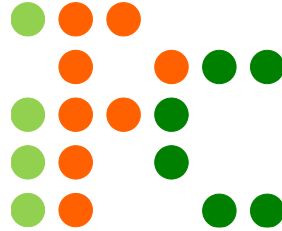


puzzle Ramayan

and



Episode – 5
3rd – 7th May 2019

MII (Made In India) and Regions
by
Swaroop Guggilam and Ashish Kumar

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/201905/>

Discussion Thread : <http://logicmastersindia.com/t/?tid=2699>

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* Rassi Silai
- 3* Consecutive Quads
- 3* Regional Loop
- 2* Outside Regional Loop
- 3* Araf
- 3* Five Cells
- 3* Spiral Galaxies
- 2* Double Spiral Galaxies

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 3rd May (but on or before 7th May), 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.

Rassi Silai	3, 2, 7
Consecutive Quads	3, 4, 4
Regional Loop	3, 5, 6
Outside Regional Loop	6, 5
Araf	3, 9, 3
Five Cells	4, 3, 1
Spiral Galaxies	9, 2, 5
Double Spiral Galaxies	6, 7

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

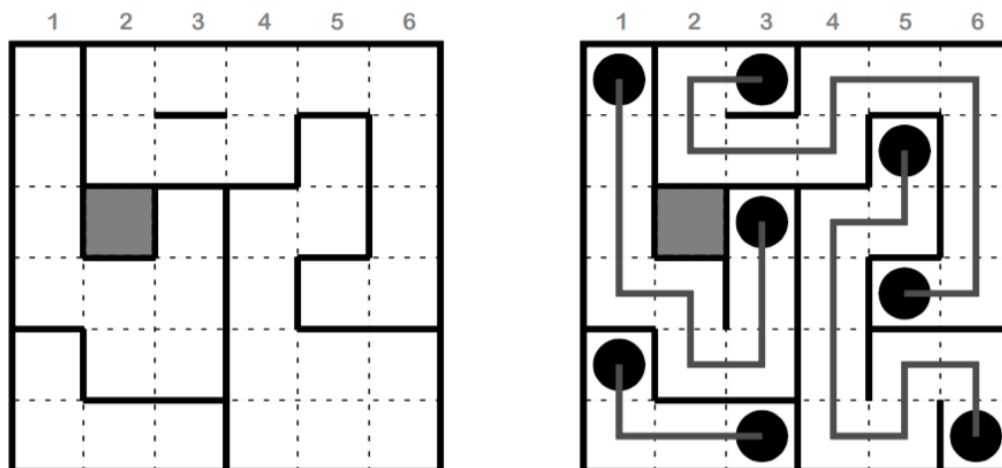
The password protected Puzzle booklet will have about 10 pages. We expect you to print and solve on paper, so you would need to have a printer accessible with enough paper.

1-3 Rassi Silai

3 + 2 + 7 points

Thread a rope in each region. A rope is a path that passes through all cells of the region, between two cells that are end-points. End-points do not touch each other, even diagonally, even across regions. Some bars are given within some regions; there cannot be a path between the two cells on both sides of the bar. Ignore any shaded regions – there cannot be a rope in a shaded region.

The numbers at the top denote the column number and are used for the answer key.



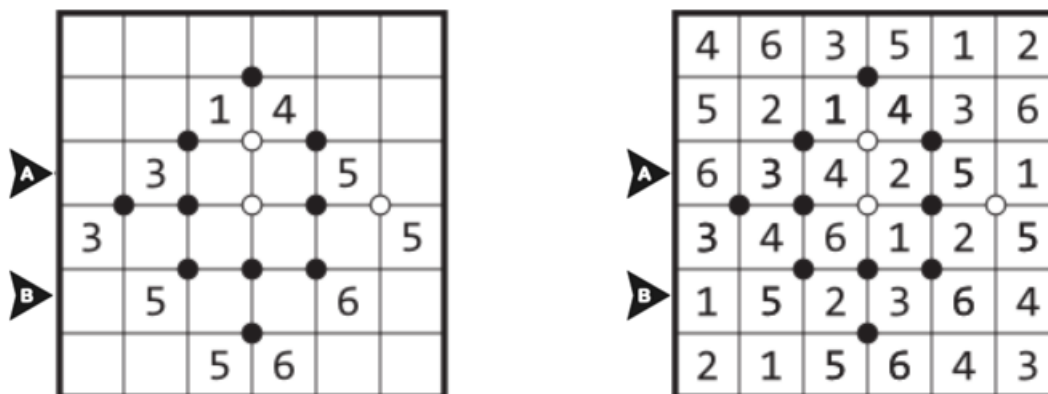
Answer Key: For each row, enter the column number of the leftmost end-point. Enter 0 if there are no end-points in a row.

Example: 153513

4-6 Consecutive Quads

3 + 4 + 4 points

Place a digit from 1 to N, in an NxN grid, into each of the empty cells so that each digit appears exactly once in each row and column. White dots indicate that the 2x2 area around them contain exactly one consecutive pair of digits. Black dots indicate that the 2x2 area around them contain at least two consecutive pairs of digits. Not all dots are given. Repeats are allowed, e.g., 2-4-5-6 is valid with 4-5 and 5-6, and so is 2-5-6-5.



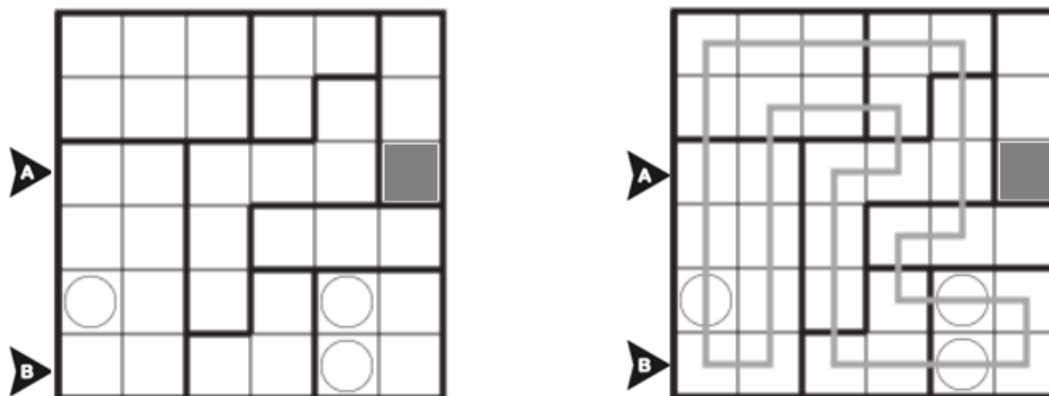
Answer Key: For each marked row (or column), enter the contents of the row (or column) from left to right (or top to bottom).

Example: 634251, 152364

7-9 Regional Loop

3 + 5 + 6 points

Draw a closed loop passing through centres of cells horizontally or vertically. The loop passes straight through all circled cells. The loop may or may not visit a region. The number of turns the loop makes in every visited region is constant across the grid. Shaded cells cannot be part of the loop.



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.

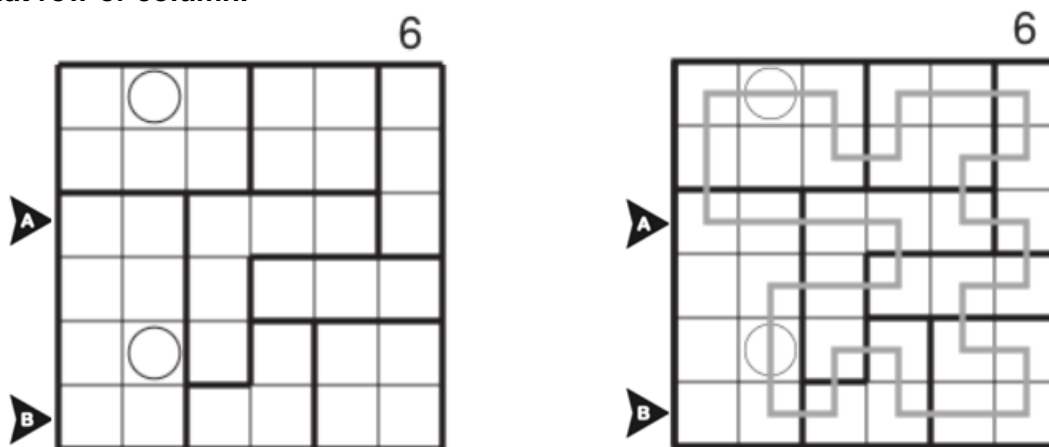
Example: 1,13

10-11 Outside Regional Loop

6 + 5 points

Draw a closed loop passing through centres of cells horizontally or vertically. The loop passes straight through all circled cells. The loop may or may not visit a region. The number of turns the loop makes in every visited region is constant across the grid. Shaded cells cannot be part of the loop.

Additionally, the clues outside the grid indicate the number of turns the loop makes in that row or column.



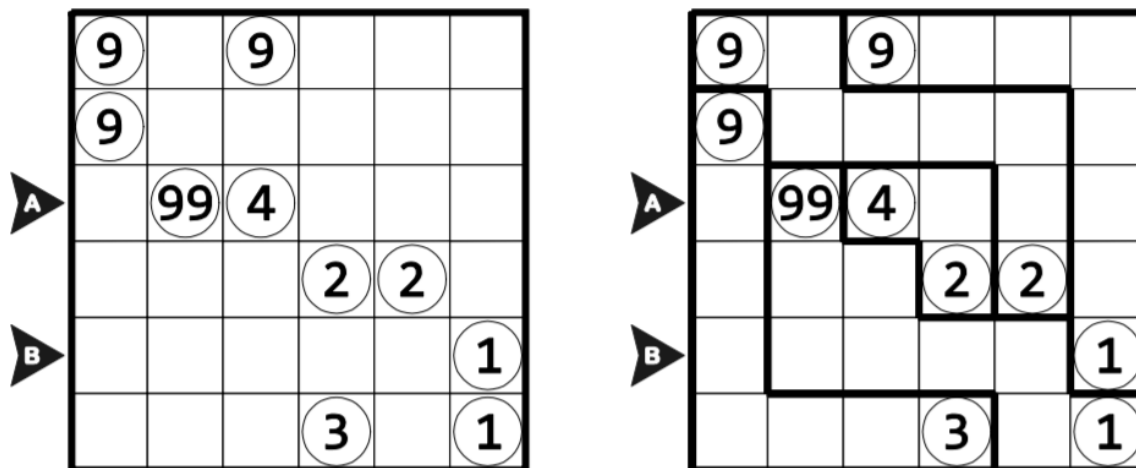
Answer Key: Enter the lengths of loop segments in the marked rows/columns, along the marked direction. Enter '0' if there are no line segments along the marked direction.

Example: 31,12

12-14 Araf

3 + 9 + 3 points

Divide the grid into some regions containing two circles each. Each cell of the grid is part of one region. Each region must have an area that is strictly between the numbers in the circles contained in it. This means, for two number clues A and B with $A < B$, the area C fulfils $A < C < B$.



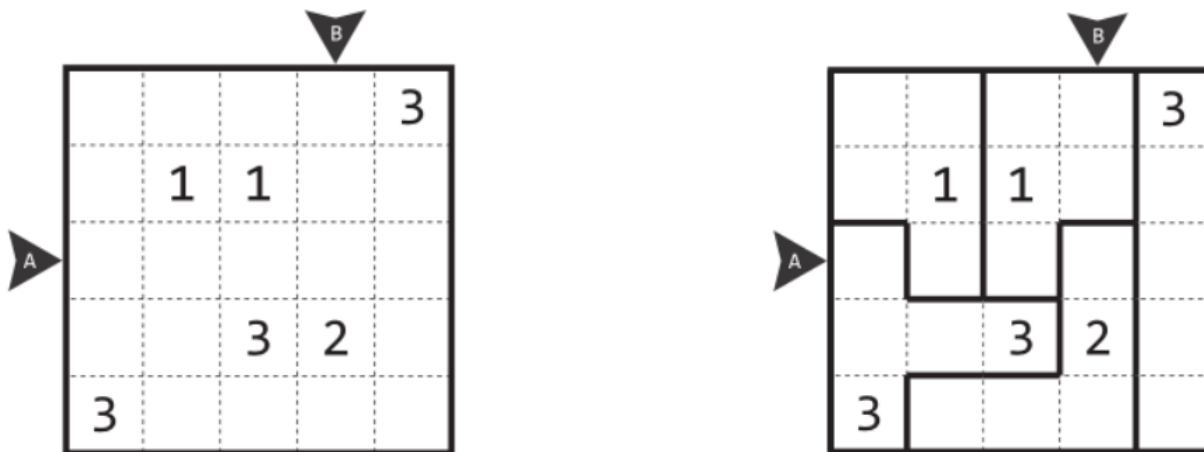
Answer Key: For the marked rows/columns, enter the number of consecutive cells in each region from left to right/top to bottom. Enter only the unit's digit for double digit numbers.

Example: 11211,141

15-17 Five Cells

4 + 3 + 1 points

Divide the grid into regions, each of size 5 cells, using horizontal and vertical lines along cell edges. A number in a cell tells how many of that cell's edges are region boundaries. The edge of the grid is considered as a region boundary. A region may contain zero or more clues.



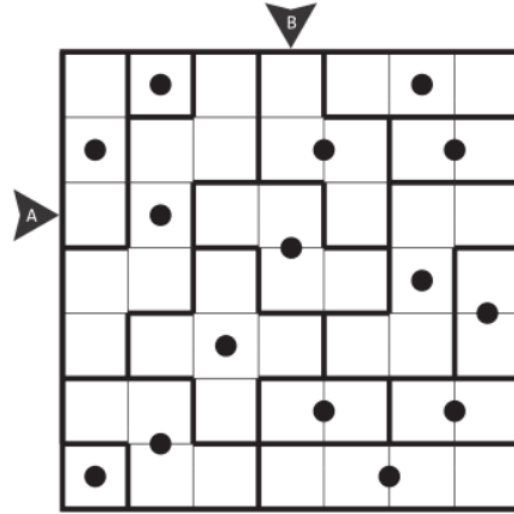
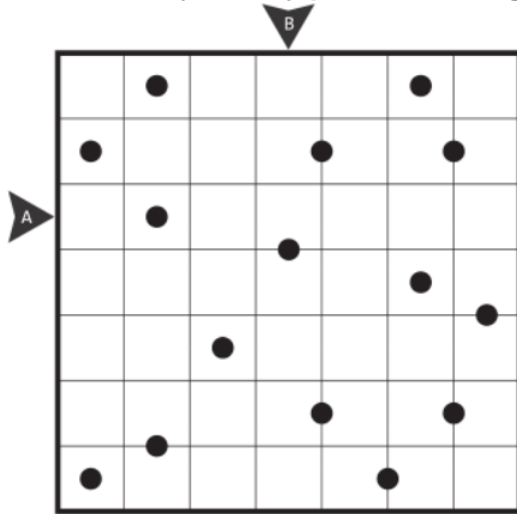
Answer: For the marked rows/columns, enter the number of consecutive cells in each region from left to right/top to bottom. Enter only the unit's digit for double digit numbers.

Answer: 11111, 23

18-20 Spiral Galaxies

9 + 2 + 5 points

Divide the grid into 180 degree symmetrical regions along the gridlines, so that each cell is part of exactly one region. Each region must contain exactly one circle, which represents the central symmetry point of the region. All circles are given.



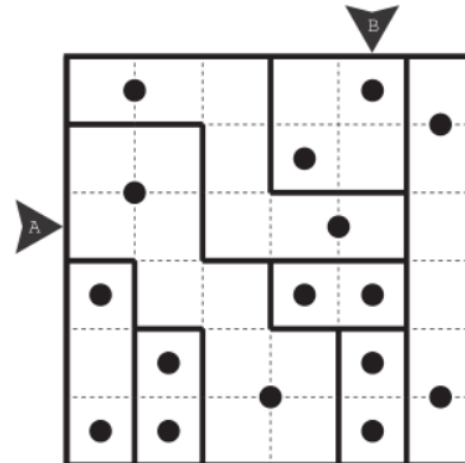
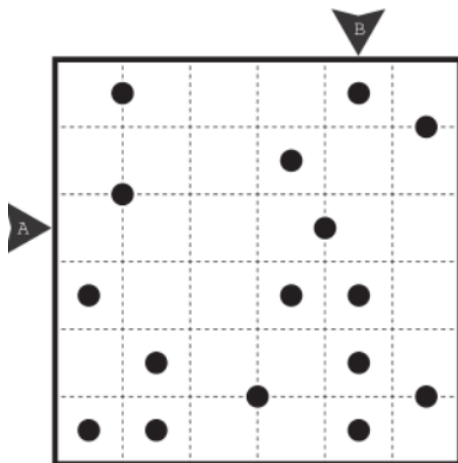
Answer Key: For each marked row/column, write the number of cells that belong to different regions - from left to right / top to bottom.

Example: 11212, 22111

20-21 Double Spiral Galaxies

6 + 7 points

Divide the grid into 180 degree symmetrical regions along the gridlines, so that each cell is part of exactly one region. Each region must contain exactly two circles, which should be present in 180 degree symmetrical cells in their respective region. All circles are given.



Answer Key: For each marked row/column, write the number of cells that belong to different regions - from left to right / top to bottom.

Example: 231, 2112