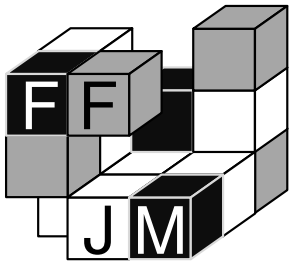
# French Puzzle Championship

## Finals – Round 3
## 29 June 2019




**Fédération Française des Jeux Mathématiques**

**Name :** _____ **First Name :** _____

## Round 3 – Four in one – 45 minutes

1. **Yajilin+Striped Snake+Simple Loop+Masyu** **4*25**
2. **Nurikabe+Skyscrapers+Tents+Minesweeper** **4*25**
3. **Hitori+Battleships+Spiral End View+Equal Cut** **4*45**

**Total: 380 points + bonus (10 pts/minute)**

Author: Denis Auroux

| French Puzzle Championship 2019 | Round 3 | | |
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## 1. Yajilin+Striped Snake+Simple Loop+Masyu (4*25 points)

Draw a single closed loop consisting of horizontal and vertical line segments connecting the centers of adjacent squares of the grid. The loop must not cross or overlap itself. The portion of the loop which lies inside each of the four smaller grids consists of a single connected path. *Each grid separately may have more than one solution. Credit will only be given for the unique solution consistent with the other grids.* Specific rules for each grid:

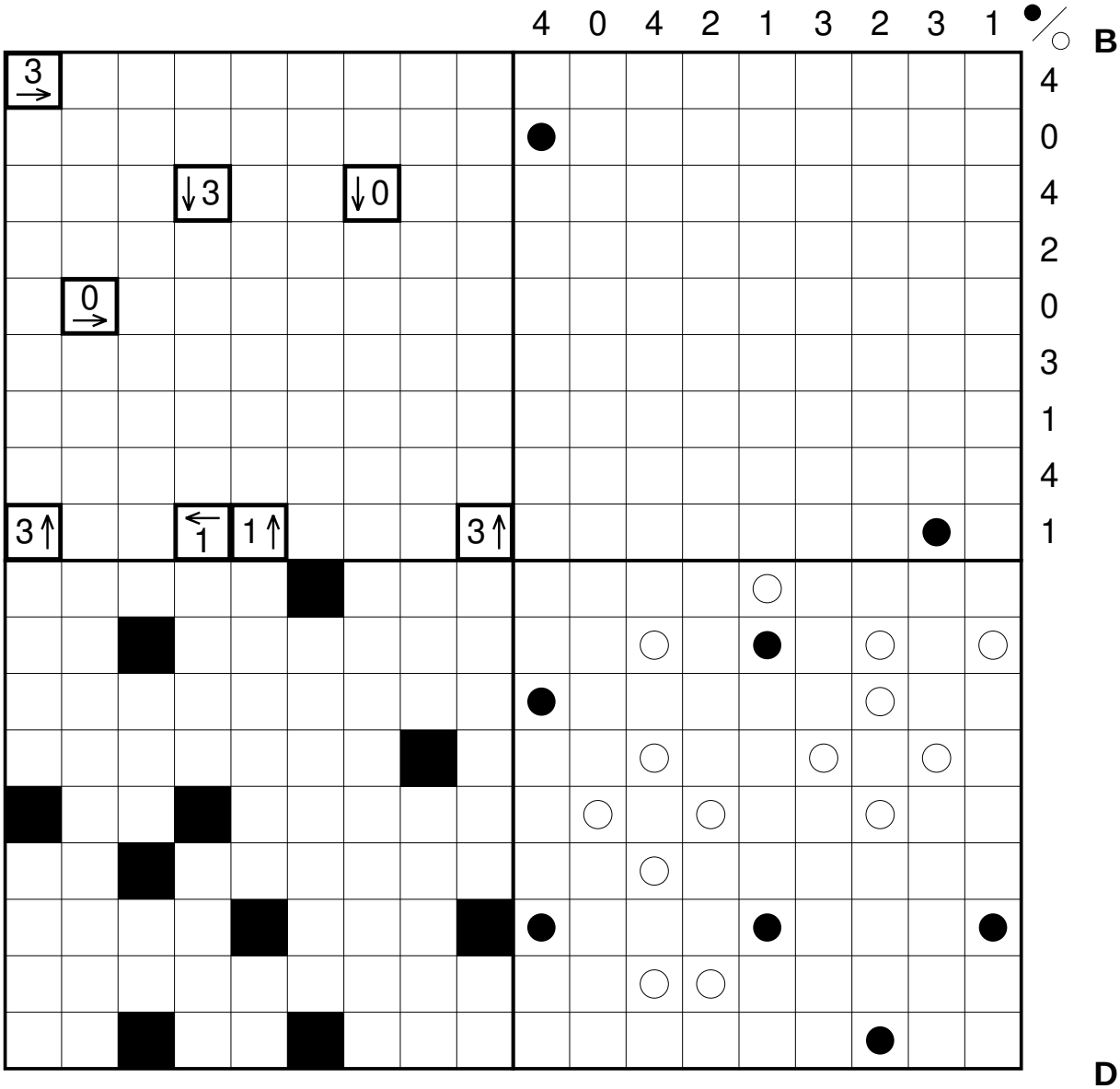
**A:** Shade some cells black, and draw a path that passes through all remaining empty squares of the grid. Each clue indicates the number of black cells in the direction pointed by the arrow; cells with clues cannot be shaded black, and black cells may not touch each other by an edge.

**B:** Draw a snake consisting of an alternating sequence of black and white circles, each occupying one square of the grid. The two extremities of the snake are given. The path of the snake cannot touch itself, not even diagonally. The clues above the grid indicate the number of black circles in each column, while the clues to the right of the grid indicate the number of white circles in each row.

**C:** Draw a path that passes through all white squares in the grid.

**D:** Draw a path that passes through every circle. When passing through a black circle, the path must make a $90^{o}$ turn and extend at least two squares in both directions. When passing through a white circle, the path must go straight and make a $90^{o}$ turn in at least one of the adjacent squares. (The squares adjacent to the circle along the path must also lie inside grid D).

A



| French Puzzle Championship 2019 | Round 3 | | |
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## 2. Nurikabe+Skyscrapers+Tents+Minesweeper (4*25 points)

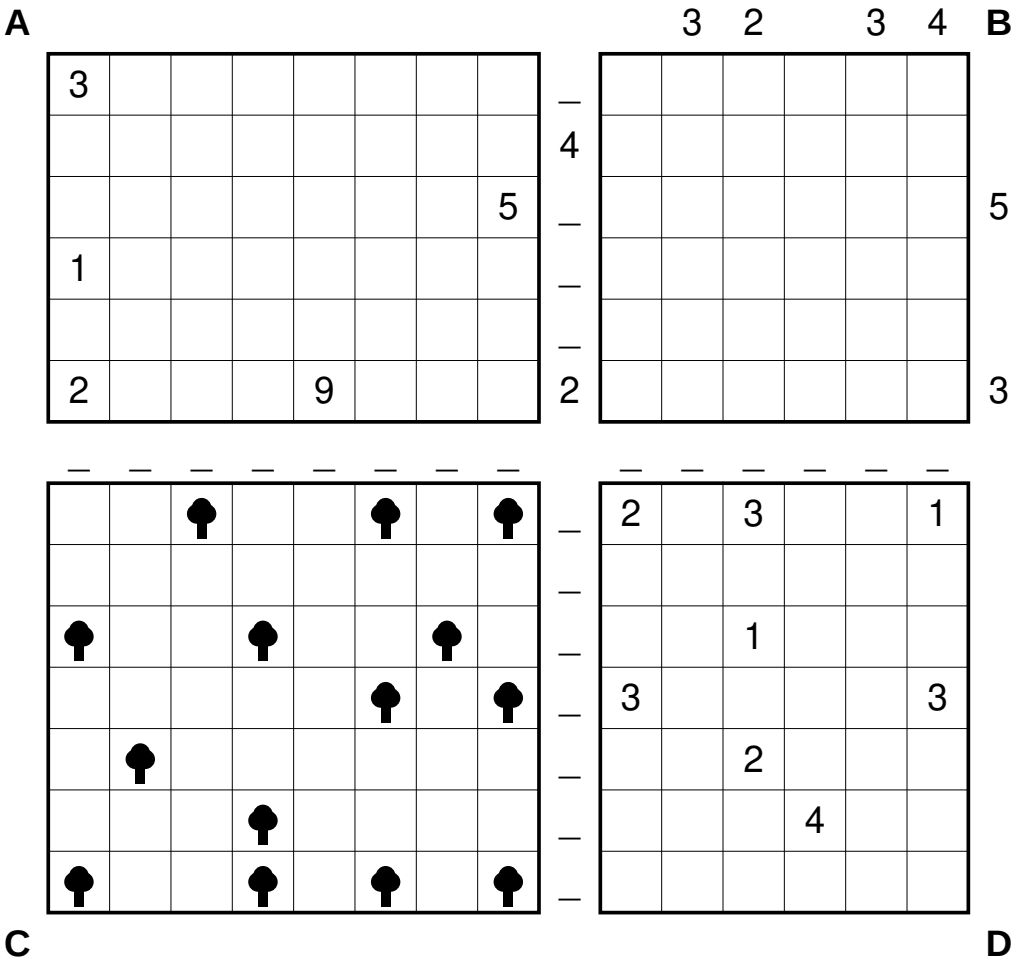
Fill in the four grids so that, when two rows or columns are facing each other in adjacent grids, the value of the clue that belongs in the margin between the two grids (whether given or not) must always be the same for both grids. *Each grid separately may have more than one solution. Credit will only be given for the unique solution consistent with the other grids.*

**A:** Shade some empty cells black so that the grid is divided into white areas (islands), separated by blackened cells which are linked together to form a continuous sea. Each island should contain exactly one of the given numbers, which is equal to its area. The islands may touch each other only diagonally. The sea cannot form any 2x2 square. *The numbers outside the grid indicate the number of blocks of consecutive black cells present in the corresponding row or column.*

**B:** The grid represents a group of skyscrapers. Each row and column contains skyscrapers of different heights from 1 to 6. *The numbers outside the grid indicate how many skyscrapers are visible from that direction* (a building located behind a taller one in the same row is completely hidden).

**C:** Place tents in the grid, so that each tree is connected to exactly one tent, found in a horizontally or vertically adjacent square. Tents do not touch each other, not even diagonally. *The numbers outside the grid give the total number of tents in each row or column.*

**D:** Mines are hidden in the diagram, at most one per square. The numbers inside the diagram indicate the number of mines that can be found in the squares immediately adjacent to that square (horizontally, vertically, or diagonally). Squares with a number do not contain mines. *The numbers outside the grid give the number of mines in each row or column.*



| French Puzzle Championship 2019 | Round 3 | | |
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## 3. Hitori+Battleships+Spiral End View+Equal Cut (4*45 points)

Fill in the four grids so that, when two rows or columns are facing each other in adjacent grids, the value of the clue that belongs in the margin between the two grids (whether given or not) must always be the same for both grids. *Each grid separately may have more than one solution. Credit will only be given for the unique solution consistent with the other grids.*

**A:** Black out some of the numbers in the grid so that each row and each column contains only different digits. Black squares must not touch horizontally or vertically, and the remaining squares must all be connected to each other. *The numbers outside the grid indicate the number of black squares in each row or column.*

**B:** Place the given fleet (shown in the margin) into the grid. Each segment of a ship occupies a single cell. Ships are oriented either horizontally or vertically, and they do not touch each other, not even diagonally. *The numbers outside the grid reveal the total number of ship segments that appear in each row or column.*

**C:** Place digits 1, 2 and 3 into the grid in such a way that each digit appears exactly once in each row and column. Going along the highlighted path from the edge of the grid to its center, one should read in order: 1, 2, 3, 1, 2, 3, etc. *The clues outside the grid indicate the first digit seen from that direction in the corresponding row or column.*

**D:** Split the grid into regions of equal areas. *The numbers outside the grid indicate the distance from the edge of the grid to the first boundary encountered from that direction.*