puzzle
ramayan

and

Episode – 6
21st April – 27th April 2023

Regions & Loops
by
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Puzzle Ramayan rounds will also serve as qualifiers for Indian Puzzle Championship for year 2023. Please check http://logicmastersindia.com/PR/2023pr.asp **for details.**

Important Links

Submission Page : http://logicmastersindia.com/live?contest=PR202306

Discussion Thread : http://logicmastersindia.com/t/?tid=3186

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

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

About this Episode

This episode has 22 Puzzles from the following puzzle types:

- 3* Fillomino
- 3* Tatamibari
- 3* Sashigane
- 2* Fillomino [No Rectangles]
- 3* Slitherlink
- 3* Reflect Link
- 3* Ice Walk
- 2* Slitherlink [Consecutive]

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 21ˢᵗ April (but on or before 27ᵗʰ 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.**

Fillomino	6, 7, 6
Tatamibari	2, 2, 4
Sashigane	2, 3, 3
Fillomino [No Rectangles]	6, 10
Slitherlink	4, 5, 3
Reflect Link	2, 3, 4
Ice Walk	3, 2, 9
Slitherlink [Consecutive]	8, 6

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 of 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
- **Jamie Hargrove** 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 8 pages. This is relevant only for paper solvers.

1-3 Fillomino

6 + 7 + 6 points

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

4-6 Tatamibari

2 + 2 + 4 points
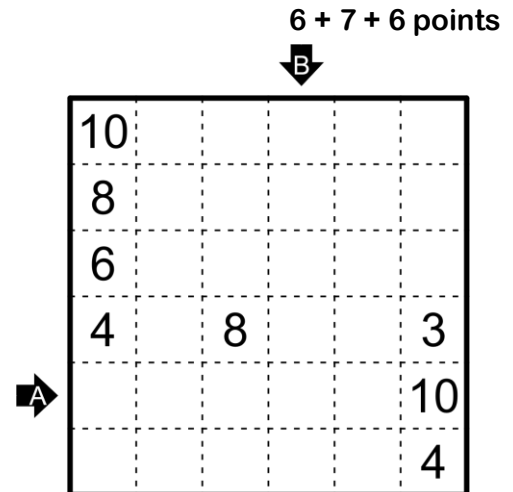
Divide the grid into rectangular regions of orthogonally connected cells, each containing exactly one clue. A plus shaped clue means that the region it belongs to is a square. A line shaped clue means that the region it belongs to is a rectangle with the longer edge parallel to the line. Region borders may not form any four-way intersections.

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

Penpa for example: https://tinyurl.com/2ykepn6p

7-9 Sashigane

2 + 3 + 3 points
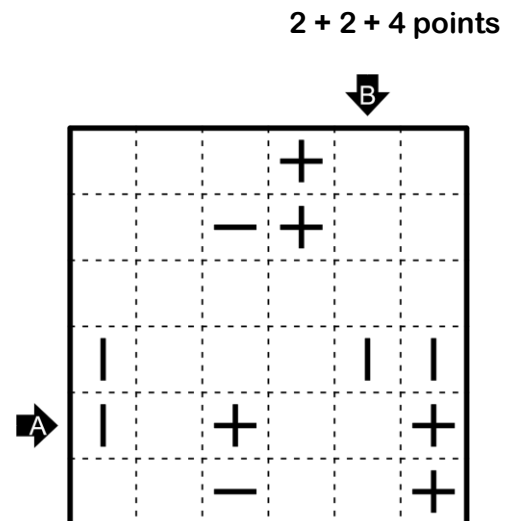
Divide the grid into regions of orthogonally connected cells. Each region must be an L shape with a width of one cell. Arrows must lie at one end of an L and point toward the bend. Circles must lie at the bend of an L, and if one contains a number, the L it's inside must contain the indicated number of cells.

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

Penpa for example: https://tinyurl.com/2bqnqcqm
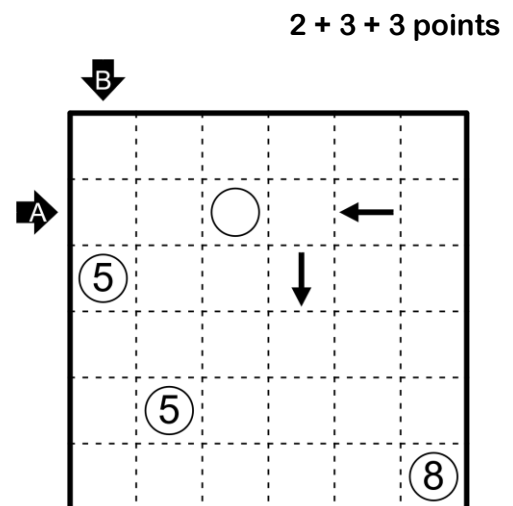
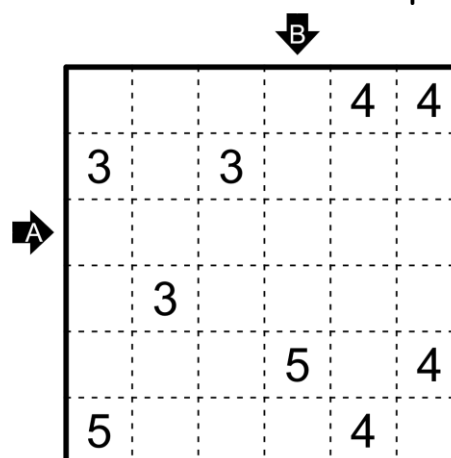## 10-11 Fillomino [No Rectangles]

6 + 10 points

Apply regular Fillomino rules.

Additionally, regions may not be rectangular in shape.

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

**Penpa for example: https://tinyurl.com/2c3pwupj**

12-14 Slitherlink

4 + 5 + 3 points

Draw a single, non-intersecting loop that only consists of horizontal and vertical segments between the dots. Numbers inside a cell indicate how many of the edges of that cell are part of the loop.

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

**Penpa for example: https://tinyurl.com/ycktzvtb**

15-17 Reflect Link

2 + 3 + 4 points
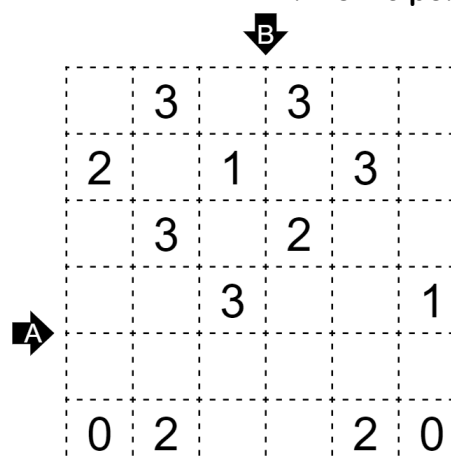
Draw a non-intersecting loop through the centers of some cells. Two perpendicular line segments must cross each other at given intersections, but nowhere else. Every triangle must be touched by the loop. Triangles reflect the loop at right angles, and a number in a triangle indicates the total number of cells that the lines coming out of it travel to before turning, including the cell the triangle is in.

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

**Penpa for example: https://tinyurl.com/27zcw3nj**
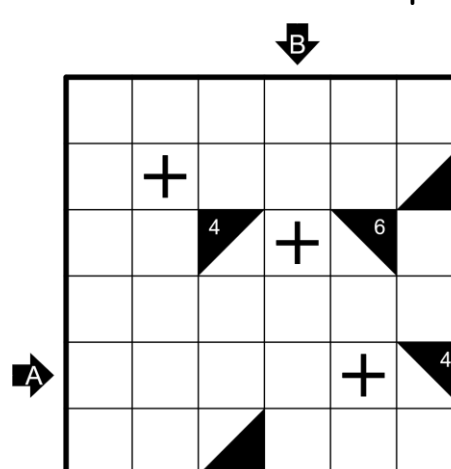
18-20 Ice Walk

3 + 2 + 9 points

Draw a loop through the centers of some cells which passes through each numbered cell. Two perpendicular line segments may intersect each other only on icy cells, but they may not turn at their intersection or otherwise overlap. The loop may not turn on icy cells. A number indicates how many cells make up the continuous non-icy section of the loop that the number is on. A '?' stands for any non-zero number.

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

Penpa for example: https://tinyurl.com/2b38bnz8
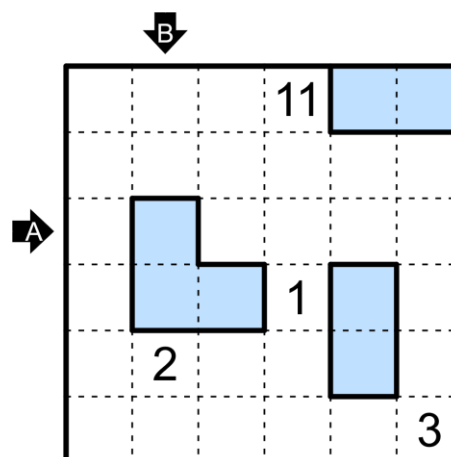
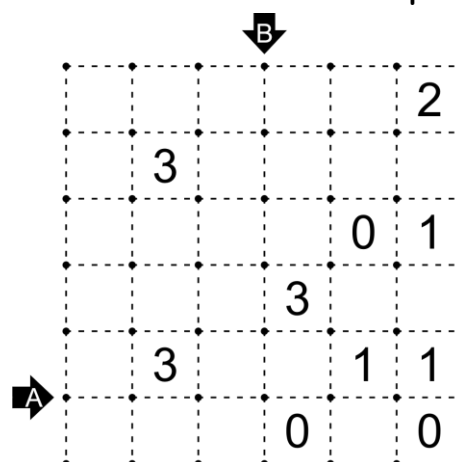# 21-22 Slitherlink [Consecutive]

8 + 6 points

Apply regular Slitherlink rules.

Every straight line segment must be adjacent along the loop to at least one other segment with consecutive (one greater or one smaller) length.

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

Penpa for example: https://tinyurl.com/25rmc736

Answer Keys:

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

The keys are given section by section.

Fillomino, Tatamibari, Sashigane, Fillomino [No Rectangles] – 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.
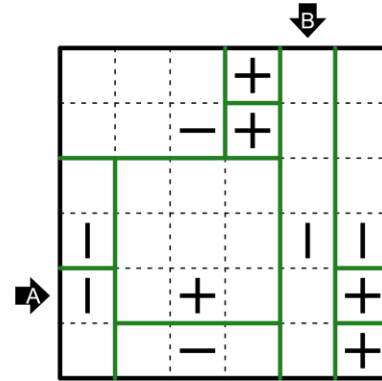
Slitherlink, Reflect Link, Ice Walk, Slitherlink [Consecutive] – For each marked row/column, enter the lengths of separate loop segments in the direction of the arrow. Use unit's digit for double digit values. Enter 0 if there are no segments.
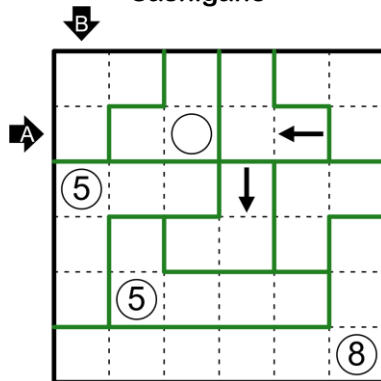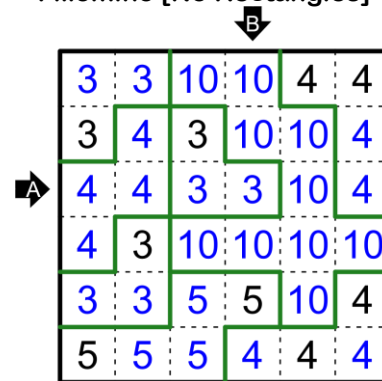
Fillomino

10	10	10	10	10	1
8	8	8	8	10	3
6	6	8	8	10	3
4	6	8	8	10	3
4	6	6	4	10	10
4	4	6	4	4	4
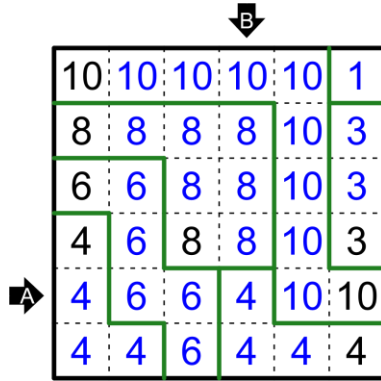
Key: 1212, 132

Tatamibari

Key: 1311, 6

Sashigane

Key: 1221, 231

Fillomino [No Rectangles]

3	3	10	10	4	4
3	4	3	10	10	4
4	4	3	3	10	4
4	3	10	10	10	10
3	3	5	5	10	4
5	5	5	4	4	4

Key: 2211, 21111

Slitherlink

	3		3	
2		1		3
	3		2	
		3		1
0	2			2	0
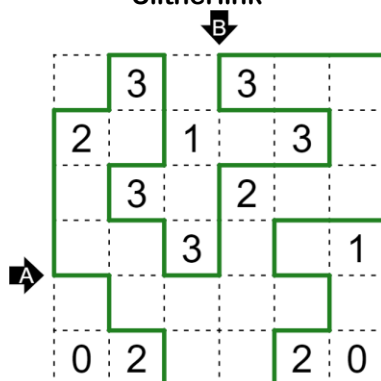
Key: 111, 12

Reflect Link

4   6

4

Key: 12, 3

Ice Walk

11

1

2

3

Key: 2, 3

Slitherlink [Consecutive]

2

3

0   1

3

3   1   1

0   0

Key: 2, 12