Krazydad

Two Not Touch

360 Star Battle Puzzles To Preserve Your Sanity In These Trying Times

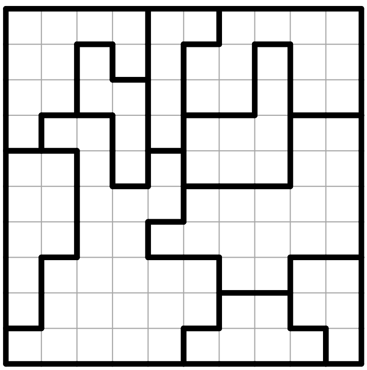
Volume 1

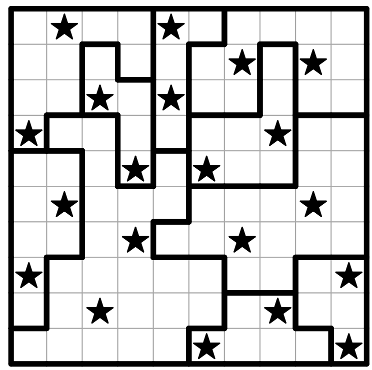
Jim Bumgardner

TINY LOBSTER LOS ANGELES

ABOUT THESE PUZZLES

Star Battle, or Two Not Touch, is a fun and truly addictive logic puzzle. The goal is to place 20 stars in the puzzle, such that every row, column, and bold-outlined shape contains exactly two stars. These stars may not be placed next to each other — not even diagonally adjacent! This is one of those rare logic puzzles, like Sudoku, that has extremely simple rules, yet there are many strategies for solving it.



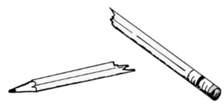


Star Battle first appeared in the Netherlands in 2003. The puzzle was originally created by Hns Eendebak for the World Puzzle Championship. I started carrying these delightful puzzles at my website, krazydad.com, in 2018. Two years later, I started supplying these puzzles to The New York Times, where they are now being published from Monday through Saturday under the name Two Not Touch. In addition to the two-star puzzles in this book, my website also carries a simpler one-star variant, and a more difficult three-star variant. I hope you will find these puzzles a welcome diversion in these trying times.

The puzzles in this book gradually get harder, from the first puzzle to the last. The most difficult puzzles in this book are more difficult than those published in the Times (The Times publishes an easy puzzle on the left, and a medium difficulty puzzle on the right). I should mention that the most difficult Star Battle puzzles available on my website are even harder, but often require some guesswork to solve. All the puzzles in this book have a single solution, and can be solved without trial and error.

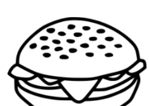
SOLVING STRATEGIES

A common newbie mistake with Star Battle is to think only about where the stars can go, without marking the squares that have been ruled out. If you do this, you will run out of known positions very quickly, and then you might start making guesses about likely positions and that just leads to trouble. You will soon break your pencil in frustration.



In a typical puzzle, you can generally place a few stars without too much trouble, but then you should start focusing on ruling out (and marking) the squares that cannot contain stars. You'll place the remaining stars largely via the process of elimination. To paraphrase the words of a great fictional detective, "Once you have eliminated the impossible, whatever remains, however improbable, must be the truth."

In these puzzles, I spend far more time ruling out squares, rather than placing stars. In the following examples I will use dots to indicate squares that have been ruled out. When I solve these puzzles, I draw little dots, and big stars. I've noticed many other people don't use dots and stars, and that's great! Some people use Os and Xs, as in Tic-Tac-Toe. Others use 1s and 0s (like a computer!) and others use hyphens and circles. Maybe someone is using pickles and hamburgers. It really doesn't matter what notation you use, as long as your system makes sense to you.



Rule of Finished Containers

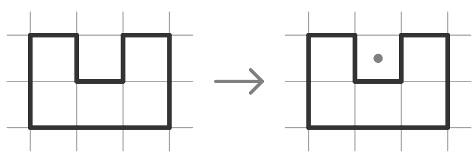
A container is a row, column or boldly-outlined region (there are ten of each kind). In these puzzles, every container gets two stars.

If a container has only one possible set of locations where you can place its remaining stars, place the stars there. If a container has both of its stars placed, then the rest of its squares can be eliminated.

This is the most basic rule of Two Not Touch, and is the only rule you need to solve some of the easiest puzzles.

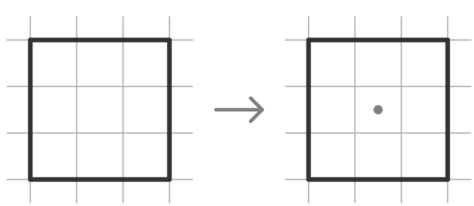
Rule of Nosy Neighbors

If a group of cells is known to contain at least one star, any other square adjacent to all the cells in that group can be eliminated, as it would prevent that star from being placed. After a time, you will begin to recognize common patterns for which this rule applies. For example, in the U-shaped region below, there is an exterior cell that is adjacent to all the interior cells, and it can be eliminated as shown.



Rule of Selfish Roommates

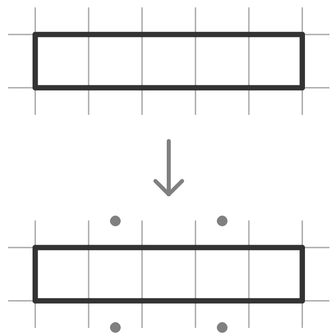
If a group of cells is known to contain at least two stars, any cell in the group that is adjacent to all other cells in the group can be eliminated. For example, if a container is a 3×3 block, the center cell can always be eliminated, because it is adjacent to all the other cells in the container, and would prevent a second star from being placed.



Rule of Crowding

If an external cell is adjacent to enough cells in a container that it prevents us from placing all of its stars, it can be eliminated.

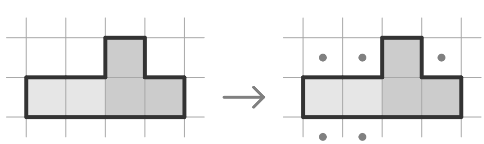
For example, if there are 5 cells in a row that are known to contain two stars, there are two external cells on either side that can't be used, because they prevent us from placing both stars.



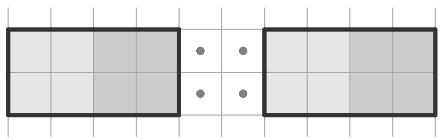
Rule of Clumps (Four-squares)

Every 2×2 block or “four-square” can contain at most one star. If you can divide a region into clumps, such that each clump fits into a four-square, and the number of clumps corresponds to the number of remaining stars, then you can treat each clump as a one-star container, and apply the previous crowding rules to it.

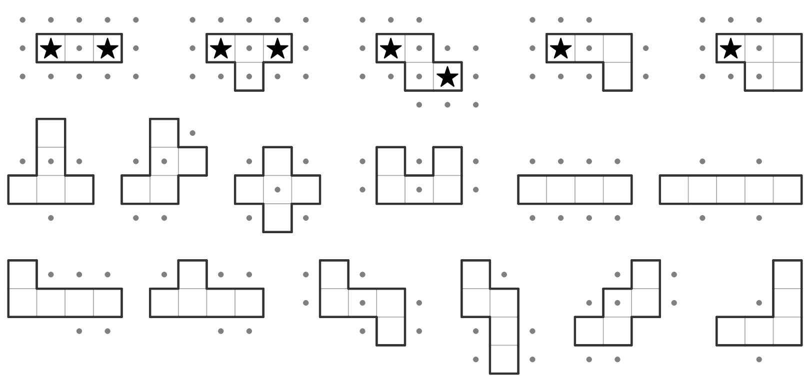
In the following example, I use four-squares to split the region into two parts that each fit into a four-square. We can then use the Rule of Nosy Neighbors to eliminate external squares that would crowd each of those sub-regions.



Note that the rule of clumps can be generalized to apply to groups of containers. For example, any two rows or columns must contain four stars between them. If you can identify only four discrete four-square areas in those two columns, then each must contain a star.



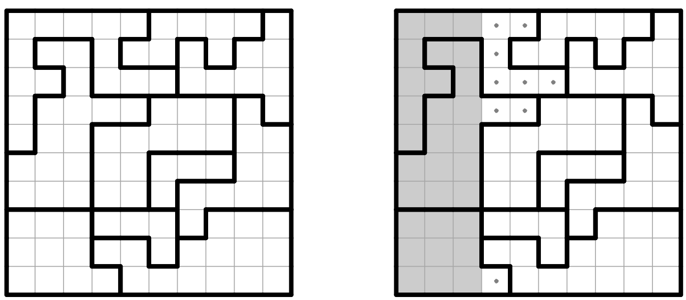
By combining the above crowding rules, there are a lot of eliminations that can be made, especially around regions that are already small and crowded to begin with. Here are a number of common small shapes and the eliminations you can make with these shapes, including some that can immediately have stars placed. The five starred shapes in the top row are the “gimmes” and will enable you to make initial progress in many of the puzzles in this book.



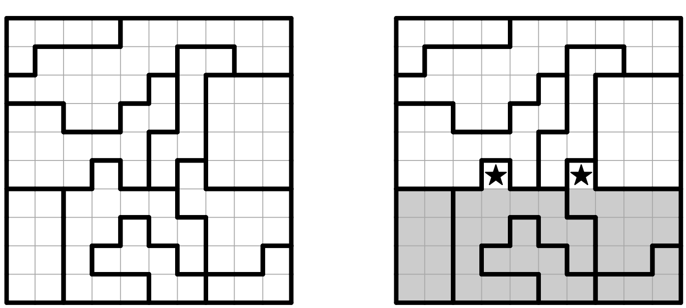
Rule of Container Cabals

If the same number of containers fits within the same number of a different kind of container (such as 3 bolded-regions fully occupying the space of 3 rows) it creates an opportunity to eliminate cells. Solving the occupied containers must also solve the occupying containers. All the other unsolved squares in the occupying containers can be eliminated.

For example, consider the following grid. If you look at the first three columns (which I've highlighted), you'll see that there are only 3 bolded regions which occupy that space. By the above logic, we can eliminate all the other cells that stick out in those 3 occupying regions, as shown.



This rule can be generalized for situations in which the number of regions exceeds the number of rows. In the following puzzle the bottom 4 rows are comprised of cells from 5 different regions. The 5 regions must contain 10 stars, and the 4 rows must contain 8 stars. The parts of the 5 regions which stick out must contain the remaining stars. There are 10 – 8 stars or 2 remaining stars, and there are just two cells sticking out, so both of those cells must contain stars!



Want to learn more? My website contains a fully-worked out solution of an advanced puzzle as well as additional tutorials. I also publish a step-by-step solution for the daily Two Not Touch puzzle published in The New York Times. You'll find all this material at

https://krazydad.com/twonotouch/

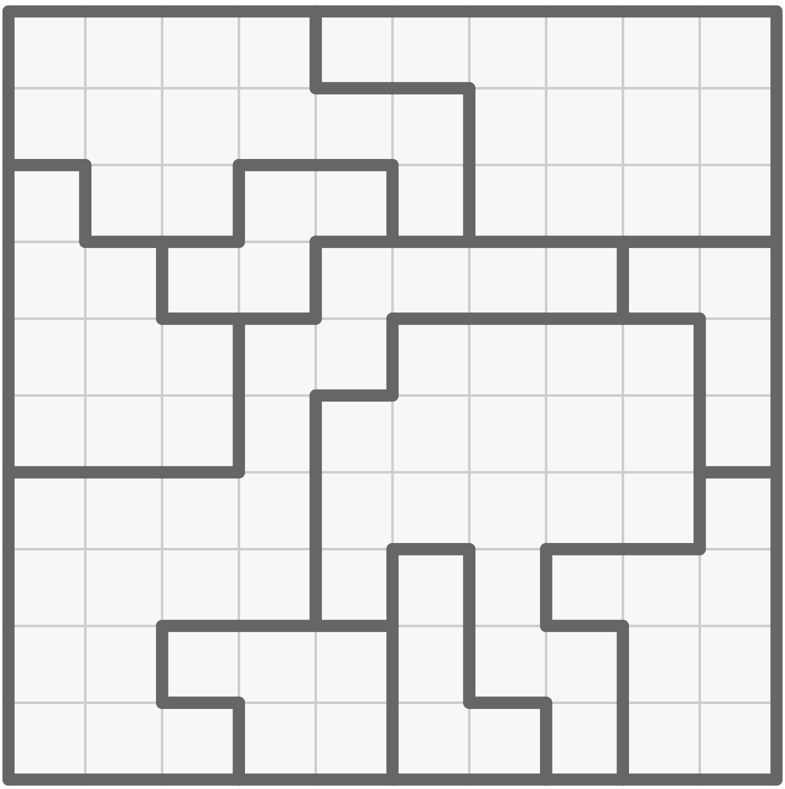
Happy solving!

Jim Bumgardner

PUZZLE MENU

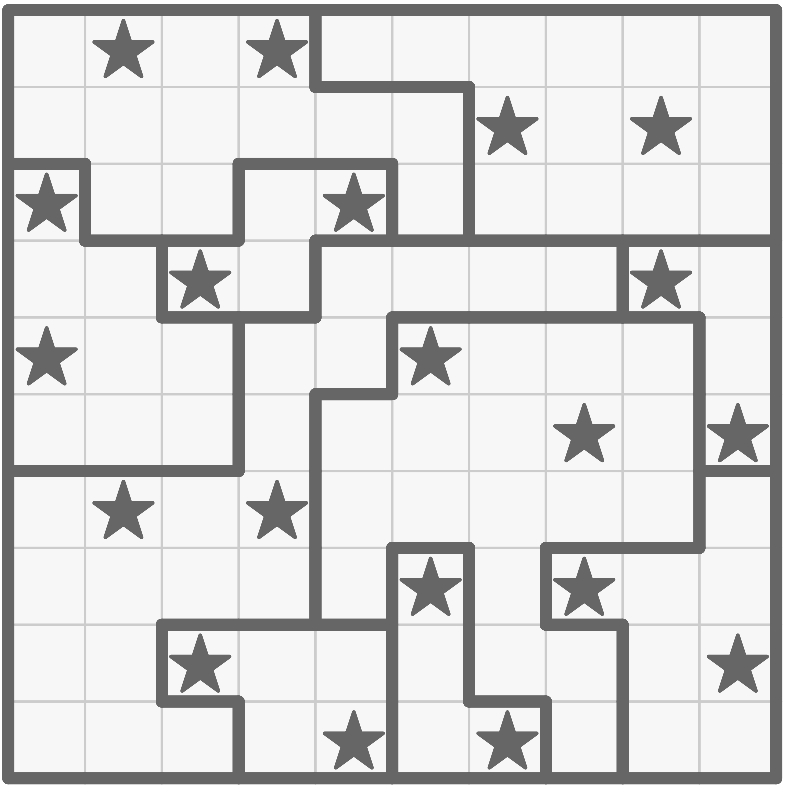
1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
7 ☐	8 ☐	9 ☐	10 ☐	11 ☐	12 ☐
13 ☐	14 ☐	15 ☐	16 ☐	17 ☐	18 ☐
19 ☐	20 ☐	21 ☐	22 ☐	23 ☐	24 ☐
25 ☐	26 ☐	27 ☐	28 ☐	29 ☐	30 ☐
31 ☐	32 ☐	33 ☐	34 ☐	35 ☐	36 ☐
37 ☐	38 ☐	39 ☐	40 ☐	41 ☐	42 ☐
43 ☐	44 ☐	45 ☐	46 ☐	47 ☐	48 ☐
49 ☐	50 ☐	51 ☐	52 ☐	53 ☐	54 ☐
55 ☐	56 ☐	57 ☐	58 ☐	59 ☐	60 ☐

home menu next



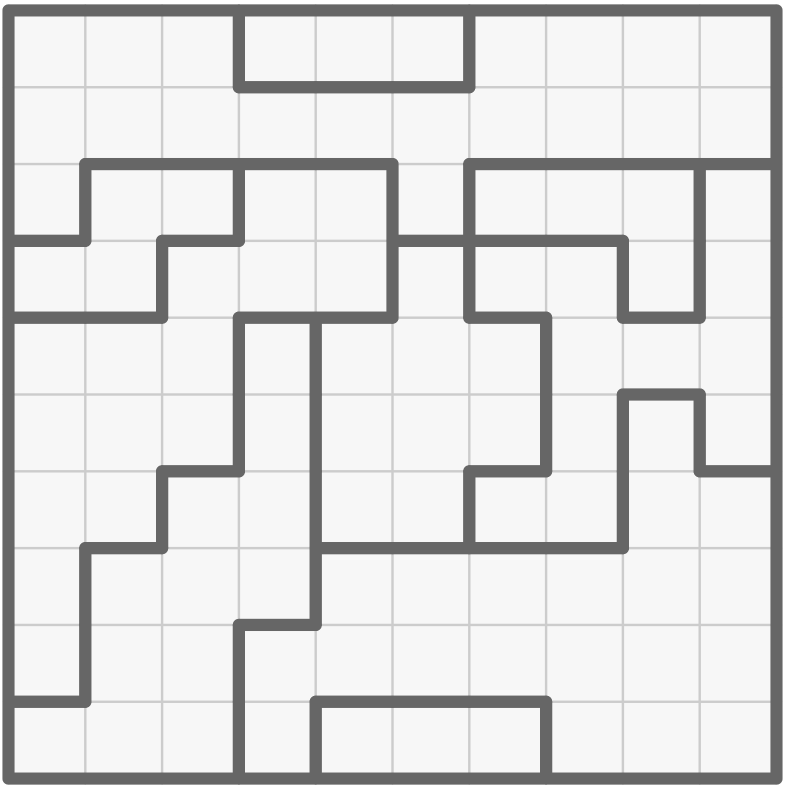
Puzzle #1

answer

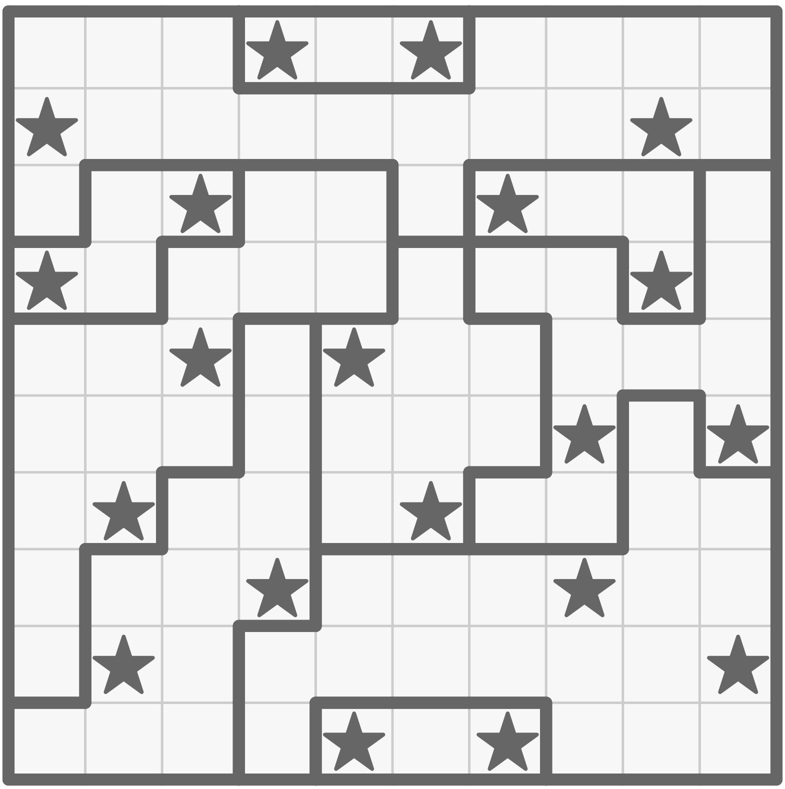


Answer #1

back to
puzzle



Puzzle #2



Answer #2

home

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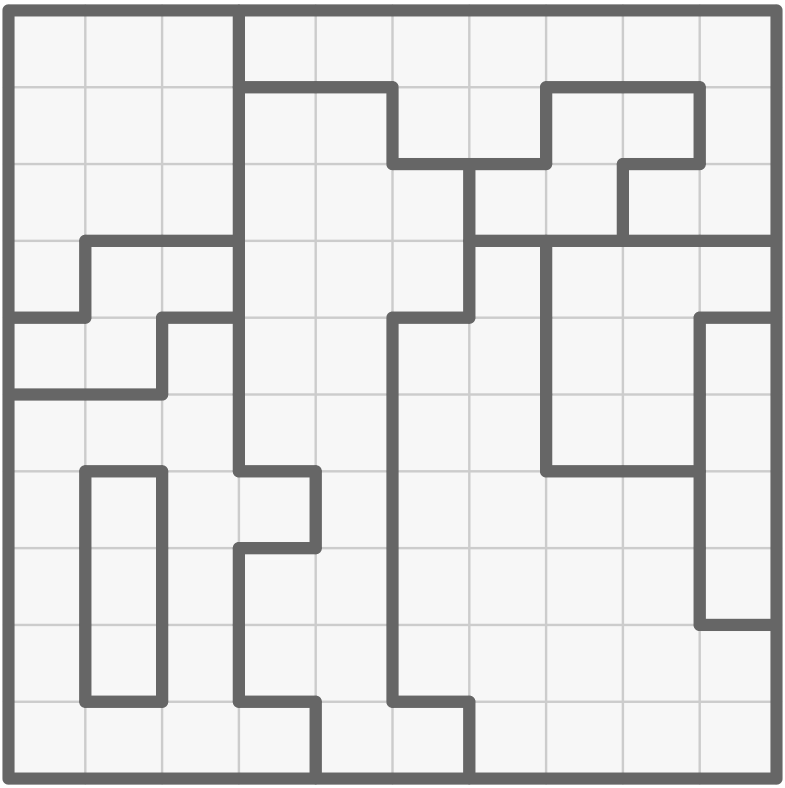
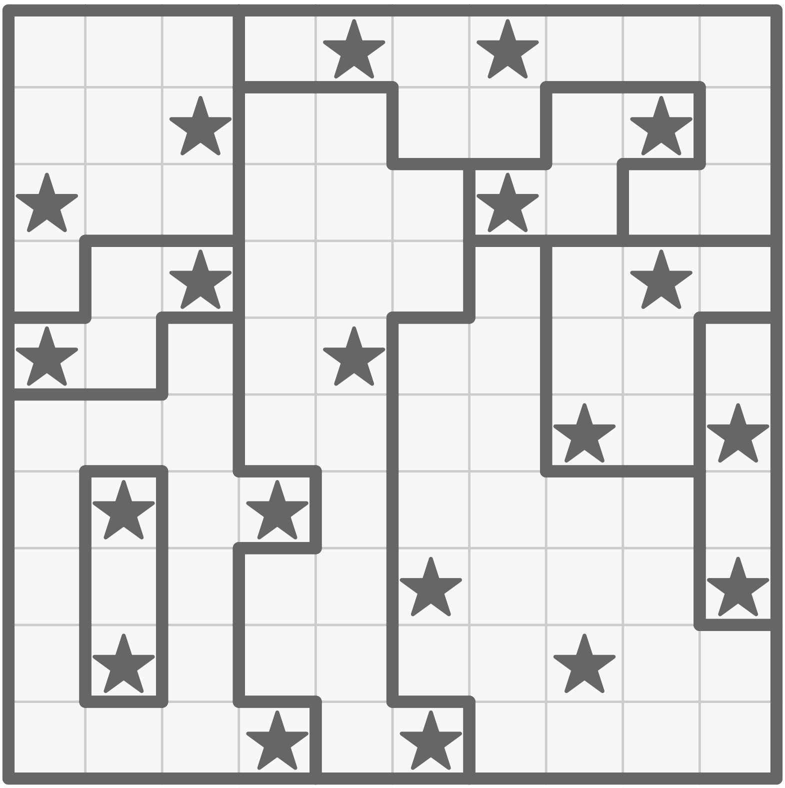
next



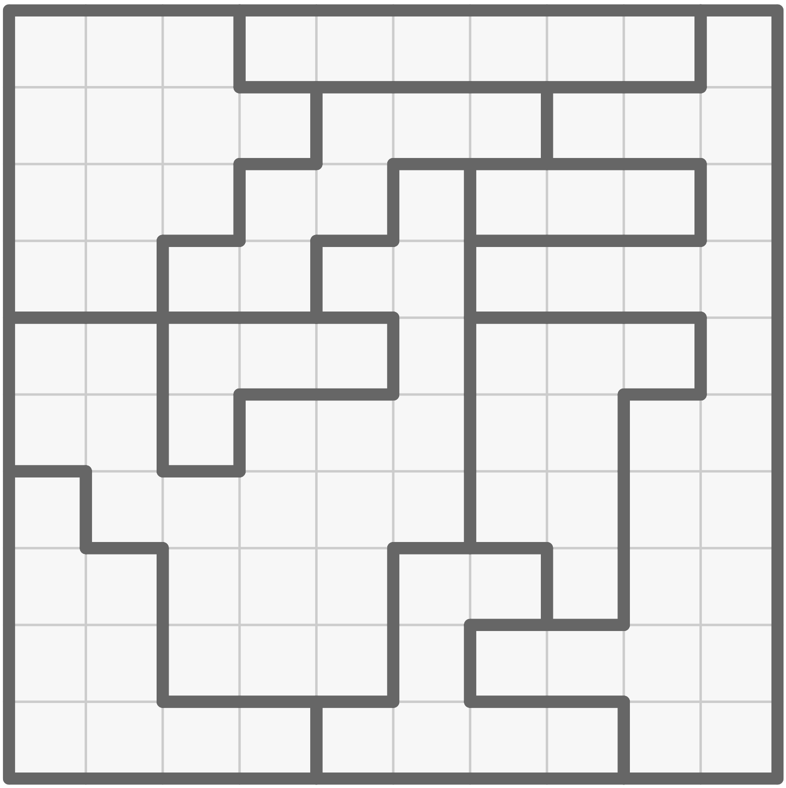
Puzzle #3

answer



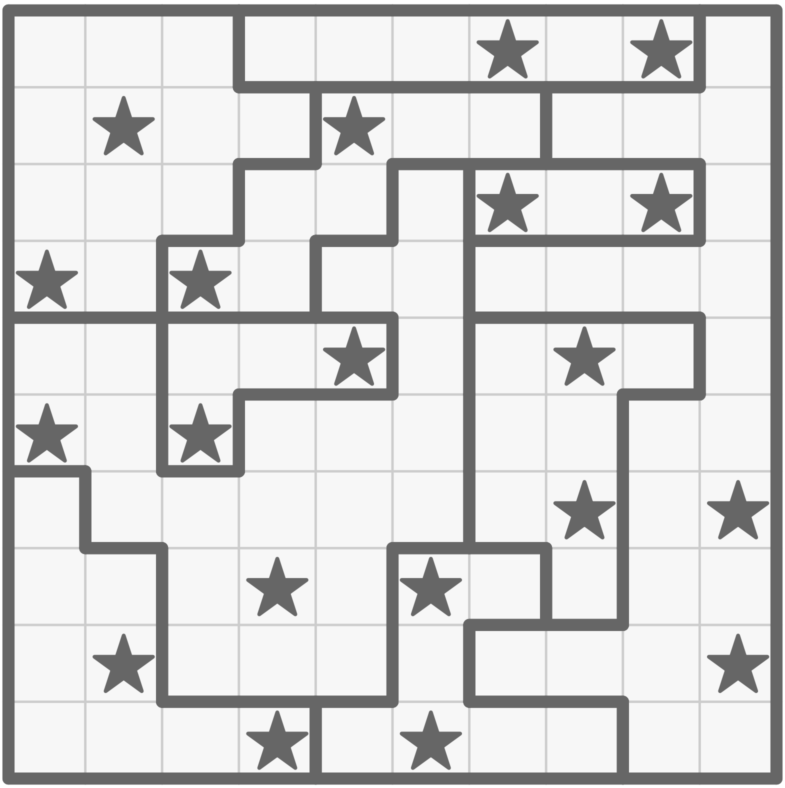
Answer #3

back to
puzzle



Puzzle #4

answer



Answer #4

back to
puzzle

home
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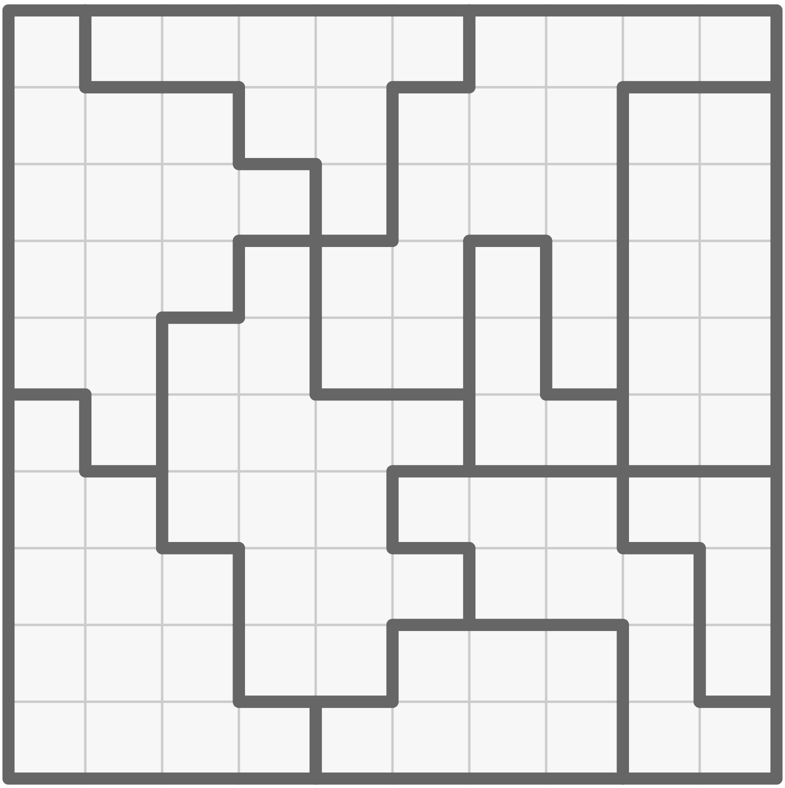
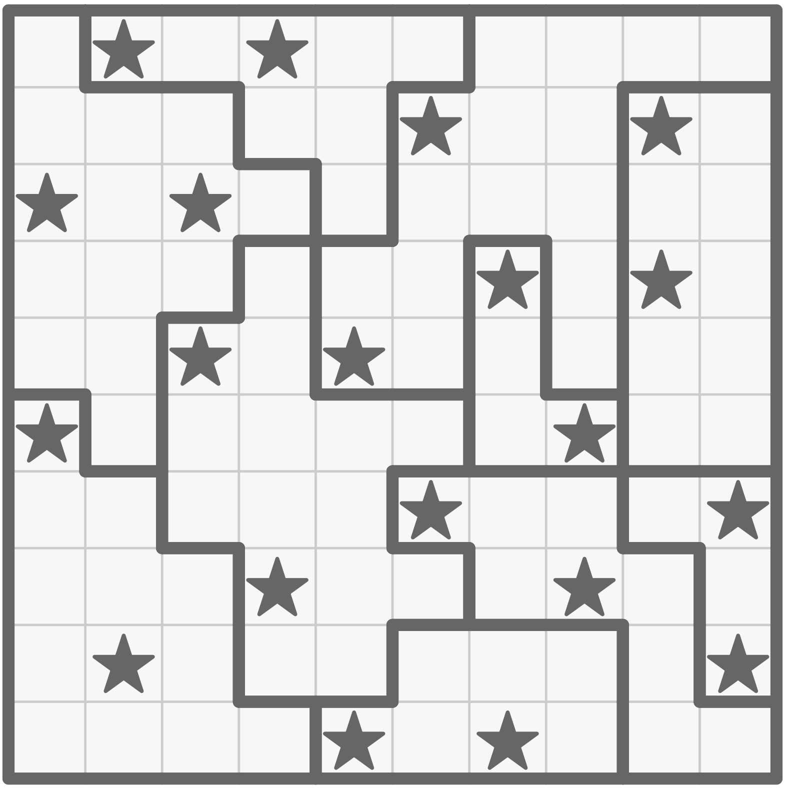


Puzzle #5

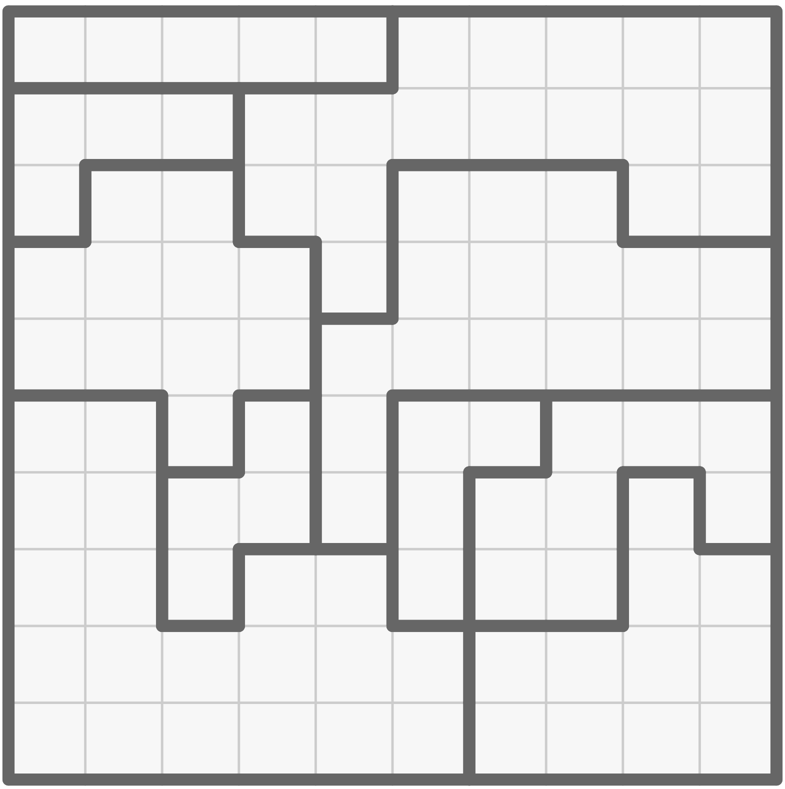
answer



Answer #5

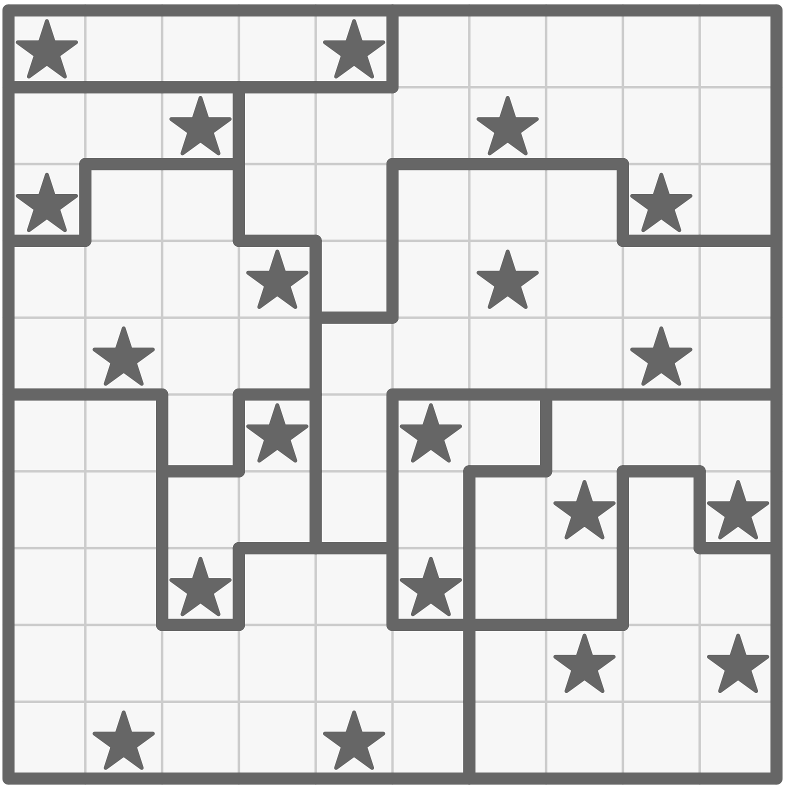
back to puzzle

home menu next



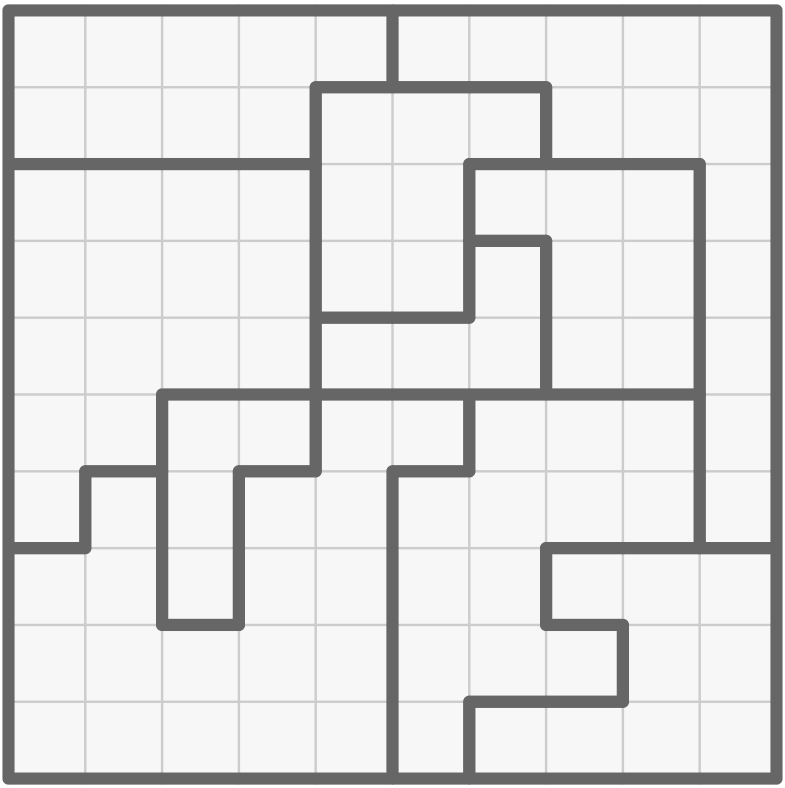
Puzzle #6

answer



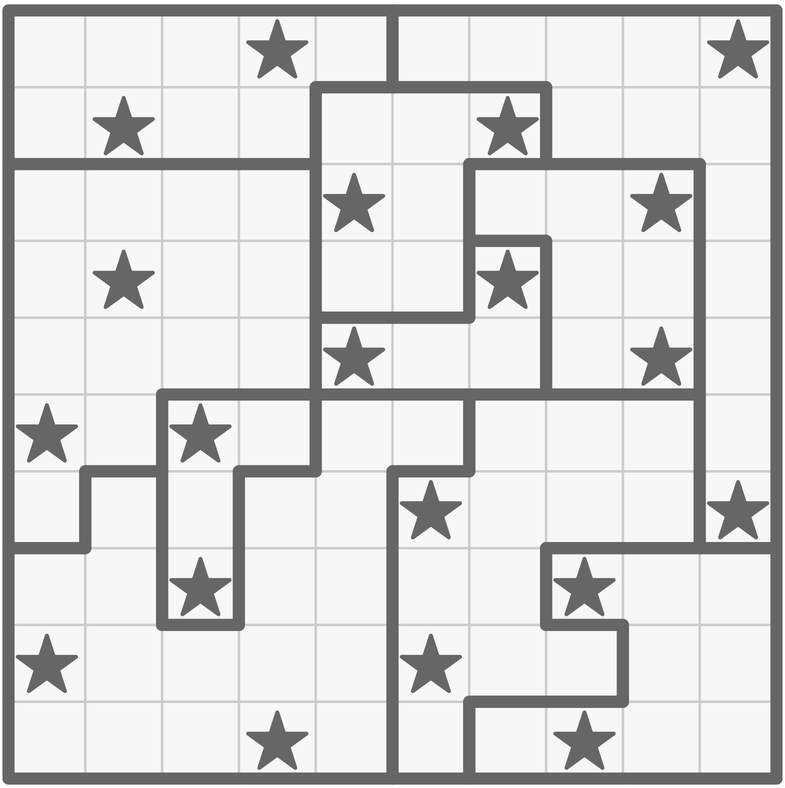
Answer #6

back to puzzle



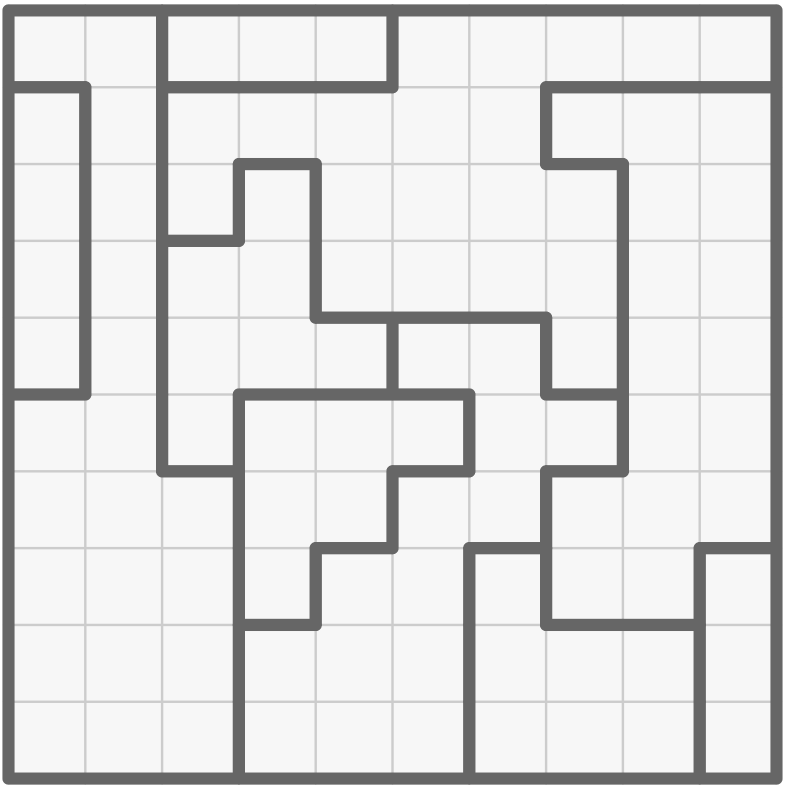
Puzzle #7

answer



Answer #7

back to puzzle



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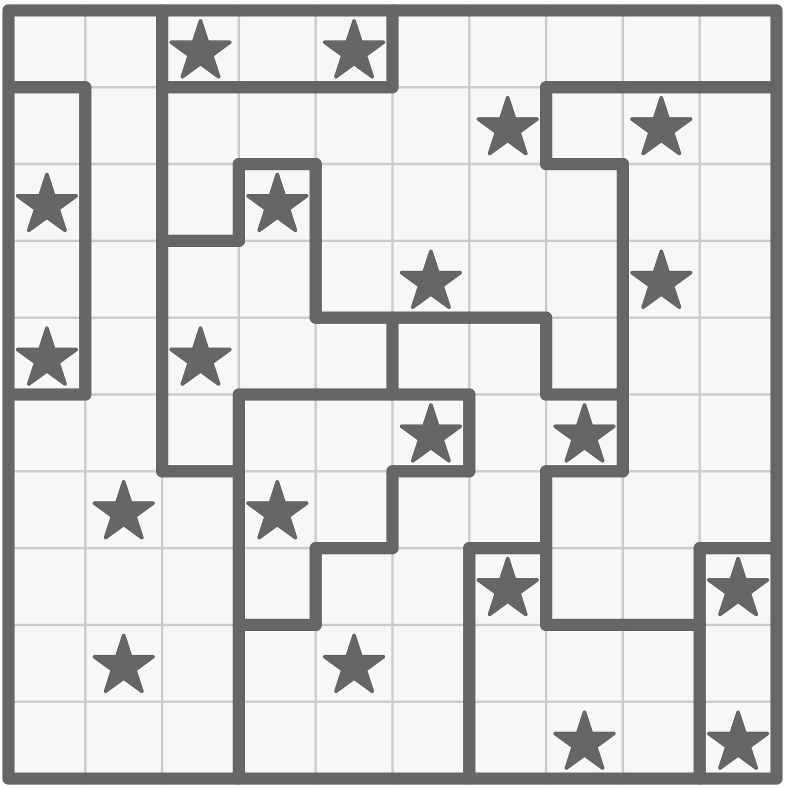
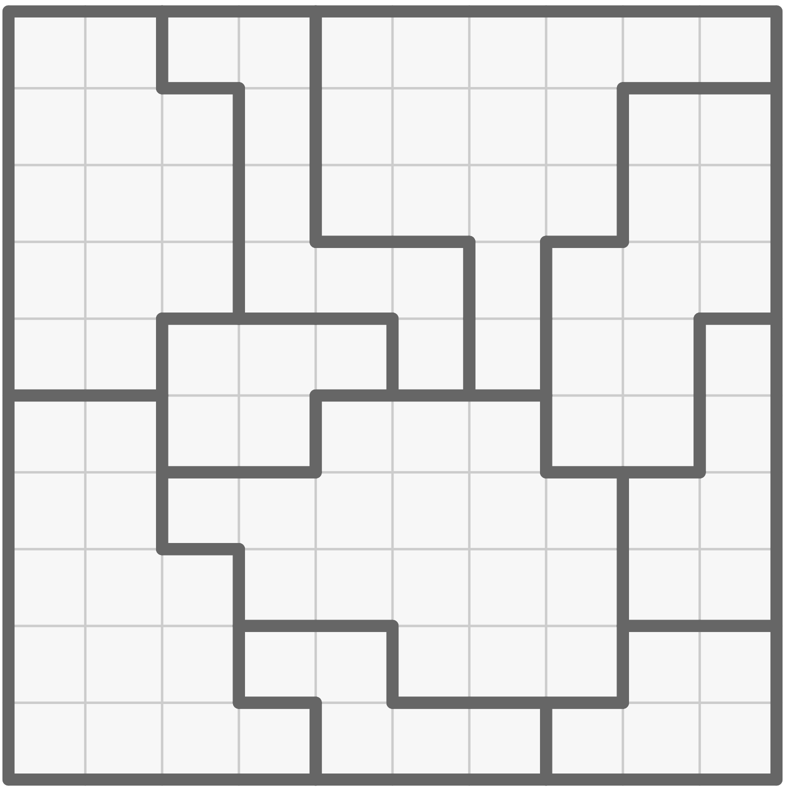


Answer #8

back to
puzzle

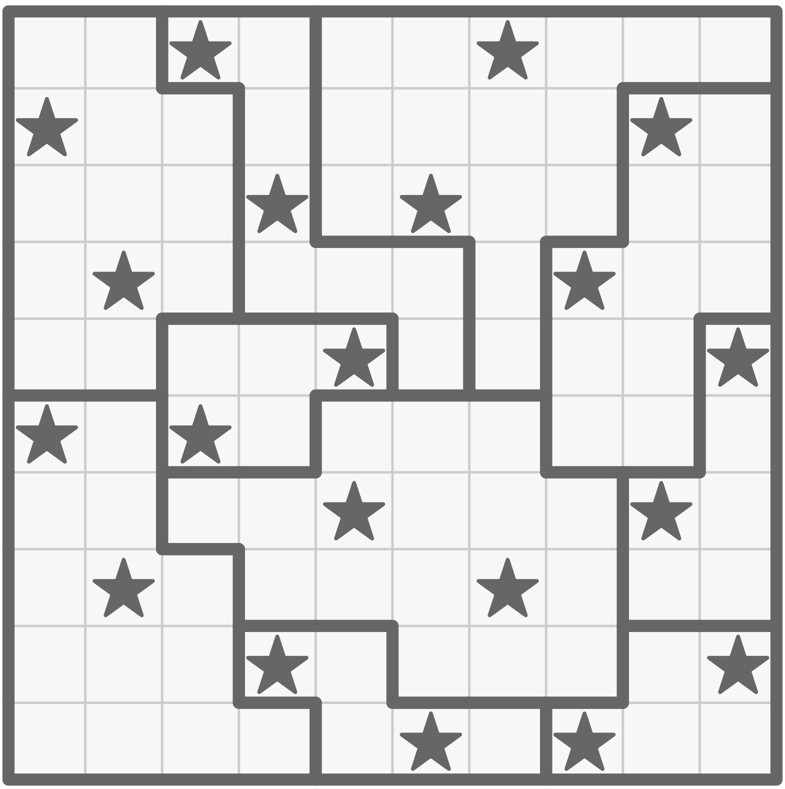
home menu next



Puzzle #9

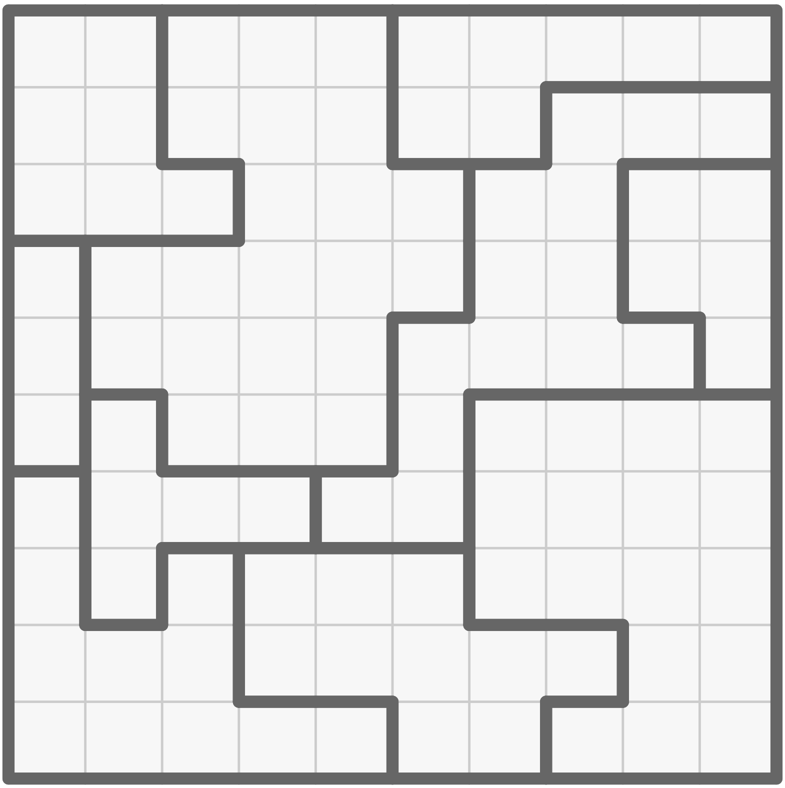
answer

home
menu
next



Answer #9

back to
puzzle



Puzzle #10

home
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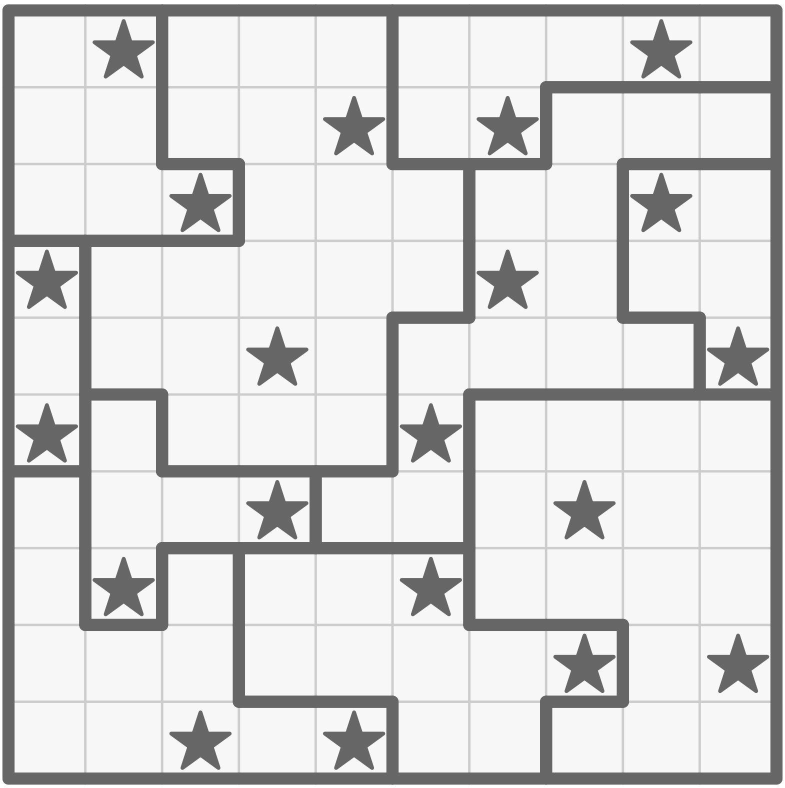
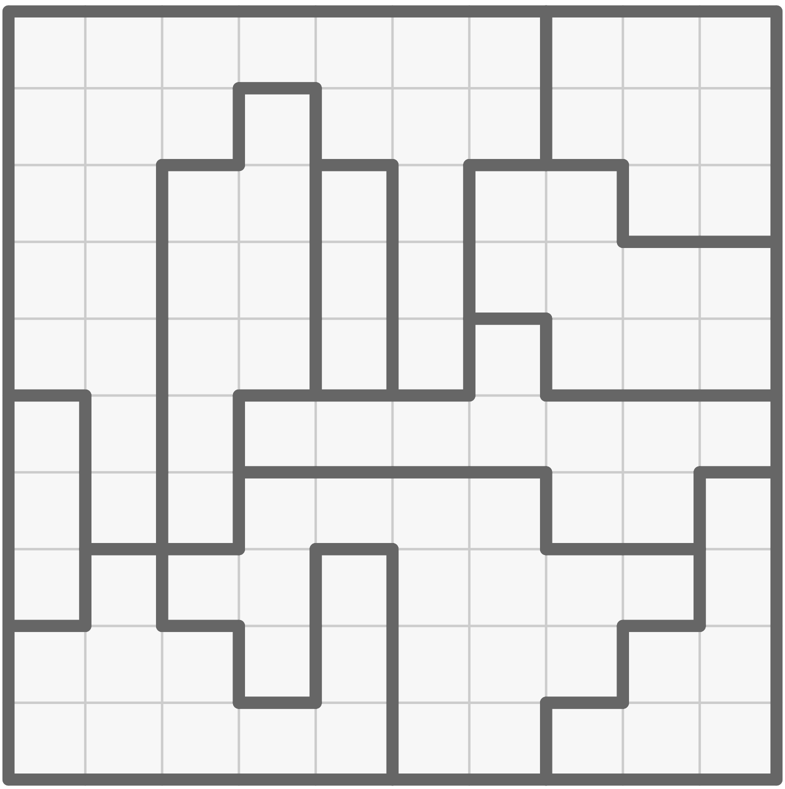
next



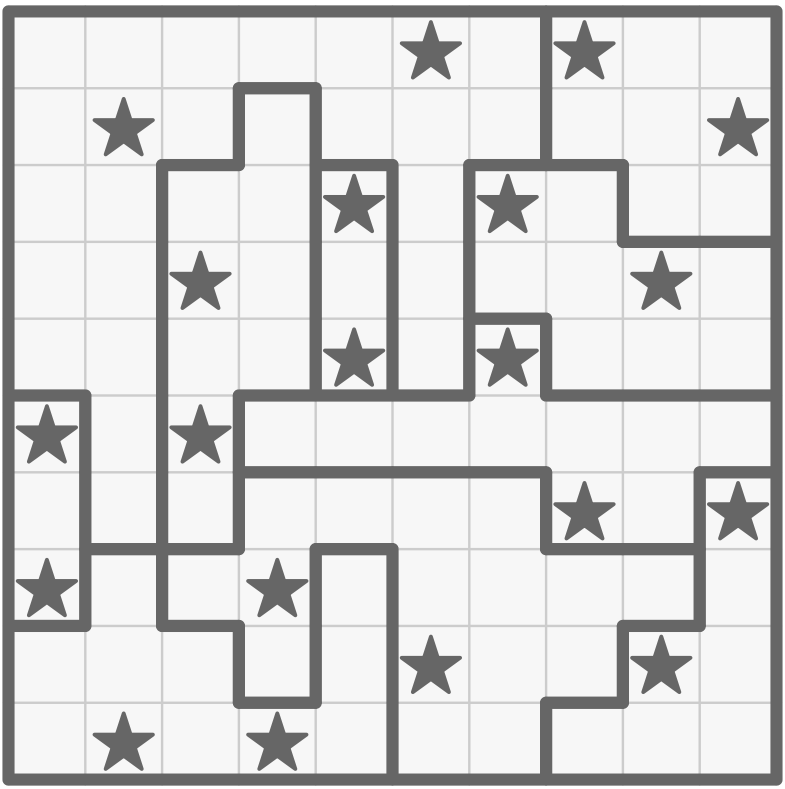
Answer #10

back to puzzle



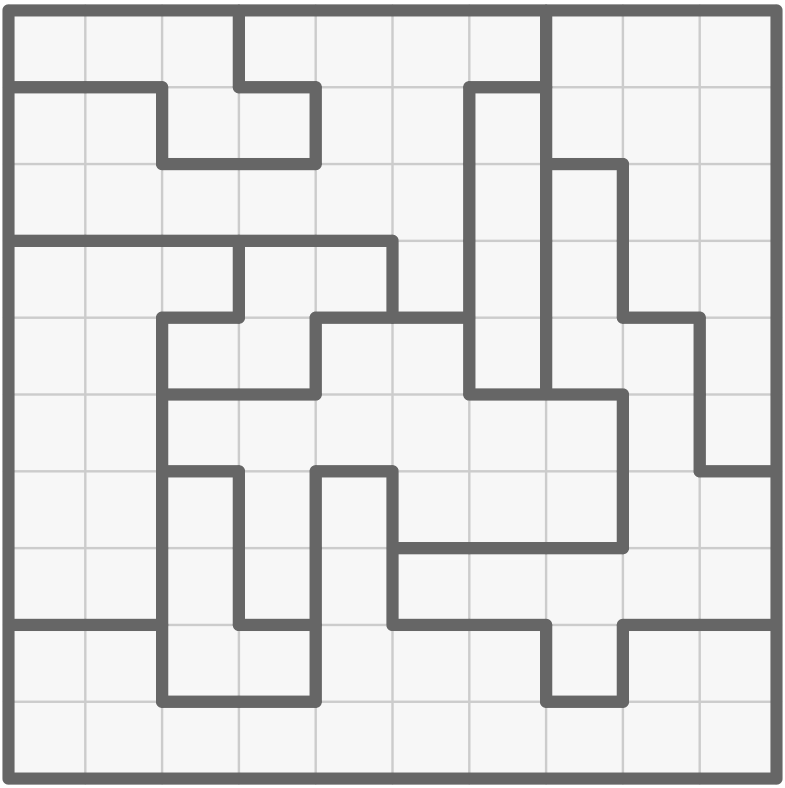
Puzzle #11

answer



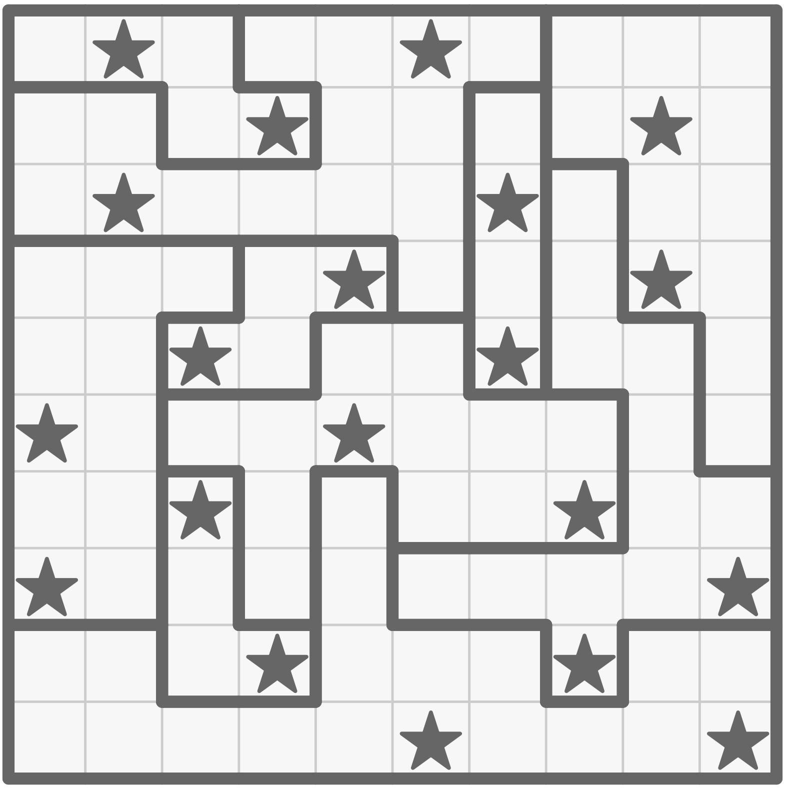
Answer #11

back to
puzzle



Puzzle #12

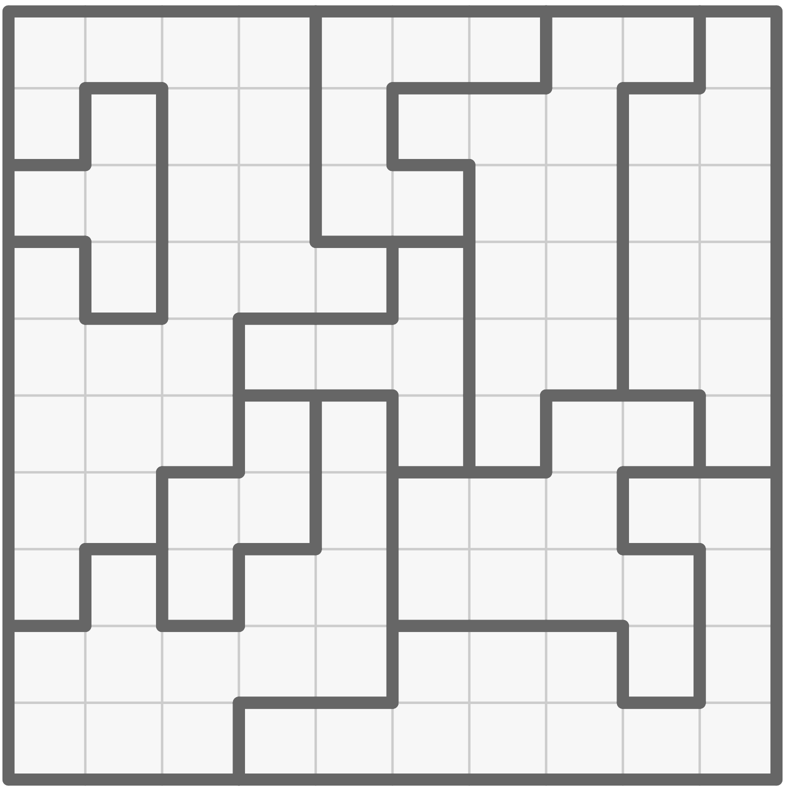
answer



Answer #12

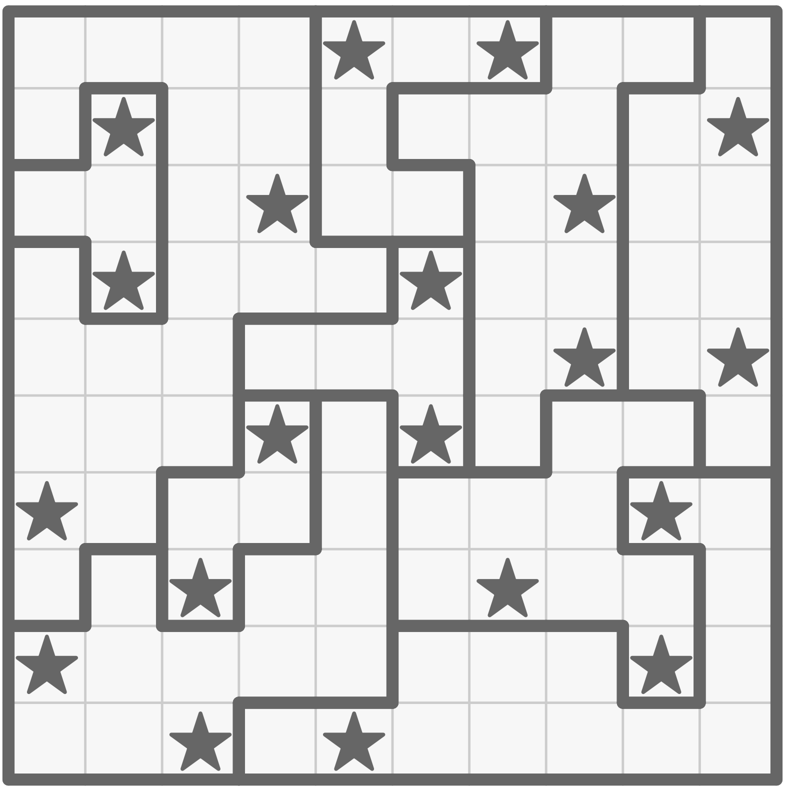
back to
puzzle

home menu next



Puzzle #13

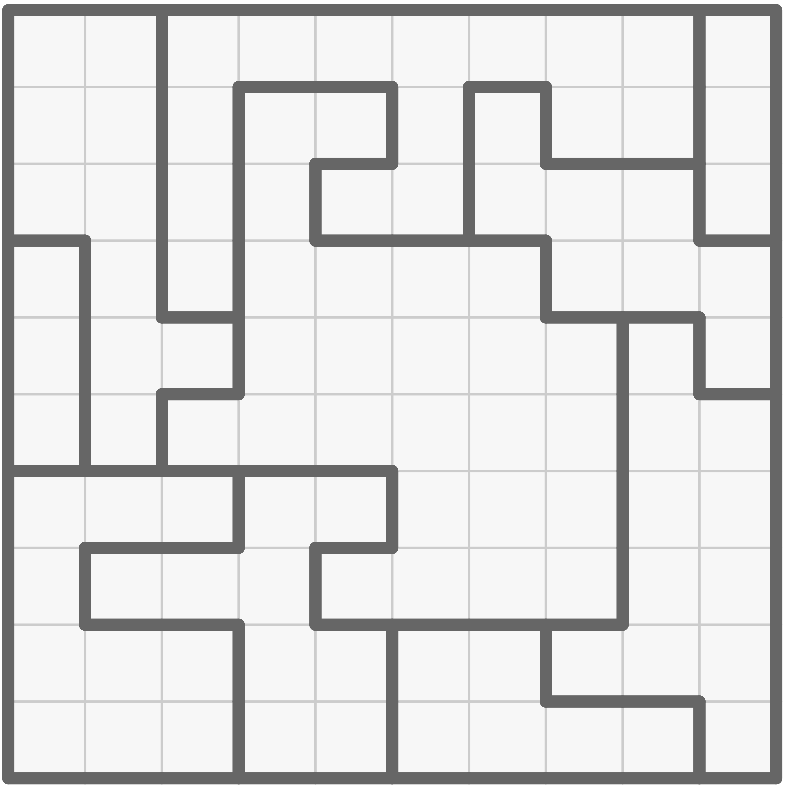
answer



Answer #13

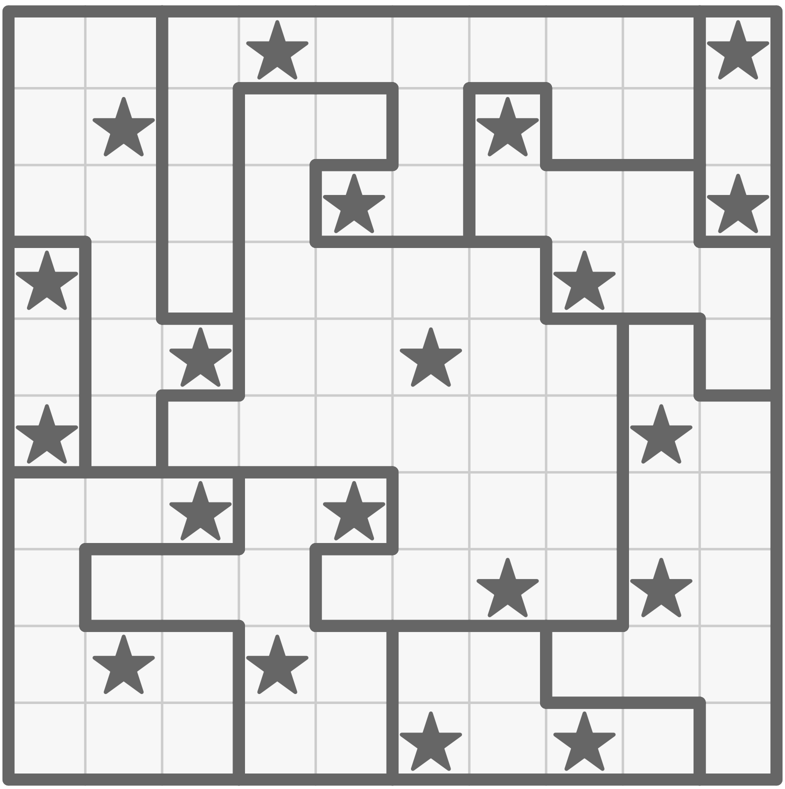
back to
puzzle

home menu next



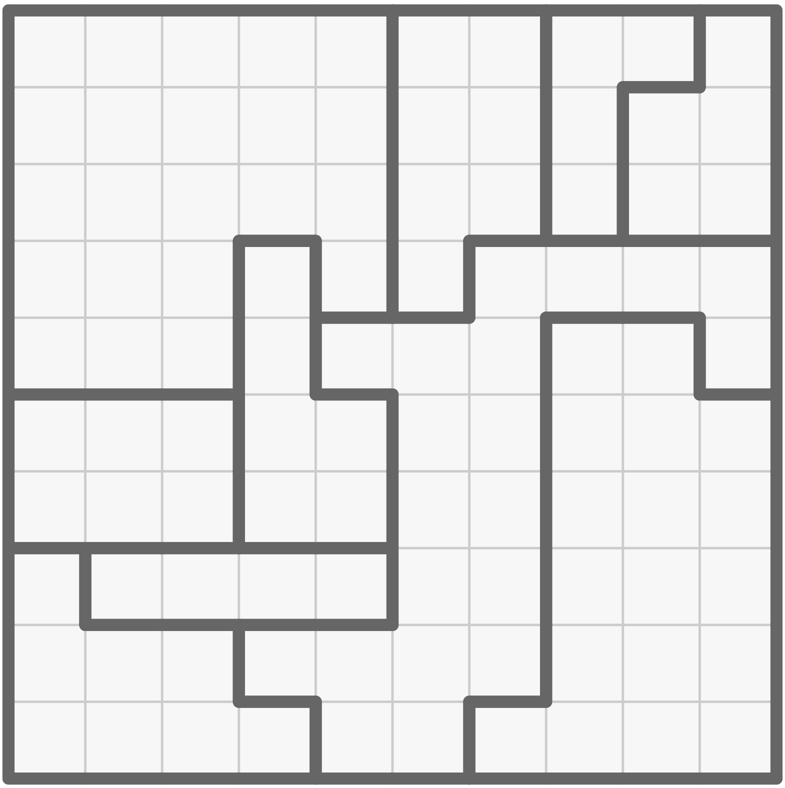
Puzzle #14

answer



Answer #14

back to
puzzle



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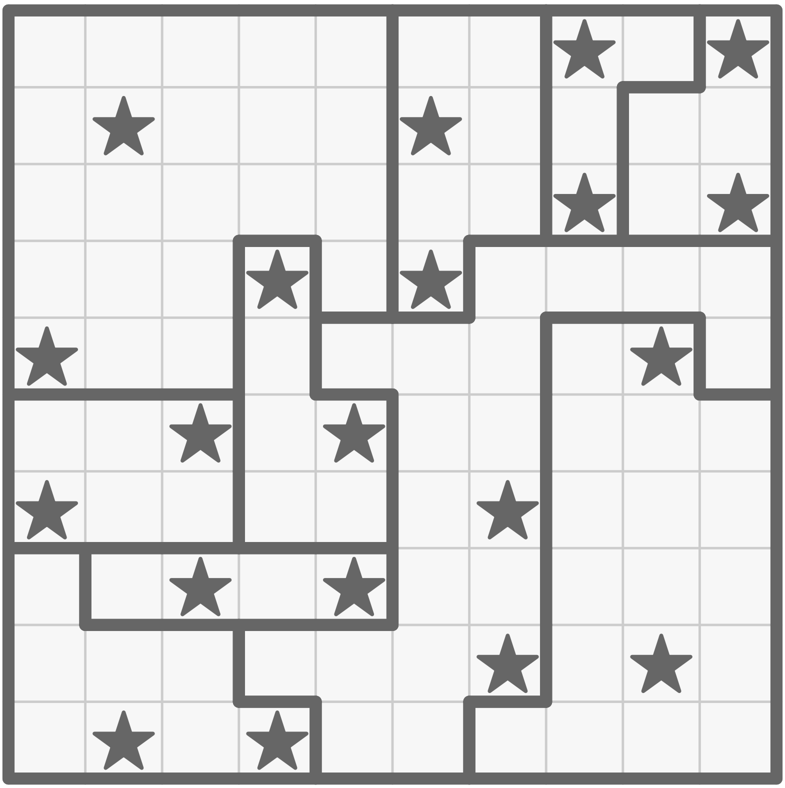
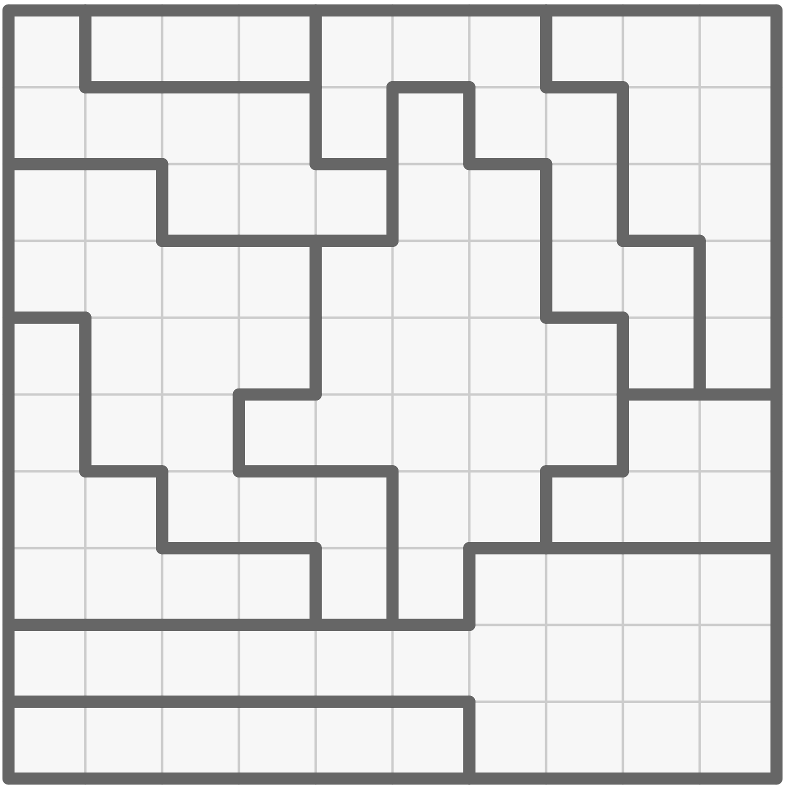
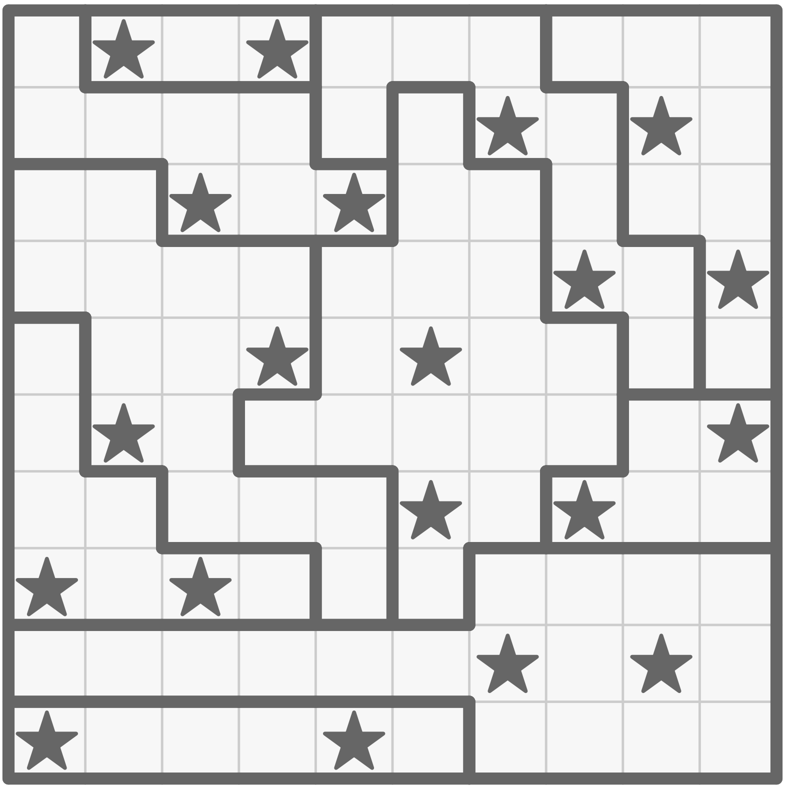


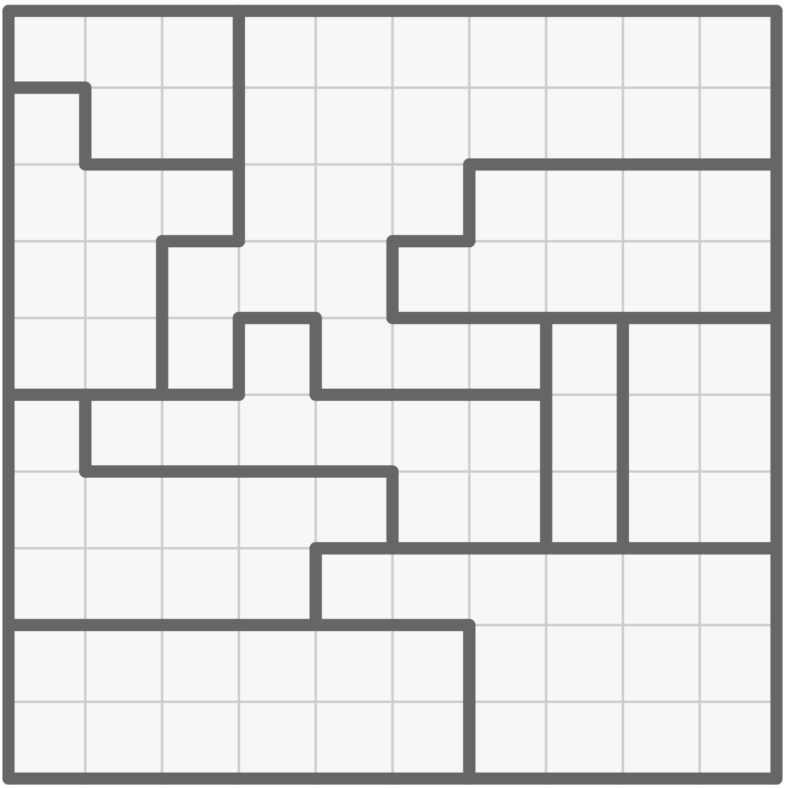
Answer #15



Puzzle #16

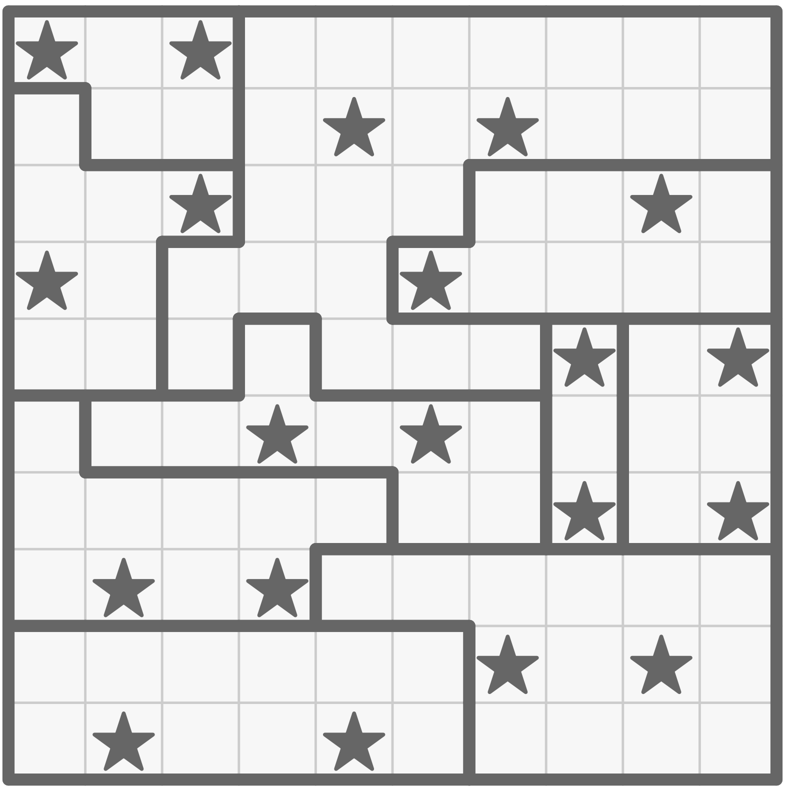


Answer #16



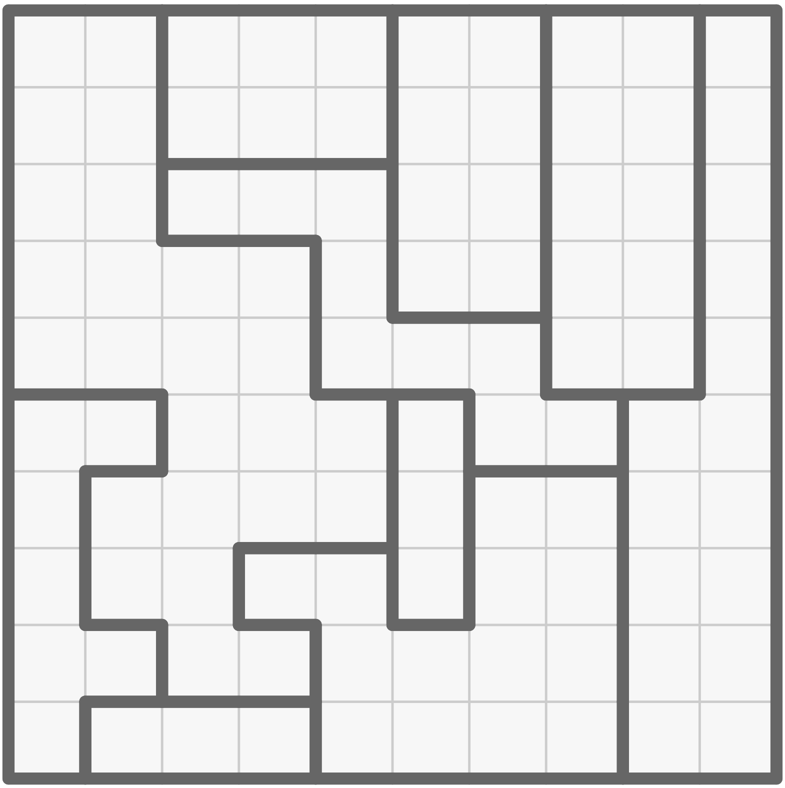
Puzzle #17

answer

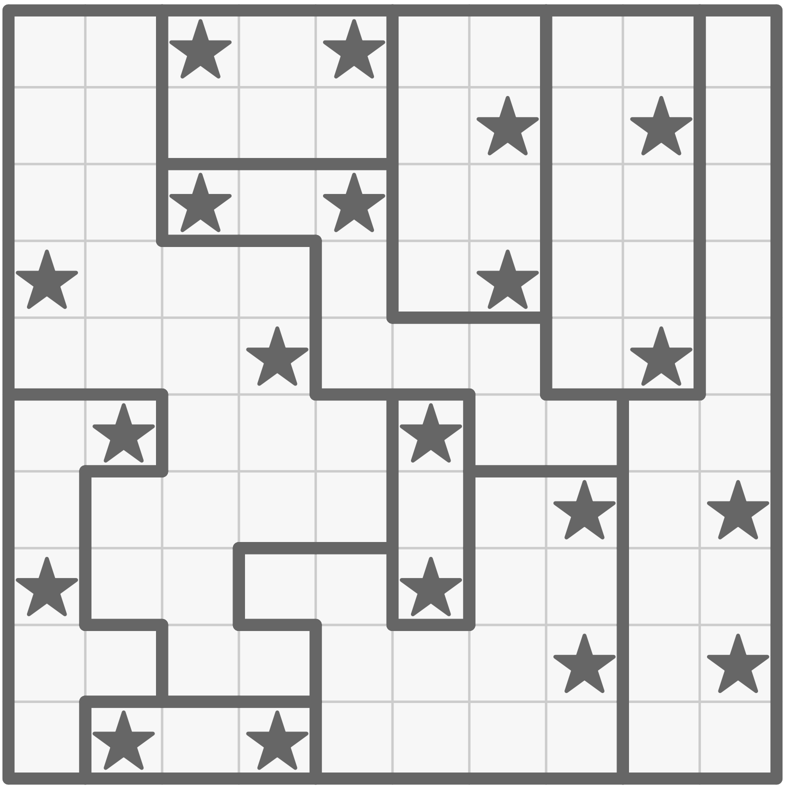


Answer #17

back to puzzle

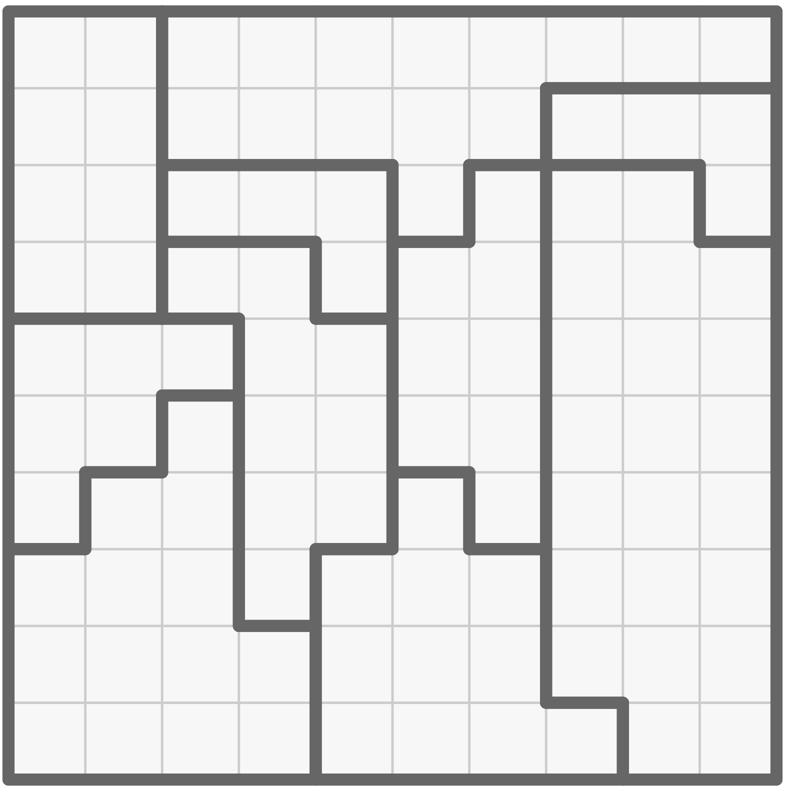


Puzzle #18

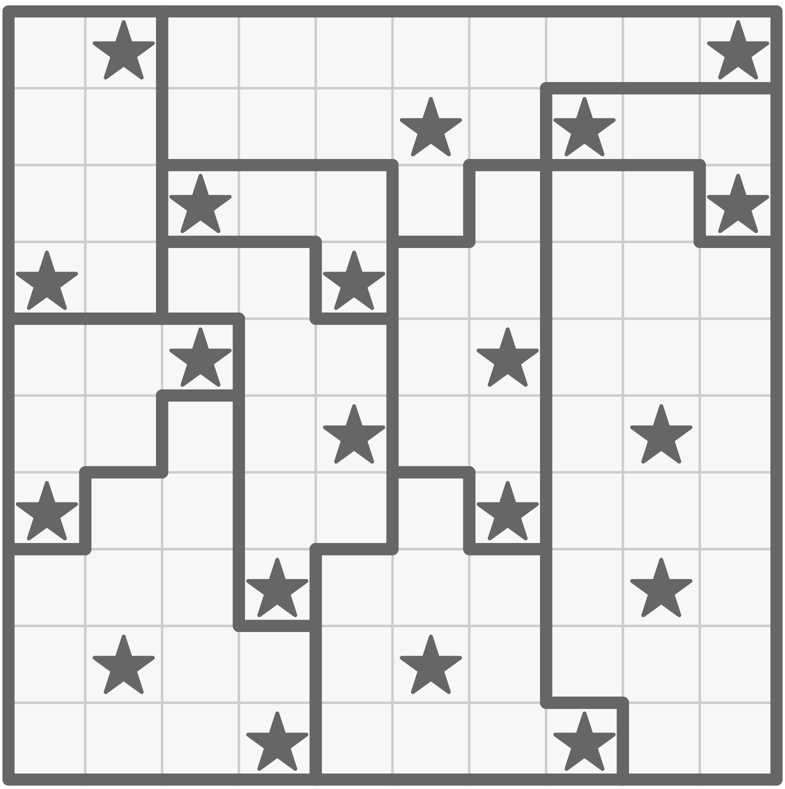


Answer #18

back to
puzzle

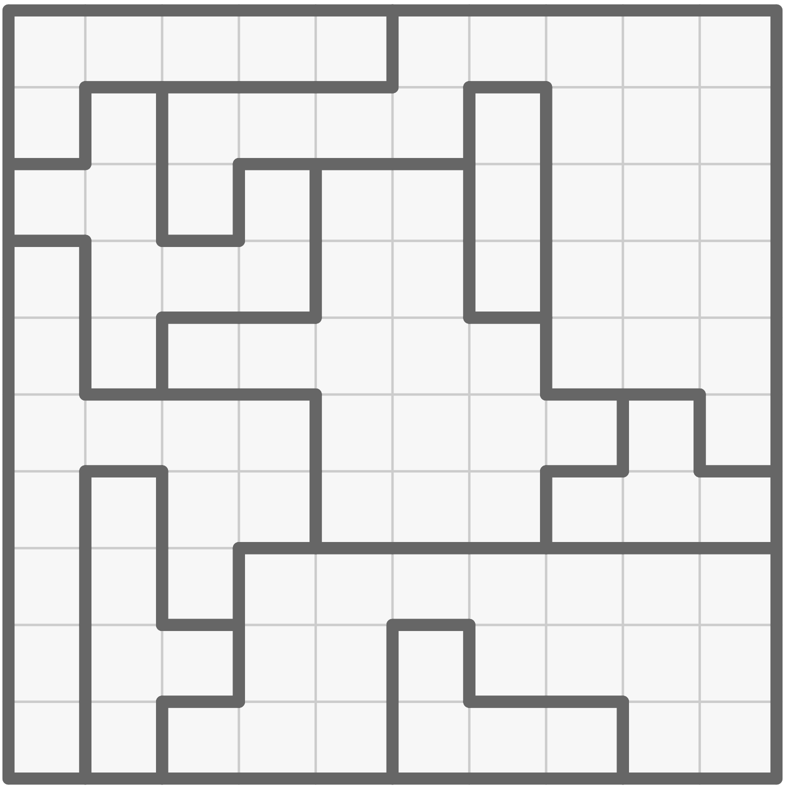


Puzzle #19



Answer #19

back to puzzle



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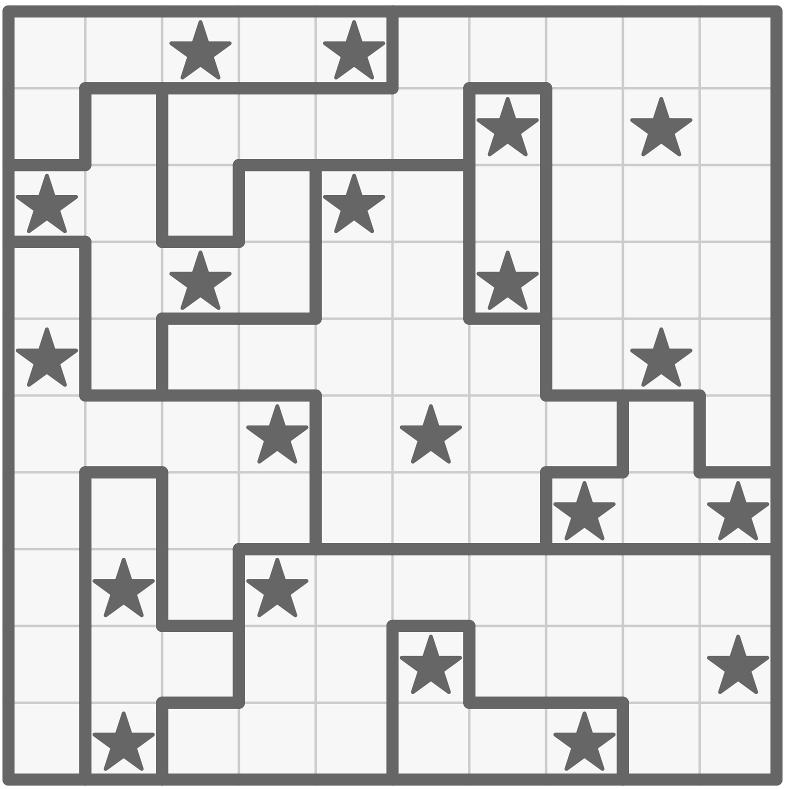
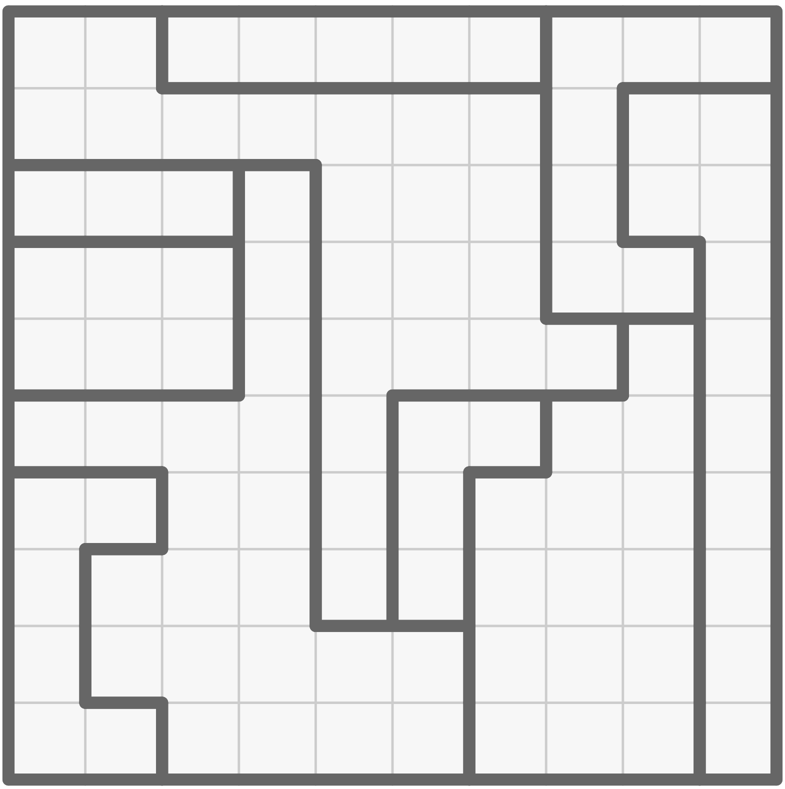


Answer #20

back to puzzle



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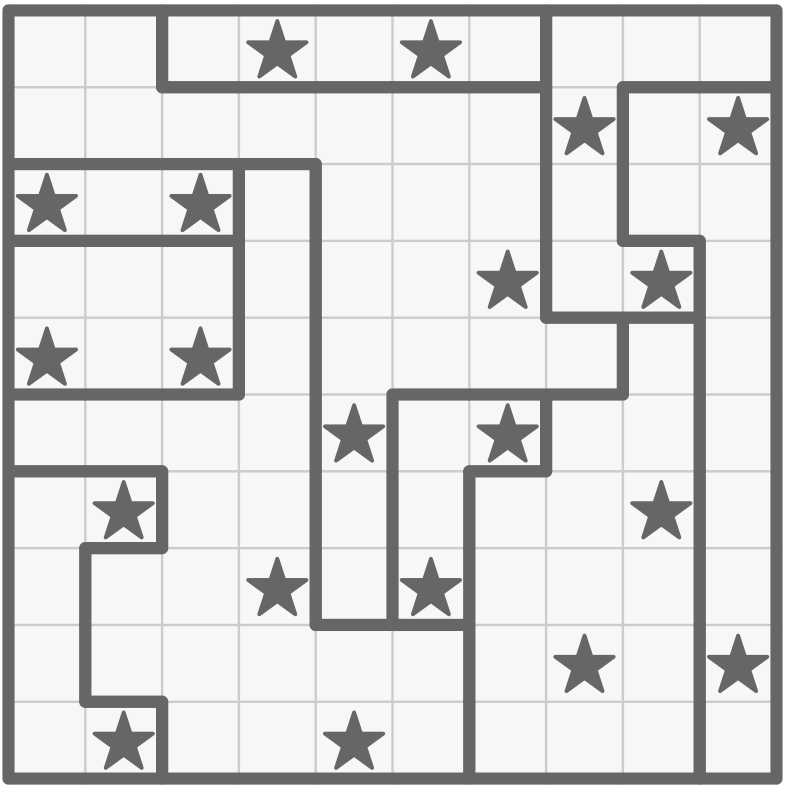
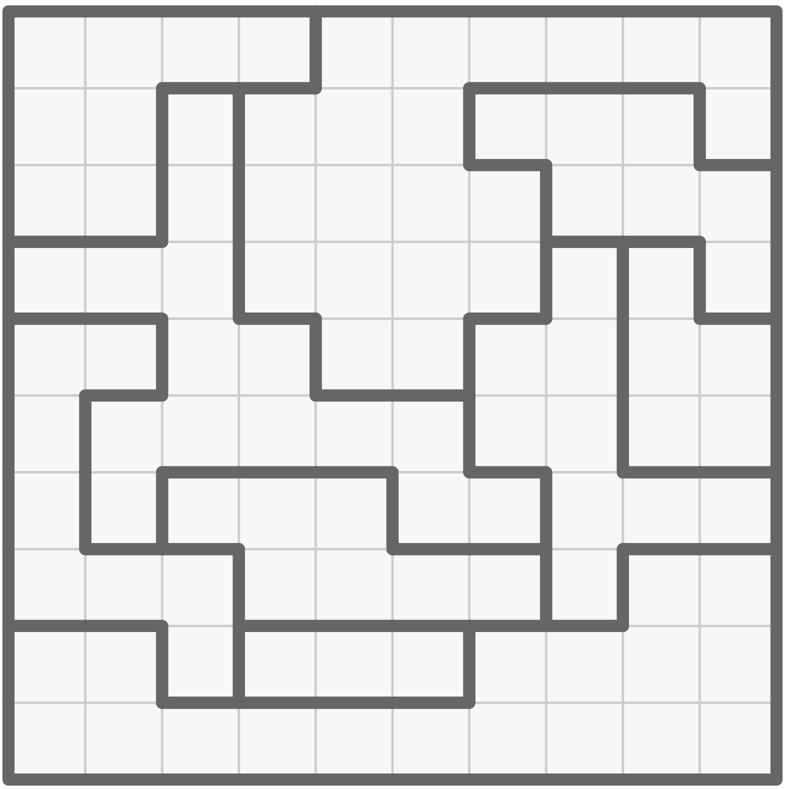
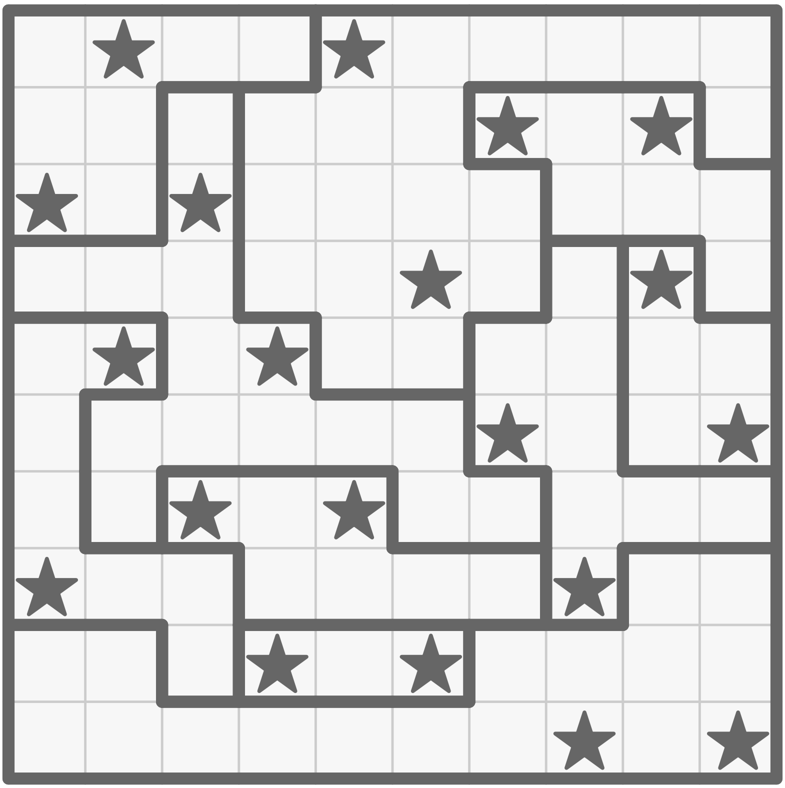


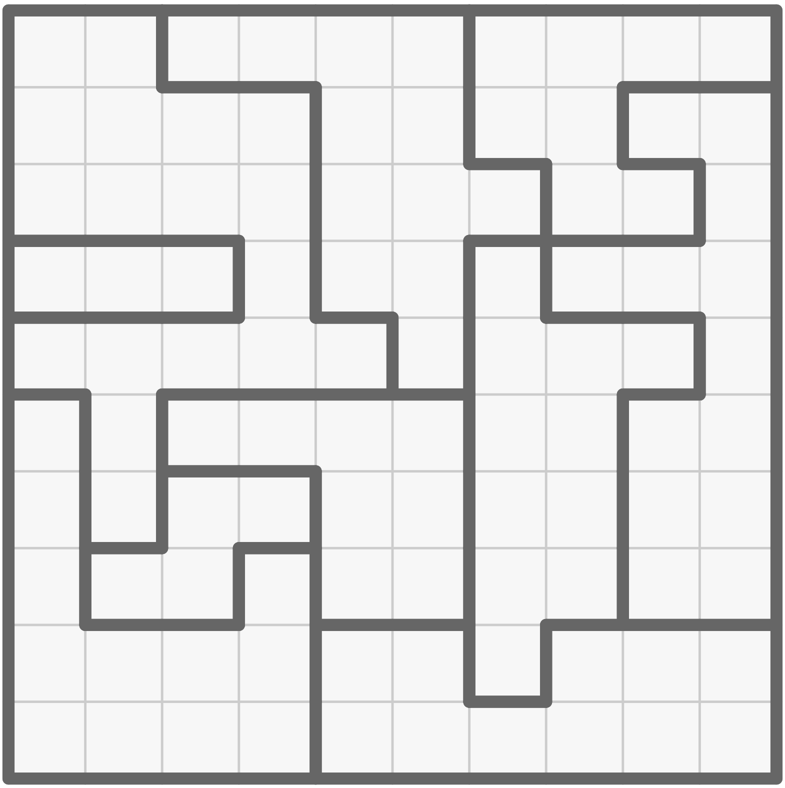
Answer #21



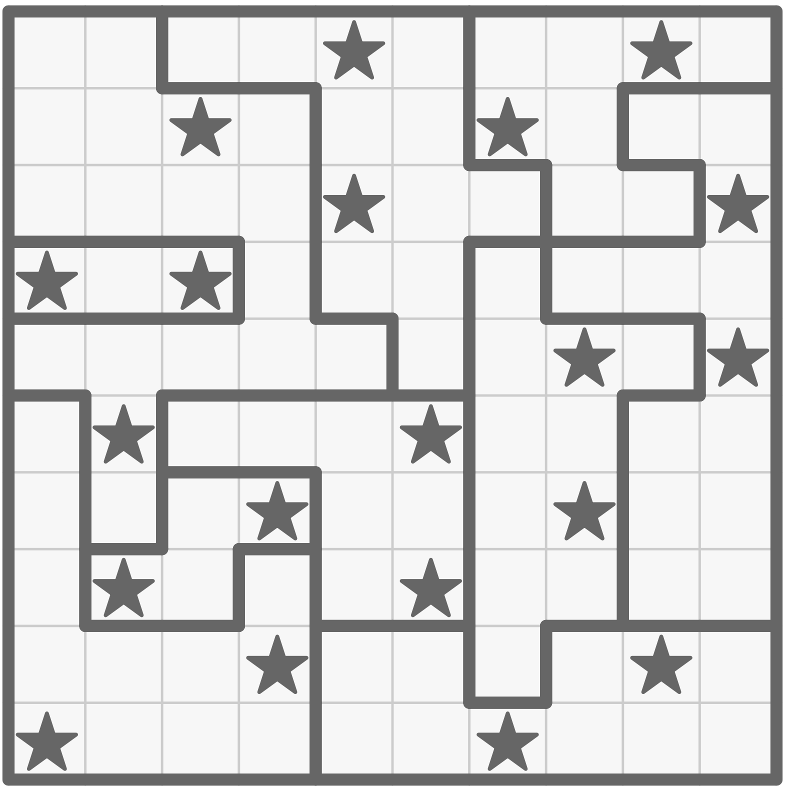
Puzzle #22



Answer #22

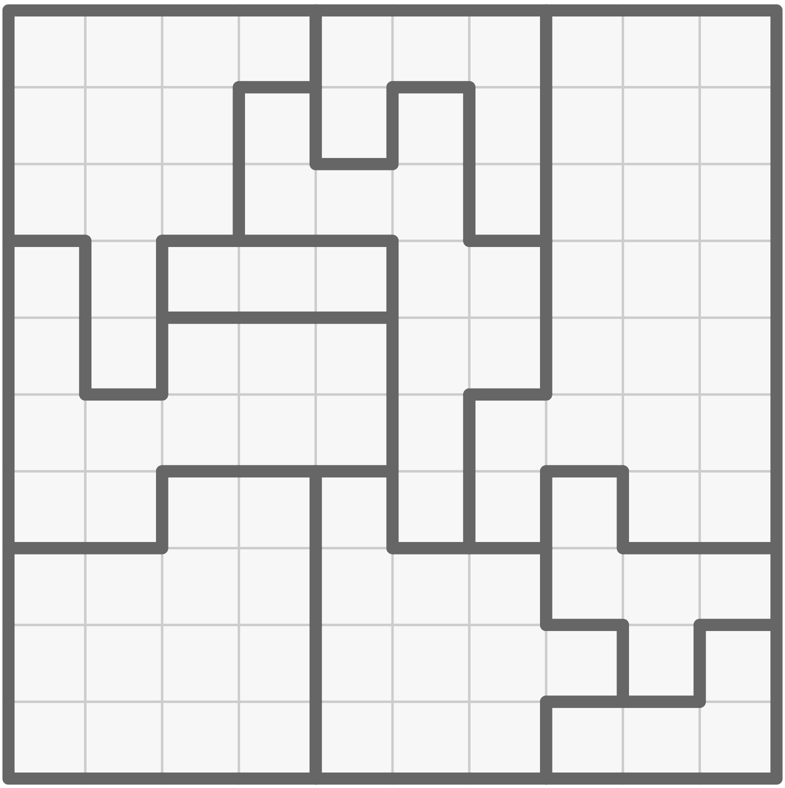


Puzzle #23

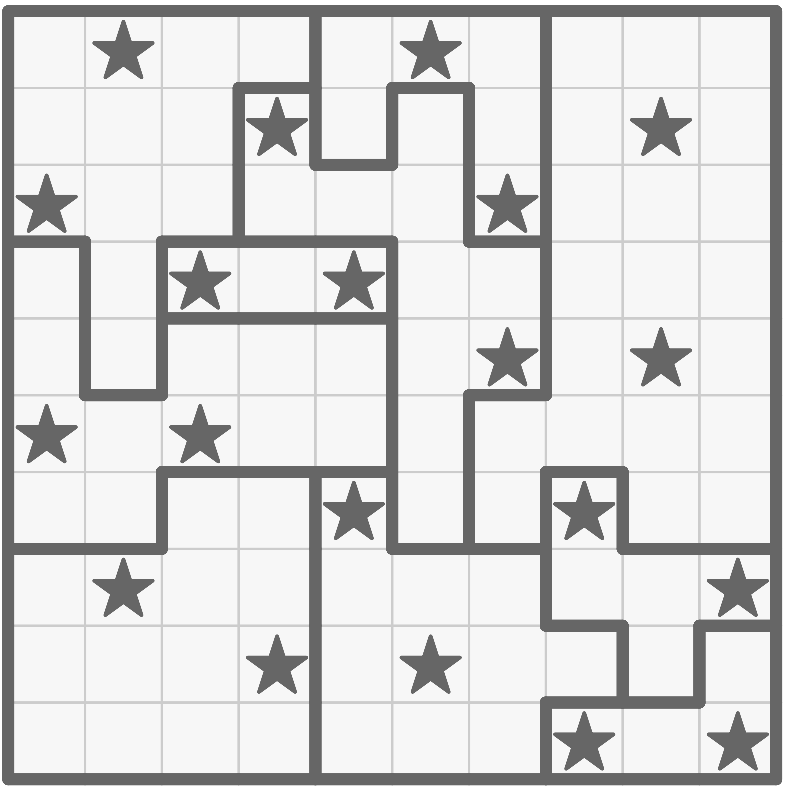


Answer #23

back to
puzzle



Puzzle #24

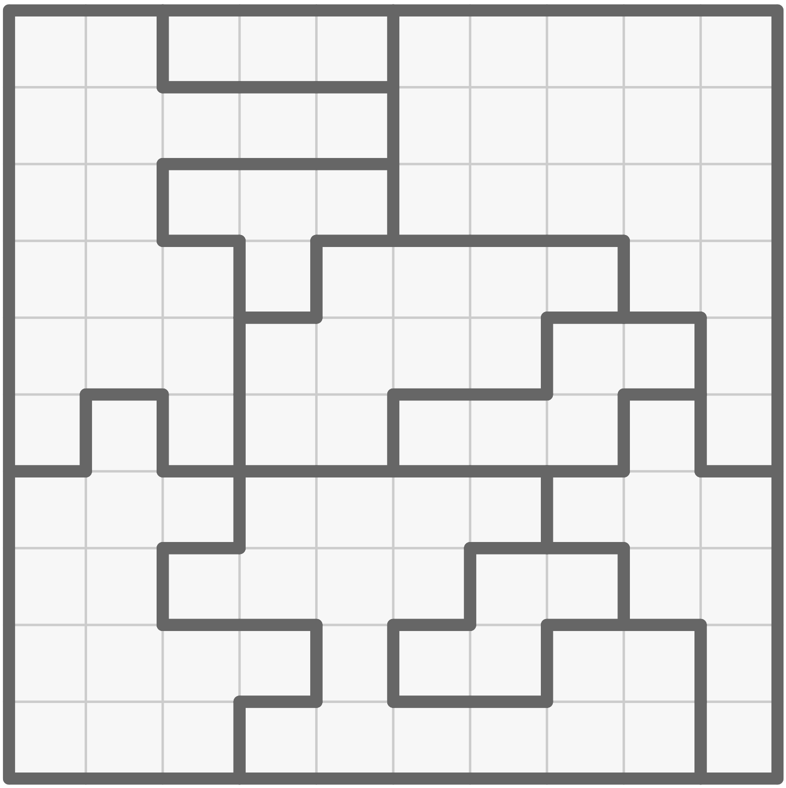


Answer #24

home

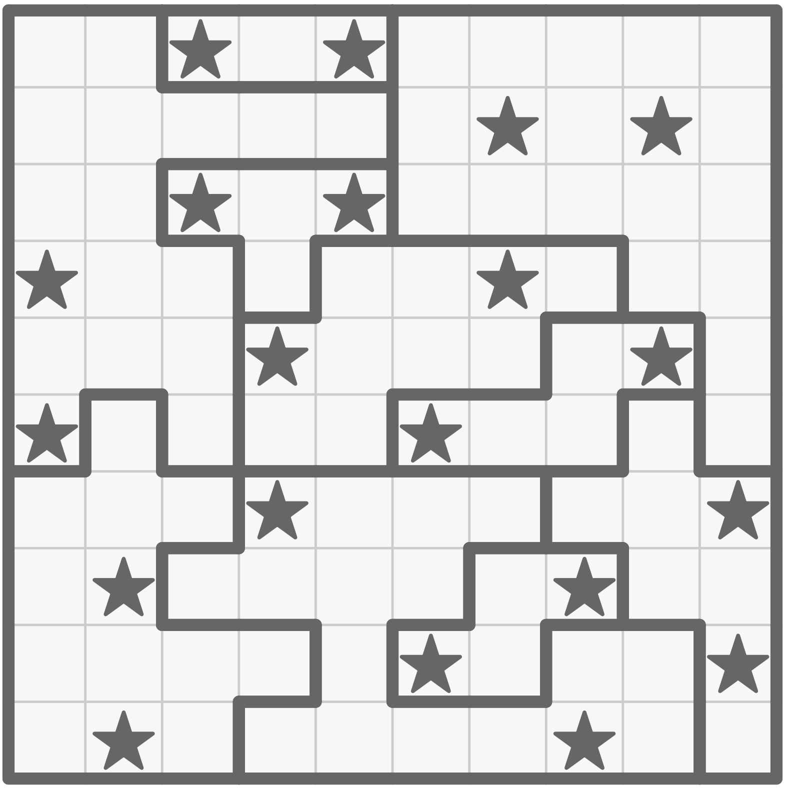
menu

next



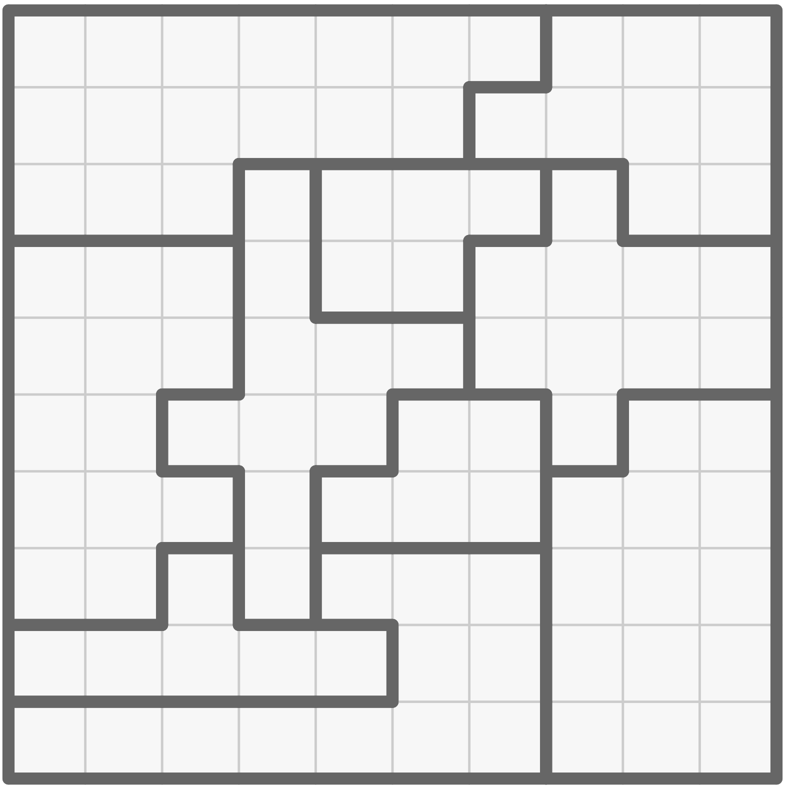
Puzzle #25

answer

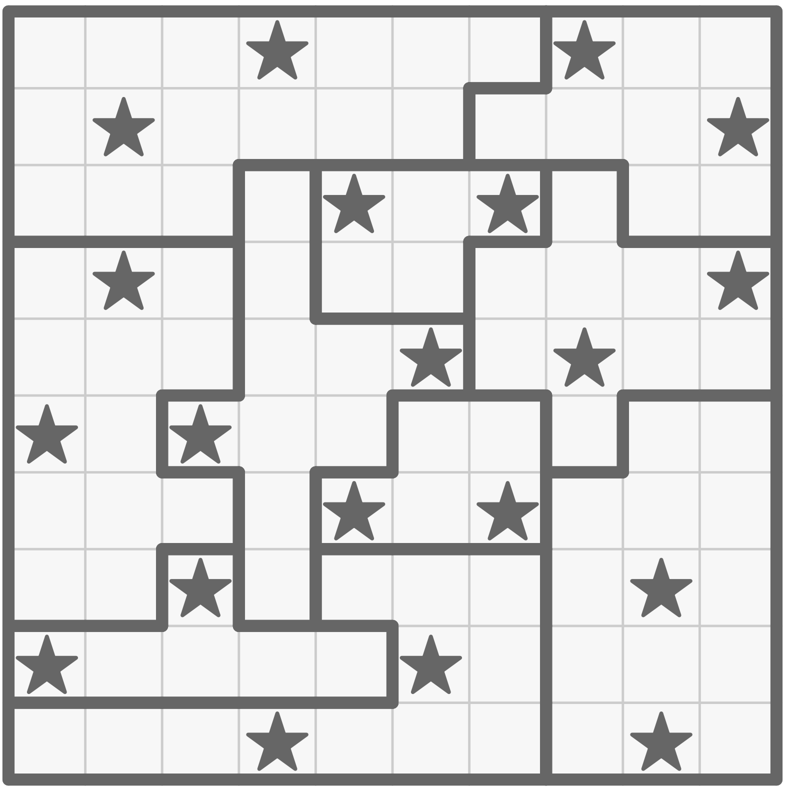


Answer #25

back to puzzle



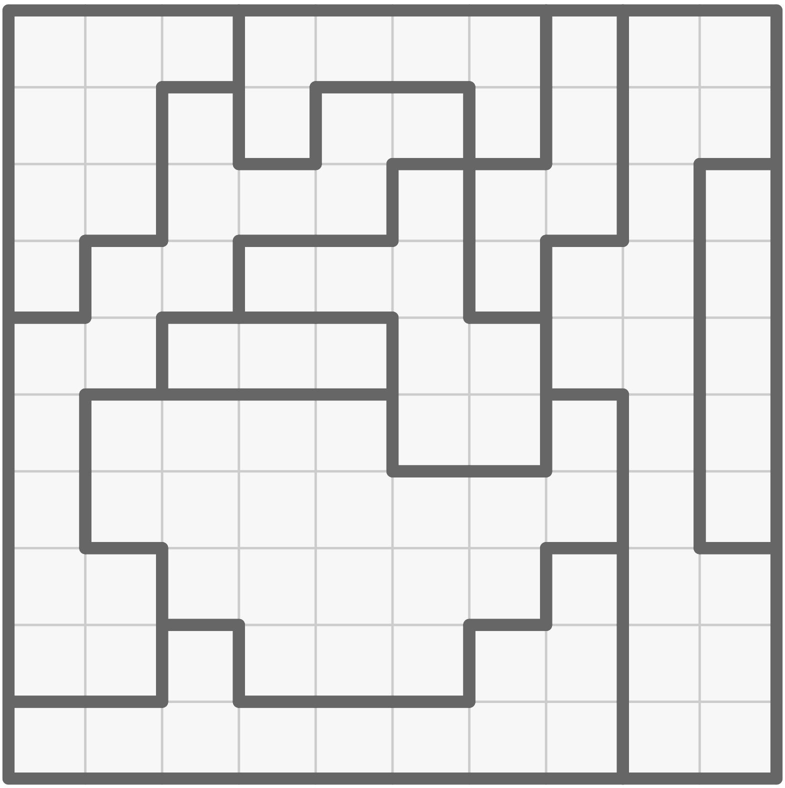
Puzzle #26



Answer #26

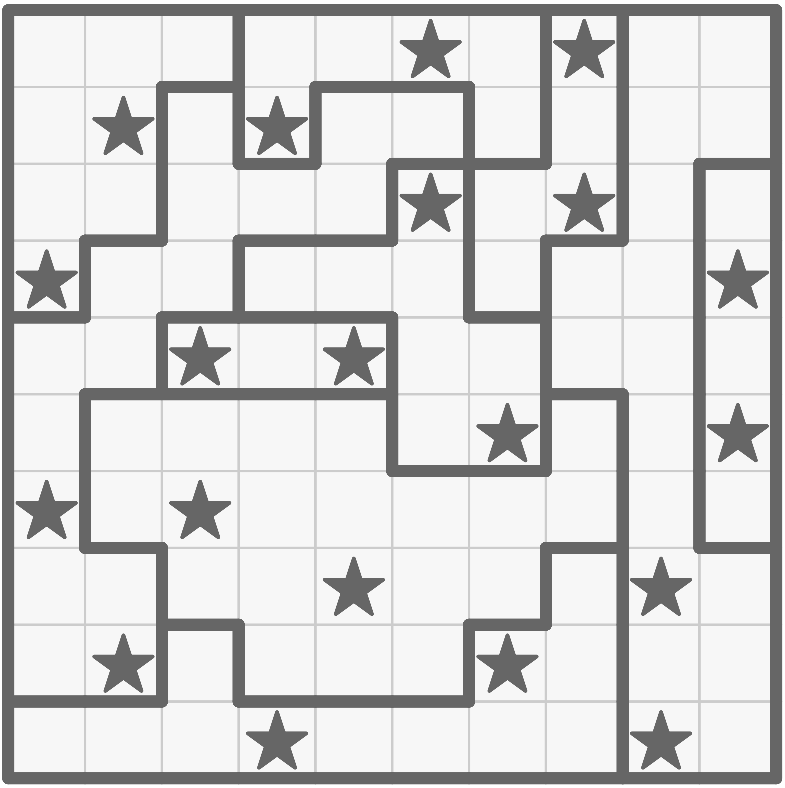
back to
puzzle

home menu next

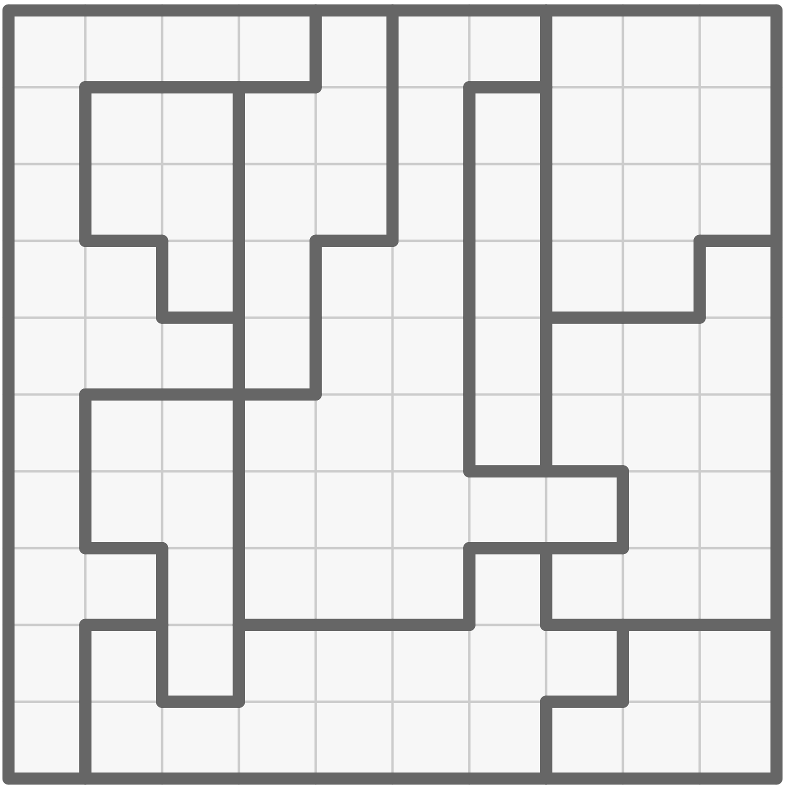


Puzzle #27

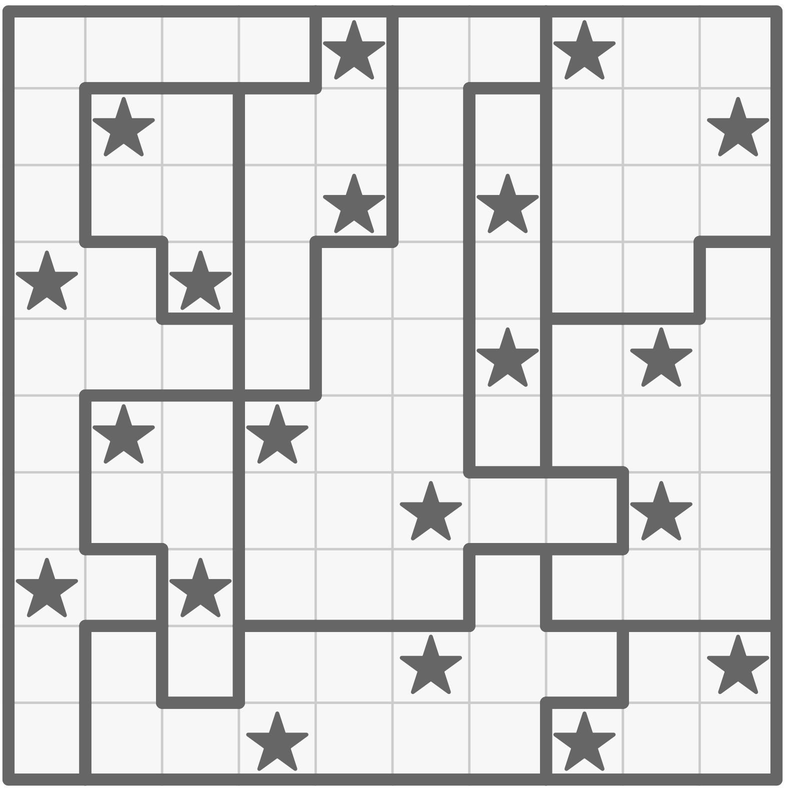
answer



Answer #27



Puzzle #28



Answer #28

back to puzzle

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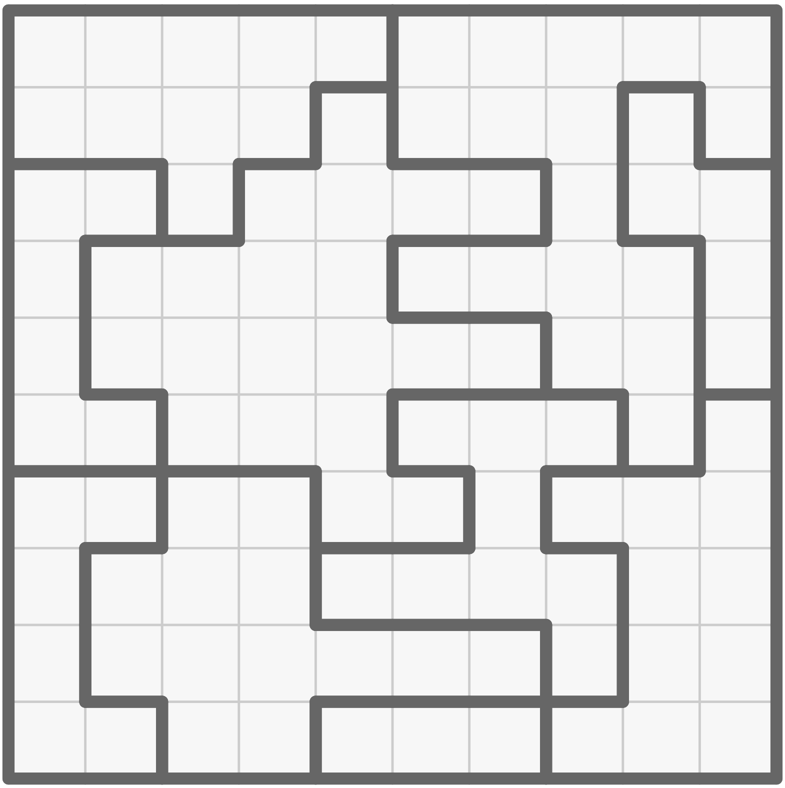
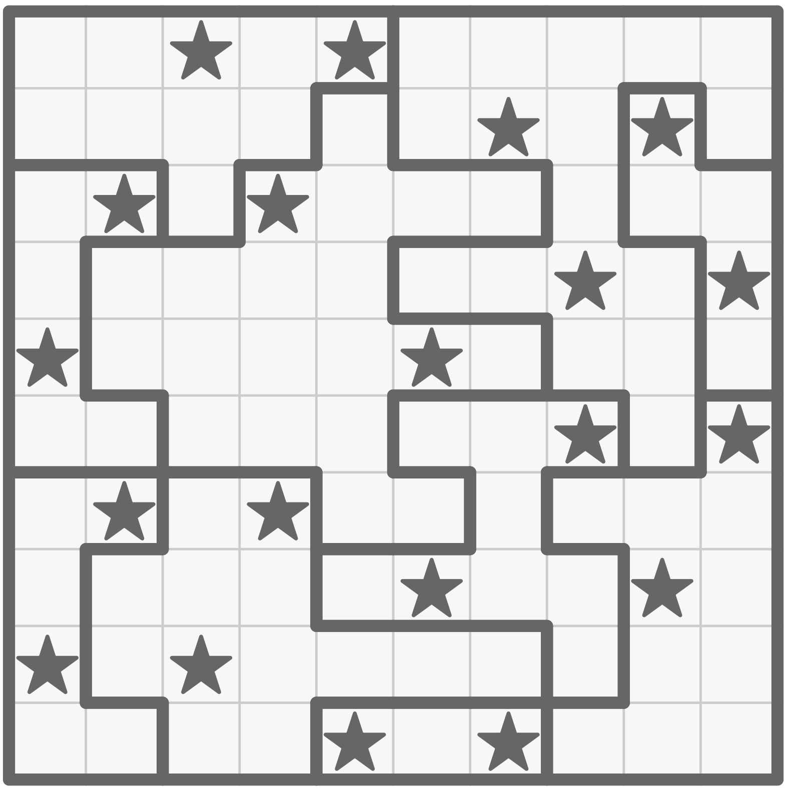
next



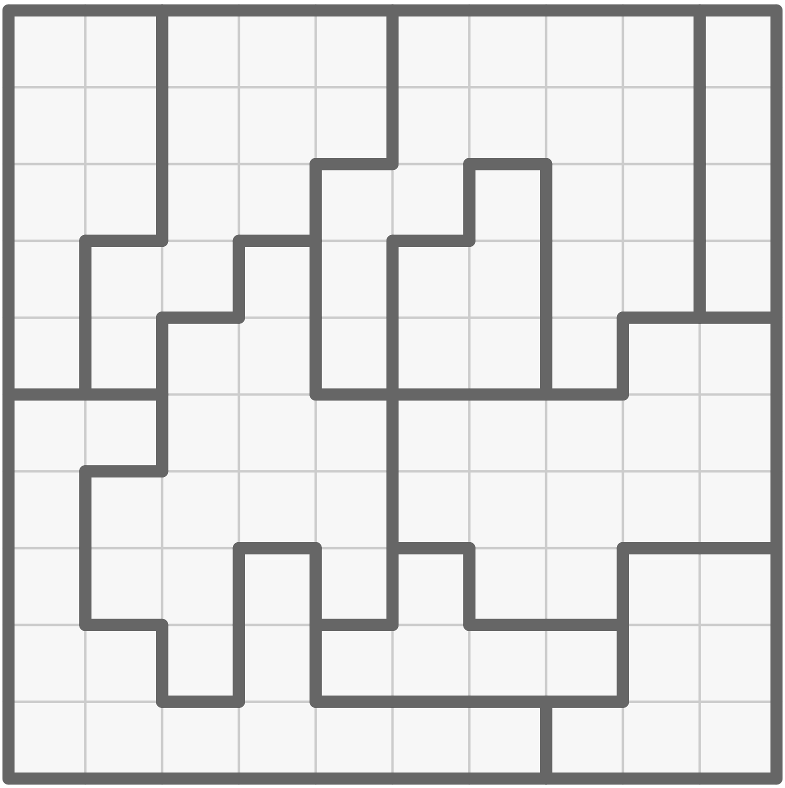
Puzzle #29

answer



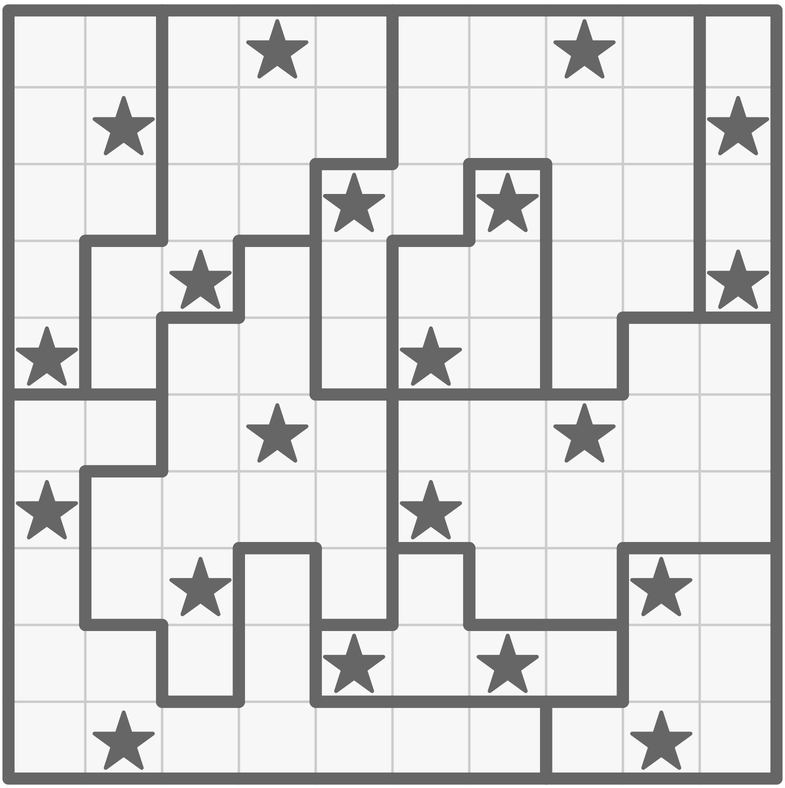
Answer #29

back to
puzzle



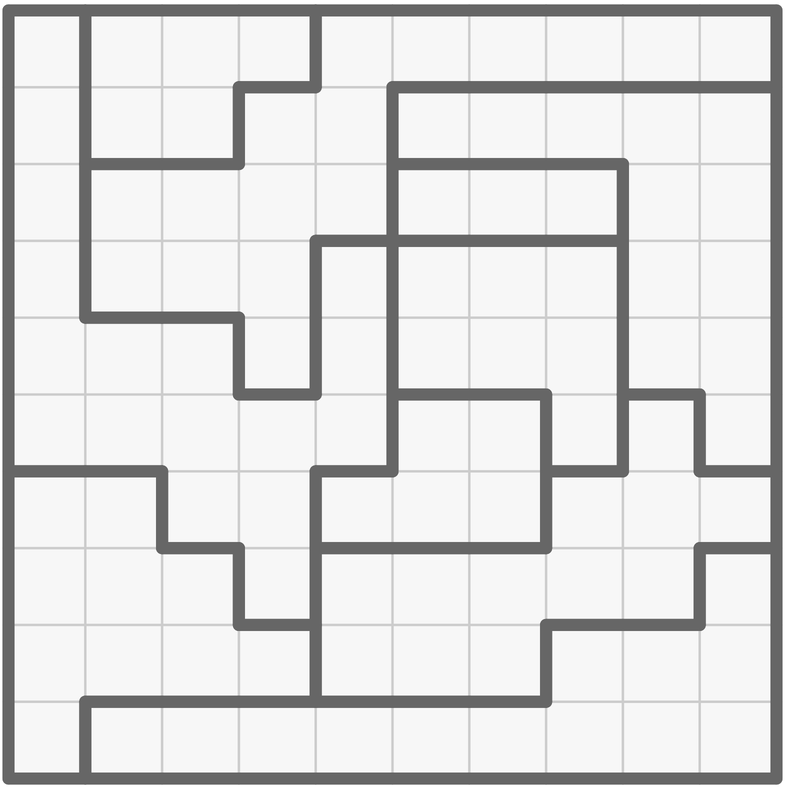
Puzzle #30

answer



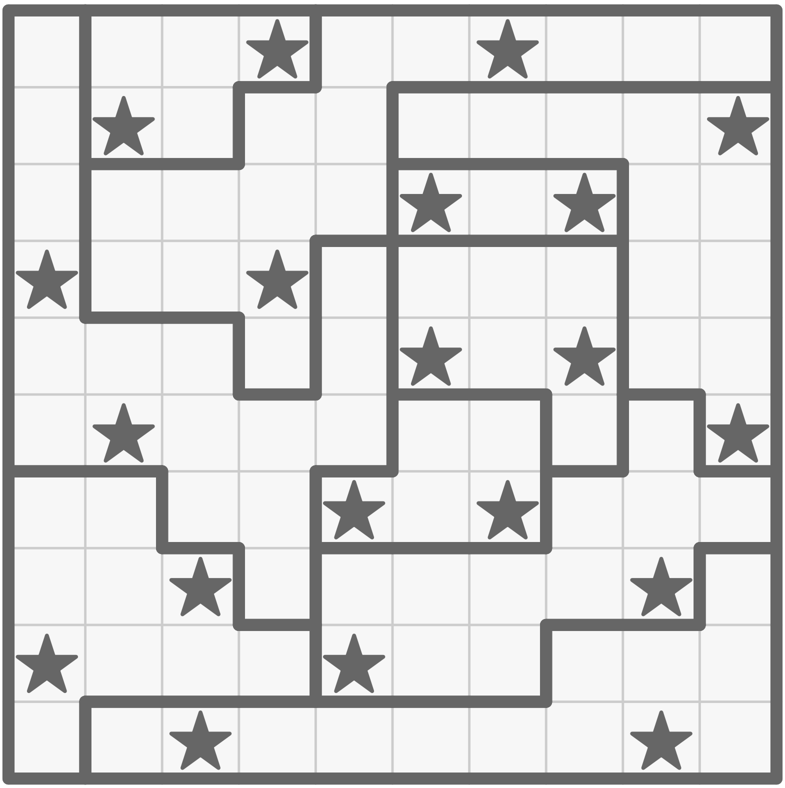
Answer #30

back to
puzzle

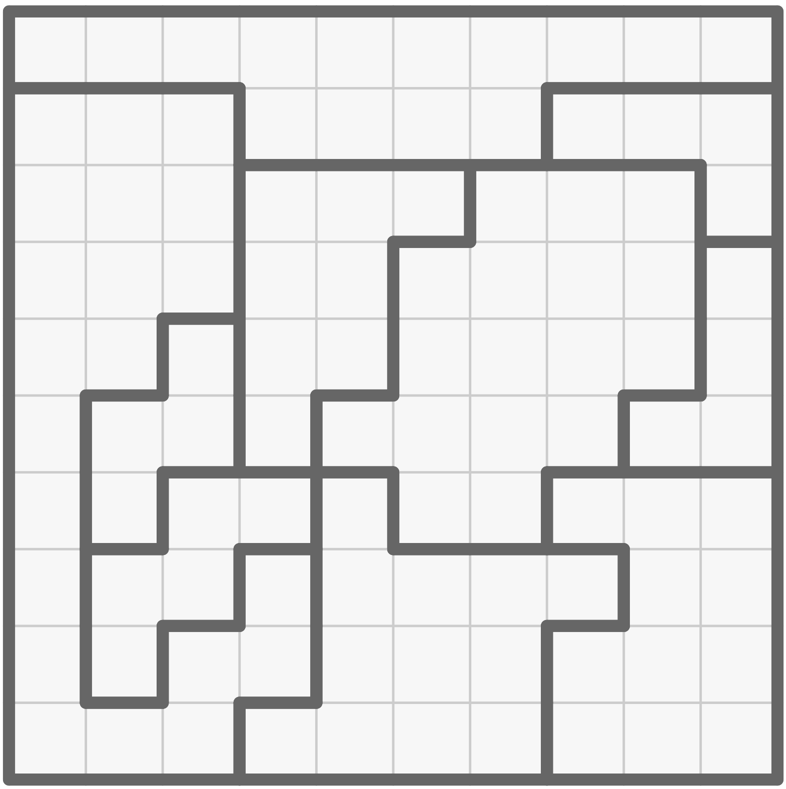


Puzzle #31

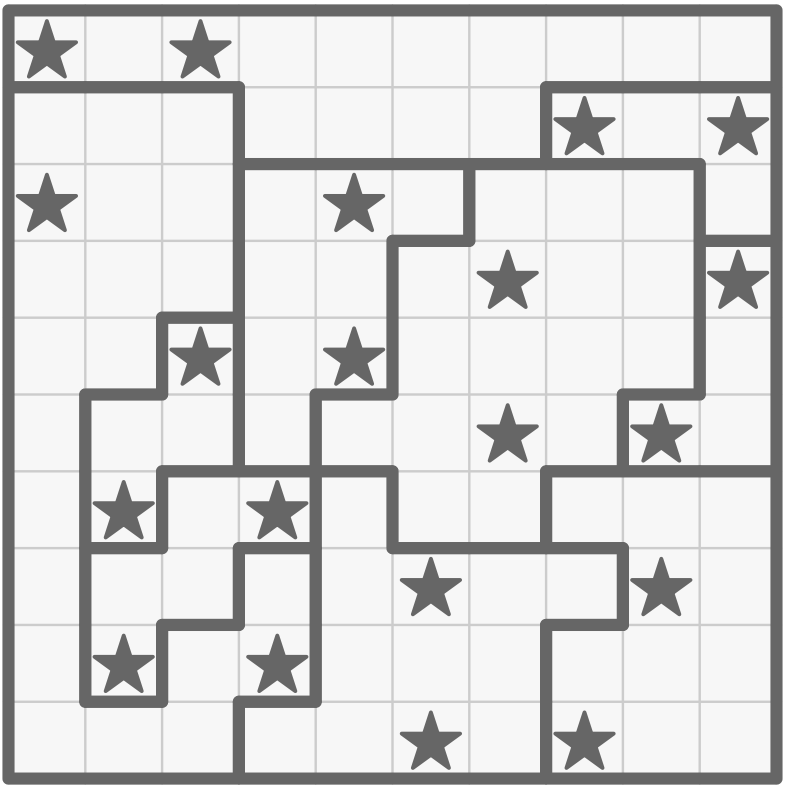
answer



Answer #31

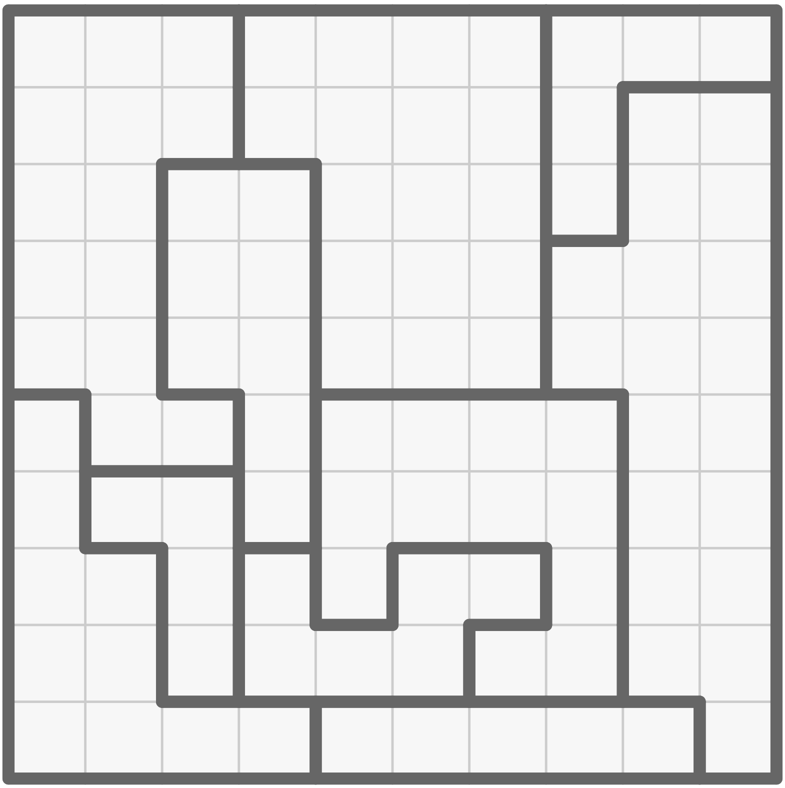


Puzzle #32

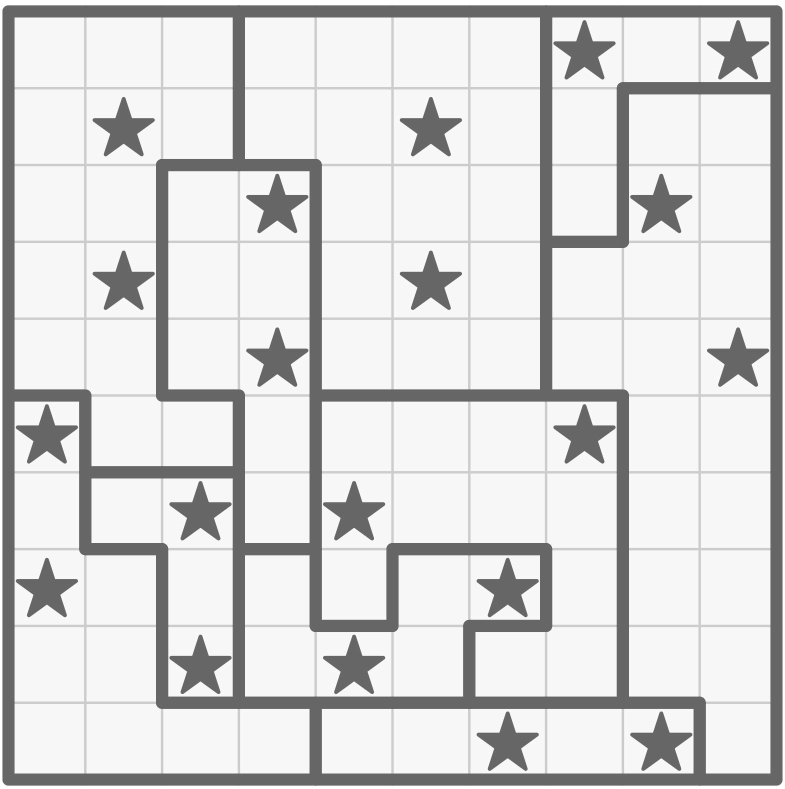


Answer #32

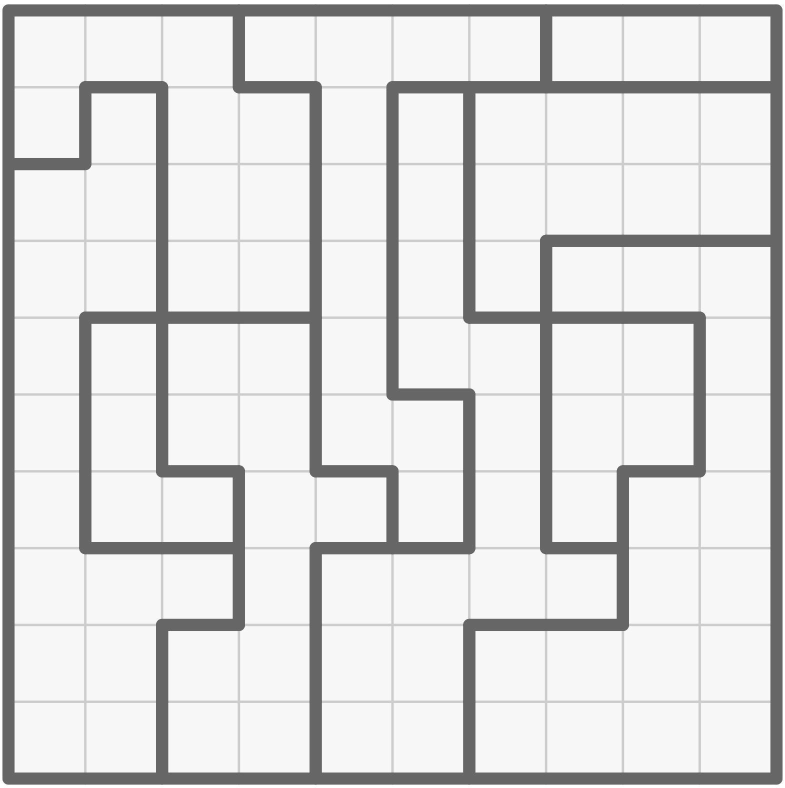
back to
puzzle



Puzzle #33



Answer #33



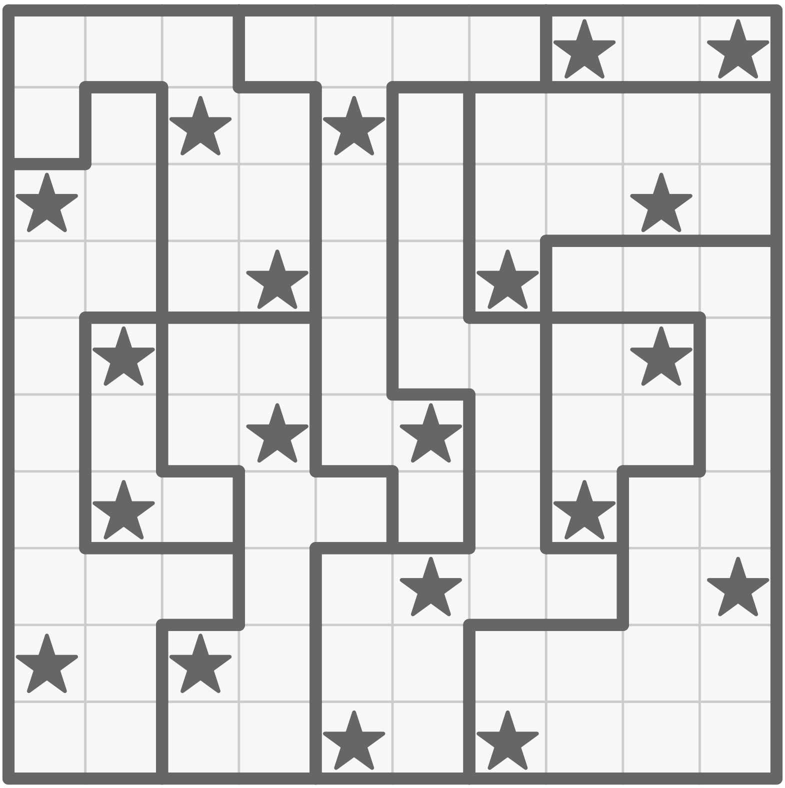
Puzzle #34

answer

home

menu

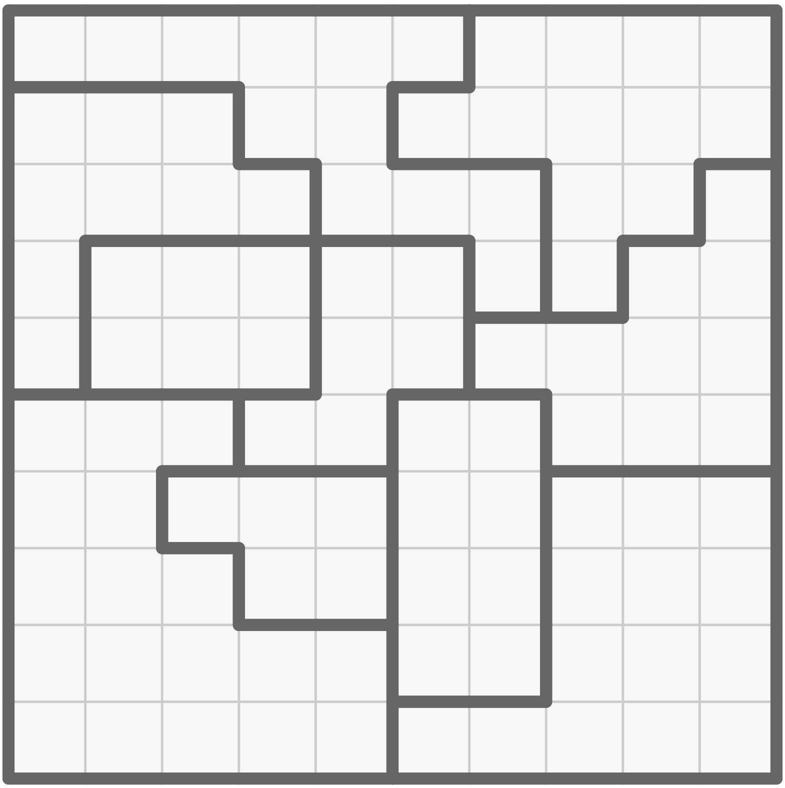
next



Answer #34

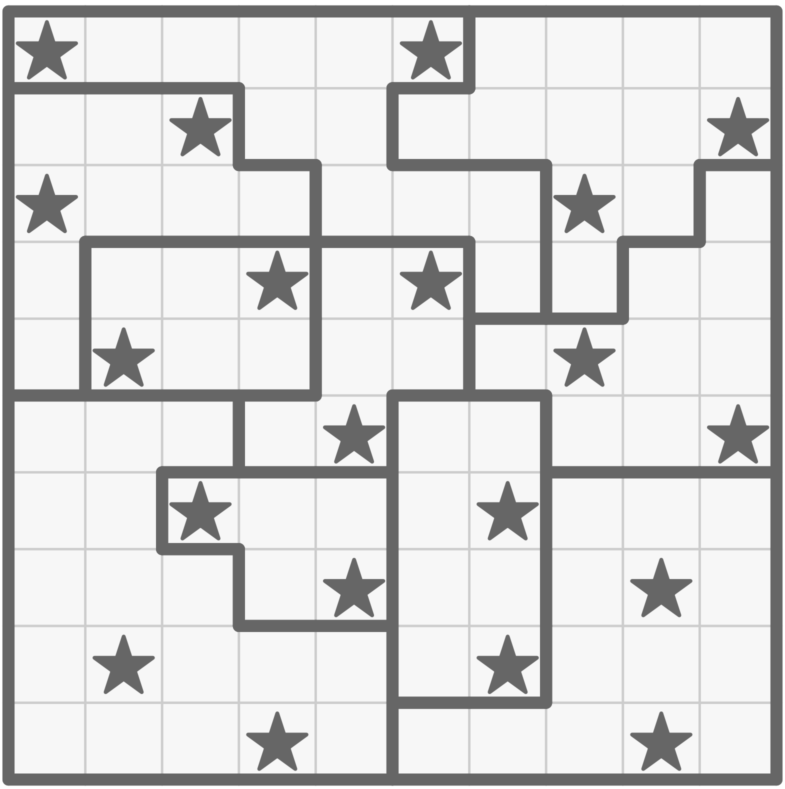
back to puzzle

home menu next



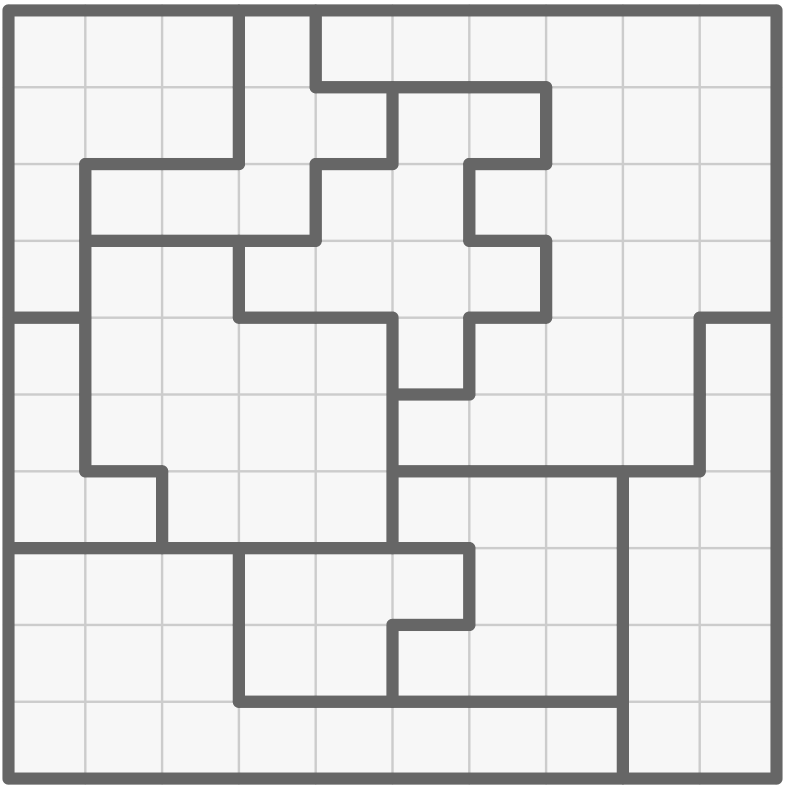
Puzzle #35

answer



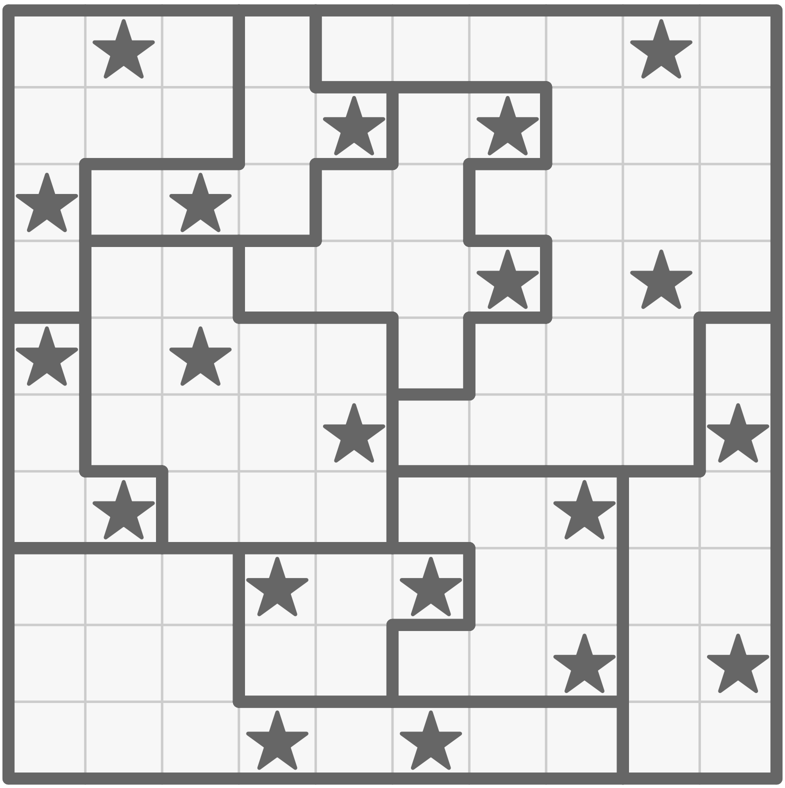
Answer #35

home menu next



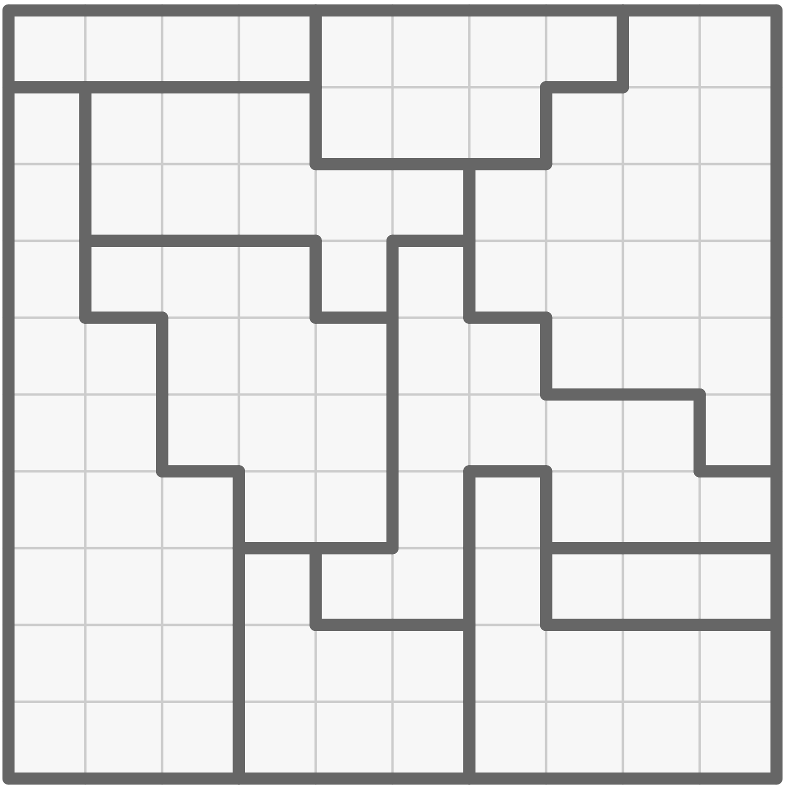
Puzzle #36

answer



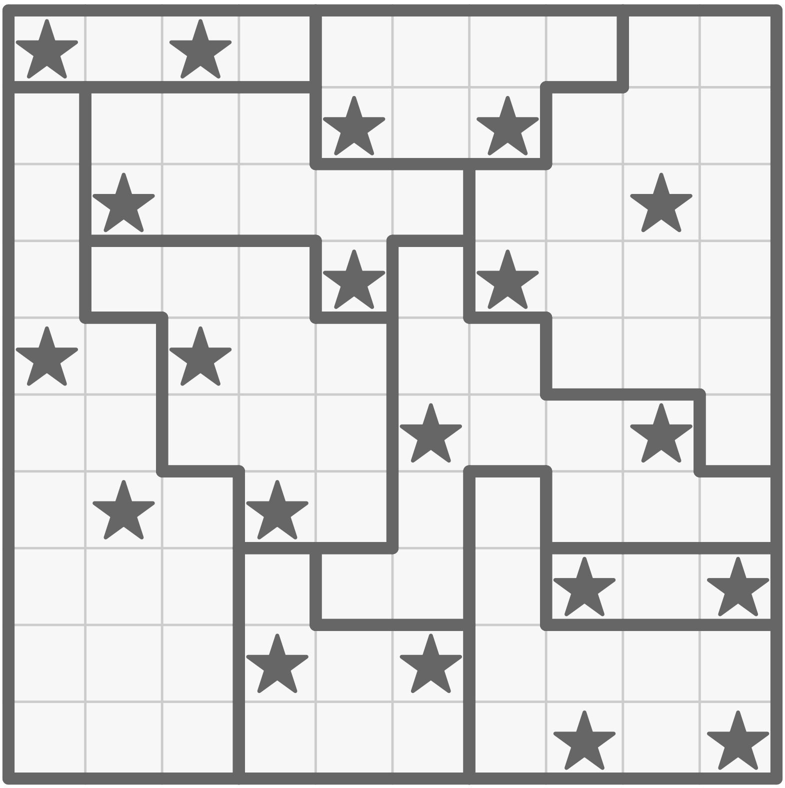
Answer #36

home menu next

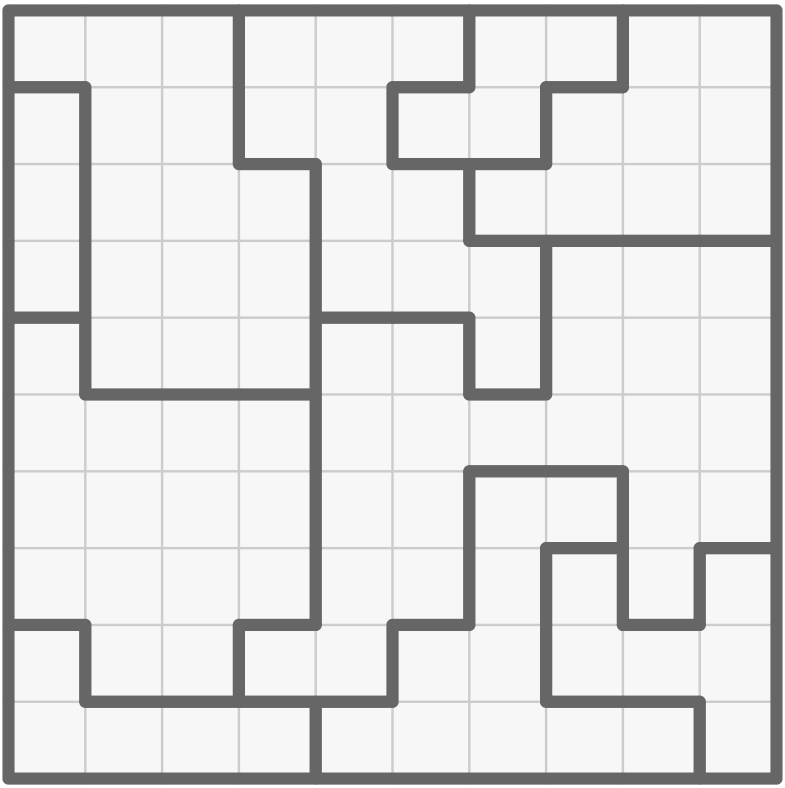


Puzzle #37

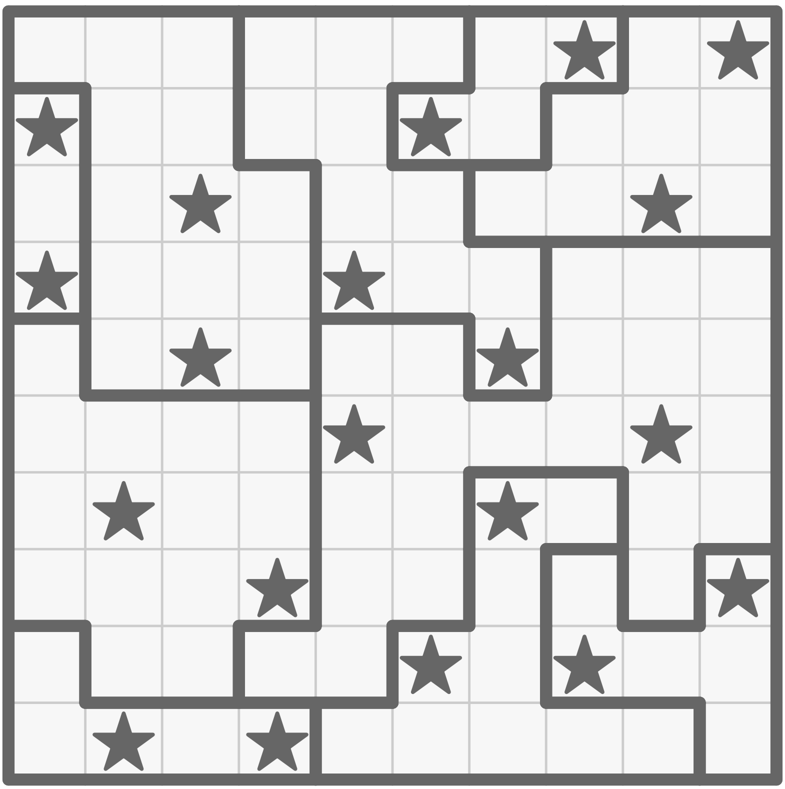
answer



Answer #37

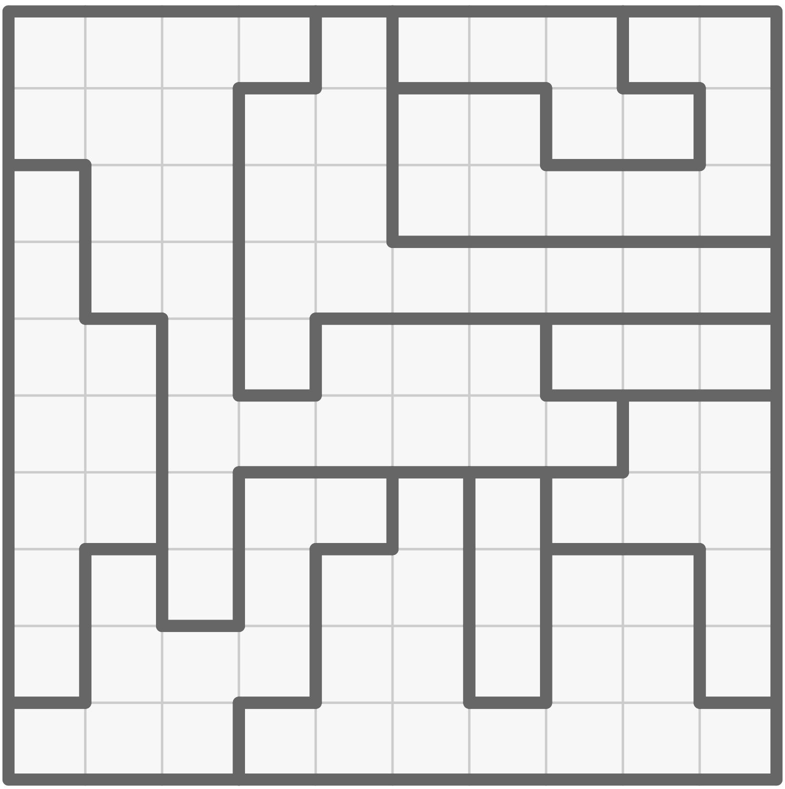


Puzzle #38



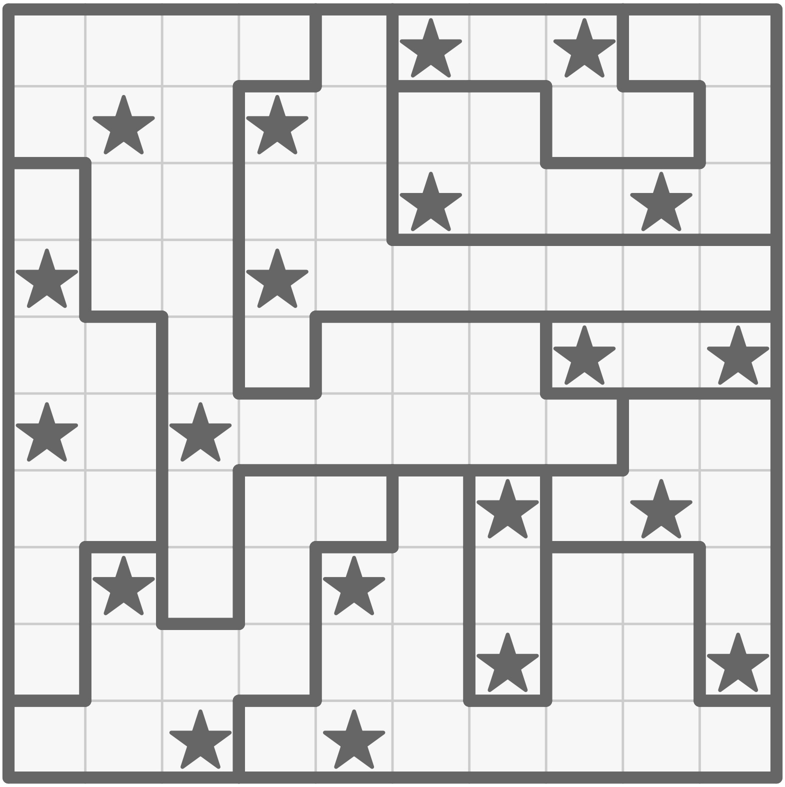
Answer #38

back to puzzle



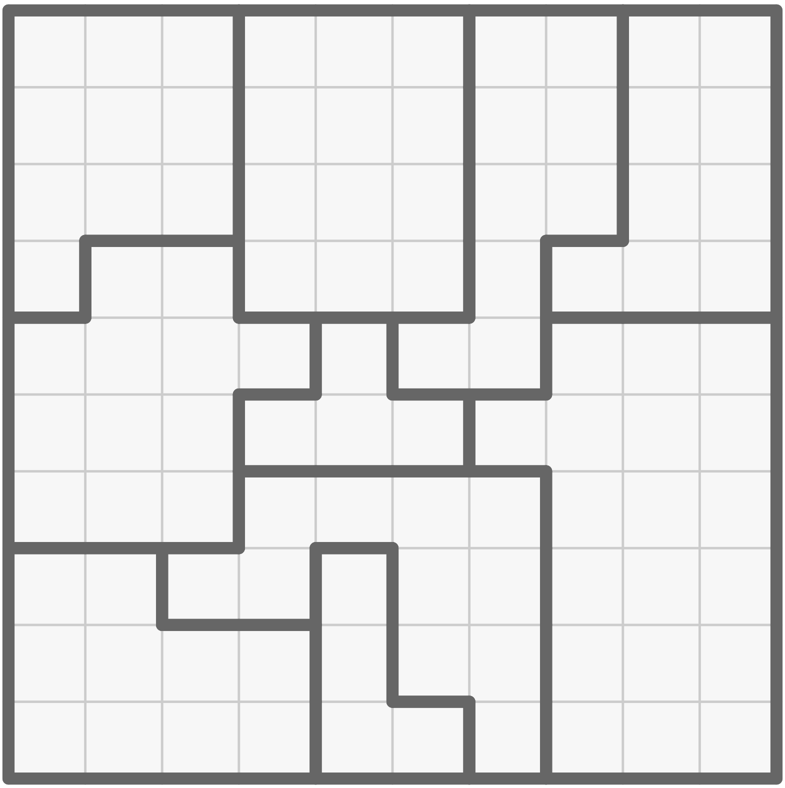
Puzzle #39

answer



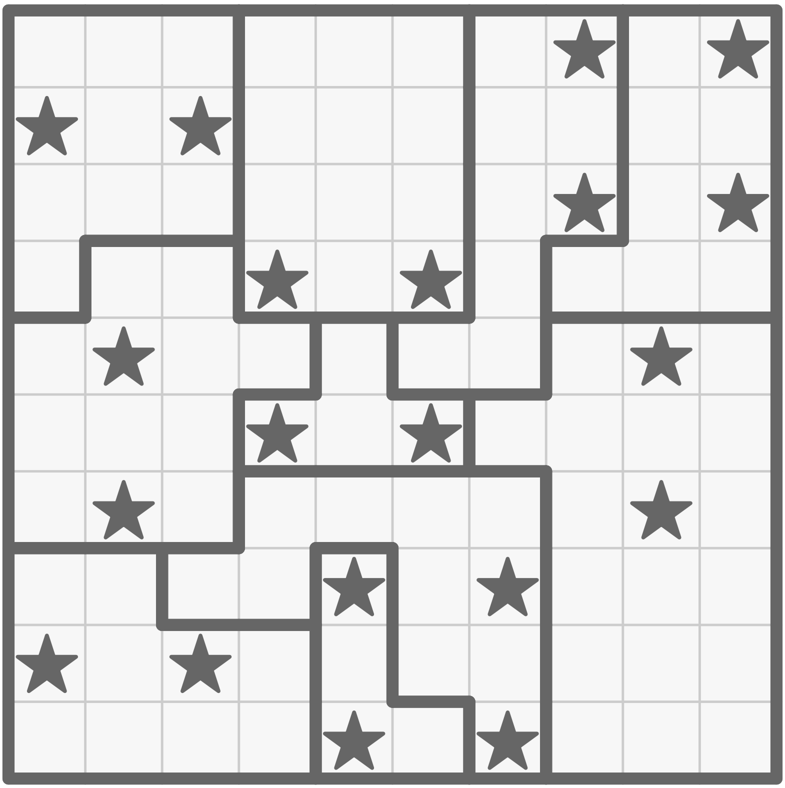
Answer #39

back to
puzzle



Puzzle #40

answer



Answer #40

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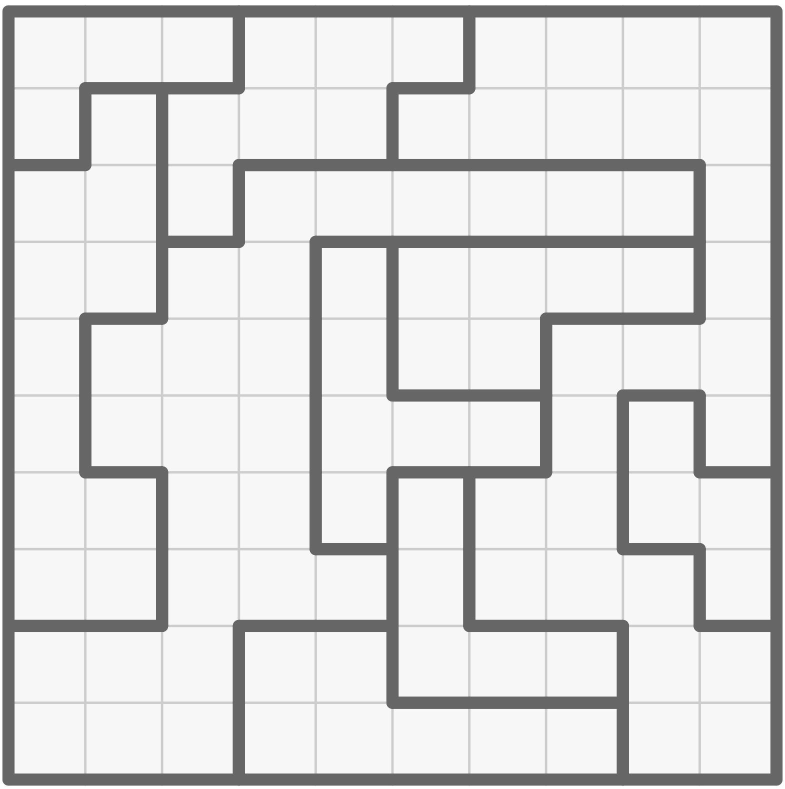
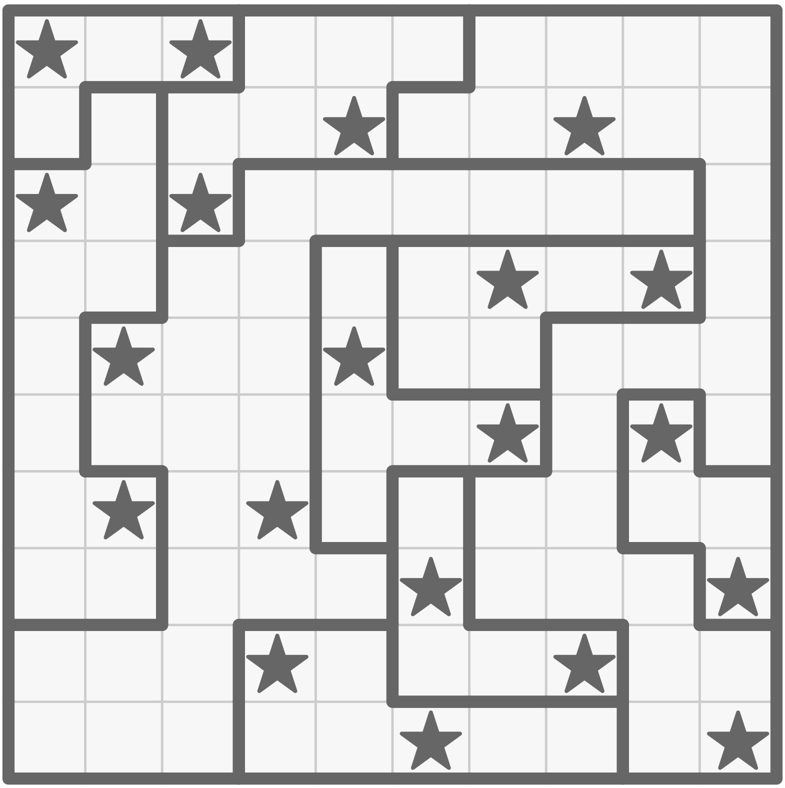
puzzle

home menu next



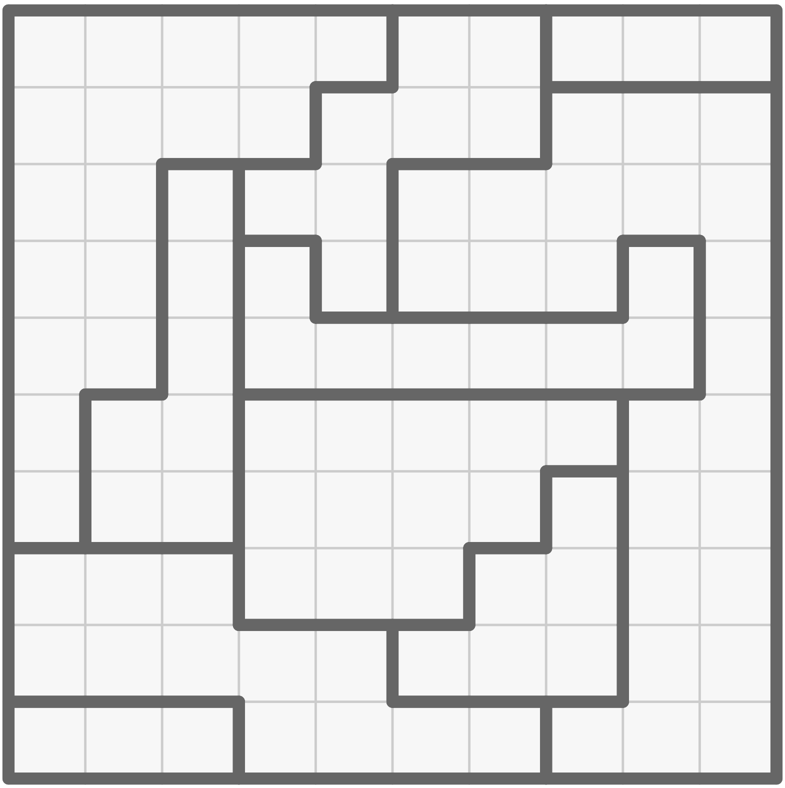
Puzzle #41

answer



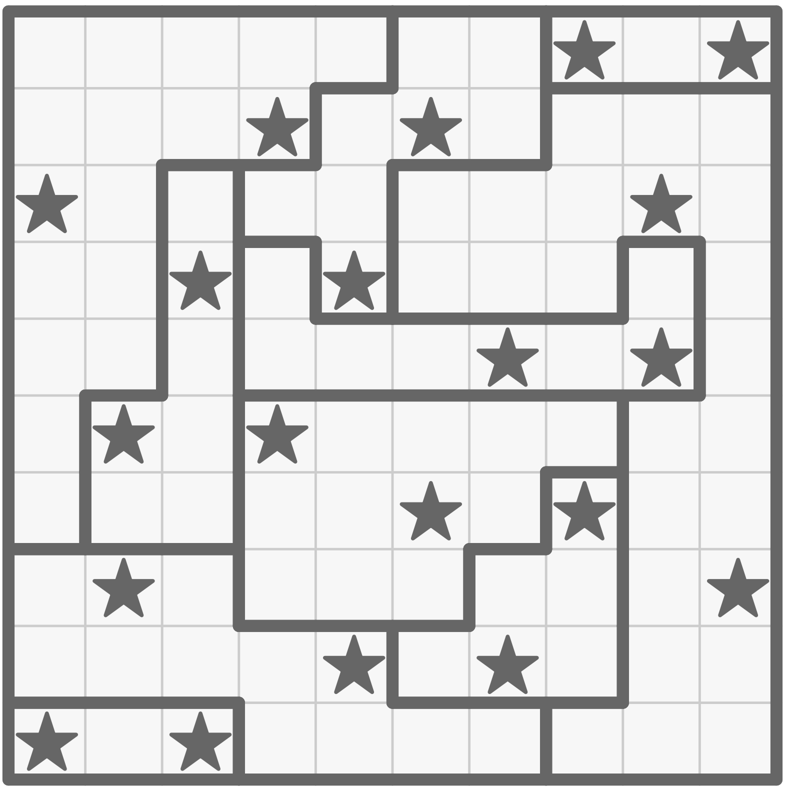
Answer #41

back to
puzzle

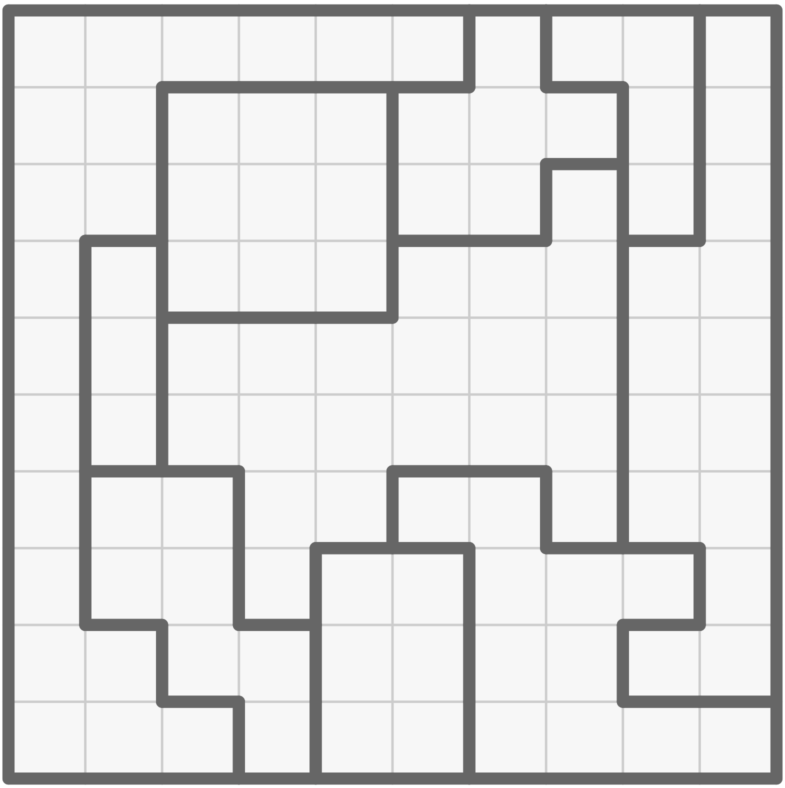


Puzzle #42

answer

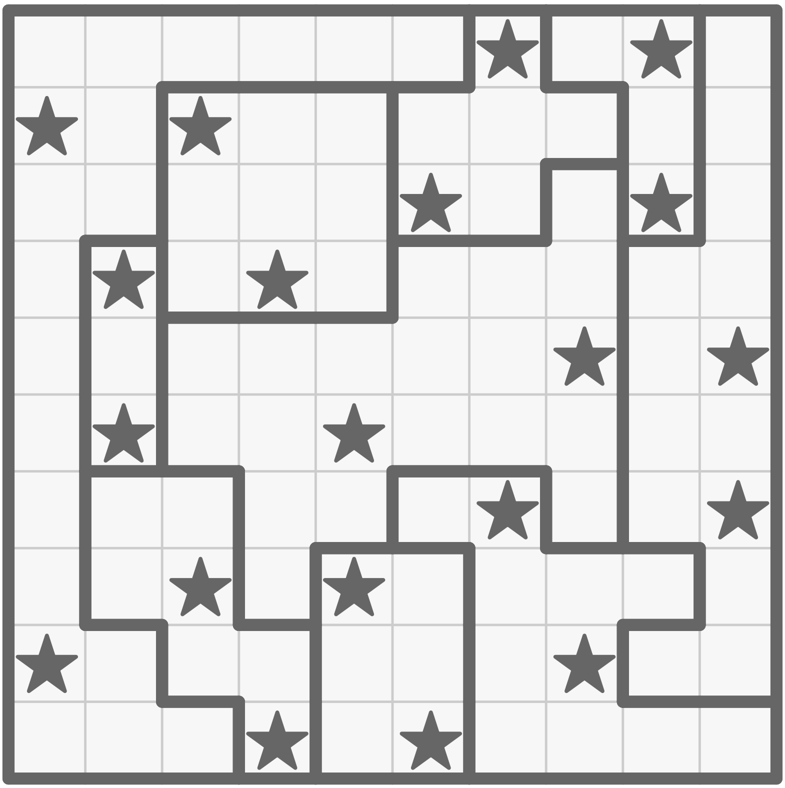


Answer #42

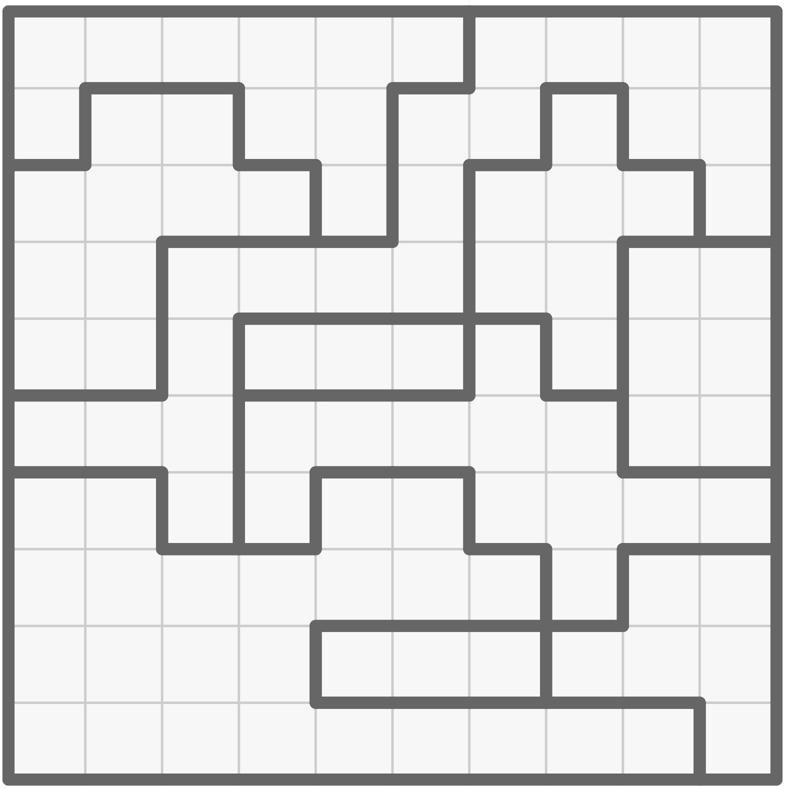


Puzzle #43

answer

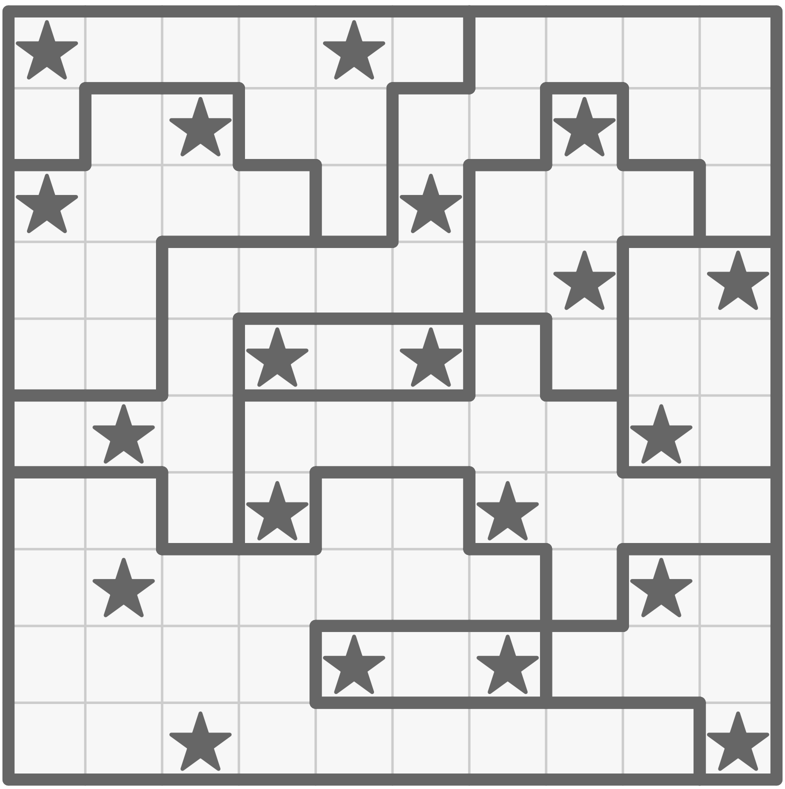


Answer #43



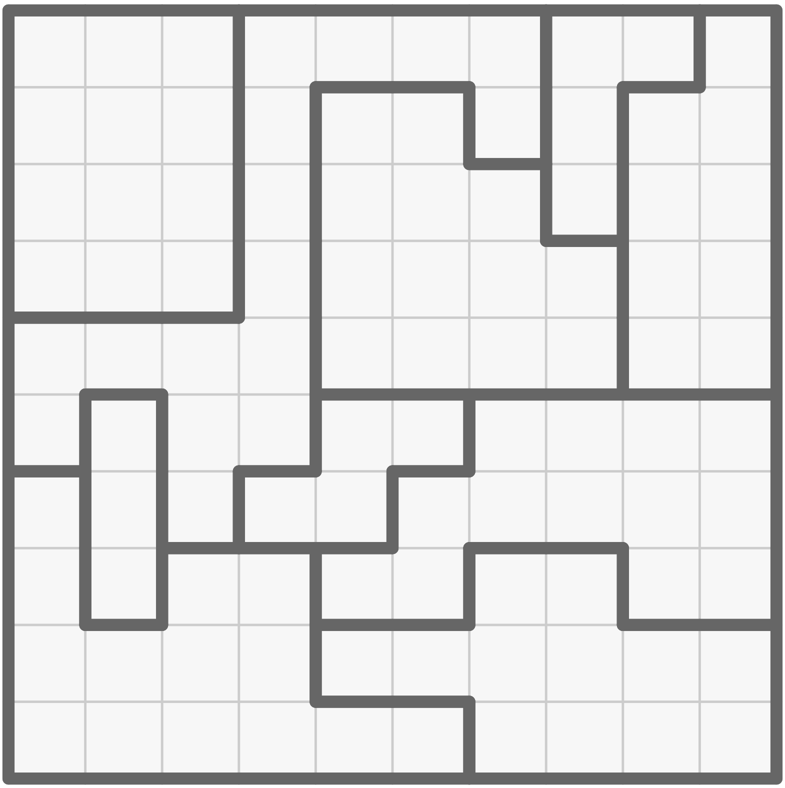
Puzzle #44

answer

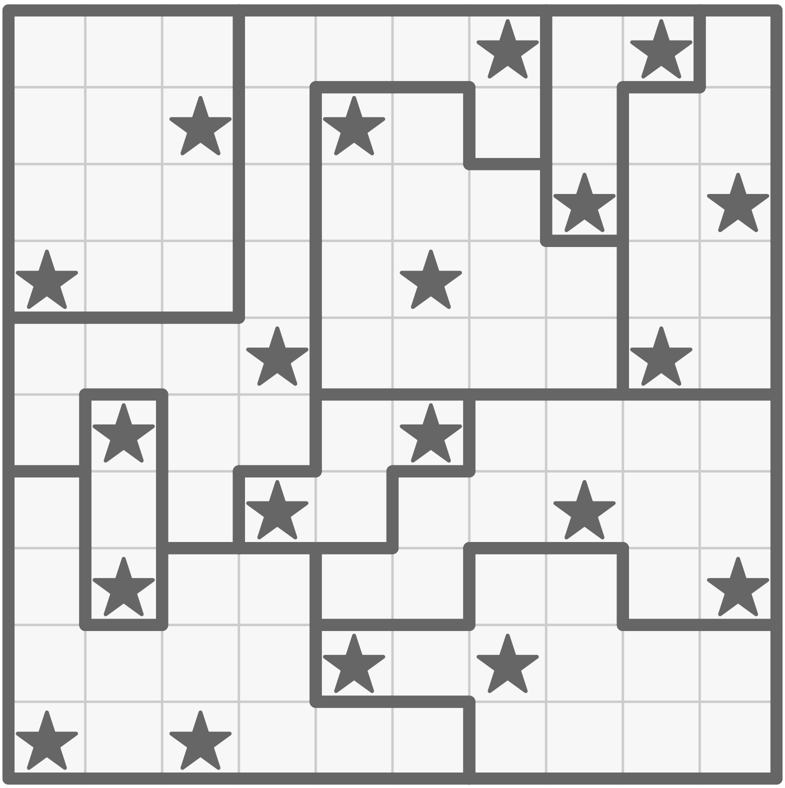


Answer #44

back to
puzzle

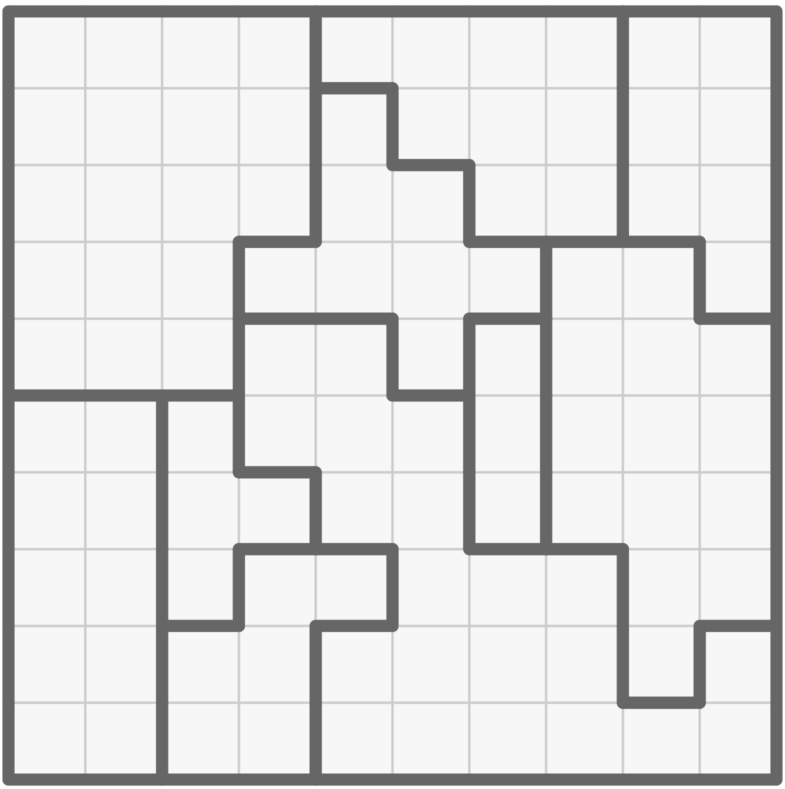


Puzzle #45

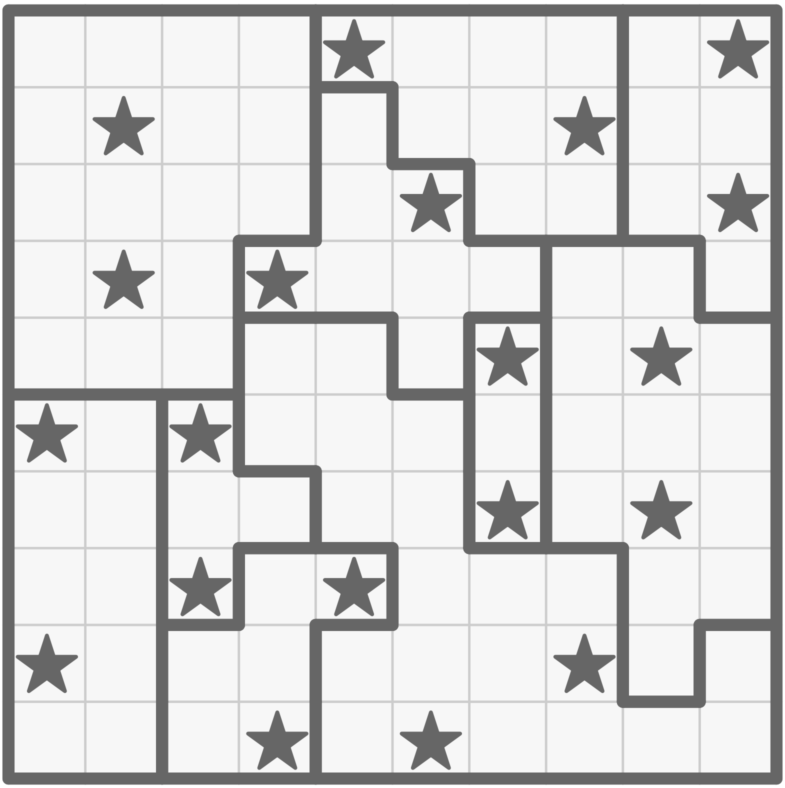


Answer #45

back to
puzzle

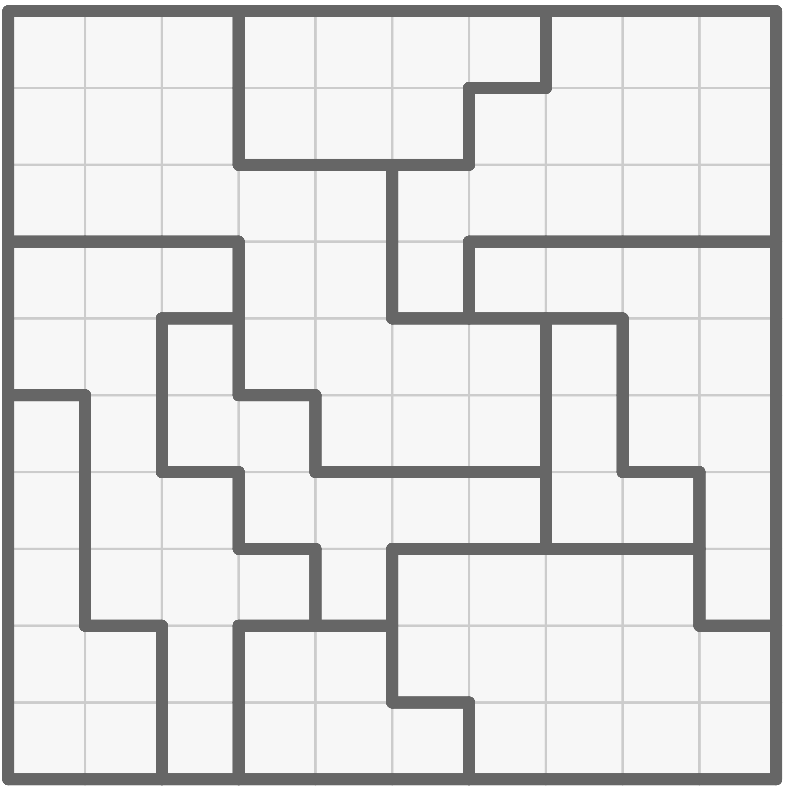


Puzzle #46



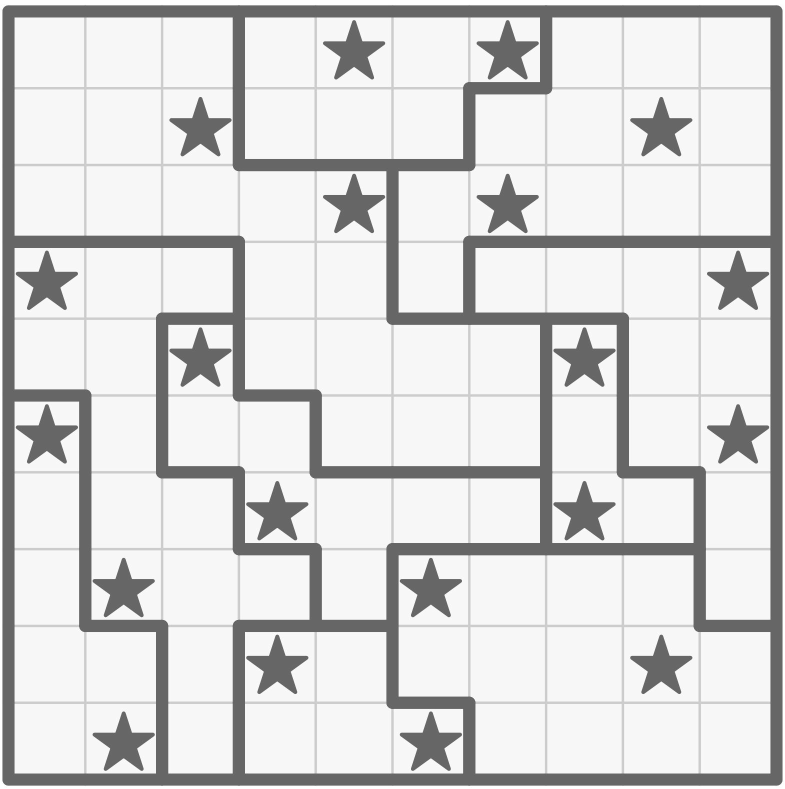
Answer #46

back to puzzle

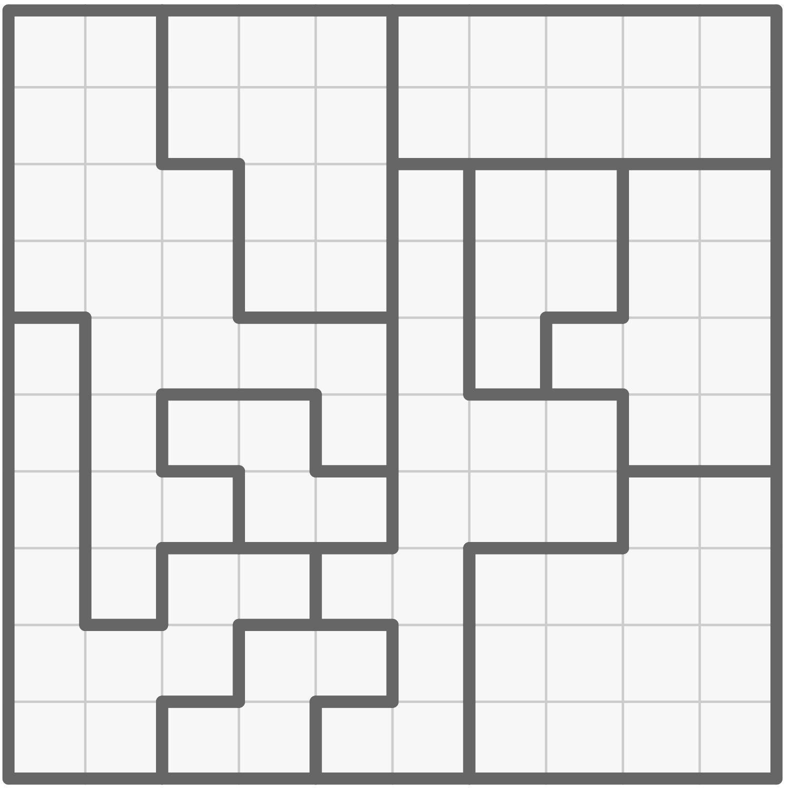


Puzzle #47

answer



Answer #47



Puzzle #48

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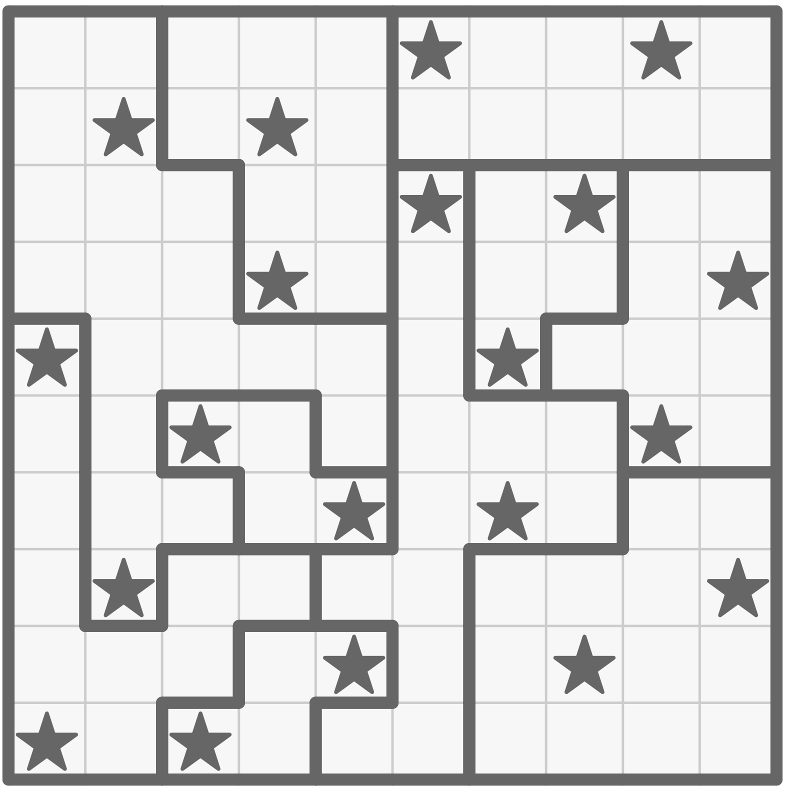
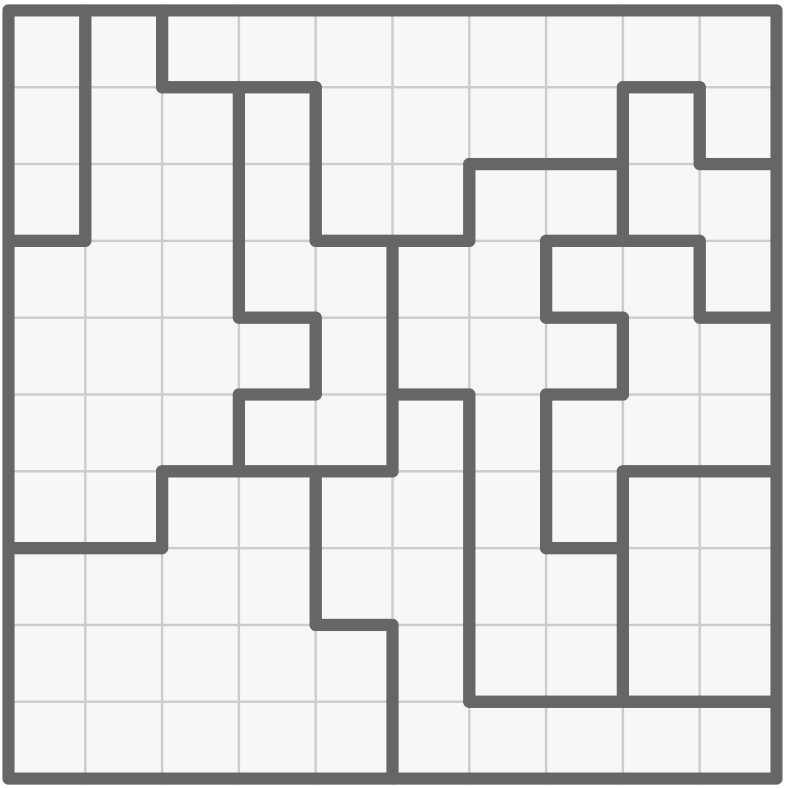


Answer #48

back to
puzzle

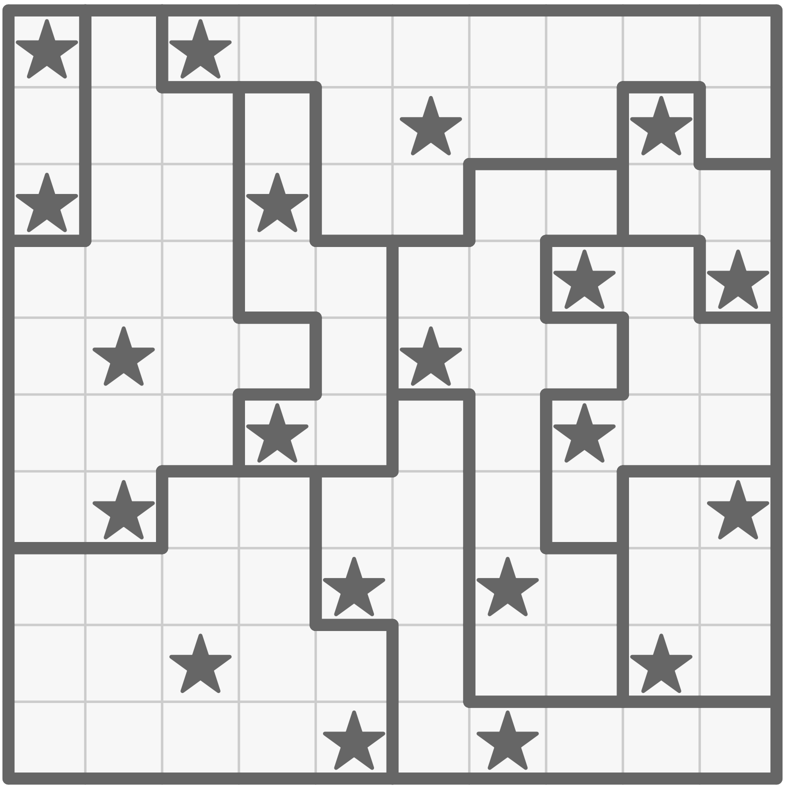


Puzzle #49

home

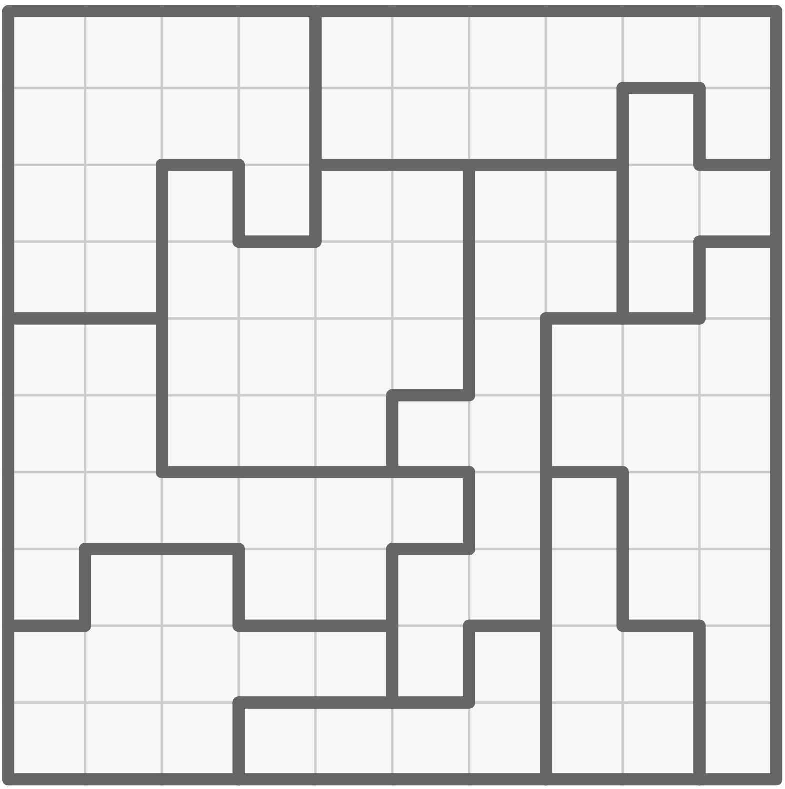
menu

next



Answer #49

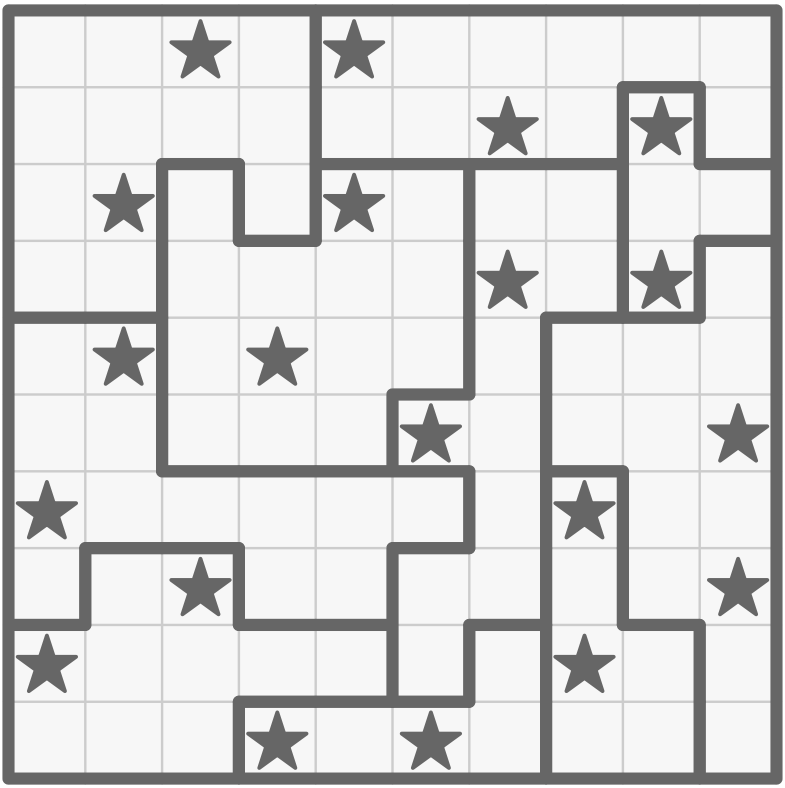
back to puzzle



Puzzle #50

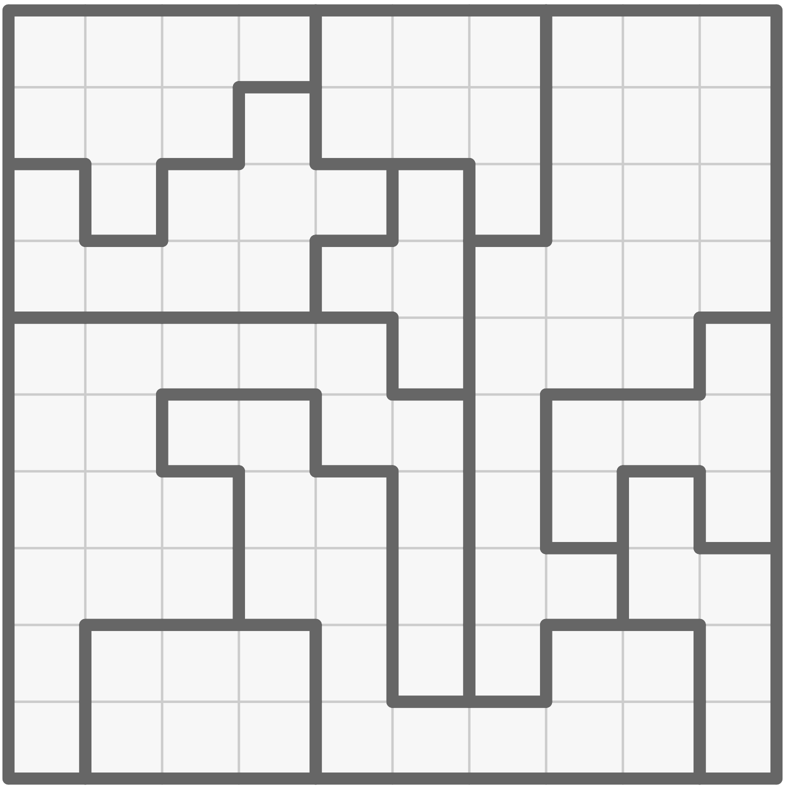
answer

home
menu
next

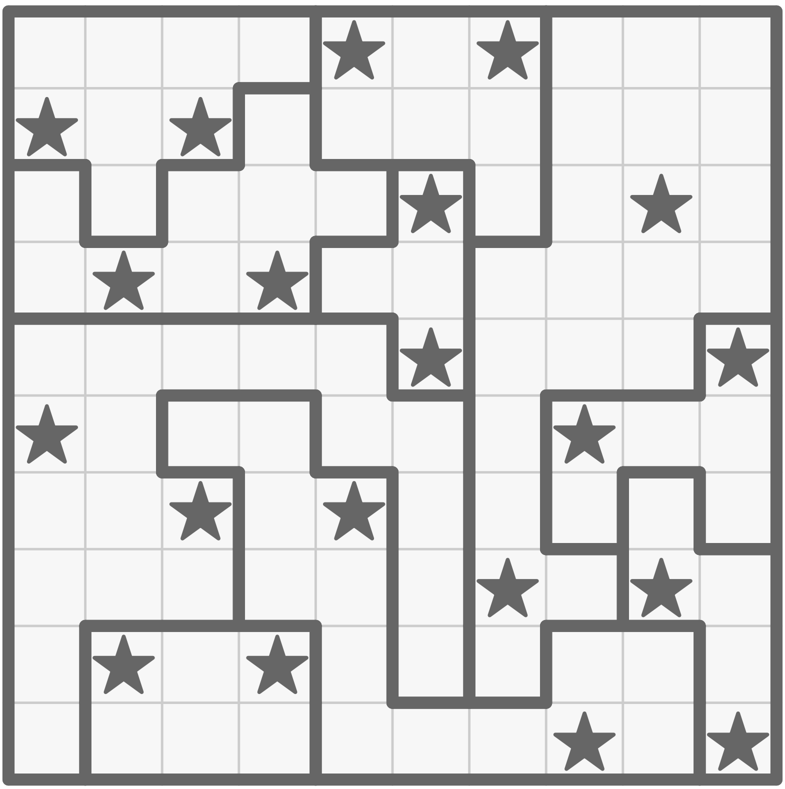


Answer #50

back to
puzzle



Puzzle #51



Answer #51

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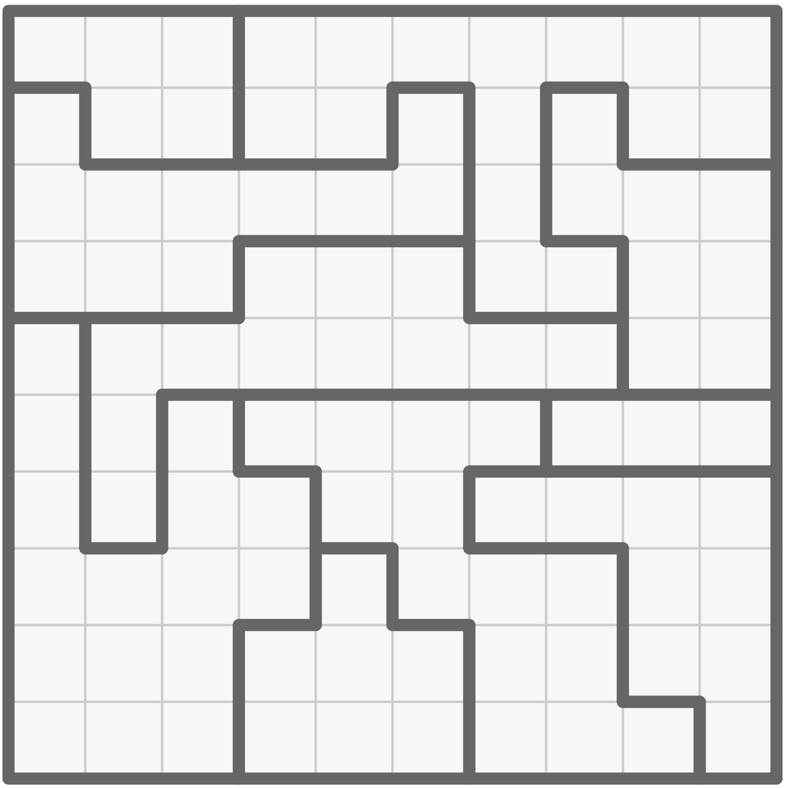
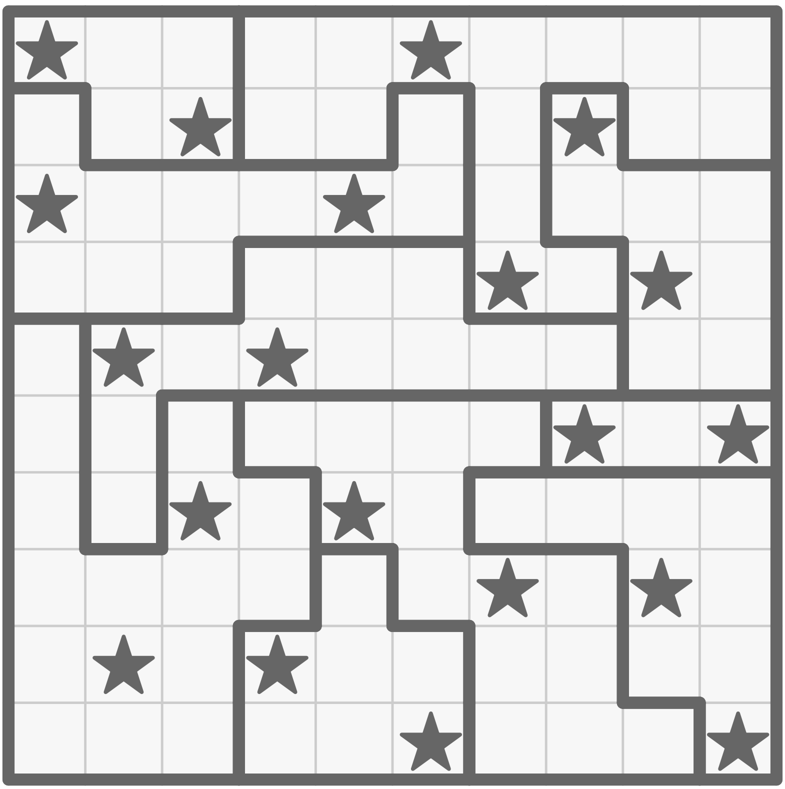


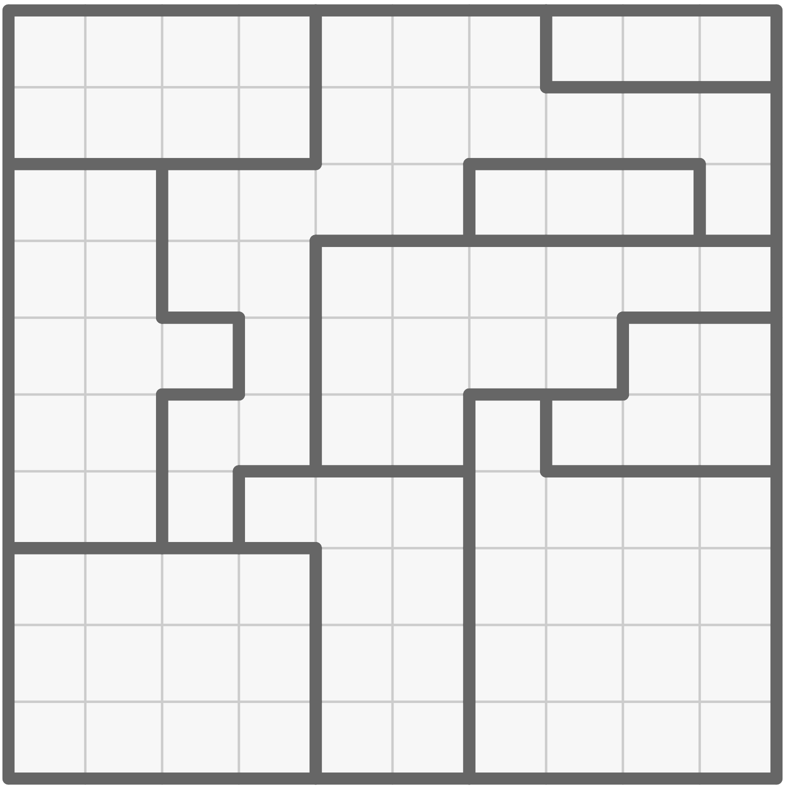
Puzzle #52

answer



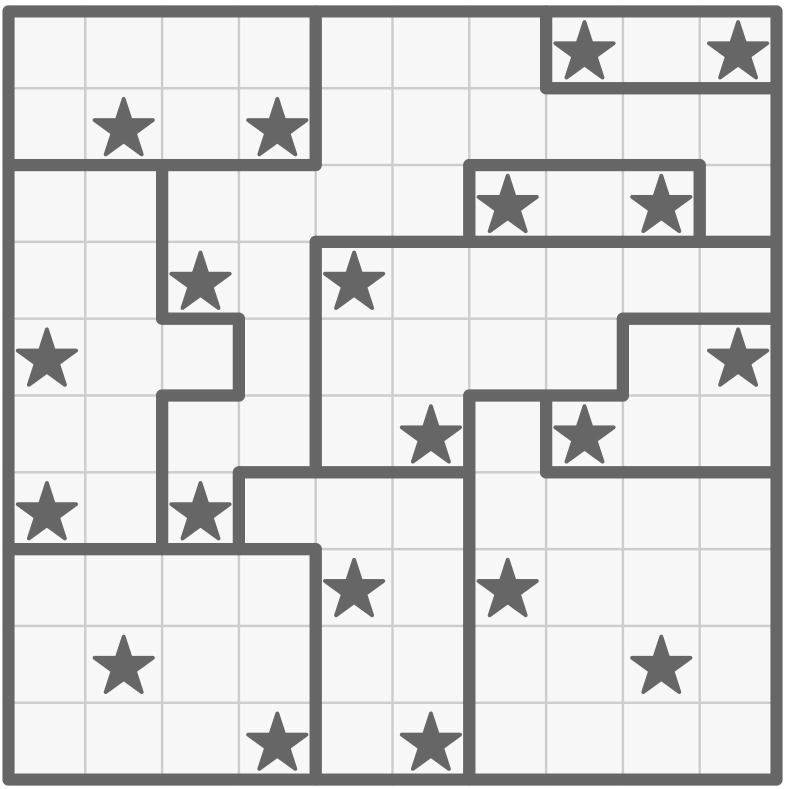
Answer #52

back to puzzle



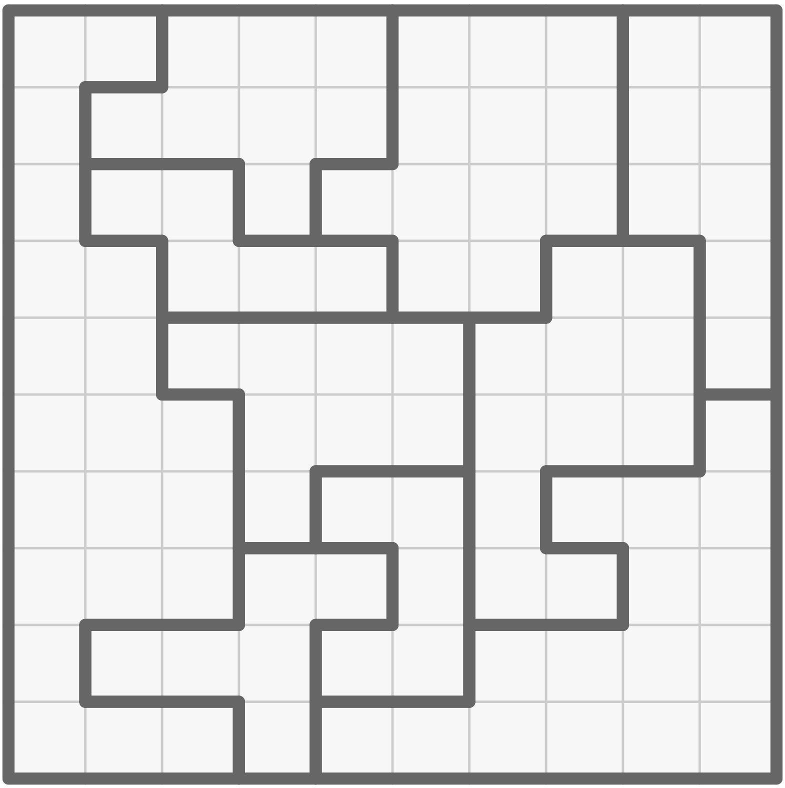
Puzzle #53

answer



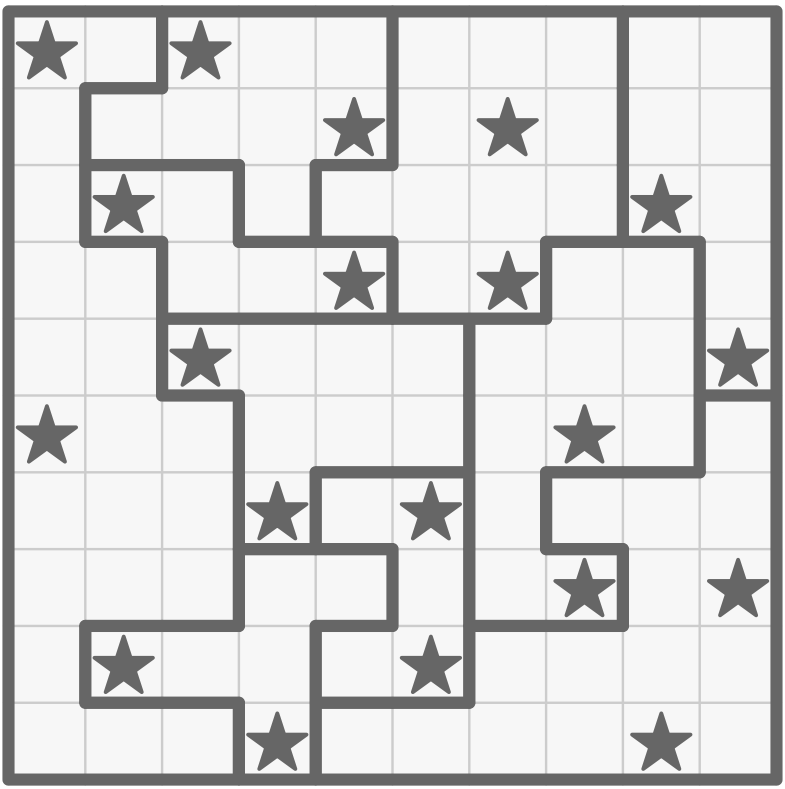
Answer #53

home menu next



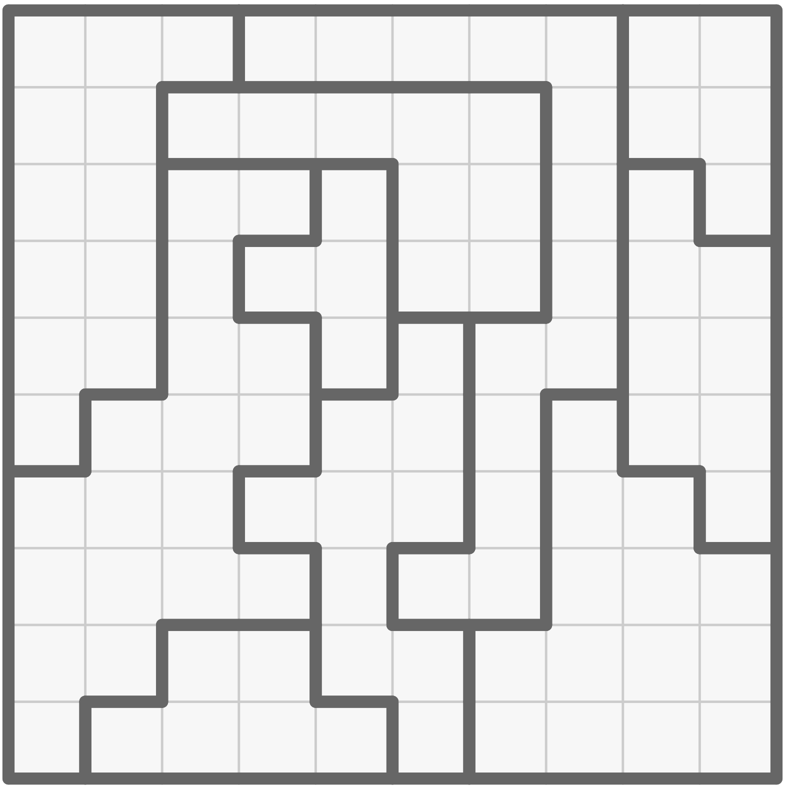
Puzzle #54

answer



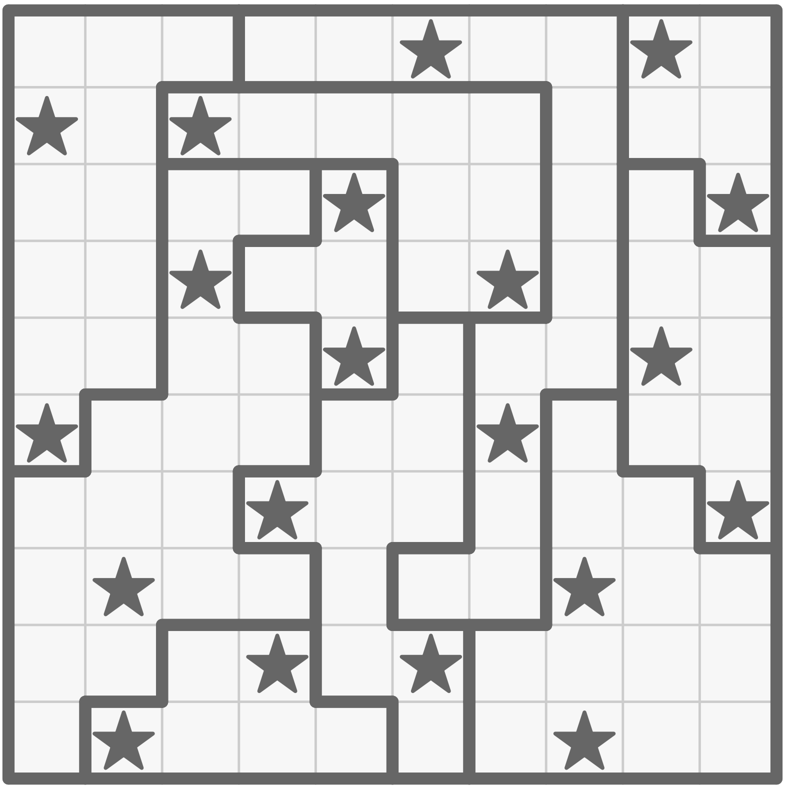
Answer #54

back to
puzzle



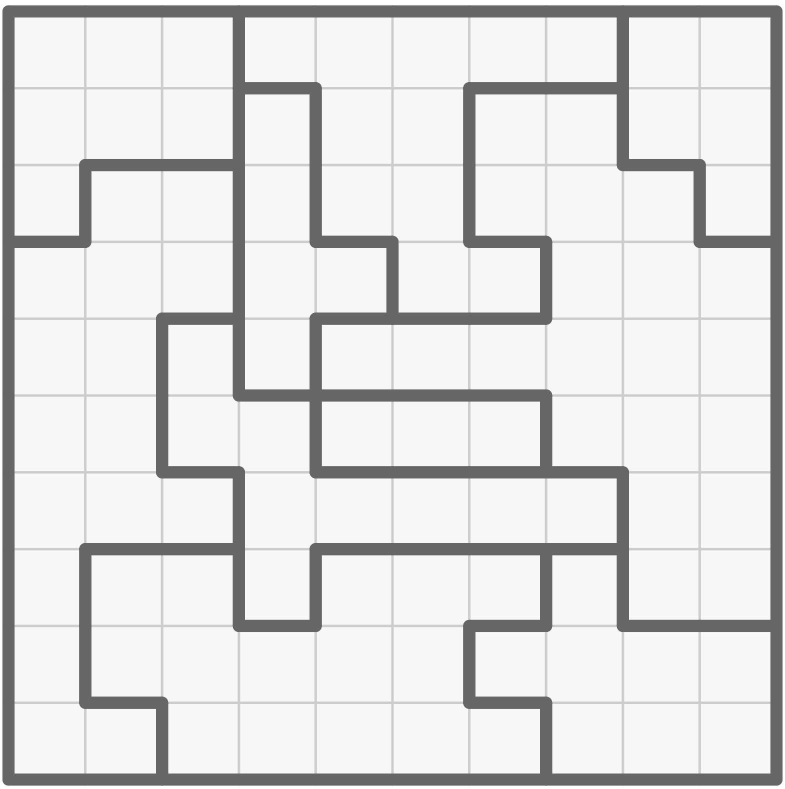
Puzzle #55

answer



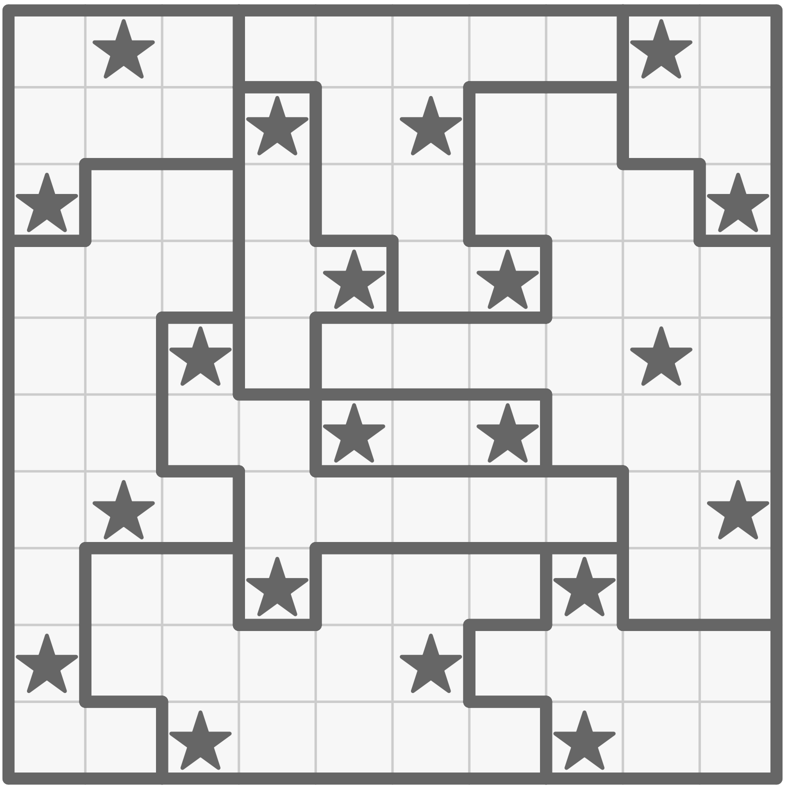
Answer #55

back to puzzle

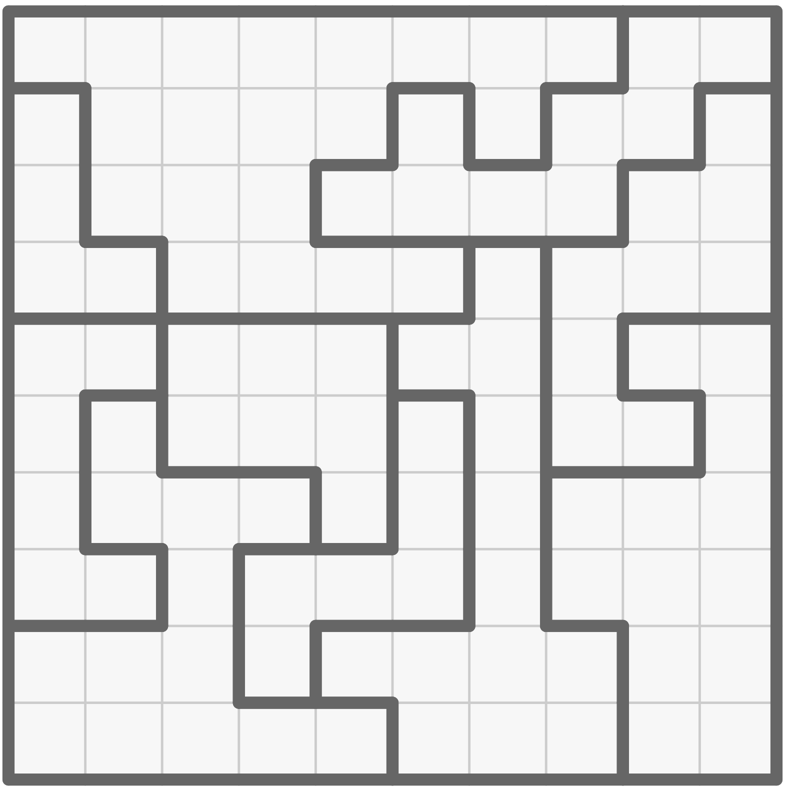


Puzzle #56

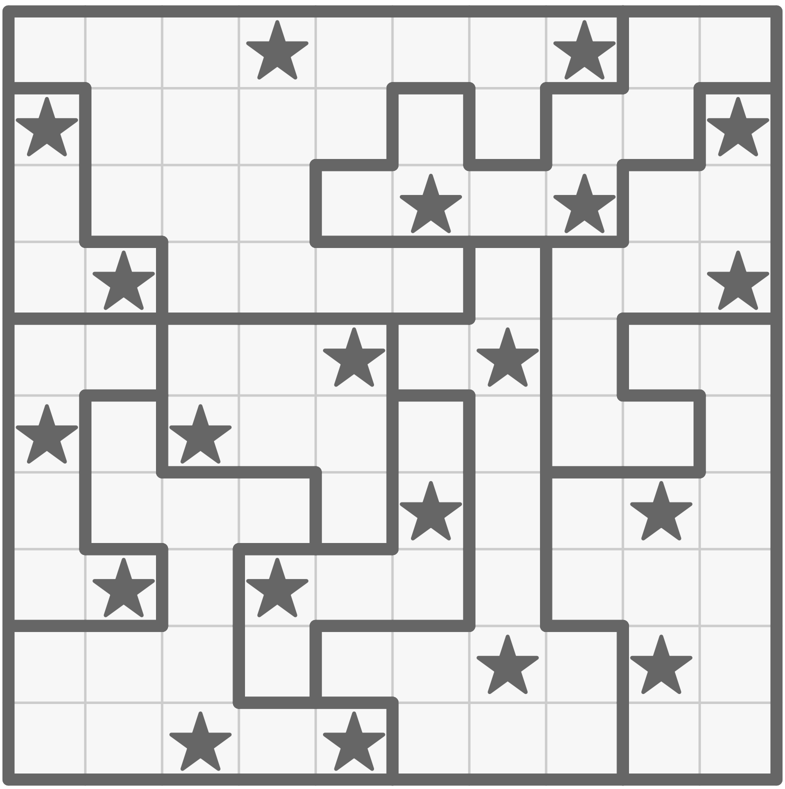
answer



Answer #56

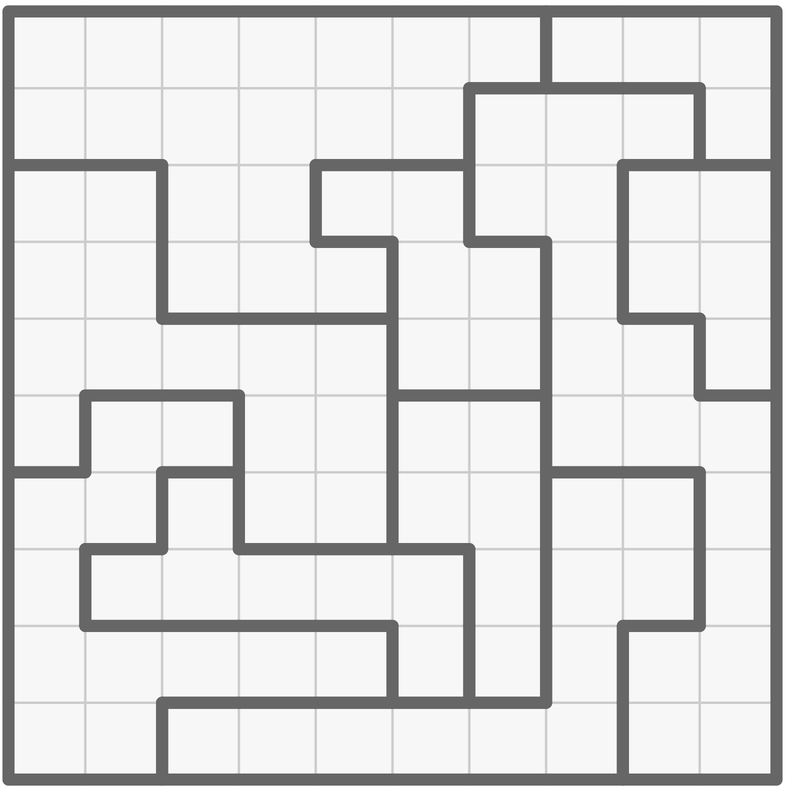


Puzzle #57



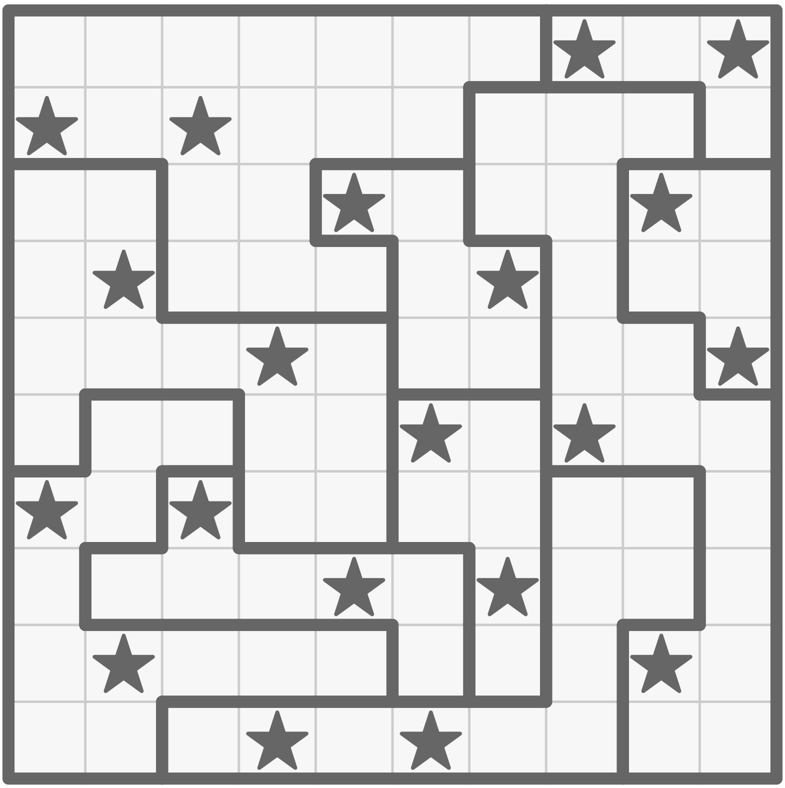
Answer #57

back to puzzle



Puzzle #58

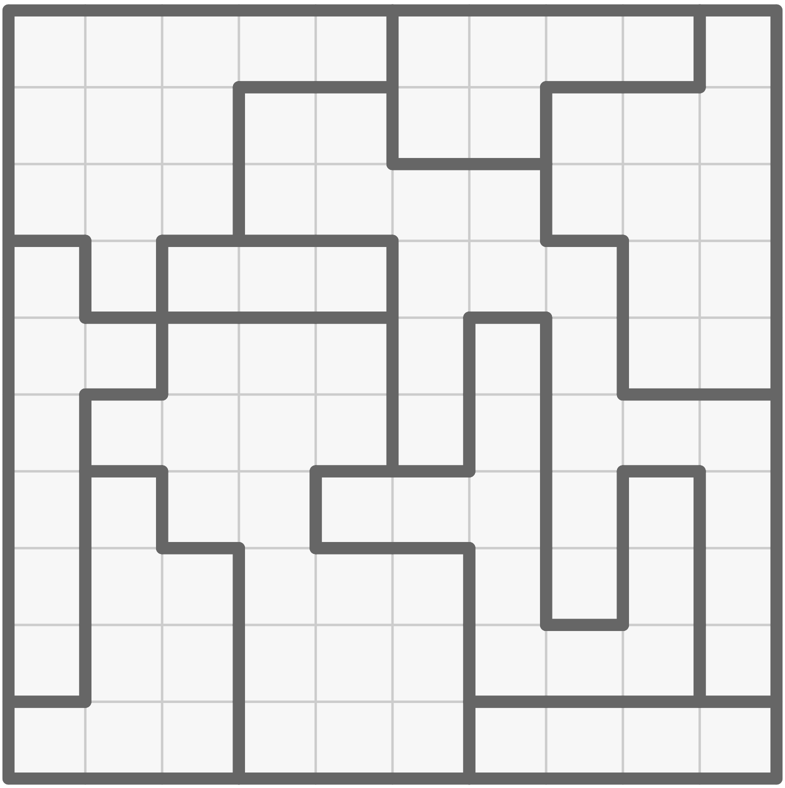
home
menu
next



Answer #58

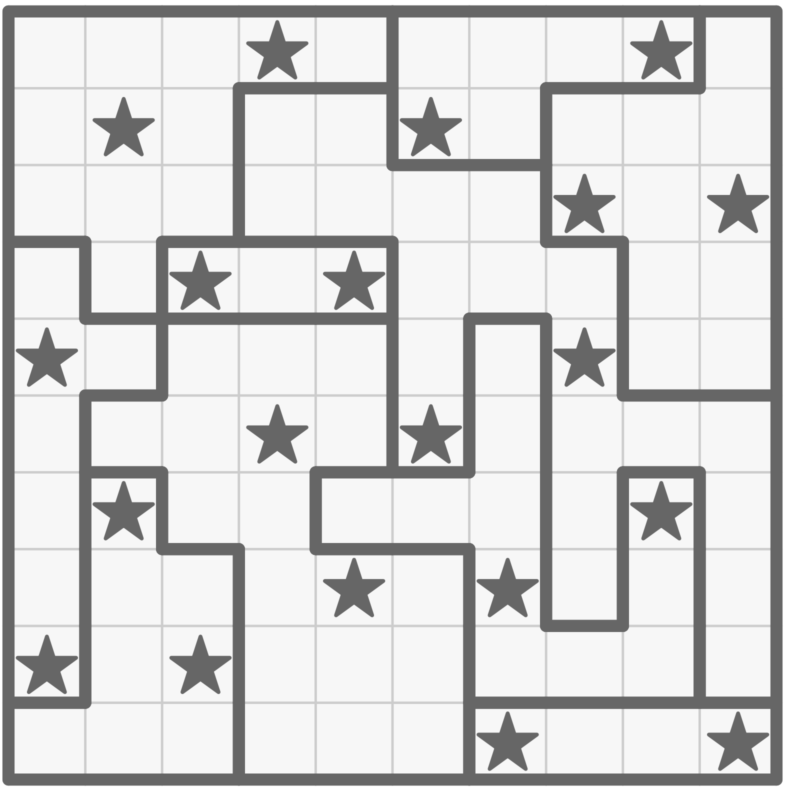
back to
puzzle

home menu next



Puzzle #59

answer

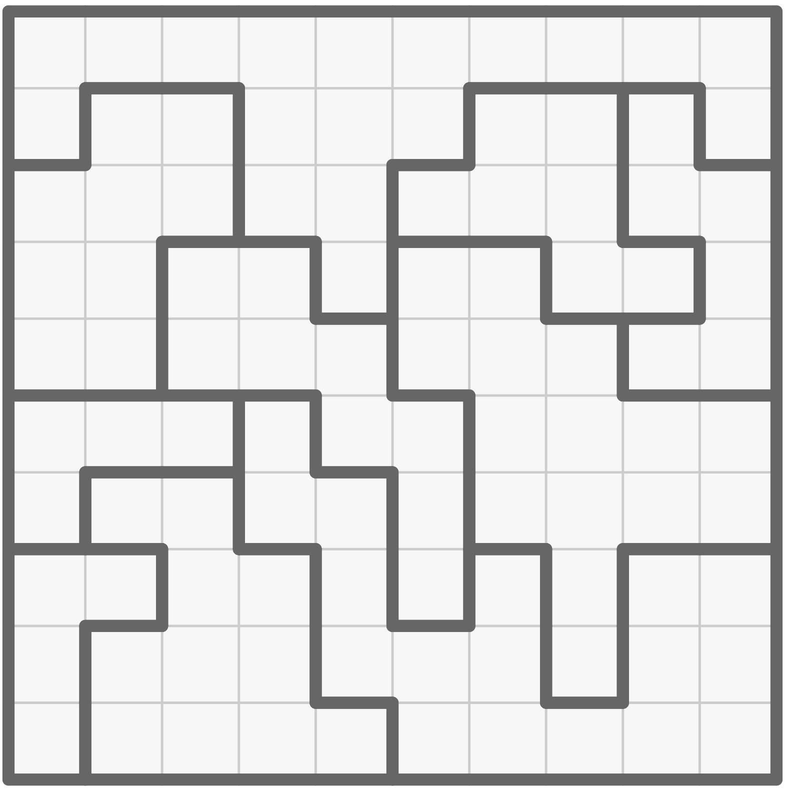


Answer #59

home

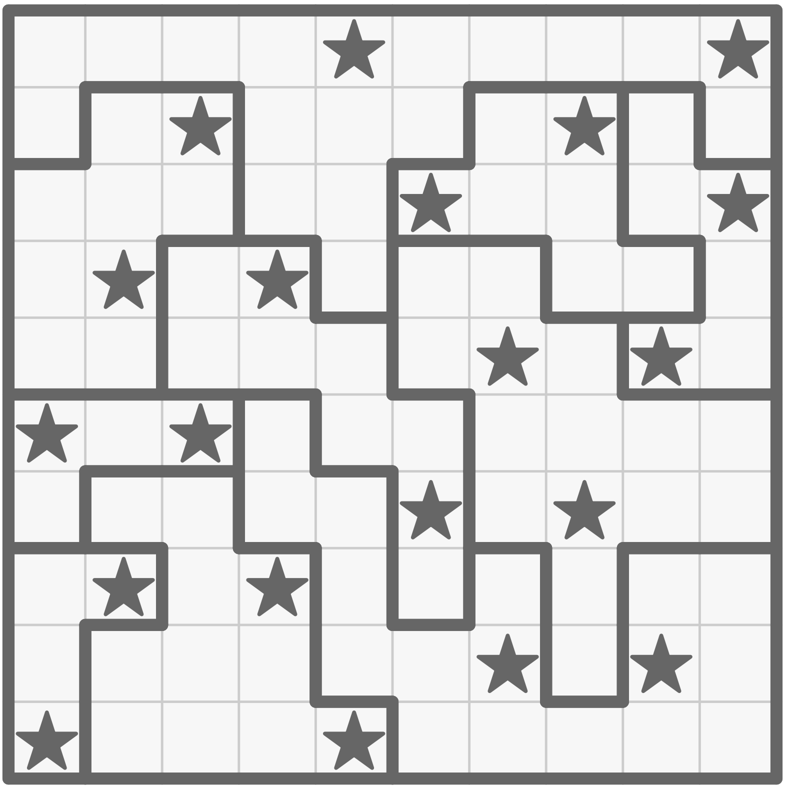
menu

next



Puzzle #60

answer



Answer #60

back to puzzle

WANT MORE PUZZLES?

Photo: Tucker Elliot

ABOUT THE AUTHOR

Jim Bumgardner has been making and publishing free puzzles at Krazydad.com since 2005. The site now offers over two million puzzles, free to download and print.

Jim's "Two Not Touch" puzzles are currently printed Monday through Saturday in *The New York Times*.

Jim has worked for over 30 years as a computer software developer and is also a pianist and songwriter. He lives in Los Angeles with his wife, kids, two pretty good dogs (well one of them, anyway), and a broken pencil sharpener.