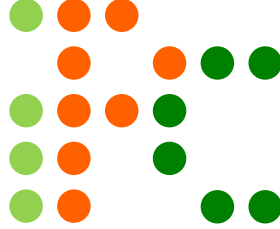


puzzle Ramayan

and



Episode – 5
7th – 14th April 2023

Casual & Word
by
Madhav Sankaranarayanan

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=PR202305>

Discussion Thread : <http://logicmastersindia.com/t/?tid=3155>

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* Arithmetic Square
- 2* Curve Data
- 2* Shortest Distances
- 2* Mastermind
- 2* Easy As Snake
- 3* Word Search
- 2* Word Labyrinth
- 2* Letter Scrabble
- 2* Word Worms
- 2* Word Nurikabe

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 April (but on or before 14th 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.**

Arithmetic Square	4,3,9
Curve Data	2,4
Shortest Distances	3,4
Mastermind	10,6
Easy As Snake	7,3
Word Search	2,5,5
Word Labyrinth	2,5
Scrabble	3,3
Word Worms	5,4
Word Nurikabe	4,7

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. A demonstration for this is shown below.

Original points

04 Araf	50 points	4A	Sum should be 10
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Potential points after 1 incorrect submission

04 Araf	45 / 50	4A	1234
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Potential points after 2 incorrect submissions

04 Araf	35 / 50	4A	23311
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Potential points after 3 incorrect submissions

04 Araf	20 / 50	4A	1111111111
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Potential points after 4 incorrect submissions

04 Araf	0 / 50	4A	541
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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

- **Botaku** 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 a maximum of 11 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.

There are some special notes in the Curve Data section regarding online solving, don't miss them!

1-3 Arithmetic Square

Place each digit from 1 to 9 (1 to 16 in Puzzle 3) into the cells (a different single digit in each cell) so that the indicated equations/relations are correct. Evaluate from left-to-right and top-to-bottom (ignore the usual precedence of the operators). It is possible for expressions and partial expressions to be negative, but not non-integral.

[The puzzles in the contest will be of sizes 3x3, 3x3 and 4x4. This example is 3x3.]

Penpa for example: <https://tinyurl.com/26xfkaxv>

$$\begin{array}{r}
 \text{A} \rightarrow \begin{array}{c} \square \\ \times \\ \square \\ \times \\ \square \end{array} = 504 \\
 \begin{array}{c} \square \\ / \\ \square \end{array} \times \begin{array}{c} \square \\ \times \\ \square \end{array} = 12 \\
 \begin{array}{c} \square \\ - \\ \square \end{array} + \begin{array}{c} \square \\ / \\ \square \end{array} - \begin{array}{c} \square \\ + \\ \square \end{array} = 2 \\
 \begin{array}{ccc} = & = & = \\ 13 & 2 & 20 \end{array}
 \end{array}$$

4 + 3 + 9 points

4-5 Curve Data

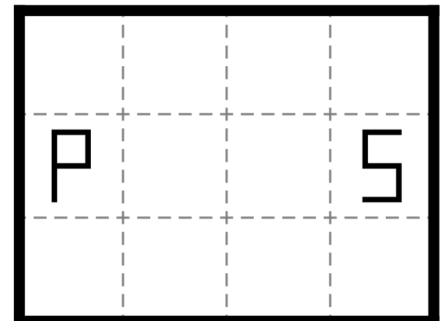
Draw lines between the centers of cells so that each connected figure goes through exactly one clue, and all cells are used by a figure. Clues show how their figures turn and connect with themselves, not allowing rotation or reflection, but do not indicate the lengths of the line segments.

NOTE: The online solving will only contain placeholder clues that depict the location of the clue cells. For the exact clue, please have a copy of the Puzzle Booklet downloaded and handy. The puzzle booklet is password protected and can be downloaded from the top left area. When starting the contest, the password is displayed near the timer.

You may refer to the example link provided below to see an example of the difference in presentation.

[The puzzles in the contest will be of sizes 6x6 and 8x8. This example is 3x4.]

Penpa for example: <https://tinyurl.com/2borsn6r>



2 + 4 points

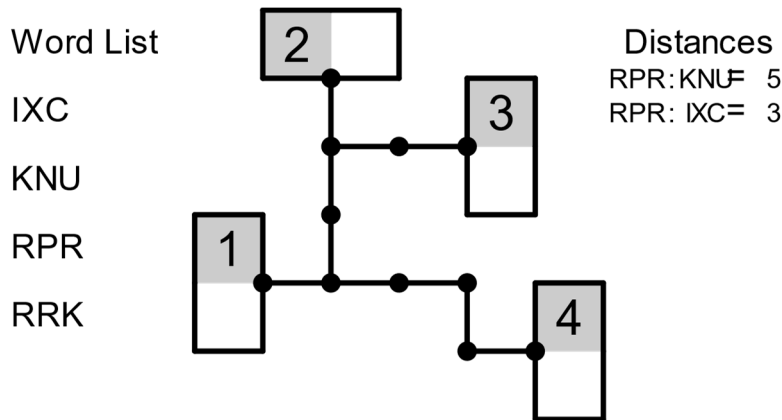
6-7 Shortest Distances

3 + 4 points

Some dots on the map are labelled with boxes. Put the list of given location names onto the boxes, a single different name on each box, such that the provided distances between names are accurate. Distances are measured by the shortest path that follows the black lines between dots; a black line between dots is one unit. Ignore the numbers on the boxes while solving.

[There is no size information available.]

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



8-9 Mastermind

10 + 6 points

Find the secret answer. Some guesses have been given. There are clues next to each guess. A black circle indicates a correct digit in the correct position. A white circle indicates a correct digit in the wrong position. Letters may repeat in the answer key and answer guesses. If a digit appears twice or more in a guess but only once in the answer key, one circle is given. If a digit appears once in the answer guess but more than once in the answer key, one circle is given. In all cases black circles take precedence over white circles.

A	E	I	O	U	●	○	○
A	A	E	E	I	●		
O	O	I	U	I	●	●	○
V	O	W	E	L	●	●	●

--	--	--	--	--

[There is no size information available.]

Penpa for example: <https://tinyurl.com/ycodmjpr>

10-11 Easy As Snake

Locate a word snake (a 1 cell-wide single continuous path) in the grid whose head and tail are unknown. The snake does not touch itself, even diagonally. The snake should contain the letter string given below the grid in the same sequence of letters. Clues outside the grid indicate the first seen letter in that row or column when looking from that direction.

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

Penpa for example: <https://tinyurl.com/258eka2n>

7 + 3 points

S
E
T O
SOLVETHEWORDPUZZLE

12-14 Word Search

2 + 5 + 5 points

Find all the words from the list in the grid of letters. Each words reads in a straight line in any direction: horizontally, vertically or diagonally. Some cells have been left blank and can be filled with exactly one letter each to help find all the words.

[The puzzles in the contest will be of sizes 8x8, 9x9 and 10x10. This example is 5x5.]

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

D			A	N
T	J	E	E	T
D	E	A	N	A
I	L	E	H	A
V	E	E		N

AHELI
DHYAN
GEET
NEAL

15-16 Word Labyrinth

2 + 5 points

Write all the given words into the grid. Each word must be readable following the spiral inwards and all letters of a word must appear in consecutive cells. Different words must be separated by at least one empty cell. Letters cannot appear more than once in any row or column.

Some letters are already given.

[The puzzles in the contest will be of sizes 8x8 and 9x9. This example is 5x5.]

Penpa for example: <https://tinyurl.com/27l23oru>

JEDAN
DVA
TRI
CETIRI

17-18 Letter Scrabble

3 + 3 points

Place all the listed words exactly once in the grid going across (left to right) or down (top to bottom). Each word intersects with at least one other word and all words are interconnected. No words of two or more letters can appear anywhere in the grid, except the ones listed. If a letter is given, all instances of it are given.

Shaded cells cannot contain any letters.

[The puzzles in the contest will be of sizes 6x6 and 8x8. This example is 5x4.]

Penpa for example: <https://tinyurl.com/23k9exco>

MUM
RAM
DORM
MAIM
MEME
MADAM

19-20 Word Worms

5 + 4 points

Place the given list of words in the grid so that there is one letter in each cell and cells that contain the same letter do not share a side with each other (but may touch diagonally). Each word must be placed such that consecutive letters in the word are touching each other by a side. Each cell must be used by exactly one word, and all cells must be used.

Some letters are given. If they are in a circle, they cannot be the start of the word. If they aren't in a circle, they must be the start of the word. All starting letters are given.

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

Penpa for example: <https://tinyurl.com/2yt6tluu>

		N		N	
	S	A			
A					
		O			

↓ B

AKARI

BARNS

SNAKE

NANRO

ONSEN

21-22 Word Nurikabe

4 + 7 points

Place the given words in the grid, so that the words can be read in horizontally and vertically connected cells. Different words can't touch each other horizontally or vertically. The remaining cells must form a single connected shape and can't have any 2x2 areas anywhere. Each word has exactly one letter given in the grid.

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

Penpa for example: <https://tinyurl.com/264lxlq4>

	P			W	
A					
		Z			
B					

WORD

PUZZLES

EXAMPLE

Solutions

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

The keys are given section by section.

Arithmetic Square – For each marked row/column, Enter the numbers before the ‘=’ sign. For 2-digit numbers, enter only the unit’s digit.

Curve Data – For each column from left to right, enter the number of different figures visiting at least one cell.

Shortest Distances – In order from 1 to N, where N is the highest number, enter the first letter of the location in each box.

Mastermind – Enter the secret answer.

Easy As Snake – For each row from top to bottom, enter the second seen letter. If a row has zero letters or one letter, enter 0 for that row.

Word Search – For each column from left to right, enter the number of different words visiting at least one cell.

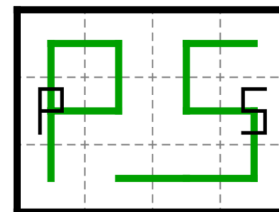
Word Labyrinth, Scrabble, Word Worms, Word Nurikabe – For each marked row/column, enter the letters that appear, in order. Ignore empty/shaded cells along the way. If there are no letters, enter 0.

Arithmetic Square

$$\begin{array}{r} \Rightarrow \boxed{8} \times \boxed{7} \times \boxed{9} = 504 \\ \quad \times \quad + \quad + \\ \boxed{2} / \boxed{1} \times \boxed{6} = 12 \\ \quad - \quad / \quad + \\ \Rightarrow \boxed{3} + \boxed{4} - \boxed{5} = 2 \\ \quad = \quad = \quad = \\ \quad 13 \quad 2 \quad 20 \end{array}$$

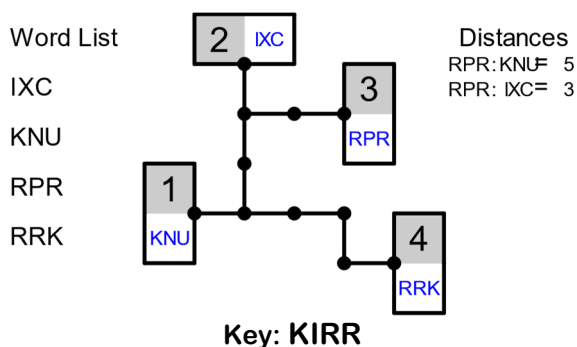
Key: 879, 345

Curve Data



Key: 1211

Shortest Distances



Mastermind

A E I O U ● ○ ○
A A E E I ●
O O I U I ● ● ○
V O W E L ● ● ●

O O W E U

Key: OOWEU

Easy As Snake

L	V	L	O	S		S
O	E					
H	T	H		Z	Z	L
U		E		U		E
P		W		P		
R		O	R	D		

T O

SOLVETHEWORDPUZZLE

Key: L0HUPR

Word Search

↓	↓	↓	↓	↓
D	H	Y	A	N
T	J	E	E	T
D	E	A	N	A
I	L	E	H	A
V	E	E	G	N

3 4 4 4 3

AHELI
DHYAN
GEET
NEAL

Key: 34443

Word Labyrinth

		T	R	I	
				C	D
		I		E	V
→	N	R	I	T	A
	A	D	E	J	

Key: NRITA, RIE

JEDAN
DVA
TRI
CETIRI

Letter Scrabble

↓	M	A	I	M
	A			U
	D	O	R	M
→	A		A	
	M	E	M	E

Key: AA, IRAM

MUM
RAM
DORM
MAIM
MEME
MADAM

Word Worms

	B	O	R	N	A
	A	R	N	S	N
	S	A	K	A	R
→	N	E	N	S	I
	A	K	O	E	N

Key: NENSI, NSASE

AKARI
BARN
SNAKE
NANRO
ONSEN

Word Nurikabe

	P	L		W	O	R
→	M	E				D
	A		Z	Z		
→	X		U	L	E	
	E		P		S	

Key: MED, XULE

WORD
PUZZLES
EXAMPLE