We Are **Puzzlers Club**: Part 1 Instructions Booklet
July 2019 Monthly Puzzle Test on **Logic Masters India**

Puzzle authors and testsolvers:

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Other testsolvers: boboquack, Jack Lance, Jamie Hargrove, phenomist

History

Welcome! We are Puzzlers Club, and this is our contest.

Puzzlers Club is a Discord-based community of puzzle lovers. We officially formed around 1.5 years ago, when a group of puzzle enthusiasts split from another community that was not specifically about puzzles. Over the time, several well-known logic puzzlers have joined our community, including David Millar, Ivan Koswara, Robert Vollmert, and Tawan Sunathvanichkul.

We have contributed for 24-Hour Puzzle Championship in 2018 and 2019, and we want to expand our contribution to logic puzzling into other communities, hence this test. Although several authors have previously written for LMI independently such as David Millar with *FLIP* (November 2010), Ivan Koswara with *Deception* (May 2013), and Robert Vollmert contributing to *Puzzle Marathon* in 2015 and 2016, this is our first LMI contest organized collectively as a group.

Due to the large number of authors that are interested in contributing, we have a lot of puzzles. As such, we have divided the test into two independent parts. This is the first part; the second part will come next month, in August 2019, as a separate contest.

Structure

This contest is divided into many small sections, each featuring a single author. Each author has been given (nearly) free reign to write any set of puzzles they wish, so different sections will likely feature very different styles. However, this is still a regular contest; each puzzle correctly solved will score you the corresponding points, regardless of who the author is.

When you solve a puzzle, submit its answer key. **Instant Grading will be enabled**; upon entering an answer, you will immediately know if it's correct or not, and you may fix it if it's incorrect. After 1, 2, 3, and 4 mistakes on a puzzle, the puzzle's score reduces to 90%, 70%, 40%, and 0% of its original score, respectively. (After 4 mistakes or more, the puzzle is not worth anything. But you still need to solve it to claim the bonus.)

The test lasts for **120 minutes**. If you solve all puzzles, you gain a multiplier to your score, equal to 120 minutes / the time you took. For example, if you solve all puzzles in 100 minutes, you gain a multiplier of 120 minutes / 100 minutes = x1.2 to your final score, equivalent to a +20% bonus.

Points Table

Terminology

Some commonly used terms are ambiguous. For clarity, they are defined here.

Two cells are **"adjacent"** if they share a side. Touching on a corner doesn't count.

Two cells are **"touching"** if they share a corner or a side.

A **"connected region"** of cells only considers adjacency. Two blobs of cells that only touch diagonally are not connected.

A **"loop"** may never intersect or touch itself, unless otherwise stated.

In **answer keys** where you need to enter contents of a row/column: for a row, enter from left to right; for a column, enter from top to bottom. Also, in general, <u>only enter the units digits</u>; if you need to enter a 12, only use the digit 2.

lovemathboy

01. Masyu (20 points)

Draw a loop on the cells of the grid. The loop doesn't need to visit all cells, but it must pass through all cells with circles. On a white circle, the loop must go straight, but it must turn either before or after the circle (or both). On a black circle, the loop must make a turn, but it must go straight both before and after the circle.
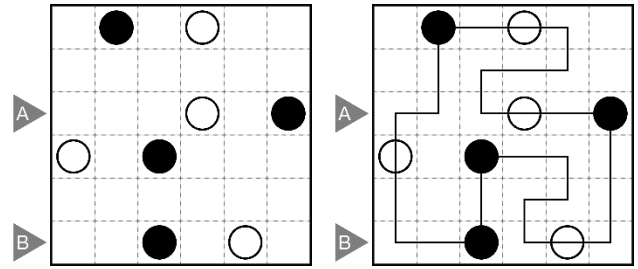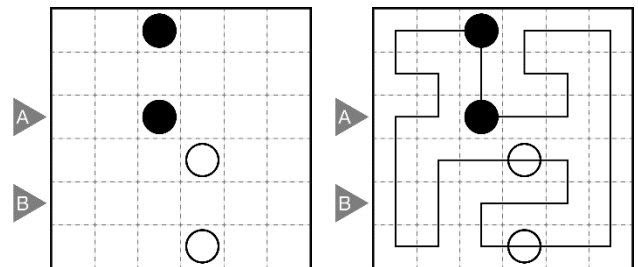
Answer key: Enter the lengths of loop segments in the marked rows/columns. If there is no loop segment in the row/column, enter the single digit 0. **Example:** *13, 22*

02. Masyu [All Cells] (30 points)

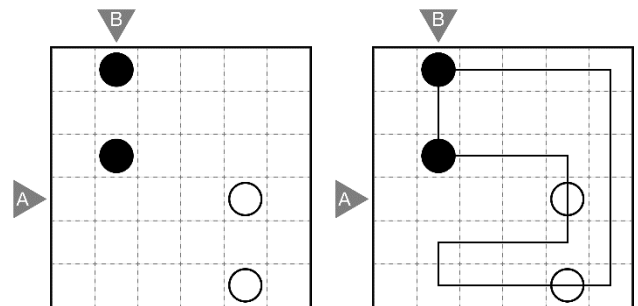Follow regular Masyu rules. In addition, all cells must be visited by the loop.

Answer key: Same as above. **Example:** *12, 2*

03. Masyu [Unequal Lengths] (50 points)

Follow regular Masyu rules. In addition, any two consecutive line segments in the loop must have different lengths.
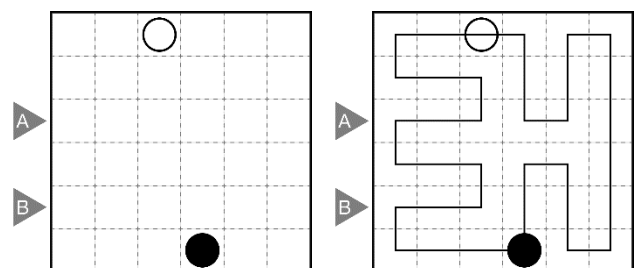
Answer key: Same as above. **Example:** *0, 21*

04. Masyu [AC+UL] (50 points)

Follow regular Masyu rules. In addition, both the All Cells variation and Unequal Lengths variation apply.

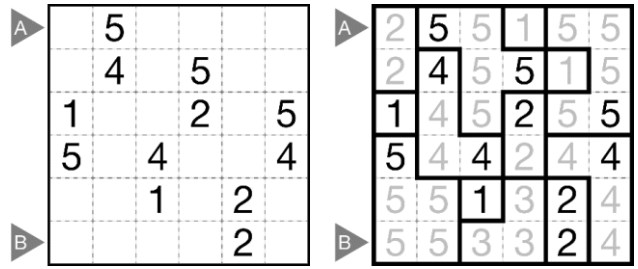*Answer key: Same as above.* **Example:** *21, 2*

edderiofer

05. Fillomino (20 points)

Divide the grid into regions along the gridlines. Two regions with the same area may not be adjacent. Each number indicates the area of the region it's in.

*Answer key: Enter the lengths of cell segments separated by region borders in the marked rows/columns. **Example:** 1212, 2211*

06. Masyu [Total] (40 points)

Follow regular Masyu rules. In addition, all circles have been given; a cell that is empty must not be able to have either kind of circle.

*Answer key: Enter the lengths of loop segments in the marked rows/columns. If there is no loop segment in the row/column, enter the single digit 0. **Example:** 111, 21*
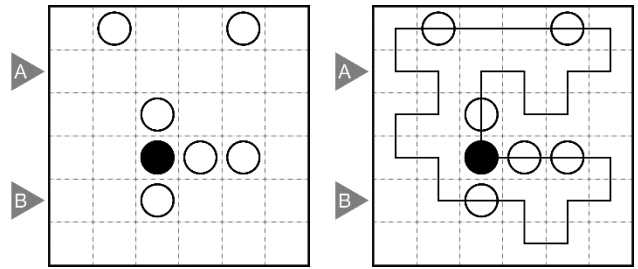
rob (Robert Vollmert)

07. Geradeweg (30 points)

Draw a loop on the cells of the grid. The loop doesn't need to visit all cells, but it must pass through all circled numbers. Each number indicates the length of the line segment covering it. A loop may turn on a number; in that case, both line segments ending on the number have the same length (equal to the number).

*Answer key: Enter the lengths of loop segments in the marked rows/columns. If there is no loop segment in the row/column, enter the single digit 0. **Example:** 12, 1*
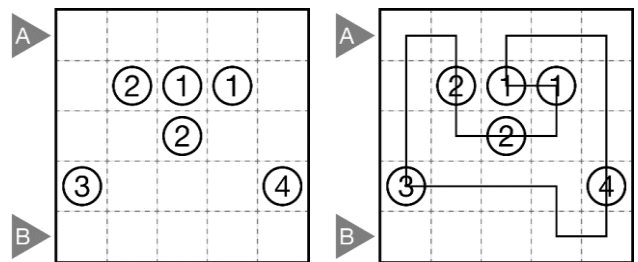
08. Fillomino [Checkered] (70 points)

Divide the grid into regions along the gridlines. Two regions with the same area may not be adjacent. Each number indicates the area of the region it's in. In addition, it must be possible to color the regions with two colors such that no regions with the same color are adjacent.

*Answer key: Enter the lengths of cell segments separated by region borders in the marked rows/columns. **Example:** 211, 112*
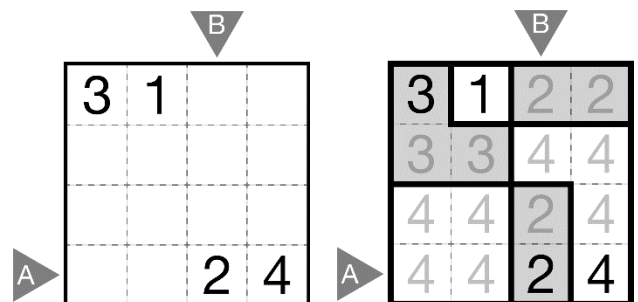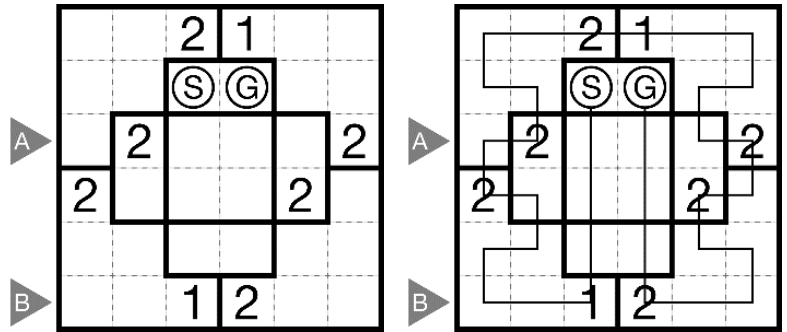
TheGreatEscaper

09. Haisu (30 points)
10. Haisu (50 points)
11. Haisu (50 points)

Draw a path on the cells of the grid, starting from S (start) and ending on G (goal). The path must visit all cells. A number N in a region means that the path passes that cell on the N-th entry into the region. For example, a 2 means the path must pass that cell on its second entry into its region.

Answer key: Enter the lengths of path segments in the marked rows/columns. If there is no path segment in the row/column, enter the single digit 0. **Example:** 11, 22

Elyot (Elyot Grant)

12. Statue Islands (50 points)
13. Statue Islands (60 points)
14. Statue Islands (60 points)

Place each shape from the bank into the grid. Shapes may be rotated and reflected. Shapes may not overlap each other or overlap any given black cell, but they may be adjacent. The remaining white cells must form a connected region. Each number on a black cell gives the size of the black region it's in, treating all cells occupied by shapes as black.
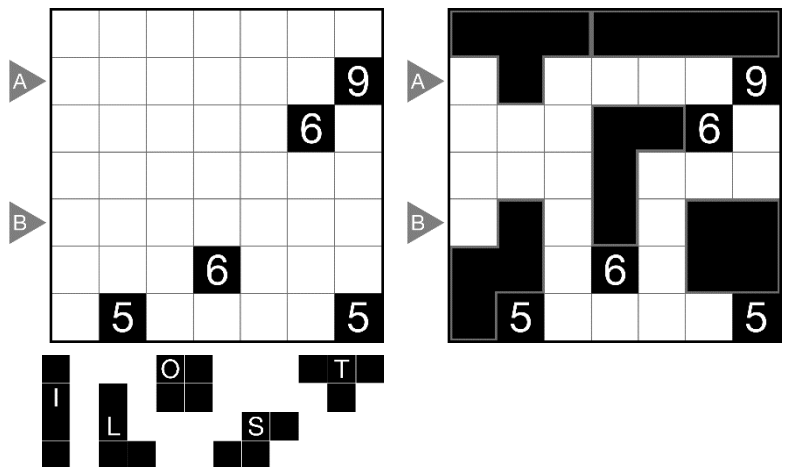
Note: If you are familiar with Statue Park, note that statues may be adjacent. If you are familiar with Nurikabe, note that an island may contain any number of clues, be that zero, one, or many.

Answer key: Enter the cells occupied by shapes in the marked rows/columns, using the letters in the bank. Skip empty cells and numbered cells. If there is no shape in the row/column, enter a single dash (-). **Example:** T, SLOO

ManyPinkHats

The puzzles in this section are concerned with symmetry. A "symmetric pair of cells" is a pair of cells that are opposites with respect to the center of the grid. <u>The center of the grid is marked with a dot.</u>

15. Tapa [Antisymmetric] (30 points)
16. Tapa [Antisymmetric] (90 points)

Shade some cells black. All black squares must form a connected region, but no 2x2 area may be fully shaded. Cells containing numbers may not be shaded. A cell containing numbers indicate the lengths of black segments in the cells touching it. If there are multiple black segments, there is at least one white cell separating them. As a special case, a cell containing 0 means there is no black cell touching it. A question mark (?) stands for an unknown, <u>nonzero</u> number.

In addition, the solution is antisymmetric: for each symmetric pair of cells, exactly one of them is shaded black.

Answer key: *Enter the lengths of black segments in the marked rows/columns. If there is no black cell in the row/column, enter the single digit 0.* ***Example:*** *11, 11*
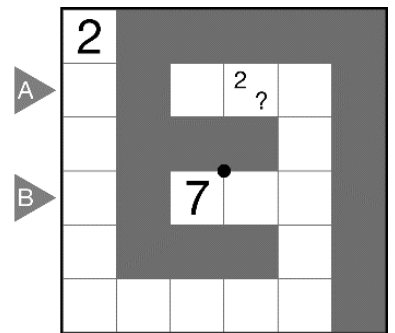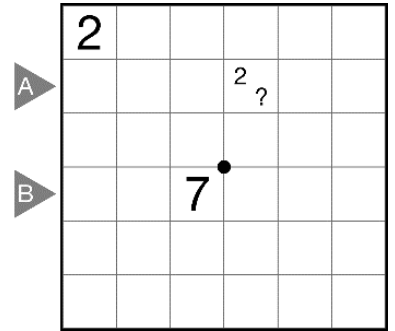
17. Masyu [Antisymmetric Pairs] (50 points)
18. Masyu [Antisymmetric Pairs] (50 points)

Draw a loop on the cells of the grid. The loop doesn't need to visit all cells, but it must pass through all cells with circles. On a white circle, the loop must go straight, but it must turn either before or after the circle (or both). On a black circle, the loop must make a turn, but it must go straight both before and after the circle.

In addition, for each symmetric pair of gray circles, one of them acts like a black circle and the other acts like a white circle.
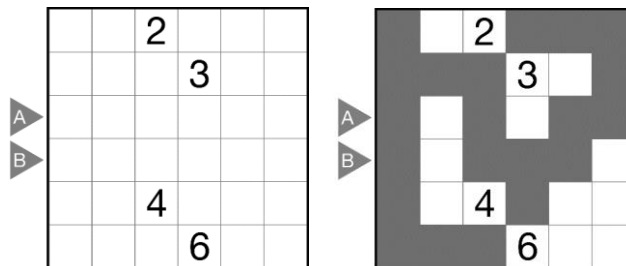
Answer key: *Enter the lengths of loop segments in the marked rows/columns. If there is no loop segment in the row/column, enter the single digit 0.* ***Example:*** *2, 31*
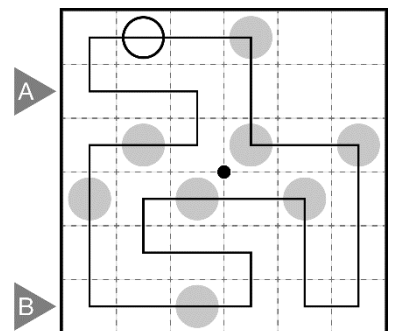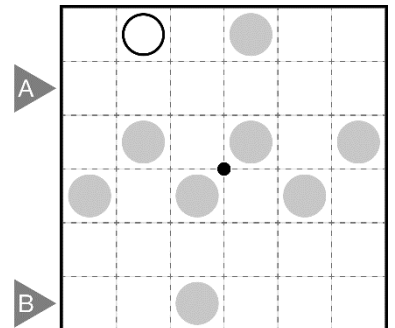
chaotic_iak (Ivan Koswara)

19. Nurikabe (20 points)

Shade some cells black. All black squares must form a connected region, but no 2x2 area may be fully shaded. Cells containing numbers may not be shaded. Each white region has exactly one number that describes its area.

Answer key: Enter the lengths of black segments in the marked rows/columns. If there is no black cell in the row/column, enter the single digit 0. ***Example:*** *112, 13*

20. Fillomino (30 points)

Divide the grid into regions along the gridlines. Two regions with the same area may not be adjacent. Each number indicates the area of the region it's in.
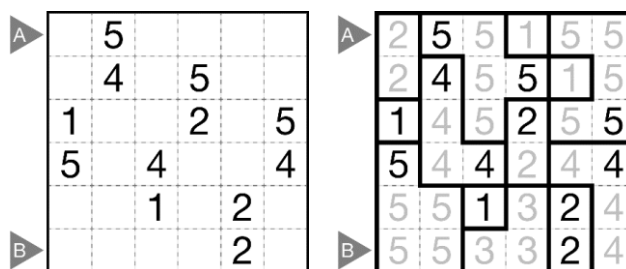
Answer key: Enter the lengths of cell segments separated by region borders in the marked rows/columns. ***Example:*** *1212, 2211*

21. Poset Futoshiki (120 points)

Put the given numbers into the grid such that each number appears exactly once in each row/column. If there is an arrow in the grid from a cell with number X to a cell with number Y, that means it's possible to trace a path from X to Y in the accompanying diagram, following one or more arrows. Not all arrows are necessarily given.
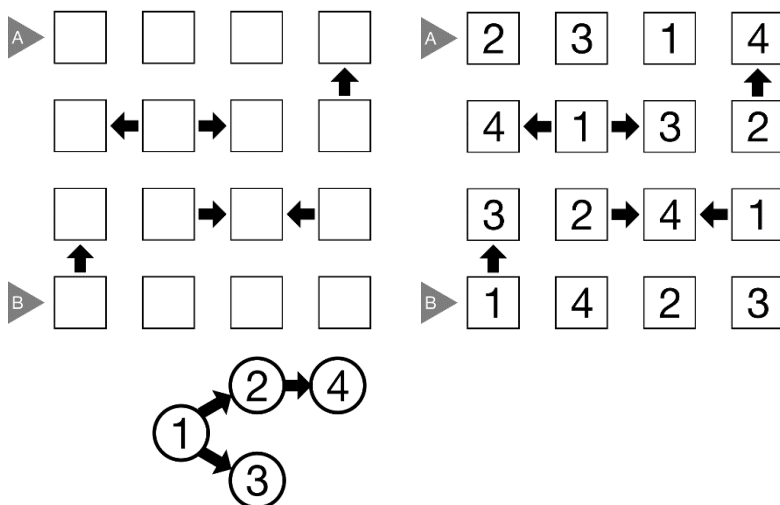
Note: A poset (partially ordered set) is a mathematical concept for a collection of objects, where some but not necessarily all pairs of objects are comparable. Knowledge of this concept is not necessary; all necessary information are given in the above rules.

Answer key: Enter the contents of the marked rows/columns. Only enter the numbers; do not enter the arrows. ***Example:*** *2314, 1423*

Miscellaneous Information

Geradeweg is an uncommon, but existing genre. It appeared recently on LMI in *Puzzle Ramayan 2019 – Shading & Loops* (http://logicmastersindia.com/lmitests/?test=PR201902) under the name Straight Loop.

Haisu is TheGreatEscaper's original creation, first published in January 2017 on Puzzling StackExchange (https://puzzling.stackexchange.com/questions/48029/) with an additional clue type. There have been several such puzzles (https://puzzling.stackexchange.com/search?q=haisu). It also recently appeared in 19th 24-Hour Puzzle Championship. This version of Haisu, where only one kind of clue appears, is new; TheGreatEscaper believes this kind of clue is already rich enough to present interesting puzzles.

Statue Islands is Elyot's original creation, inspired by the genre Statue Park, and has never appeared elsewhere before.

Poset Futoshiki is Ivan's original creation, inspired by the genre Futoshiki.
It was first published in March 2016 on LMI in *NEW, HUGE, AND CHALLENGING!* (http://logicmastersindia.com/lmitests/?test=M201603F), and later in *Puzzle Marathon 2016* (http://logicmastersindia.com/2016/04P/).