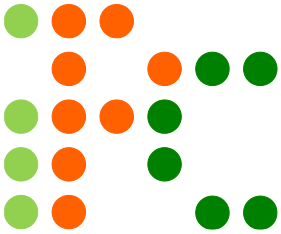
puzzle ramayan

and



Episode – 2
23rd – 29th February 2024

Loops & Numbers
by
Ashish Kumar

Puzzle Ramayan rounds will also serve as qualifiers for Indian Puzzle Championship for year 2024. Please check http://logicmastersindia.com/PR/2023pr.asp for details.

Important Links

Submission Page : http://logicmastersindia.com/live?contest=PR202402

Discussion Thread : http://logicmastersindia.com/t/?tid=3659

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* Geradeweg
- 3* Round Trip
- 3* Turning Fences
- 2* Geradeweg [Full]
- 3* Doppelblock
- 3* TomTom
- 3* Patchwork
- 2* Tripleblock

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 23rd Feb (but on or before 29th Feb), 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

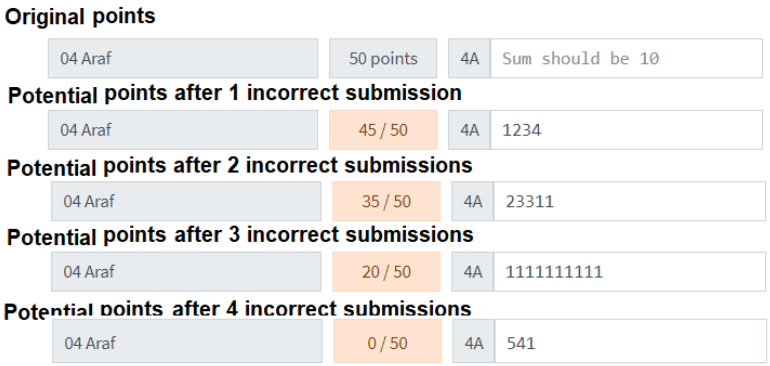
- If multiple columns are marked, enter from left to right for marked columns
- Uppercase or lower case does not matter for answer keys where letters must be entered.
- Characters other than the ones explicitly expected by the answer key will cause the red highlight to appear around the submission box.

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.**

Geradeweg	2, 4, 8
Round Trip	4, 6, 4
Turning Fences	3, 8, 12
Geradeweg [Full]	1, 3
Doppelblock	2, 3, 4
TomTom	5, 6, 4
Patchwork	2, 5, 7
Tripleblock	2, 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.



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

- **Botaku & Wessel Strijkstra** 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.

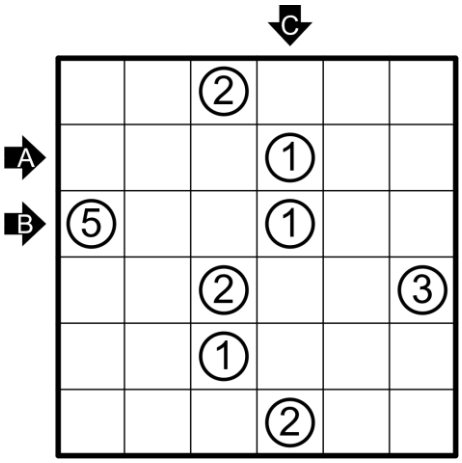
About the Puzzle Booklet

The password protected Puzzle booklet will have 8 pages. This is relevant only for paper solvers.

Solutions and keys (including the key explanation) to examples are towards the end of the booklet in the Solutions section.

1-3 Geradeweg

2 + 4 + 8 points



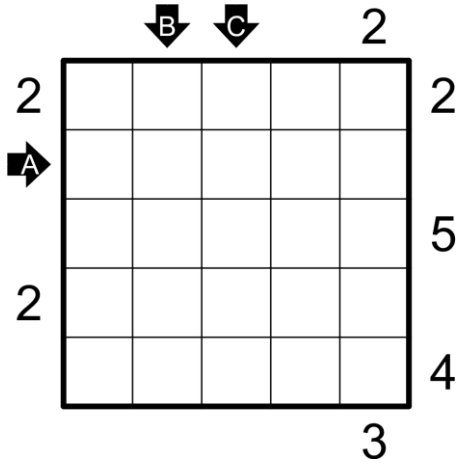
Draw a non-intersecting loop through the centers of some cells that passes through every clue. Every straight line segment that touches a clue must have a length equal to the clue's value.

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

Penpa for example: http://tinyurl.com/29vkb252

4-6 Round Trip

4 + 6 + 4 points



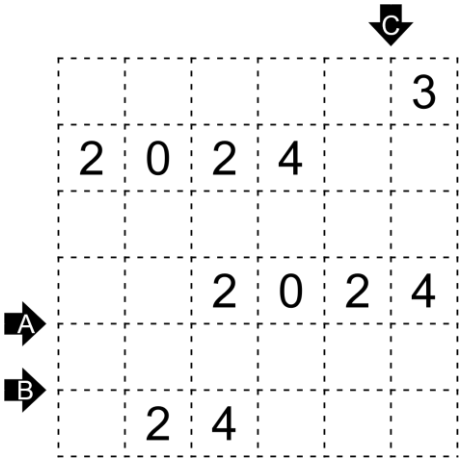
Draw a loop through the centers of some cells so that each number outside the grid represents the number of cells used by the first line segment traveling within the corresponding row or column from the direction of the clue. Two perpendicular line segments may intersect each other, but not turn at their intersection or otherwise overlap.

[The puzzles in the contest will be of sizes 6x6, 7x7 and 7x7. This example is 5x5.]

Penpa for example: http://tinyurl.com/252wu8ob

7-9 Turning Fences

3 + 8 + 12 points



Connect some pairs of orthogonally adjacent dots to form a single non-intersecting loop. Clues represent the number of turns the loop makes on the four surrounding vertices.

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

Penpa for example: http://tinyurl.com/24paylwj

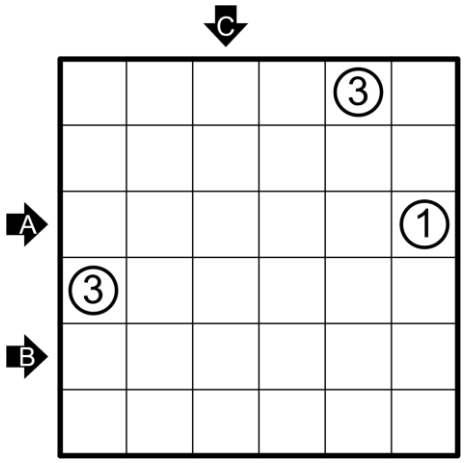
10-11 Geradeweg [Full]

1 + 3 points

Draw a non-intersecting loop through the centers of ALL cells that passes through every clue. Every straight line segment that touches a clue must have a length equal to the clue's value.

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

Penpa for example: http://tinyurl.com/24mpwofm



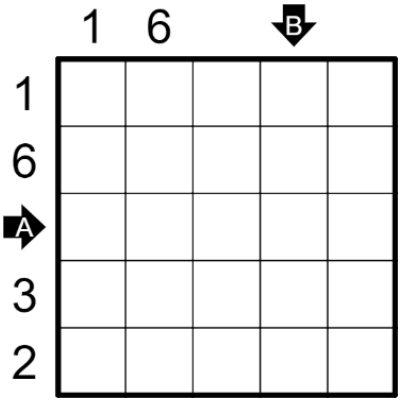
12-14 Doppelblock

2 + 3 + 4 points

Place a number from 1 to N-2 into some cells so that each row and column contains every number from that range with no repeats, where N is the side length of the grid, and shade the remaining two cells of each row and column. A clue outside the grid indicates the sum of the digits which appear between the two shaded cells in the corresponding row or column.

[The puzzles in the contest will be of sizes 5x5, 6x6 and 6x6. This example is 5x5.]

Penpa for example: https://tinyurl.com/y6yv8k8k



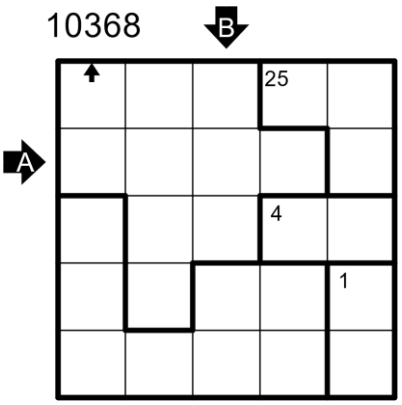
15-17 TomTom

5 + 6 + 4 points

Place a number from 1 to N into each cell so that each row and column contains every number from that range with no repeats, where N is the side length of the grid. A clue represents the value obtained by applying an operation iteratively on the numbers in the region the clue is in. If no operation is given, it may be any of +, -, ×, or ÷. Subtraction and division in regions with more than two numbers are handled by taking the largest number and subtracting/dividing all the others.

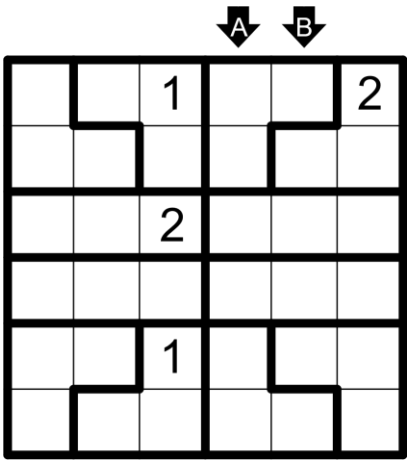
[The puzzles in the contest will be of sizes 5x5, 6x6 and 6x6. This example is 5x5. Note: The example illustrates a case that may appear in competition with a large clue, presented this way for visibility.]

Penpa for example: http://tinyurl.com/2bldcy6g



18-20 Patchwork

2 + 5 + 7 points



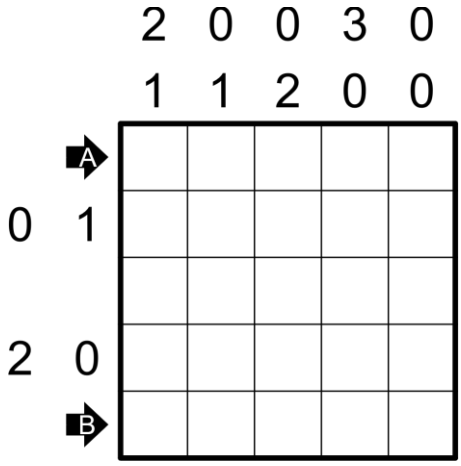
Place a number into each cell so that each region contains the numbers from 1 to N with no repeats, where N is the number of cells in <u>all regions</u>. Numbers of the same value may not touch one another orthogonally. <u>Each row and column contains each number from 1 to N the same number of times.</u>

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

Penpa for example: http://tinyurl.com/22rn553f

21-22 Tripleblock

2 + 5 points



Place a number from 1 to ***N-3*** into some cells so that each row and column contains every number from that range with no repeats, where N is the side length of the grid, and shade the remaining ***three*** cells of each row and column. Clues outside the grid indicate both the sums of digits appearing between the shaded cells, in order, in the corresponding row or column.

[The puzzles in the contest will be of sizes 6x6 and 7x7. This example is 5x5.]

Penpa for example: http://tinyurl.com/28q799g5

Solutions

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

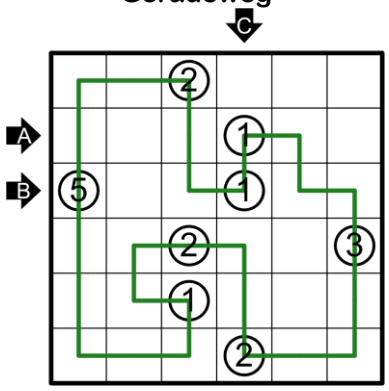
The keys are given section by section.

<u>Geradeweg, Round Trip, Turning Fences, Geradeweg [Full]</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>Doppelblock, Tripleblock</u> – For each marked row/column, enter the digits in the direction of the arrow, including given digits. Enter X for empty/shaded cells. Ignore outside clues.

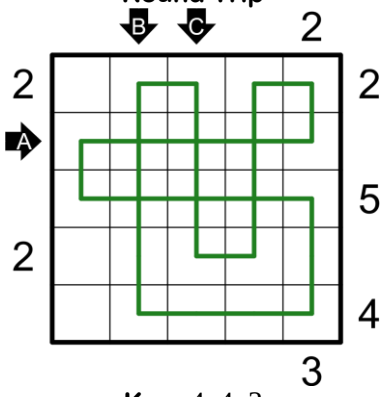
<u>TomTom, Patchwork</u> – For each marked row/column, enter the digits in the direction of the arrow, including given digits.

Geradeweg



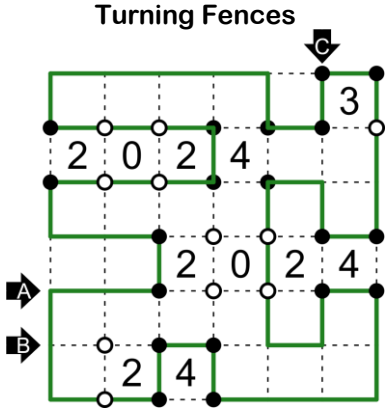
Key: 1, 11, 12

Round Trip



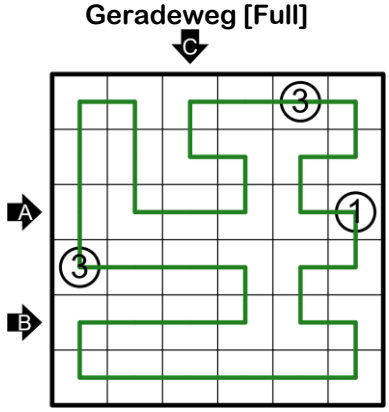
Key: 4, 4, 3

Turning Fences



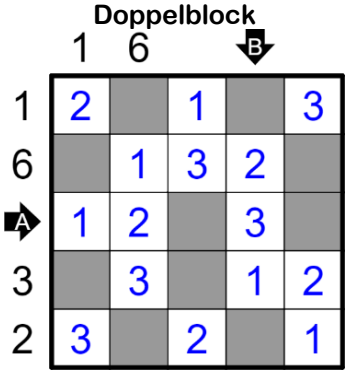
Key: 21, 11, 111

Geradeweg [Full]



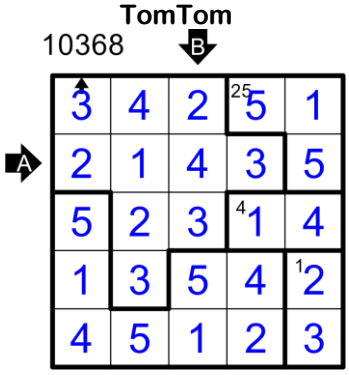
Key: 21, 31, 1

Doppelblock



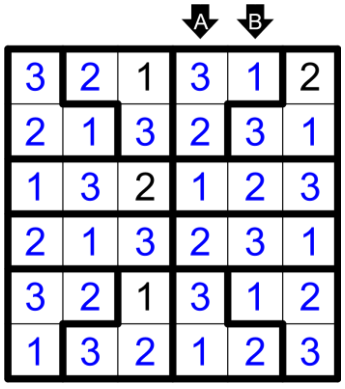
Key: 12X3X, X231X

TomTom



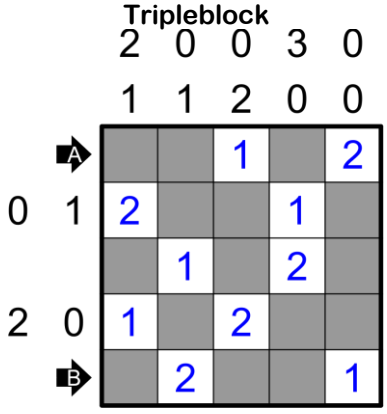
Key: 21435, 24351

Patchwork



Key: 321231, 132312

Tripleblock



Key: XX1X2, X2XX1