Indian Puzzle Championship 2011

Online Qualification Round

24-Apr-2011

http://logicmastersindia.com/IPC2011/onlineQ.asp

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	Total	**200**

Timing

- 60 minutes
- Online round will start at 24-Apr-2011 14:00 IST.
- Answers will not be accepted after 24-Apr-2011 15:30 IST.

Notes

- There is no provision to solve the puzzle online. Each puzzle has one or two answer keys. After solving the puzzle on paper, you have to enter the answer key(s) in the submission site.
- Points are generally indicative of the difficulty of the puzzle and time required to solve it. However, your personal experience and preference might differ.

How to participate

- Participants must be a registered member at http://logicmastersindia.com (LMI)
- Download the password protected puzzle booklet (which will be uploaded on 24-Apr-2011 morning Indian time)
- After Online Round starts, login at the submission page using your LMI userid and password (and fill country)
- Click on "Start Online Round". At this time, password for pdf will be shown
- Open and print the pdf using the password
- Solve on paper and submit using the Submission form.

Results

- Results will be published at LMI site on or before 26-Apr-2011 (Tuesday)
- External help of any kind is not allowed. LMI reserves the right to withhold results of participants, if we feel unfair means have been used to achieve the results.
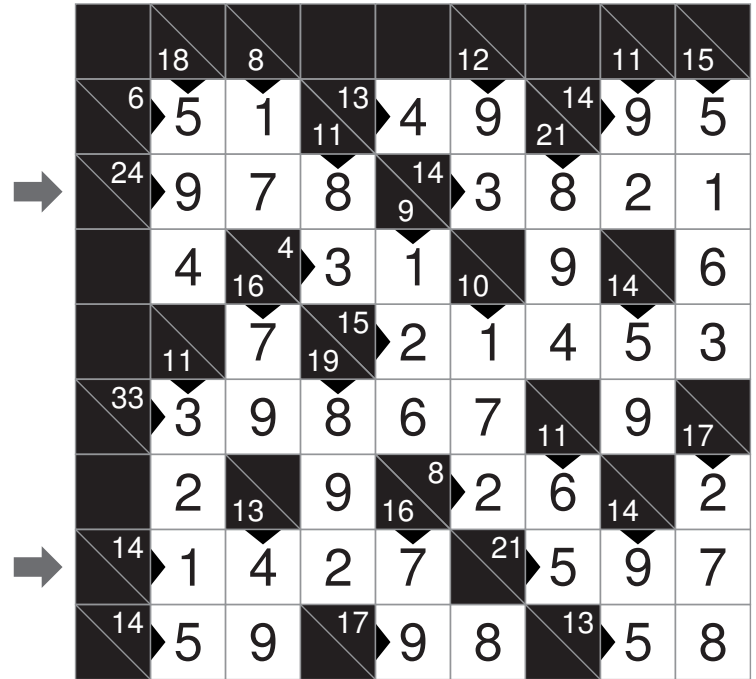
Kakuro

Place one digit from 1 to 9 in each empty square so that the sum of the digits in each set of consecutive white squares (horizontal or vertical) is the number appearing to the left of a set or above the set. No number may appear more than once in any set of consecutive white squares.
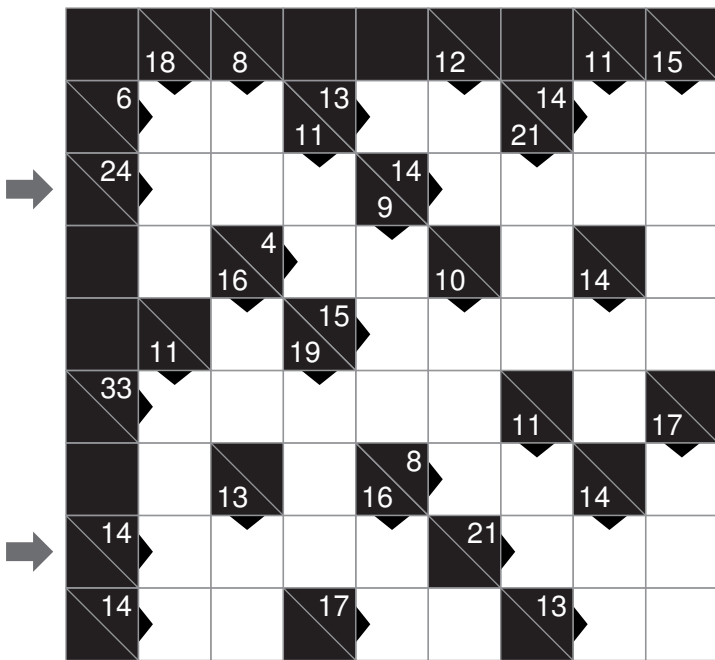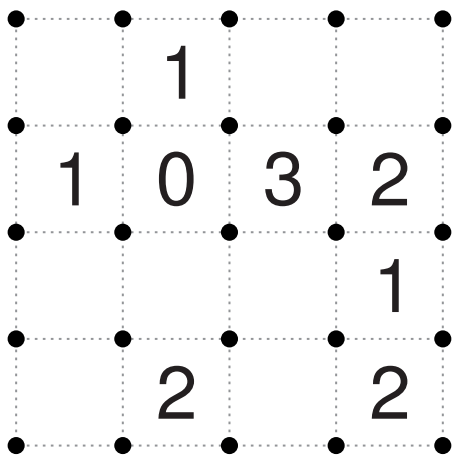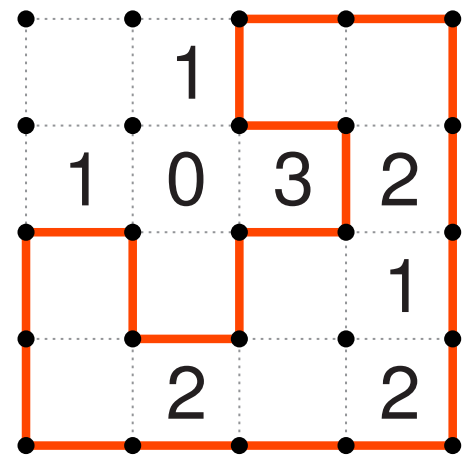
Answer Key: Enter the digits along the marked rows (e.g. 9783821, 1427597)

Fence

Draw a single continuous loop along the dotted vertical or horizontal line segments. Crossovers or branches are not allowed. Digits given inside the cell indicate the count of line segments surrounding that cell.

Answer Key: Starting from the top row, enter the number of cells 'outside the loop' in each row (e.g. 2310)

Hitori

Black out some of the digits in the grid so that each row and each column contains distinct digits. Black cells must not touch each other horizontally or vertically. It must be possible to visit any white cell from another white cell using horizontal or vertical paths.

4	5	9	3	2
1	9	9	2	2
7	2	9	1	4
7	3	2	5	3
2	1	5	4	5

E X A M P L E

4	5	**9**	3	2
1	**9**	9	2	**2**
7	2	**9**	1	4
7	3	2	5	**3**
2	1	**5**	4	5

Answer Key: Starting from the top row, enter the number of 'shaded cells' in each row (e.g. 12121)

Mastermind

Find out the correct series of numbers with the help of the information given by the black and white markers. Black markers indicate correct numbers in the right position, while the white ones mark correct numbers in the wrong place. Each number can occur only once in the solution and digit '0' is not used.

```
9 8 1 3  ●●
4 5 6 7  ○
2 8 9 5  ●●●○
─────────
         ●●●●●●
```

E X A M P L E

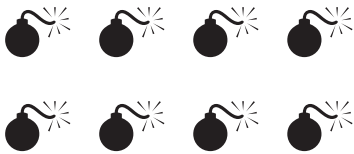```
9 8 1 3 ●●
4 5 6 7 ○
2 8 9 5 ●●●○
─────────
2 8 5 3 ●●●●
```

Answer Key: Enter the number (e.g. 2853)

# Minesweeper

Place the given number of mines into empty cells in the grid such that the numbers in the grid represent the number of mines in the neighboring cells, including diagonal ones.

| | 3 | | | 1 |
|---|---|---|---|---|
| 1 | | | 3 | 1 |
| 1 | | | 4 | 2 |
| 1 | 2 | | | |
| 1 | | | | 2 |

**E X A M P L E**

| | 3 | 💣 | 💣 | 1 |
|---|---|---|---|---|
| 1 | 💣 | 💣 | 3 | 1 |
| 1 | | | 4 | 2 |
| 1 | 2 | 💣 | 💣 | 💣 |
| 1 | 💣 | | | 2 |

💣 💣 💣 💣

💣 💣 💣 💣

Answer Key: Starting from the top row, enter the number of mines in each row (e.g. 22031)

# Paint-By-Number

Blacken some of the cells to find out the hidden figure. The numbers on the sides of the grid give the number of black cells in each black stretch in a certain row or column. The black regions are separated by one or more empty cells.
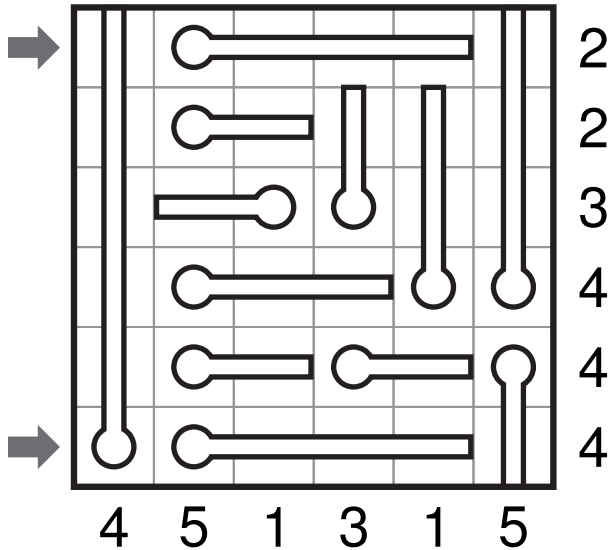
**E X A M P L E**

Answer Key: Describe the top-left to bottom-right diagonal, 1 for black cell, 0 for white cell (e.g. 1110)

# Thermometer

The thermometers in the grid all have their own level of mercury, which always flows from rounded end towards the other end. Thermometers may be empty, partially or completely full. Numbers around the grid indicate the numbers of cells in the corresponding row / column that contain mercury.



EXAMPLE
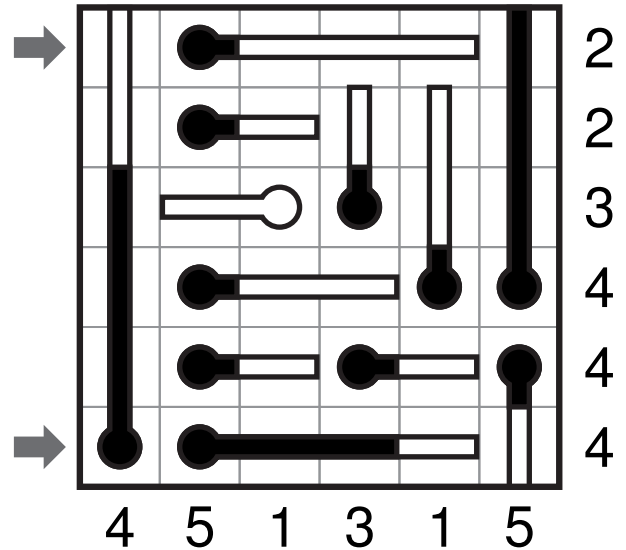
Describe the marked rows, 1 if filled with mercury, 0 if not (e.g. 010001,111100)

# Word-Search

5 of the 8 words in the list have been placed in the grid. Find the words in the list which have not been placed in the grid.



EXAMPLE

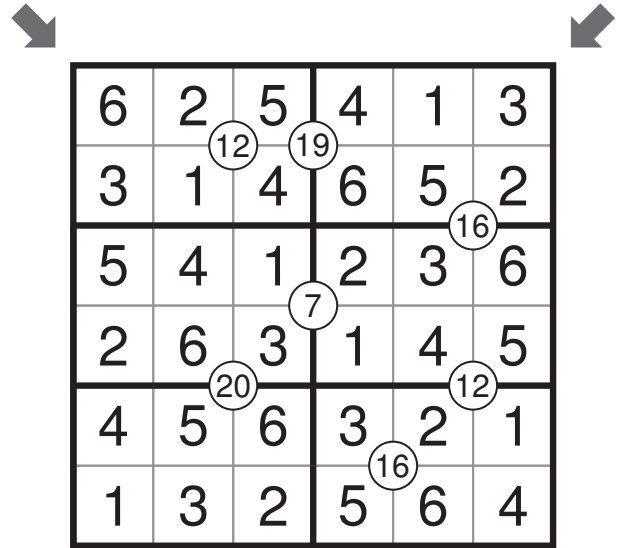| AKARI | SNAIL |
| ARROW | SNAKE |
| HASHI | TENTS |
| MASYU | VISTA |

Missing Words
SNAIL
SNAKE
VISTA

Answer Key: Enter the missing words, sorted alphabetically, and separated by comma (e.g. SNAIL, SNAKE, VISTA)

# Group Sum Sudoku

Fill in the grid such that every row, every column and every 2x3 box contains the numbers 1 to 6. The number in the circle represents the sum of the digits surrounding it.
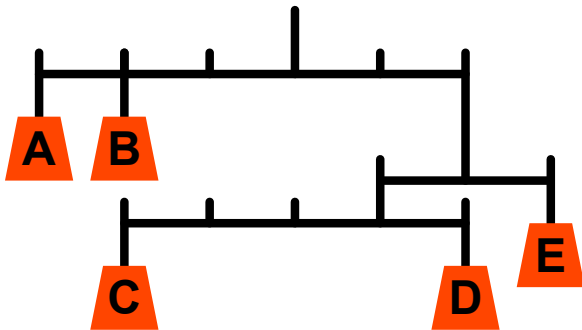
| | | 12 | 19 | | |
|---|---|---|---|---|---|
| | | | | 16 | |
| | | 7 | | | |
| 20 | | | | 12 | |
| | | 16 | | | |

| 6 | 2 | 5 (12) | (19) | 4 | 1 | 3 |
|---|---|---|---|---|---|---|
| 3 | 1 | 4 | 6 | 5 (16) | 2 |
| 5 | 4 | 1 | 2 (7) | 3 | 6 |
| 2 | 6 | 3 | 1 | 4 (12) | 5 |
| 4 | 5 (20) | 6 | 3 (16) | 2 | 1 |
| 1 | 3 | 2 | 5 | 6 | 4 |

Answer Key: Enter the digits of diagonals. (e.g.611124,352351)

# Weights

Assign digits from 1 to n to each weight, where n is the number of weights. The horizontal rod indicates that there is equal torque on both sides. The torque of each weight is its weight times its distance from fulcrum. Assume that the strings and rods have negligible weight.
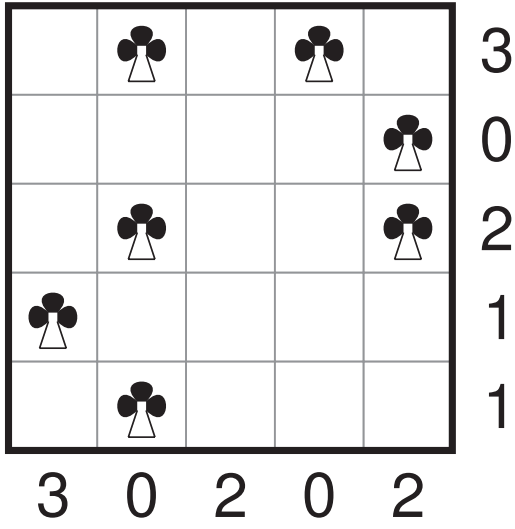
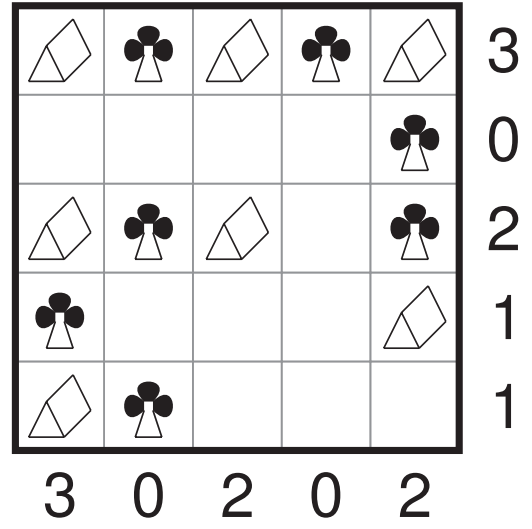Weights diagram with weights labeled A, B, C, D, E and example with 2, 5, 1, 3, 4.
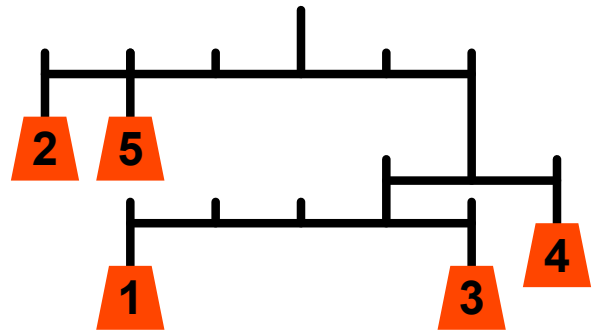
Answer Key : Enter the digits in the pans as per the alphabet position ABCDE.. (e.g. 25134)

# Tents

Place one tent horizontally or vertically next to each tree. Tents do not touch each other, not even diagonally. The numbers outside the grid indicate the number of tents in that row or column.
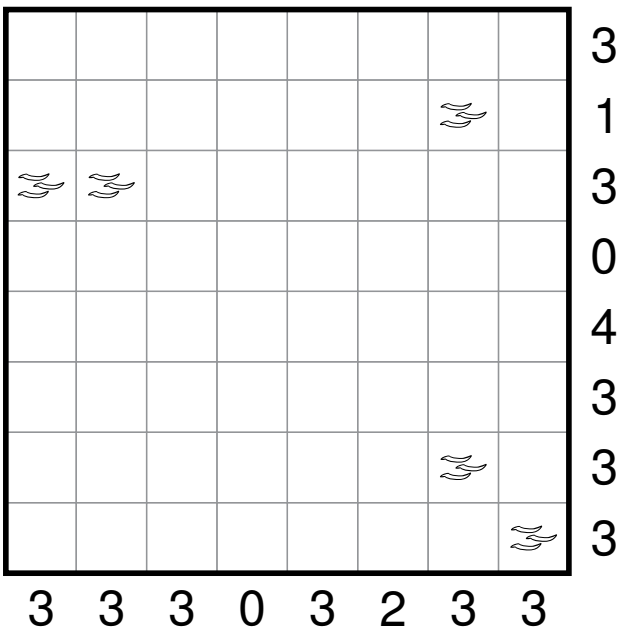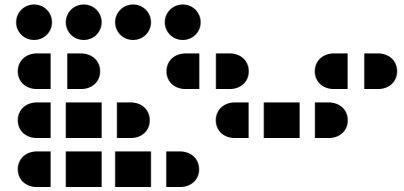
E X A M P L E

Answer Key: Enter the number of tents attached horizontally to trees. (e.g. 4)

# Battleships

Locate the position of the 10-ship fleet in the grid. The shapes of the ships are shown. There is one 4x1 battleship, two 3x1 cruisers, three 2x1 destroyers and four 1x1 submarines. The numbers beside the grid indicate the number of cells occupied by ships in each row, while the numbers below the grid indicate the number of occupied cells in each column. Ships cannot touch each other, not even diagonally. Some cells are known to be water and are indicated by waves.
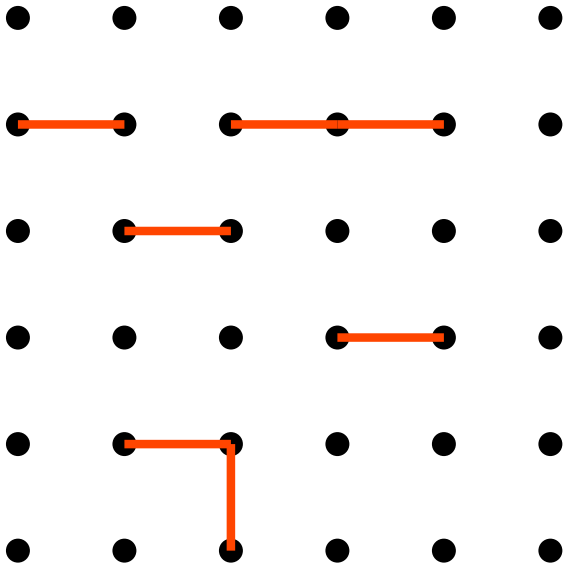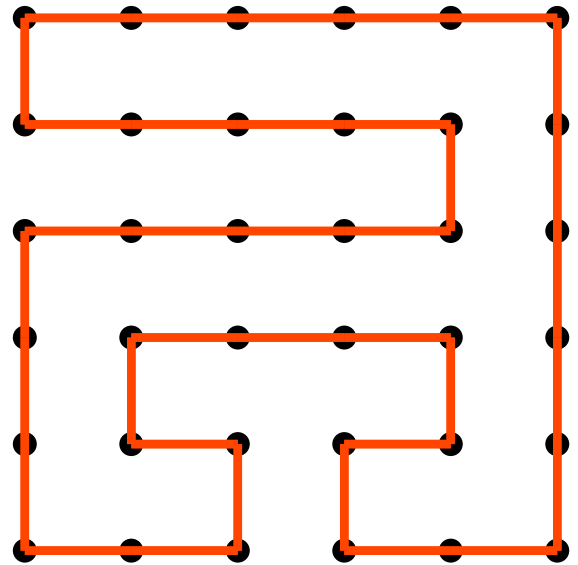
E X A M P L E
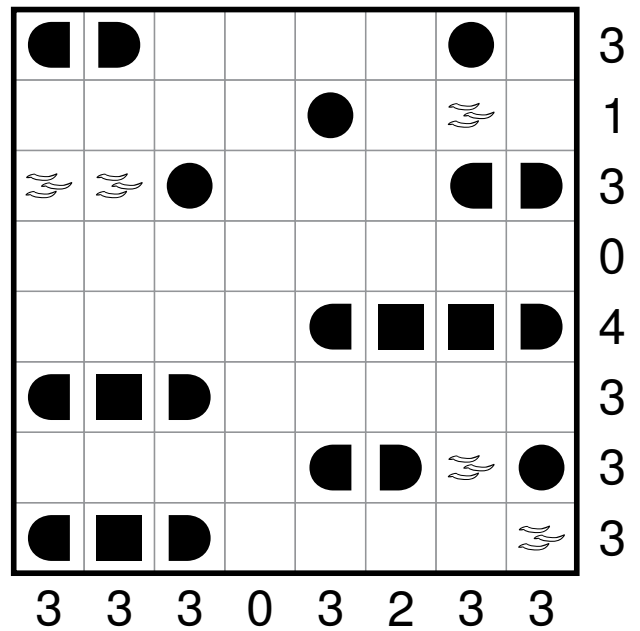
Answer Key: Describe the top-left to bottom-right diagonal, 1 if battleship, 0 if no battleship (e.g. 101010000)

# Simple Loop Finder

Draw a single continuous loop that visits all dots. The loop has only horizontal and vertical line segments. Some line segments are already drawn.

E
X
A
M
P
L
E

Answer Key: Starting from the top row, enter the number of cells 'outside the loop' in each row (e.g. 04031)

# Magnets

The grid is made up of magnetic and non-magnetic plates. Each magnetic plate has 2 halves: one positive (+) and one negative (-). Halves with the same polarity cannot touch each other vertically or horizontally. The digits outside the grid indicate the number of magnetic halves with a particular polarity in each row/column.

|   |   |   |   | 1 | 1 |
|---|---|---|---|---|---|
|   |   |   |   | 1 | 1 |
|   |   |   |   | 1 | 2 |
|   |   |   |   | 2 | 1 |
| 1 | 1 | 1 | 2 | + |   |
| 2 | 0 | 2 | 1 |   | - |

E
X
A
M
P
L
E

| - | + |   |   | 1 | 1 |
|---|---|---|---|---|---|
|   |   | - | + | 1 | 1 |
| - |   | + | - | 1 | 2 |
| + |   | - | + | 2 | 1 |
| 1 | 1 | 1 | 2 | + |   |
| 2 | 0 | 2 | 1 |   | - |

Answer Key: Describe the top-left to bottom-right diagonal, use 0 if no magnet (e.g. -0++)

# Water Fun

Fill water in some parts of the grid. The numbers below or next to the grid indicate how many squares of each row or column must be filled with water. Connected areas of filled cells must have same surface height everywhere – even if the surface is not connected, like in a U-shaped tube.
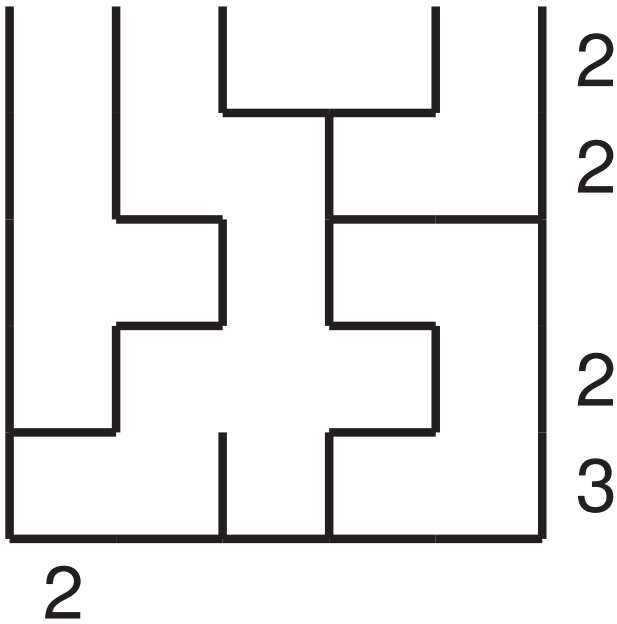


EXAMPLE
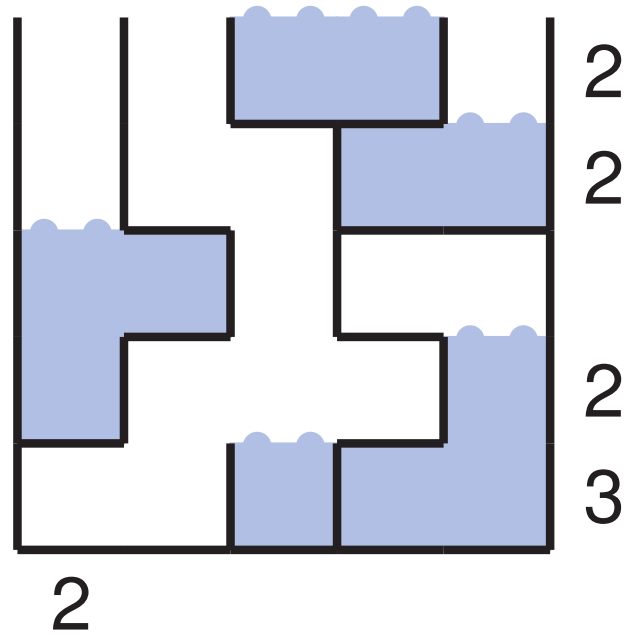
Answer Key: Describe the top-left to bottom-right diagonal, 1 if water, 0 if no water (e.g. 00001)

Note: The puzzles in the Puzzle Booklet will be sorted in ascending order of points