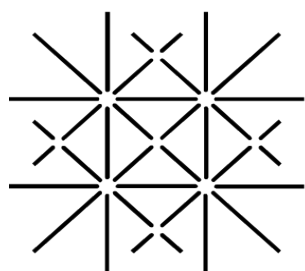


# Decodoku Puzzle Book



**Solve Puzzles!**  
**Help Science!**



UNI  
BASEL

**QSIT** *Quantum  
Science and  
Technology*

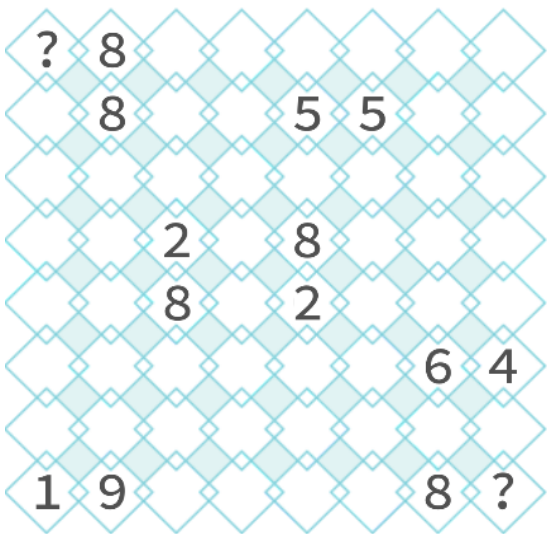
*National Centre of Competence in Research*

To build a quantum computer, we need to solve puzzles. They aren't weird quantum puzzles. They are just like the ones you solve all the time. So help us out!

Each puzzle has a grid of numbers.

They come in groups that add up to a multiple of 10.

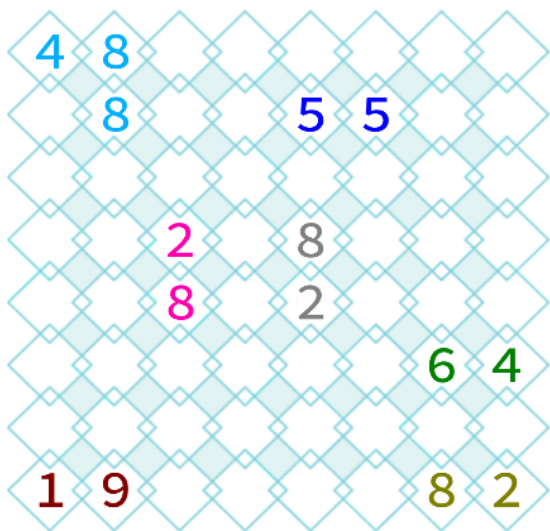
There are two ? squares. You just need to work out what's in them (if anything).



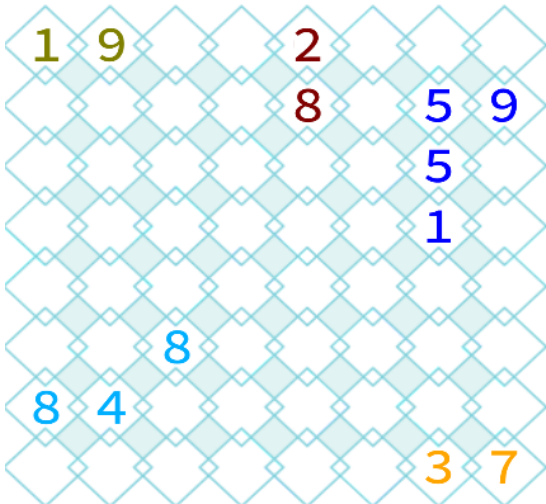
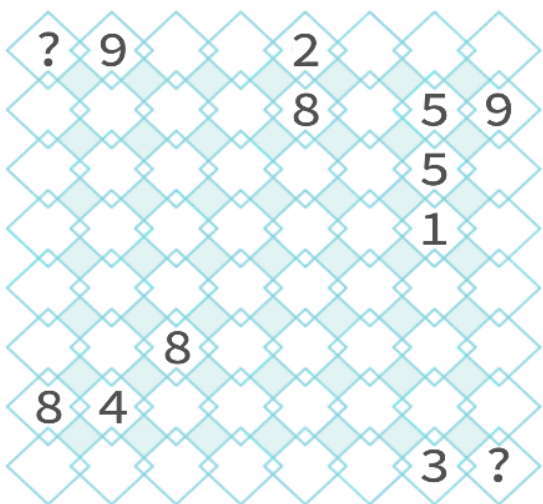
Here's the full solution for the example above.

The bottom right has an 8 in need of a 2. But nothing is nearby. So the bottom left ? square must hold that that 2.

The top left has two 8's. They need a nearby 4 to give us 20. So the top left ? is a 4.

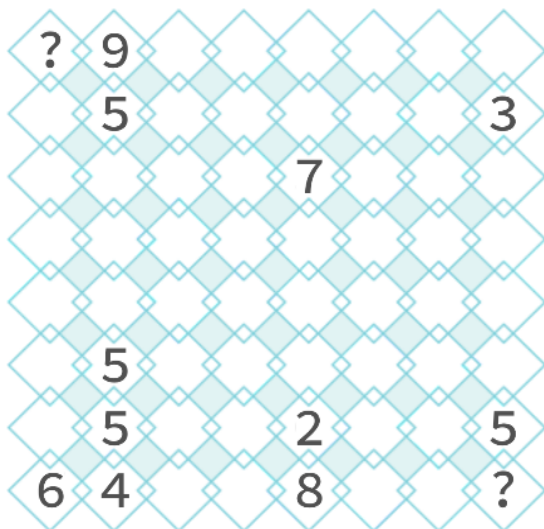


This example had simple groups. Mostly just pairs that add up to 10. But the groups can get more messy, as in the example below

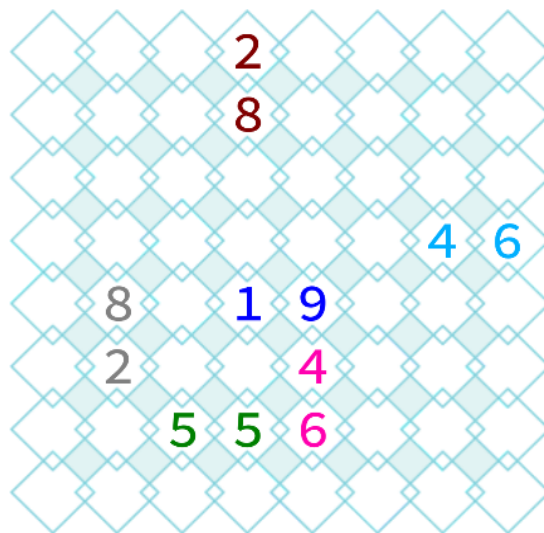
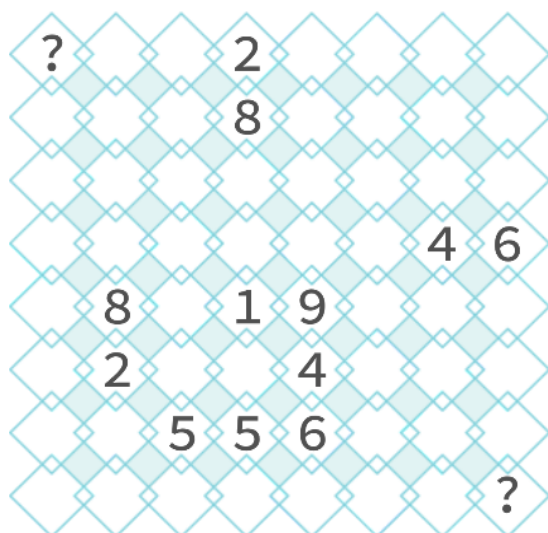


The numbers don't need to touch to be in the same group. But the further away they are from each other, the less likely they are to be in the same group.

For example, look at the 7 and the 3 below. They are quite far from each other, but neither has any other friends nearby. So they belong together.



A final word of advice. It is possible that either ? square can be empty. They can even both be empty!



Now we have over 100 puzzles for you to try. Once you've finished, you'll know more about quantum error correction than we do! So come and tell us scientists how to do our job at

[www.decodoku.com/puzzles](http://www.decodoku.com/puzzles)

Do it before the end of 2016 and you could even win a prize!

We'll start with 10 easy puzzles, and then move on to some harder ones. The solution for each puzzle is written underneath.

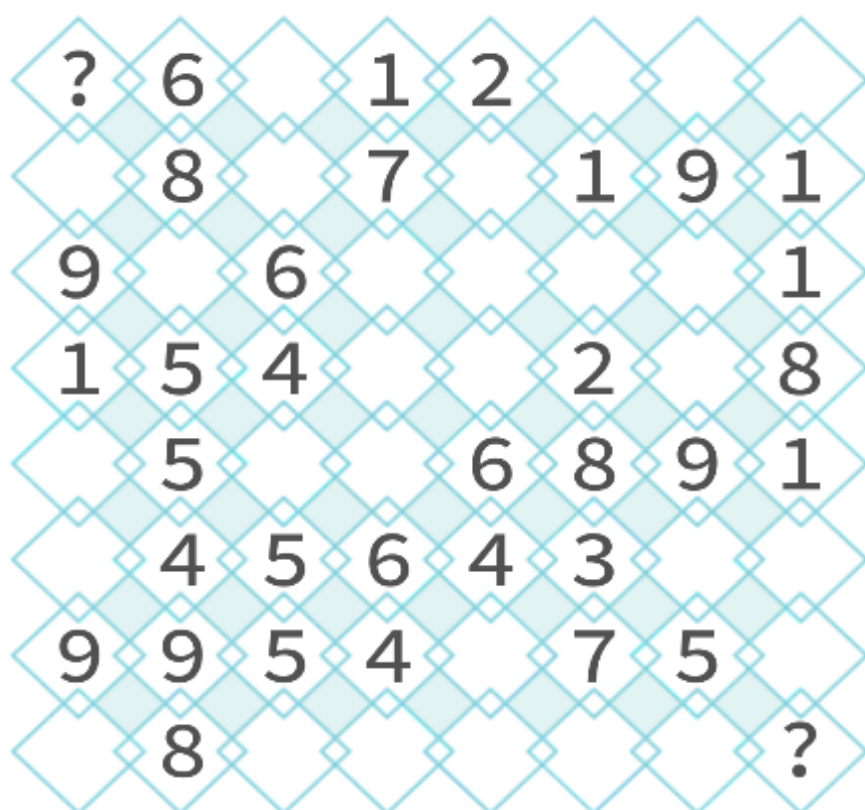
A diamond-shaped grid puzzle consisting of 8 rows of diamonds. The grid is filled with numbers and question marks. The numbers are: Row 1: ?, 3, 9, 7, 4; Row 2: 4, 4, 4, 7, 9; Row 3: 3, 3; Row 4: 7; Row 5: 4, 5, 5; Row 6: 6, 4, 3, 7, 6, 4; Row 7: 2, 8, 6, 5, 5, 5; Row 8: 5, 8, ?. Below the grid, the text "top left = six" and "bottom right = two" is written.

top left = six  
bottom right = two

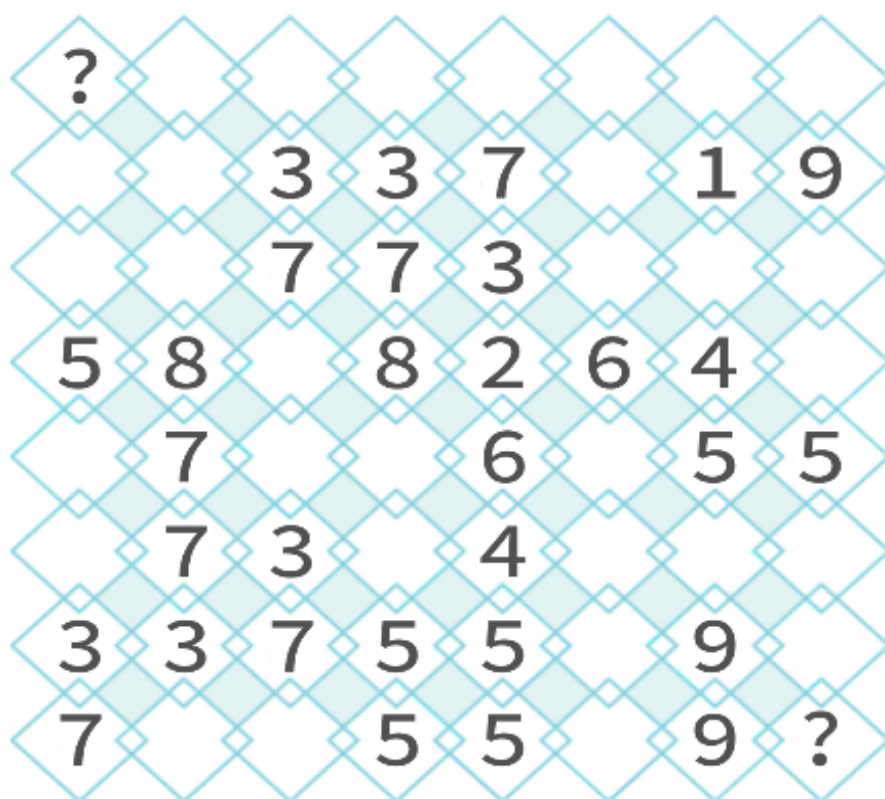
A diamond-shaped grid puzzle consisting of 8 rows of diamonds. The grid is filled with numbers and question marks. The numbers are: Row 1: ?, 2, 7, 2, 8; Row 2: 7, 3; Row 3: 4, 6, 3; Row 4: 8, 7, 7, 7; Row 5: 5, 8, 3, 9, 3; Row 6: 4, 6, 5, 5; Row 7: 4, 4, 9, 1, 2; Row 8: 6, 6, 1, 3, ?. Below the grid, the text "top left = one" and "bottom right = four" is written.

top left = one  
bottom right = four

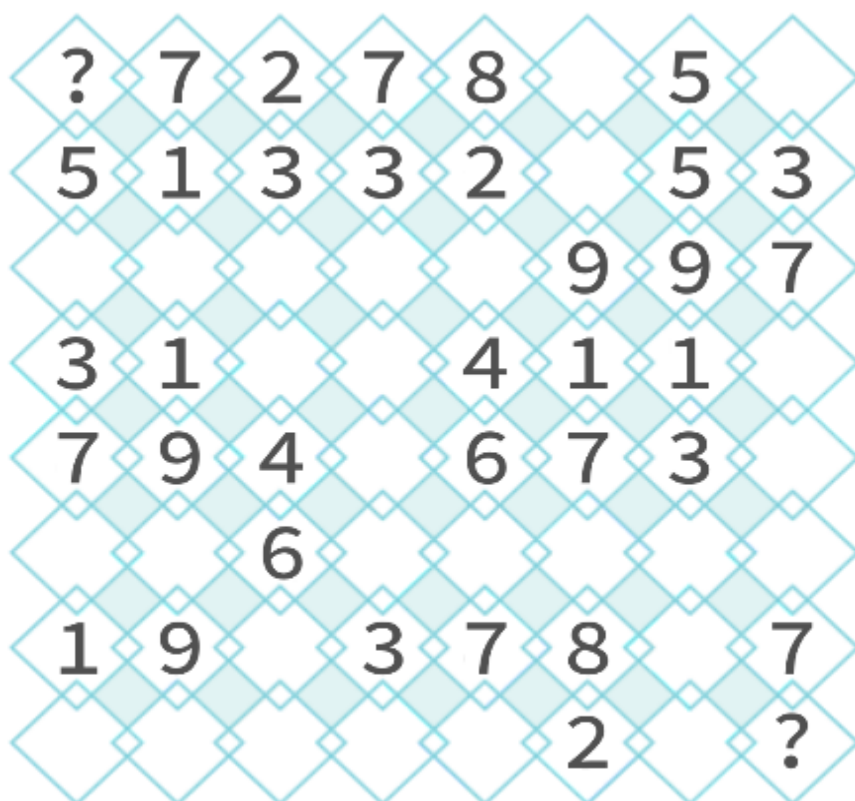




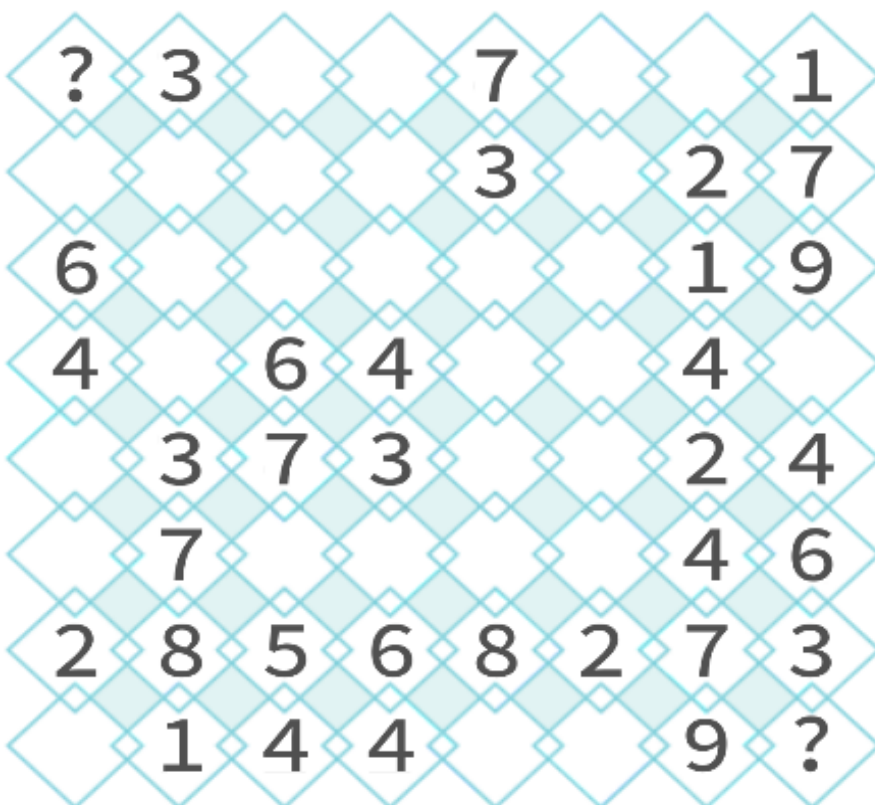
top left = six bottom right = five



top left = zero bottom right = two



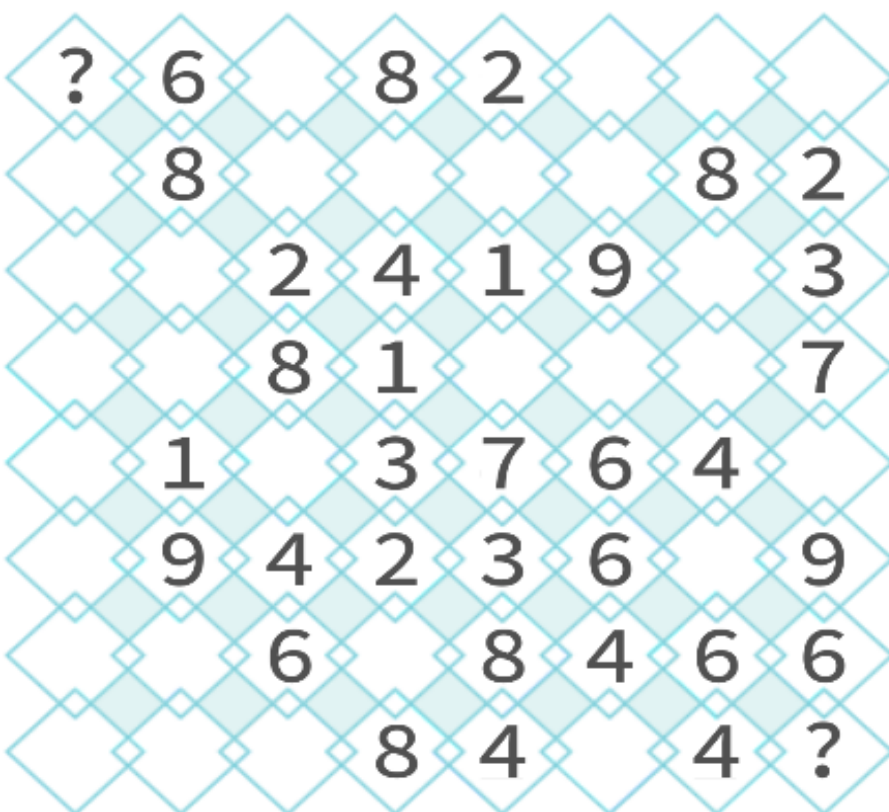
top left = two      bottom right = three



top left = seven      bottom right = one



top left = nine      bottom right = one

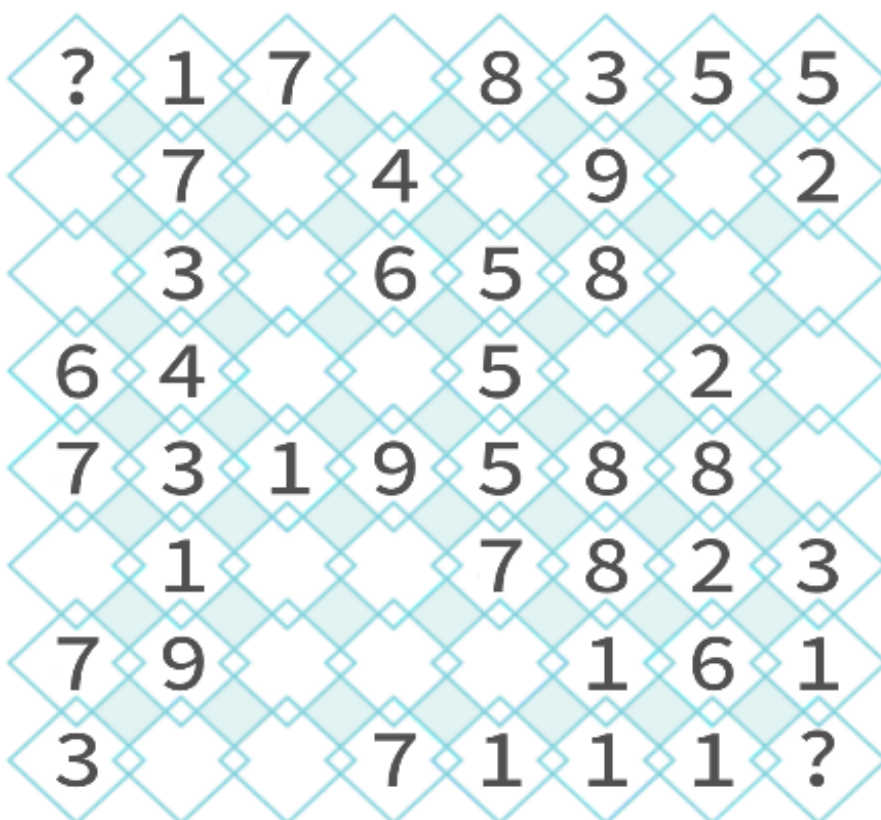


top left = six      bottom right = five



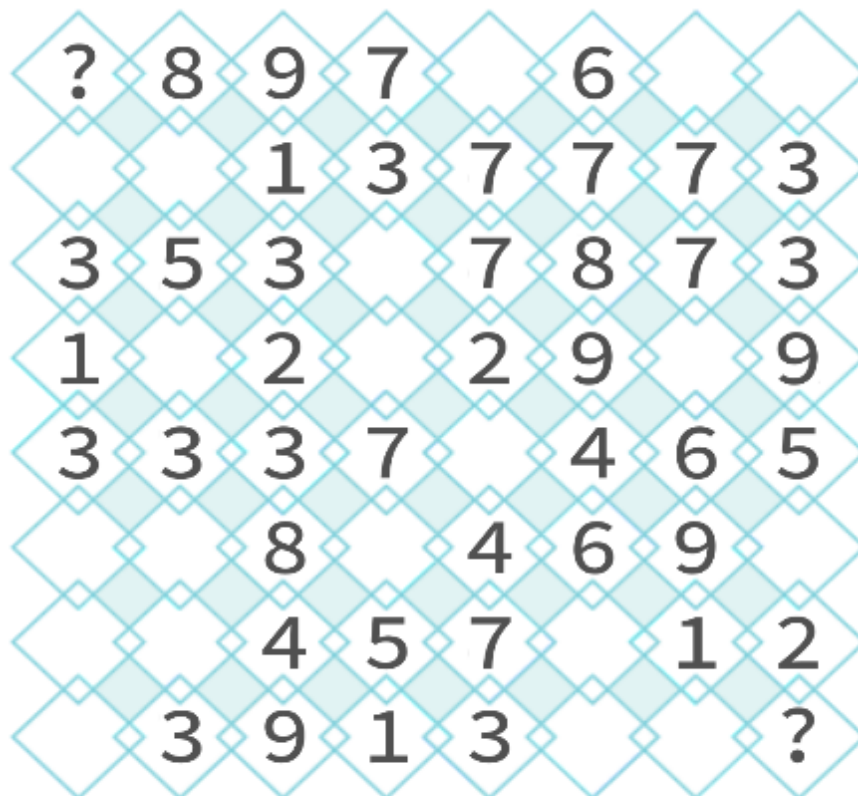


top left = five      bottom right = seven

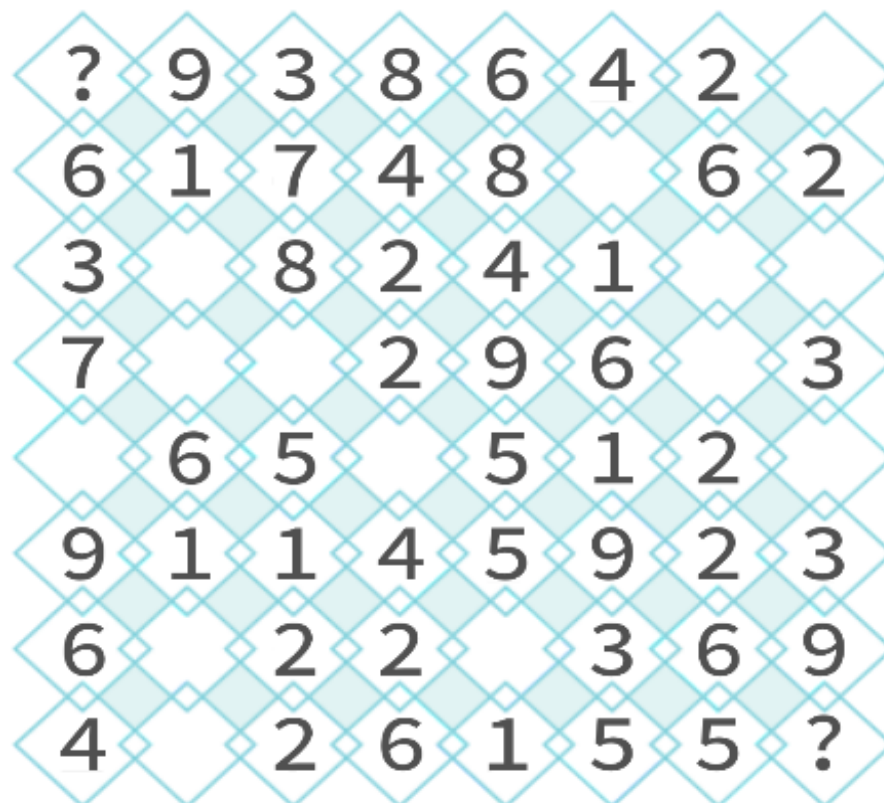


top left = two      bottom right = nine

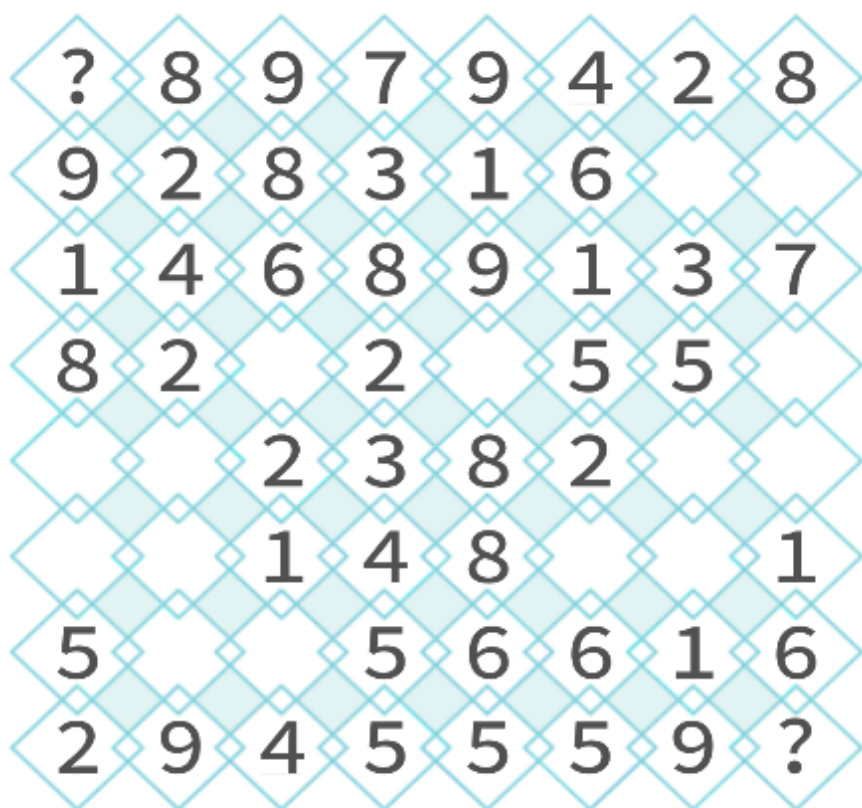




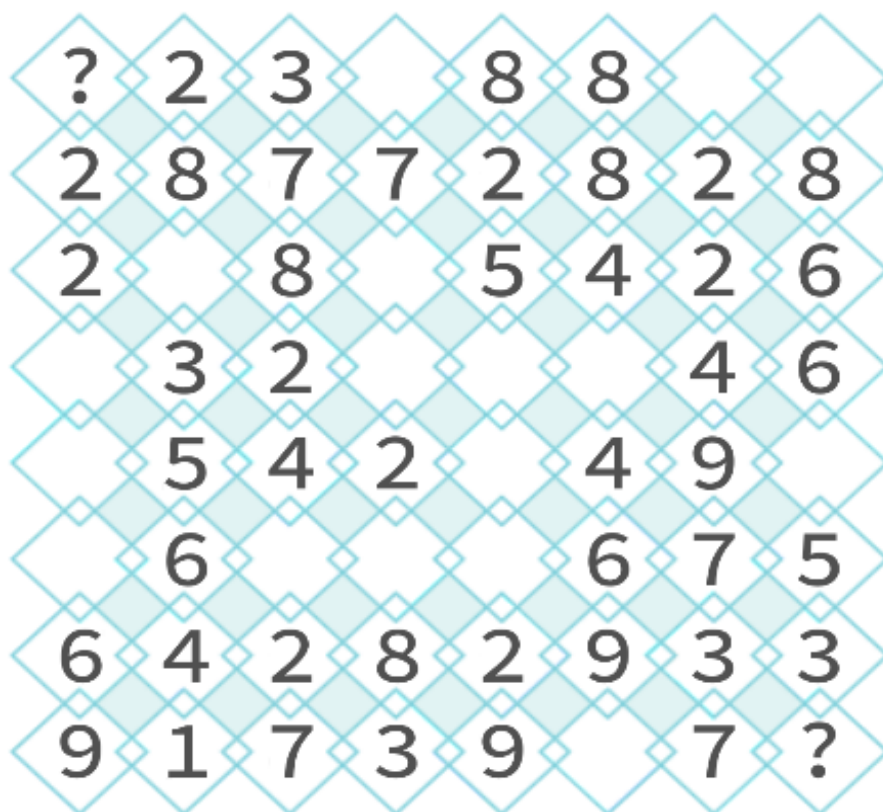
top left = two      bottom right = eight



top left = four      bottom right = one



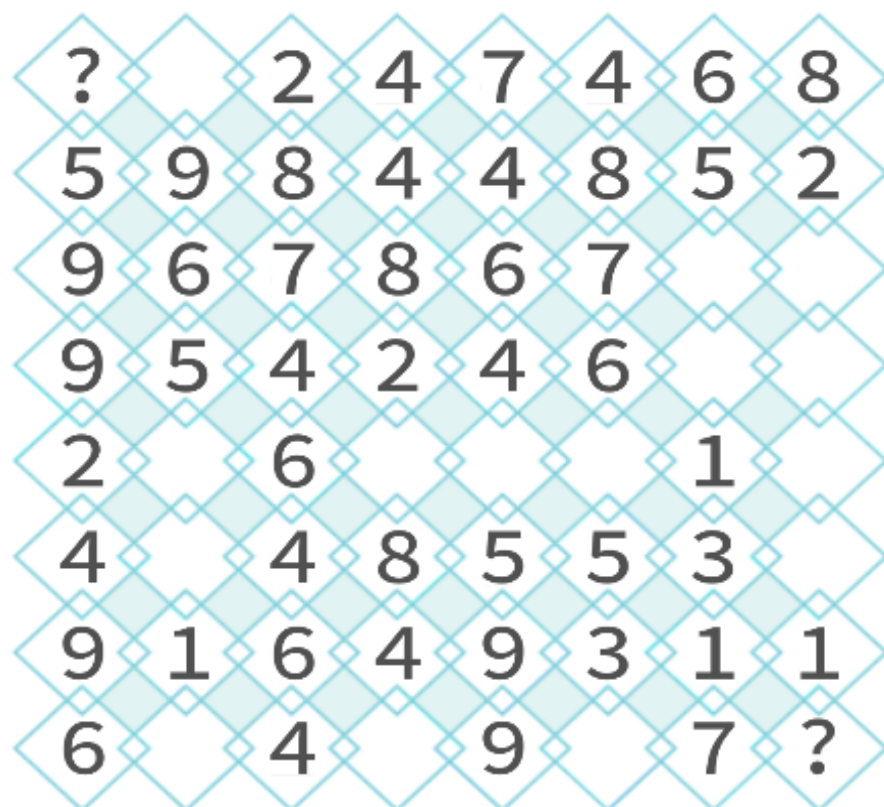
top left = three      bottom right = three



top left = six      bottom right = six

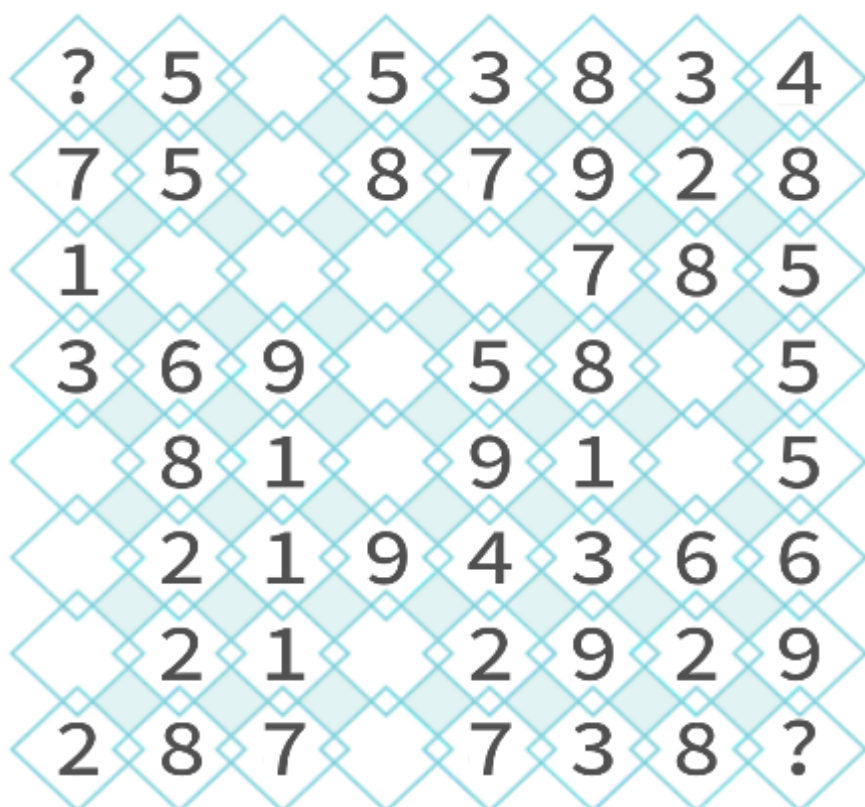


top left = right      bottom right = zero

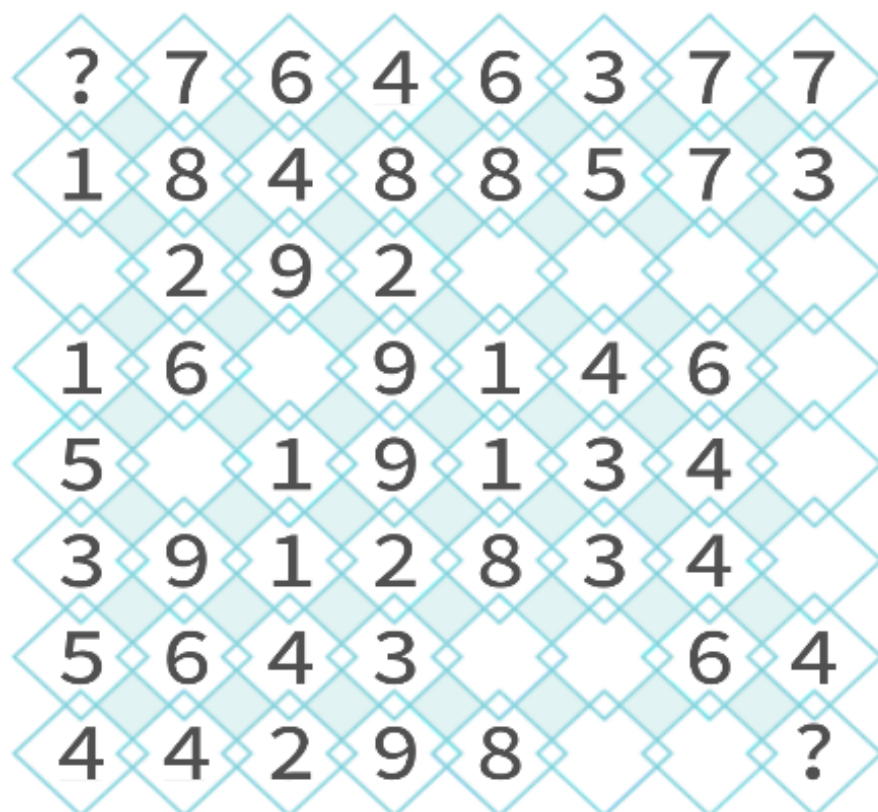


top left = five      bottom right = eight



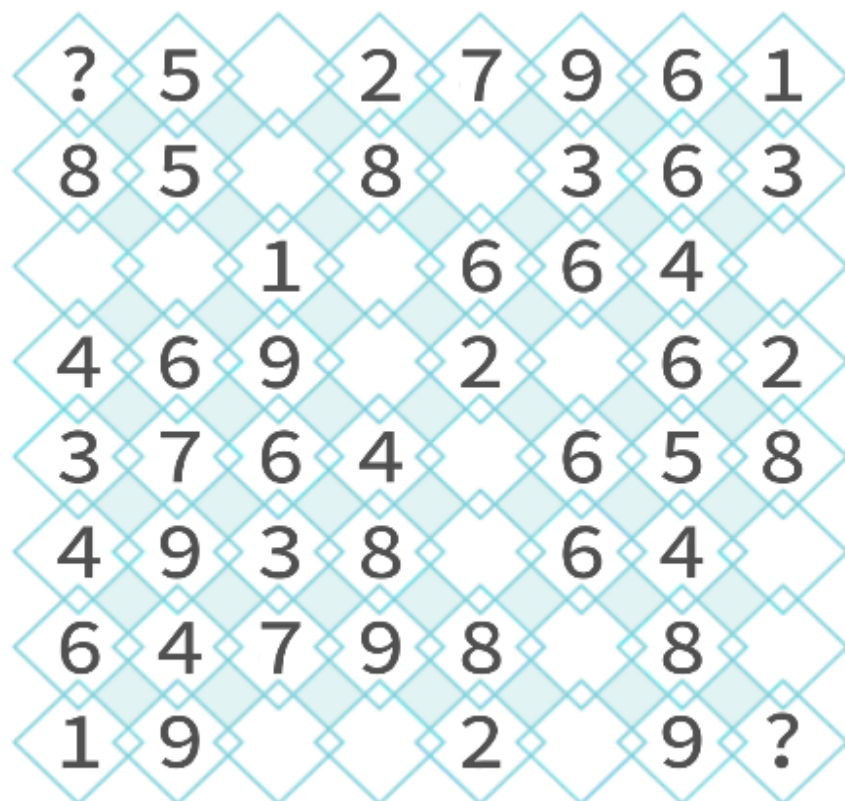


top left = three      bottom right = one



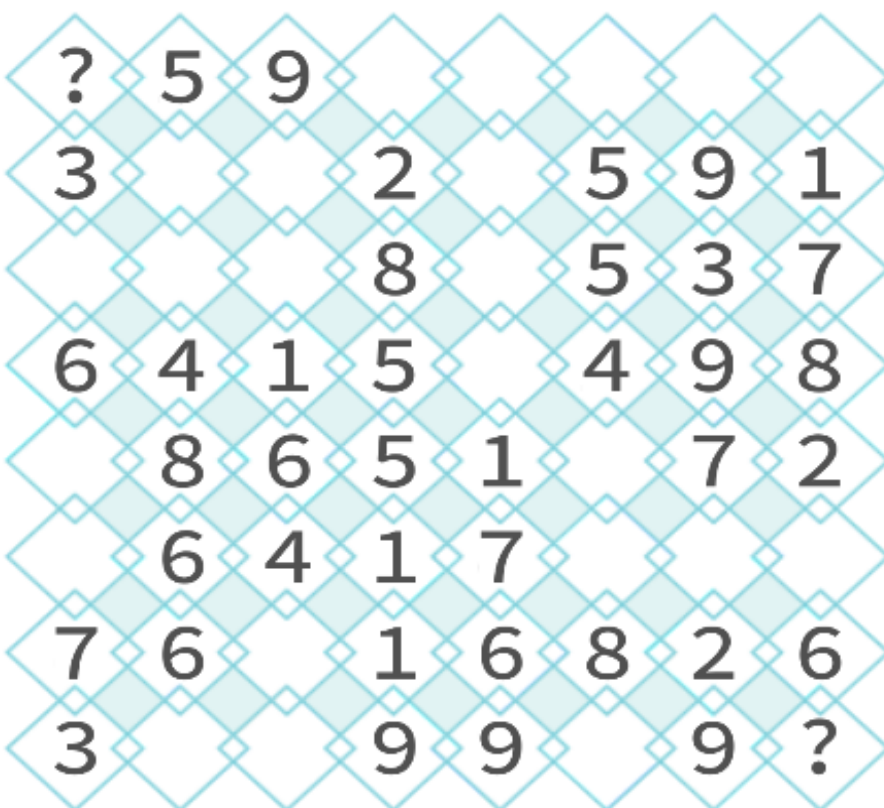
top left = two      bottom right = six





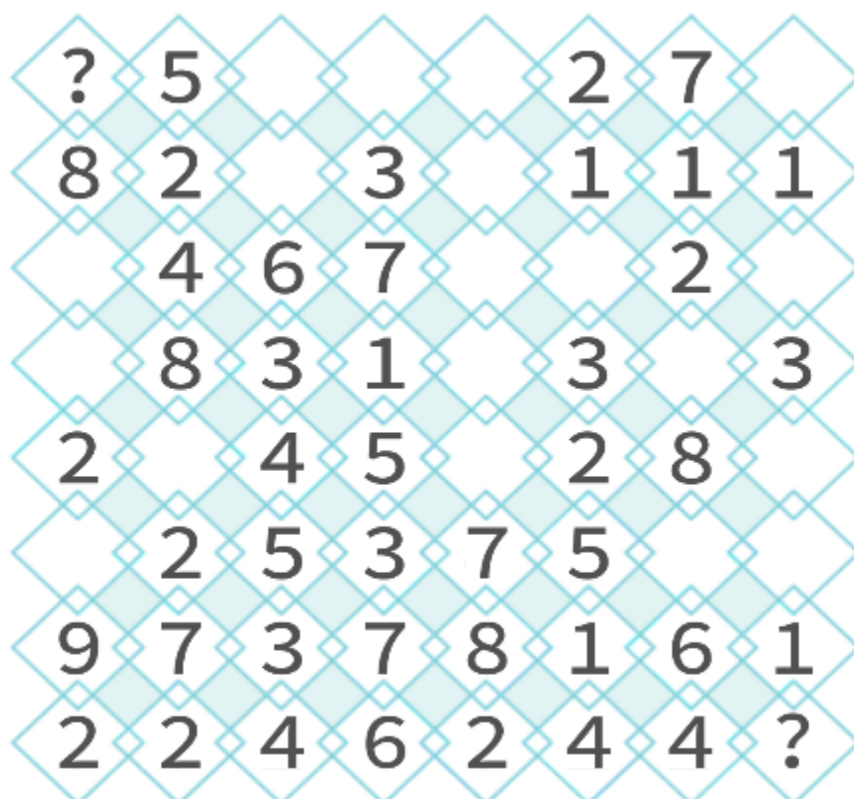
bottom right = three

top left = two



bottom right = one

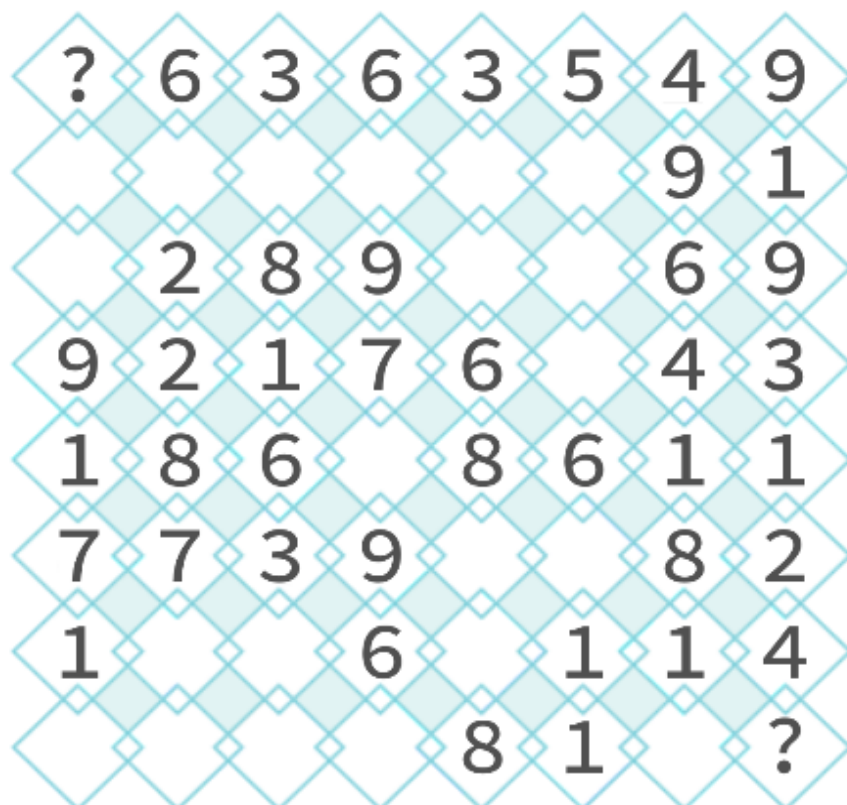
top left = two



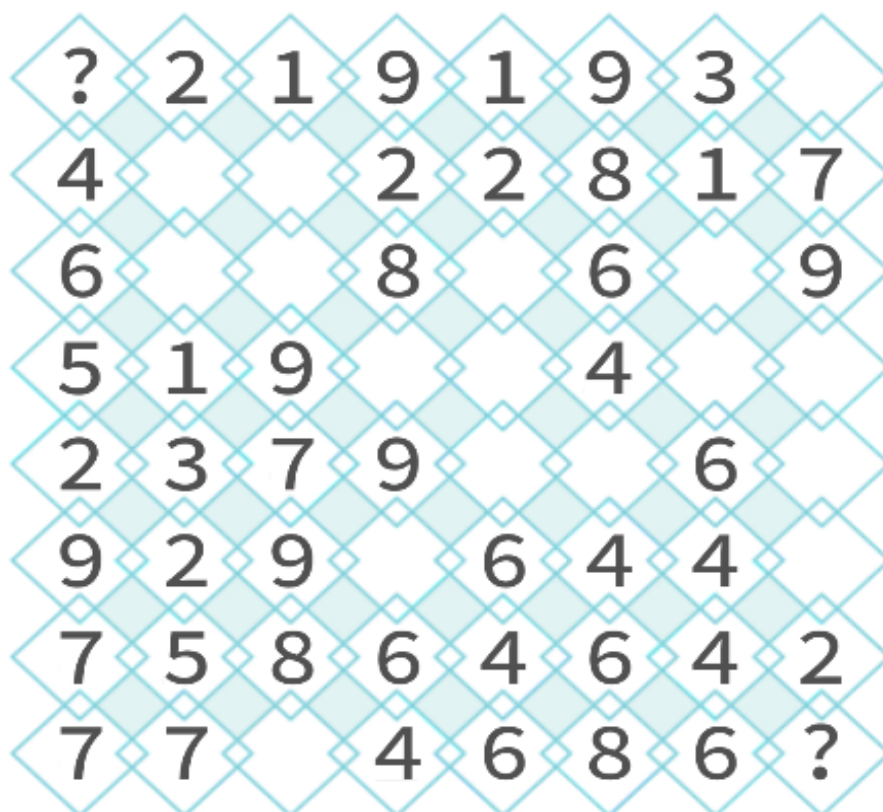
top left = five      bottom right = nine



top left = three      bottom right = three

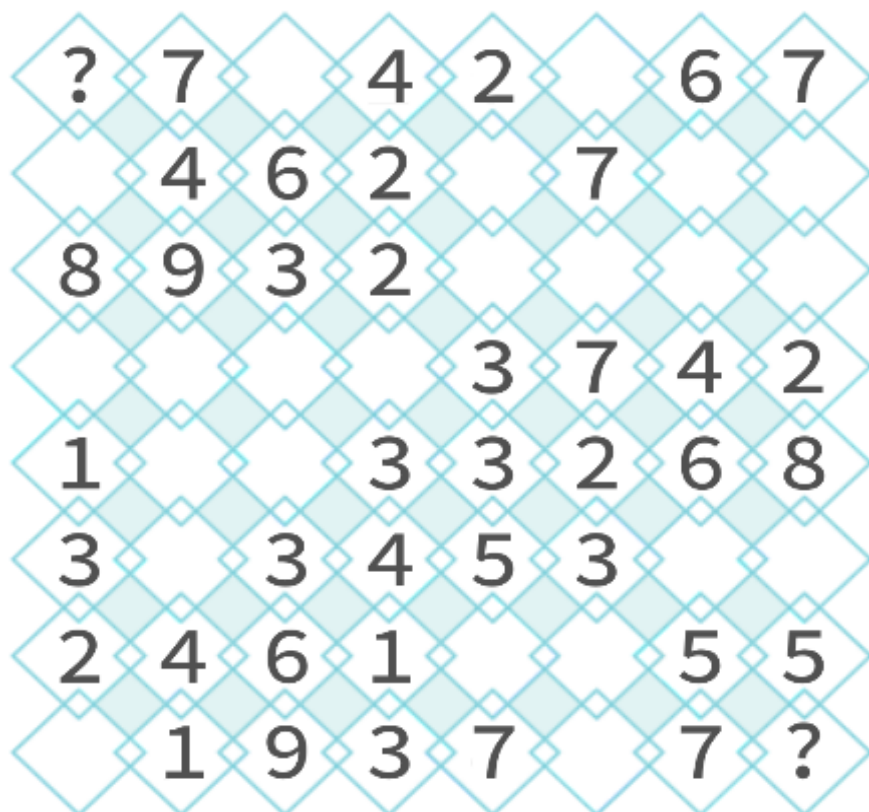


top left = four      bottom right = five

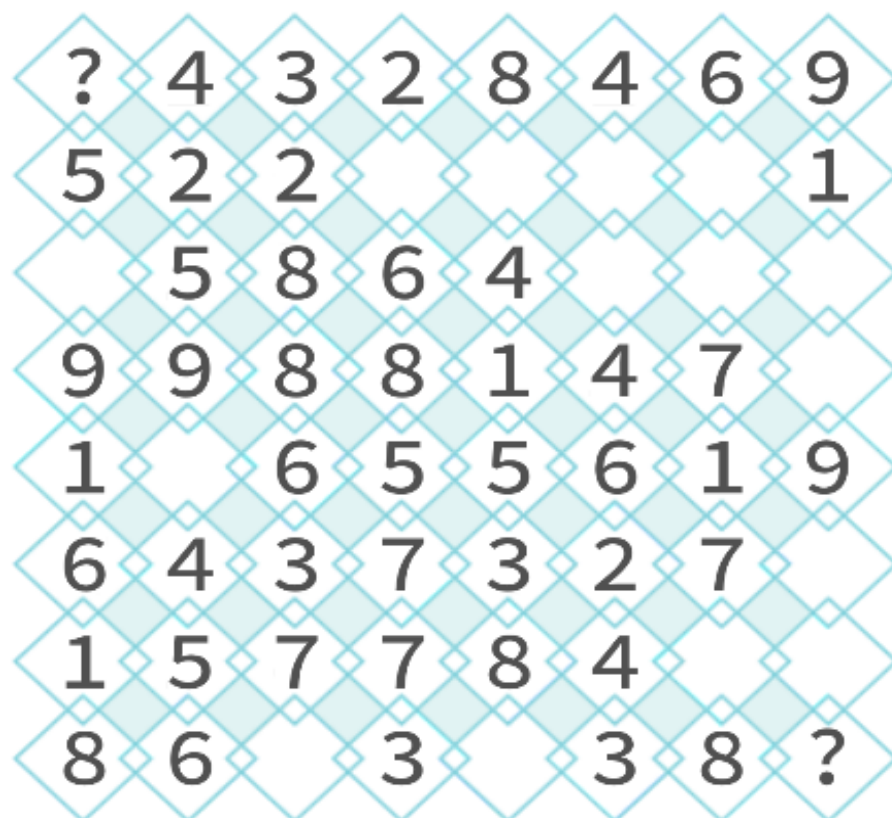


top left = eight      bottom right = four



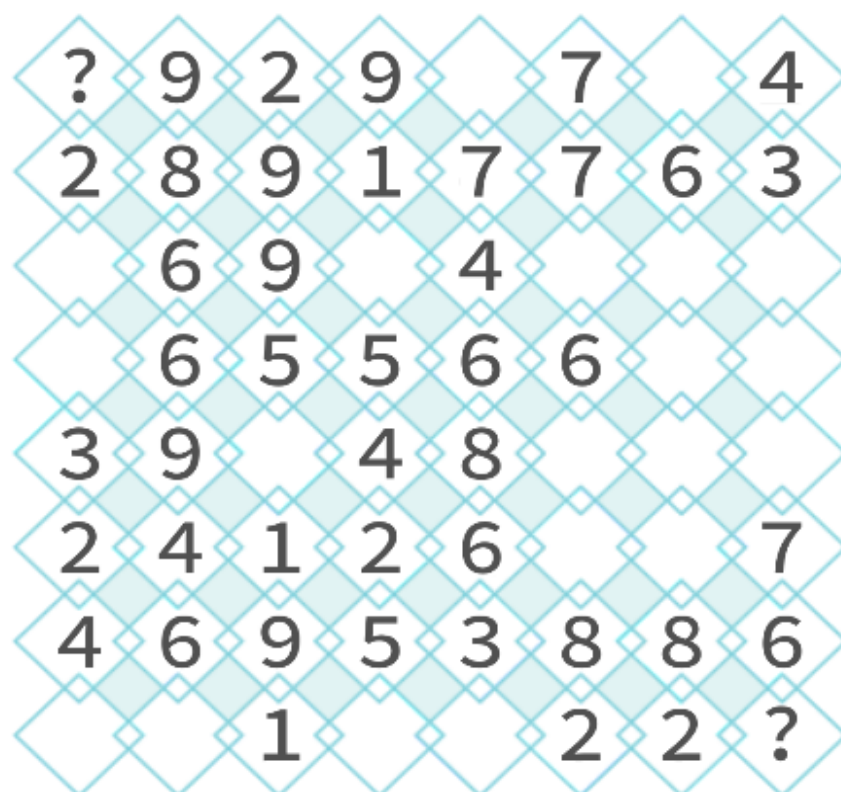


top left = three      bottom right = three

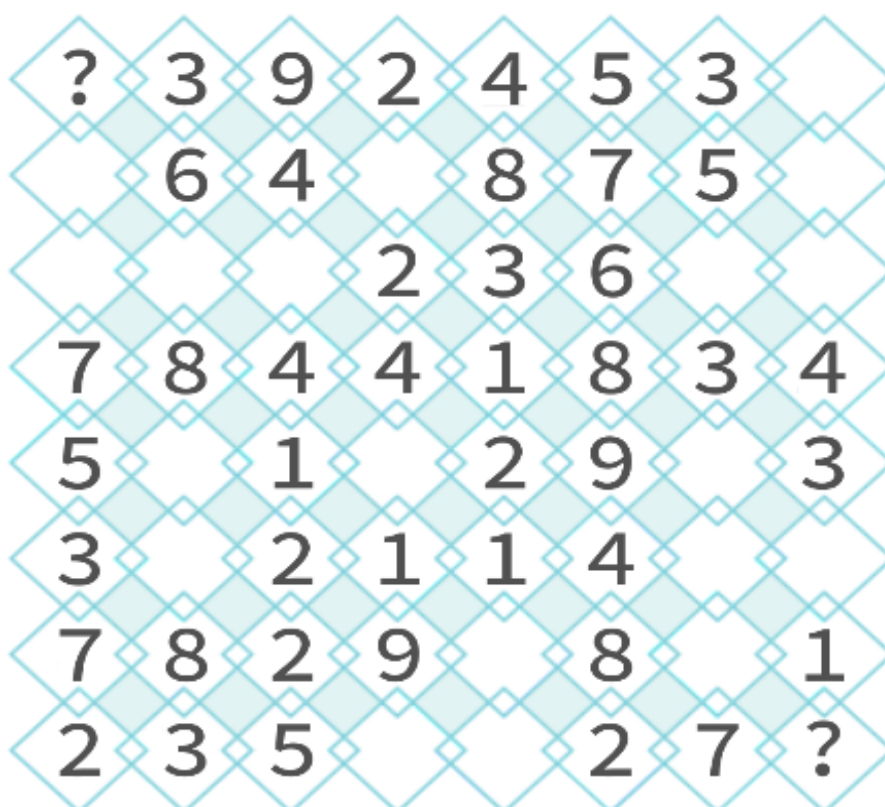


top left = eight      bottom right = two

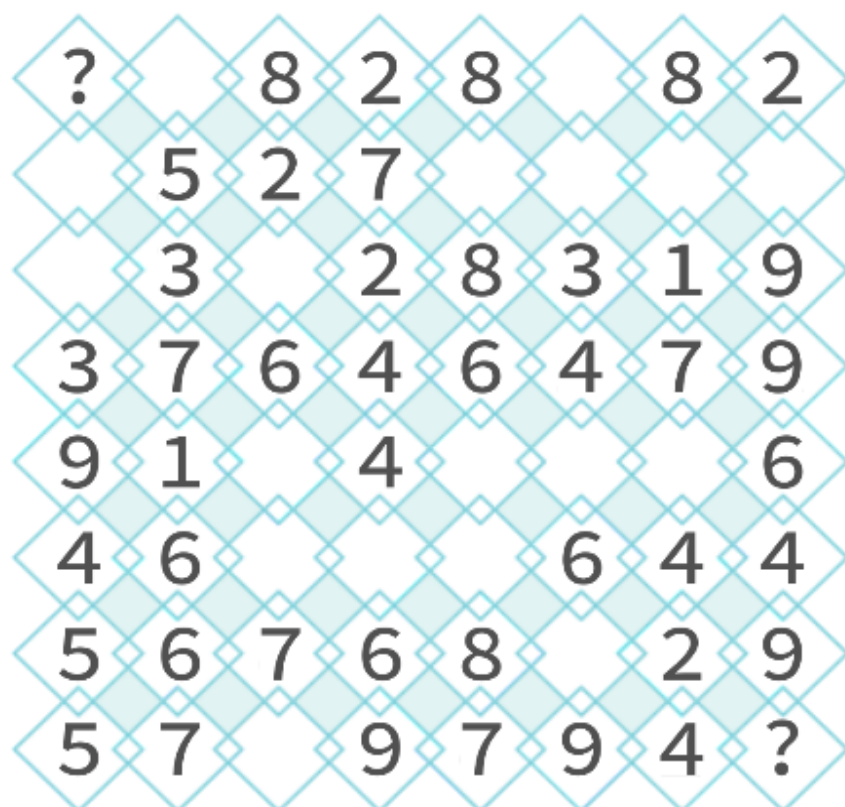




top left = two      bottom right = seven

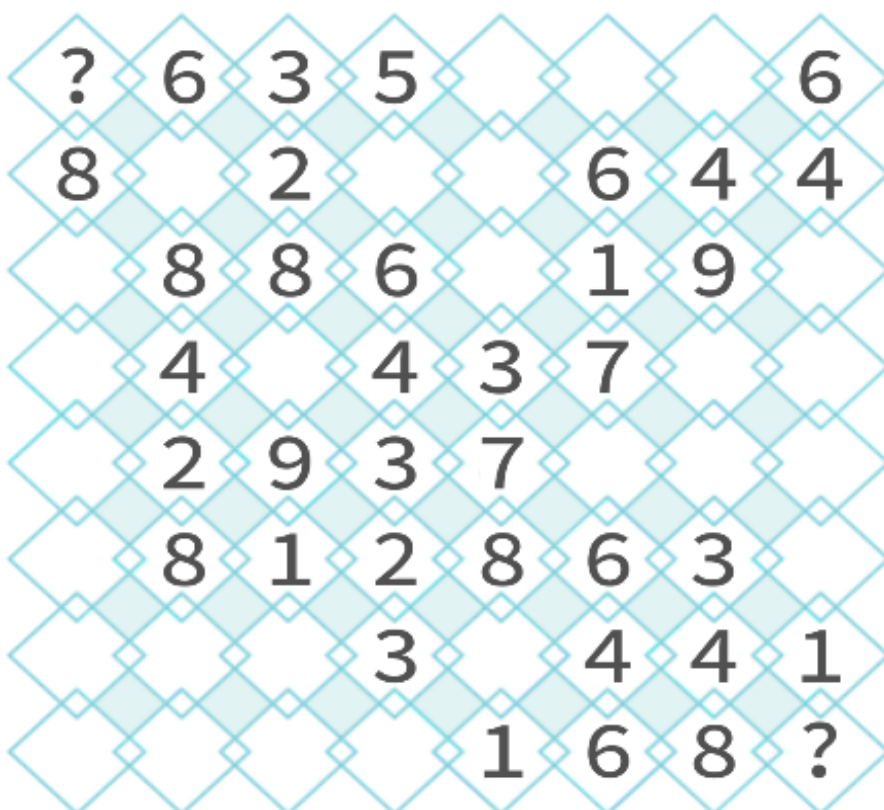


top left = seven      bottom right = two



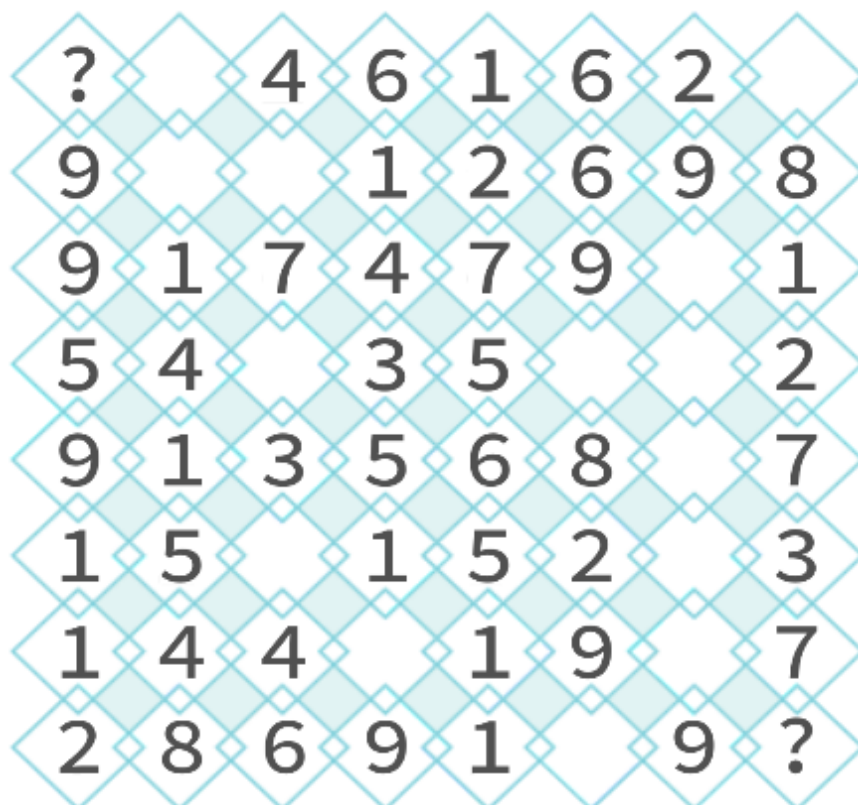
bottom right = six

top left = two

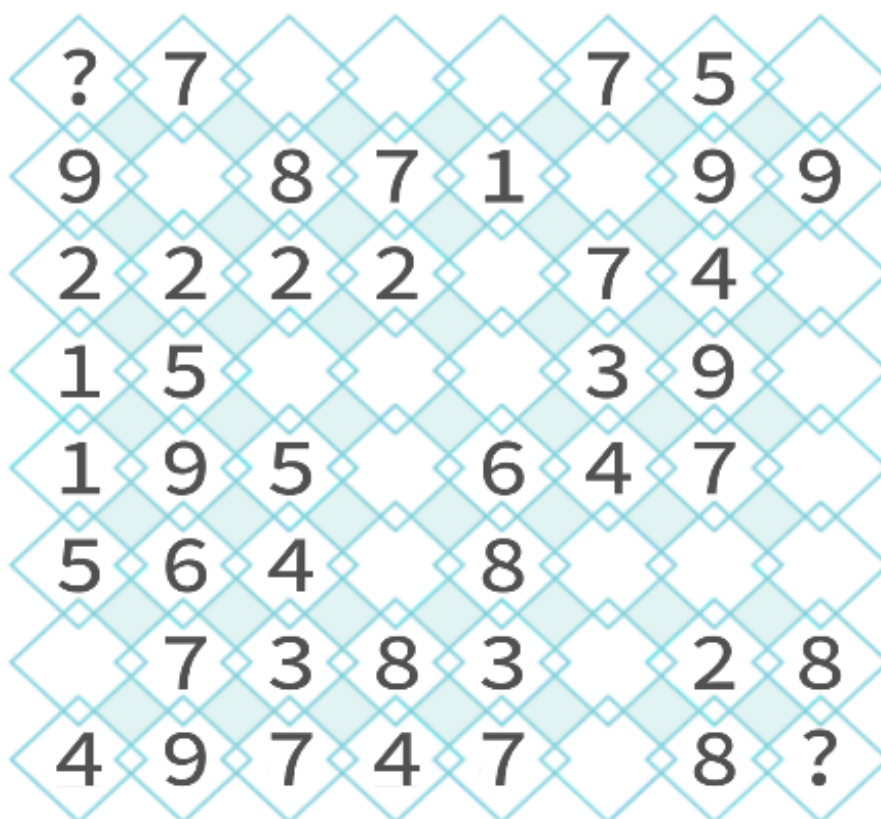


bottom right = four

top left = six



top left = one      bottom right = one



top left = four      bottom right = two



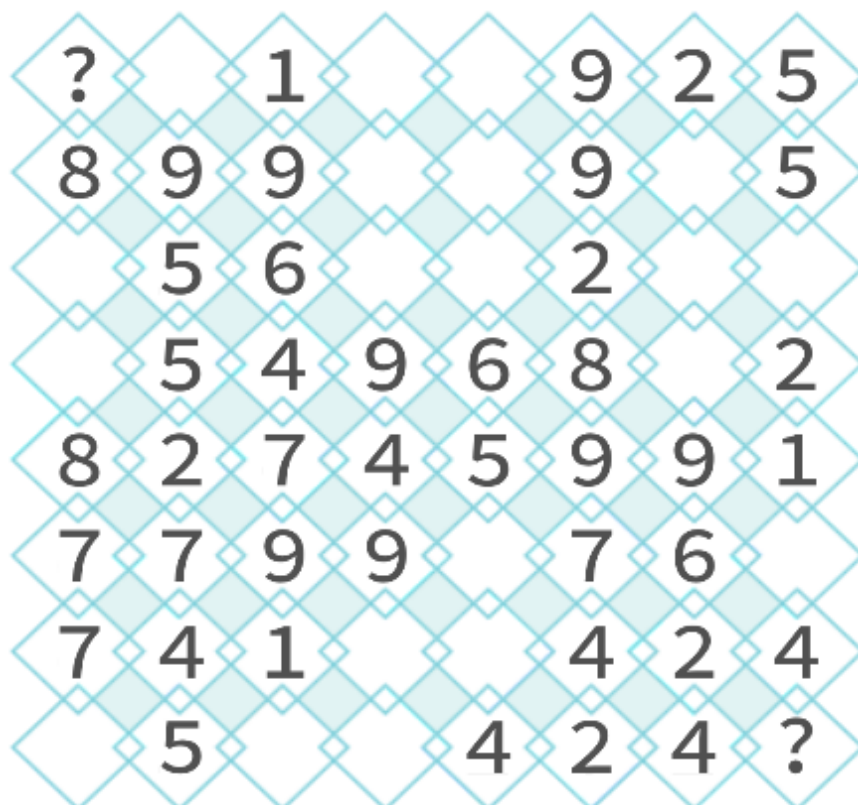
?	9	4	1	9	1	8	1
1	1	6			9	2	1
	8	6	5	4		8	8
9	2	9	8	5	1	2	
4	2		2				
5		5		3	2	7	3
8	9	3	8	5			7
2	9	1	5	4	6	3	?

top left = nine      bottom right = zero

?	4	1	9		9	1	
6	9				1	9	2
2	8		9	1		2	8
1				2		5	3
2	8	1	9	1	5	4	3
	4	4	2	7	5	9	5
5	5		4	3	7	4	5
7	3		6			2	?

top left = zero      bottom right = eight

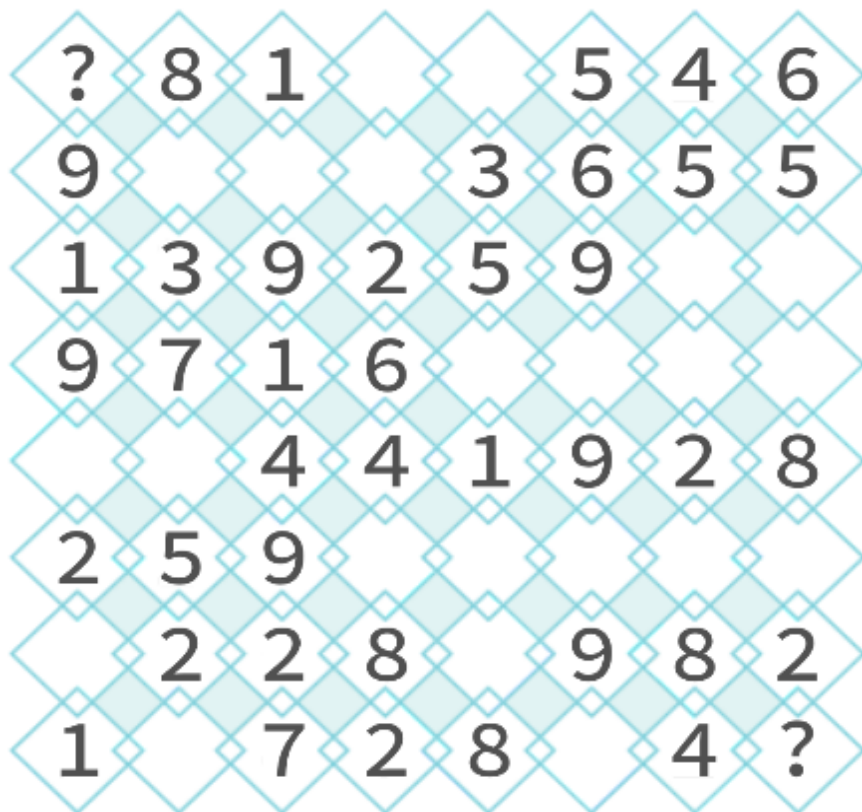




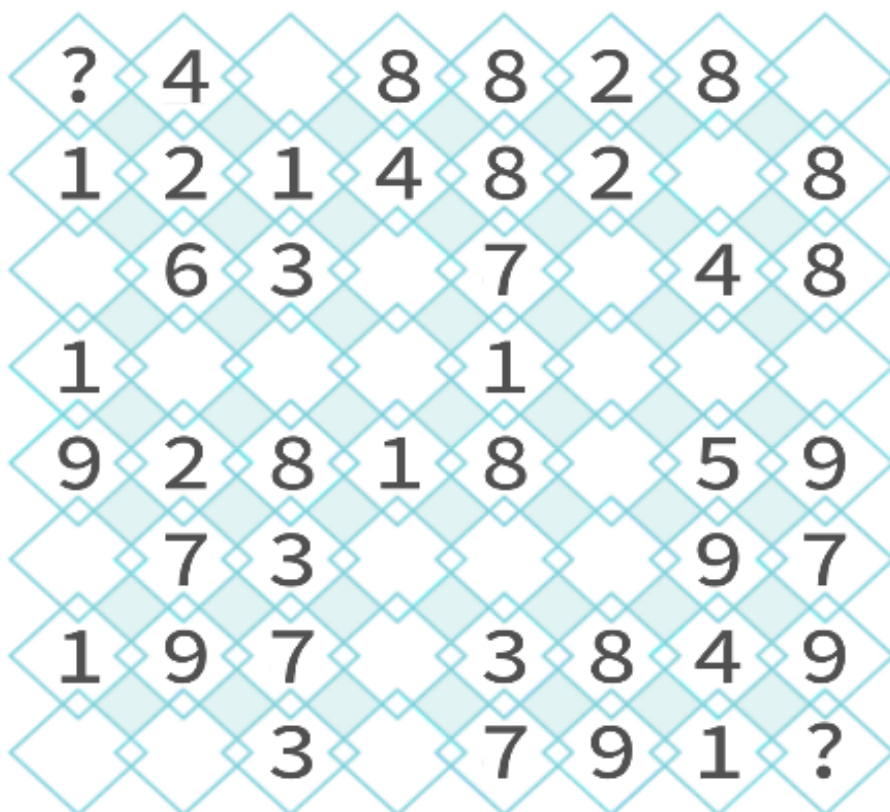
top left = three      bottom right = six



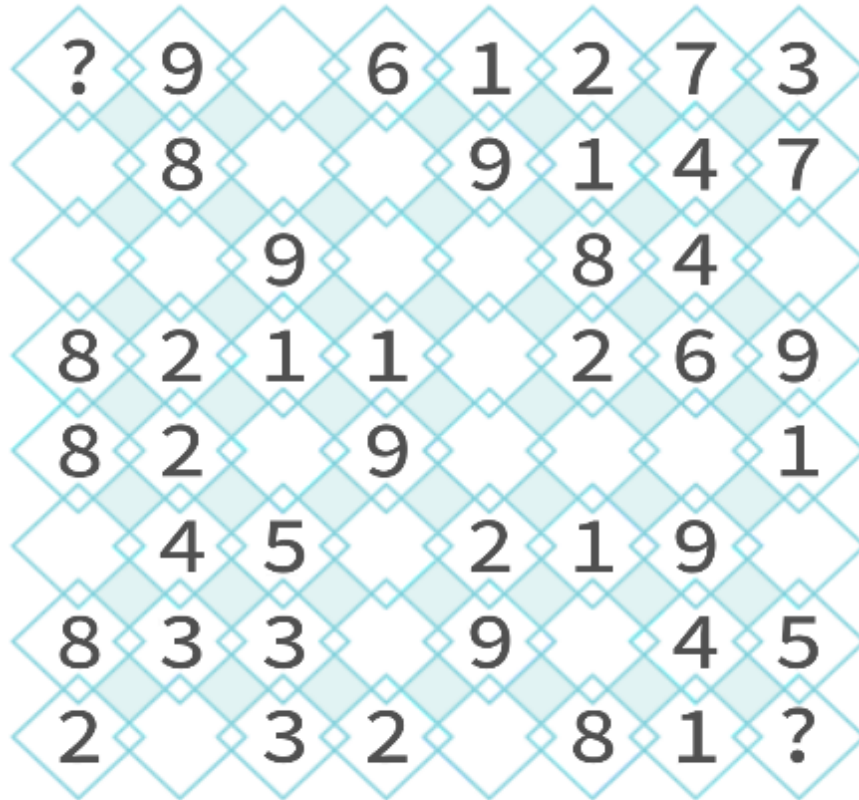
top left = three      bottom right = two



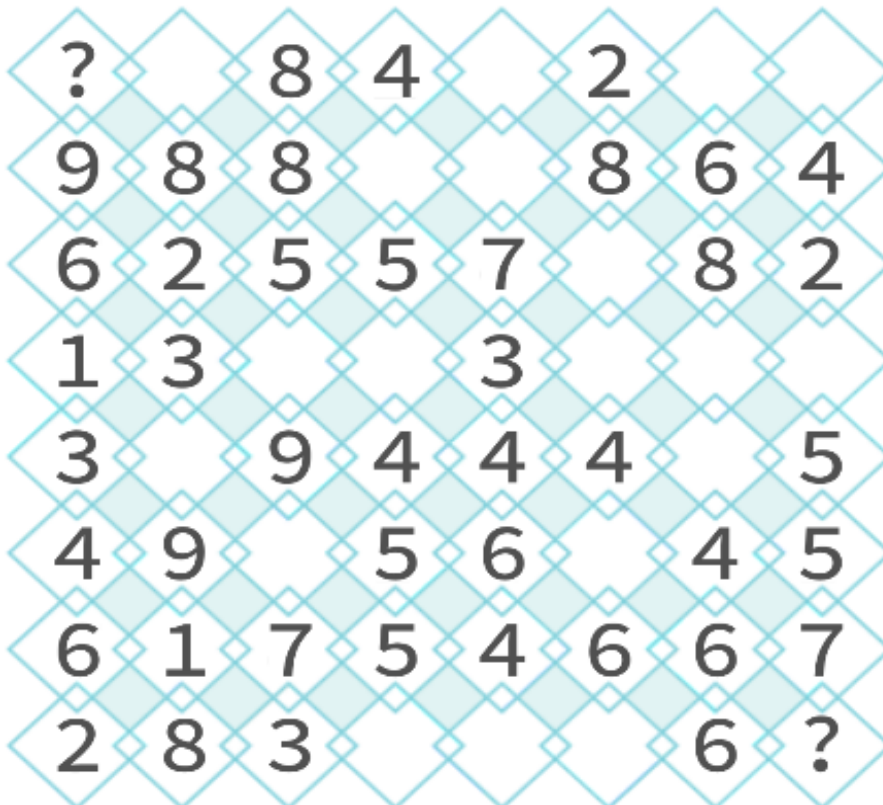
top left = two      bottom right = seven



top left = six      bottom right = nine

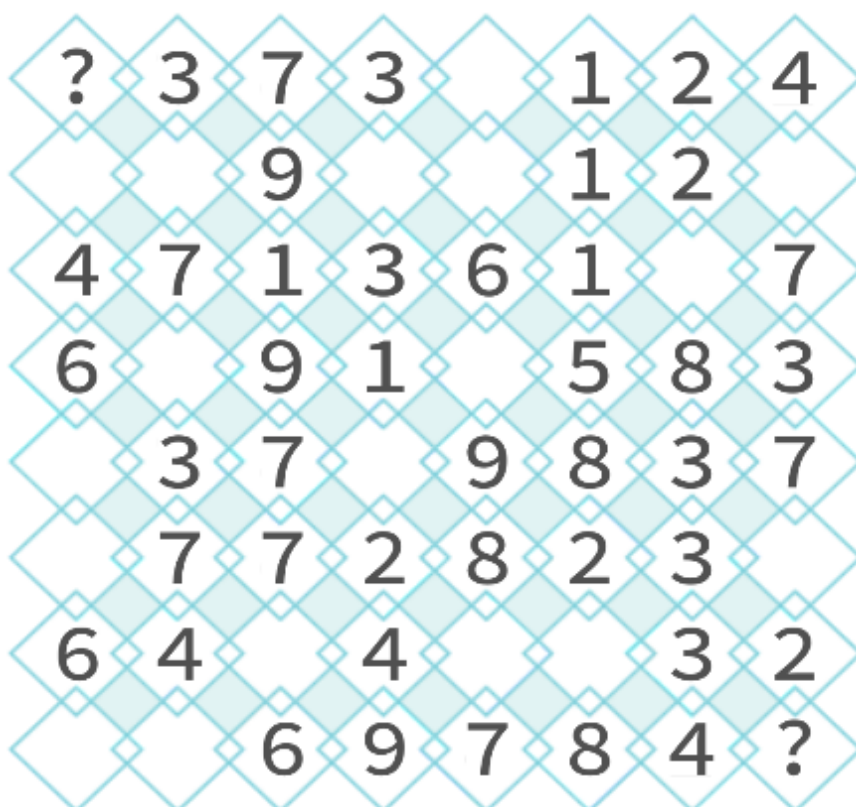


top left = three bottom right = one

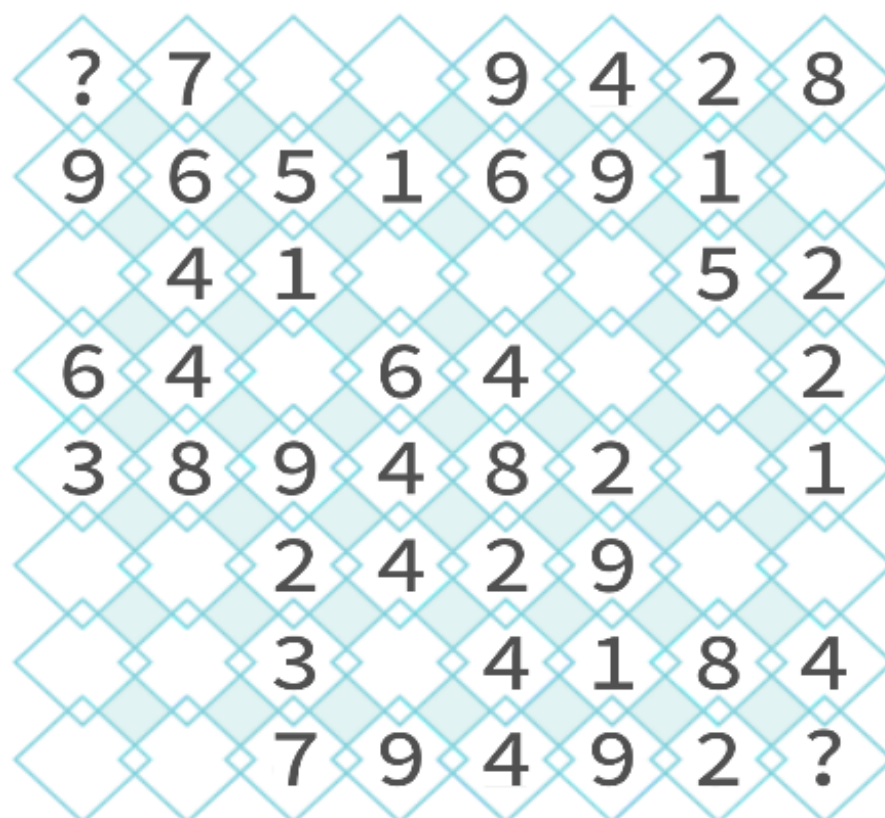


top left = one bottom right = seven

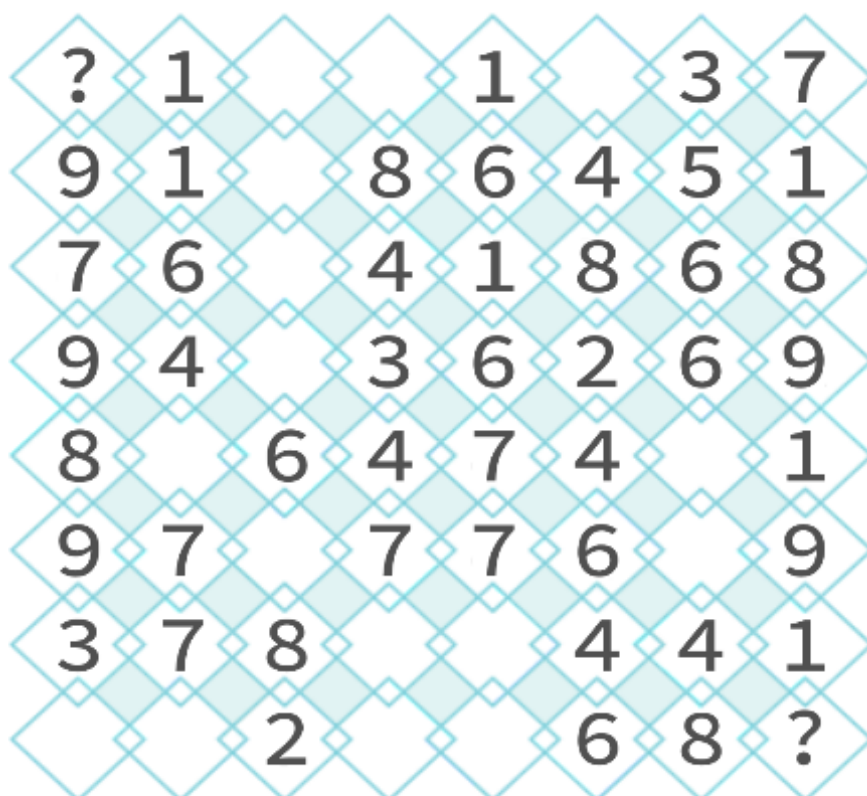




top left = zero      bottom right = eight



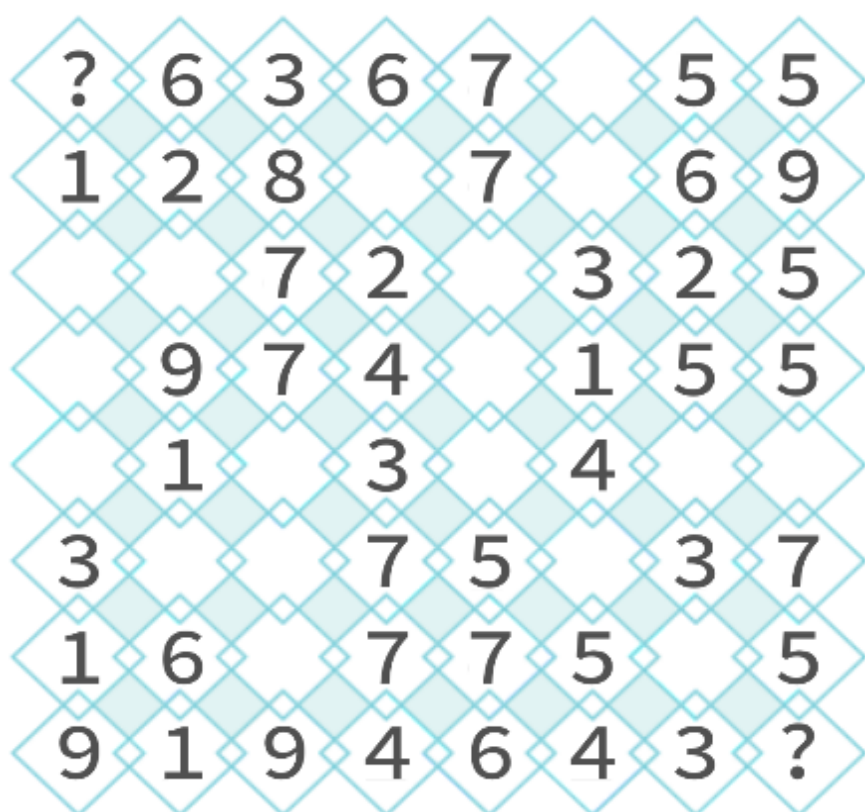
top left = eight      bottom right = eight



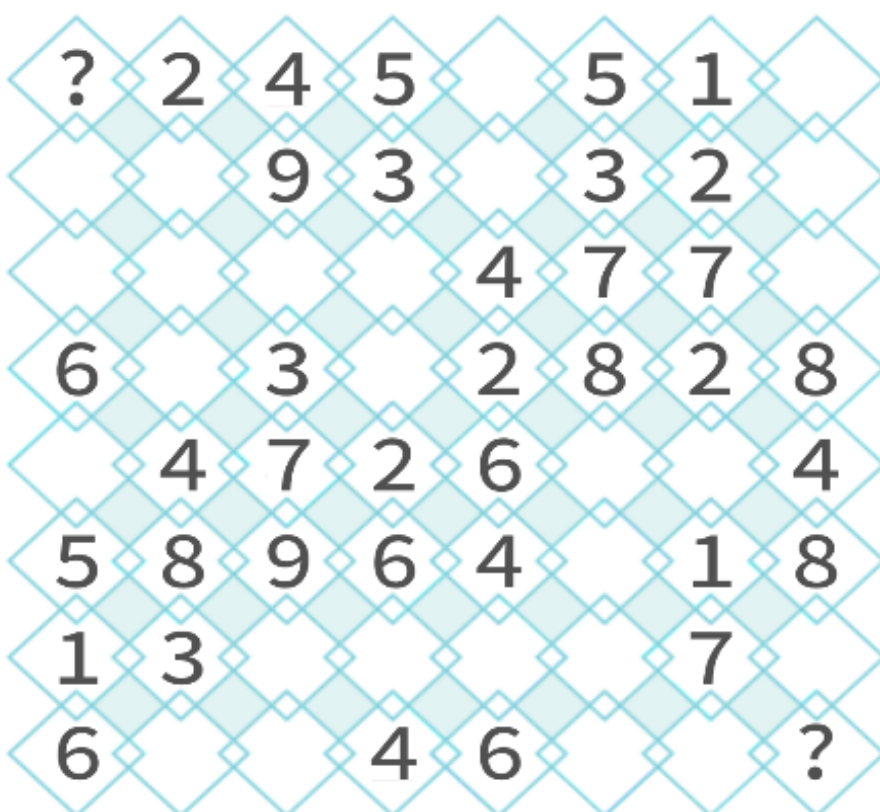
top left = nine      bottom right = eight



top left = two      bottom right = one

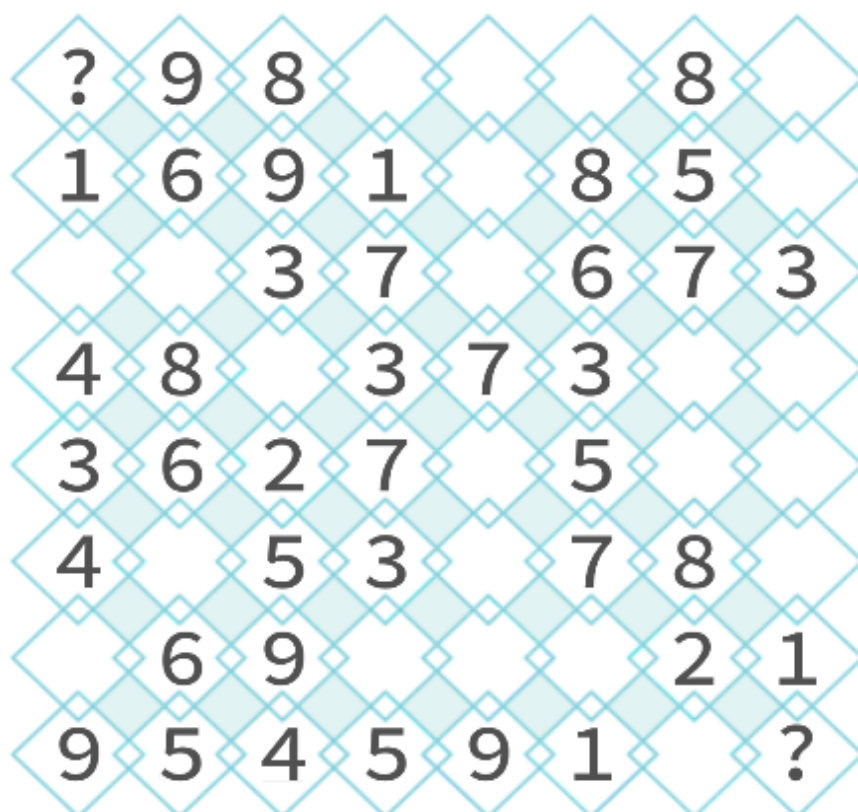


top left = zero      bottom right = five



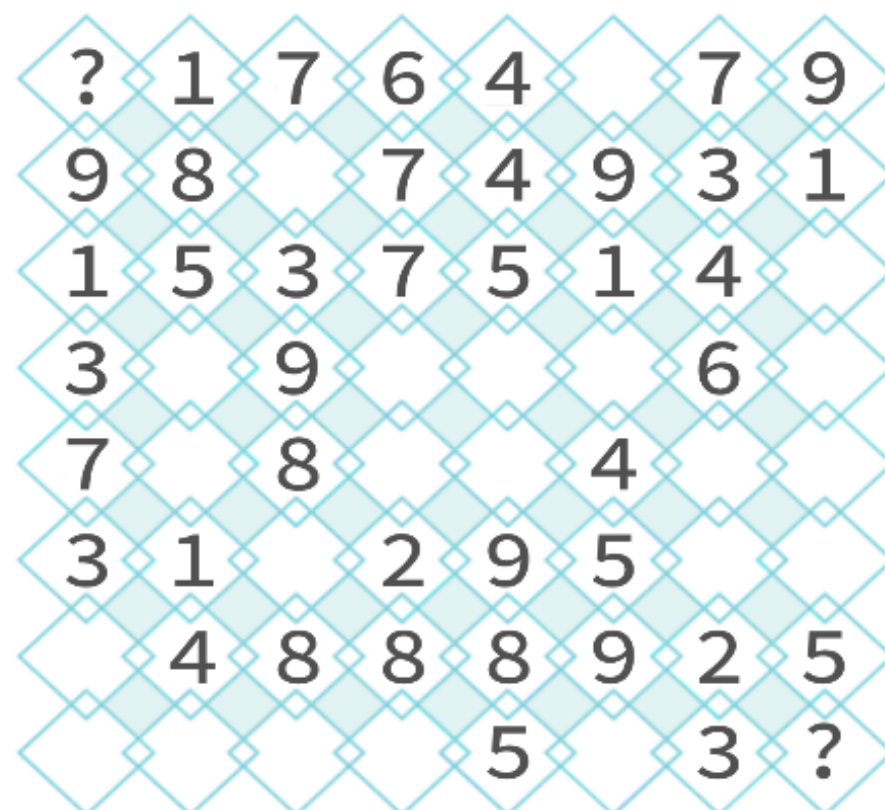
top left = eight      bottom right = zero





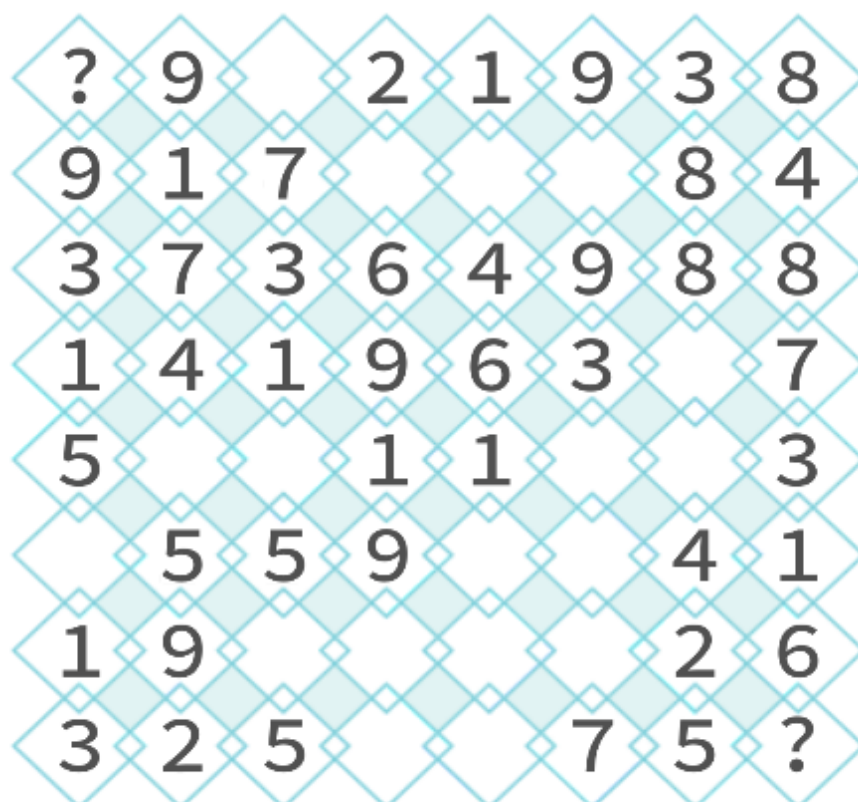
bottom right = seven

top left = six

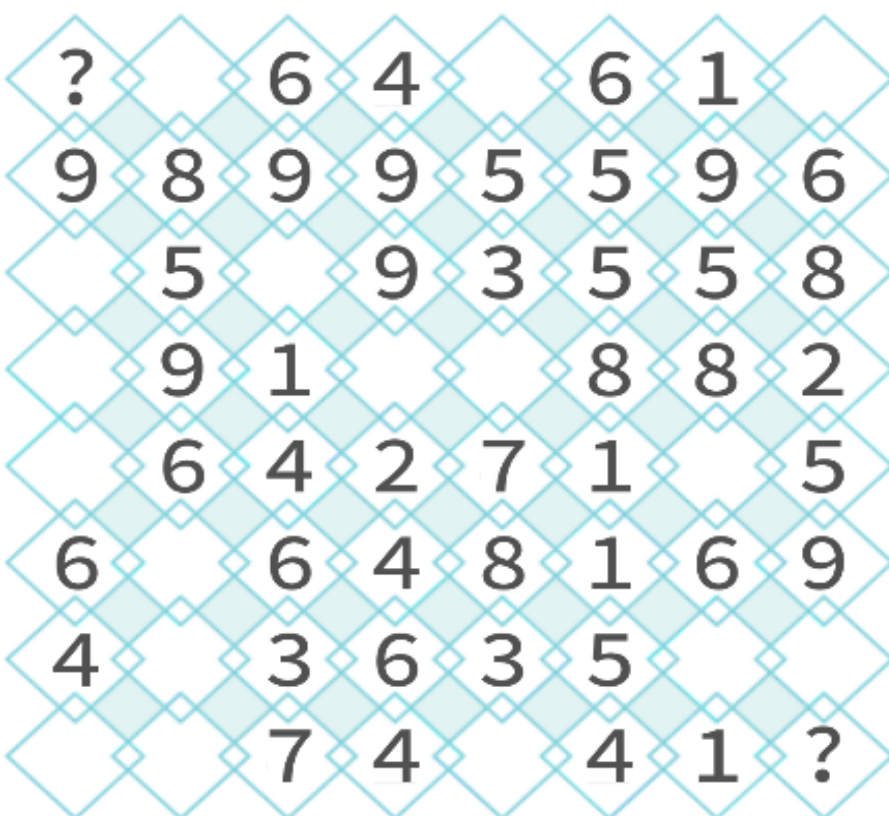


bottom right = eight

top left = two



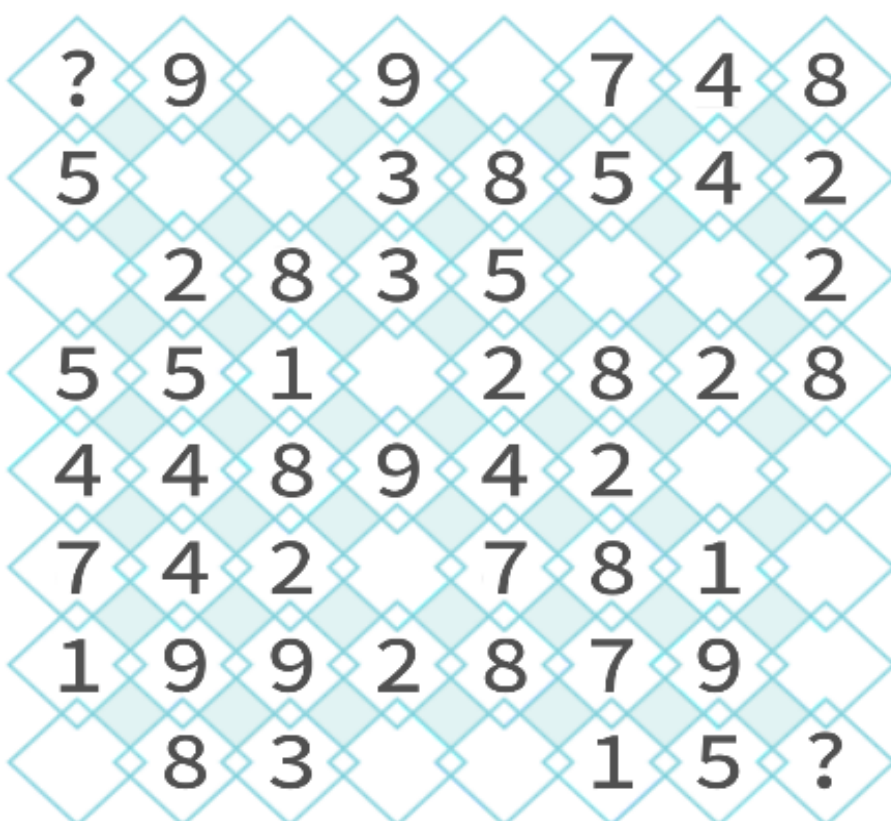
top left = one      bottom right = five



top left = eight      bottom right = zero



top left = six      bottom right = seven



top left = six      bottom right = seven

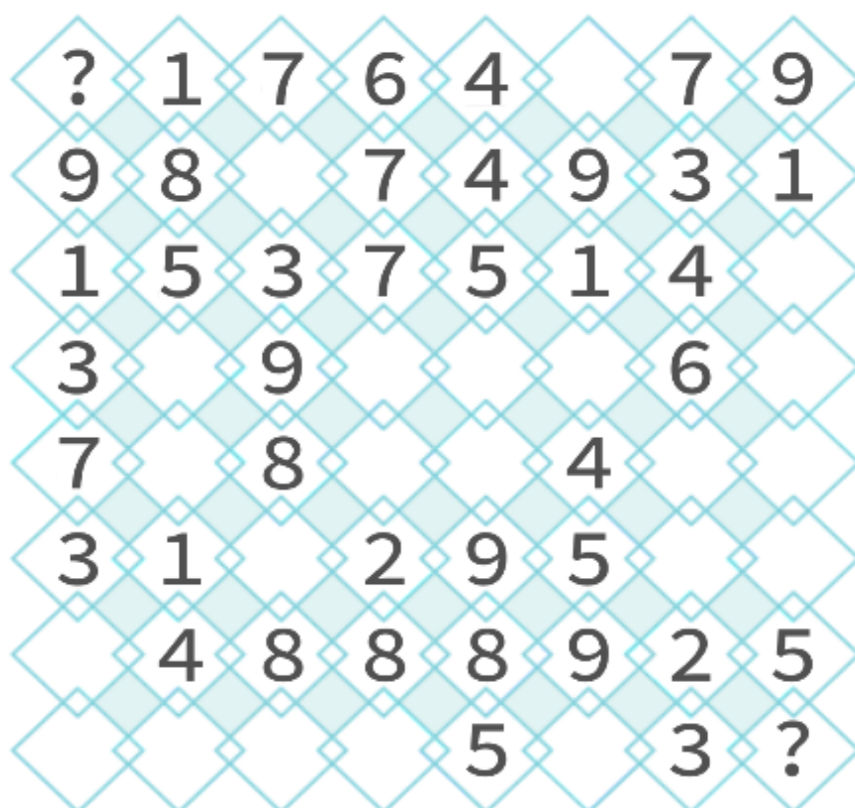




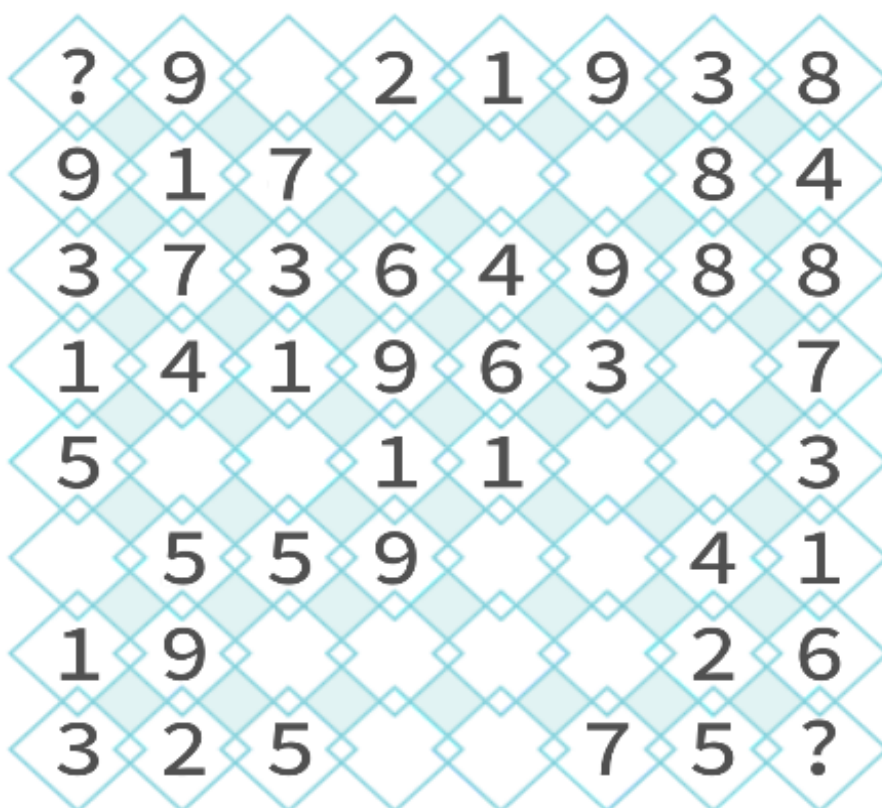
top left = four      bottom right = eight



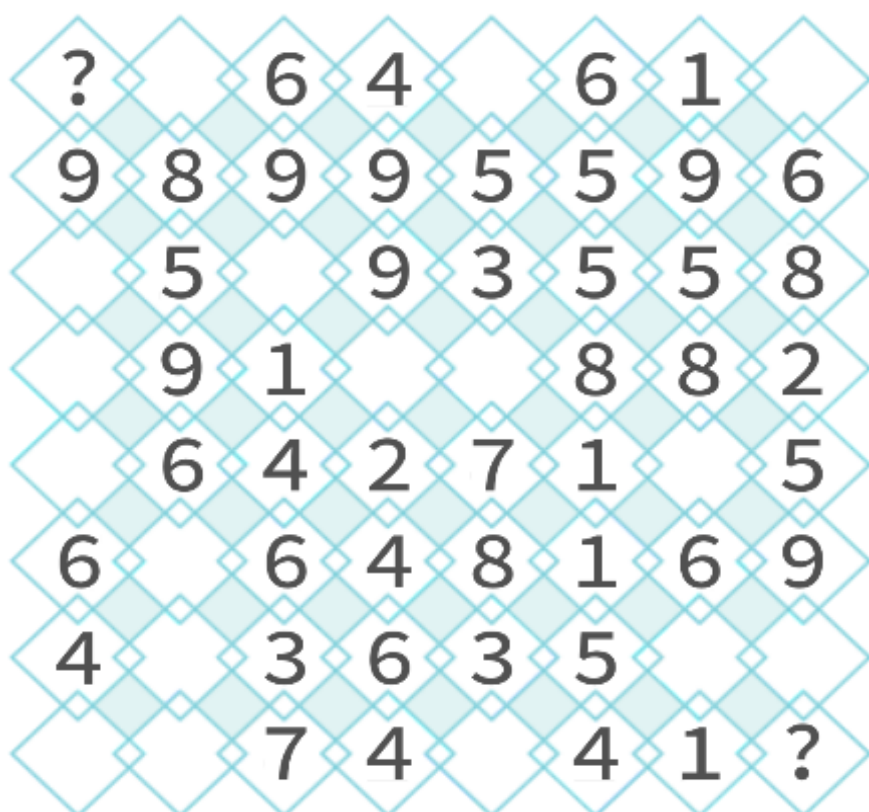
top left = six      bottom right = seven



top left = two      bottom right = eight



top left = one      bottom right = five

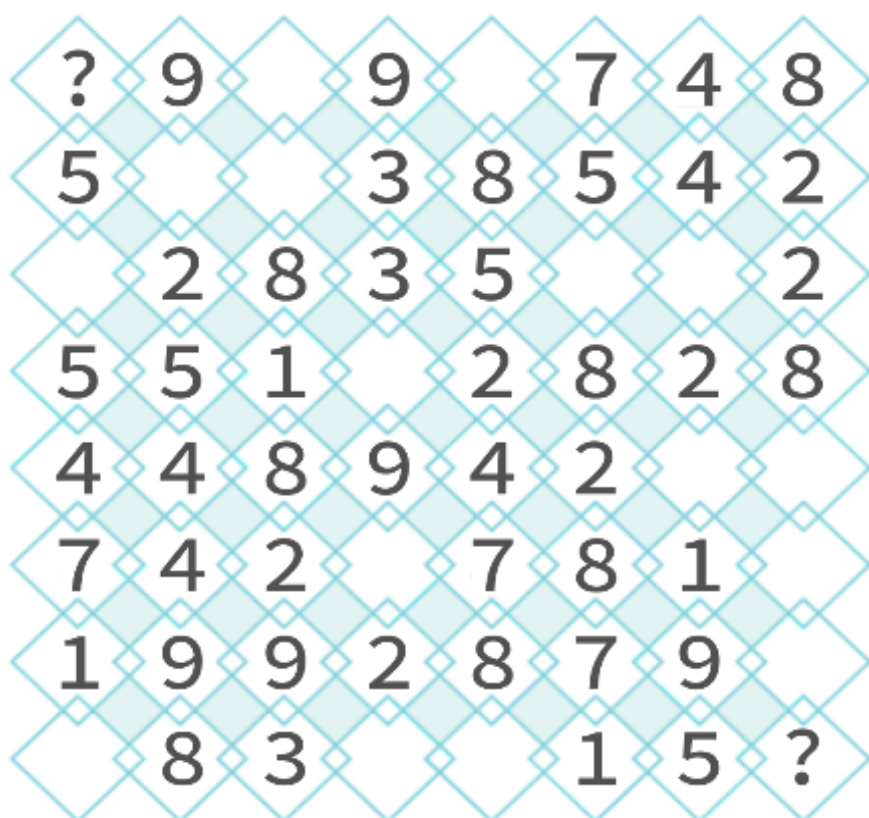


top left = right      bottom right = zero



top left = six      bottom right = seven





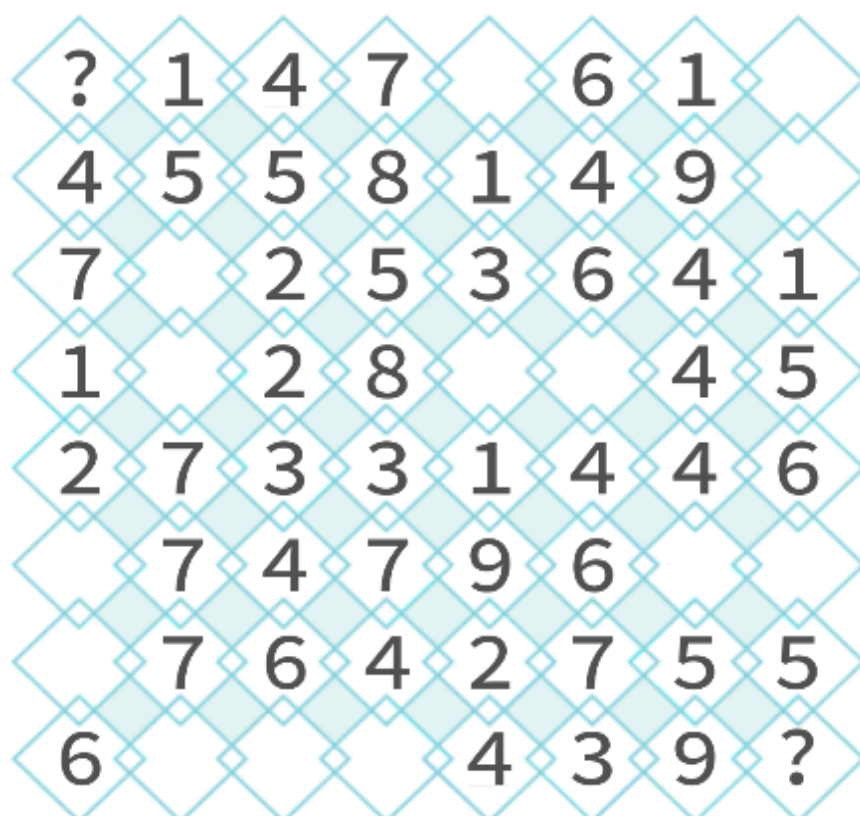
bottom right = seven

top left = six

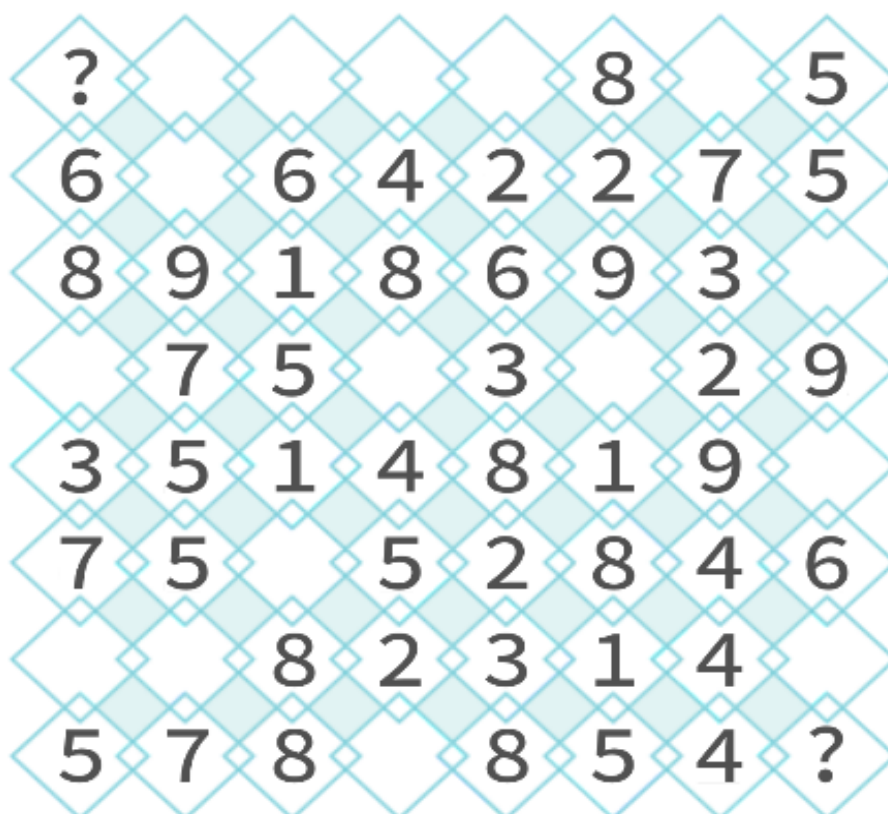


bottom right = eight

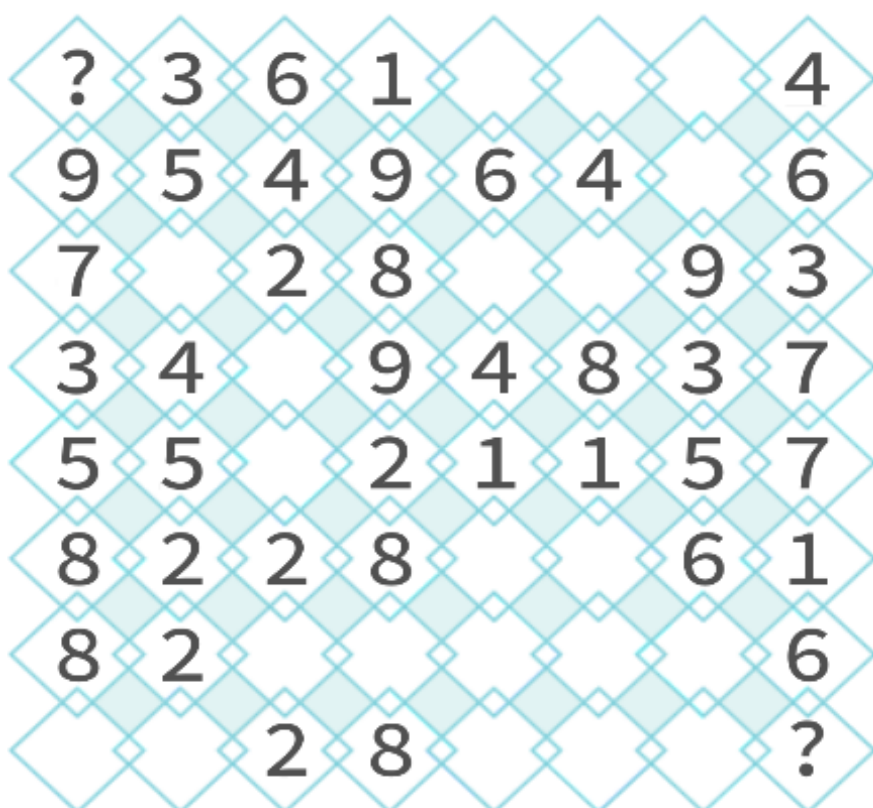
top left = four



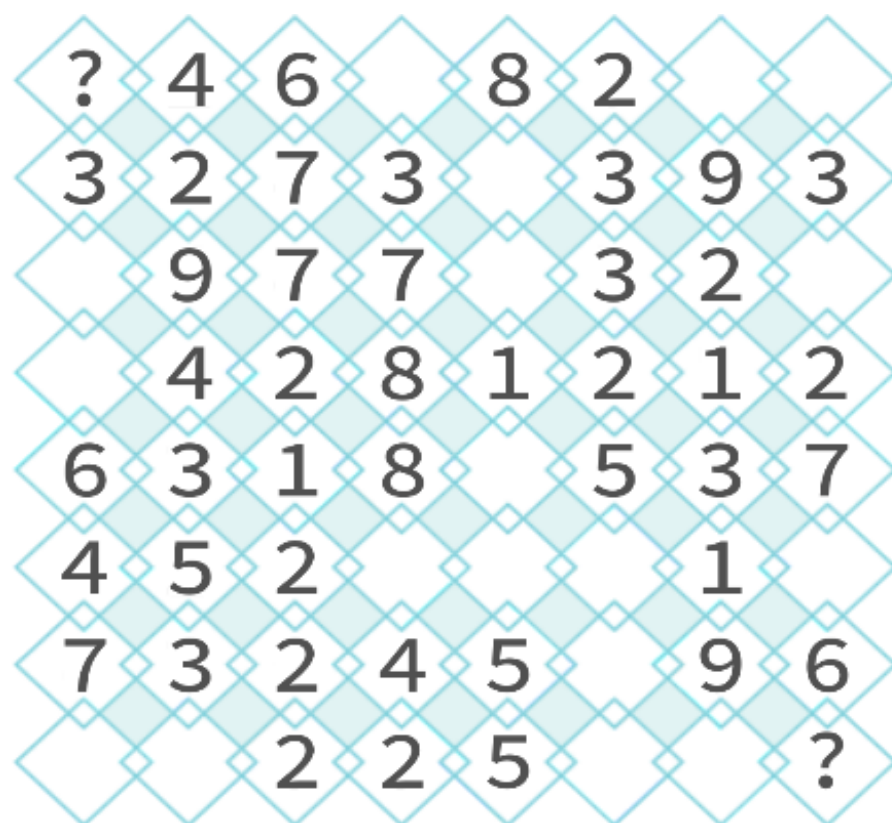
top left = five      bottom right = one



top left = four      bottom right = eight

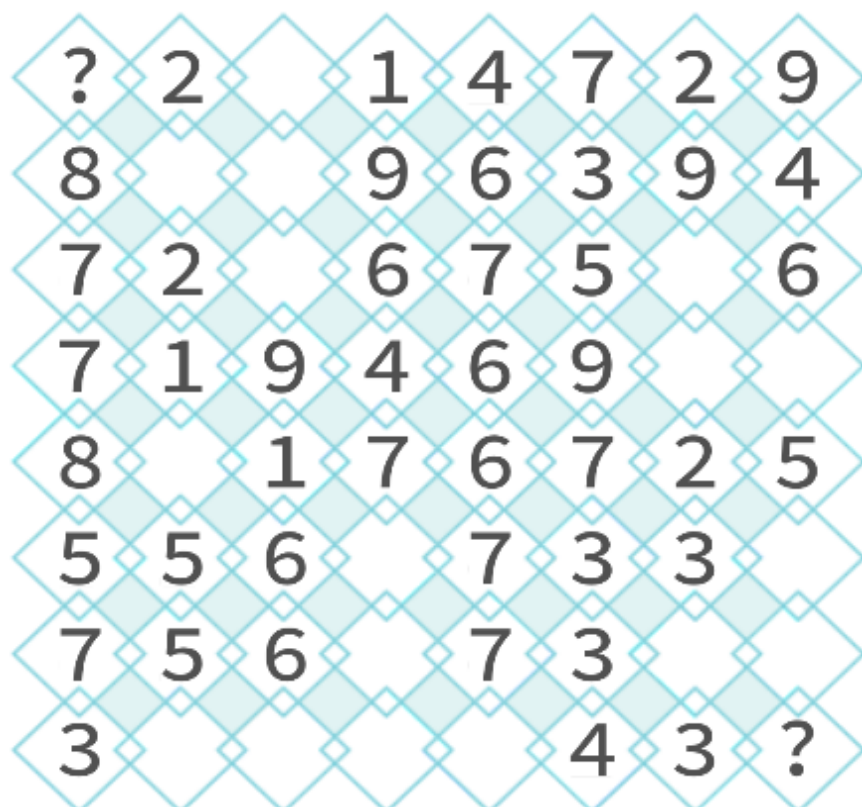


top left = three  
bottom right = four



top left = eight  
bottom right = four

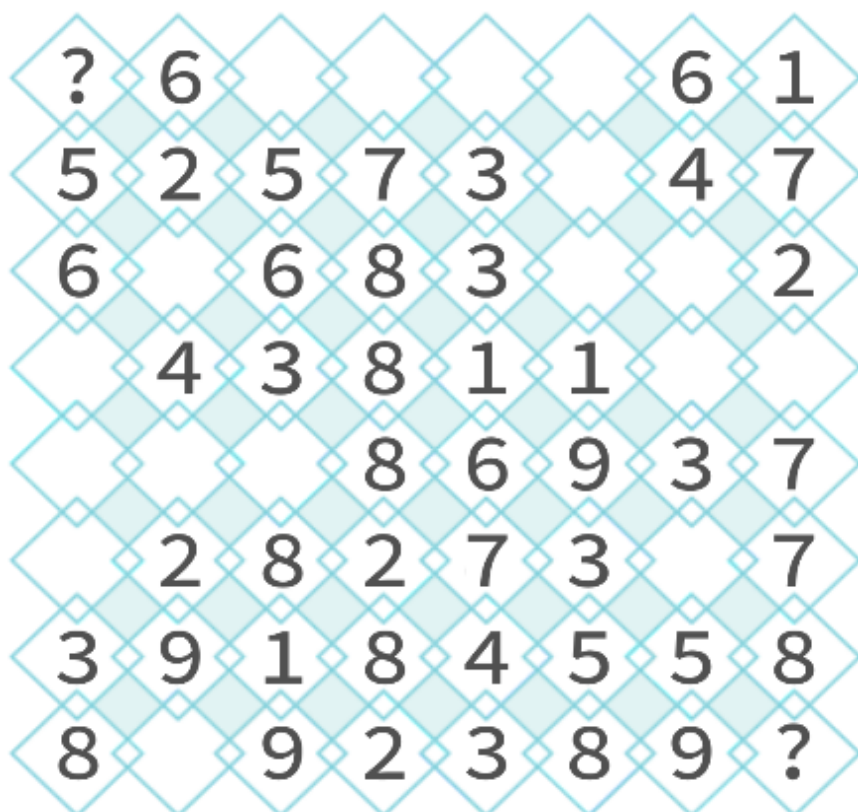




top left = one      bottom right = three



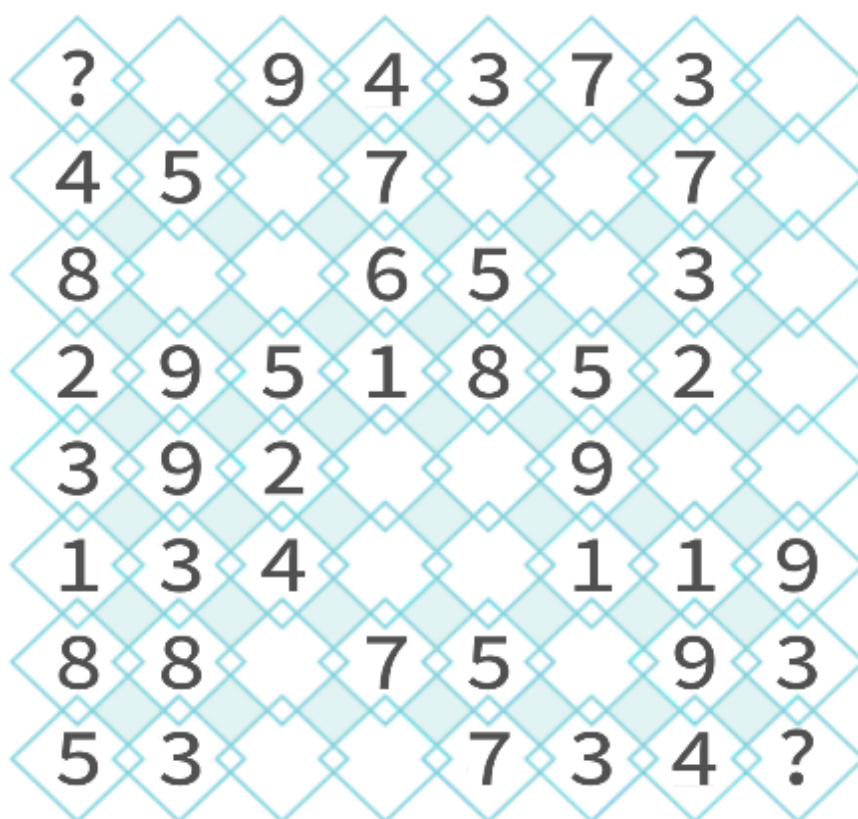
top left = five      bottom right = six



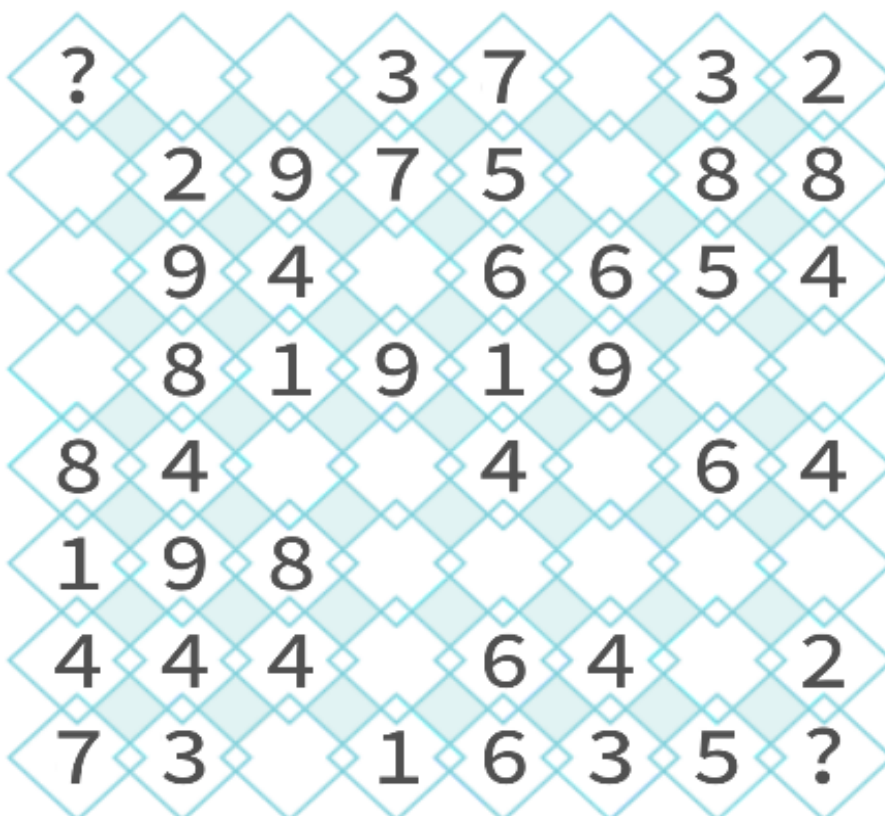
top left = seven      bottom right = one



top left = seven      bottom right = five

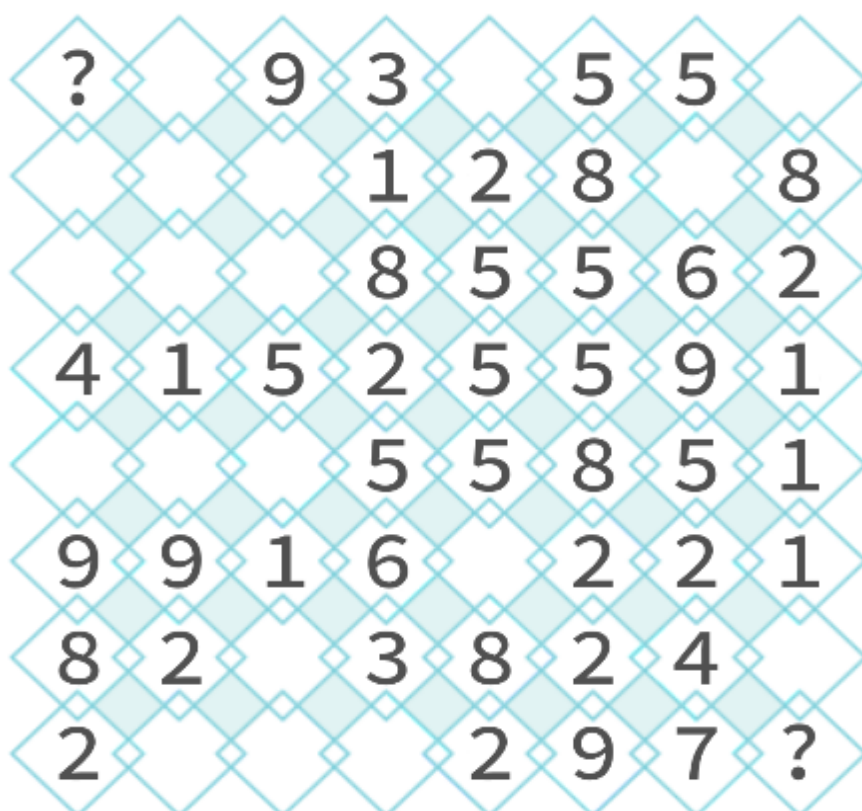


top left = one      bottom right = two

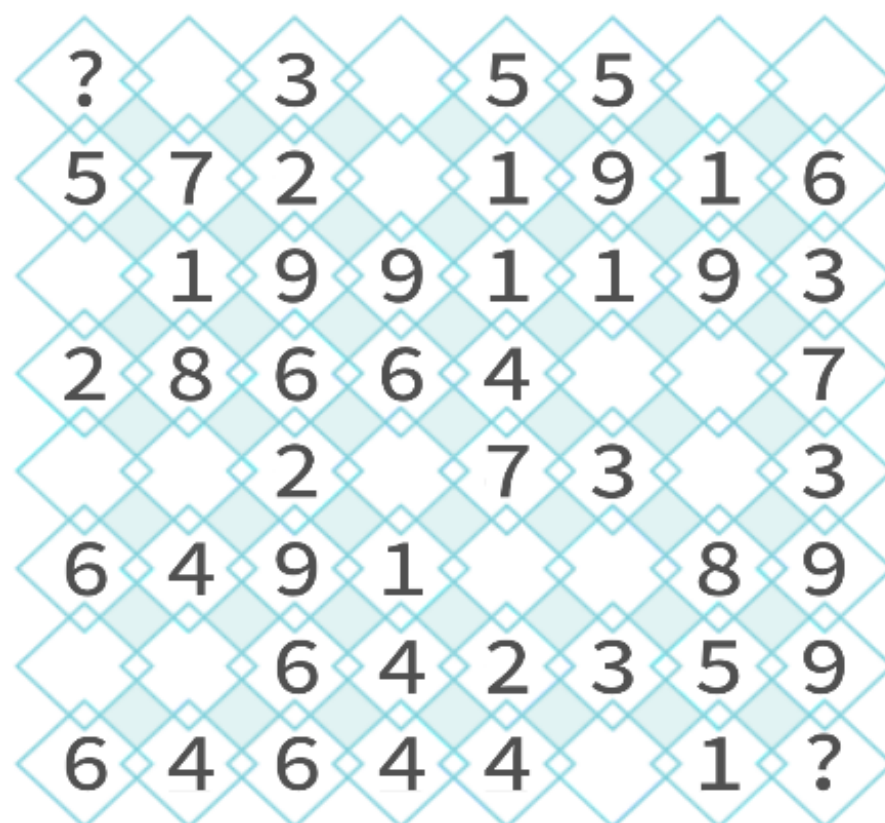


top left = eight      bottom right = three

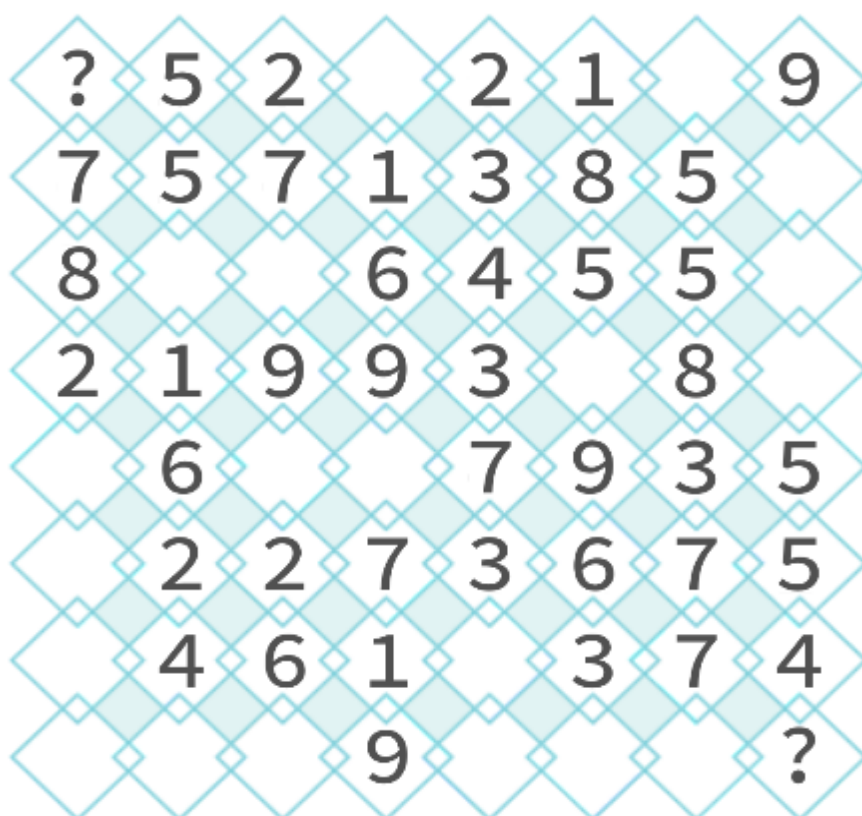




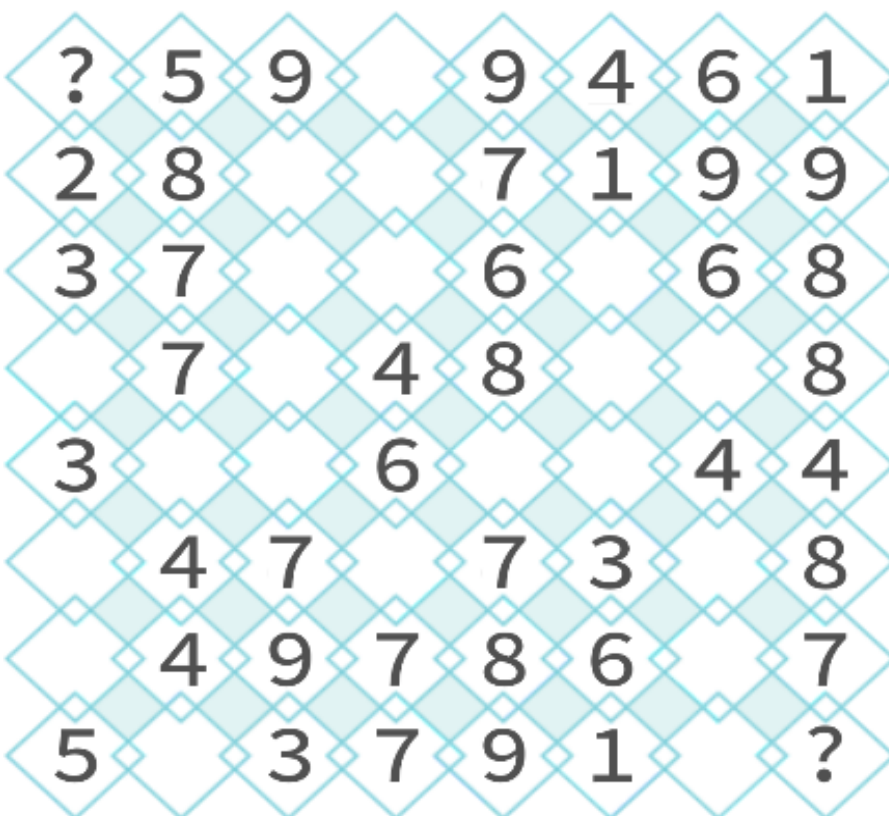
top left = seven      bottom right = three



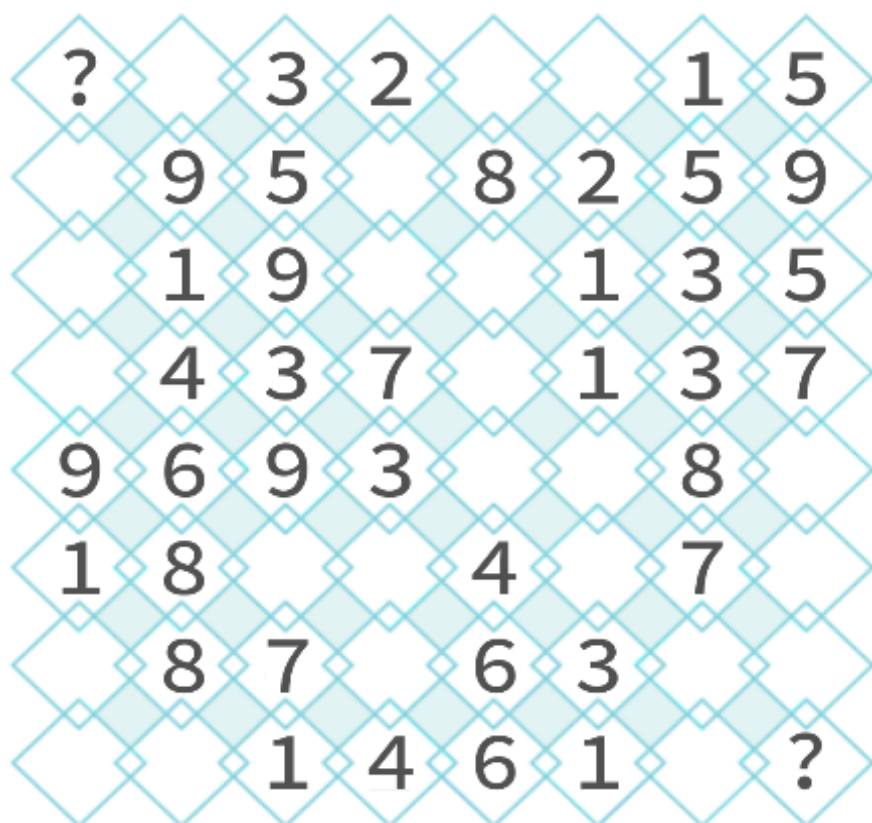
top left = five      bottom right = nine



top left = three bottom right = six



top left = six bottom right = five

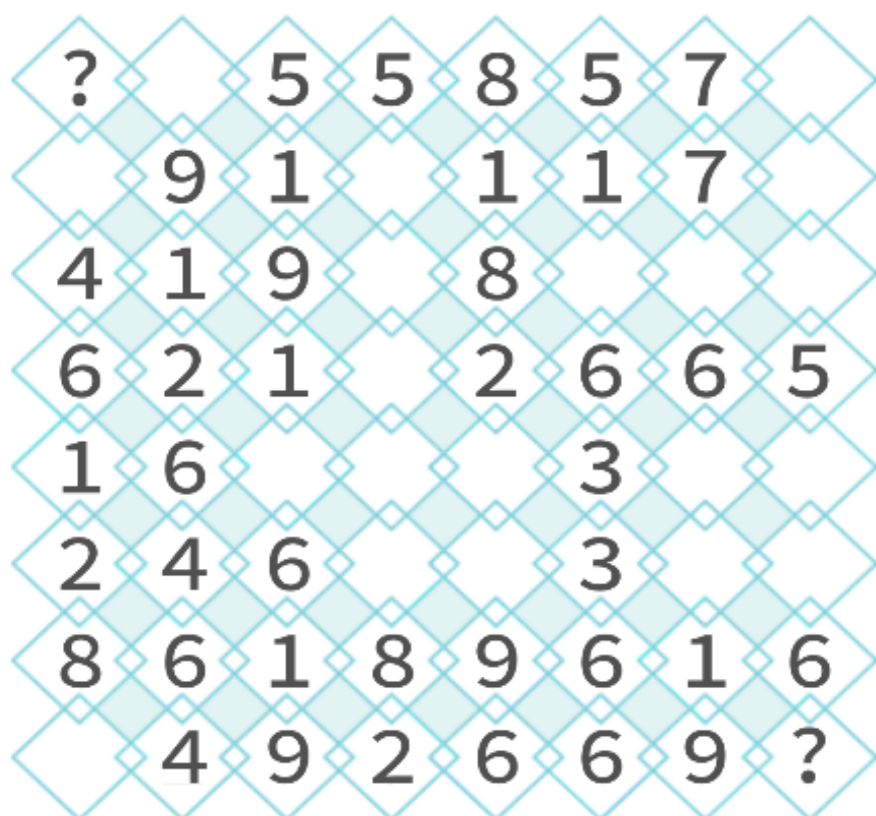


top left = one      bottom right = five



top left = one      bottom right = five

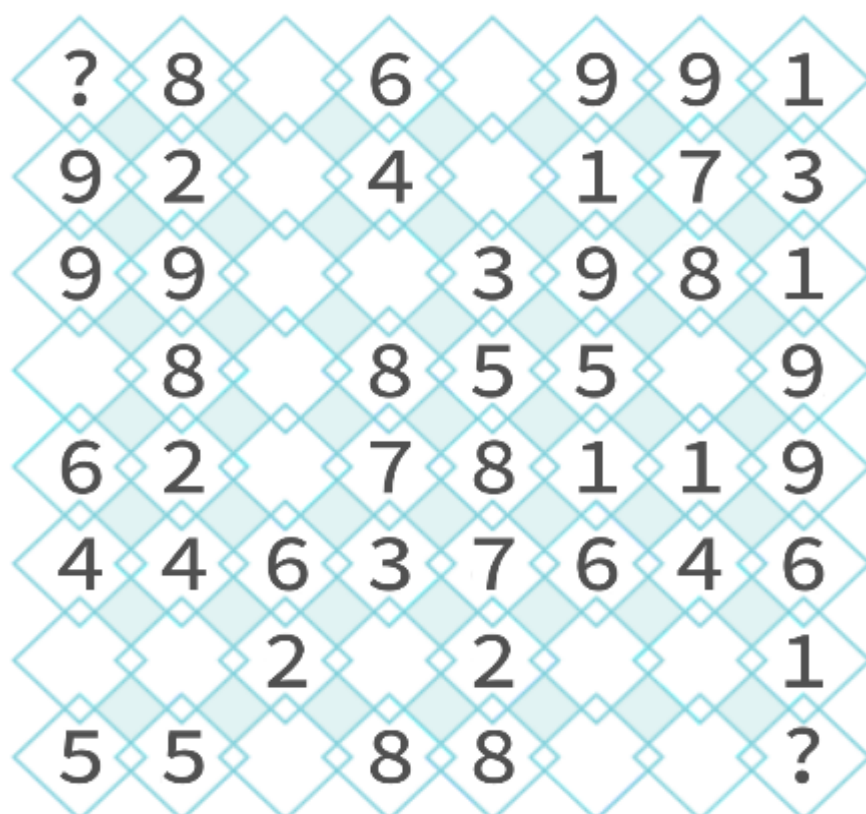




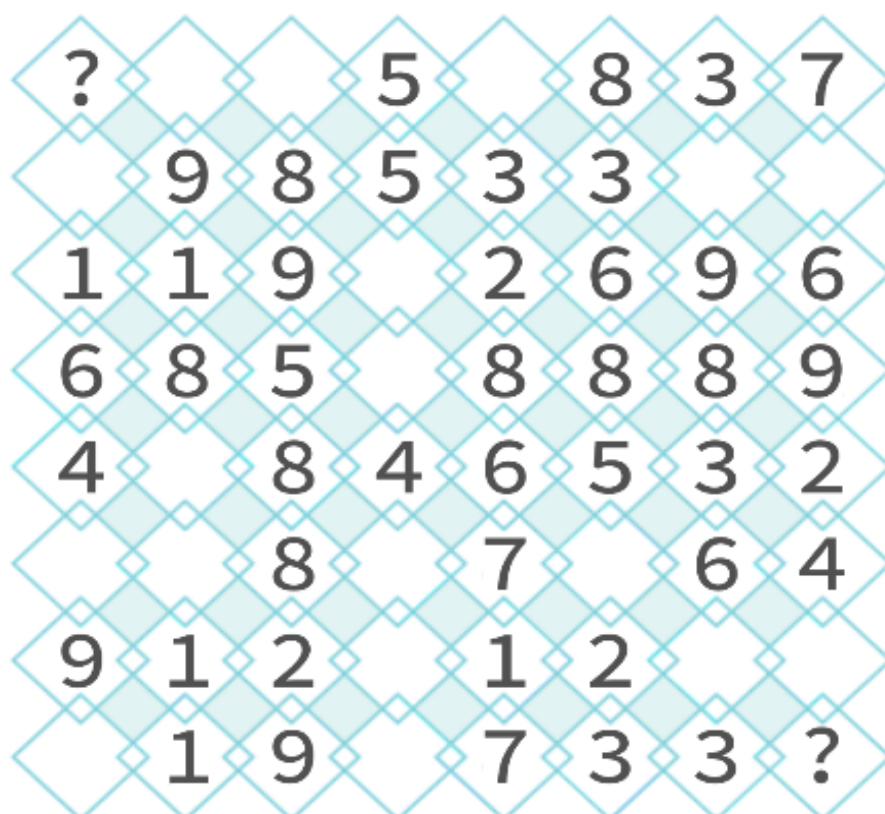
top left = one      bottom right = four



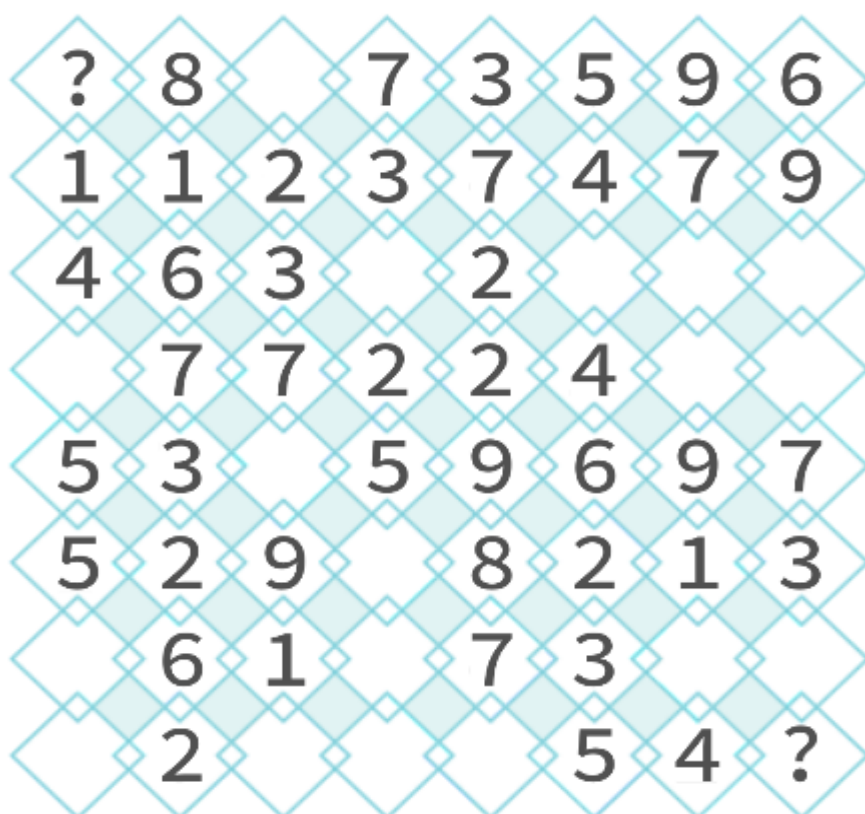
top left = six      bottom right = four



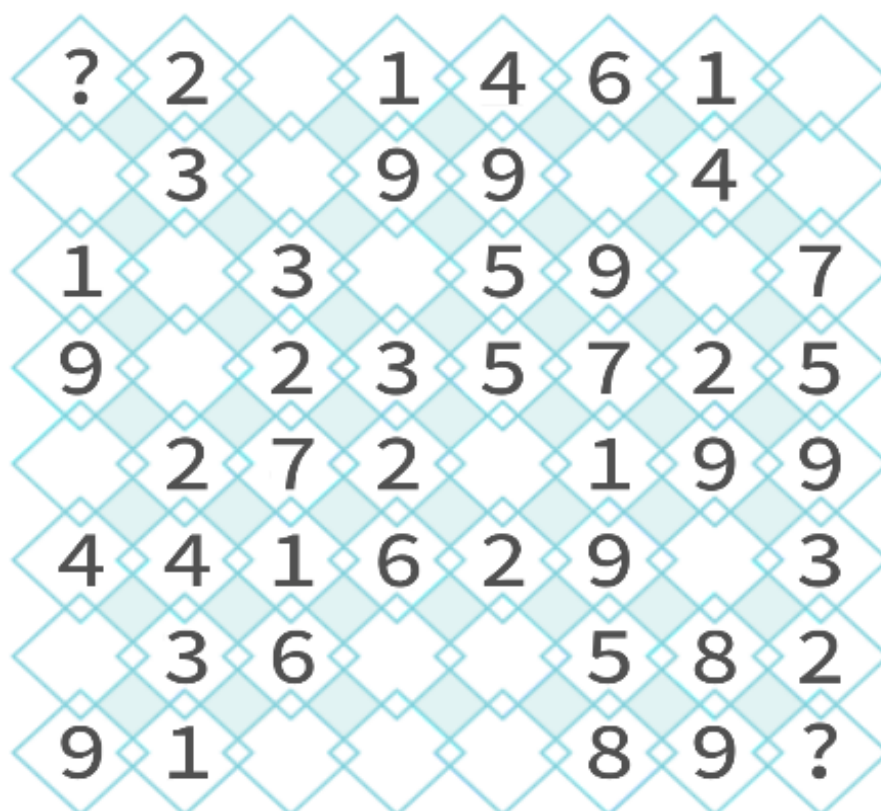
top left = three      bottom right = nine



top left = one      bottom right = seven

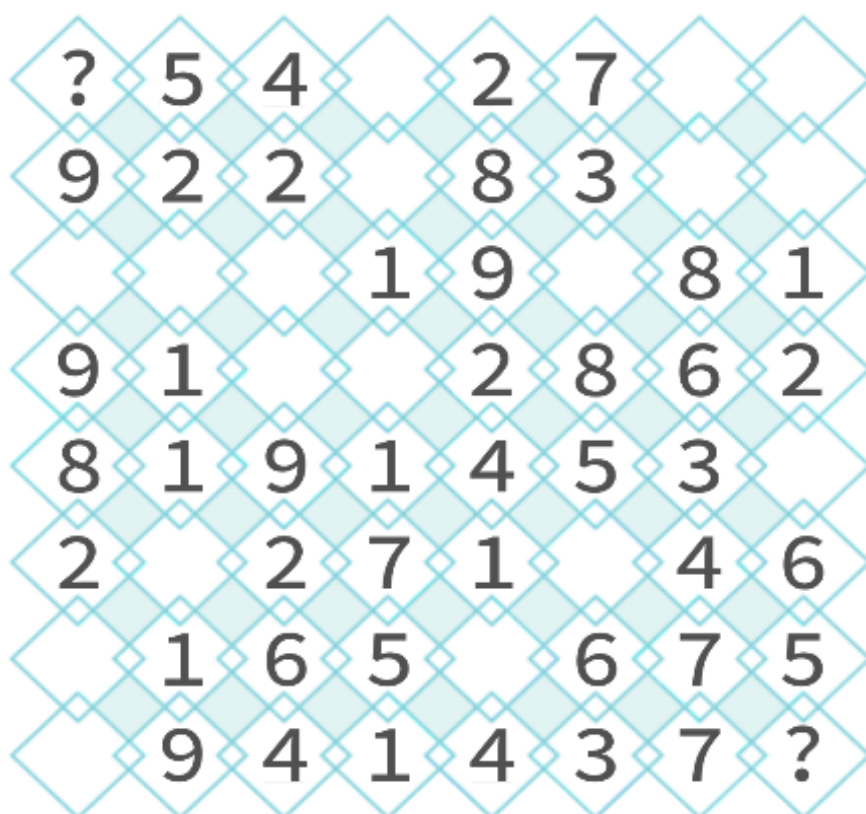


top left = eight      bottom right = one

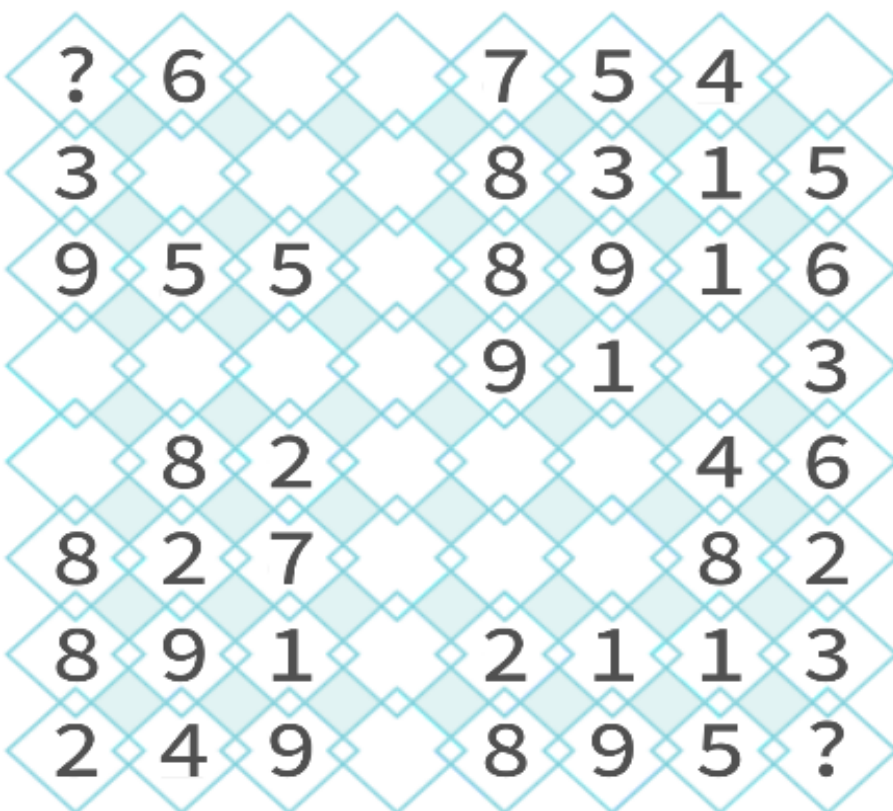


top left = five      bottom right = eight

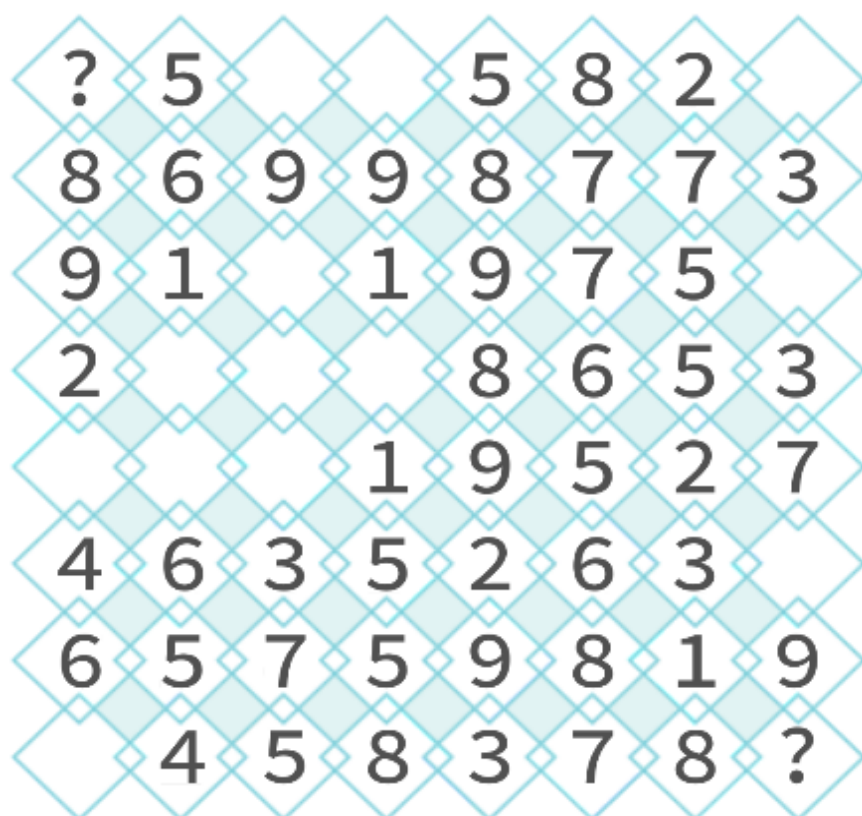




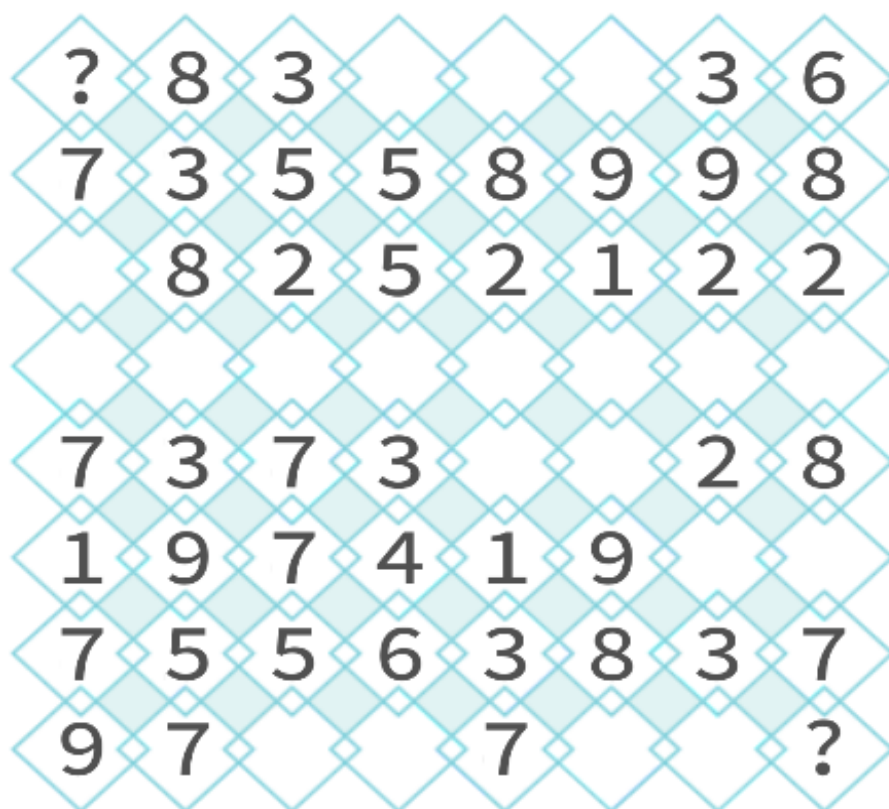
top left = eight      bottom right = two



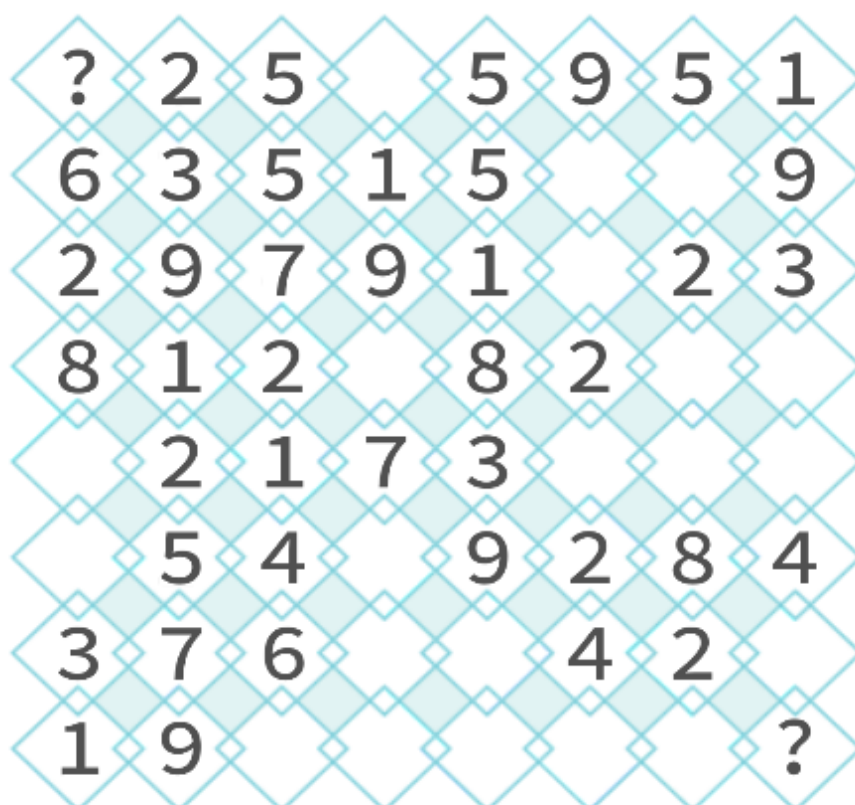
top left = two      bottom right = one



top left = zero      bottom right = nine

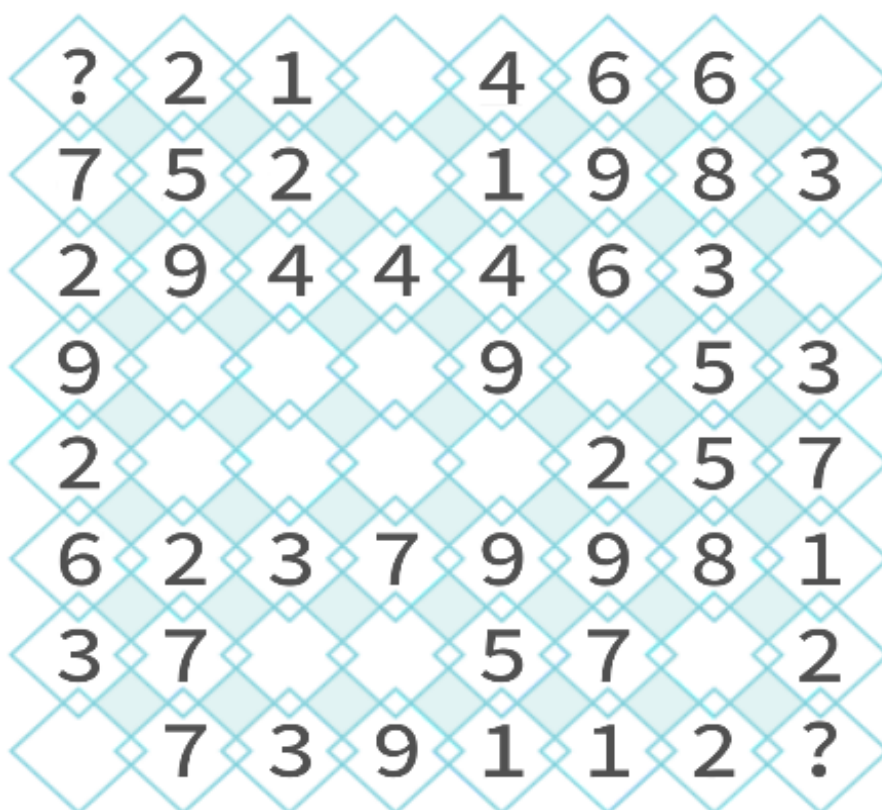


top left = four      bottom right = two



bottom right = one

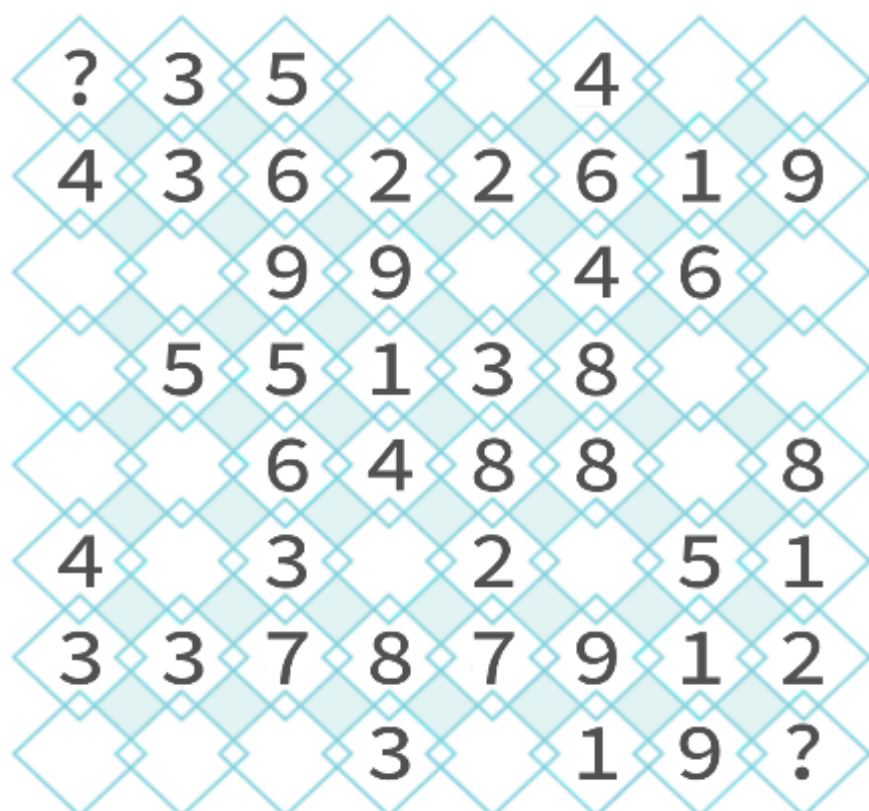
top left = two



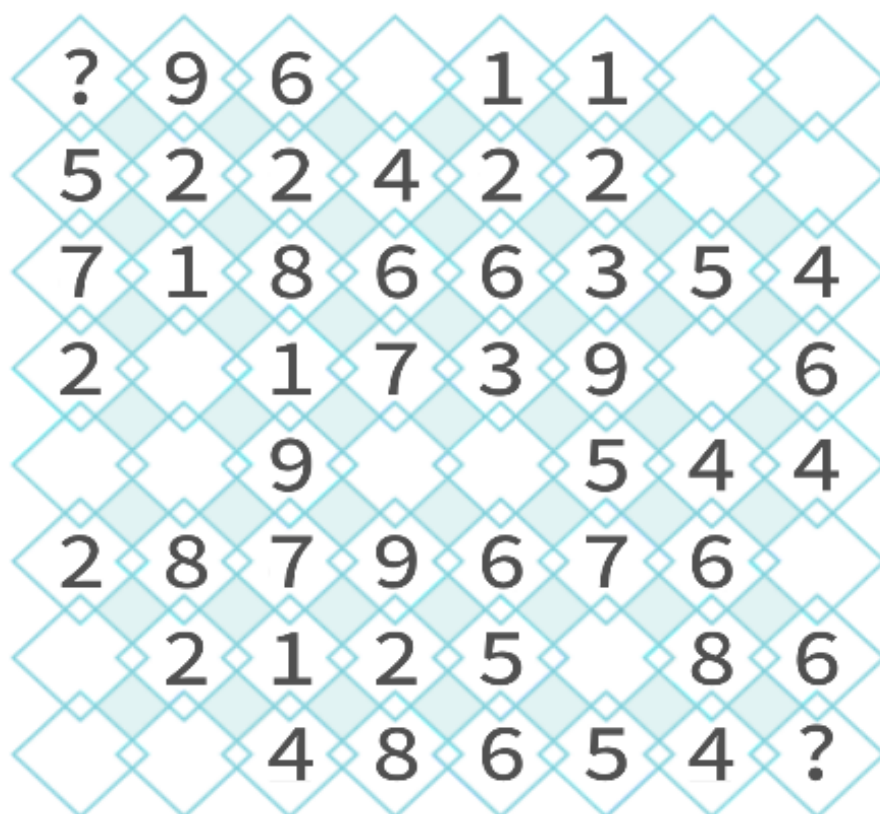
bottom right = five

top left = five

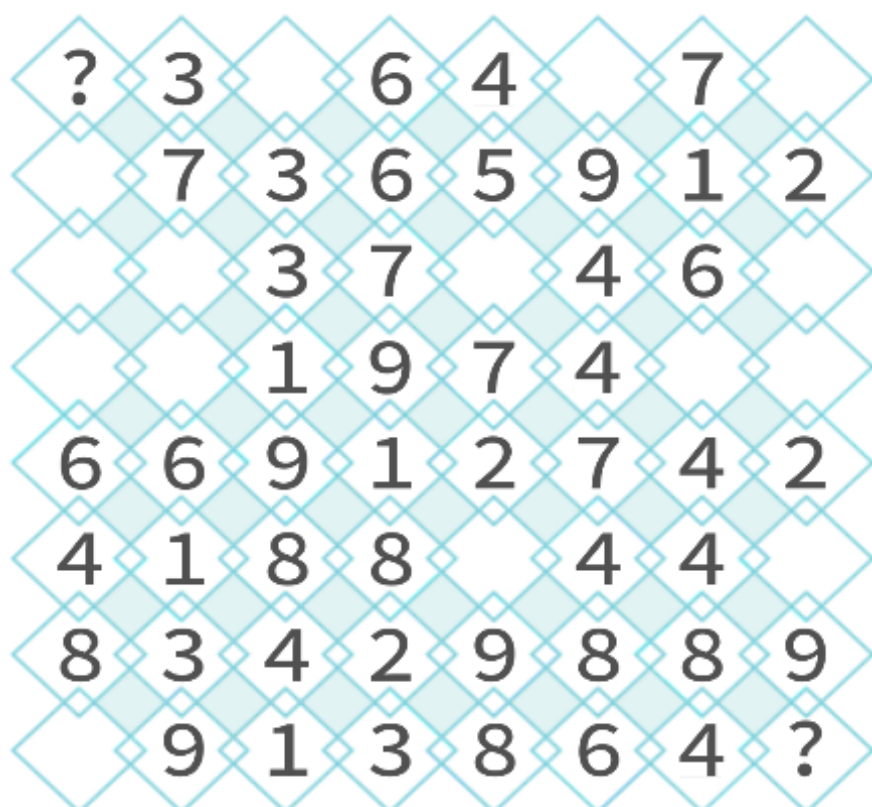




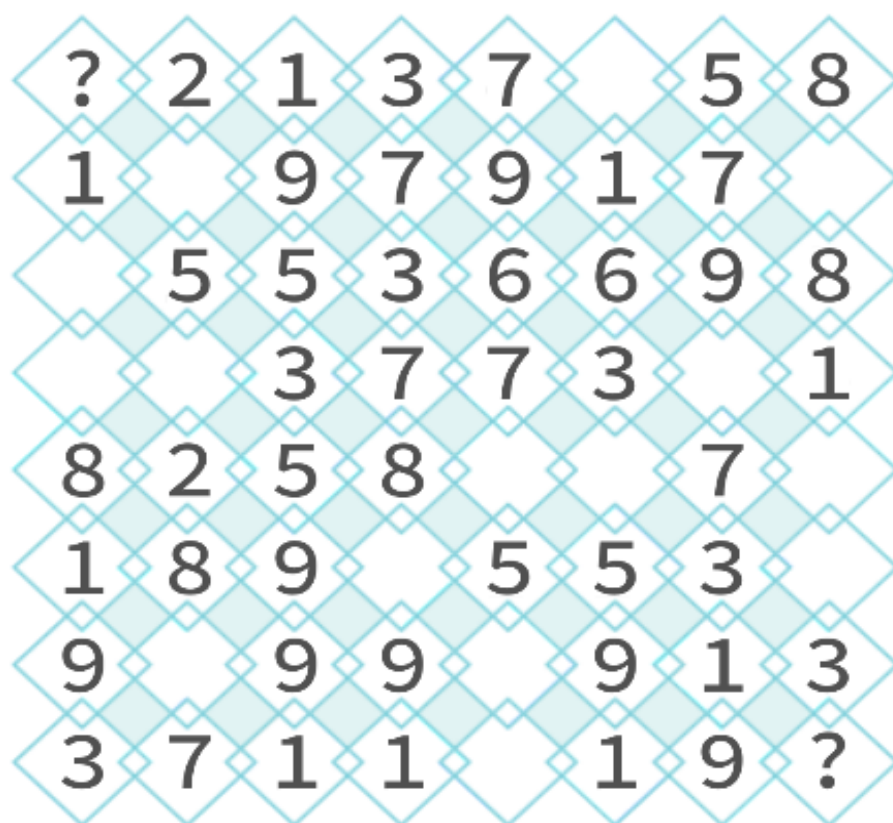
top left = five      bottom right = eight



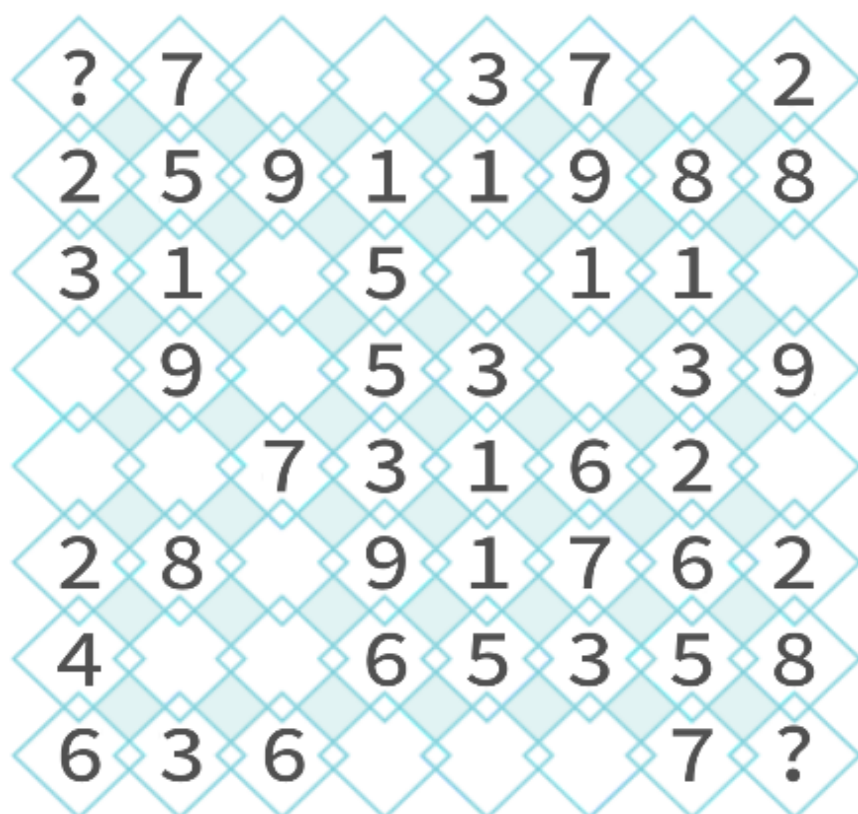
top left = four      bottom right = six



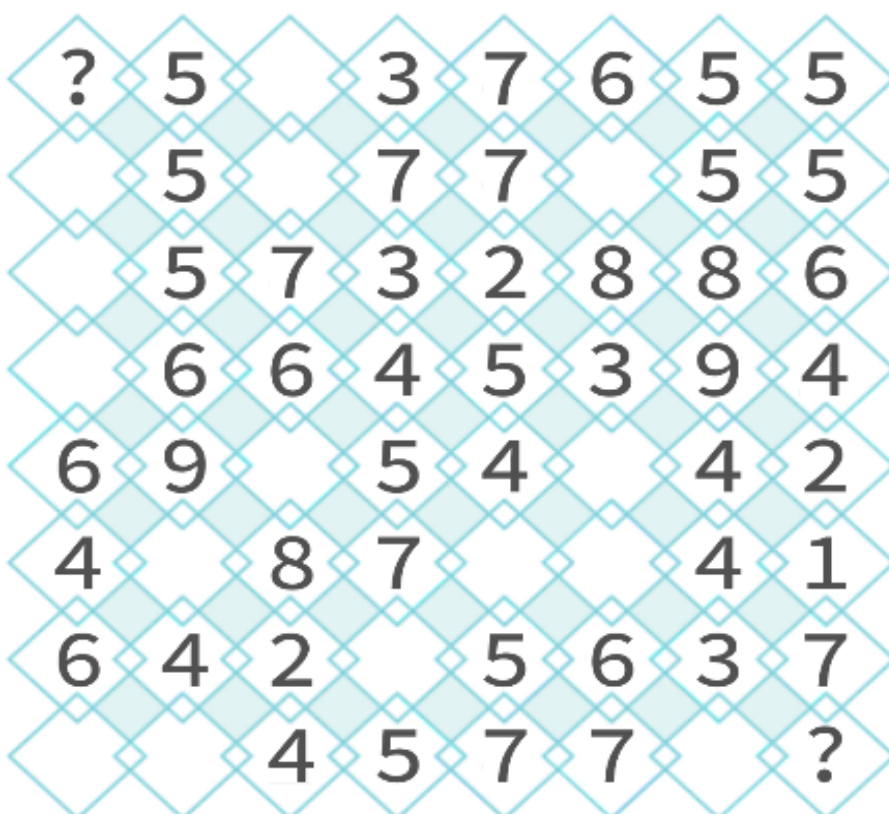
top left = seven      bottom right = one



top left = seven      bottom right = seven

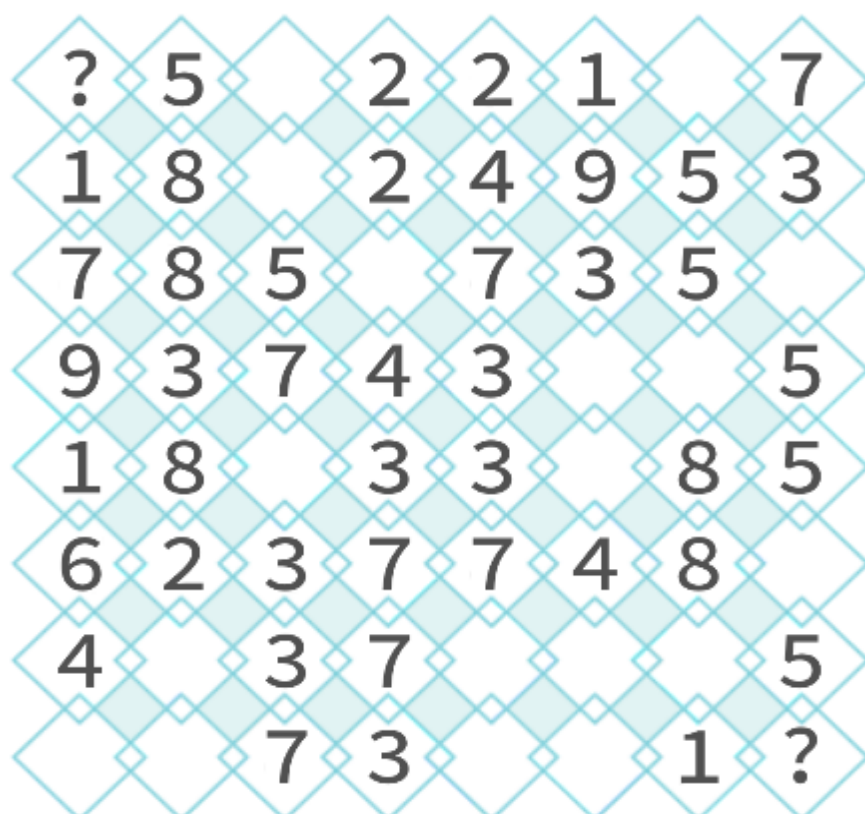


top left = three      bottom right = eight

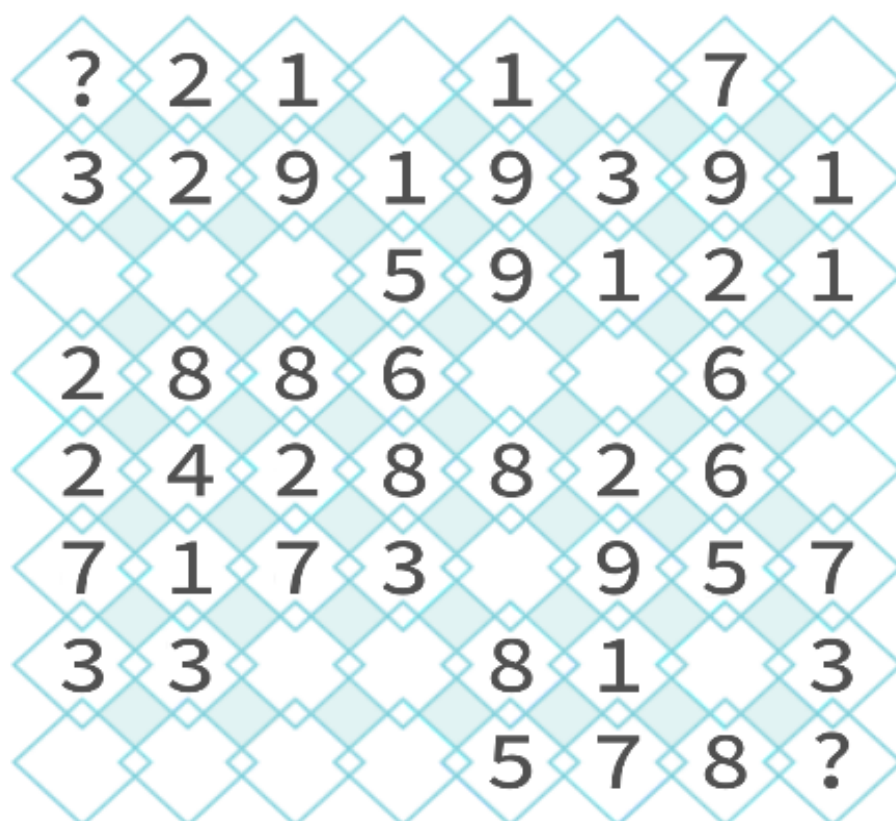


top left = five      bottom right = nine

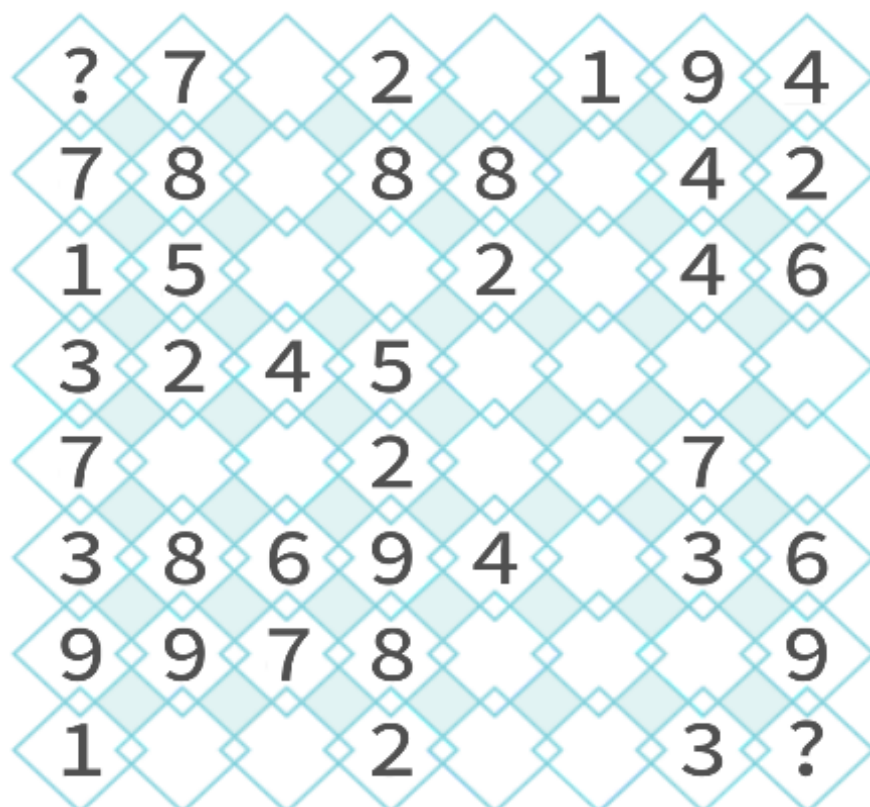




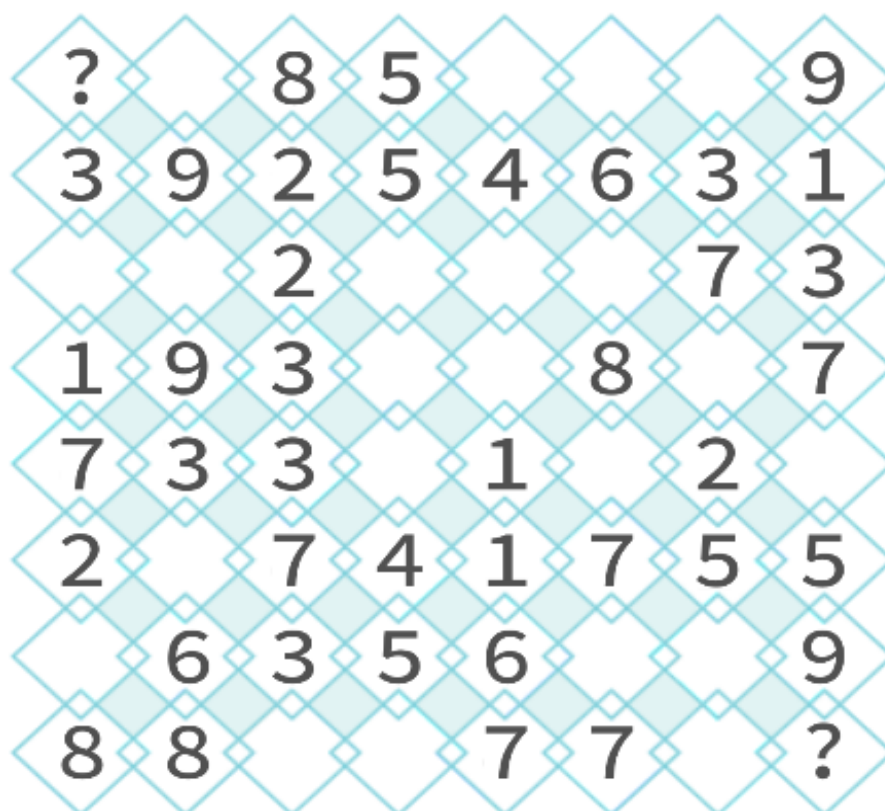
top left = six  
bottom right = four



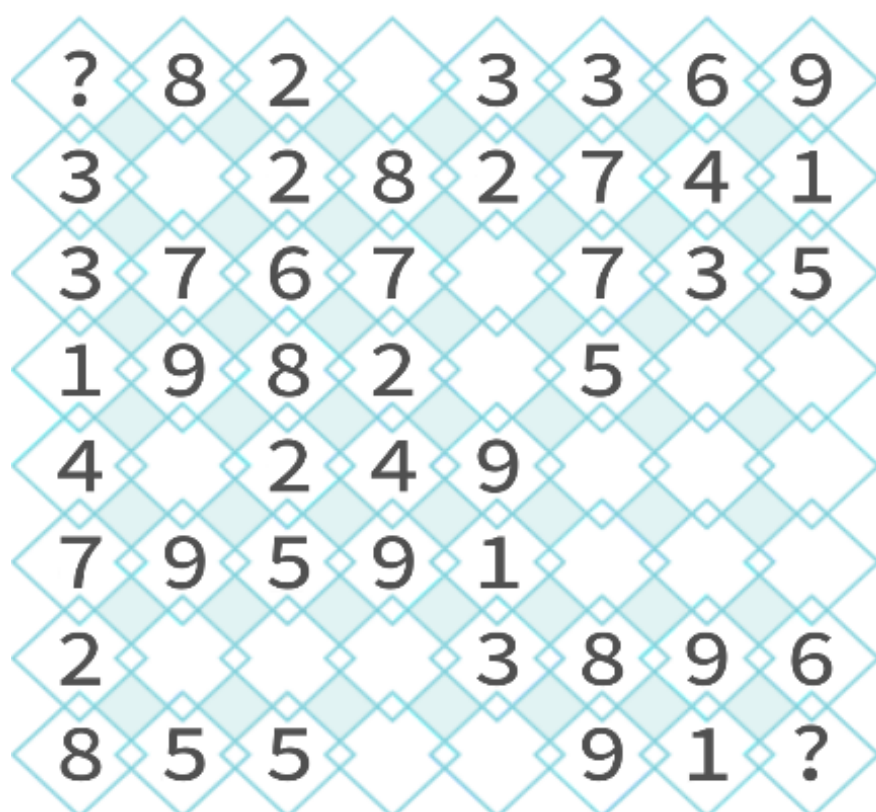
top left = three  
bottom right = two



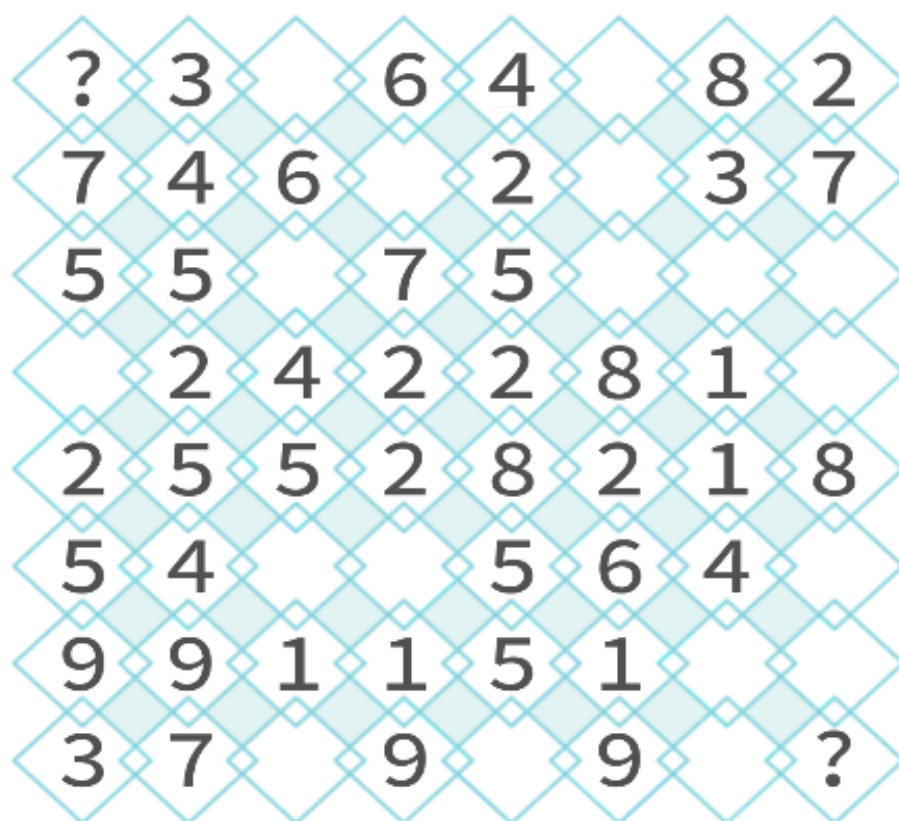
top left = three bottom right = two



top left = eight bottom right = one

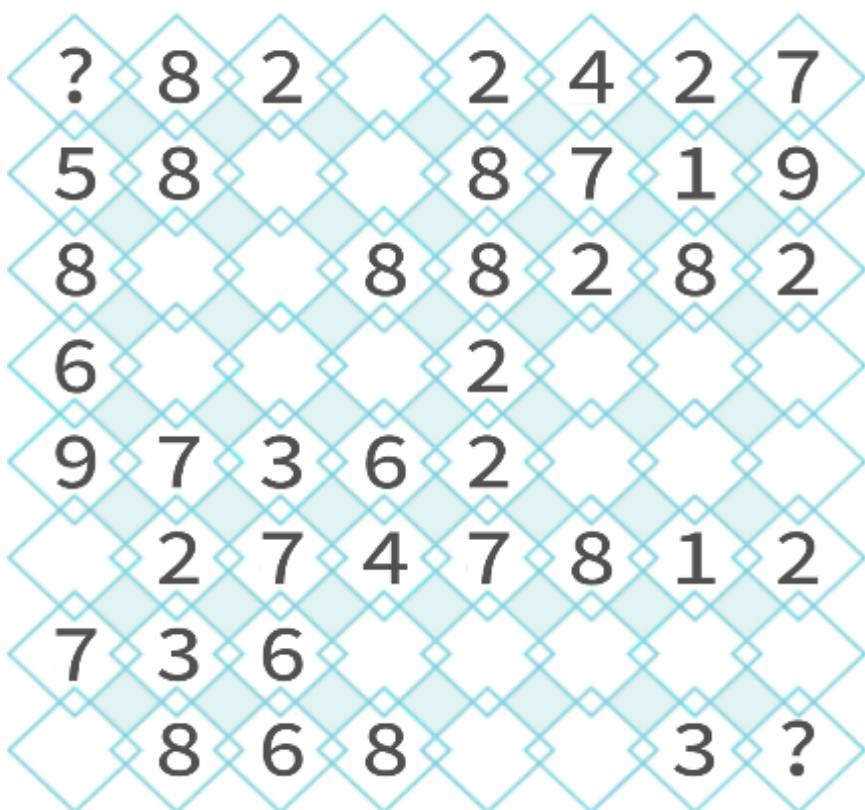


top left = nine      bottom right = four

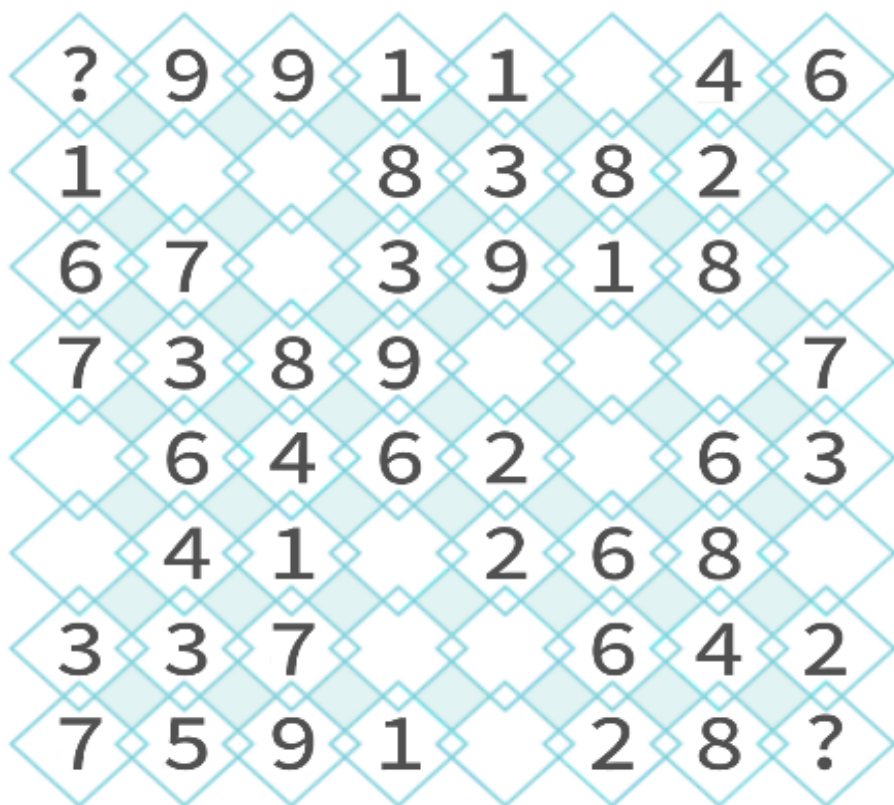


top left = six      bottom right = zero

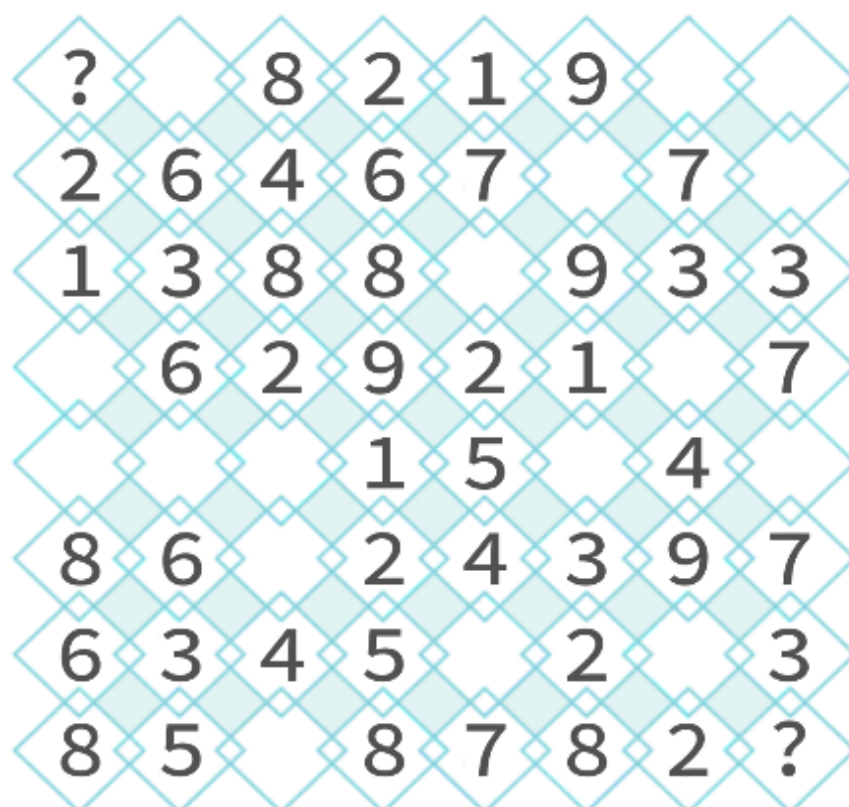




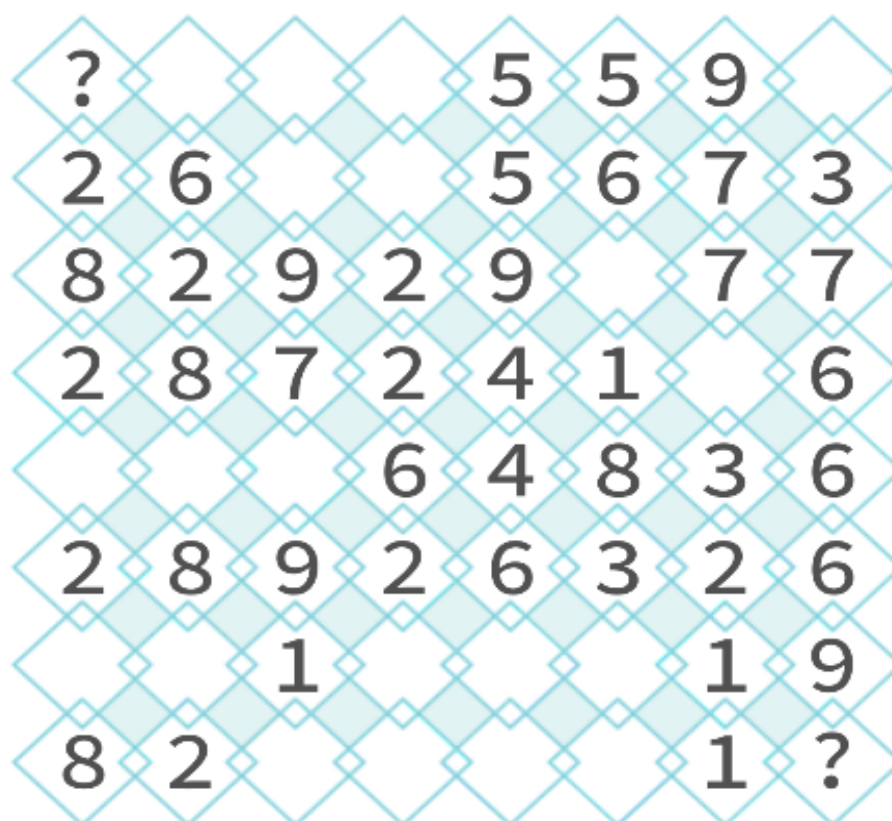
top left = seven      bottom right = seven



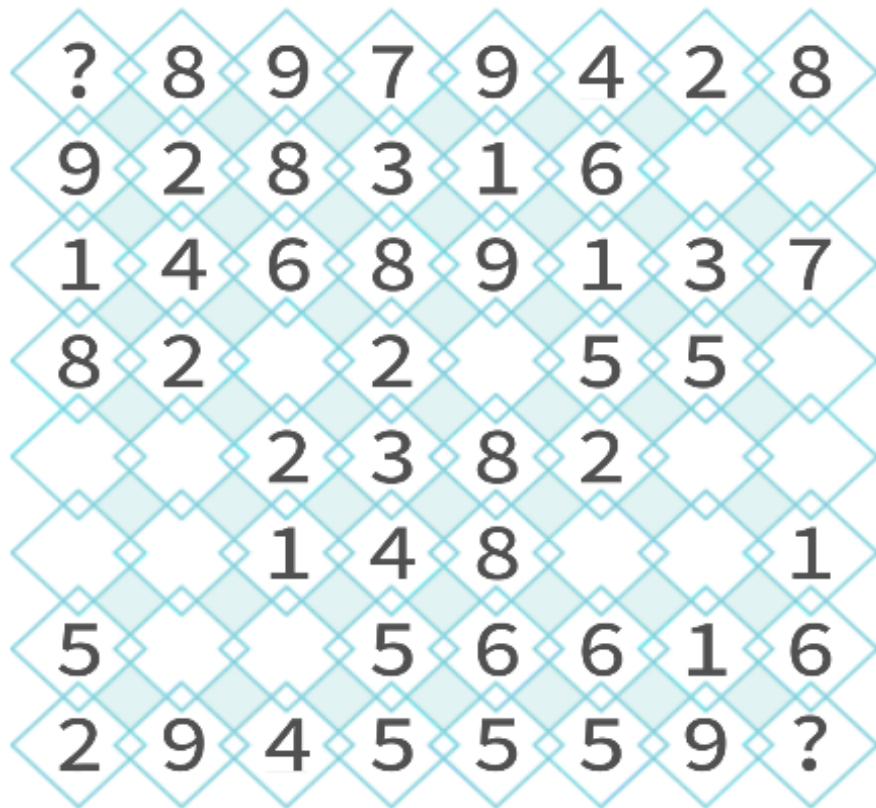
top left = seven      bottom right = eight



top left = right bottom right = right



top left = two bottom right = nine



top left = three      bottom right = three