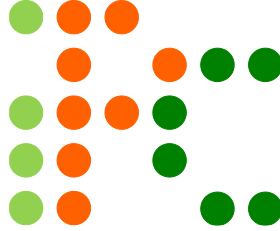


puzzle Ramayan

and



Episode – 6
7th – 13th June 2024

Snake & Casual
by
Nityant Agarwal & Prasanna Seshadri

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=PR202406>

Discussion Thread : <http://logicmastersindia.com/t/?tid=3820>

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* Snake
- 3* Bosnian Road
- 3* Hebi-Ichigo
- 2* Snake [First Seen]
- 3* Arithmetic Square
- 3* Not Alone
- 3* Jigsaw Loop
- 2* Overlap

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 7th Jun (but on or before 13th Jun), 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.**

Snake	3, 6, 11
Bosnian Road	2, 3, 4
Hebi-Ichigo	3, 5, 8
Snake [First Seen]	4, 6
Arithmetic Square	3, 5, 3
Not Alone	2, 5, 7
Jigsaw Loop	4, 3, 5
Overlap	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 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

- **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 10 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.

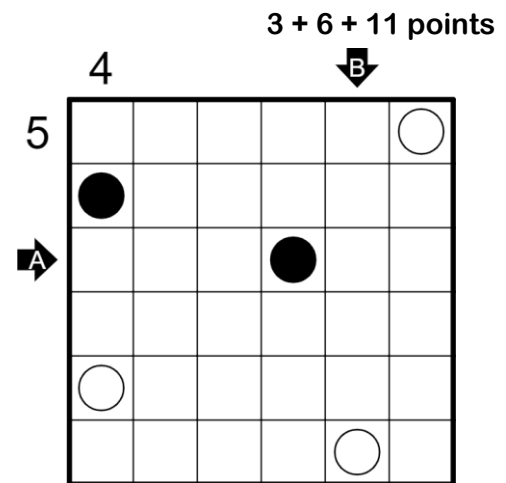
1-3 Snake

Shade some cells to form a non-intersecting path of 1-cell width which does not touch itself, not even diagonally. A black circle must lie on an end of the path. A white circle must lie somewhere along the path, but not at an end.

A number outside the grid represents how many cells in the corresponding row or column are shaded.

[The puzzles in the contest will be of sizes 7x7, 9x9 and 10x10. This example is 6x6.]

Penpa for example: <https://tinyurl.com/3uhznn2c>

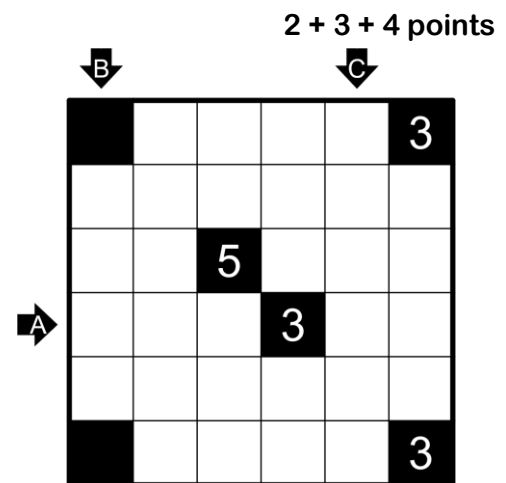


4-6 Bosnian Road

Shade some cells to form a non-intersecting loop which does not touch itself, not even diagonally. Clues cannot be shaded, and represent the number of shaded cells in the (up to) eight cells surrounding the clue.

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

Penpa for example: <https://tinyurl.com/2bq88kpm>

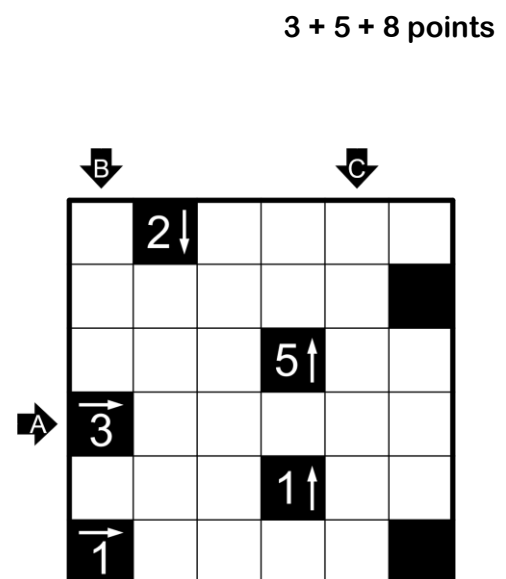


7-9 Hebi-Ichigo

Place numbers into some empty cells such that each orthogonally connected group forms a sequence of consecutive numbers from 1 to 5. Each number in the sequence must be orthogonally adjacent to the next. These groups may not share an edge with one another. The 1 in a sequence must not be able to see any numbers in a straight line in the direction it's pointing (away from its adjacent 2) unless a black cell blocks its view. A clue represents the first number seen in the indicated direction. Clues cannot see through black cells.

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

Penpa for example: <https://tinyurl.com/2yv2czdb>



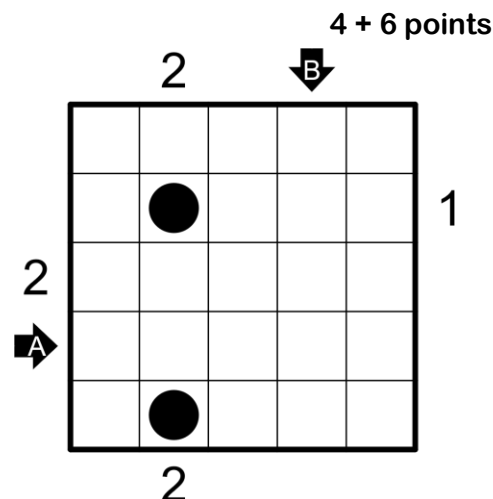
10-11 Snake [First Seen]

Shade some cells to form a non-intersecting path of 1-cell width which does not touch itself, not even diagonally. A black circle must lie on an end of the path. A white circle must lie somewhere along the path, but not at an end.

A number outside the grid represents the number of cells in the first shaded block from the clue in the corresponding row or column.

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

Penpa for example: <https://tinyurl.com/25xh9t7l>

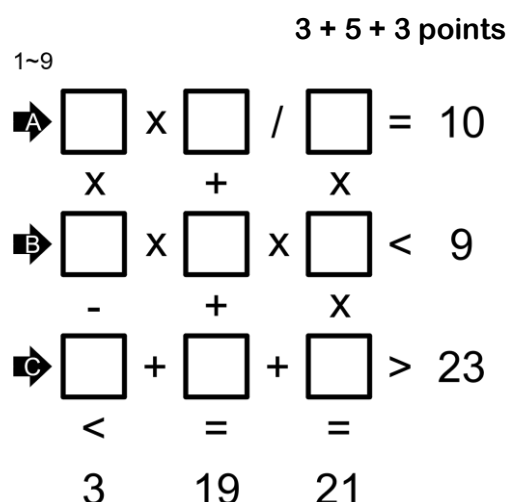


12-14 Arithmetic Square

Place each digit from 1 through 9 into the white boxes (a different digit per box) so that the indicated equations or relations are correct when evaluating from left to right or top to bottom (ignore the usual order of operations). The results of the operations must be integers.

[The puzzles in the contest will be of the same size as the example.]

Penpa for example: <https://tinyurl.com/29c473z3>

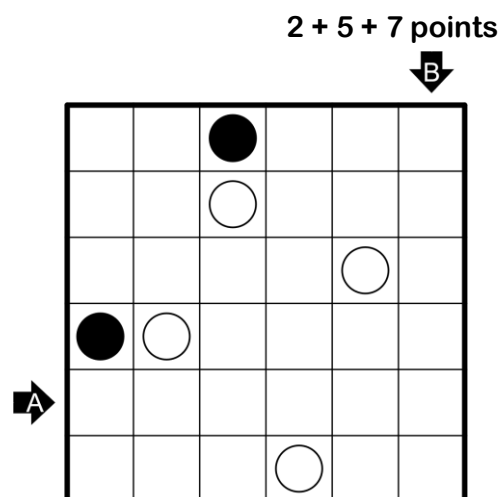


15-17 Not Alone

Place a circle into each cell of the grid; some white, and some black. Each row and column must contain equally as many white circles as black circles. No individual circle may be sandwiched horizontally or vertically by circles of the opposite color.

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

Penpa for example: <https://tinyurl.com/25ysm8ow>



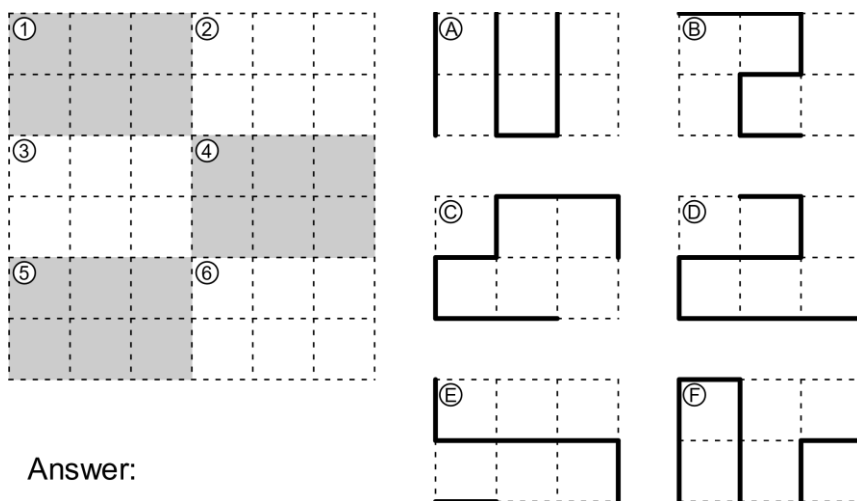
18-20 Jigsaw Loop

4 + 3 + 5 points

Reconstruct a closed loop from the pieces given on the right, that does not cross itself. The cells of pieces cannot overlap each other but the loop segments can. The pieces cannot be rotated or reflected. All loop segments are given, and represented on every piece.

[The puzzles in the contest will be of sizes 7x7, 8x8 and 9x9. This example is 6x6.]

Penpa for example: <https://tinyurl.com/23opokuq>



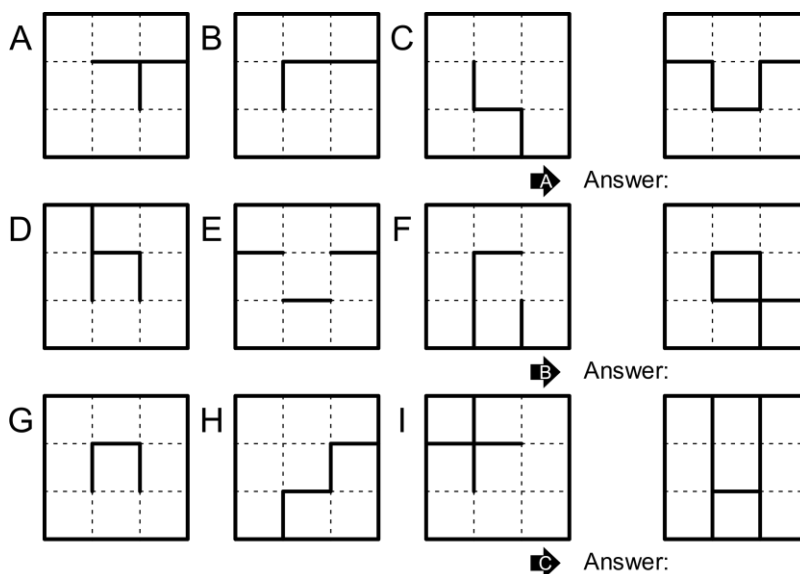
21-22 Overlap

3 + 5 points

For each figure on the right, from top to bottom, find all the pieces on the left that can overlap with it (i.e. the set of lines is a subset of the one in the figure). Pieces can be rotated but not reflected. All cells of the piece must overlap with the figure.

[There is no size information for this puzzle.]

Penpa for example: <https://tinyurl.com/25geh22x>



Solutions

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

The keys are given section by section.

Snake, Bosnian Road, Snake [First Seen] – 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. (For Bosnian Road: Given black cells are considered 'unshaded')

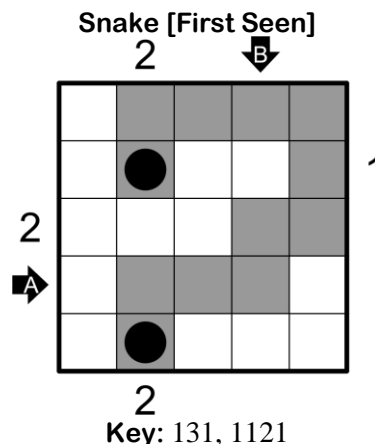
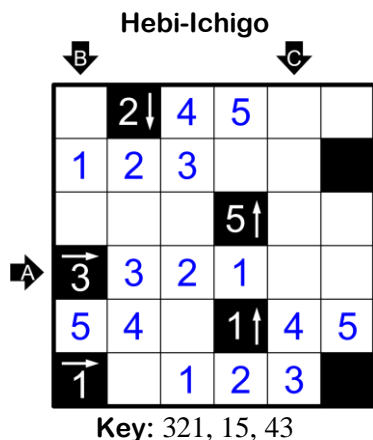
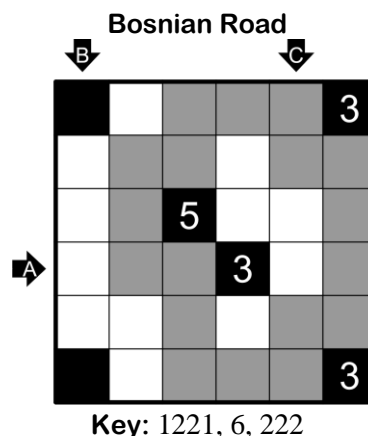
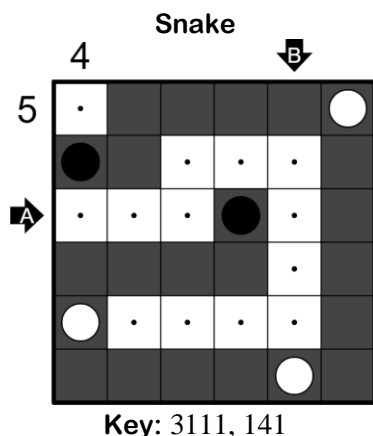
Hebi-Ichigo – For each marked row/column, enter the digits in the direction of the arrow, ignoring empty/black cells.

Arithmetic Square – Enter the digits in the squares in each row, from top to bottom.

Not Alone – For each marked row/column, enter the lengths of consecutive cells occupied by each type of circle in the direction of the arrow. Use unit's digit for double digit values.

Jigsaw Loop – For each marked area from 1 to N (where N is the total number of areas), enter the letter corresponding to the piece that fits there.

Overlap – For each figure from top to bottom, enter the labels for the pieces that overlap with the figure, in alphabetical order. Enter 0 if no pieces overlap.

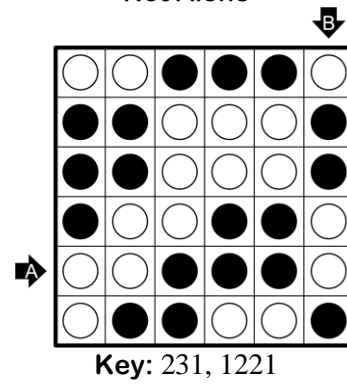


Arithmetic Square

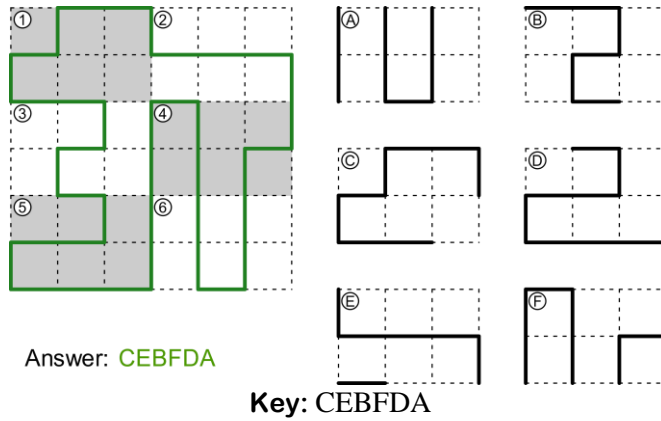
1-9

$$\begin{array}{r} \rightarrow \boxed{5} \times \boxed{6} / \boxed{3} = 10 \\ \quad \times \quad + \quad \times \\ \rightarrow \boxed{2} \times \boxed{4} \times \boxed{1} < 9 \\ \quad - \quad + \quad \times \\ \rightarrow \boxed{8} + \boxed{9} + \boxed{7} > 23 \\ \quad < \quad = \quad = \\ \quad 3 \quad 19 \quad 21 \\ \text{Key: } 563, 241, 897 \end{array}$$

Not Alone



Jigsaw Loop



Overlap

