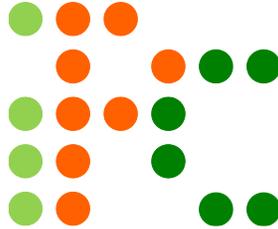


puzzle Ramayan

and



Episode – 3
22nd – 26th February 2019

Shading and Loops
by
Amit Sowani

Puzzle Ramayan rounds will also serve as qualifiers for Indian Puzzle Championship for year 2019. Please check <http://logicmastersindia.com/PR/2019pr.asp> for details.

Important Links

Submission Page : <http://logicmastersindia.com/PR/201902/>

Discussion Thread : <http://logicmastersindia.com/t/?tid=2691>

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

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

About this Episode

This episode has 22 Puzzles from the following puzzle types:

- 3* Water Fun
- 3* Nurikabe
- 3* Shakashaka
- 2* Nurikabe Loop
- 3* Simple Loop
- 3* Straight Loop
- 3* Cross Loop
- 2* Simple Loop with Shading

How to participate?

- Understand the rules of different puzzles that will appear in this episode. This Instruction Booklet has rules for each puzzle.
- Download the password protected Puzzle booklet (will be uploaded before the test starts). The Puzzle booklet contains the actual Puzzles to be solved. It is password protected, so you won't be able to open it.
- Any time on or after 22nd February (but on or before 26th February), 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.
- The puzzle booklet should be downloaded, printed and solved on paper.
- There will not be any interface / applet to solve the puzzles on web browser.
- Most of the puzzles are designed to be solved faster on paper.
- We advise you to have a printer accessible with enough paper.
- 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, and tape.

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

About answer keys and Submission

- Each puzzle has some answer keys, as described in the instructions.
 - After solving the puzzle, you need to submit the puzzle using the answer keys.
 - You may submit the answer keys anytime during the test duration. You may consider submitting a puzzle as soon as you solve it.
 - Answer keys are always to be entered from left to right or top to bottom
 - Don't enter any separator unless specified in the answer key
 - If one row and one column is marked, enter the row first and then the column
 - If multiple rows are marked, enter from top to bottom for marked rows
 - If multiple columns are marked, enter from left to right for marked columns
 - If horizontal and vertical keys are needed, first enter the horizontal and then the vertical
 - Uppercase or lower case of answer key does not matter
 - Characters other than alphabets, numbers and comma will be removed while checking the answer
-

Points Table and Scoring

Points typically indicate difficulty of the Puzzles and time required to solve them. You will get full points if you enter the correct answer key. While the organizers have made best efforts to match them, your personal experience and preference may differ.

Water Fun	2, 2, 6
Nurikabe	2, 2, 9
Shakashaka	2, 5, 8
Nurikabe Loop	1, 12
Simple Loop	1, 2, 3
Straight Loop	2, 5, 8
Cross Loop	2, 5, 10
Simple Loop with Shading	2, 9

This test uses instant grading where a solver can submit any individual Puzzle and receive confirmation that the solution is correct or not. Each incorrect submission reduces the puzzle's potential score. The first, second, third, and fourth incorrect submissions reduce the potential score to 90%, 70%, 40%, and 0% respectively.

Bonus and Ranking

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

Ranking will be based on following rules in order:

1. Most total points
2. Earliest final submission time, up to seconds (ignoring incorrect submissions)

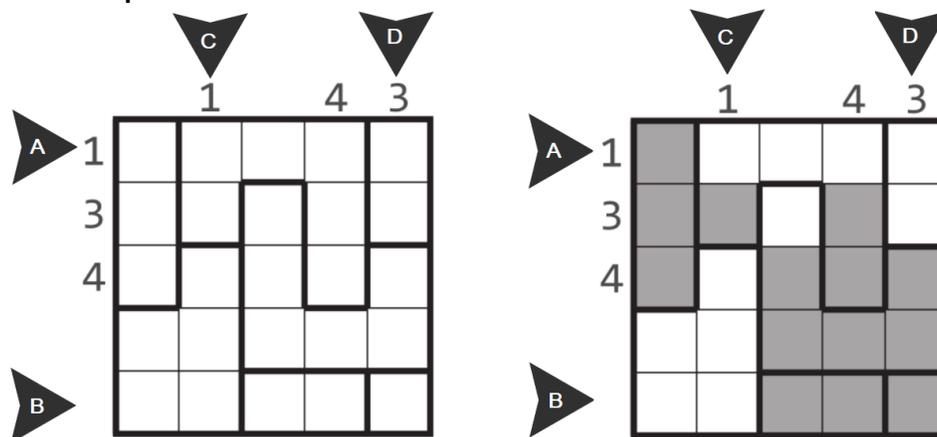
About the Puzzle Booklet

The password protected Puzzle booklet will have 9 pages. We expect you to print and solve on paper, so you would need to have a printer accessible with enough paper.

1-3 Water Fun

2 + 2 + 6 points

Fill some cells with water so that the numbers to the top and left of the grid indicate how many cells in the corresponding row or column must be filled with water. Connected areas of filled cells must have same surface height everywhere – even if the surface is not connected, like in a U-shaped tube. (In any row of a connected area, either all fields must always be filled with water or none.) Within an area, the fields must be filled up from the bottom upwards.



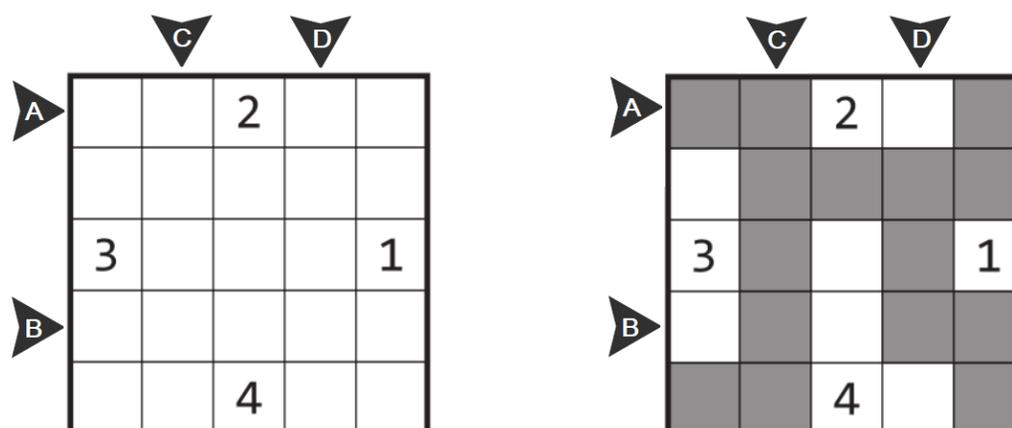
Answer key: Enter the length of continuous areas of shaded (filled) and unshaded (unfilled) cells in the marked rows/columns.

Example: 14, 23, 113, 23

4-6 Nurikabe

2 + 2 + 9 points

Shade some cells so that each area of unshaded cells contains only one number in it and they are separated by shaded cells. Cells containing numbers cannot be shaded. A number tells the number of continuous white cells (size of the unshaded area). All shaded cells must be orthogonally connected. Shaded cells cannot form a 2x2 square.



Answer Key: Enter the length of continuous areas of shaded and unshaded cells in the marked rows/columns.

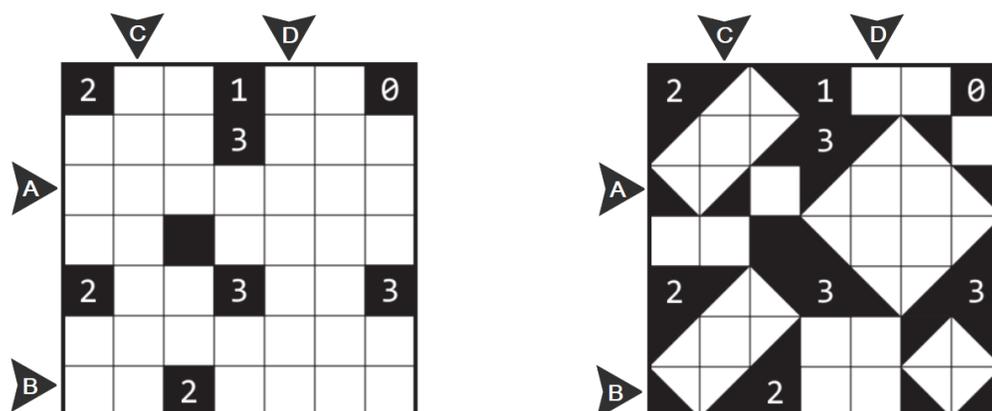
Example: 221, 1112, 5, 131

7-9 Shakashaka

2 + 5 + 8 points

Place “black triangles” in some cells in the grid. You cannot place black triangles in the black squares. The parts of the grid that remain white (uncovered by black triangles) always form a rectangle or a square. The numbers indicate how many black triangles are around it, vertically and horizontally.

There are four kinds of black triangles you can put in the squares: 



Answer Key: Enter the number of black triangles in the marked rows/columns. Enter ‘0’ if there are no black triangles.

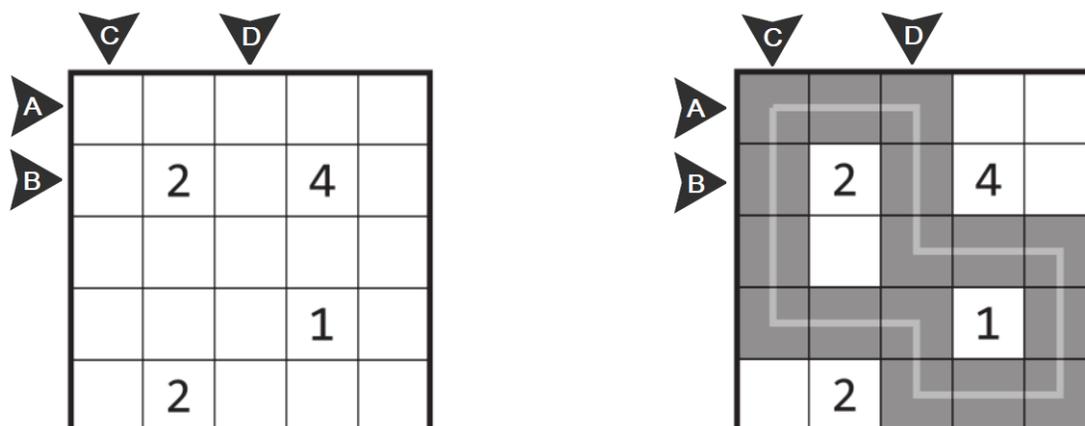
Example: 4, 4, 4, 2

10-11 Nurikabe Loop

1 + 12 points

Shade some cells so that each area of unshaded cells contains only one number in it and they are separated by shaded cells. Cells containing numbers cannot be shaded. A number tells the number of continuous white cells (size of the unshaded area). All shaded cells must be orthogonally connected. Shaded cells cannot form a 2x2 square.

Additionally, draw a single closed loop (without intersections or crossings) through all the shaded cells that travels horizontally and vertically from cell center to cell center.



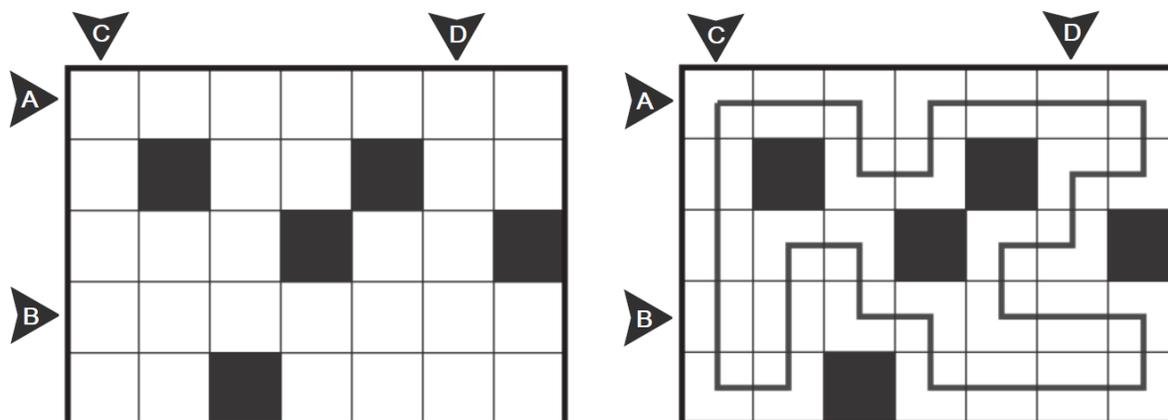
Answer Key: Enter the lengths of loop segments in the marked rows/columns, along the marked direction. Enter ‘0’ if there are no loop segments along the marked direction.

Example: 2, 0, 3, 21

12-14 Simple Loop

1 + 2 + 3 points

Draw a single closed loop (without intersections or crossings) that travels horizontally and vertically from cell center to cell center, does not visit any black cells, and visits every white cell exactly once.



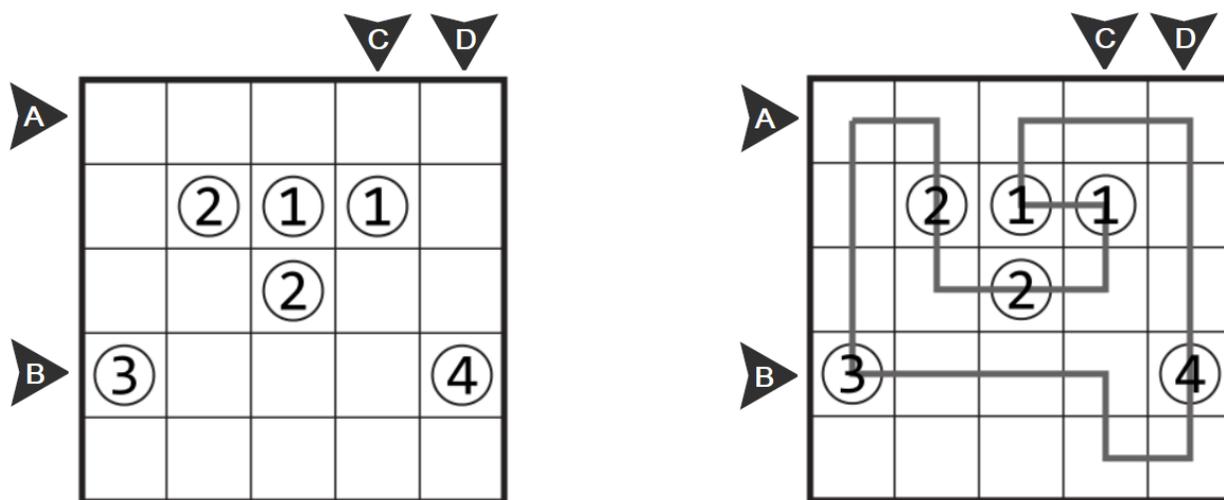
Answer Key: Enter the lengths of loop segments in the marked rows/columns, along the marked direction. Enter '0' if there are no line segments along the marked direction.

Example: 23, 12, 4, 1

15-17 Straight Loop

2 + 5 + 8 points

Draw a single closed loop (without intersections or crossings) that travels horizontally and vertically from cell center to cell center and that visits each cell with a circle. The length of every straight segment that meets a circle cell is equal to the number in the circle.



Answer Key: Enter the lengths of loop segments in the marked rows/columns, along the marked direction. Enter '0' if there are no line segments along the marked direction.

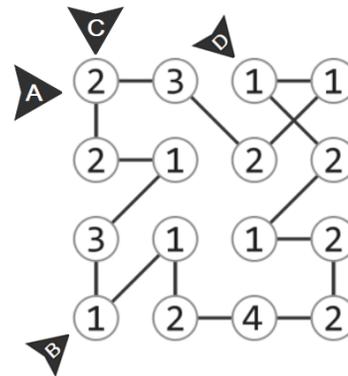
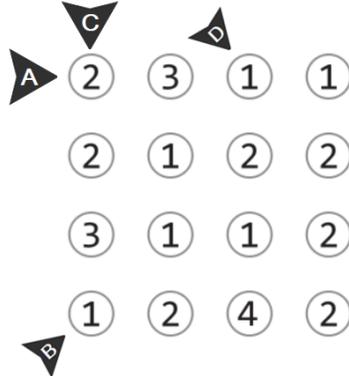
Example: 12, 3, 11, 4

18-20 Cross Loop

2 + 5 + 10 points

Draw a single closed loop through all the given cells. Loop segments join vertically, horizontally or diagonally adjacent cells. Loop segments can cross each other. The numbers in the cells indicate the angle between the two loop segments in a cell, as a multiple of 45° . The numbers indicate the below angles:

- 1 – Acute angle (45°)
- 2 – Right angle (90°)
- 3 – Obtuse angle (135°)
- 4 – Straight angle (180°)



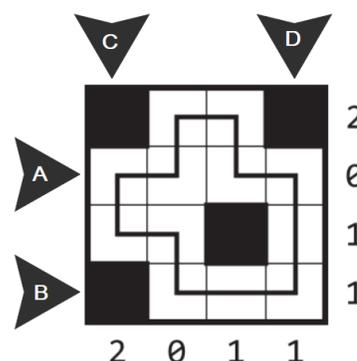
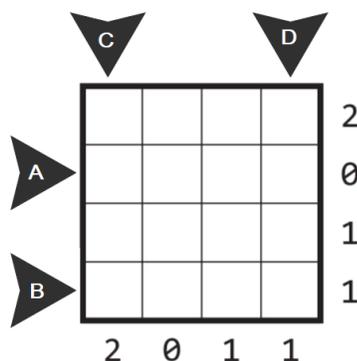
Answer key: Enter the lengths of loop segments in the marked rows/columns/diagonals, along the marked direction. Enter '0' if there are no line segments along the marked direction.

Example: 11, 11, 11, 1

21-22 Simple Loop with Shading

2 + 9 points

Blacken some white cells and then draw a single closed loop (without intersections or crossings) that travels horizontally and vertically from cell center to cell center through all remaining white cells. Blackened cells cannot share an edge with each other. Each number to the right and bottom of the grid reveals the number of blackened cells that must be located in that row or column.



Answer key: Enter the lengths of loop segments in the marked rows/columns, along the marked direction. Enter '0' if there are no line segments along the marked direction.

Example: 11, 2, 1, 2