I Made Some Paper Puzzles

...and since you're reading this, you might want to see them(?)

Part II

By Arvi Teikari

Version 1.0c

Table of contents:

○ = Idea not at all by me

★ = I especially like this and/or it has received positive comments

✕ = Probably weak

\+ = Has been implemented on pzprxs, puzz.link and/or Puzzle Square

*(credit to **X_Sheep** for puzz.link implementations. Thank you!)*

\+ = Has been implemented in the Kudamono puzzle editor

*(credit for both the editor & the implementation goes to **Pedro**. Thank you!)*

Hiking Track

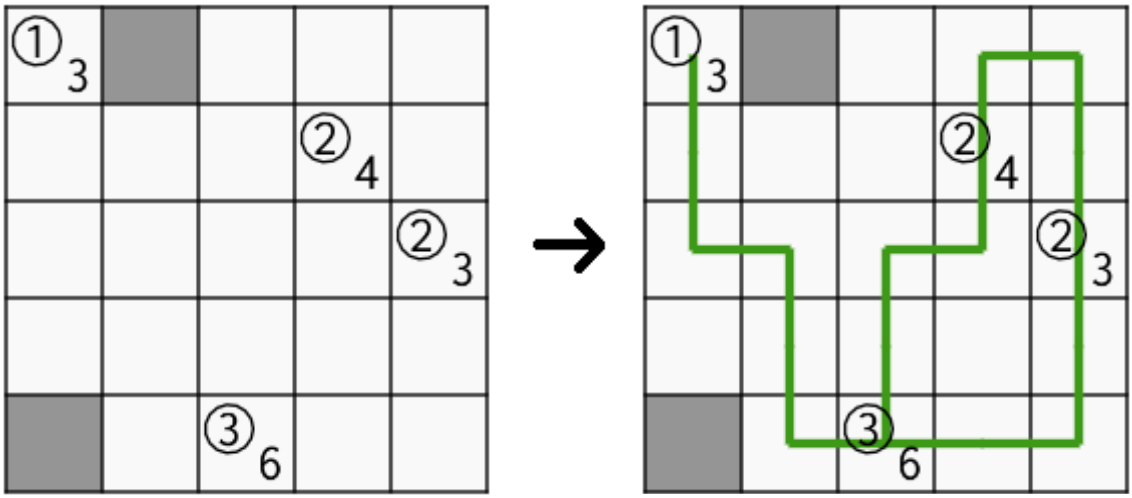
12/2020

This came to be quite suddenly after some pondering about turns in line puzzles. The main sources of inspiration were the puzzle types Hotaru Beam and Amibo, although later on I saw Ichimaga and noted that it was even closer to this type. People have seemed to like this genre!

Kudamono: https://pedros.works/kudamono/pages/hiking-track.html

Rules:

- Draw lines between cells with clues so that they form a fully interconnected network.
- Lines may not intersect or branch outside of the clue cells.
- The clue cells have two numbers as clues, a circled one and an uncircled one:
  - The circled number indicates how many lines leave from the clue cell (so the maximum value for this clue is 4).
  - The uncircled number indicates the total amount of 90-degree turns the lines leaving from the clue cell do. Clue cells that share a line will both count the turns done by the line in their totals.
- The lines may not go over greyed-out cells.
- There may not be more than one line shared by two clue cells.
- A line may not loop back to the clue cell it came from.



Hiking Track puzzles

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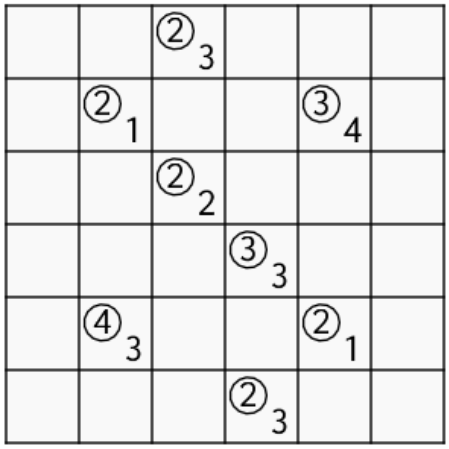

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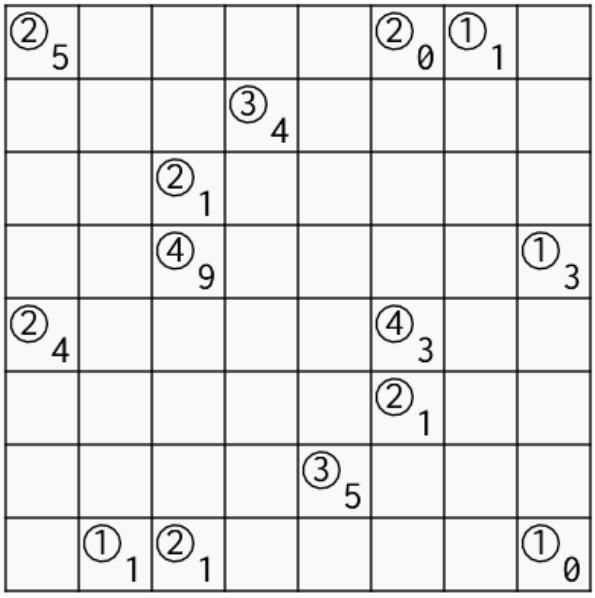

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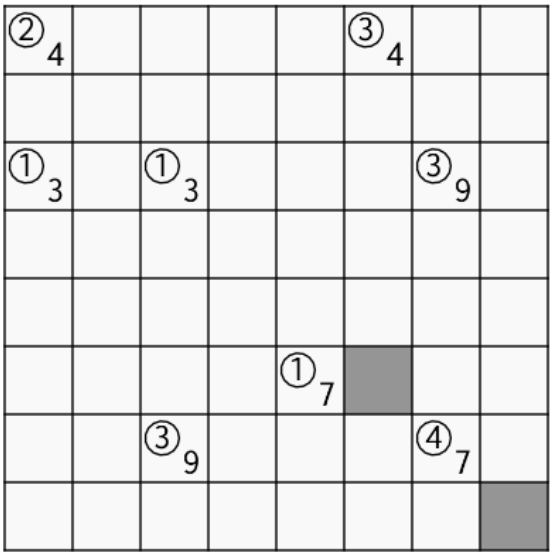

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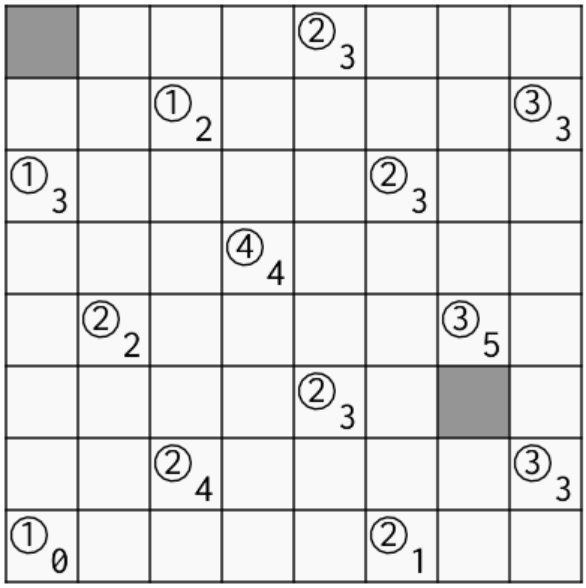

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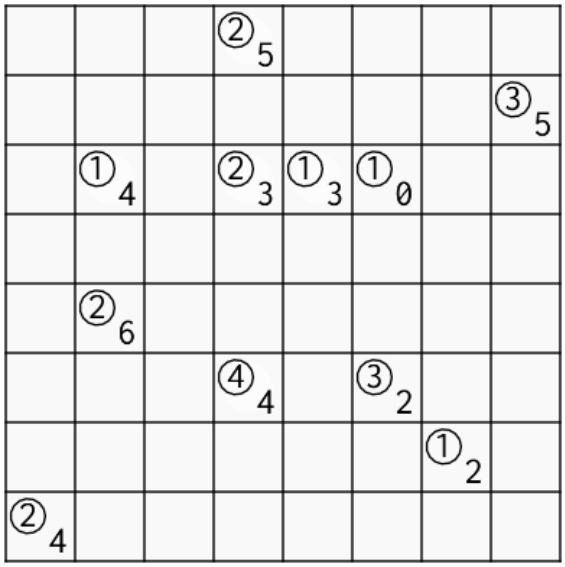


Mountain Climber

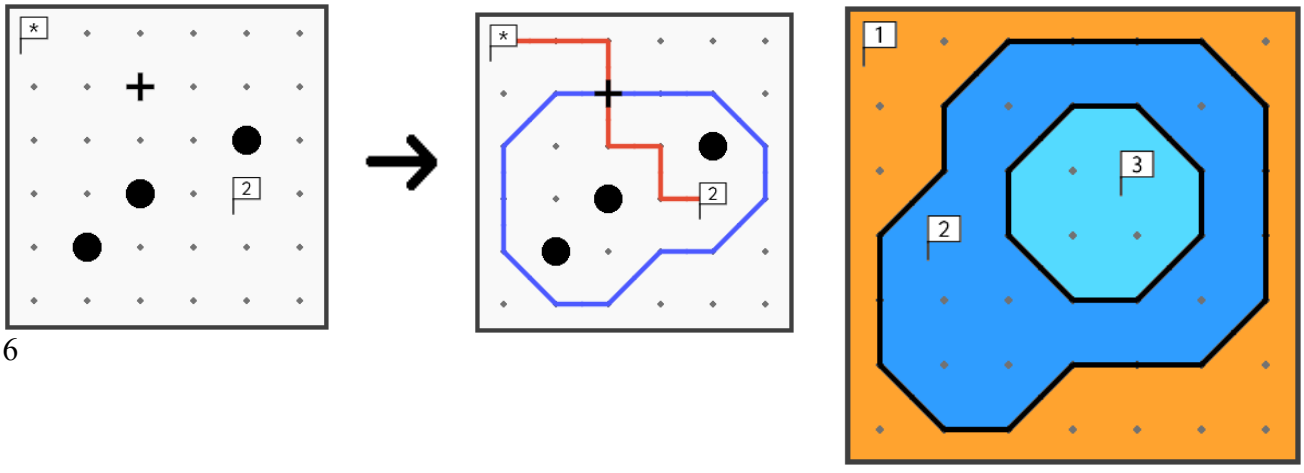
12/2020

Oh no, another quite a wacky genre! Nevertheless, I'm quite happy with this one; the rules are complicated but I feel that it has good flavour to it.

Kudamono: https://pedros.works/kudamono/pages/mountain-climber.html

Rules:

- Divide the grid into areas using lines so that every separate area has exactly one flag in it, and then draw a line (”climbing path”) starting from one flag that visits all of the flags and ends on one of them.
- The lines used for dividing the grid (”dividing lines”) may not visit cells already visited by themselves or other dividing lines.
- The dividing lines can only turn in increments of 45 degrees. When moving in a cardinal direction, a dividing line may move at most 3 steps before having to turn, and when moving in a diagonal direction, a dividing line may move only one step before having to turn.
- Every area created by the dividing lines has a ”height value” that is equal to how many dividing lines surround the area in total. The outermost area lined by the edges of the puzzle has a height value of 1, and for example an area that was separated from the edges of the puzzle by 2 dividing lines would have a height value of 3.
- If a flag has a number, the area it is enclosed in must have the same height value as the number on the flag.
- The plus symbols are ladders. A single dividing line may pass through such a symbol, but only if the dividing line is moving in a straight cardinal direction and doesn't turn on the cell containing the plus symbol.
- The climbing path may not move diagonally. It may not intersect itself, and may visit cells containing a dividing line only if that cell also contains a ladder.
- The black circles are boulders. No line may enter a cell with a boulder.



Mountain Climber puzzles

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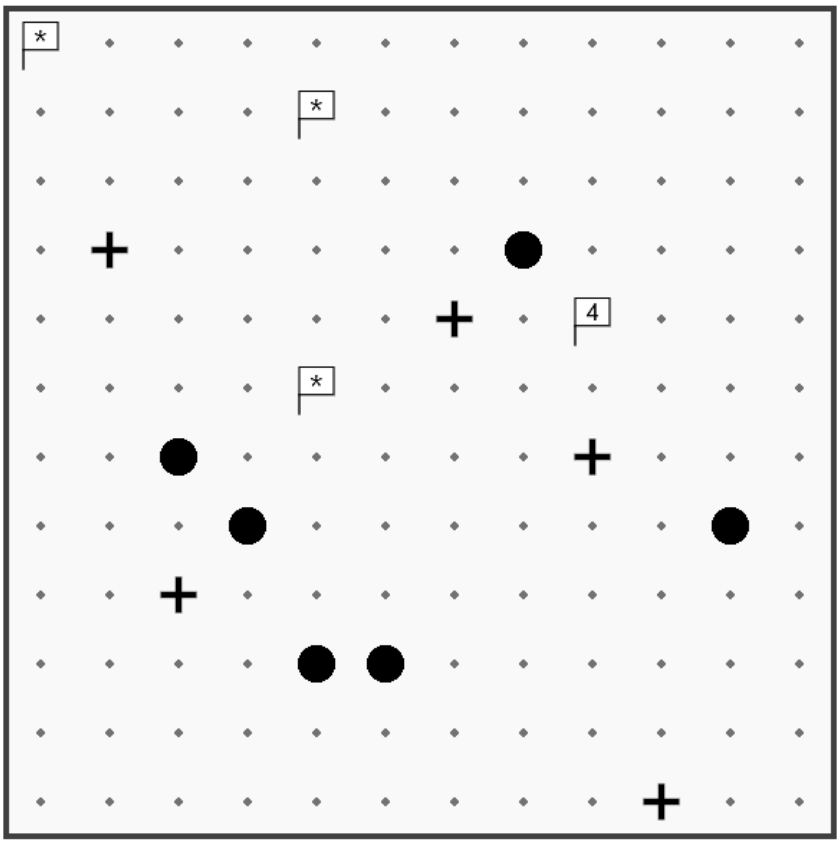

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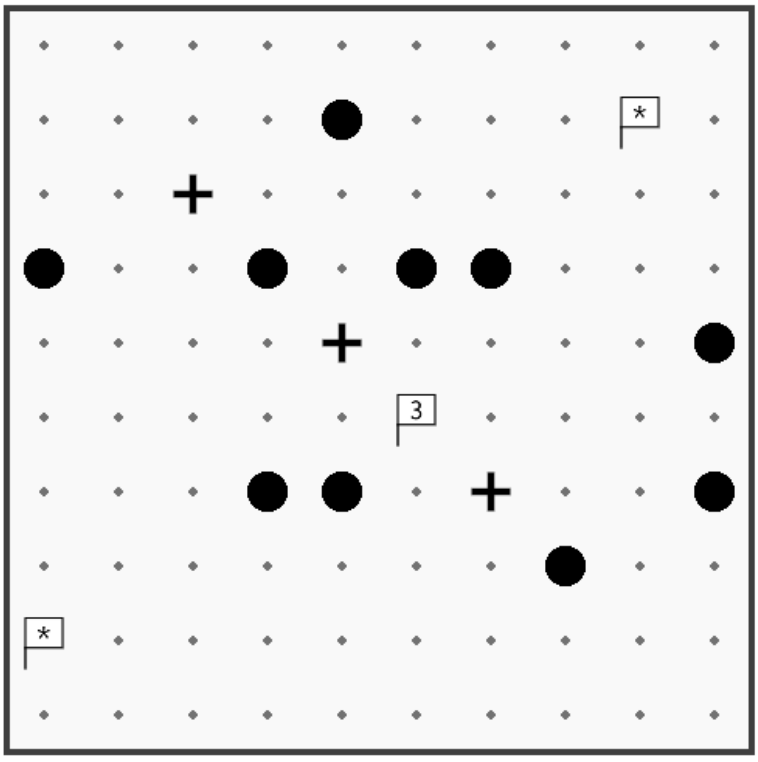

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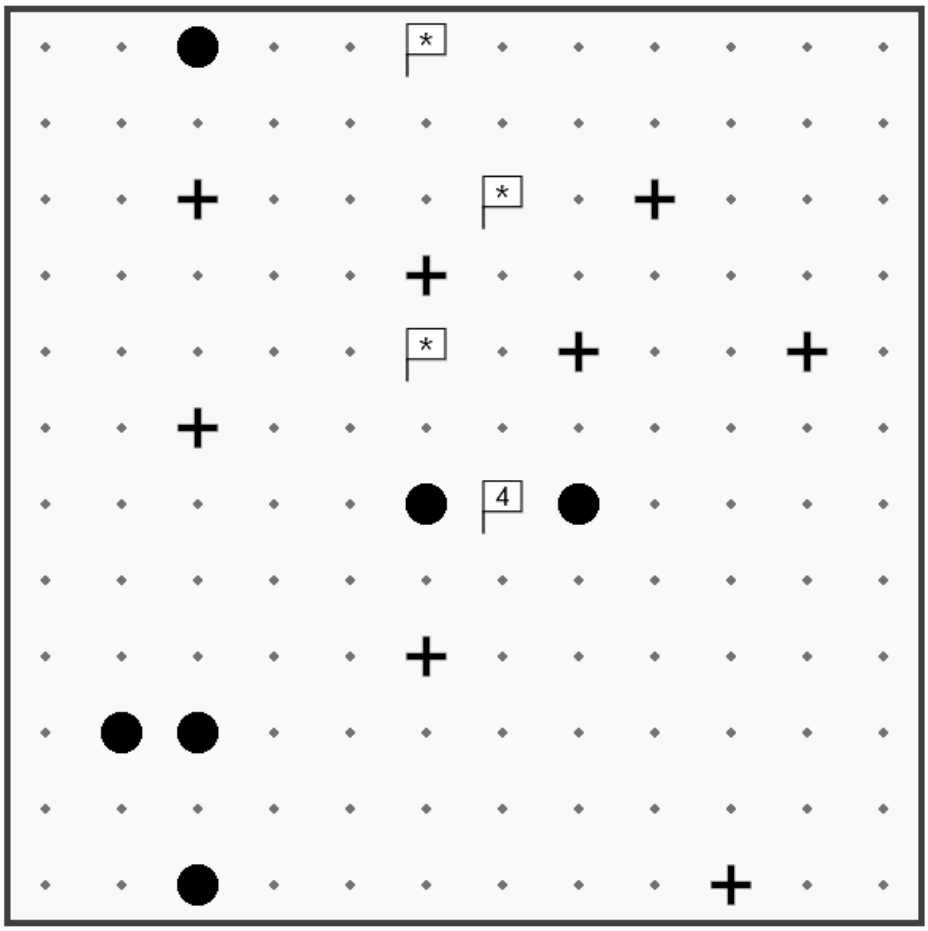

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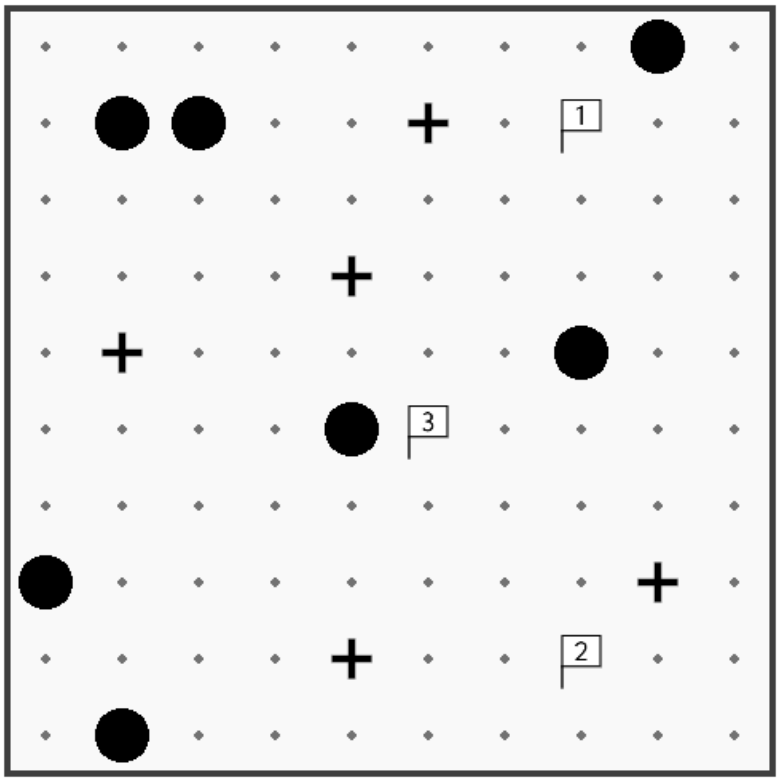

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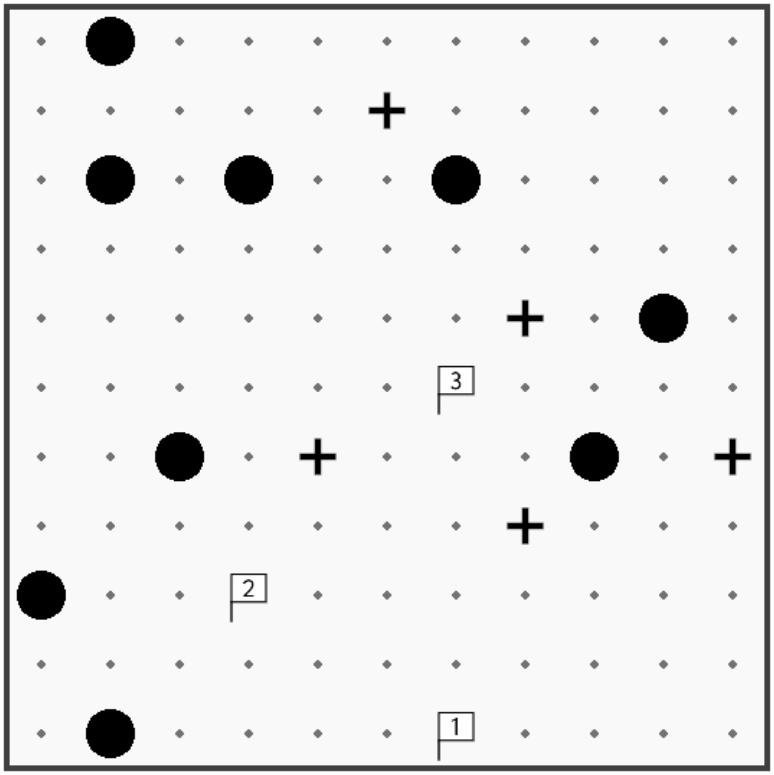

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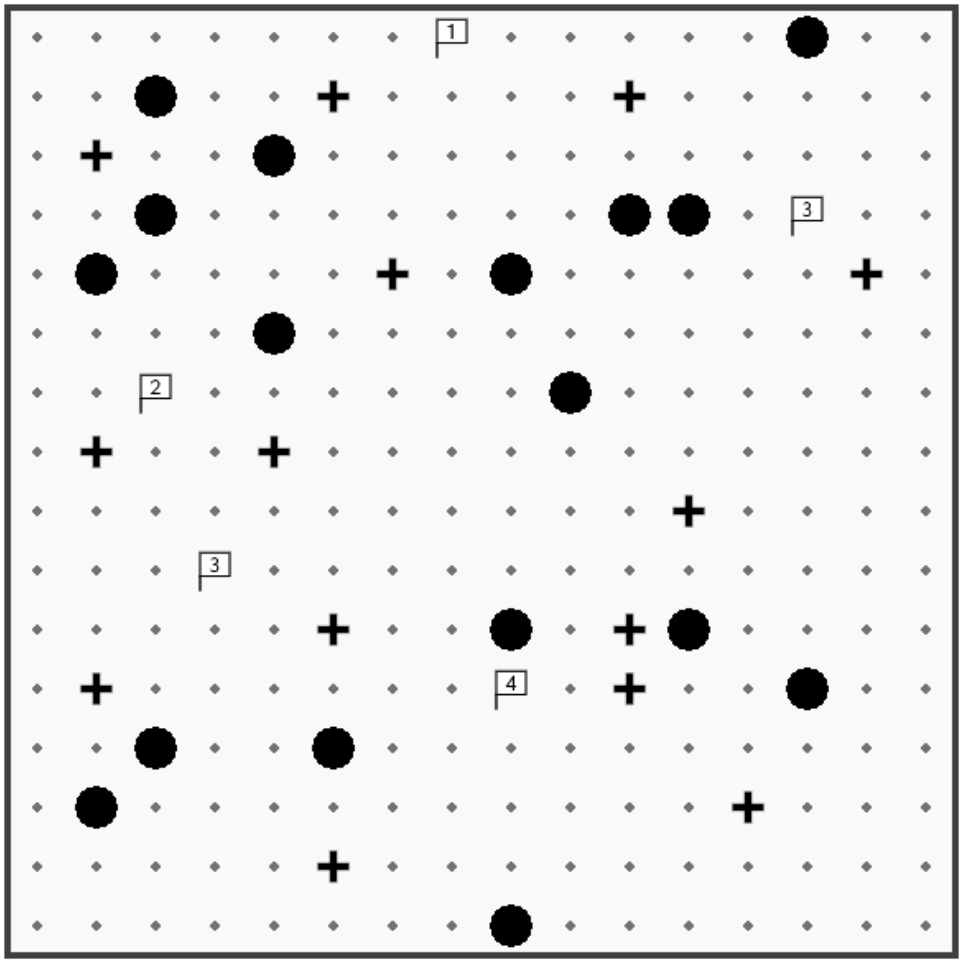


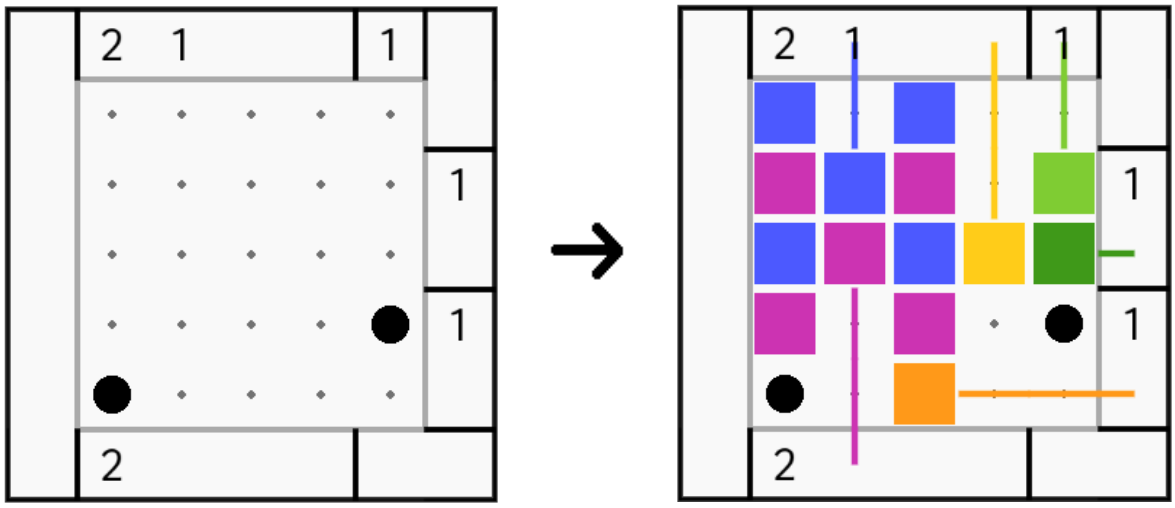
Ilotulite

1/2021

I wanted to make a puzzle type to celebrate New Year's Eve; the first attempt failed miserably, but I'm feeling more confident about this second attempt.

Rules:

- For every number at the edge of the grid, draw a line (”flying path”) and shade cells (to form the ”explosion”). The lines may not turn and multiple lines may not intersect each other, and the shaded cells may not coexist in the same cell with any lines or other shaded cells.
- The number indicates how large the explosion at the end of the flying path must be (i.e. how many cells must be shaded). If the number is 1, only the cell the flying path ends at must be shaded, if the number is higher than 1, a cell must be shaded in a line in all 4 diagonal directions from the flying path's endpoint for every explosion size value beyond 1. That is, if the explosion has a value of 3, you must shade the flying path's endpoint, and then 2 cells in a line in all four diagonal directions from there.
- The full explosion must be able to fit on the grid.
- The shaded cells from the explosions must together for a fully connected mass. No worries about fully-shaded 2x2 shapes here, though.
- The numbers at the edges are sectioned into small compartments by lines. The line corresponding to a number may be drawn from any cell within that compartment (although obviously two lines may not be started from the same cell).
- The black circles mark spots that may not have a line nor a shaded cell.



Ilotulite puzzles

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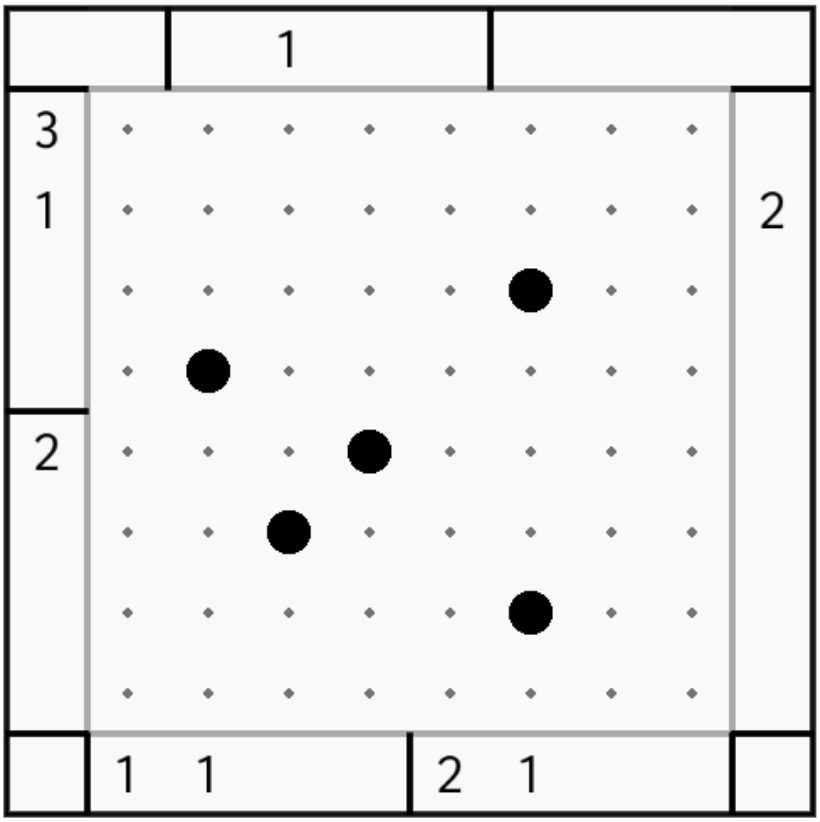

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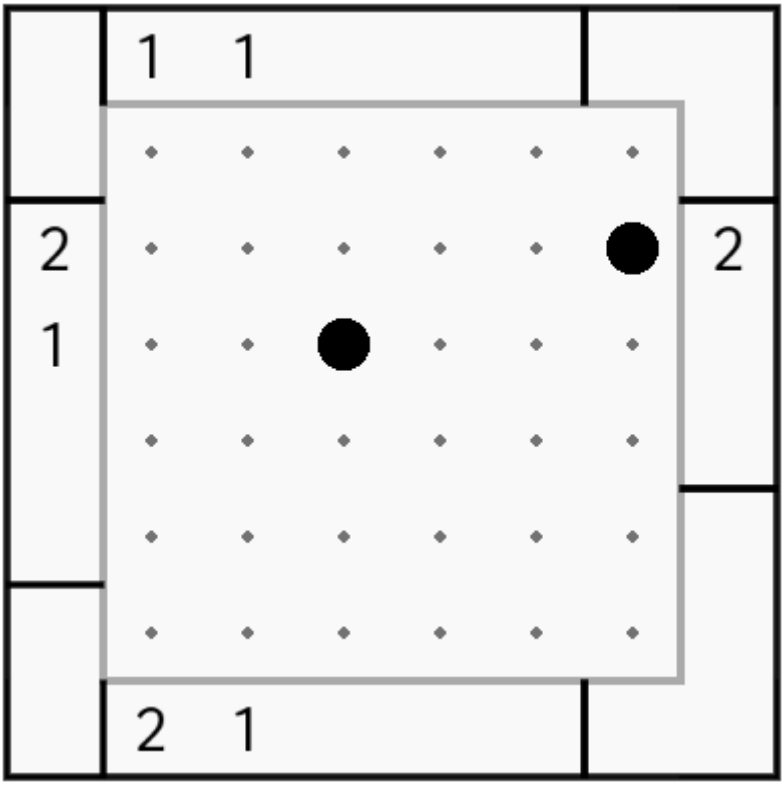

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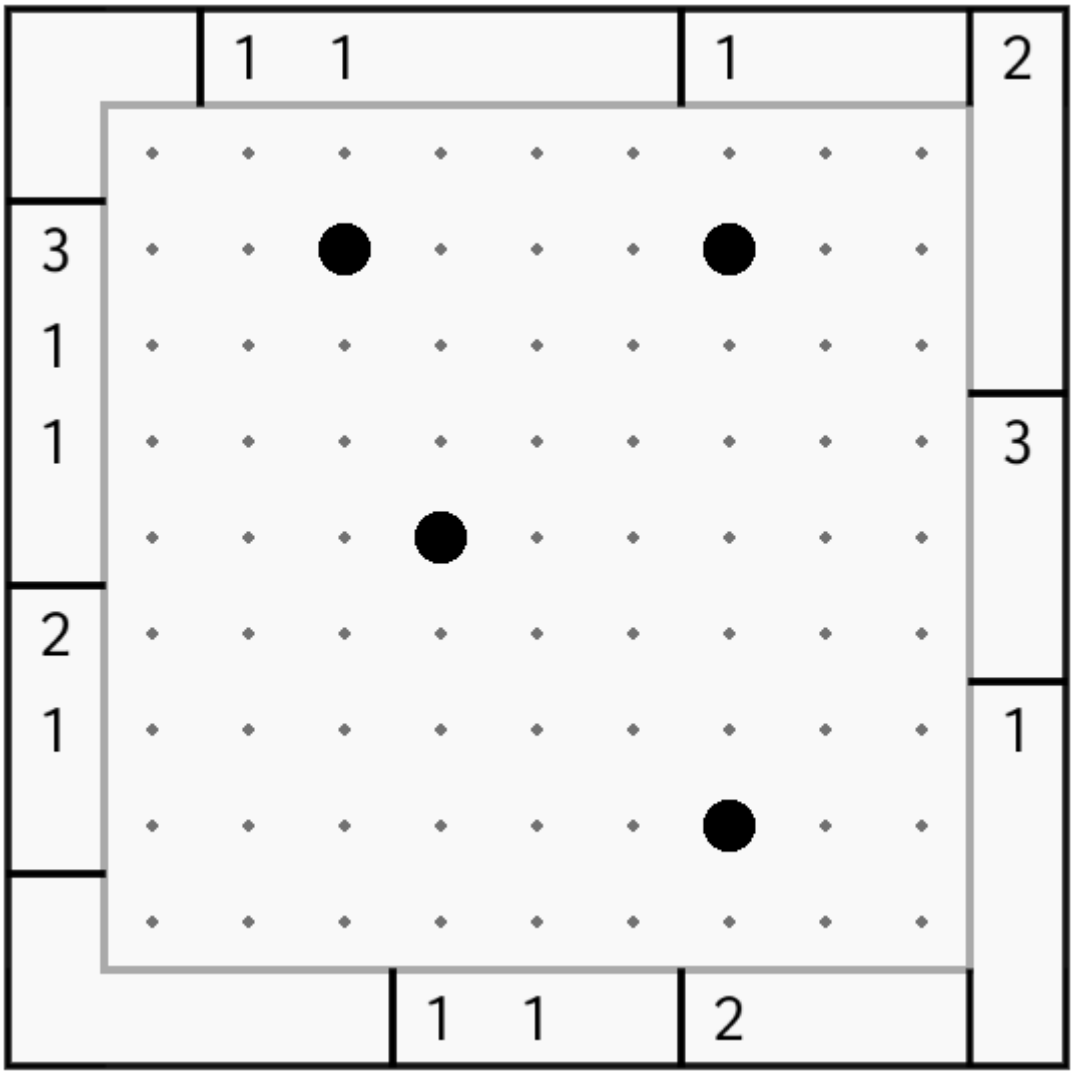


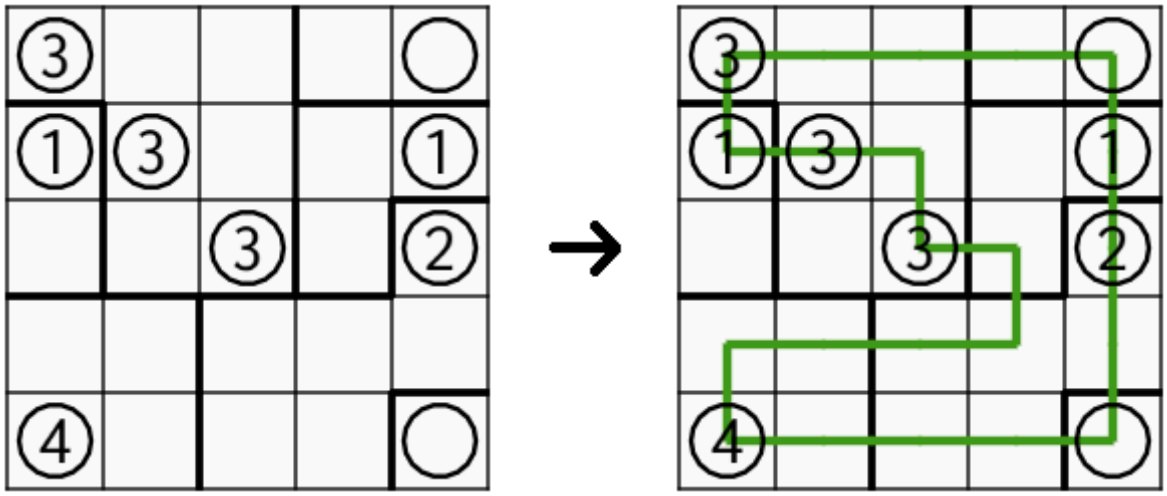
Curfew

2/2021

This took a couple attempts, but in the end I'm quite happy with the result! It resembles the existing puzzle type Haisu more than a little, though, and was directly inspired by it.

Rules:

- Draw a single unbranching loop that visits every circle in the grid.
- The line may not intersect itself or visit cells it has already visited.
- If an area contains a circled number, that number indicates how many cells the loop may and must visit in that area before leaving every time it enters that area.
    - For example, if an area contains the number 4 and the loop visits the area twice, it must both times go through exactly 4 cells before leaving.
- If an area contains an empty circle, it has a specific numeric value just like numbered areas, but that number is unknown. Therefore every time the loop enters those areas, it must visit the same amount of cells. The number may not be zero.
- If an area contains multiple circled numbers, the additional numbers are only significant in that they must also be visited by the loop; the numeric value of the area is still equal to the circled number.



Curfew puzzles

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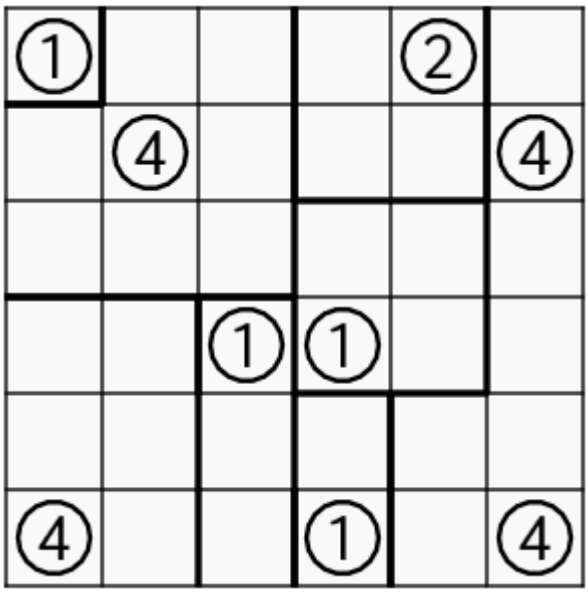

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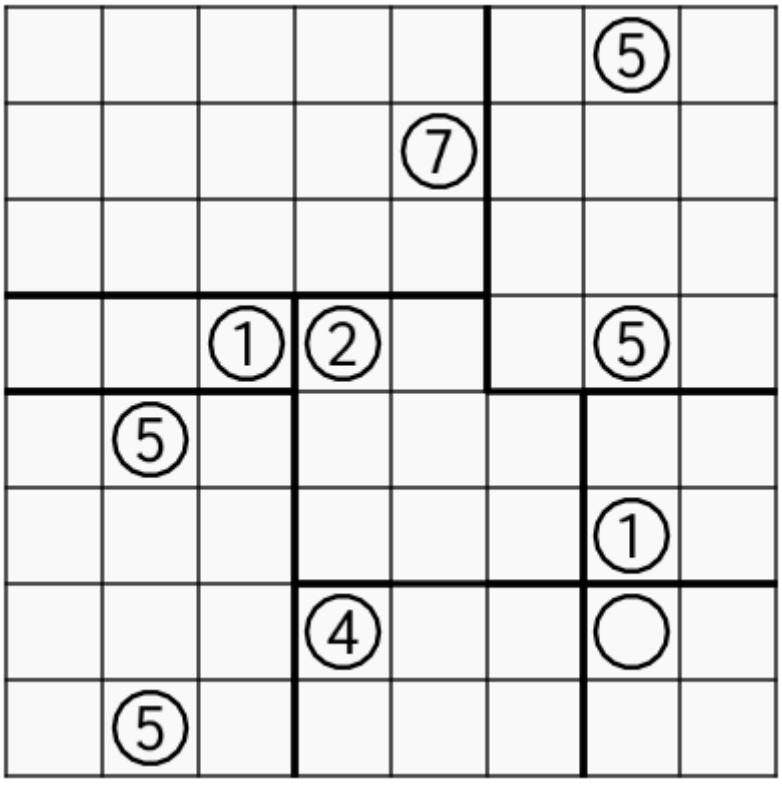

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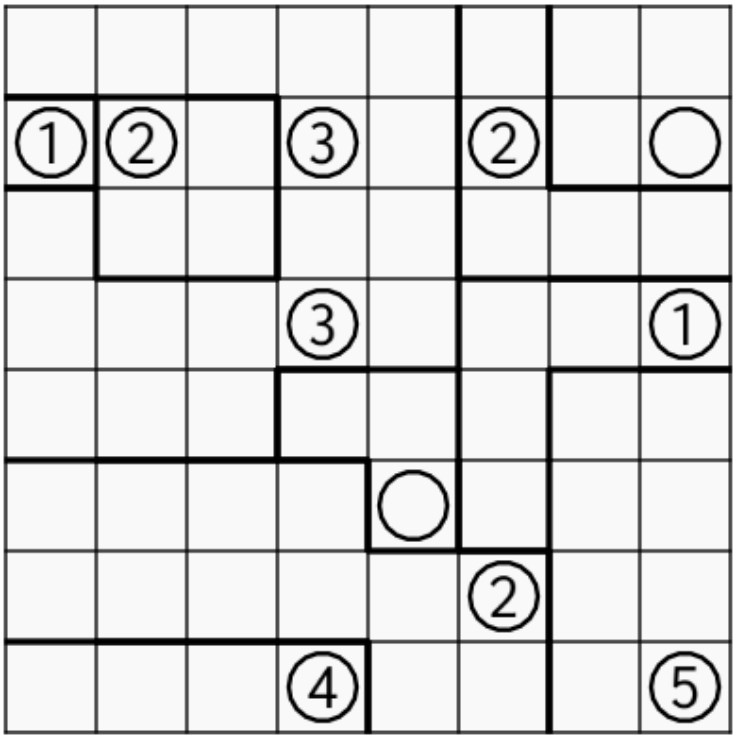

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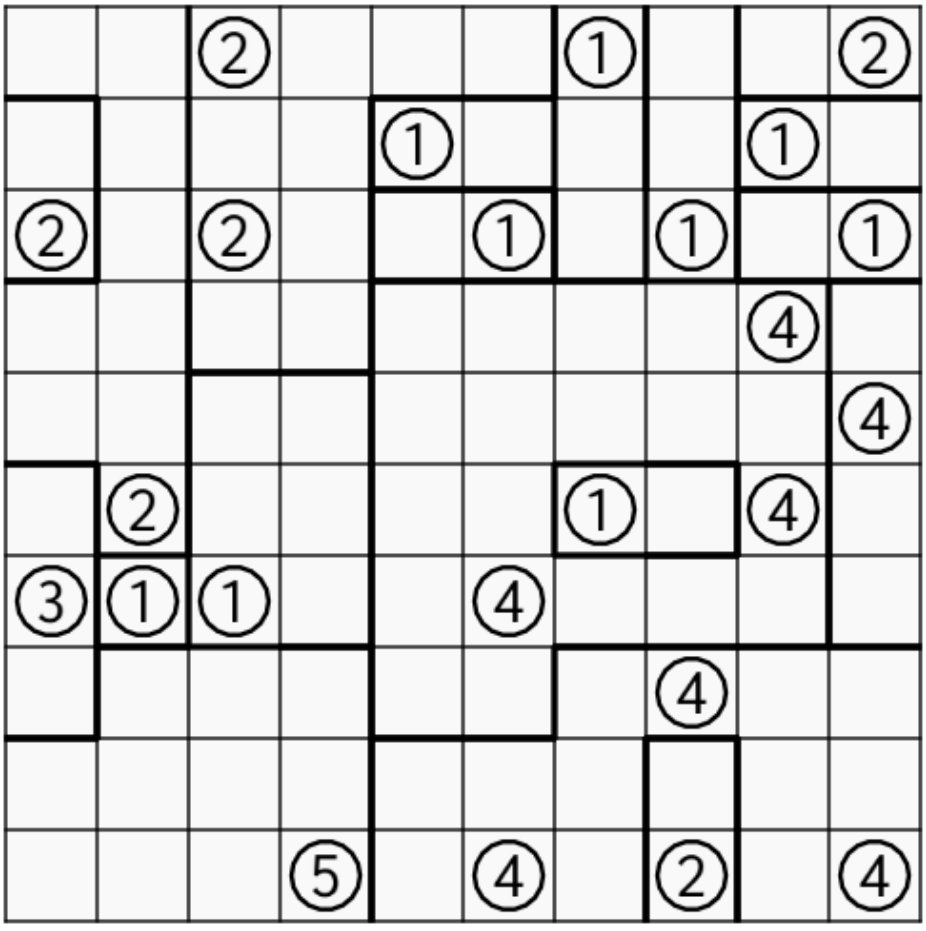

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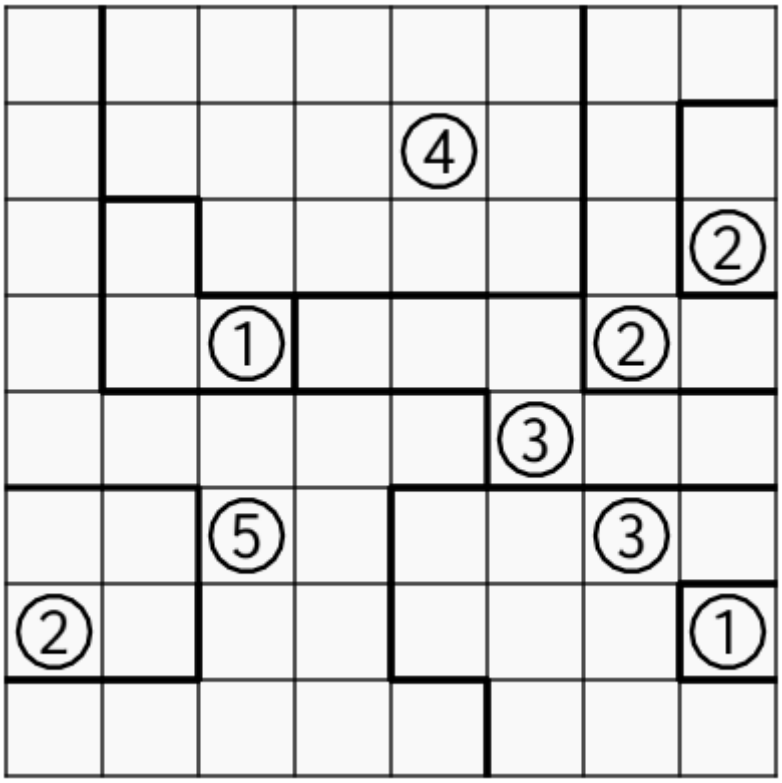


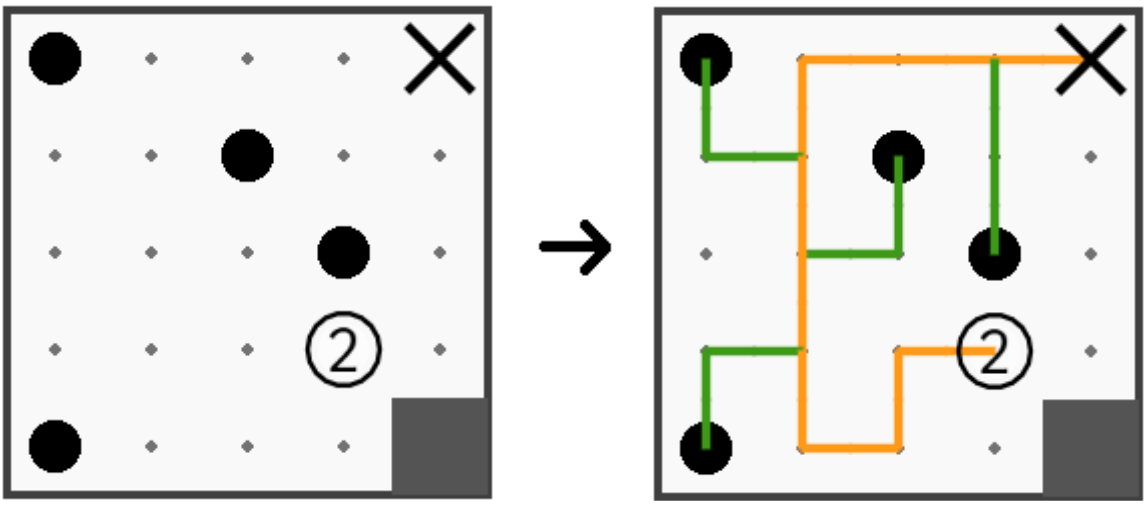
Roots

1/2021

Pretty much a continuation to the Seaweed genre, although heavily simplified. I quite like the basic idea thanks to how easy it is to grasp!

Rules:

- Draw a line for every black dot cross in the puzzle, so that the lines end on their respective symbols.
- The lines that end on crosses are ”main lines”, and they can be of any length and must start on a circled number.
- Lines that end on black dots are ”side lines”, and they must branch out from main lines and be exactly the length indicated in the circled number the main line begins from.
- The side lines may only branch out from main line segments that move straight forward; i.e. a side line can't branch from a point where a main line turns.
- None of the lines may intersect and lines can't visit spots other lines have already visited. The lines also mustn't go over grey cells.
- Only one side line may branch from a given straight segment in a main line.



Roots puzzles:

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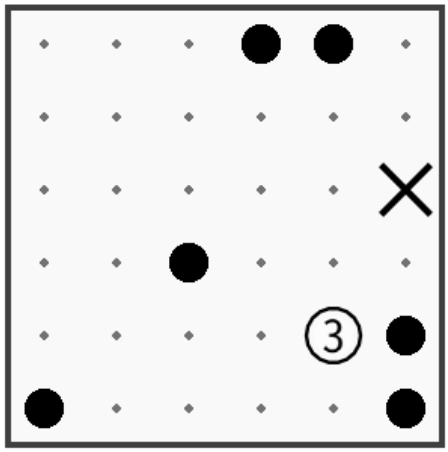

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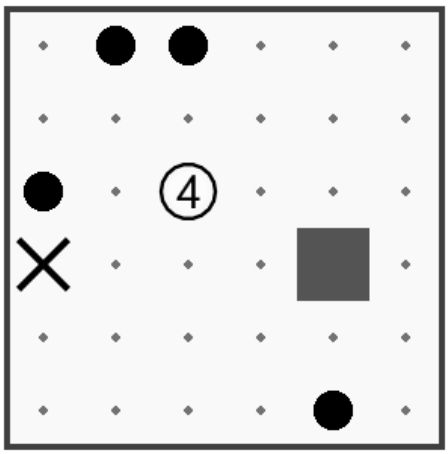

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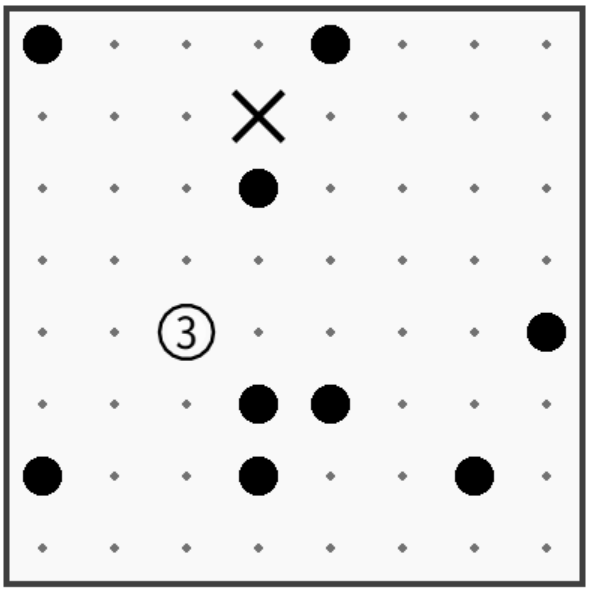

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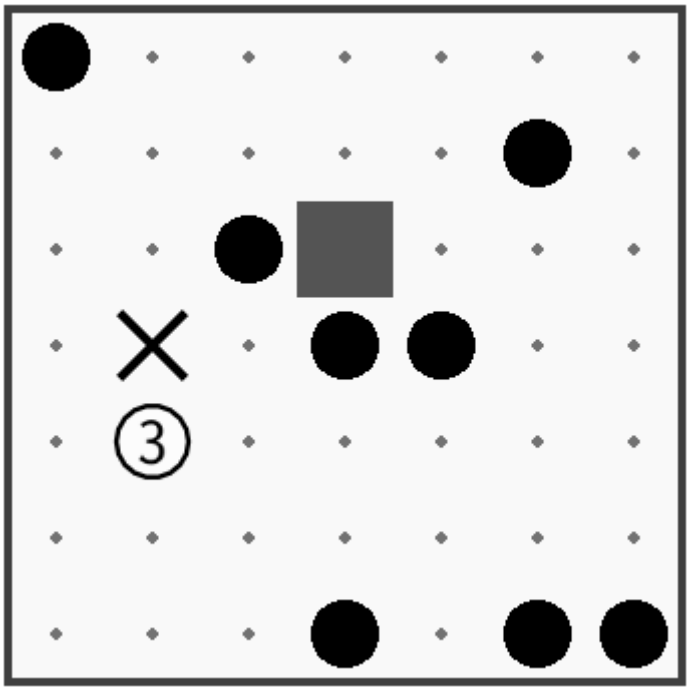


Lohkous

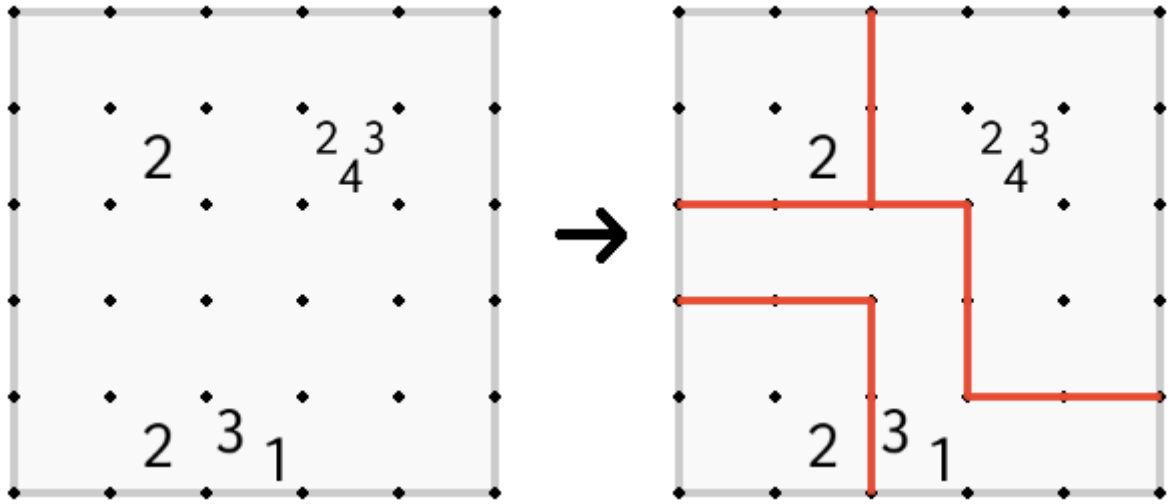
1/2021

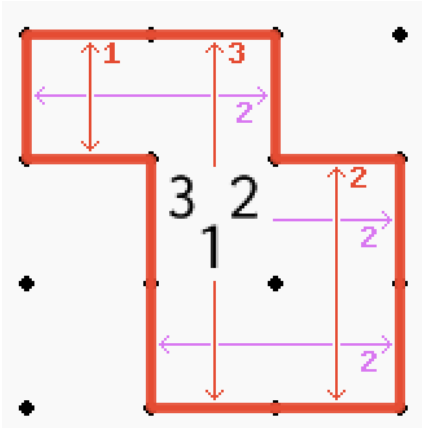
A very abstract puzzle, but with some interesting rules, I'd say. One of my favourites.

Puzz.link: https://puzz.link/db/?type=lohkous **Puzzle Square:** https://puzsq.logicpuzzle.app/?kind=388
Variant (not by me) – **Kudamono:** https://pedros.works/kudamono/pages/lohkous-scattered.html

Rules:

- Divide the puzzle into areas so that every area has exactly 1 clue in it.
- There may be no incomplete lines within areas; every area must comprise only of its outline and the cells within it.
- The numbers in a clue indicate all the allowed widths/heights in the shape of the area the clue is in. That is, no matter where you count, a segment of the area may not have a width or height value that doesn't appear in the clue.
- All the numbers given in a clue must appear somewhere in the area the clue is in as width and/or height.
- Note that ”width” and ”height” here do not refer to lengths of the lines that form the area nor the total width/height of the area. See below for an example.





Lohkous puzzles:

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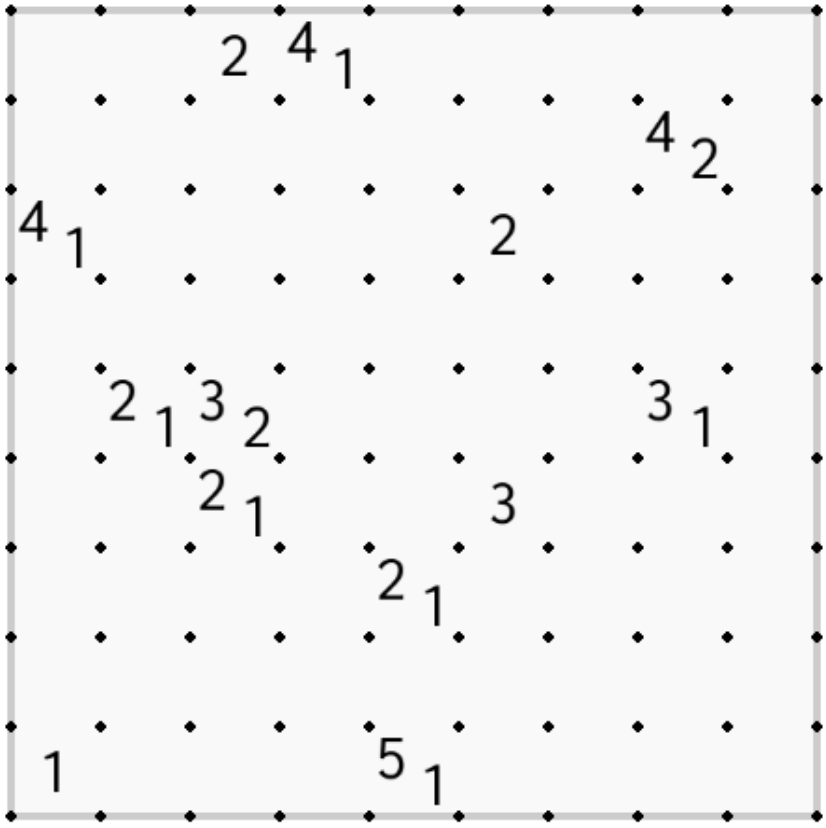

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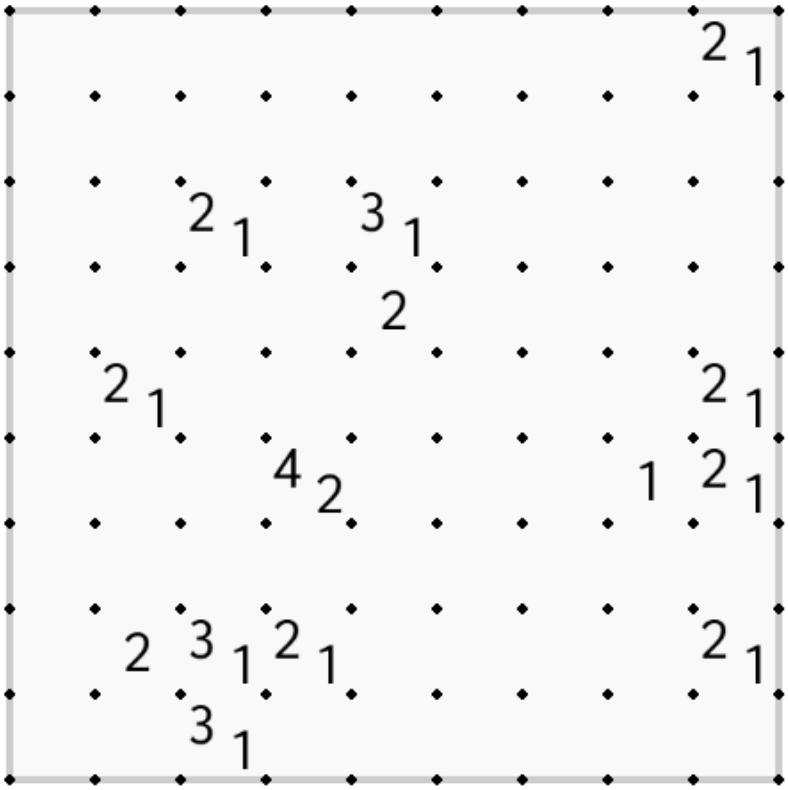

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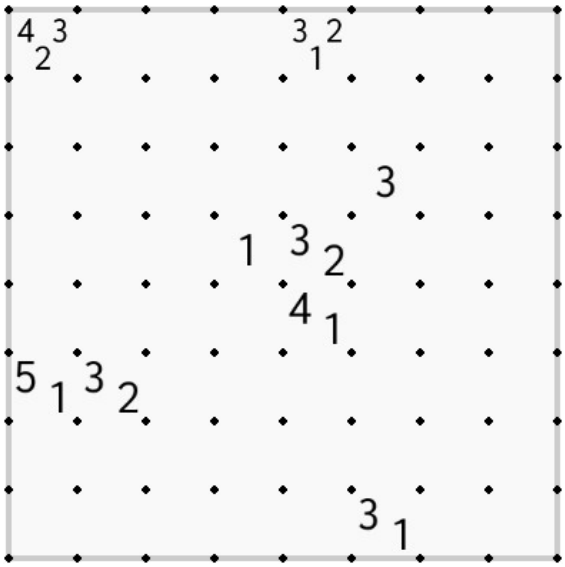

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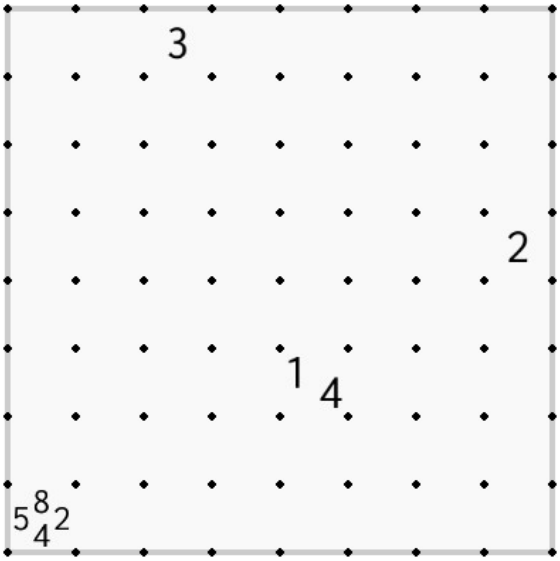

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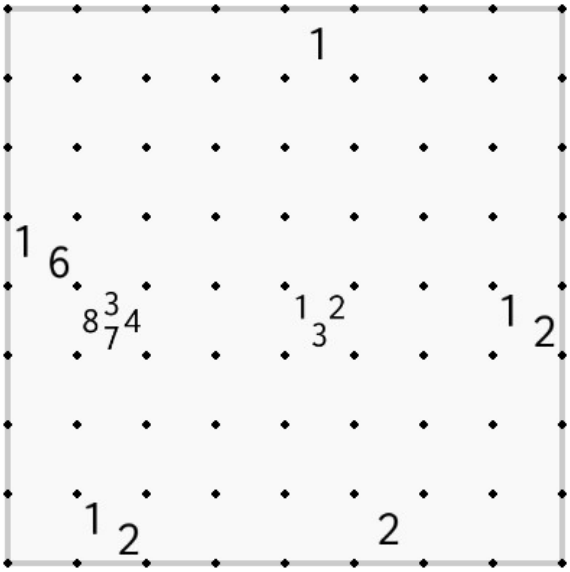

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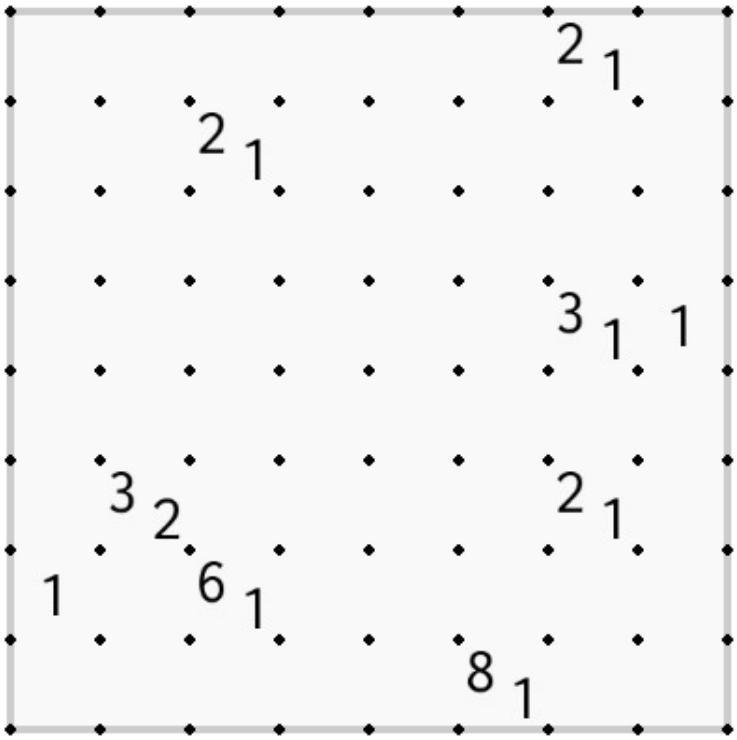

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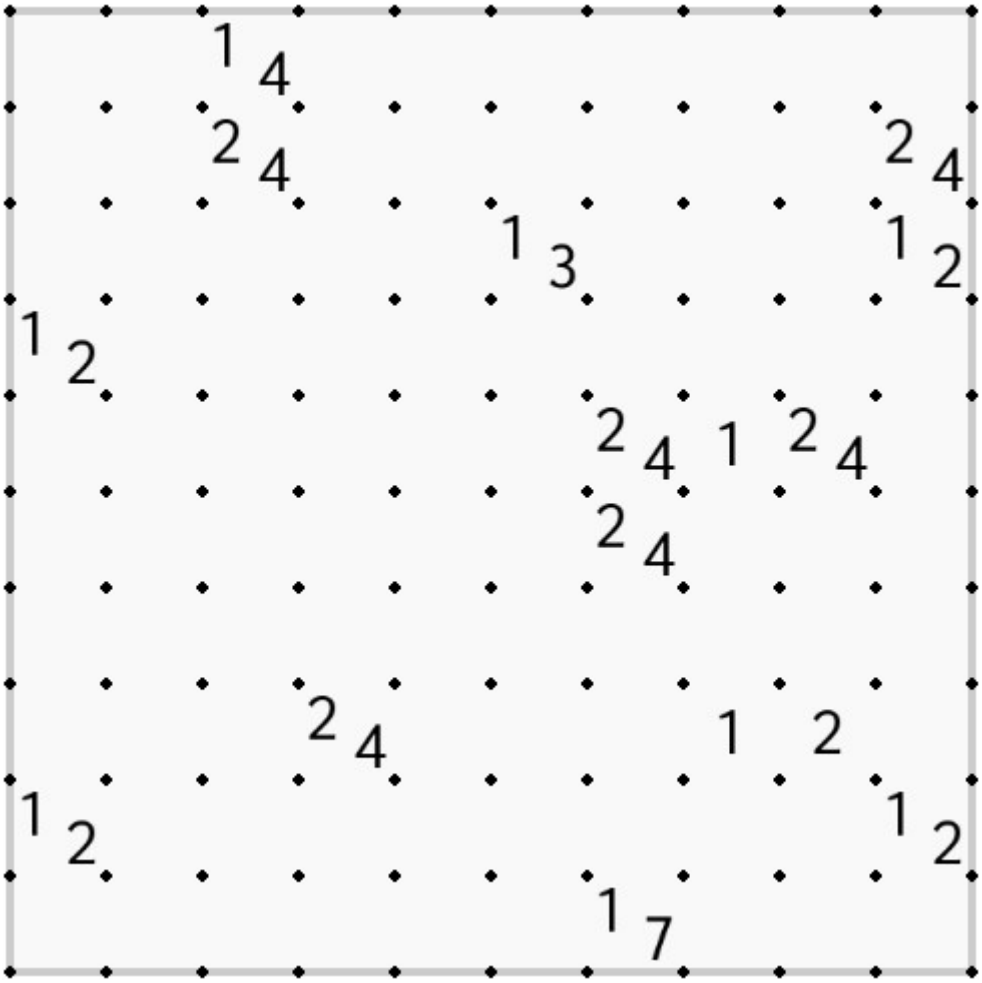

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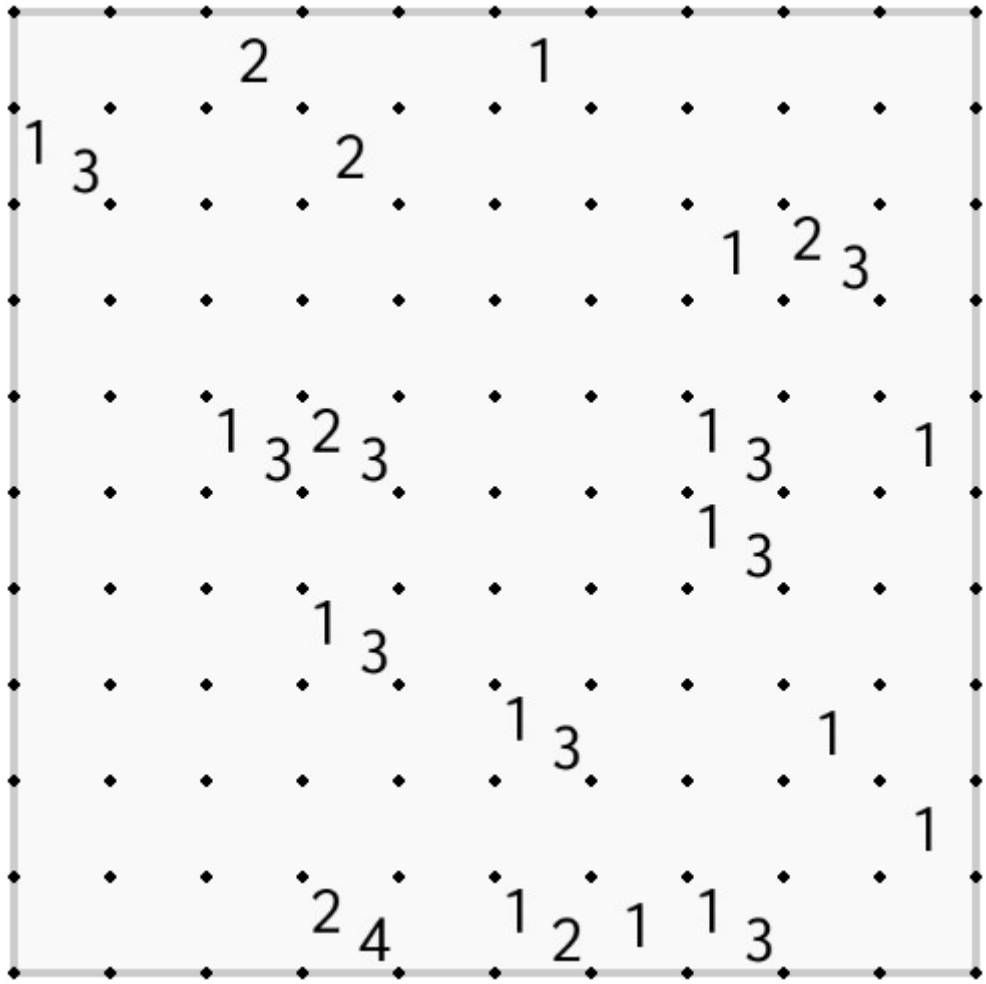

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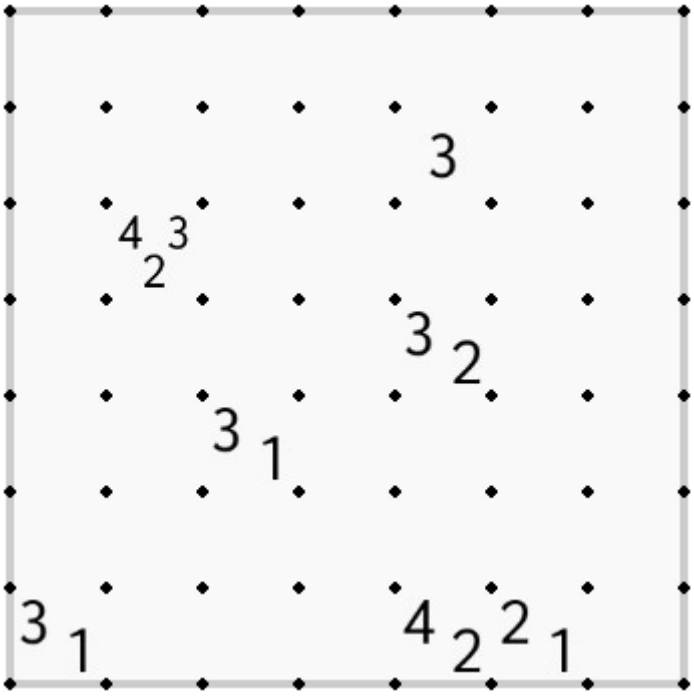

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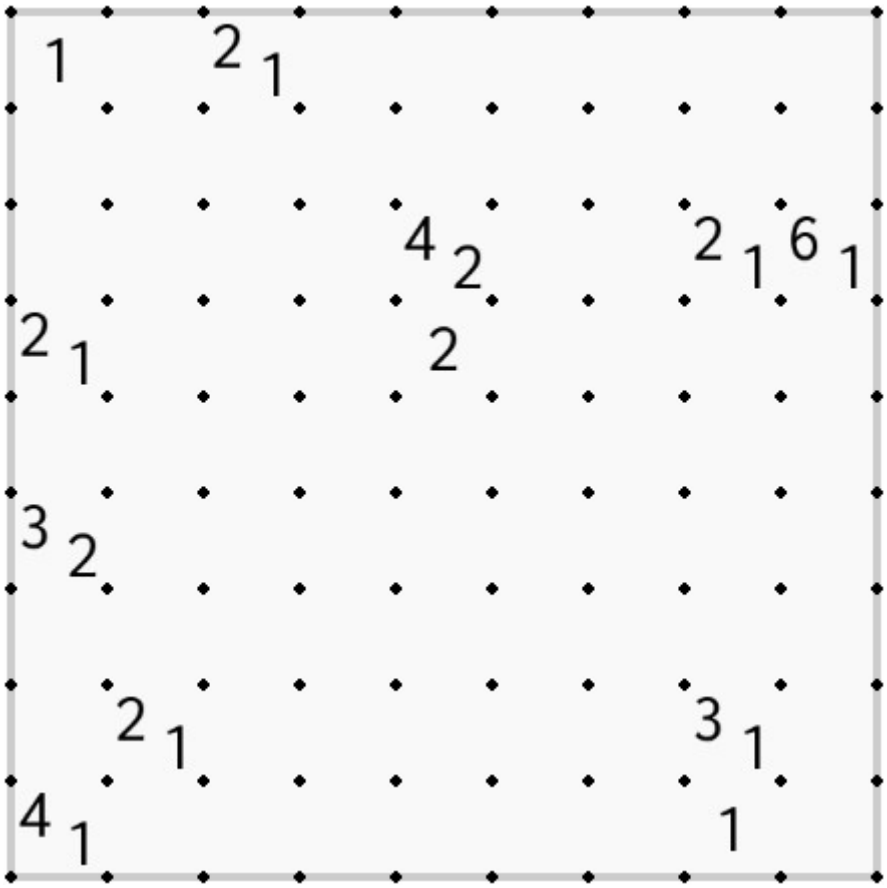


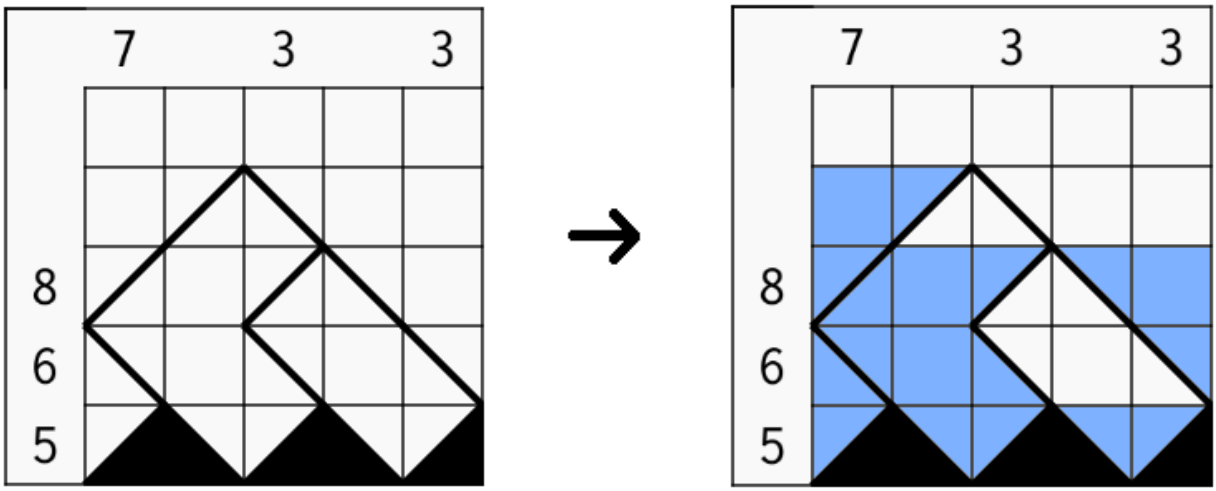
Diagaquarium

3/2021

Aquarium is an existing genre, but after seeing people on the Baba Is You fan Discord server post some of those, I got an idea for a slight variant. I like this a bunch!

Rules:

- Shade cells on the grid. When shading cells within an area, the bottom-most cells must be shaded first. You can think of this as as if the shaded cells were bits of water and had gravity, thus accumulating on the bottom of an area first, with the edges of an area being walls enclosing the water. There may not be unshaded cells below shaded cells within a single area.
- The numbers on the edges indicate the total number of shaded half-cells on that row/column. A fully-shaded square cell contains 2 halves, and counts as 2 for these clues.
- The top of a shaded section within an area must be even; that is, the surface of the water may not have notches and such.
- The surface of a single shaded shape must be everywhere on the same height, except unless the top border of that area limits that somewhere.
- If an area would have two unconnected shaded shapes, their surfaces may be on different levels.
- Really, the rules are fairly intuitive if you think of it as filling containers with water. It's surprisingly hard to convey the rules without that mental image.



Diagaquarium puzzles:

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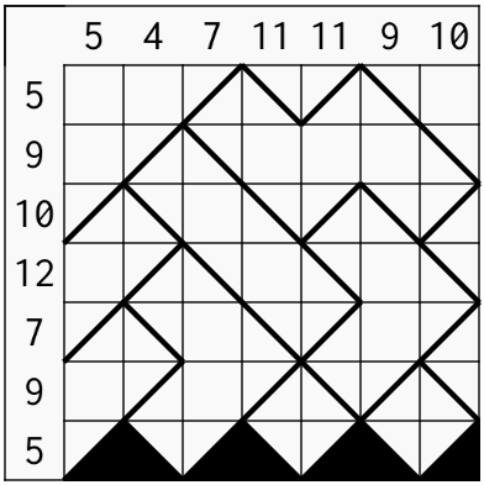

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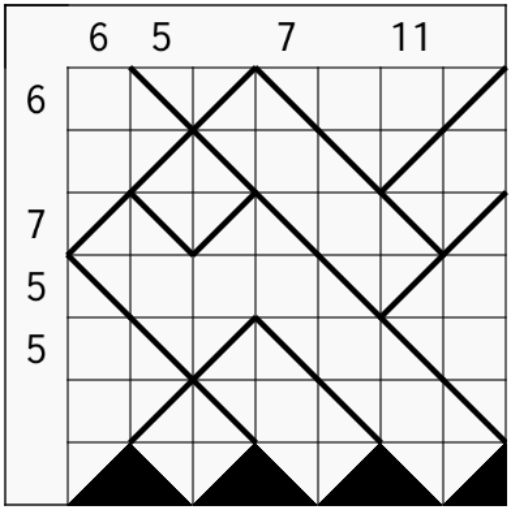

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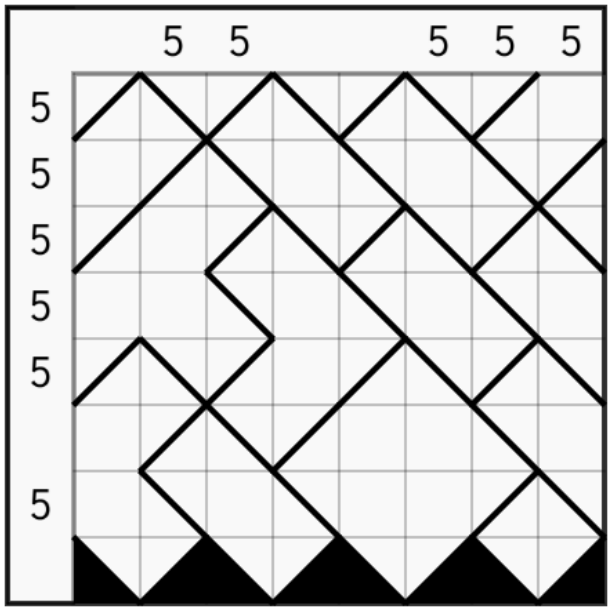


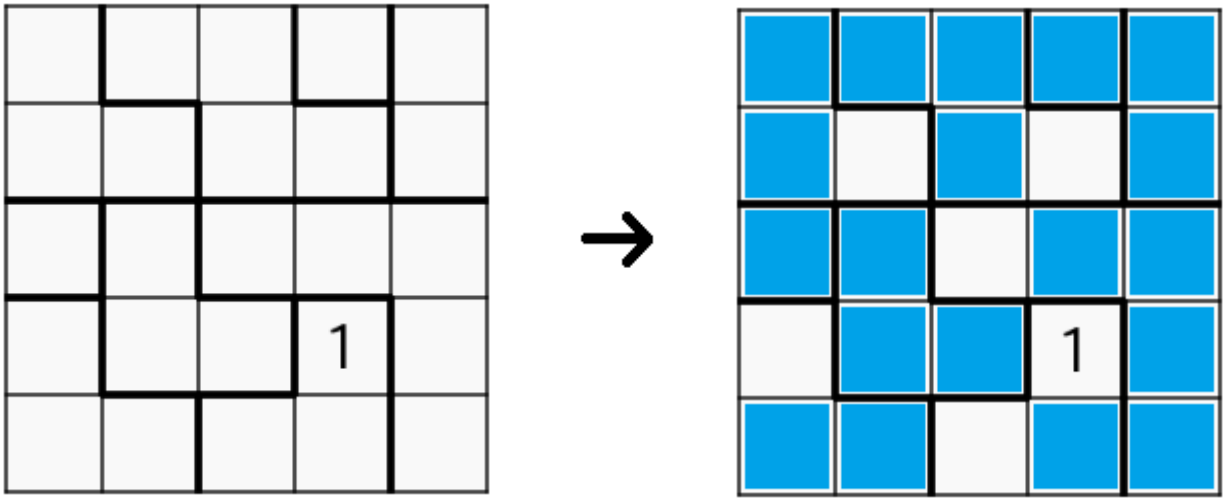
Alike

3/2021

Many of the puzzle types I've come up with have been about drawing lines, but shading puzzles were what got me initially interested in making paper puzzles, so I spent some time tinkering and came up with this shading puzzles. It feels a bit limited but fun to solve. I think part of the idea came from an existing paper puzzle type but can't recall exactly which one.

Rules:

- Shade cells so that the shaded cells form a continuous structure.
- No 2x2 fully-shaded shapes, and the shaded area can't form loops.
- All shaded cells within an area must be connected.
- There may not be two adjacent areas with the same number of shaded cells. Note that it's enough that the areas share a side; the shaded cells within them do not need to touch.
- Every area must have at least 1 shaded cell.
- If an area has a number, the number indicates the amount of shaded cells in that area. You can shade over the numbers.



Alike puzzles:

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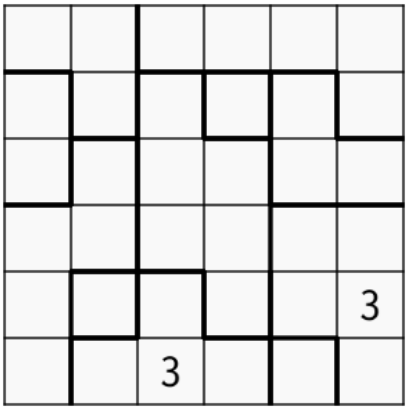

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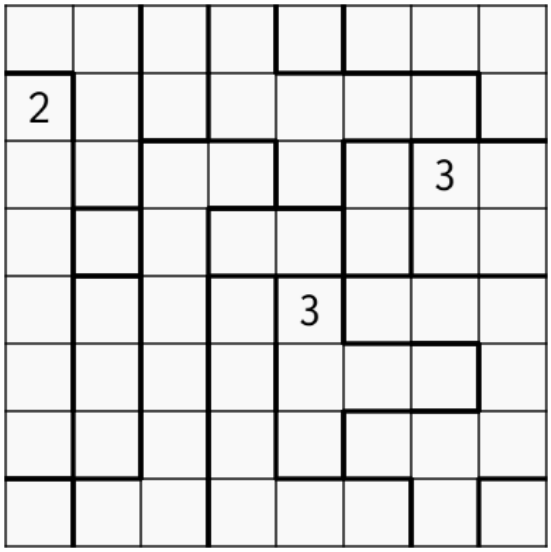

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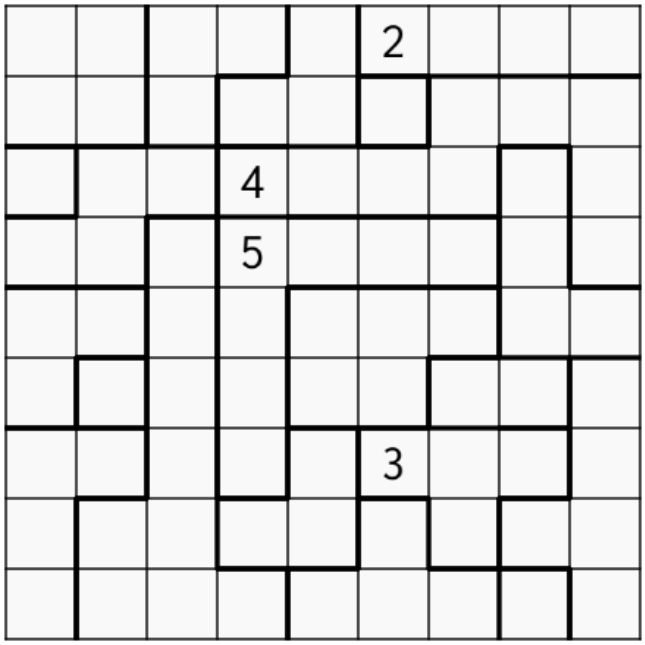

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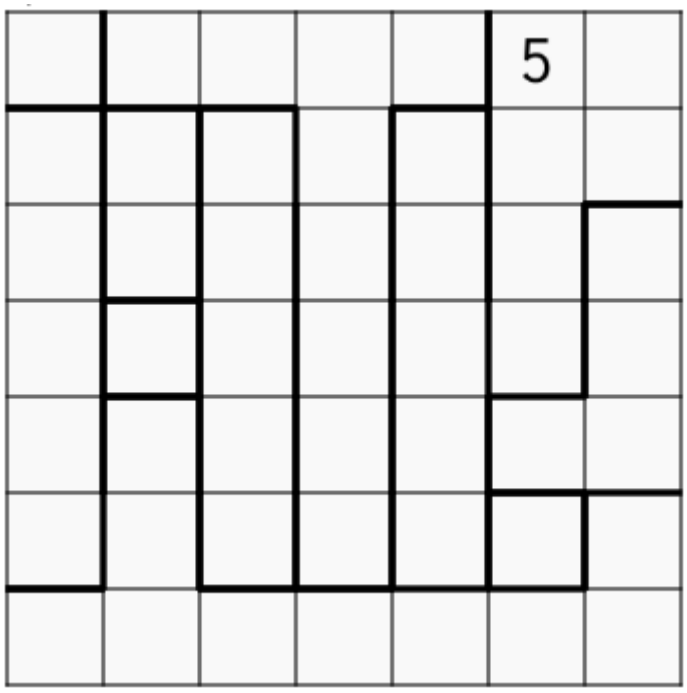


Chainlink

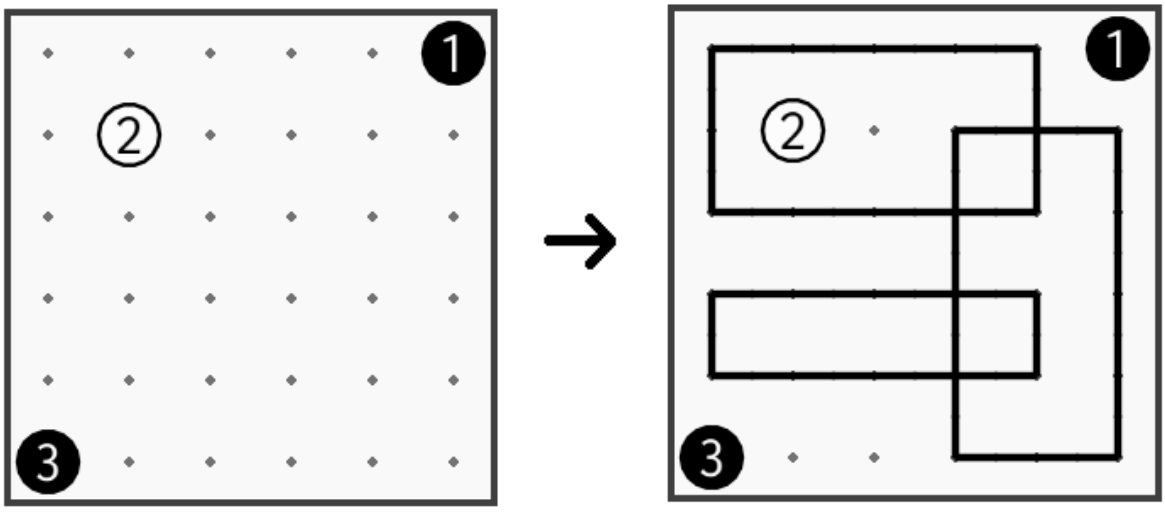
3/2021

After making Alike, I thought that a funny variant name would be ”Alike-in-chains”. To reach this height in humour, I started trying to implement a chain-themed puzzle. I actually went through a couple different designs; the ”links in a chain” design idea turned out to be clunkier than I would've hoped. The finished puzzle is still clunky, but I'm quite happy with how it works!

Kudamono: https://pedros.works/kudamono/pages/chainlink.html

Rules:

- Draw rectangles on the grid, with line segments ging from point to point.
- Every rectangle must have at least one corner within another rectangle.
- The rectangles must form a single structure (loops are ok) where every part can be reached from any other part via the interlocked corners mentioned above.
  - (So if a rectangle would overlap another without either of them having a corner inside the other, they'd not be considered connected).
- A rectangle may not be fully enclosed by another single rectangle. It's ok for a rectangle to have all its corners within other rectangles, as long as there are more than one.
- The numbers indicate groups of points with no line segments drawn to them. A clue with 3 would thus refer to 3 points with no line segments next to each other, with the clue being one of them (see the example puzzle for extra clarification).
- White clues must be within a rectangle (or multiple rectangles, that's fine too).
- Black clues mustn't be within any rectangles.
- Two clues may not be in the same area/group of points.



Chainlink puzzles:

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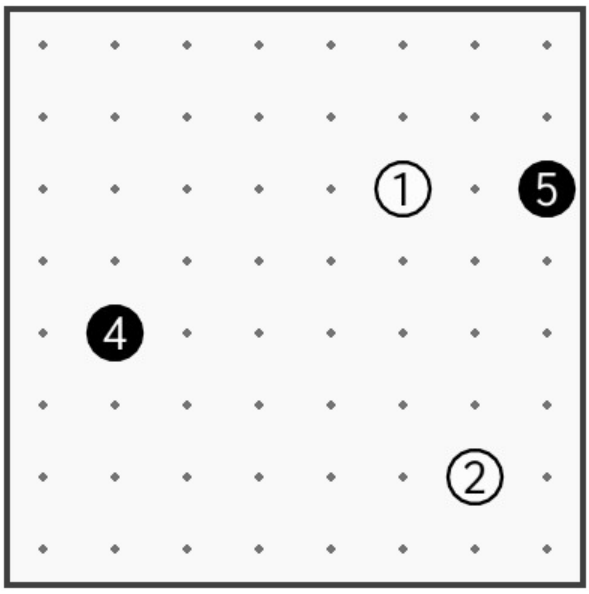

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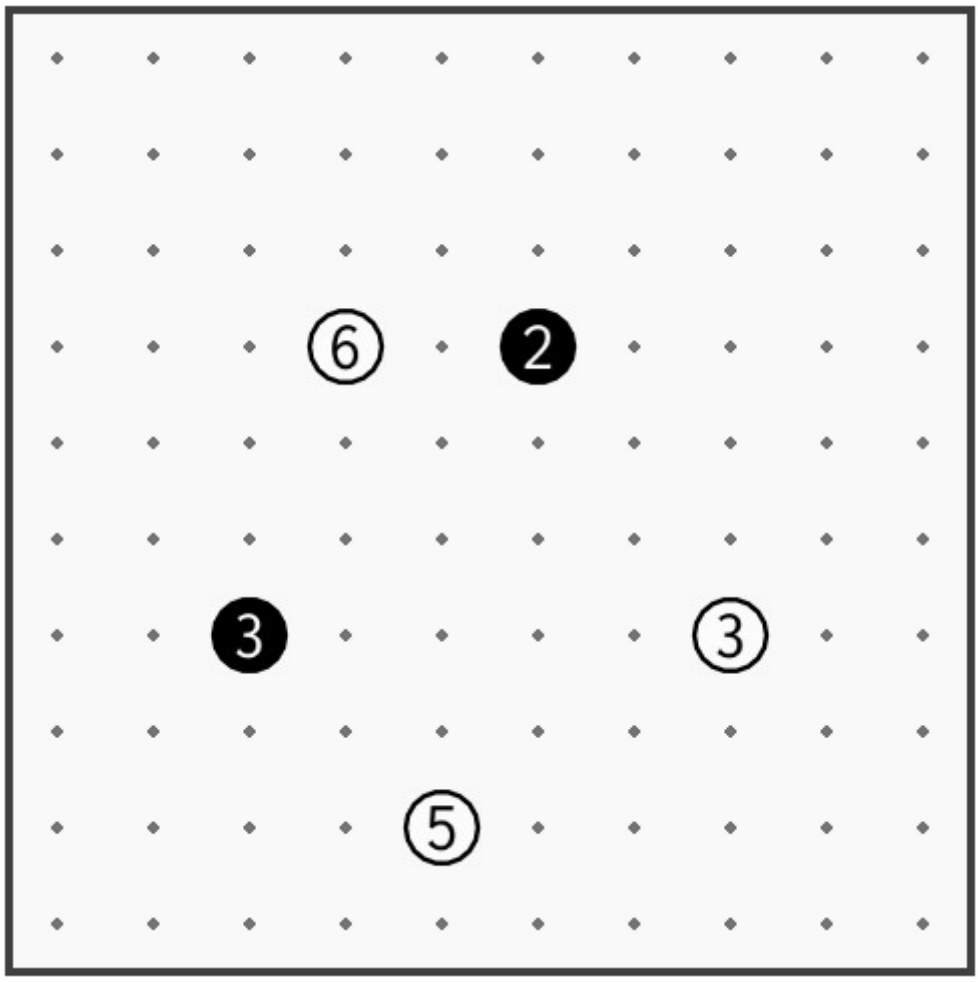

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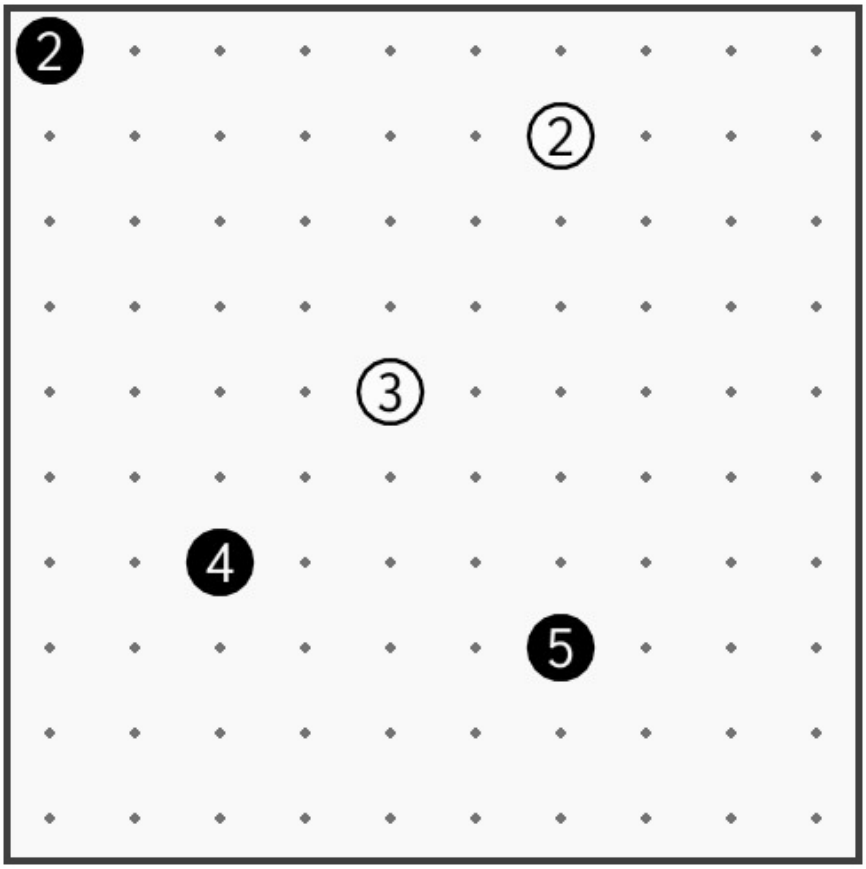

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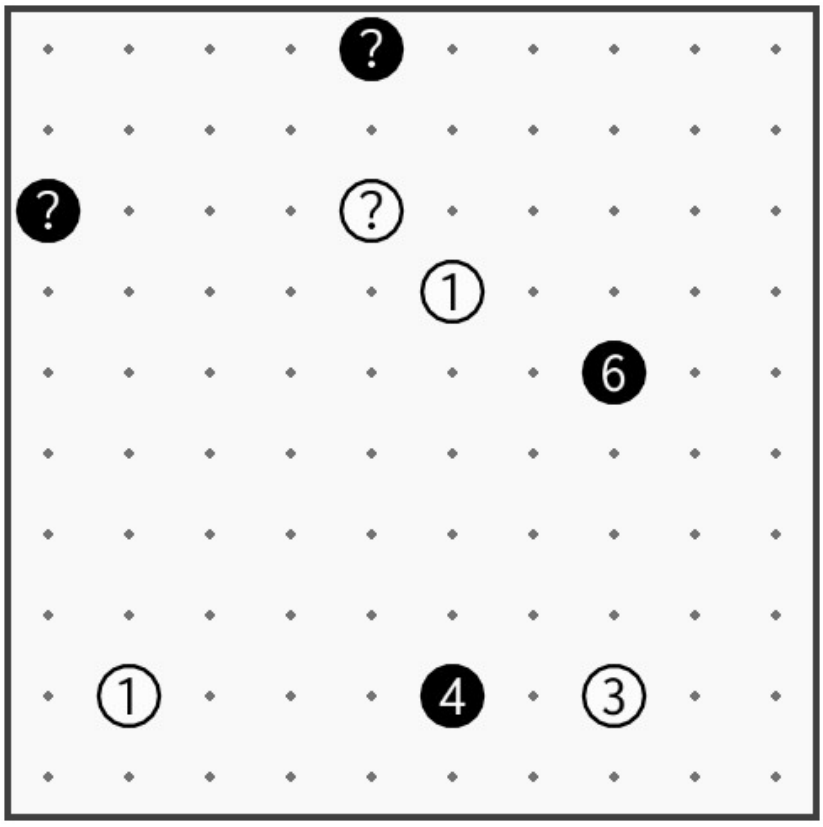


Tonttiraja

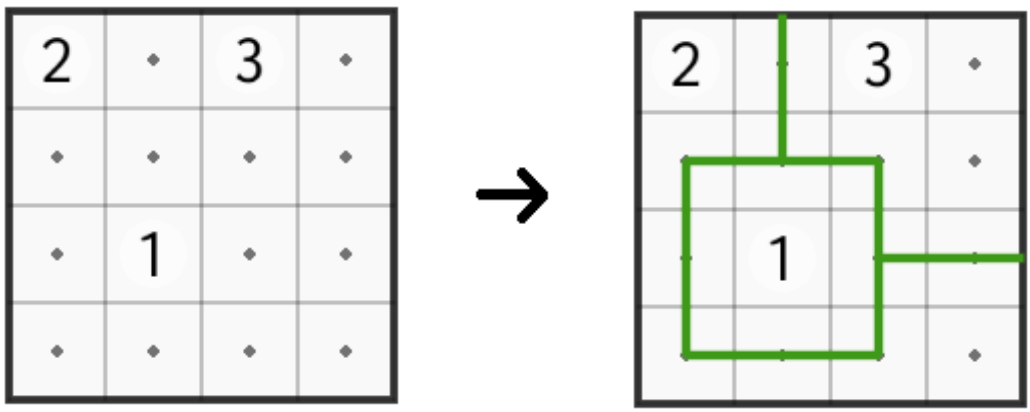
3/2021

I had an idea for a line-drawing puzzle but couldn't quite figure out what to do with it. While testing out some concepts with it, I stumbled into a somewhat different idea and that developed into Tonttiraja. The name is Finnish for ”(building) plot border”. The inspiration for ”no identical adjacent segments” comes from **Le Slo**'s ”Bonsai” puzzle genre.

Puzz.link: https://puzz.link/db/?type=tontti **Puzzle Square:** https://puzsq.logicpuzzle.app/?kind=594

Rules:

- Divide the puzzle into areas so that every area has exactly 1 clue. You may not draw over the clue cells.
- The lines may branch, but there may not be plus-shaped crossings, so a cell can only have a T-junction, turn or a straight line (or be empty). There may not be any dead-ending, dangling lines.
- There may not be two directly connected adjacent cells with the same type of line structure (T-junction, turn, straight line).
- The clues indicate how many empty cells are within that area (i.e. cells with no line segments in them). The clue cell is counted as an empty cell.
- An area is continuous as long as it's not blocked by line segments or the edge of the puzzle, so the empty cells within an area may be quite far from each other (see example).
- You may draw a line to the edge of the puzzle from any of the border cells, as long as the other rules aren't broken by doing that.



Tonttiraja puzzles:

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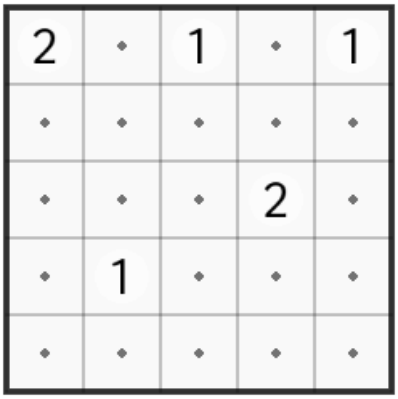

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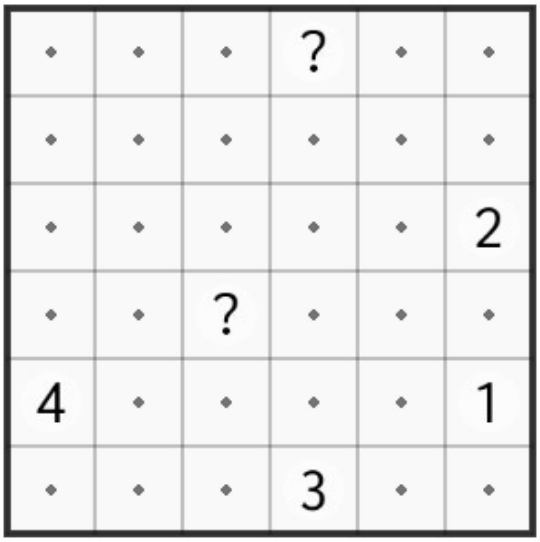

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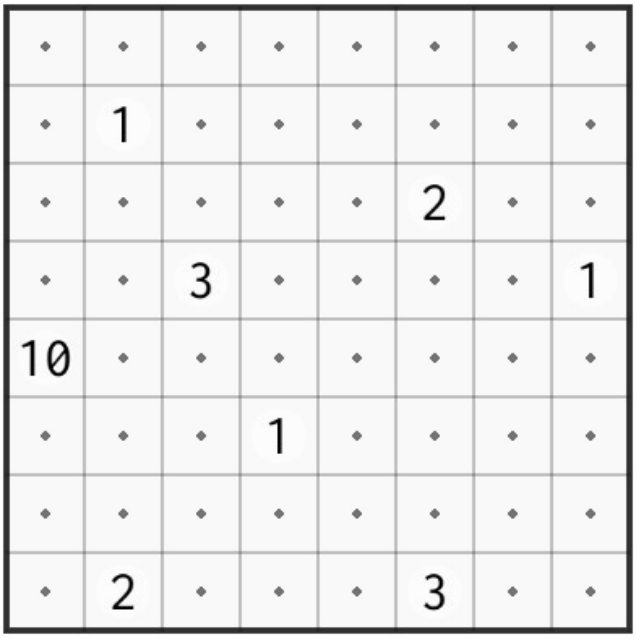

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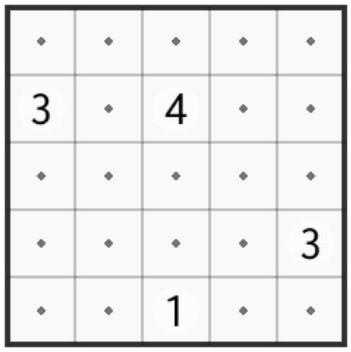

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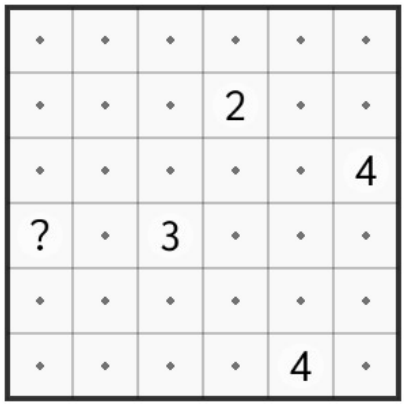

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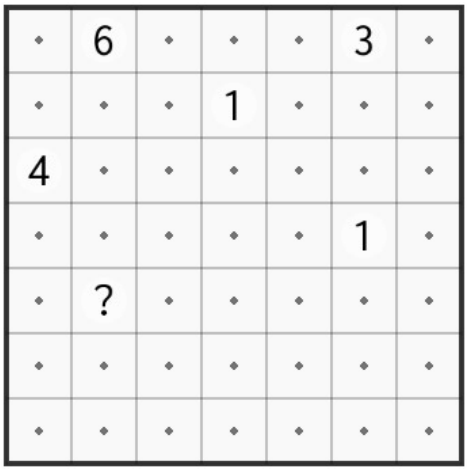

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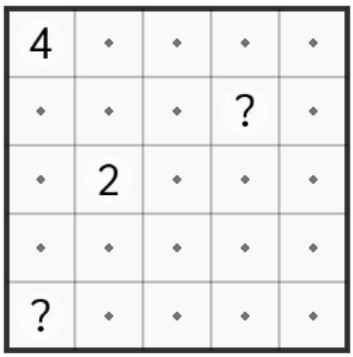


Skating

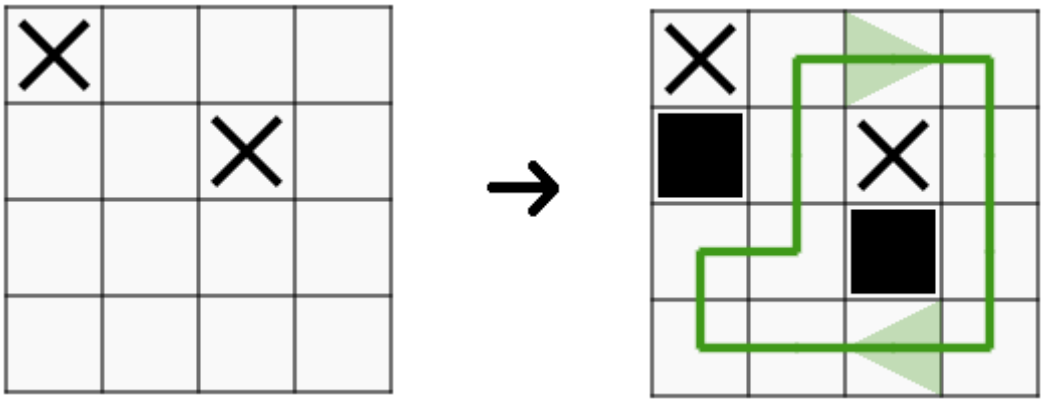
4/2021

I was pondering on a puzzle type that'd combine shading cells and drawing lines, and ended up with this. The cell-shading got a bit of a smaller role than what I at first intended, but I was ultimately very happy with the concept, at least once I actually made a puzzle with it and got some feedback!

Kudamono: https://pedros.works/kudamono/pages/skating.html

Rules:

- Shade some squares on the grid and draw a single, nonbranching loop from cell to cell.
- The cells marked with X may not be shaded over or entered by the loop (and you may not add more X's into the puzzle).
- The loop line may only turn when it's facing either the edge of the puzzle or a shaded cell. In other situations the loop may only go in straight lines.
    - This means that the loop is directional; the example puzzle below has arrows indicating the direction for clarity.
- The loop may not go over shaded cells.
- There may not be two shaded cells orthogonally adjacent to each other.
- In a finished puzzle there should be no empty cells; every cell must either have an X, be shaded or have a part of the loop in it.



Skating puzzles:

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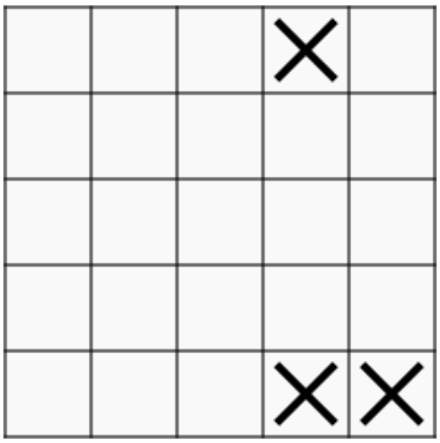

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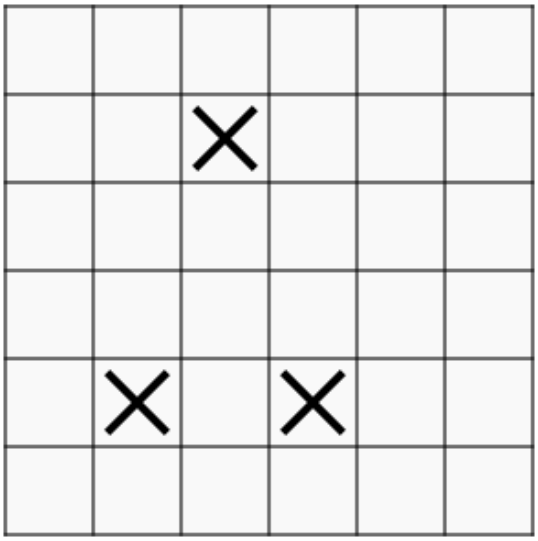

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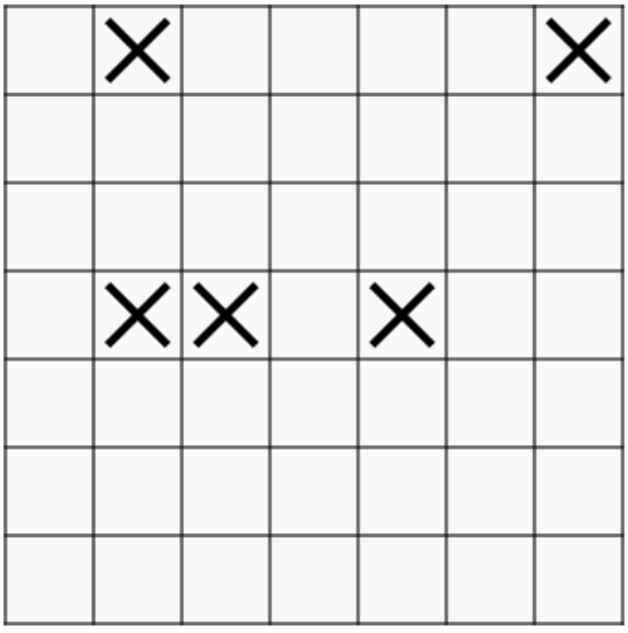

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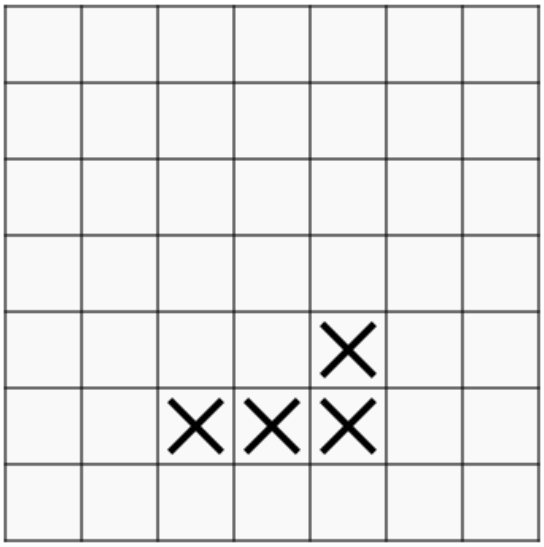

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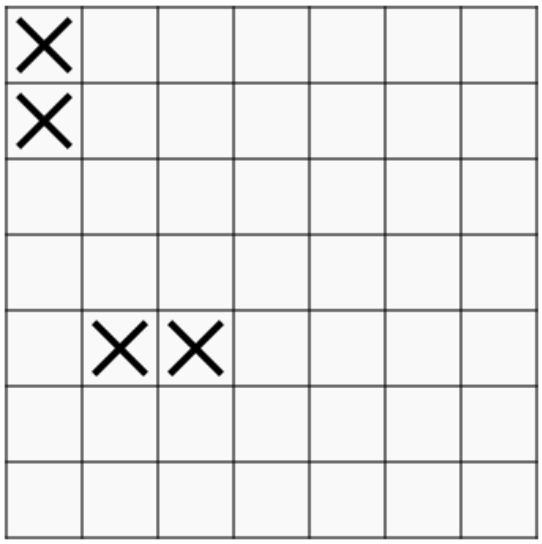
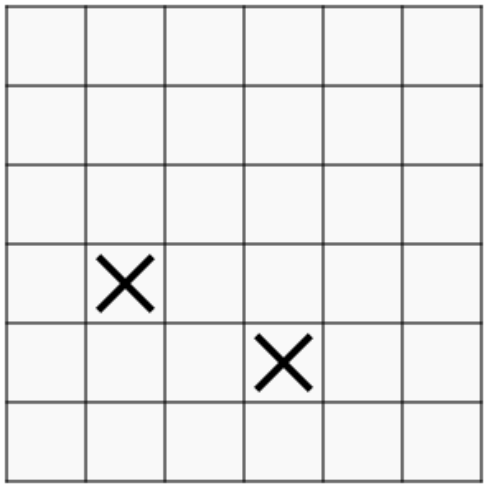


6. **Strangecreation** made a solver for Skating and used it to find this really neat 6x6 puzzle! Thank you!



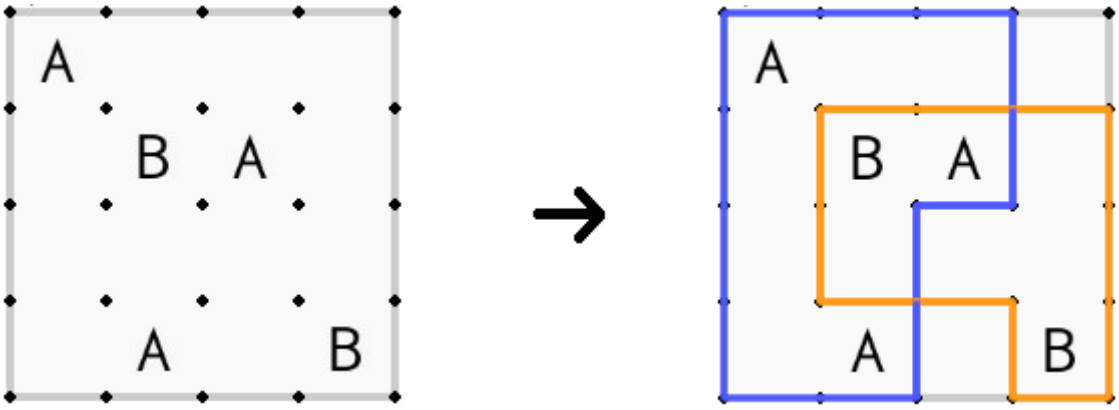
Shared field

5/2021

I briefly pondered on the idea of multiple areas overlapping in a puzzle and implemented rules around this. The result doesn't work quite as well as it could and could probably be improved a lot, but does the job ok.

Rules:

- Draw as many loops in the puzzle as there are unique letters (i.e. draw 1 loop for A, draw 1 loop for B, and so on).
- Every loop must contain every instance of the letter it stands for (i.e. there must be an A loop that surrounds every letter A).
- The loops may only move orthogonally. Two loops can cross but only in a plus-shaped pattern so that neither loop turns at the point of intersection.
- Other than the crossing mentioned above, the loops can't revisit points already visited by a loop.
- A loop can contain letters other than the intended ones (i.e. the A loop can contain letters other than A).



Shared field puzzles:

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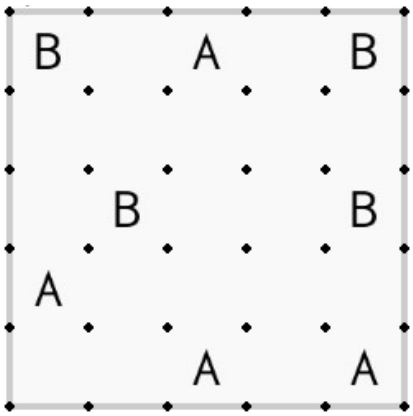

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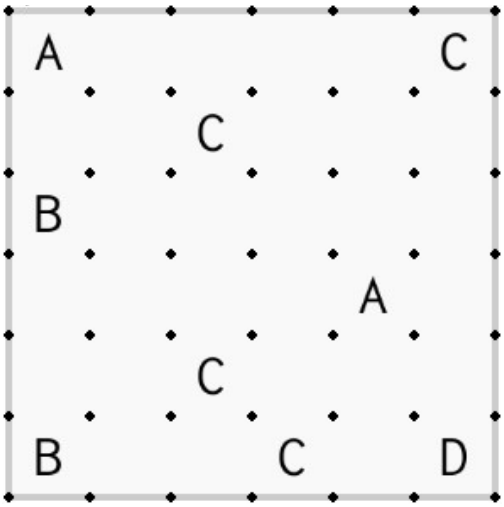

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