for Indian Participants

1. Submissions until $16: 45$ on $28^{\text {th }}$ will be considered for official scoring.
2. The organizers do not anticipate any technical problems during the championship. However, if you face any problems while submitting the answers, you may email your answers to logicmasteradmin@gmail.com before $16: 45 \mathrm{pm}$. Submissions via email is discouraged and will be accepted only in exceptional cases.

## 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.

Instant Grading: This test uses Instant Grading where a solver can submit any individual puzzle once finished and receive confirmation on whether it's correct or not. The first, second, third and fourth incorrect submission reduces the potential score to $90 \%$, $70 \%, 40 \%$ and $0 \%$ respectively (and remains at 0\% after this).

| Section 1-300 points |  |
| :--- | ---: |
| Classic 1 | 35 |
| Classic 2 | 30 |
| Classic 3 | 30 |
| Classic 4 | 45 |
| Expanded Sudoku | 40 |
| $6 \times 6$ Classic 1 | 5 |
| $6 \times 6$ Classic 2 | 5 |
| $6 \times 6$ Irregular 1 | 10 |
| $6 \times 6$ Irregular 2 | 15 |
| $6 \times 6$ Toroidal 1 | 10 |
| $6 \times 6$ Toroidal 2 | 10 |
| $6 \times 6$ Consecutive Pairs 1 | 15 |
| $6 \times 6$ Consecutive Pairs 2 | 15 |
| True or Lie Sudoku | 35 |


| Section 2-700 points |  |
| :--- | :--- |
| Extra Region | 60 |
| Diagonal 1 | 55 |
| Diagonal 2 | 45 |
| Killer Sudoku | 50 |
| No Knight Step | 75 |
| Inequality Sudoku | 45 |
| Arrow Sudoku | 35 |
| Surplus Deficit | 30 |
| Odd Even View | 85 |
| Trimino Sudoku | 60 |
| Search 9 Sudoku | 45 |
| Filler Sudoku | 45 |
| Shapes Sudoku | 70 |

## Bonus

Players submitting all Sudokus will get seven points per minute saved as bonus. Bonus will be computed upto seconds.
There will not be any "Claim Bonus" button. Players are expected to check their submissions carefully if they finish early.

## Tie Breaker

Players having same scores will be ranked based on the following tie-breakers.

1. Most points in Section 2 (puzzles 15-27)
2. Least submission time of last correctly submitted Sudoku

## 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 (Classic), or other shapes (Irregular). The 6X6 sudokus will have 6 cells in the outlined regions.

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 |

## Acknowledgements

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Branko Ceranic
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Nikola Zivanovic
Tetsuya Nishio
Yukio Sugimoto

## 1,2,3,4) Classic Sudoku

(4) Apply standard Sudoku rules

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

## 5) Expanded Sudoku

${ }^{4}$ Standard Sudoku rules apply to overlapping grids.
${ }^{\Perp}$ ) There are some gaps in the middle.

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

6,7) 6X6 Sudoku
(4) Apply standard Sudoku rules

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

10,11) $6 \times 6$ Toroidal Sudoku
(4) Apply standard Sudoku rules
${ }^{4}$ ) Some of the outlined regions wrap between the top and bottom edges, and/or the left and right edges of the grid.


## 8,9) $6 \times 6$ Irregular Sudoku

${ }^{4}$ Apply standard Sudoku rules


12,13) 6X6 Consecutive Pairs Sudoku
$\stackrel{4}{4}$ Apply standard Sudoku rules
${ }^{4}$ ) There are some white dots between cells.
${ }^{4}$ ) The numbers on each side of a white dot must always be consecutive (i.e. differ by 1 ).

14) True or Lie Sudoku
${ }^{4}$ Standard Sudoku rules apply.
$\stackrel{4}{4}$ The small digits may be correct or wrong. If wrong, then the correct digit is either 1 higher or 1 lower.

| ${ }^{6}$ |  |  |  |  | ${ }^{9}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  | 2 |  | 3 | 3 |
|  |  |  |  |  |  |  |
|  | ${ }^{2}$ |  |  |  |  |  |
| 4 |  |  | $5{ }^{4}$ |  | 6 | 6 |
|  | ${ }^{5}$ |  |  |  |  | ${ }^{9}$ |
|  |  |  |  |  |  |  |
| 7 |  |  | 8 |  |  | $9^{5}$ |
|  |  |  |  |  |  |  |

15) Extra Regions Sudoku
${ }^{4}$ Standard Sudoku rules apply.
(4) Each extra region must contain digits from 1-9. The extra regions are of 9 cells each and are shaded in the grid.

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

16,17) Diagonal Sudoku
${ }^{4}$ Standard Sudoku rules apply.
${ }^{\Perp}$ Additionally, digits do not repeat across main (marked) diagonals.

|  |  |  | 3 |  | 1 |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | $\ddots$ | 5 |  | 6 |  | 9 |  |
|  | 7 | $\ddots$ | 5 |  | 9 |  | 2 |
| 8 |  | 3 |  |  |  | 7 |  |
|  | 5 |  |  |  |  |  | 8 |
| 6 |  | 1 |  |  |  | 3 |  |
|  | 1 |  | 4 |  | 6 |  | 3 |
|  |  | 6 |  | 2 |  | 4 | $\ddots$ |
|  |  |  | 8 |  | 7 |  |  |

18) Killer Sudoku
) Standard Sudoku rules apply.
(4) The sum of digits in cells inside every cage must equal the total given for the cage at the upper left cell.
) Digits do not repeat inside a cage.

19) No Knight Step Sudoku
${ }^{4}$ Standard Sudoku rules apply.
${ }^{4}$ No cell that is a knight-step away can contain the same digit.
${ }^{\Perp}$ In chess, a knight moves two squares forward followed by one sideways.

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



## 20) Inequality Sudoku

(4) Standard Sudoku rules apply.
( ) There are 'greater than' (>) and 'less than' (<) signs.
${ }^{4}$ ) The cell with the open end of the sign should be greater than the cell with the pointed end of the sign.


## 21) Arrow Sudoku

${ }^{4}$ ) Standard Sudoku rules apply.
${ }^{\wedge}$ The sum of the digits along the path of each arrow must equal the digit in the circled cell.
${ }^{4}$ Digits can repeat within an arrow shape.

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

## 22) Deficit-Surplus Sudoku

(4) Place a digit from 1 to 8 in each empty cell so that each digit appears exactly once in each row and column.
(4) In regions with less than or equal to 8 cells, digits should not repeat.
${ }^{4}$ ) In regions with more than 8 cells, each digit ( 1 to 8 ) must appear at least once.

23) Odd Even View
) Standard Sudoku rules apply.
${ }^{4}$ An odd (13579) digit outside the grid must be the first odd digit seen from that direction.
${ }^{4}$ ) An even (2 468 ) digit outside the grid must be the first even digit seen from that direction.


## 24) Triomino Sudoku

4) Place a digit from 1 to 6 into each empty cell or blacken the cell so that each digit appears exactly once in every row, column, and outlined $3 \times 3$ region along with three black cells.
$\stackrel{4}{4}$ Each black cell should be part of an orthogonally connected group of three blackened cells (a triomino). All 6 possible triomino arrangements are shown at the right.
$\stackrel{\Perp}{4}$ No two triominoes can share an edge.
${ }^{4}$ ) For answer entry, use an X to indicate a blackened cell. The first row would be XX315246X.

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



Example from WPF Sudoku Grand Prix 2014 - Japanese Round
25) Search 9 Sudoku

4 Standard Sudoku rules apply.
${ }^{4}$ ) The number in an arrow denotes the distance (with respect to the number of cells) between the cell and the first seen 9 in the direction

| $\square$ | 5 | $\square$ | 1 |  |  | 9 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 |  |  |  |  |  |  |
|  |  | 7 |  | 7 | 5 |  |

## 26) Filler Sudoku

) Standard Sudoku rules apply.
${ }^{4}$ Shaded cells must contain one 1, two 2s, three 3s, ... and nine 9s.
${ }^{4}$ ) (The example uses one 1 to six 6 s)

| 3 | 6 | 5 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |
|  | 1 |  |  | 6 |  |
|  |  |  |  |  |  |
|  |  |  | 1 | 4 | 3 |

## 27) Shapes Sudoku

4 Standard Sudoku rules apply.
${ }^{4}$ Some cells have shapes marked in them.
${ }^{4}$ ) Those cells can only have digits as shown.


## Solutions

The remaining pages contain the solutions to the examples. However, you are encouraged to first try solving the examples with the given rules, without looking up the solution. Note that the difficulties may not be consistent with the competition Sudokus.

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

Expanded Sudoku

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

6X6 Sudoku

| 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 |

6X6 Irregular

| 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 |

True or Lie

| 3 | ${ }^{6} 5$ | 7 | ${ }^{\top} 6$ |  |  | 2 | 8 | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }^{5} 4$ | 1 | 8 | 7 | 2 | 9 | 5 | 3 | 6 |
| 9 | 6 | 2 | ${ }^{5} 5$ | 3 | 8 | 1 | 7 | 4 |
| ${ }^{6} 7$ | 3 | 1 | 8 | 4 | 6 | 9 | 5 | 2 |
| 8 | 4 | 9 | ${ }^{3} 2$ | 5 | ${ }^{4} 3$ | 7 | 6 | 1 |
| 5 | 2 | 5 | 1 | 9 | 7 | 3 | 4 | 8 |
| 5 | 8 | 4 | ${ }^{9} 9$ | 7 | 2 | 6 |  | 3 |
| 2 | 7 | 6 | 3 | 8 | 1 | 4 | 9 | 5 |
| 1 | 9 | 3 | ${ }^{4} 4$ | 6 | ${ }^{5} 5$ | 8 | 2 | 7 |

6X6 Toroidal

| 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 |

6X6 Consecutive Pairs

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

Extra Region Sudoku

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

Diagonal Sudoku

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

No Knight Step Sudoku

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

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 |


| 6 | 5 | 4 | 3 | 2 | 1 | 1 | 2 | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Inequality Sudoku

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

Surplus-Deficit

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


|  | d Even View Sudoku |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |
| 2 | 3 | 2 | 6 | 8 | 7 | 4 | 9 | 1 | 5 |  |
|  | 4 | 1 | 8 | 3 | 5 | 9 | 6 | 7 | 2 |  |
|  | 9 | 7 | 5 | 1 | 2 | 6 | 3 | 8 | 4 |  |
|  | 7 | 9 | 4 | 2 | 8 | 1 | 5 | 3 | 6 |  |
|  | 5 | 3 | 2 | 9 | 6 | 7 | 1 | 4 | 8 |  |
|  | 6 | 8 | 1 | 5 | 4 | 3 | 7 | 2 | 9 |  |
|  | 1 | 5 | 9 | 4 | 3 | 8 | 2 | 6 | 7 |  |
| 8 | 8 | 6 | 3 | 7 | 9 | 2 | 4 | 5 | 1 |  |
|  | 2 | 4 | 7 | 6 | 1 | 5 | 8 | 9 | 3 |  |
|  |  |  | , | 7 | 4 |  |  | 6 |  |  |

Search 9 Sudoku

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



Filler Sudoku

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

Shapes Sudoku


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

