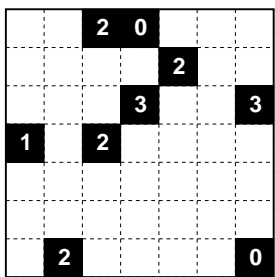


Shakashaka

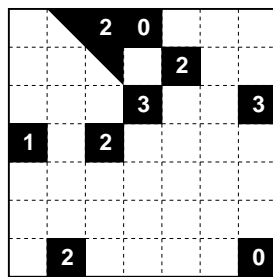
This puzzle is, for me the gem in Alex Bellos' book "Puzzle Ninja". It is unusual in having diagonal divisions of the basic cells, matched only in **Slash Pack** which is itself most remarkable and difficult for me to get to grips with. **Shakashaka** has also been quite a challenge, especially in the construction of new puzzles. This would seem to be rather easy, so have a go yourself, but then you will surely find that solving can be very tricky as your puzzle may well have multiple solutions. Let's hope I have not failed in my task!

All you are allowed to do is to half-fill a cell diagonally with a black pen so that finally you will get an answer with unfilled squares and rectangles, some of which are rotated by 45°. The unfilled squares and rectangles may touch each other only at corners, not side by side – corners on corners or corners on sides. Some cells are fully black from the start, and these sometimes carry a number, which is a 'given', and these numbers tell you how many half-filled neighbours there are for that numbered cell; the triangles which half-fill the neighbours must connect edge to edge with the cell with the given. To make it more difficult for you, some black cells may not have a number given, but the example puzzle **A** has all possible.

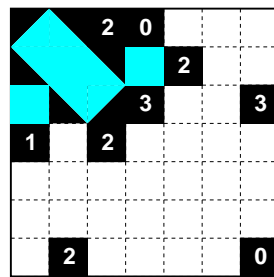
A result of these rules is that you may not black in a whole cell. Therefore any cell that seems to be without any purpose must be part of a rectangle, whether or not it is rotated 45°. Remember, a square is a rectangle.



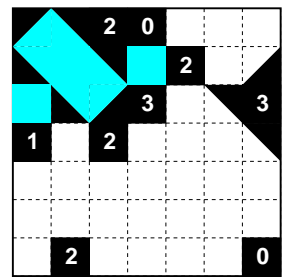
A



B

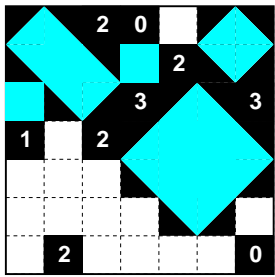


C

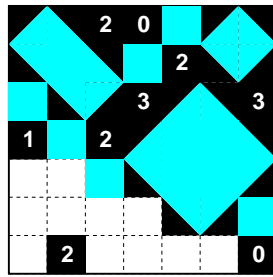


D

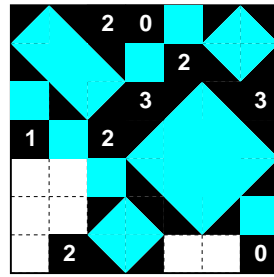
The 2 on the top row indicates two triangles, below and to its left as shown in **B**. There is only one way of completing the rectangle at an angle that these black triangles demand, and here it is filled with blue for clarity in **C**. A single cell square neighbouring the 0 given is also filled in, but the other neighbour awaits decision as it could be part of a rectangle along the top row. There is also a single cell square determined in the first column. In **D** the three triangles around the 3 on the right-hand edge are filled in, here the question being the orientation of the triangle in the third row. The chosen orientation is the only way as there is no way an angled rectangle can be filled in if it were the other way round. Two angled squares can now be placed, along with



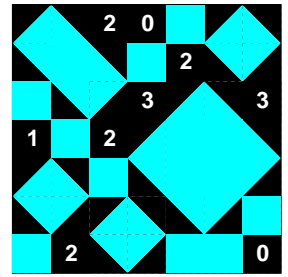
E



F



G



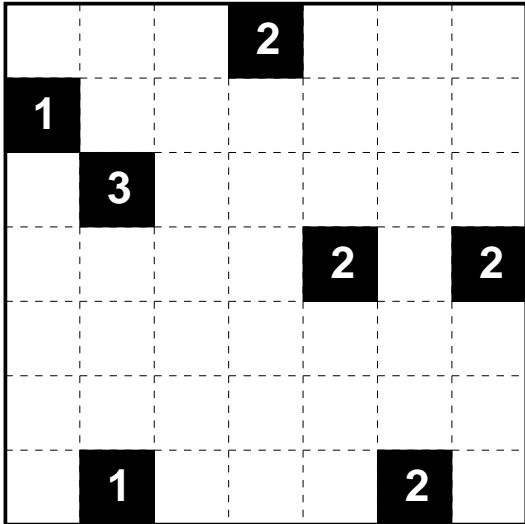
H

triangles to fill the cells, as in **E**. You will notice that the other 3 given has not been needed so that cell could have simply been left unnumbered. Four single cell squares can now be filled in as in **F**, noticing that the triangles for the 2 given near the centre are already in place, so only small squares can be chosen. The right side of the 2 in the bottom row now leads to the angled square placed in **G**. Completion, **H**, is now straightforward.

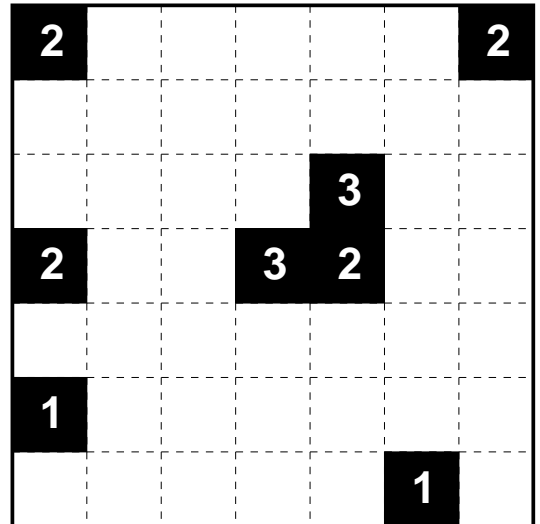
Notice that if the '2 given near the centre' was instead a 3, there would have been a quite different but still unique solution. This shows how small variations can generate other solutions, sometimes multiple solutions. When I was working my way through Bellos' puzzles I made some transcription mistakes with his largest puzzle, and then with a little tweaking I got a new puzzle. I have put this as the last puzzle in this set though cannot claim much for authorship! The last thing I did was to surprise myself in making my very own large puzzle, the penultimate puzzle in this file. For these two puzzles I present the answer in the form I have used when working on these puzzles, as they look rather pretty!

Having made a few changes to the 7 × 7 puzzles, I have added some more at 17 × 17, the best size for this puzzle.

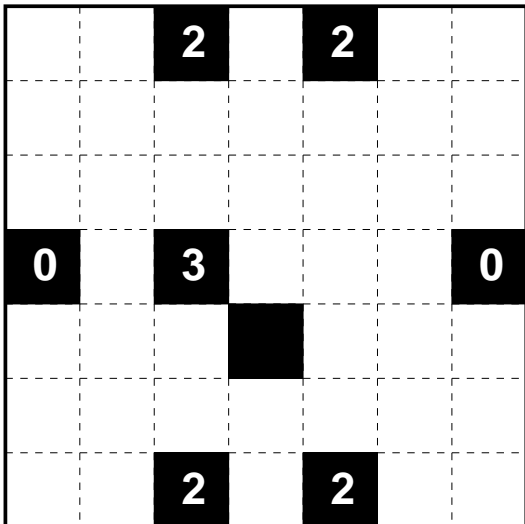
Shakashaka 7×7



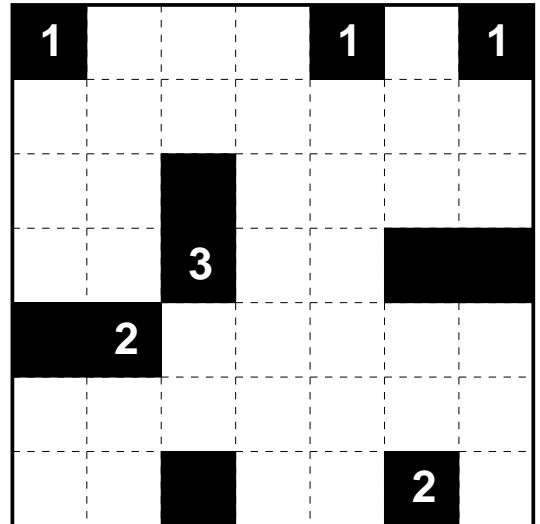
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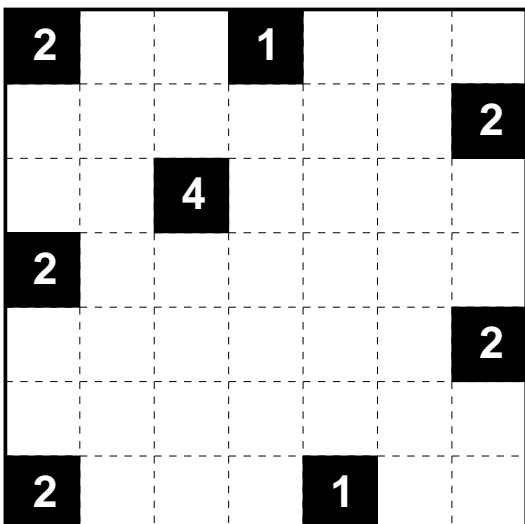
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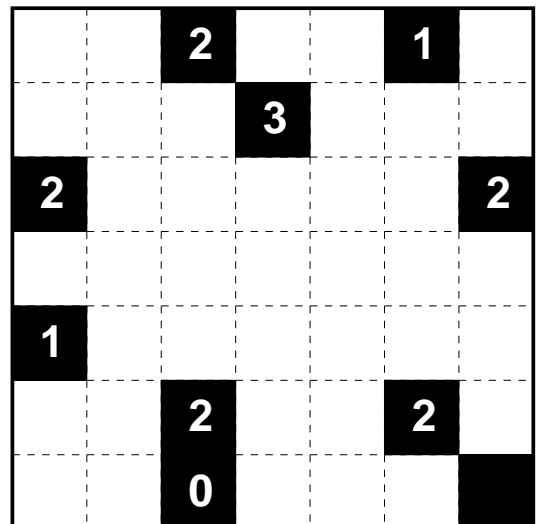
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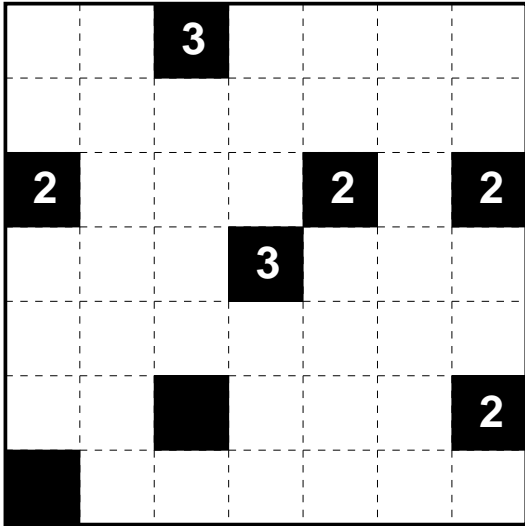


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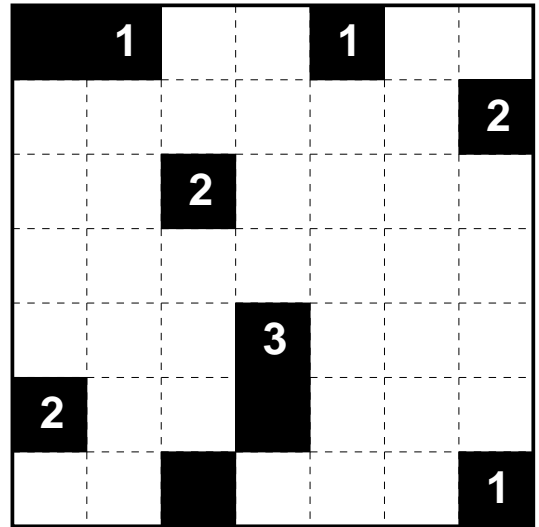


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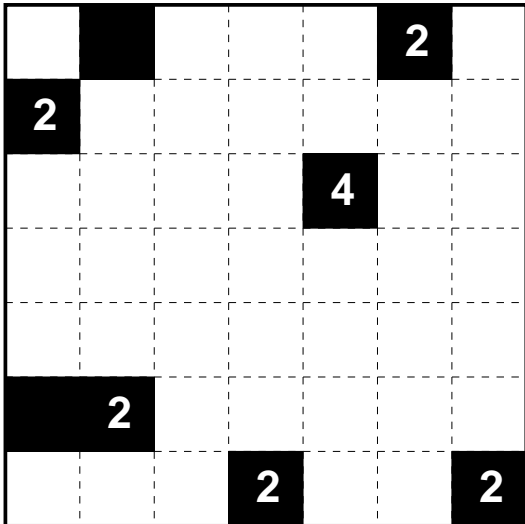
Shakashaka 7×7



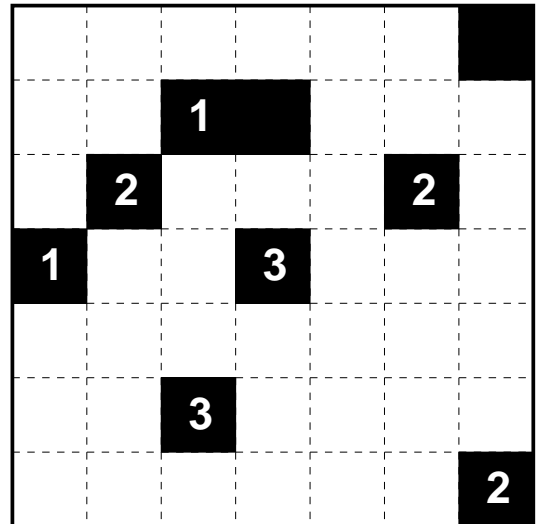
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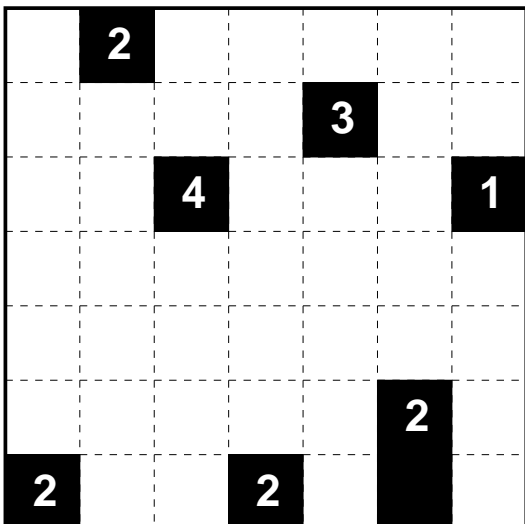
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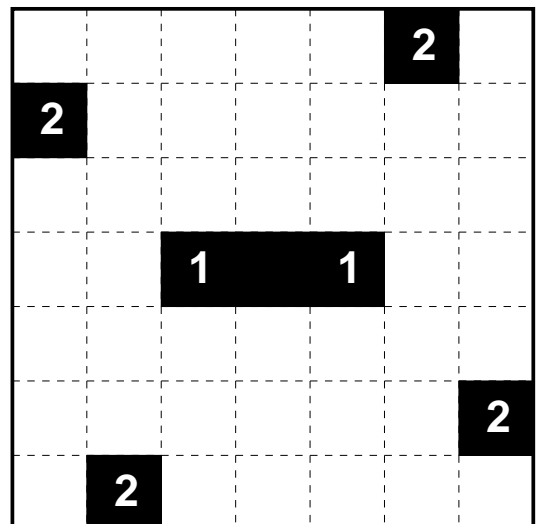
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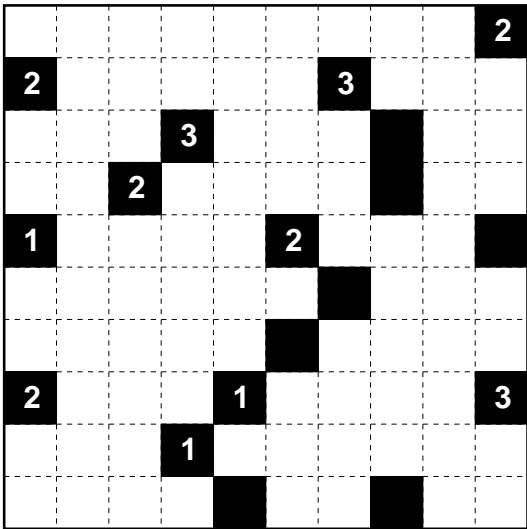


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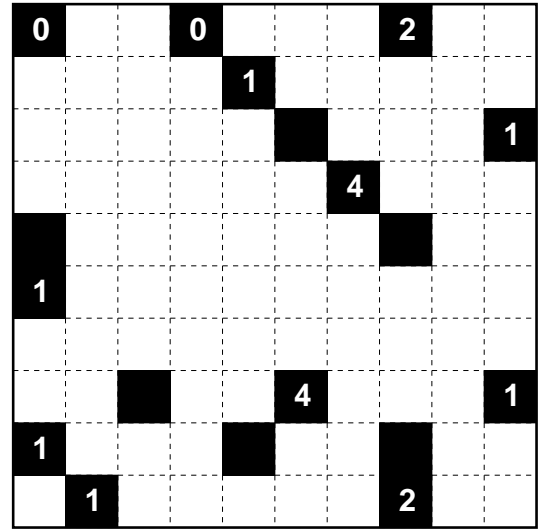


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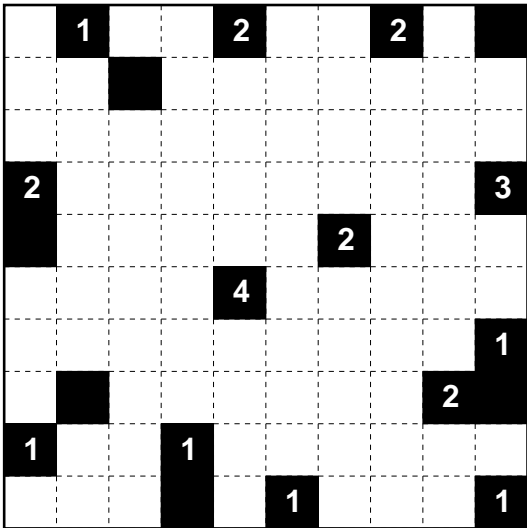
Shakashaka 10 × 10



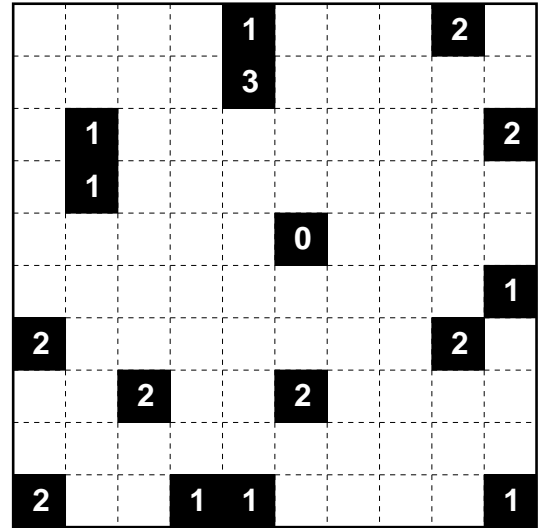
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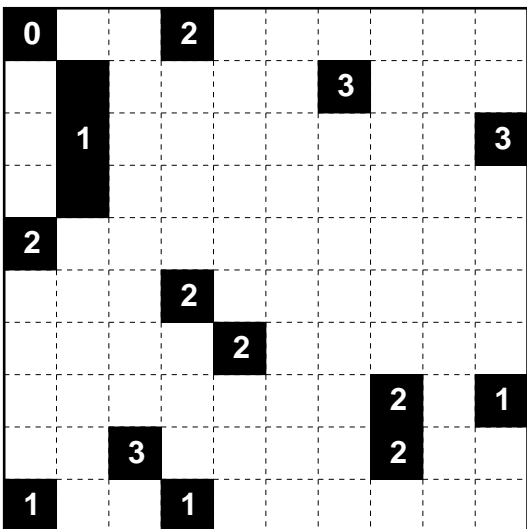
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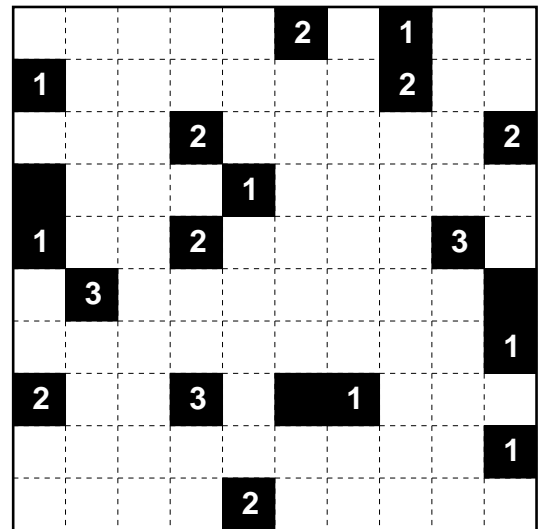
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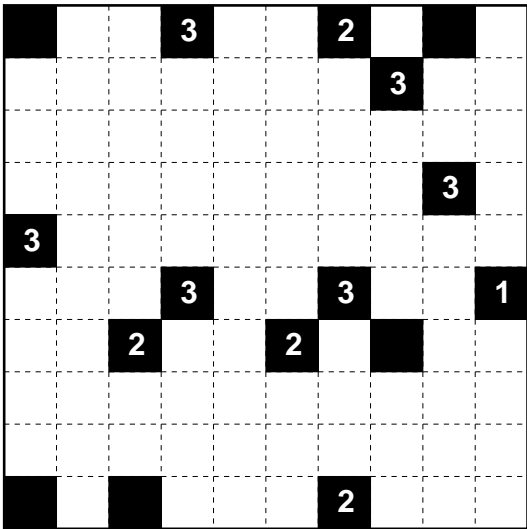


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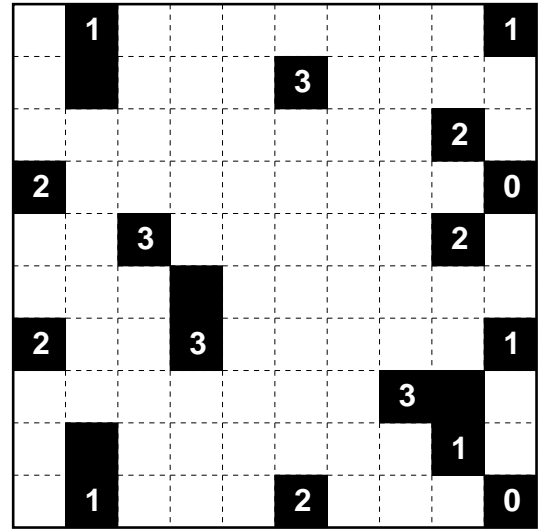


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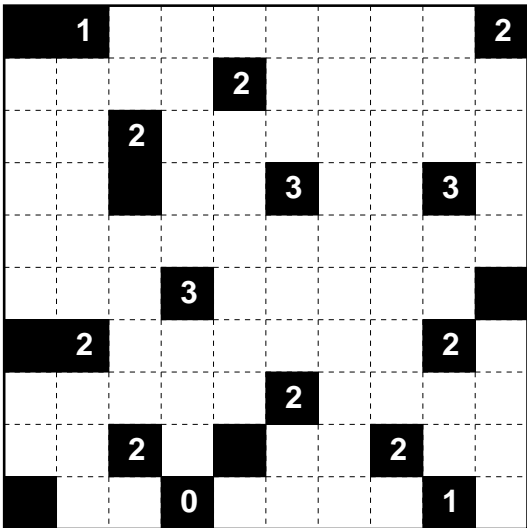
Shakashaka 10 × 10



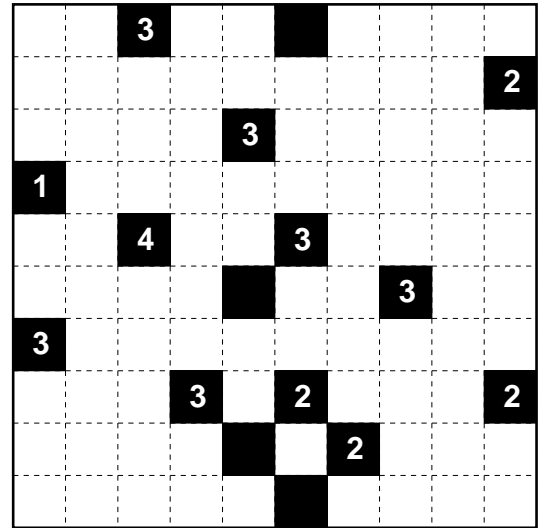
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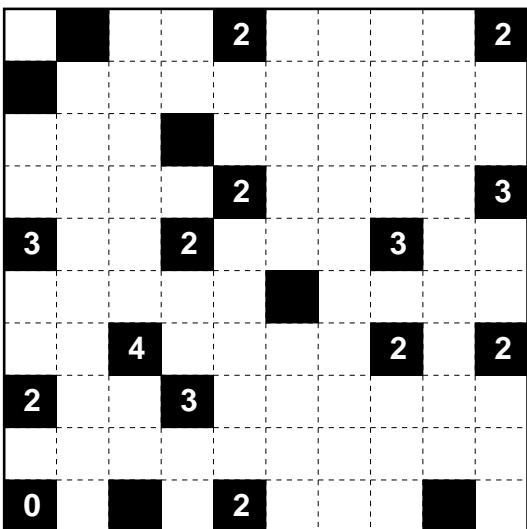
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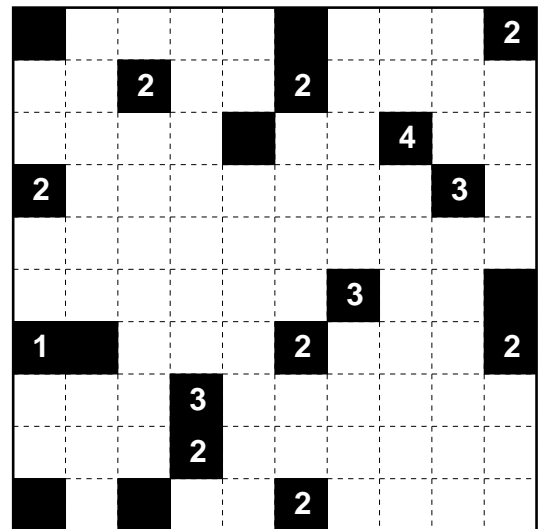
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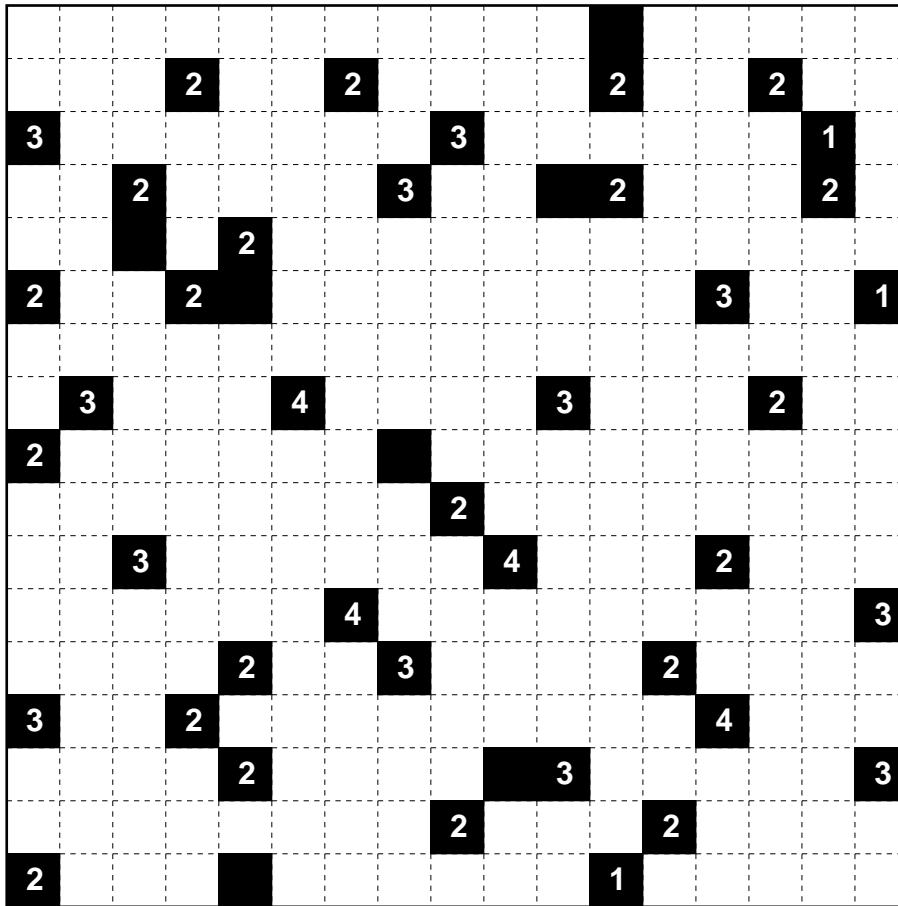
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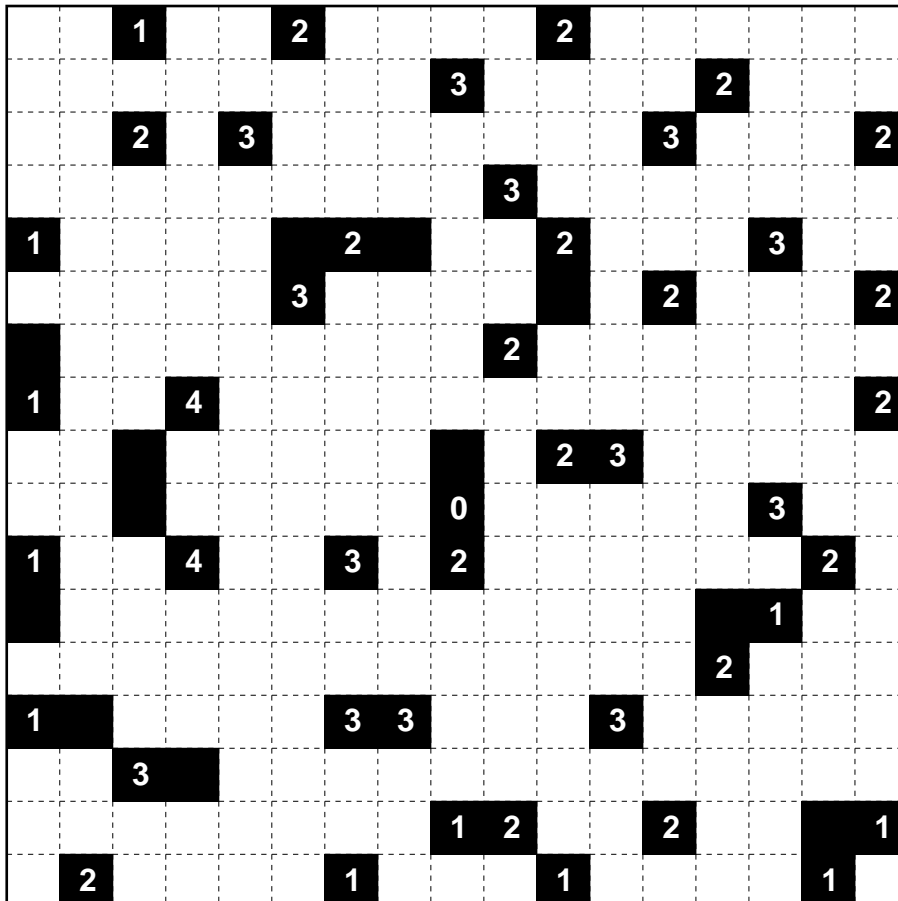
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Shakashaka 17 × 17

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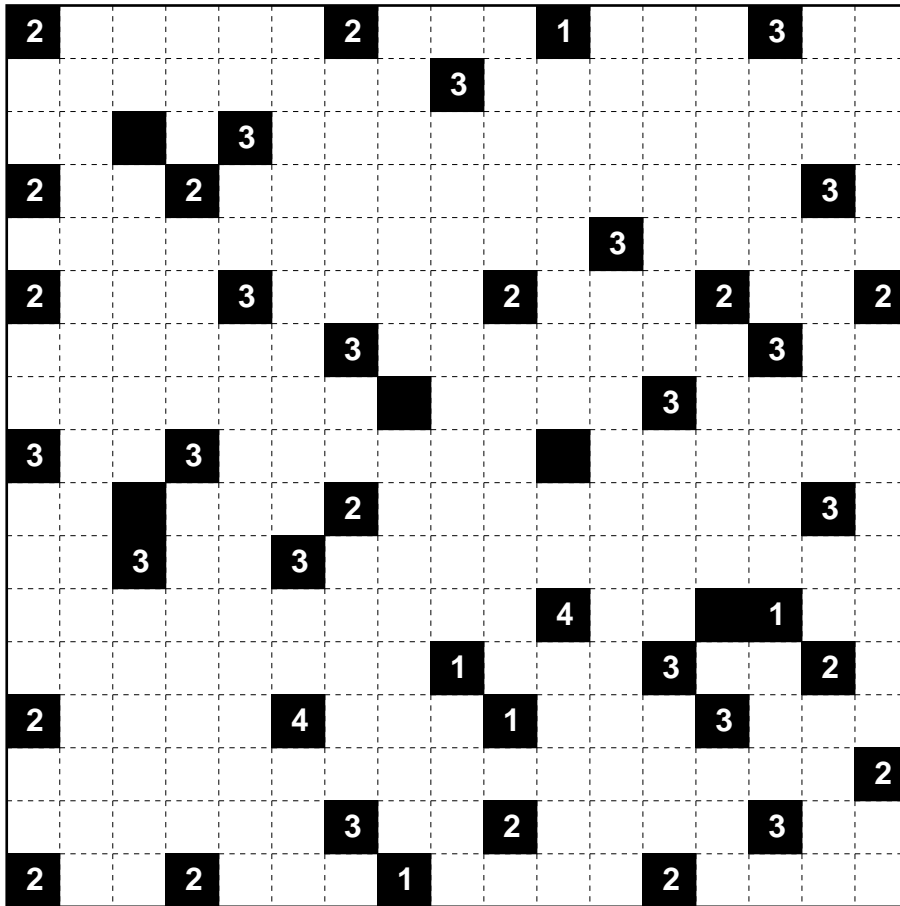


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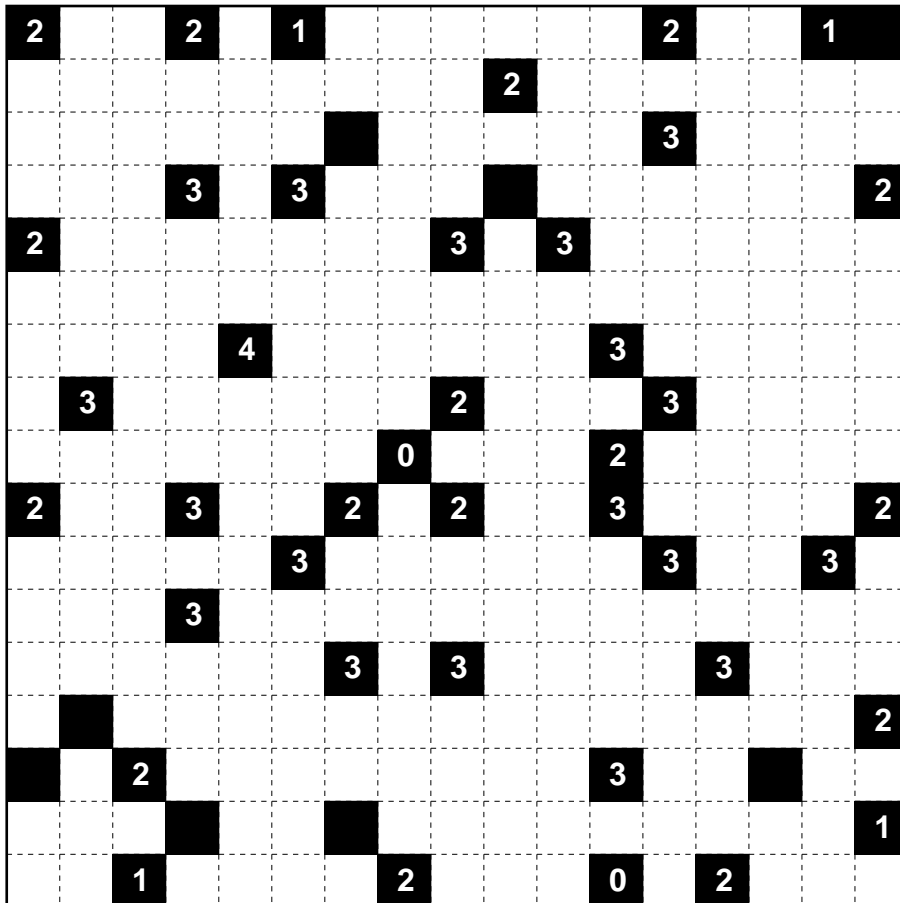


Shakashaka 17 × 17

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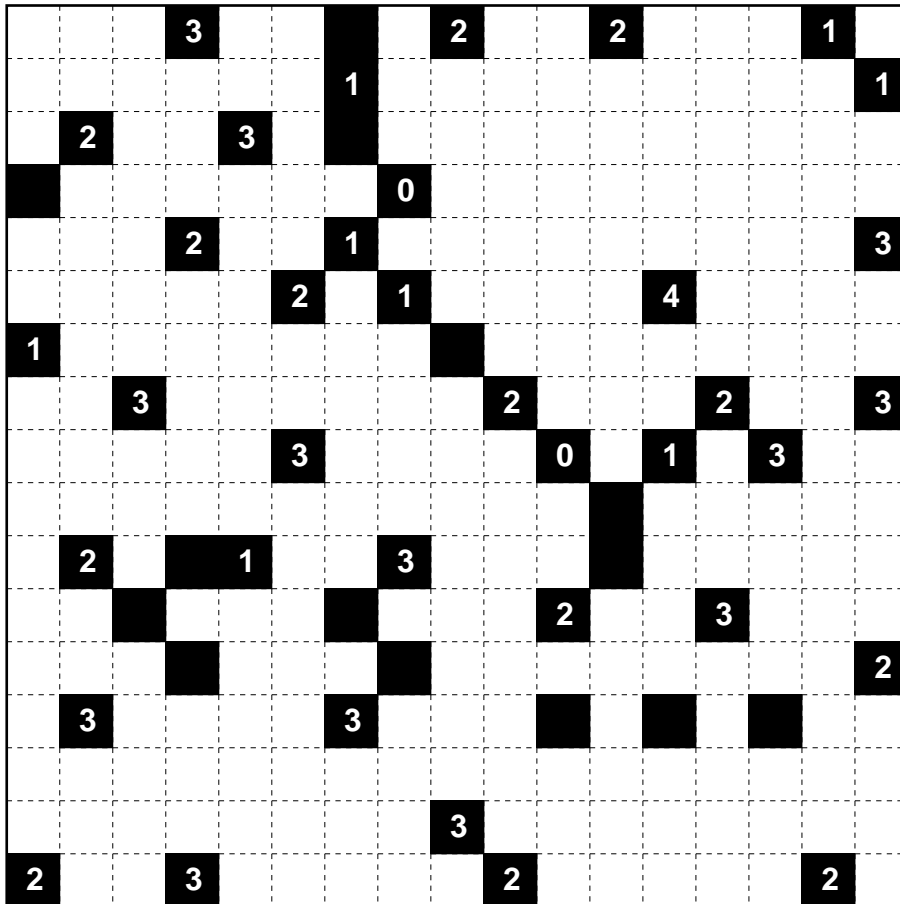


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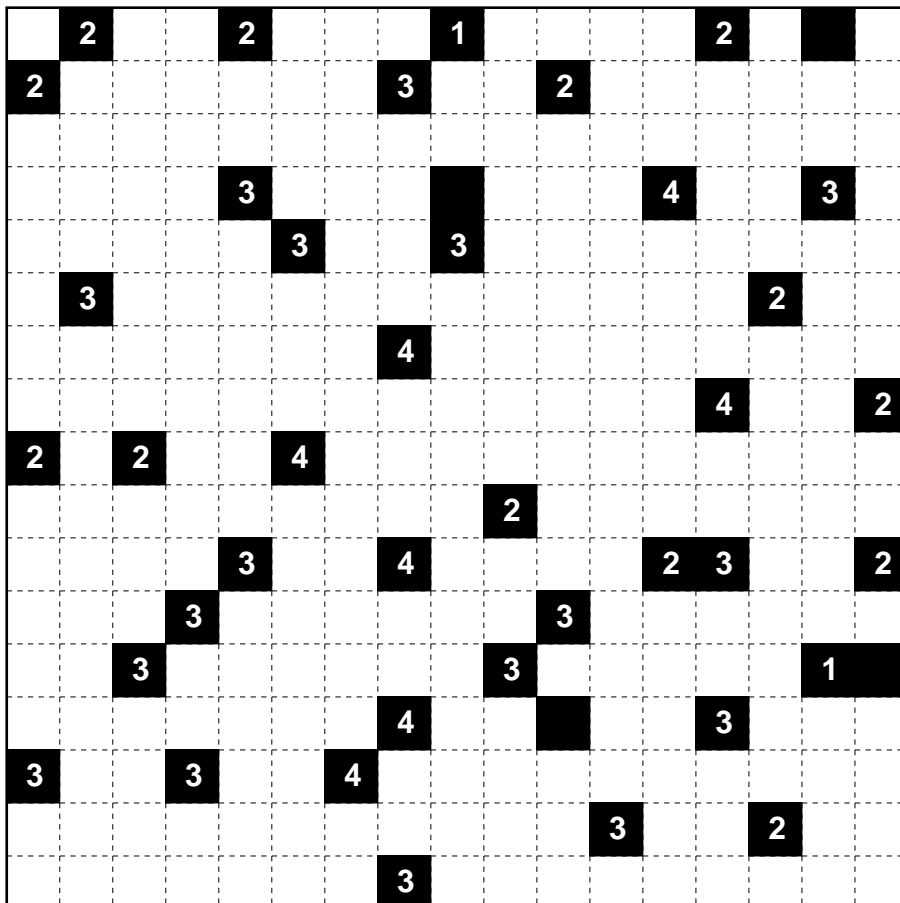


Shakashaka 17 × 17

5

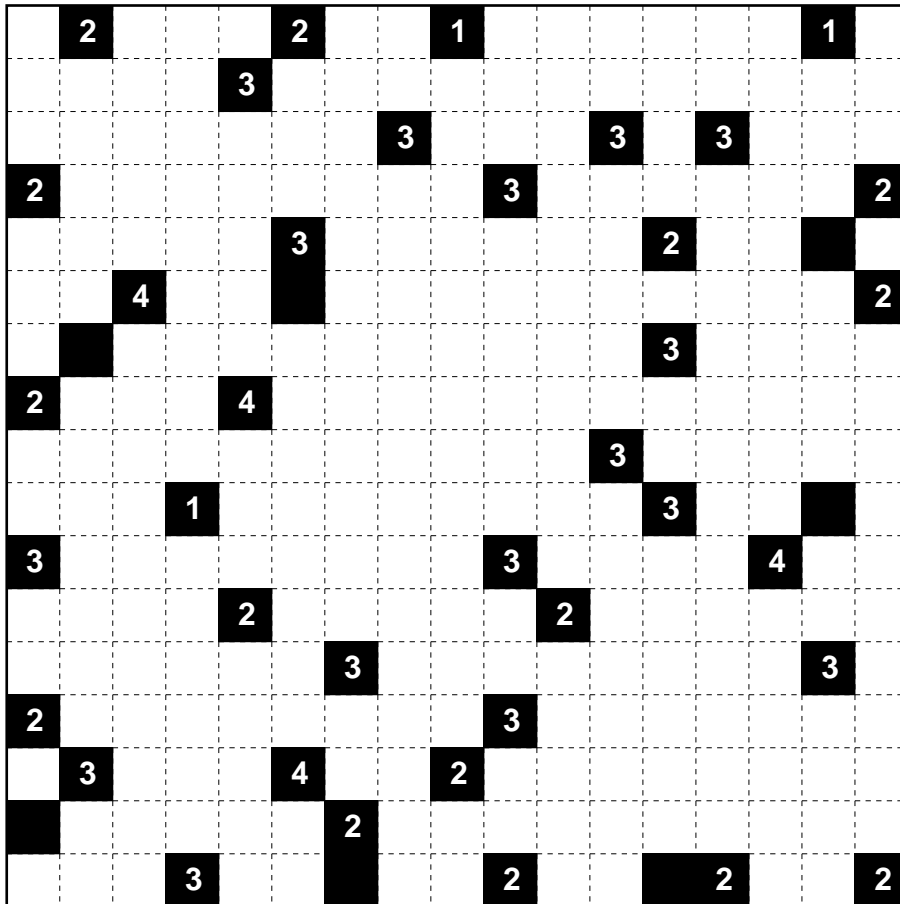


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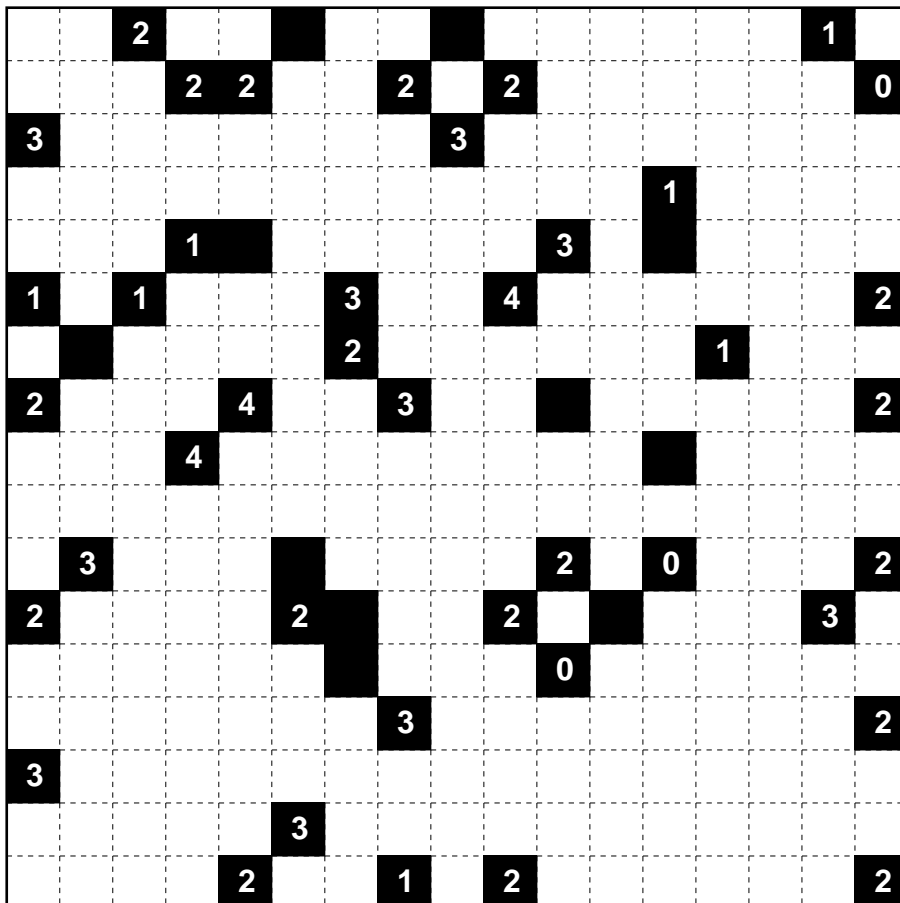


Shakashaka 17 × 17

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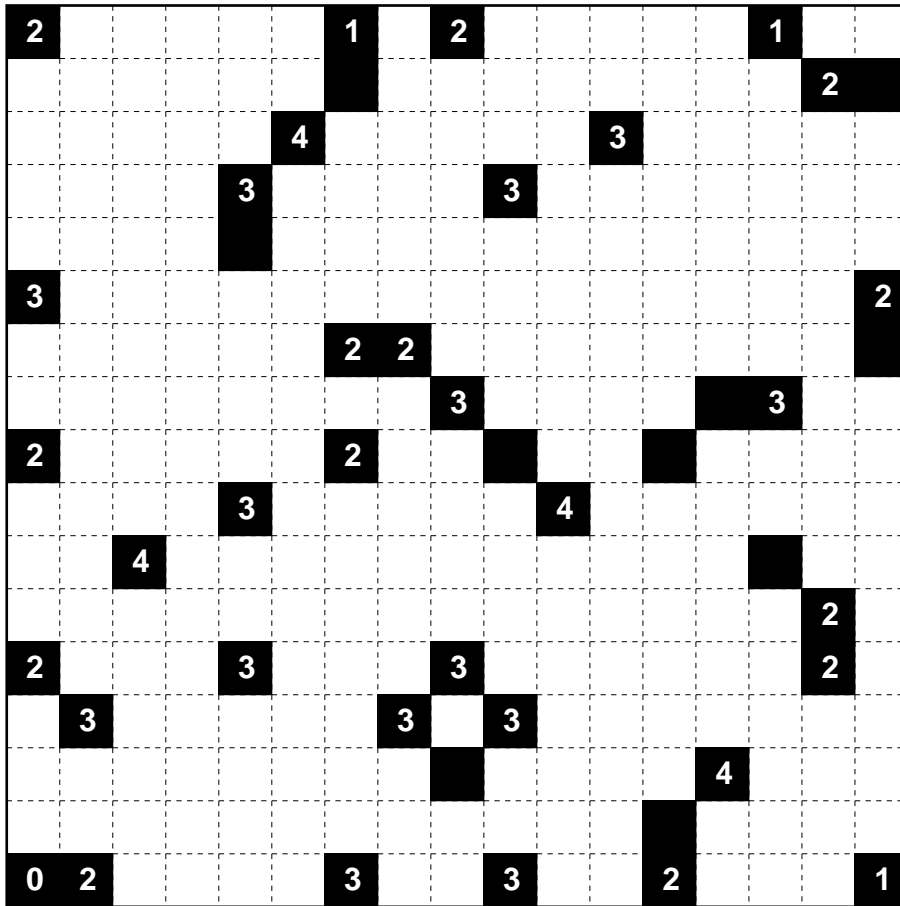


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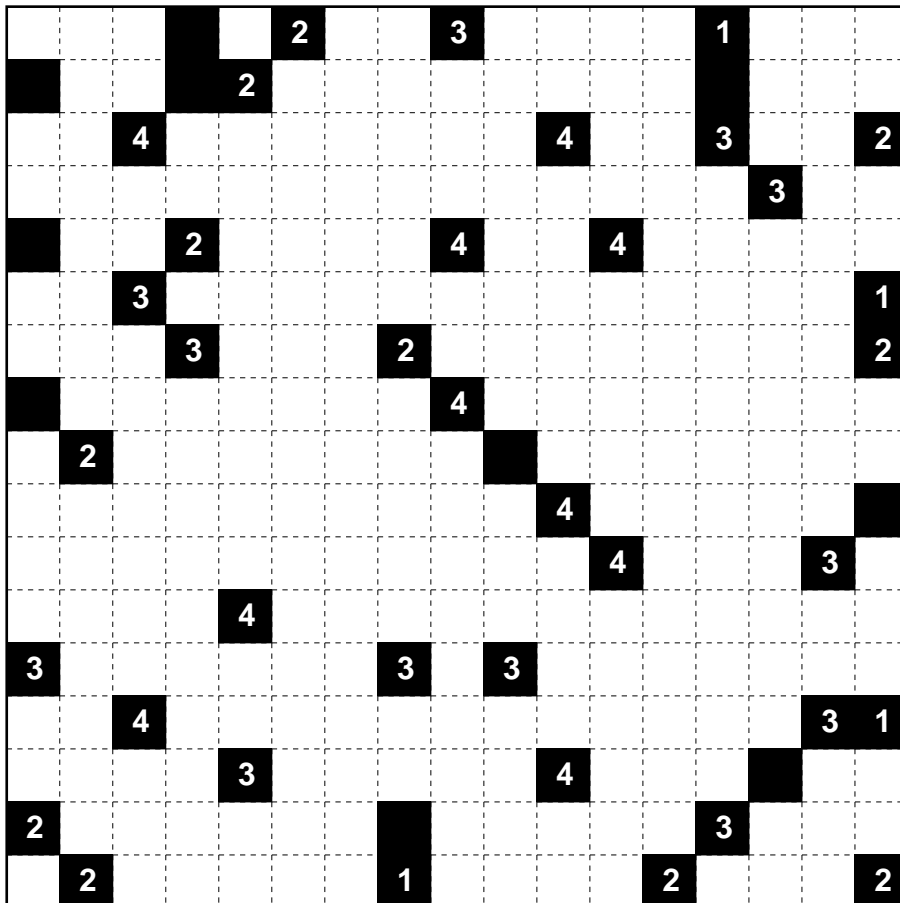


Shakashaka 17 × 17

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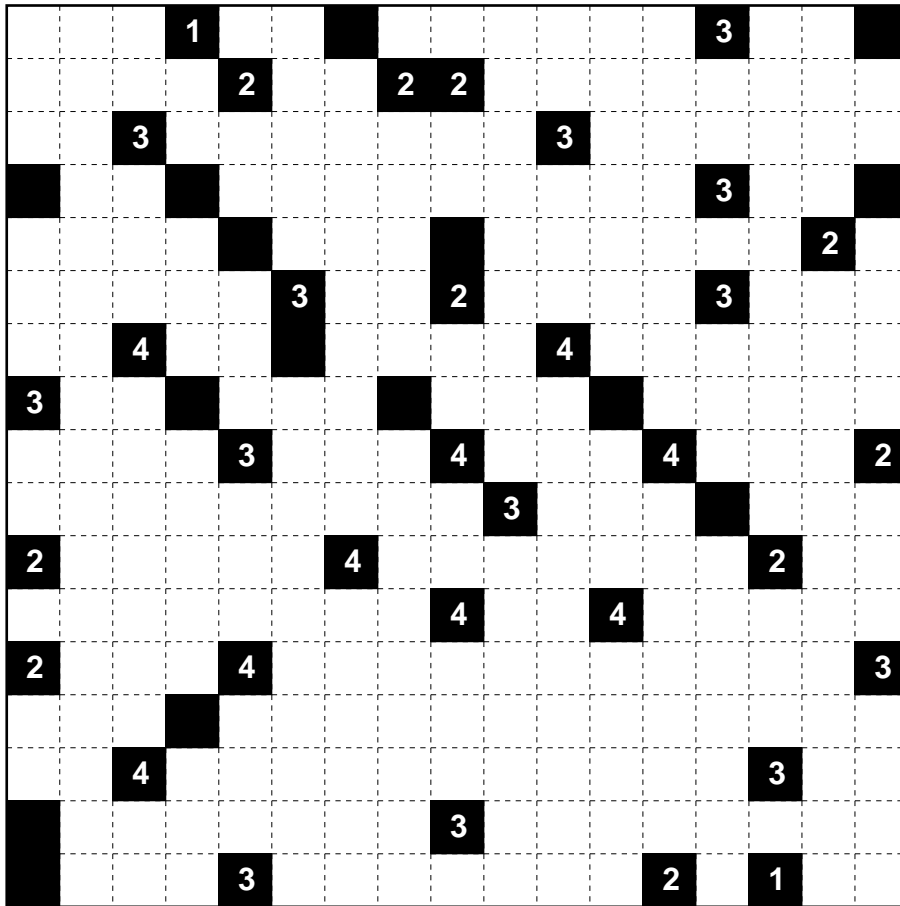


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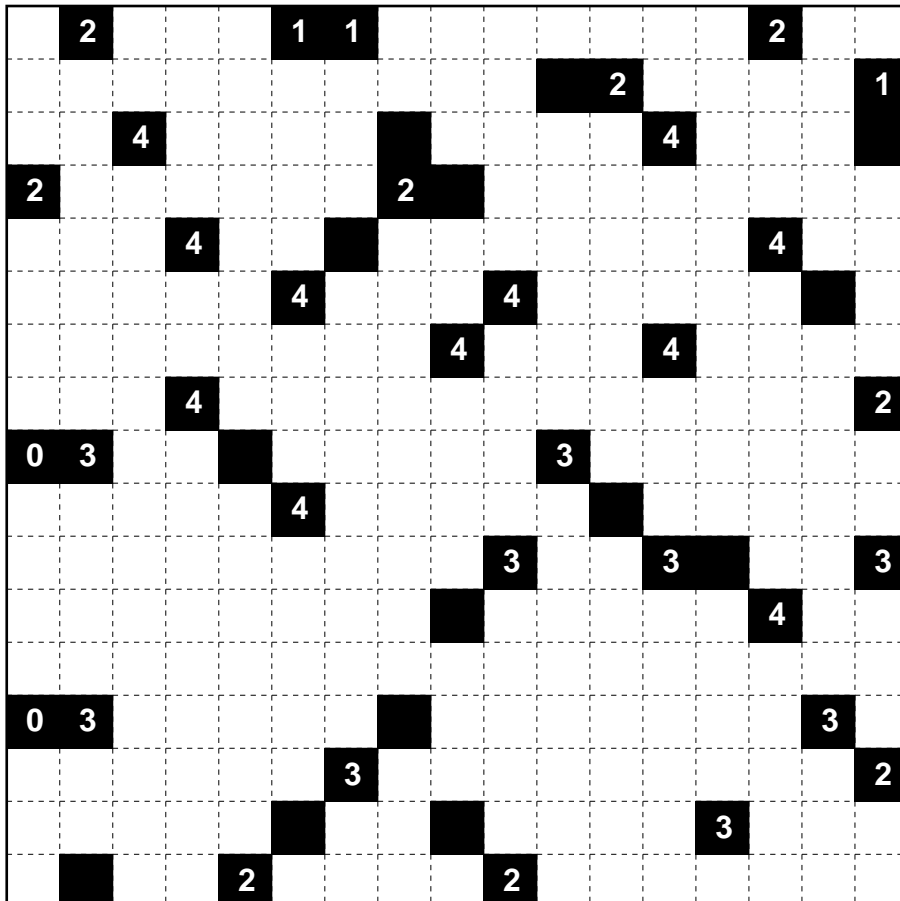


Shakashaka 17 × 17

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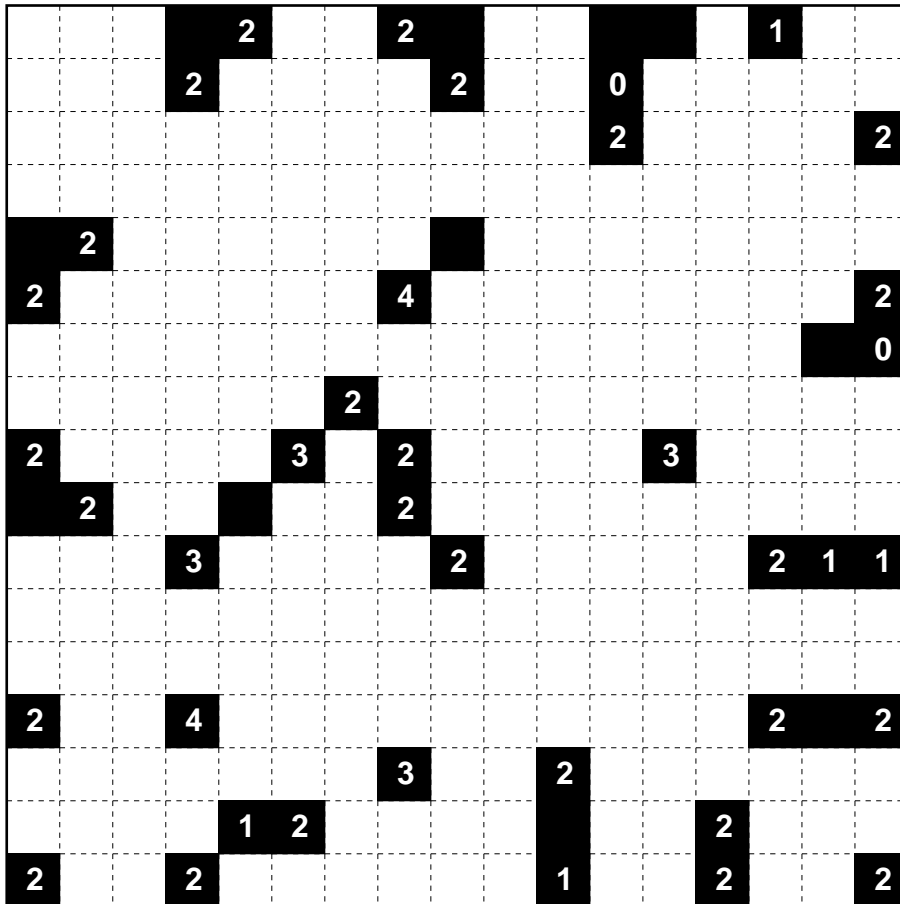


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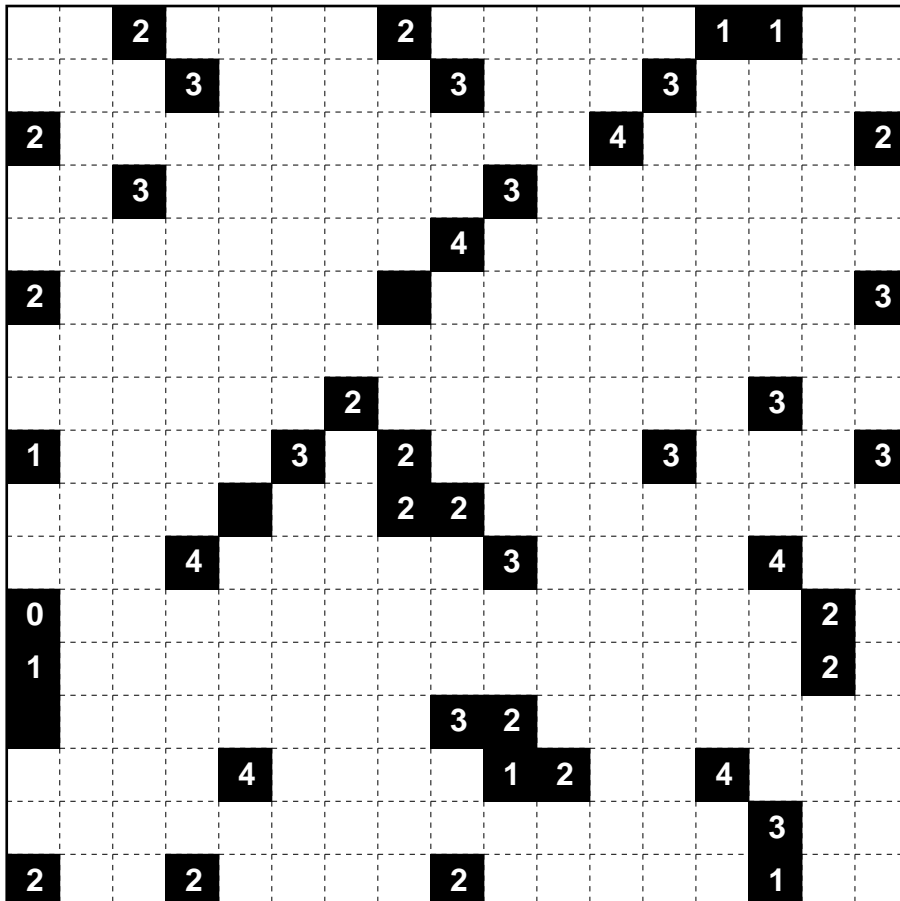


Shakashaka 17 × 17

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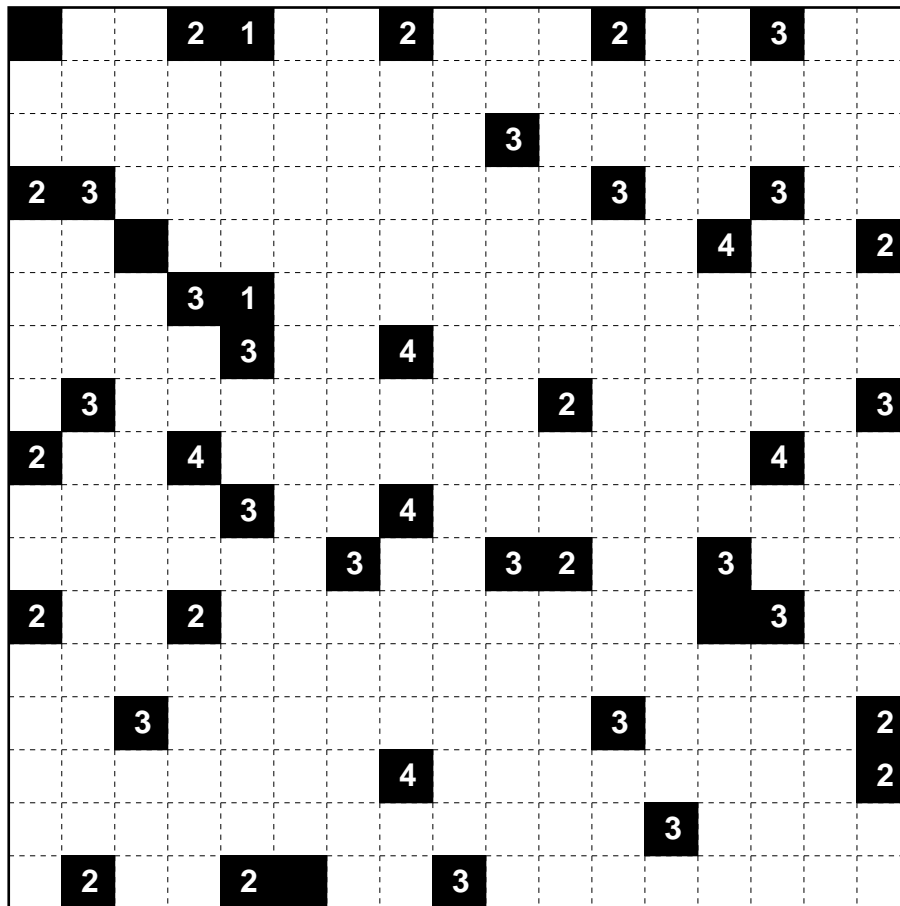


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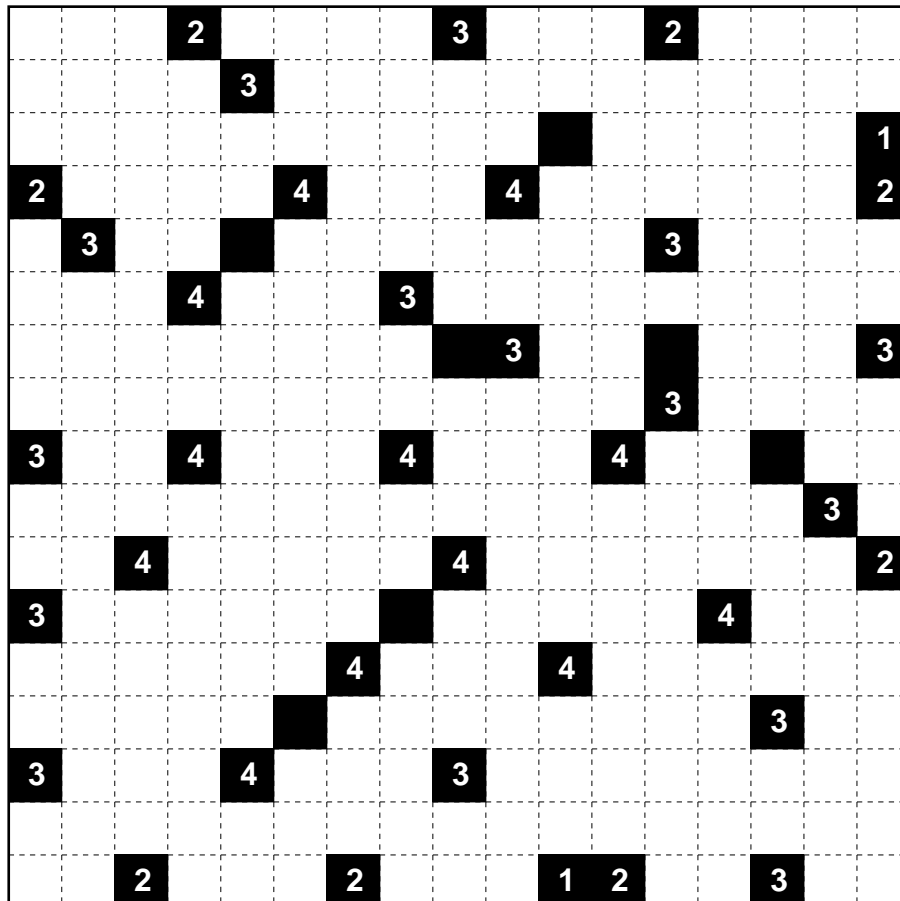


Shakashaka 17 × 17

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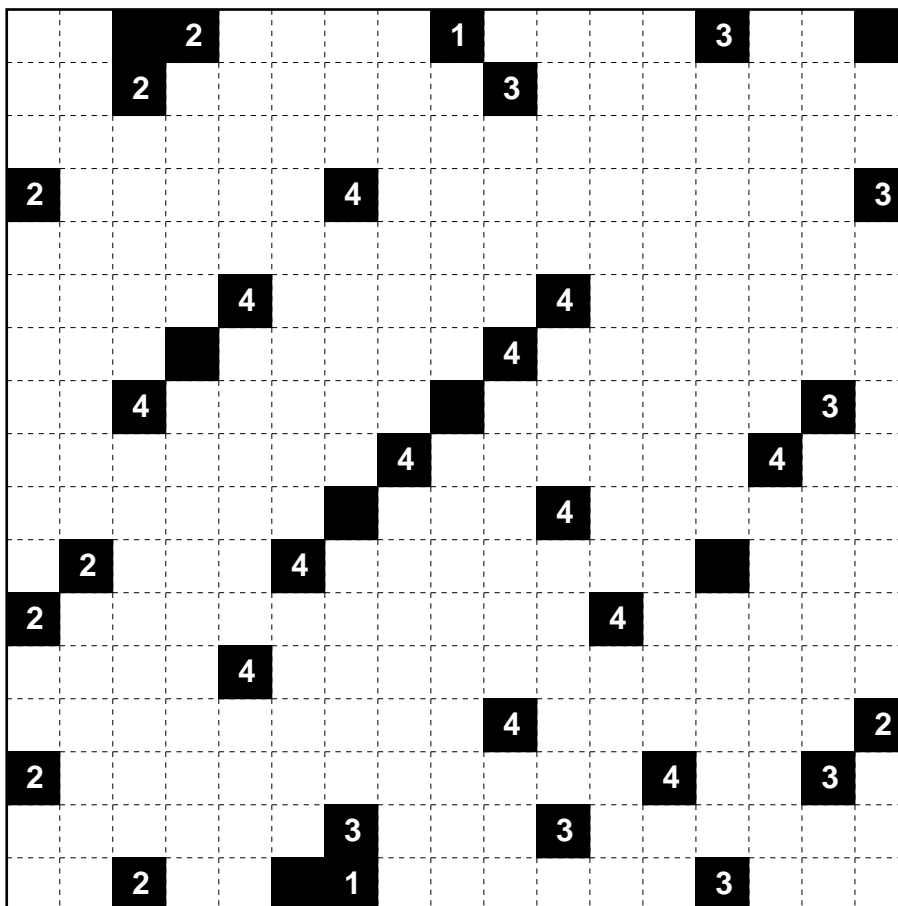


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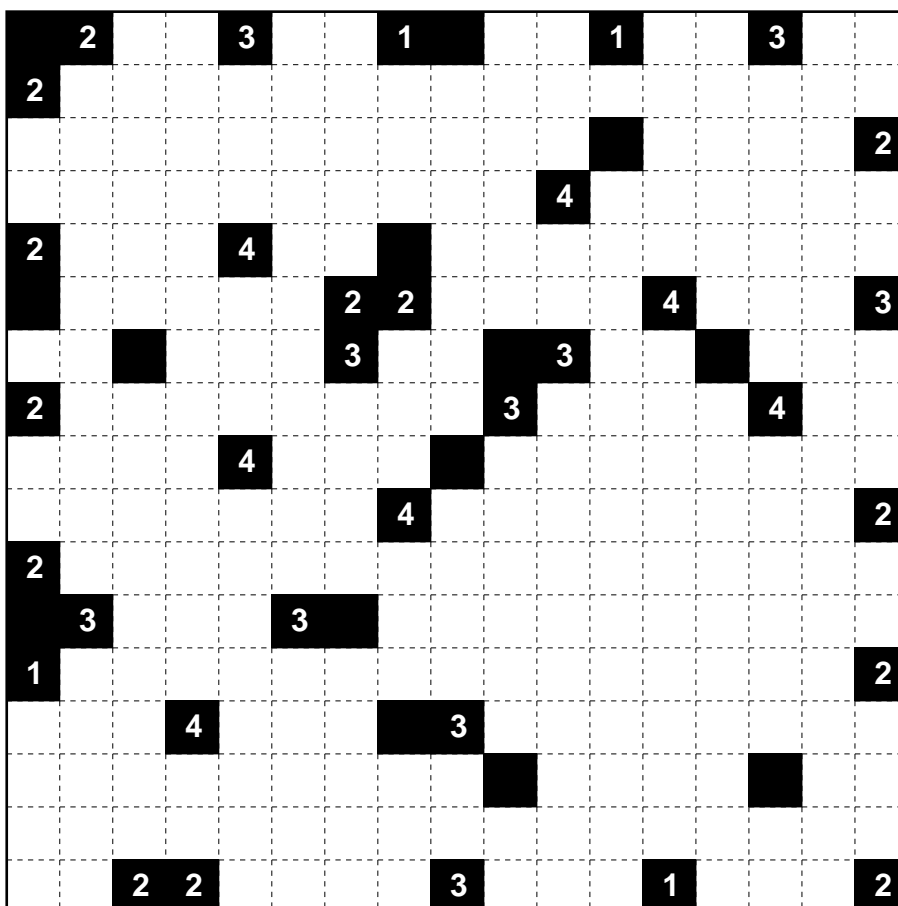


Shakashaka 17 × 17

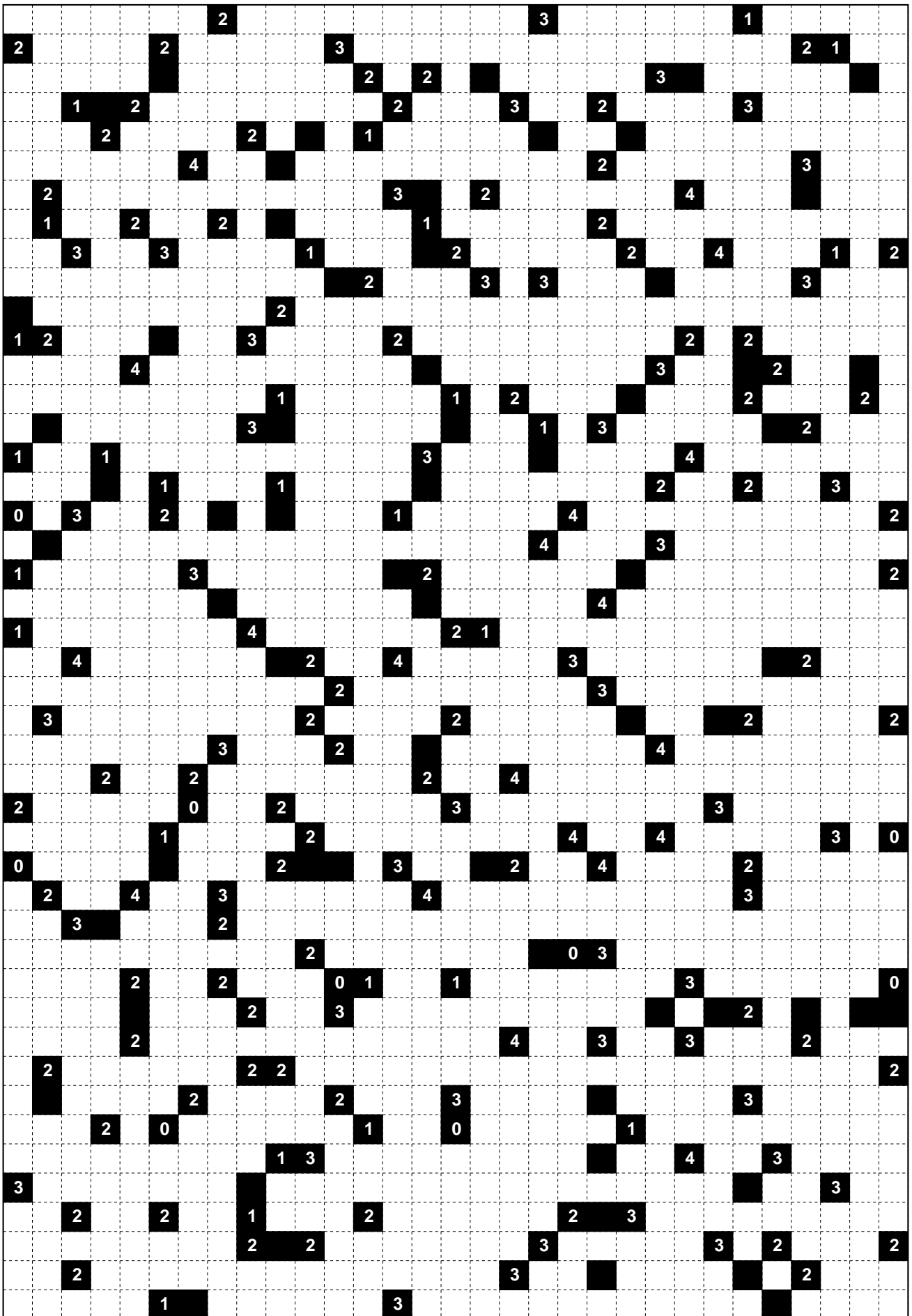
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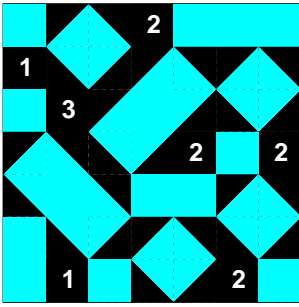
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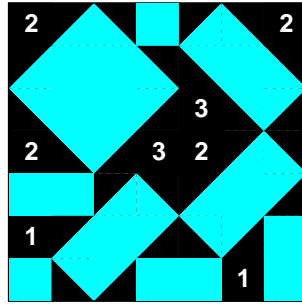
Shakashaka 31×45 mine first



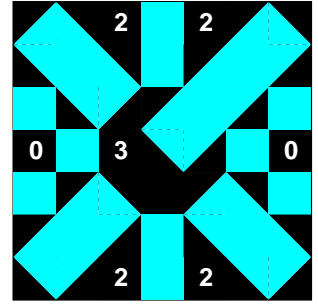
Shakashaka 7×7 solutions



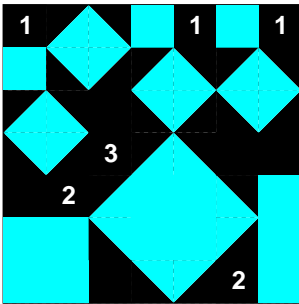
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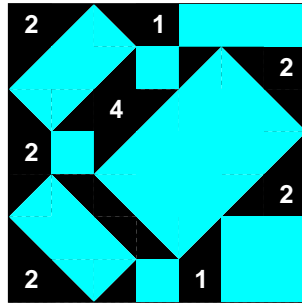
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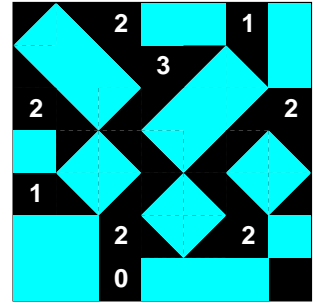
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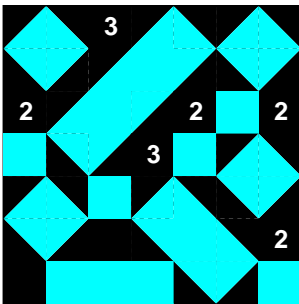
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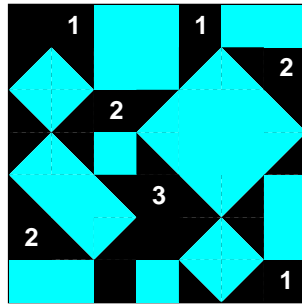
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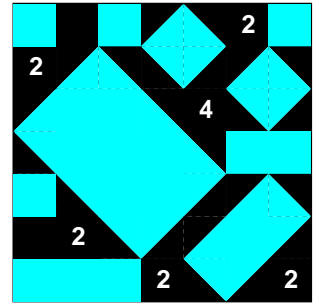
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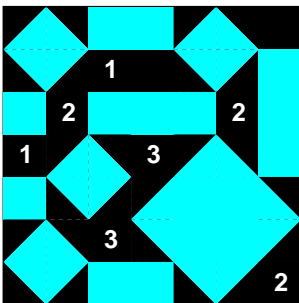
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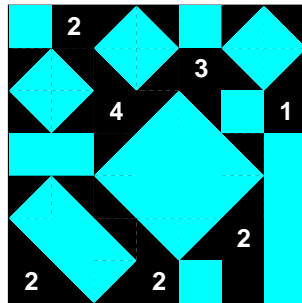
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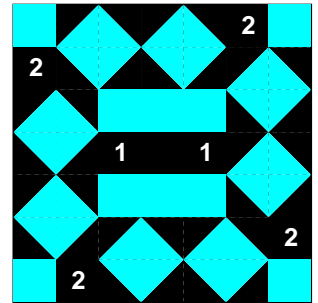
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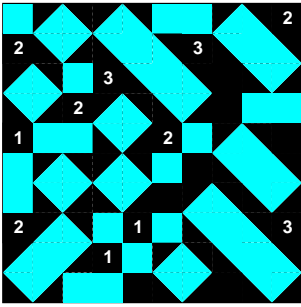


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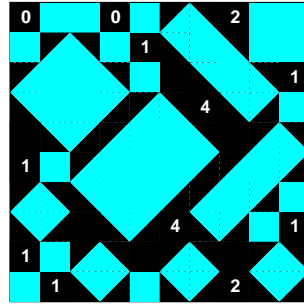


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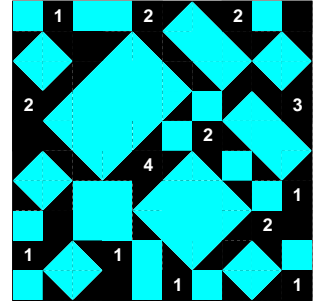
Shakashaka 10 × 10 solutions



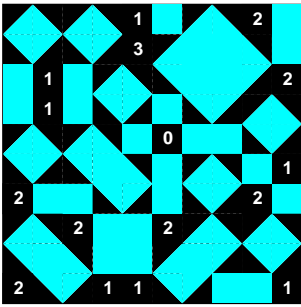
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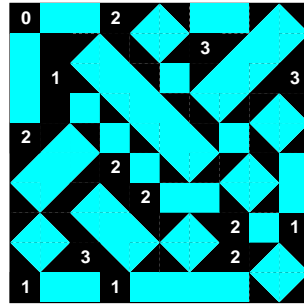
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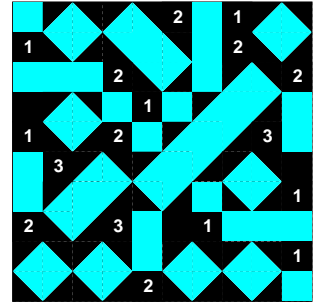
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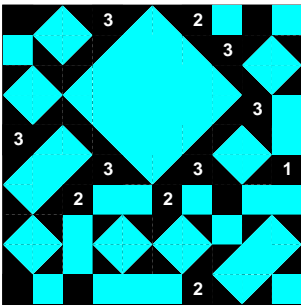
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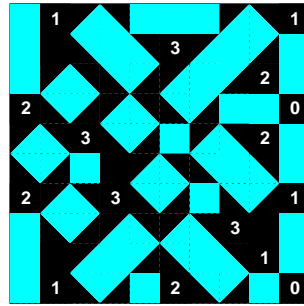
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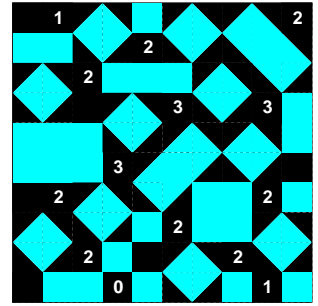
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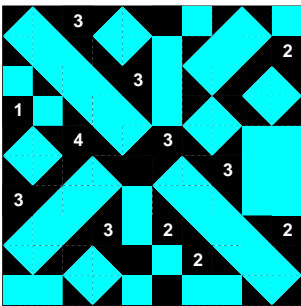
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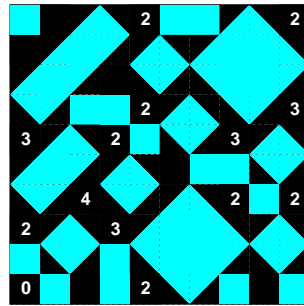
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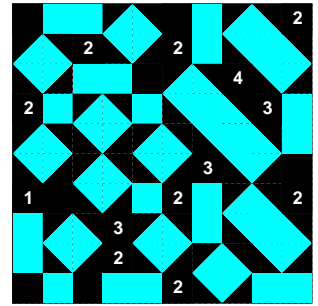
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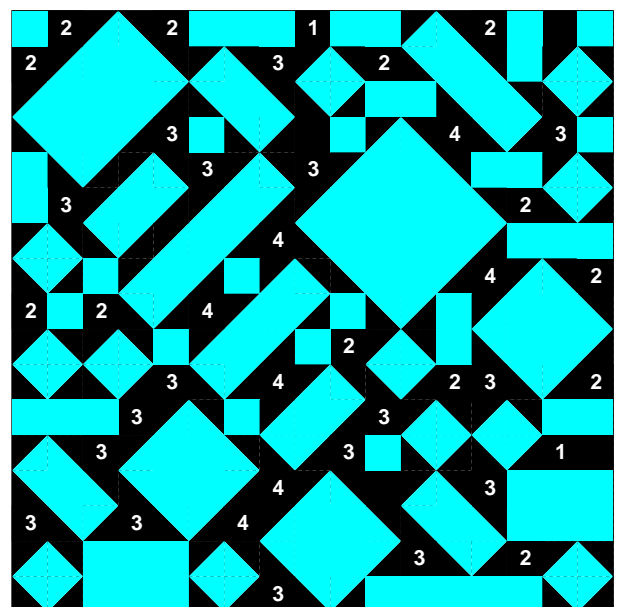
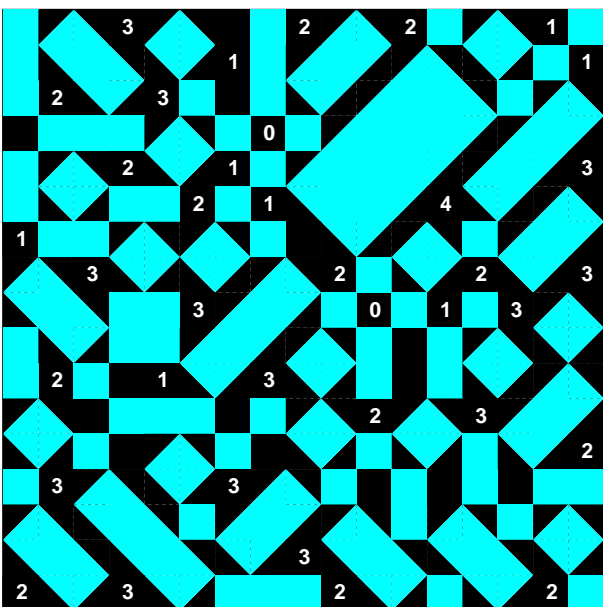
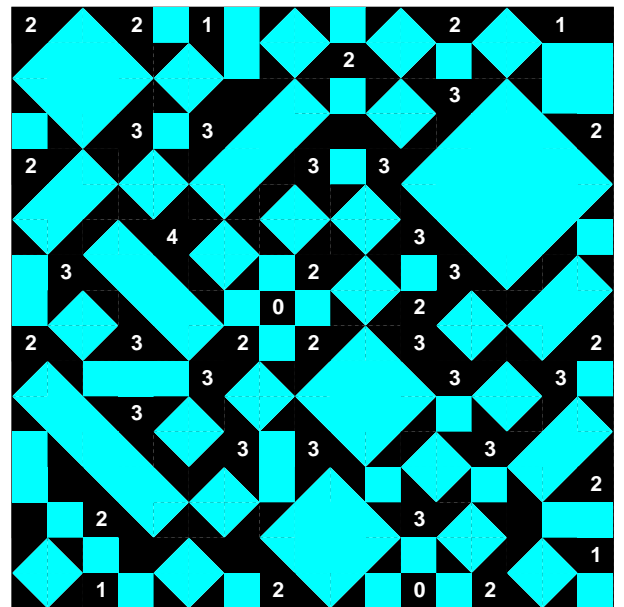
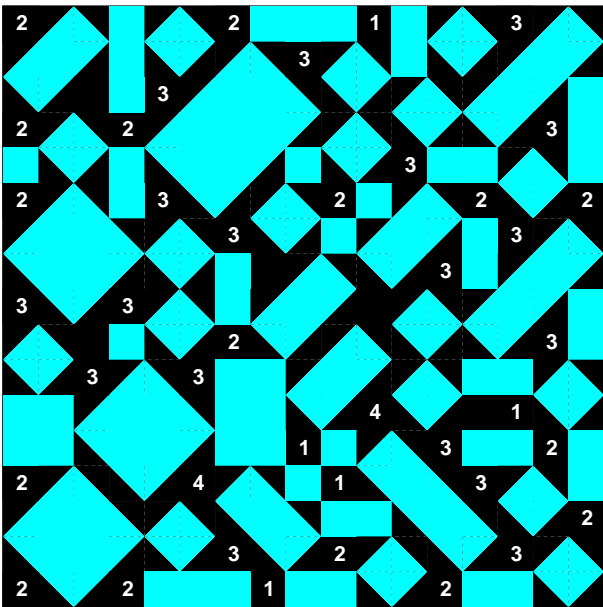
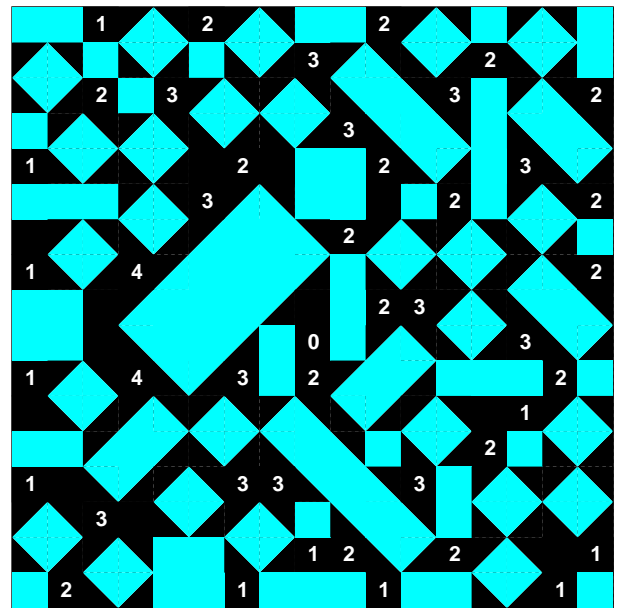
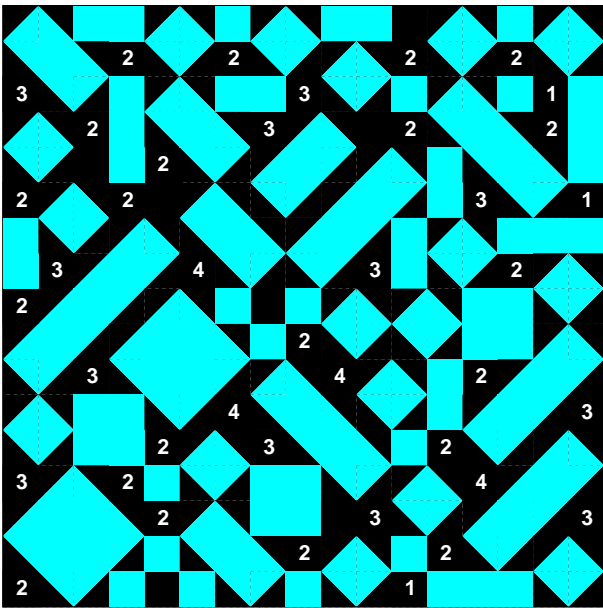


11

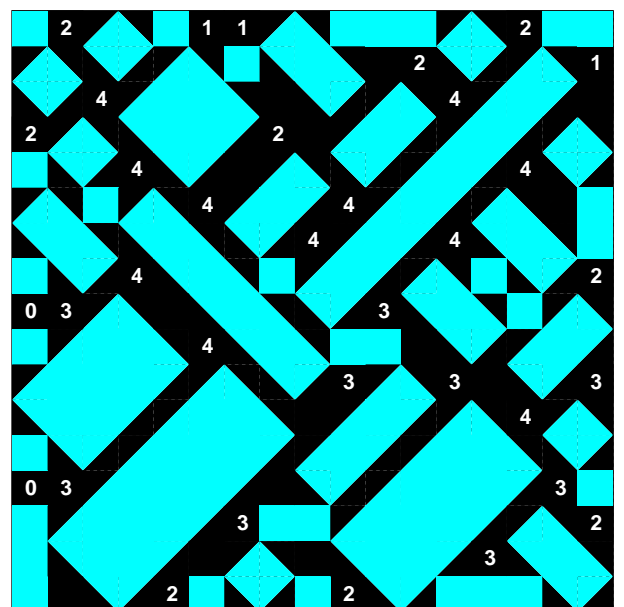
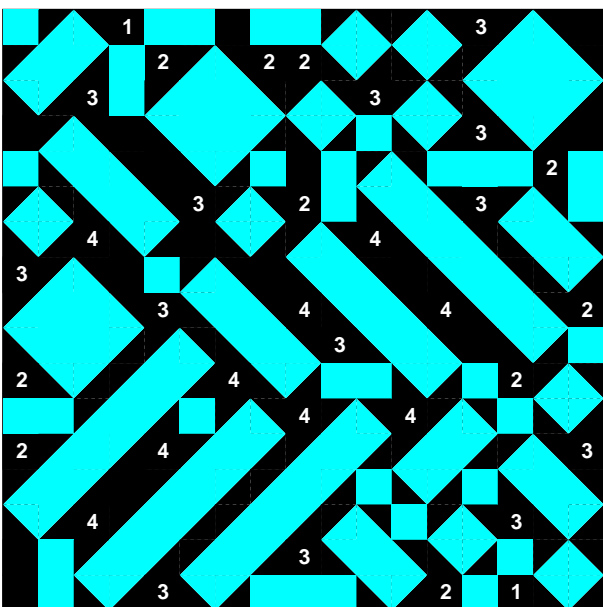
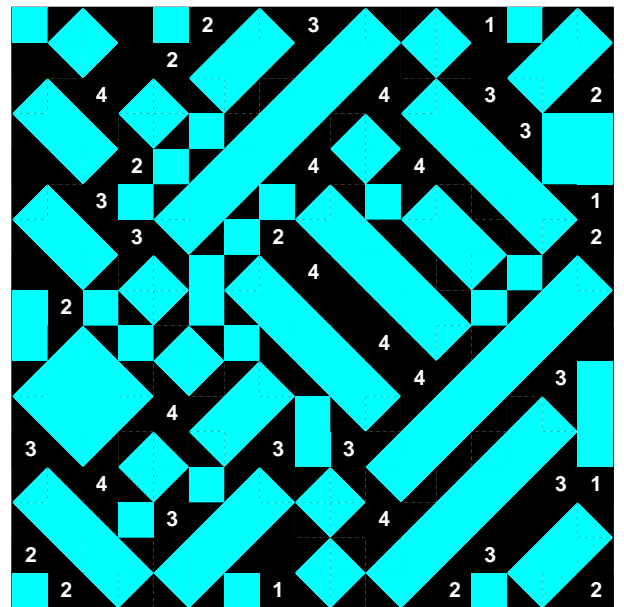
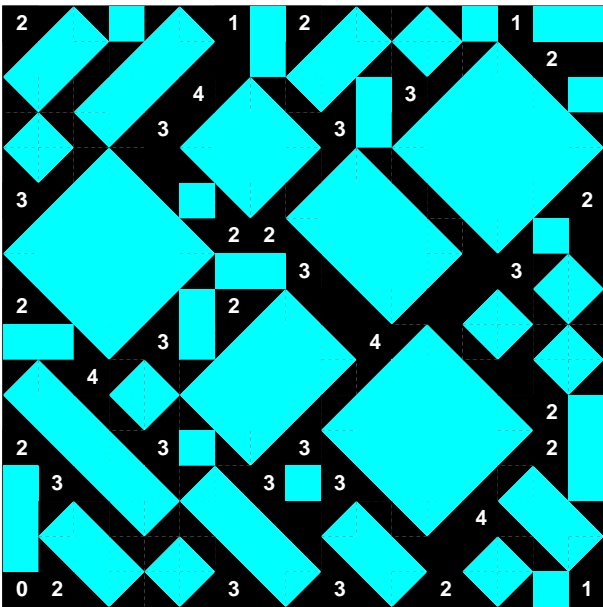
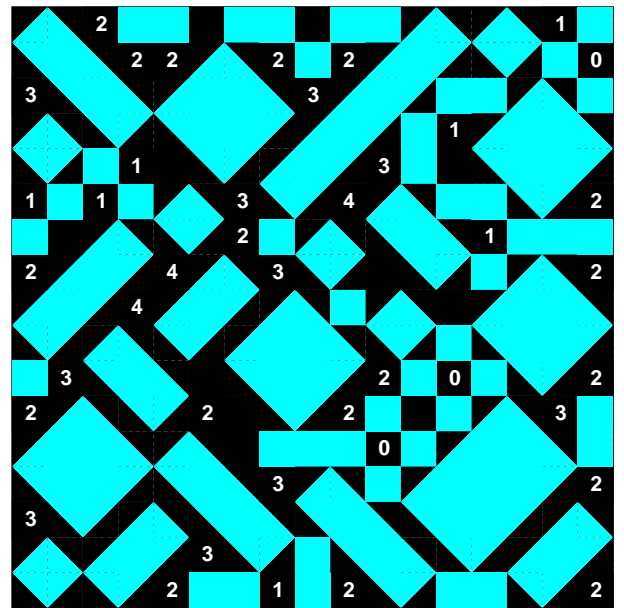
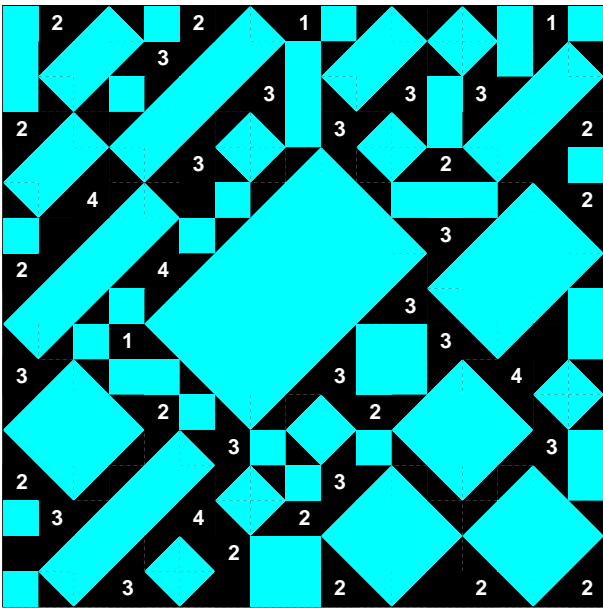


12

Shakashaka 17 × 17 solutions 1-6



Shakashaka 17 × 17 solutions 7-12



Shakashaka 17 × 17 solutions 13-18

