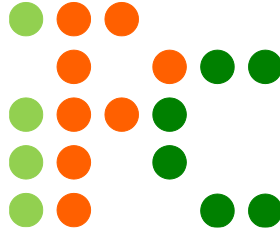# puzzle
Ramayan

and

Episode – 4
28th March – 3rd April 2025

Shading & Regions
by
Chandrachud Nanduri

Puzzle Ramayan rounds will also serve as qualifiers for Indian Puzzle Championship for year 2025. Please check http://logicmastersindia.com/PR/2025pr.asp **for details.**

Important Links

Submission Page: http://logicmastersindia.com/live?contest=PR2002504

Discussion Thread: http://logicmastersindia.com/t/?tid= 4209

F. A. Q. (contests): http://logicmastersindia.com/t/?tid=2773

F. A. Q. (online solving): https://logicmastersindia.com/live/faq-online-solving.asp

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

About this Episode

This episode has 22 Puzzles from the following puzzle types:

- 3* Nurikabe
- 3* Kurotto
- 3* Cross the Streams
- 2* Kurotto [Loop]
- 3* Pentominous
- 3* Fillomino
- 3* Spiral Galaxies
- 2* Spiral Galaxies [Prime]

How to participate?

- Understand the rules of different puzzles that will appear in this episode. This Instruction Booklet has rules for each puzzle.
- Any time on or after 28th March (but on or before 3rd April), login at the submission page using your LMI user-id and password. Please check the submission page for exact timing.
- **If you plan to solve on paper:**
  a) 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.
  b) Click on "Start". At this time, password for pdf will be shown and timer will start. **The contest duration is 60 minutes.**
  c) The puzzle booklet can be downloaded, printed and solved on paper.
  d) We advise you to have a printer accessible with enough paper.
  e) You are allowed to use writing implements, eraser, blank paper (including commercial graph paper), ruler, scissors, and tape.
- **If you plan to solve on LMI's Penpa-Integrated Interface:**
  a) Click on this link and understand the instructions - https://logicmastersindia.com/live/faq-online-solving.asp
  b) It is noted on the link too, but we note it here as well to be clear – the participants must still input the answer keys in the boxes below the puzzle and submit them to receive credit as given below.
- 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.
- Participants may use both paper solving and online solving, even interchangeably. Eventually our system will only count anything submitted in the submission boxes in either mode.

If you are participating at LMI for first time, it will be useful to check the F.A.Q. at http://logicmastersindia.com/t/?tid=2773.

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
- Uppercase or lower case does not matter for answer keys where letters must be entered.
- Characters other than the ones explicitly expected by the answer key will cause the red highlight to appear around the submission box.

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.**

Nurikabe	2, 3, 2
Kurotto	4, 5, 10
Cross the Streams	5, 6, 5
Kurotto [Loop]	3, 6
Pentominous	3, 7, 9
Fillomino	3, 3, 5
Spiral Galaxies	2, 4, 5
Spiral Galaxies [Prime]	3, 5

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. A demonstration for this is shown below.

Original points

| 04 Araf | 50 points | 4A | Sum should be 10 |

Potential points after 1 incorrect submission

| 04 Araf | 45 / 50 | 4A | 1234 |

Potential points after 2 incorrect submissions

| 04 Araf | 35 / 50 | 4A | 23311 |

Potential points after 3 incorrect submissions

| 04 Araf | 20 / 50 | 4A | 1111111111 |

Potential points after 4 incorrect submissions

| 04 Araf | 0 / 50 | 4A | 541 |

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)

Credits
- **Wessel Strijkstra and Superrabbit** for test solving the puzzles and providing invaluable feedback.
- The original creator **opt-pan** for penpa edit - https://opt-pan.github.io/penpa-edit/
- **Swaroop Guggilam** for his recent efforts in adding features to Penpa-edit - https://swaroopg92.github.io/penpa-edit/ and also working to integrate it with our contest engine.

About the Puzzle Booklet
The password protected Puzzle booklet will have 13 pages. This is relevant only for paper solvers.
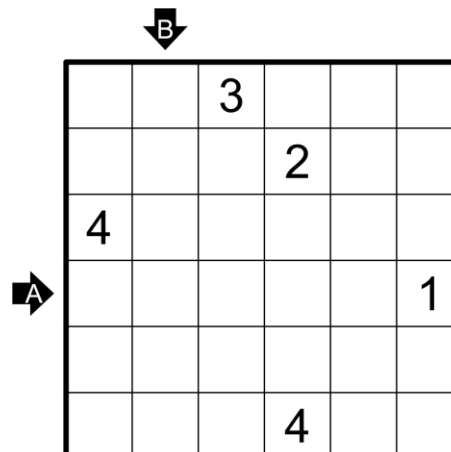
1-3 Nurikabe

2 + 3 + 2 points

Shade some cells so that all shaded cells form one orthogonally connected area. Clues cannot be shaded, and every orthogonally connected area of unshaded cells contains exactly one clue, the value of which represents the size of the area. No 2x2 region may be entirely shaded.

A '?' can mean any non-zero number.

[The puzzles in the contest will be of sizes 9x9, 10x10 and 11x11. This example is 6x6.]

Penpa for example: https://tinyurl.com/2l8qttqn

4-6 Kurotto

4 + 5 + 10 points

Shade some cells so that clues in circles represent the total size of the orthogonally connected areas of shaded cells that share an edge with the clue. Circled cells cannot be shaded.

[The puzzles in the contest will be of sizes 9x9, 10x10 and 12x12. This example is 6x6.]

Penpa for example: https://tinyurl.com/23yszbcm
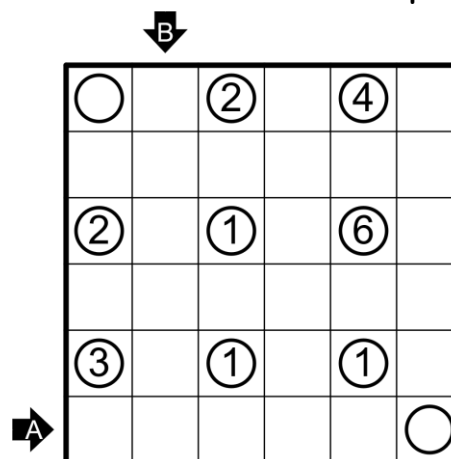
7-9 Cross the Streams

5 + 6 + 5 points

Shade some cells so that all shaded cells form one orthogonally connected area. No 2x2 region may be entirely shaded. Clues outside the grid represent the lengths of the blocks of consecutive shaded cells in the corresponding row or column, in order. A question mark represents one block of an unknown number of cells. An asterisk represents any number of blocks of shaded cells, including none at all.

[The puzzles in the contest will be of sizes 9x9, 10x10 and 10x10. This example is 6x6.]

Penpa for example: https://tinyurl.com/23xcqtl4

puzzle ramayan   **Shading & Regions 2025**
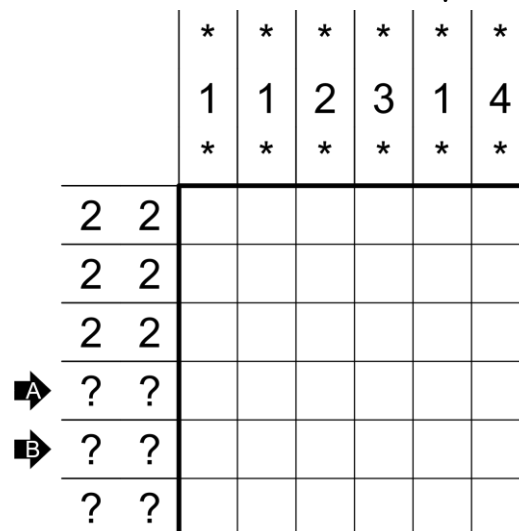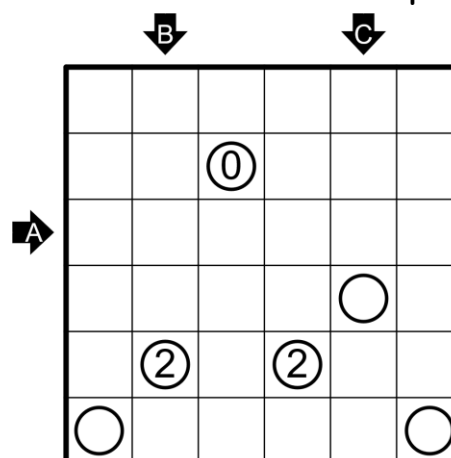
10-11 Kurotto [Loop]

Apply regular 'Kurotto' rules.

Additionally, draw a non-intersecting loop through the centers of all unshaded cells, **except** circled cells.

[The puzzles in the contest will be of sizes 9x9 and 11x11. This example is 6x6.]

Penpa for example: https://tinyurl.com/22uhtkp4

12-14 Pentominous

Divide the grid into regions of five orthogonally connected cells so that no two regions of the same shape share an edge, counting rotations and reflections as the same. Clued cells must belong to a region with the pentomino shape associated with that letter.

[The puzzles in the contest will be of sizes 60 cells, 10x10 and 10x10. This example is 25 cells / 5x5.]

Penpa for example: https://tinyurl.com/25vzfpu3
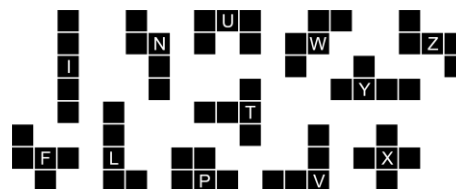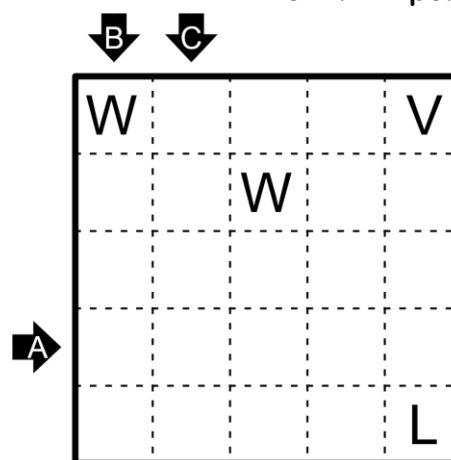
15-17 Fillomino

Divide the grid into regions of orthogonally connected cells. Two regions of the same size may not share an edge. Clued cells must belong to a region containing the indicated number of cells. A region may contain 0 or more clued cells.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 6x6.]

Penpa for example: https://tinyurl.com/2d8aufrb
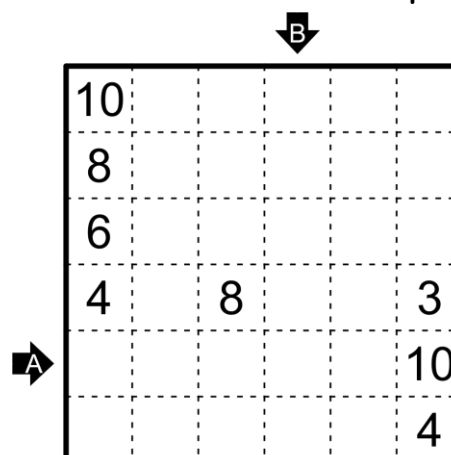
18-20 Spiral Galaxies

2 + 4 + 5 points

Divide the grid along the indicated lines into connected regions – "galaxies" – with rotational symmetry. Each cell must belong to one galaxy, and each galaxy must have exactly one circle at its center of rotational symmetry.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 6x6.]

Penpa for example: https://tinyurl.com/ywzodzxx
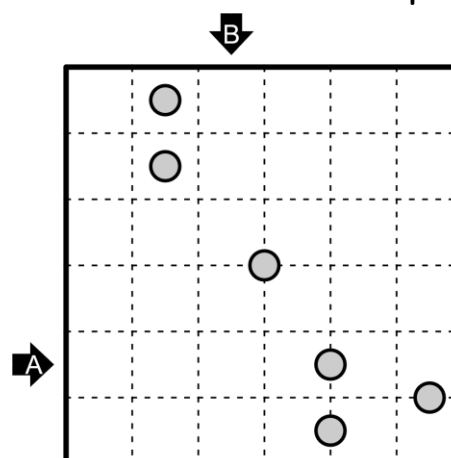
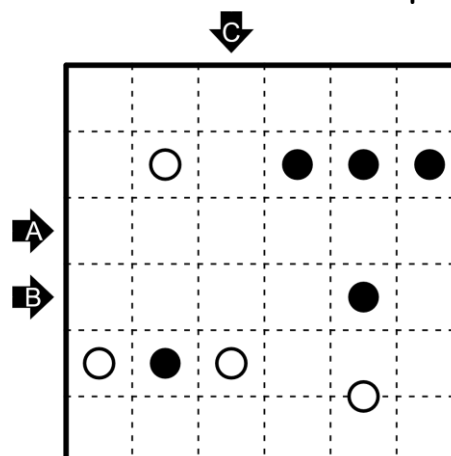## 21-22 Spiral Galaxies [Prime]

3 + 5 points

Apply regular 'Spiral Galaxies' rules.

Regions containing a black circle occupy a prime number of cells. Regions containing a white circle <u>do not</u> occupy a prime number of cells.

[The puzzles in the contest will be of sizes 8x8 and 10x10. This example is 6x6.]

Penpa for example: https://tinyurl.com/2anpfs6k

Solutions

For this round, all answer keys will NOT be the same for all puzzles.

The keys are given section by section.

<u>Nurikabe, Kurotto, Cross the Streams</u> – For each marked row/column, enter the number of consecutive shaded and unshaded cells in the direction of the arrow. Use unit's digit for double digit values.

<u>Kurotto [Loop]</u> – For each marked row/column, enter the lengths of separate loop segments in the direction of the arrow. Use unit's digit for double digit values. Enter 0 if there are no segments.

<u>Pentominous, Fillomino, Spiral Galaxies, Spiral Galaxies [Prime]</u> – For each marked row/column, enter the number of consecutive cells belonging to separate regions in the direction of the arrow. Use unit's digit for double digit values.

Nurikabe

Key: 111111, 1131

Kurotto

Key: 1113, 2112

Cross the Streams

Key: 2211, 123

Kurotto [Loop]

Key: 11, 11, 11

Pentominous

Key: 113, 14, 212

Fillomino

Key: 1212, 132

Spiral Galaxies

Key: 321, 114

Spiral Galaxies [Prime]

Key: 3111, 33, 3111