PARALLEL UNIVERSE

11th – 16th September 2020

Author: Prasanna Seshadri

About this Contest

*(**Author's note** – The other Instruction Booklet that is posted with this is the actual one to see. This one, as well as the "storyline" below, are for thematic purposes only. There is only one set of 20 puzzles. There will only be one Puzzle Booklet, and it will be consistent with the other Instruction Booklet.)*

Hello dear participants! If you are not familiar with this series, please check
Parallel Universe (https://logicmastersindia.com/lmitests/?test=M201404S),
Parallel Universe II (https://logicmastersindia.com/lmitests/?test=M201404P2) and
Parallel Universe III (https://logicmastersindia.com/2020/08P/).

Hello everyone, this is Prasanna Prasanna. Just kidding, but that's probably what you'll call me after seeing our puzzles.

Your world is so... singular. I was caught up in that even when I briefly discussed the ideas I had sent across to your Prasanna to use at WPC 2017 in the Puzzle Fusion round. It was definitely interesting to see how our puzzles could still be interesting if you took out about half the rules!

This booklet is a translation for the people of my universe. They aren't used to these puzzles without the doubling up of rulesets. This booklet won't have anything other than a rewording of the rules and puzzle names to be consistent for my people.

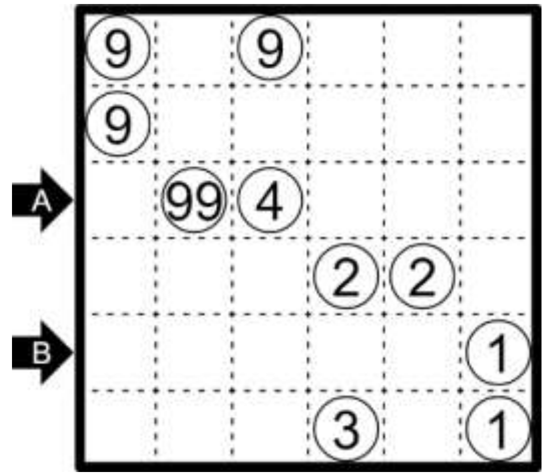
For points distributions, Penpa links, answer keys, and other details of participation, look at the other Instruction booklet.

With that, here we go!

01 Ar-half

Follow regular Araf rules as below, except, now you do not have to pair up the regions at all. Just divide the grid into regions per the rules, and that’s it.

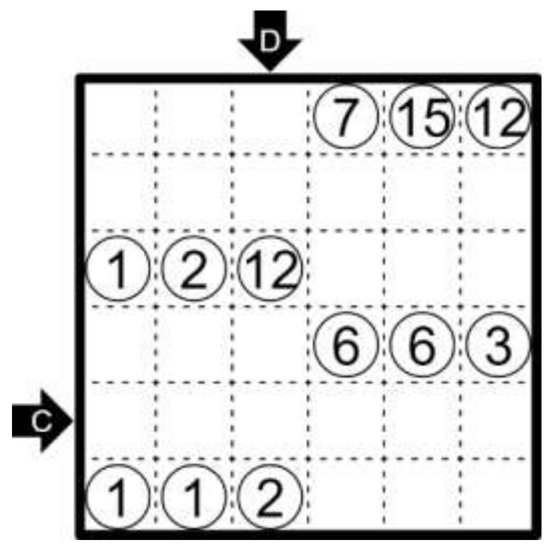
I know, I know, it seems too simple, but I tried some of them and you actually get quite a lot of interesting logic out of it!



02 Araf

Divide the grid into some regions containing two circles each. Each cell of the grid is part of one region. Each region must have an area that is strictly between the numbers in the circles contained in it.

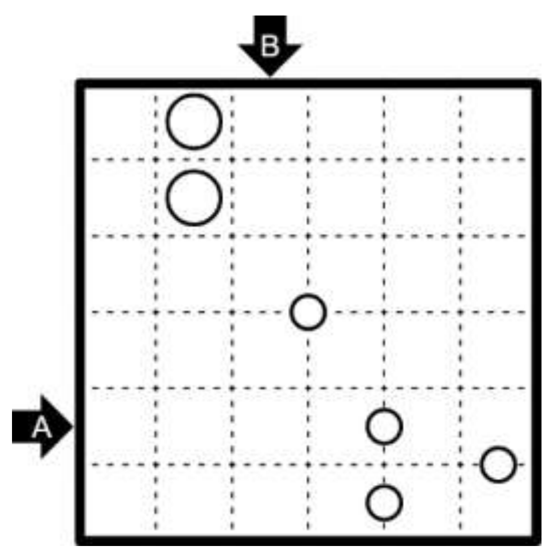
Additionally, each region must pair up with another region **that shares an edge with it,** such that their combined area is strictly between the lowest and the highest numbers within them. Numbers can repeat in paired regions.



03 Spir-all Galaxies

Follow regular Spiral Galaxies rules as below, except here, ALL cells are used by default so there is no need to consider the central point of symmetry for all the visited cells as we usually do.

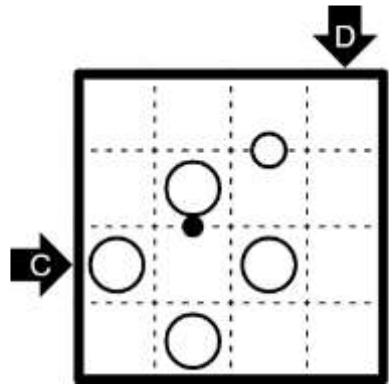
I’ll try to stop with the puns now, but I make no promises.



04 Spiral Galaxies

Divide the grid into 180 degree symmetrical regions along the gridlines, so that each cell is part of exactly one region. Each region must contain exactly one white circle, which represents the central symmetry point of the region. All circles are given.

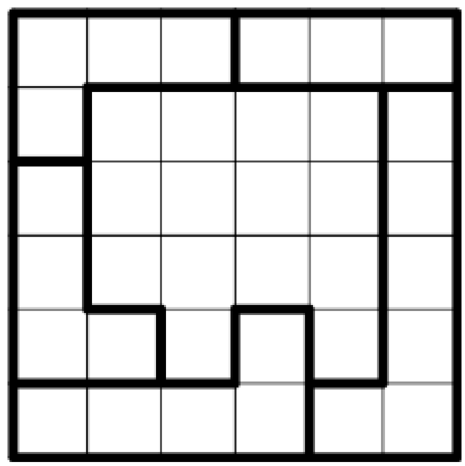
Some cells may not be part of any region. All the used cells must together form a single connected area that is 180^0 symmetrical with the black circle as the central point of symmetry for this area.



05 Star Companions

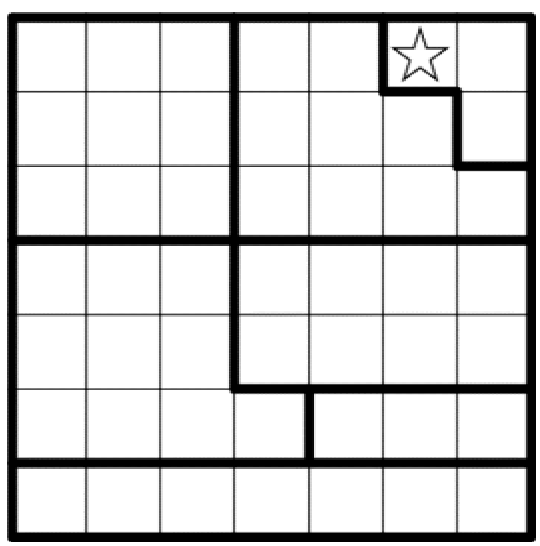
Follow Star Battle rules as below, except that there will only be white stars, and no black star.

There is no battle! Where is the battle? You can't have two same entities just hanging out together in regions and call it a battle. Anyway... Name notwithstanding, this is still a nice type to try.

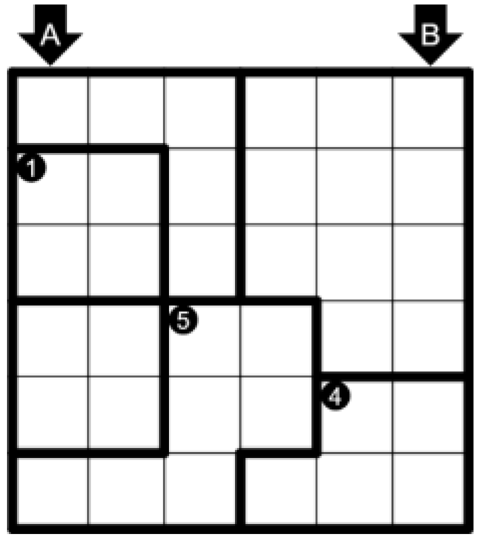


06 Star Battle

Place two white stars (1 in the example) as per regular Star Battle rules above. Additionally, place one black star in each row, column and boldly outlined region. Stars of the same colour cannot touch each other orthogonally or diagonally. Stars of different colour may touch diagonally but not orthogonally. Some stars may be given.



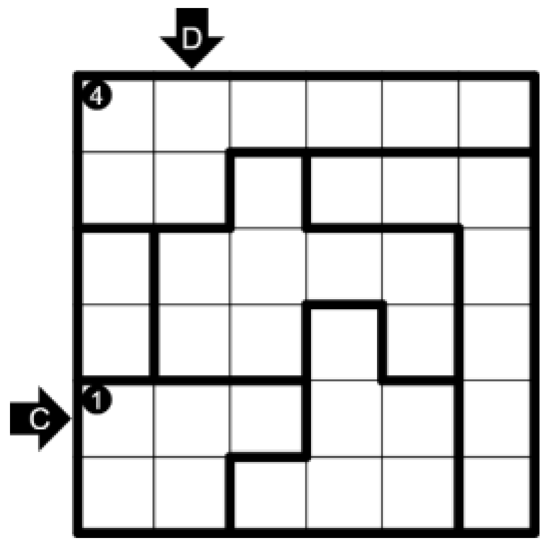
07 One Way Stostone



Follow regular Stostone rules as below, except, you do not have to satisfy the right-ward gravitational pull.

These people are so lucky! This Stostone is a representation of their world as ours is of our world. They do not have rightward gravity and only need to consider downward gravity! That's so nice…

08 Stostone

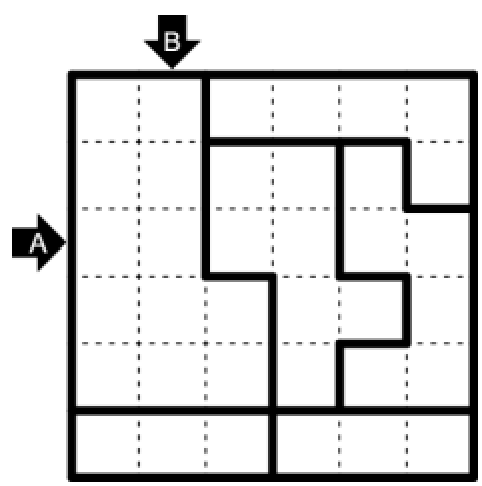


Shade some cells. A contiguous block of shaded cells is a stone. Each stone is contained in exactly one region. Each region contains exactly one stone. Each number indicates the area of the stone in the region. Regions without numbers must have a stone covering an area of 1 or more cells. No two stones share a side.

If the stones are dropped by downward gravity, they fill exactly the bottom half of the grid.

Separately, if the stones are pulled by rightward gravity, they fill exactly the right half of the grid.

09 Doub-all Back

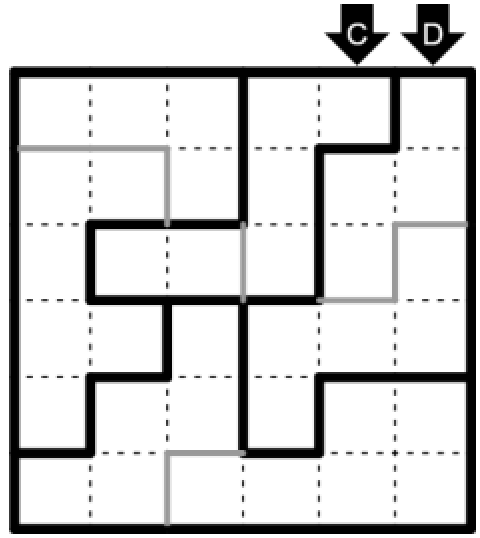


There is no pairing of the regions! Instead all cells are visited by the loop so every region is visited twice.

And again with the ALL cells visited thing. I know that's new but give it a chance.

10 Double Back

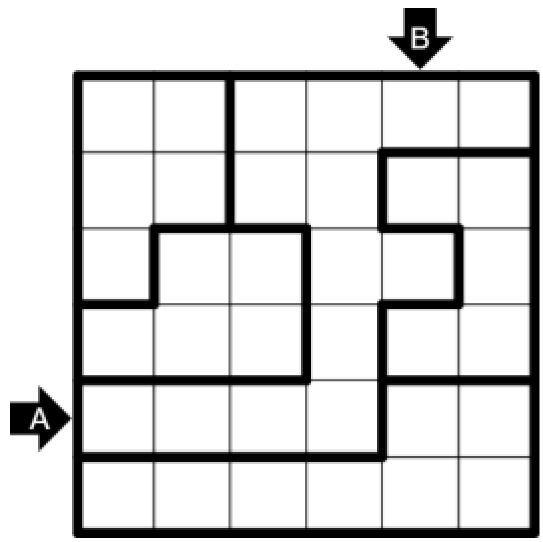
Draw a single closed loop passing horizontally and vertically through the centres of cells. The loop may not branch off, or intersect itself. The loop does not have to visit all cells, but if it visits a region it must visit all cells of that region. The regions are paired by grey lines. The loop must enter and exit each pair of regions twice. This means, within a pair, it will either enter and exit each region exactly once or one of them twice and the other zero times. The grey lines are just to show the pairings and otherwise have no difference to other bold outlines.



11 Anti-Tile LITS

Follow regular LITS rules as below, but without the need to tile in tetrominoes that don't get contained in the regions. You only need to tile the regions themselves and maintain connectivity.

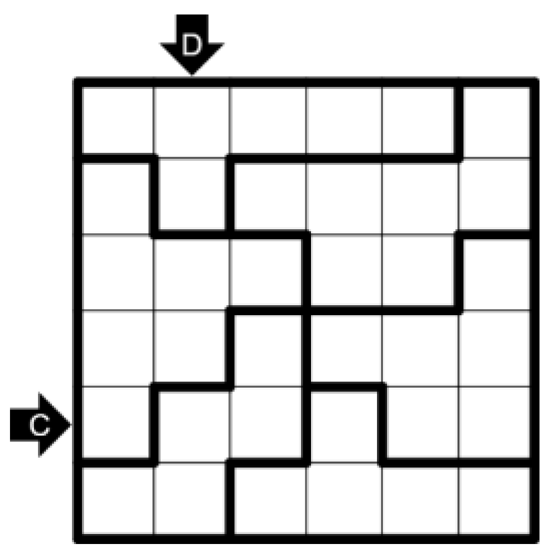
Anti-Tile implies the tiling can't happen which is technically wrong, but eh, I wanted to catch your attention so you don't miss this important rule.



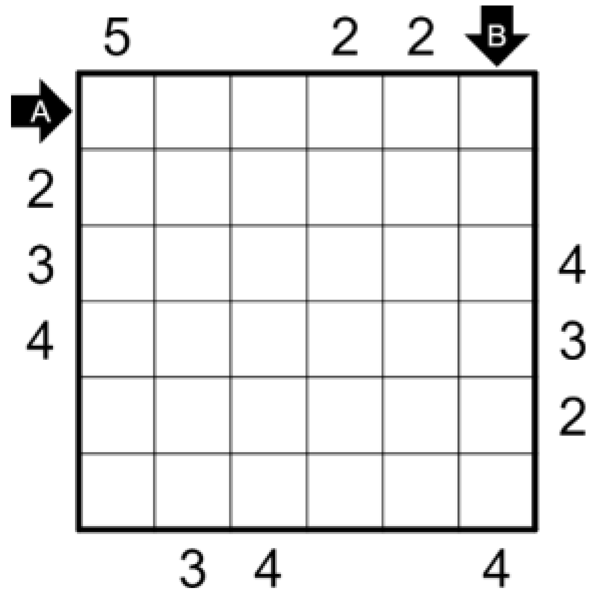
12 LITS

Shade exactly four connected cells in each outlined region, to form an L, I, T, or S tetromino, so that the following conditions are true: (1) All shaded cells are connected with each other; (2) No 2×2 group of cells can be entirely shaded black; (3) When two tetrominoes in adjacent regions share an edge, they must not be of the same type regardless of rotations or reflections.

Additionally, the shaded cells must also be entirely divisible into tetrominoes that never exist completely in the same boldly outlined region. In this division, like the regular LITS wall, when two tetrominoes share an edge, they must not be of the same type regardless of rotations and reflections.



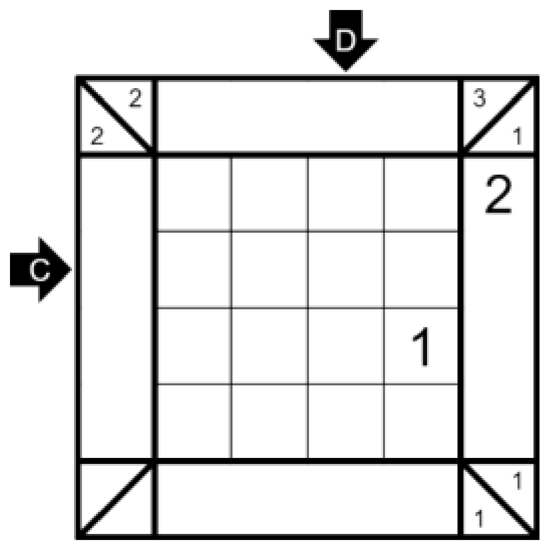
13 Skyscrapers



Apply regular Skyscraper rules as below, except, the direct grid skyscraper clues necessary to solve the puzzle are already given, and there is no usage of the clues that clue the clues.

This one actually can have the same rules as ours, it’s just that no outer corner clues are given.

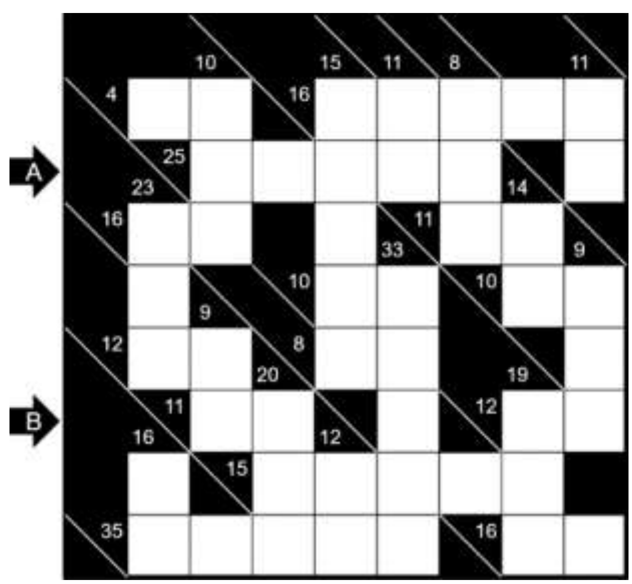
14 Skyscrapers



Fill in the grid with digits 1–N where N is the size of the grid. Each row and column contains each digit exactly once. Each number inside the grid represents the height of a building. The clues outside of the grid indicate how many buildings can be seen when looking from that direction. Taller buildings block the view of smaller buildings.

Additionally, the numbers beside diagonal lines indicate the number of skyscrapers seen considering skyscraper clues in a line in the corresponding direction. These outer lines may contain repeating digits, and digits hide smaller as well as same sized digits behind them.

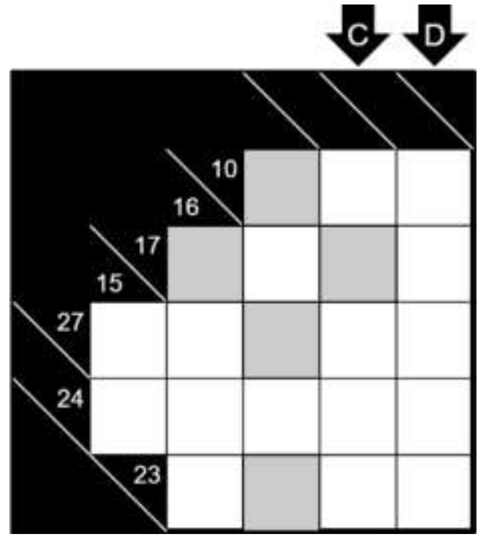
15 Kakuro



Follow regular Kakuro rules as below.

Like the Skyscrapers this one too can have the same rules as ours, just without using the shaded cells.

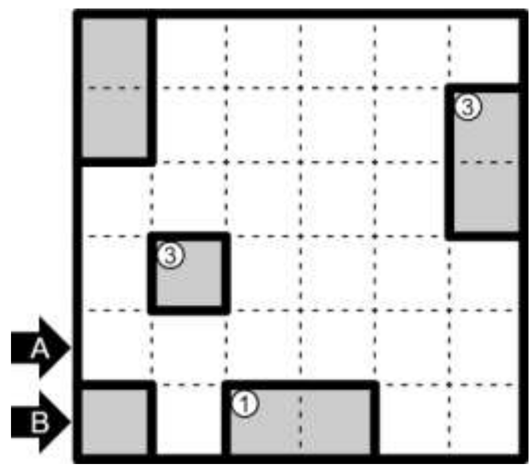
16 Kakuro



Enter a single digit from 1 to 9 into each white cell so that the sum of digits in each Across entry equals the value given to the left of the entry, and the sum of digits in each Down entry equals the value given above the entry. No digit may be repeated within a single entry (i.e., group of cells connected horizontally or vertically without any black cells between).

Additionally, some cells are shaded and the digits in these shaded cells double up as Kakuro clues for subsequent white cells, till the next grey cell, black cell or grid boundary. It is up to the solver to determine if the shaded cell digit is an across or a down clue and it could be both. Black cell sums consider shaded cells as white cells.

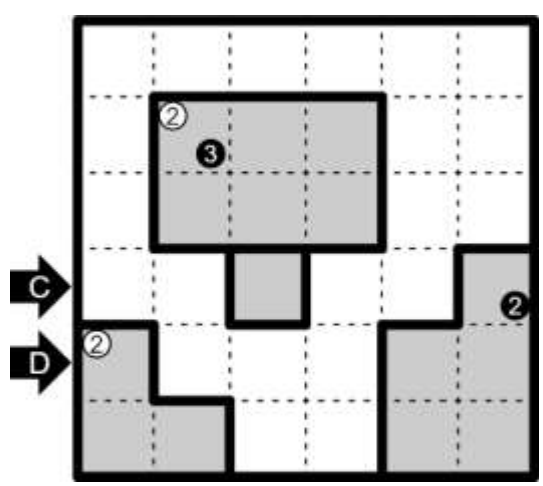
17 Ovotovata



Apply regular Ovotovatatavotovo rules as below.

As we know, our universe actually has this idea as Ovotovatatavotovo. Eric Fox loves his palindromes. Again, the rules can just be applied as is, this is just an all-white-circle themed puzzle technically.

18 Ovotovatatavotovo



Draw a single closed loop passing horizontally and vertically through the centers of cells that passes through every shaded region **at least once**. The loop may not branch off, or intersect itself.

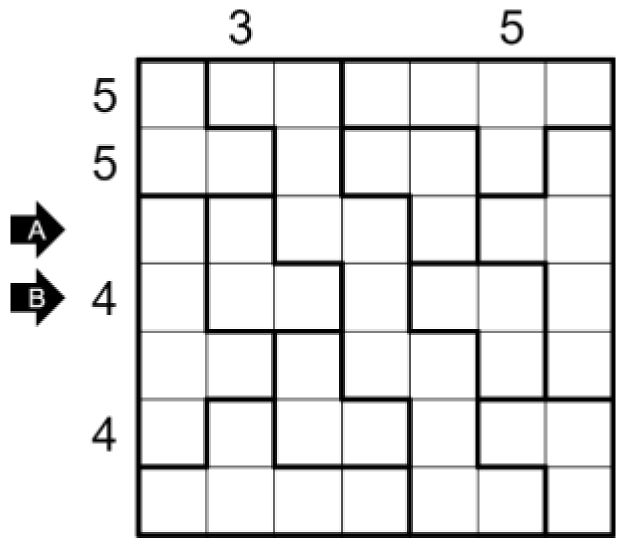
Whenever the loop exits a region with a white circle (in any direction) it must go straight till the Nth cell in that direction and then turn, where n is the number in the circle.

Whenever the loop enters a region with a black circle (in any direction) it must go straight till the Nth cell in that direction and then turn, where n is the number in the circle.

19 Fringe Pavement

Shade some cells in the grid so that for each boldly outlined region either all its cells are shaded or none at all. Numbers outside the grid indicate the number of shaded cells in that row/column.

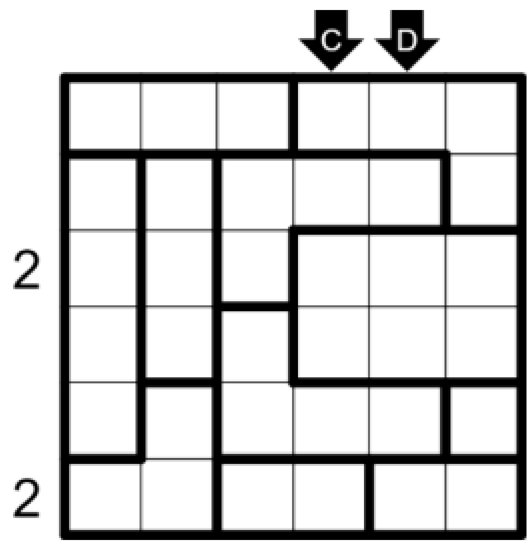
To be truly crazy, you need clues that switch around from puzzle to puzzle. This is getting there, but not crazy enough yet.



20 Crazy Pavement

Shade some cells in the grid so that for each boldly outlined region either all its cells are shaded or none at all. Shaded cells must form a contiguous group and cannot fully cover a 2x2 area of cells.

Numbers outside the grid either all indicate the number of shaded cells in that row/column, or they all indicate the number of unshaded cells in that row/column. It is up to the solver to determine which. Once determined it is true for all numbers.



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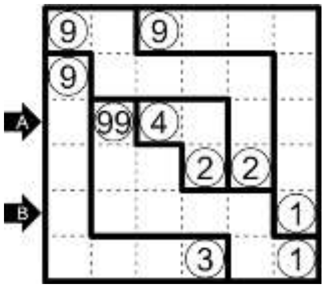
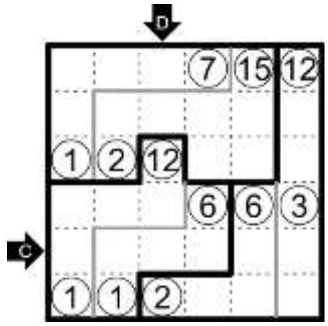


02 Araf



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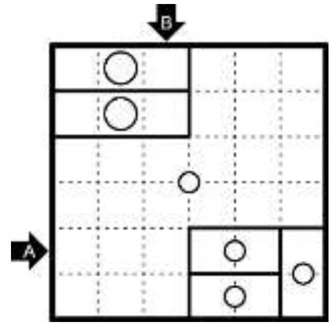

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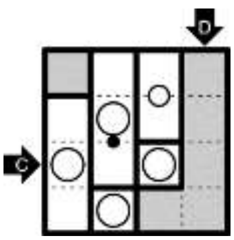

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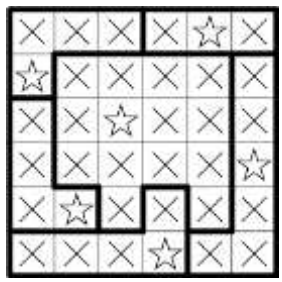
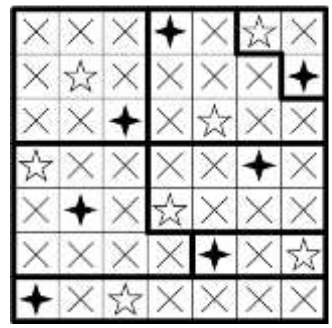


06 Star Battle



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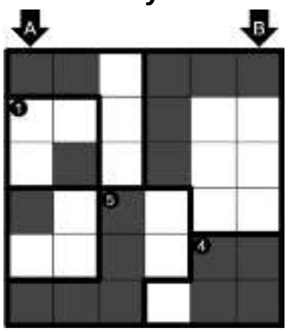

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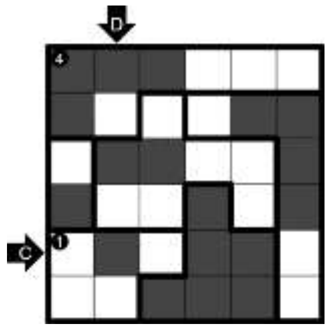

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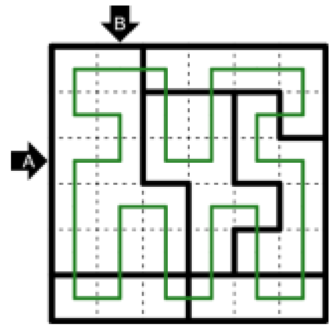

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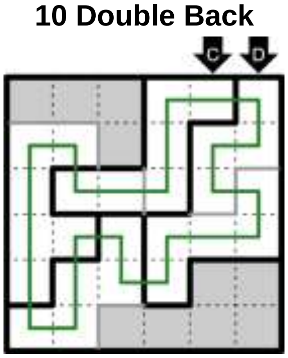

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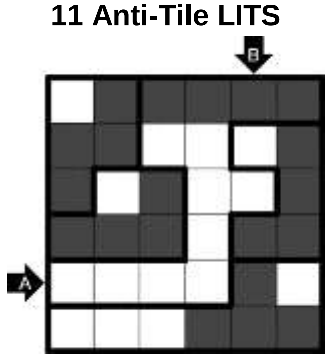
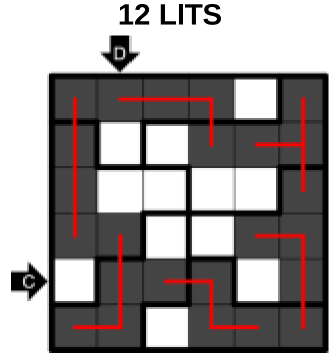


12 LITS



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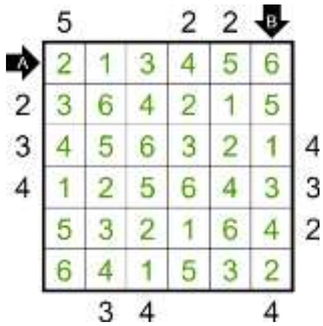

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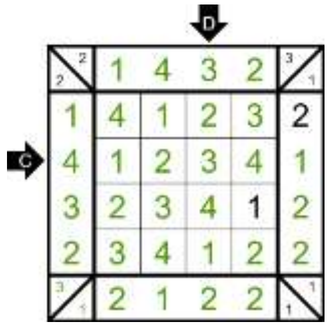

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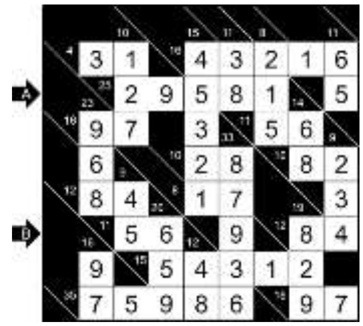
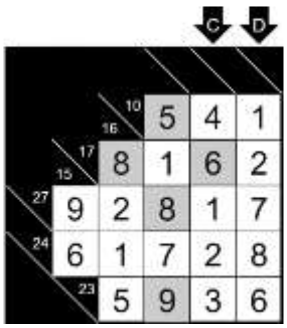
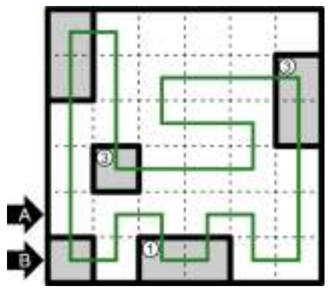


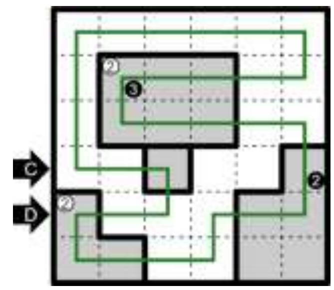
16 Kakuro



17 Ovotovata



18 Ovotovatatavotovo



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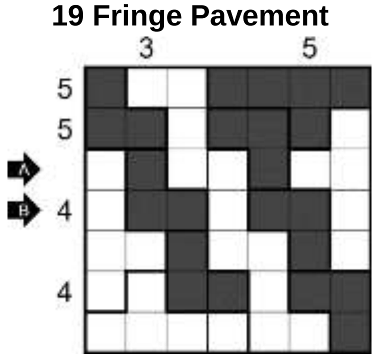

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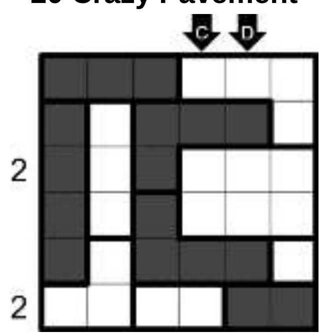

Happy Solving! ☺