FLIP

LMI Puzzle Test
November 2010
by David Millar

This Special Edition Booklet contains the entire Instruction Booklet and Puzzle Booklet from FLIP along with author commentary, answer keys, and bonus puzzles to try. I hope you enjoy this special booklet experiment!

FLIP is a variety of puzzles with a "FLIP" theme. Each puzzle has a component that can be reversed or flipped.

Thanks to the LMI team for allowing me the chance to hold this puzzle competition.

Special thanks to:
Deb Mohanty for facilitating the test, creating one of the puzzles, and much advice.
Grant Fikes for his advice and help test-solving and timing on the test.

David Millar
http://logicmastersindia.com/lmitests?test=M201011P http://thegriddle.net

FLIP

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Score Table

FLIP 'n' Fill Sequence	3 x 30 PTS
FLIP Shape Sudoku	1 x 50 PTS
FLIP Strips	1 x 45 PTS
FLIP Mirror Sums	2 x 40 PTS
FLIP Mirror 0-2-5	3 x 35 PTS
FLIP Slitherlink	1 x 65 PTS
FLIP Every Second Breakpoint	1 x 65 PTS
TOTAL	500 PTS

Timing/Bonus

Once started, you will have 50 minutes to complete FLIP.

If the test is submitted early, solvers recieve a bonus if at least 6 puzzles are correct.

6-8 correct	9-11 correct	12 correct
2 PT PER MINUTE	4 PT PER MINUTE	8 PT PER MINUTE

FLIP 'n' Fill Sequence 30PTS

Use the clues to fill the rows with digits. The marked column must contain a consecutive sequence starting with a digit and increasing by 1. (9 increases to 0.) Some of the answers must be flipped (reversed) to make the consecutive string.

A: a perfect square

B: Square root of A

C: A + B

D: A x 2

E: One-third of A

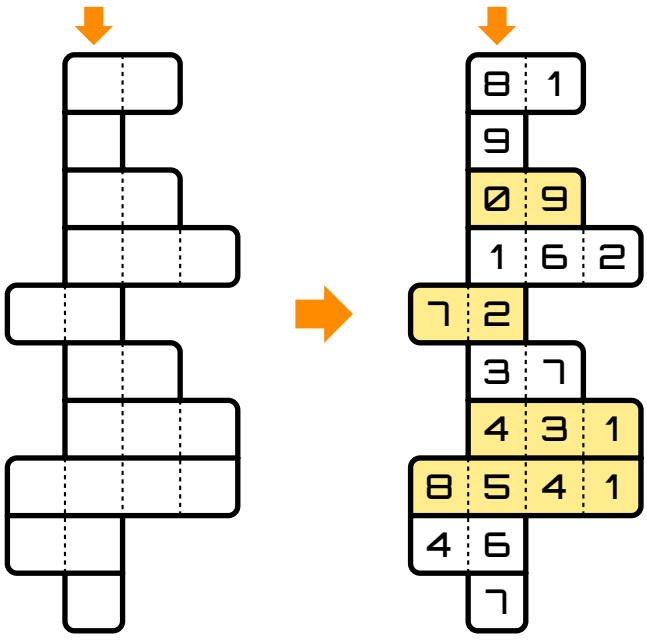
F: Digits total 10

G: A + J + K

H: B x D

J: B + F

K: Square root of (J + 3)



Originally we were going to use the top digit, but in the sample, 8 was mistaken for B, hence using the bottom (7) instead.

List the last digit of the consecutive string, then the letters of the flipped numbers in order. Do not count numbers that read the same forward and backward as flipped (i.e. 1, 121, etc). Example: 7CEGH

FLIP TRIO

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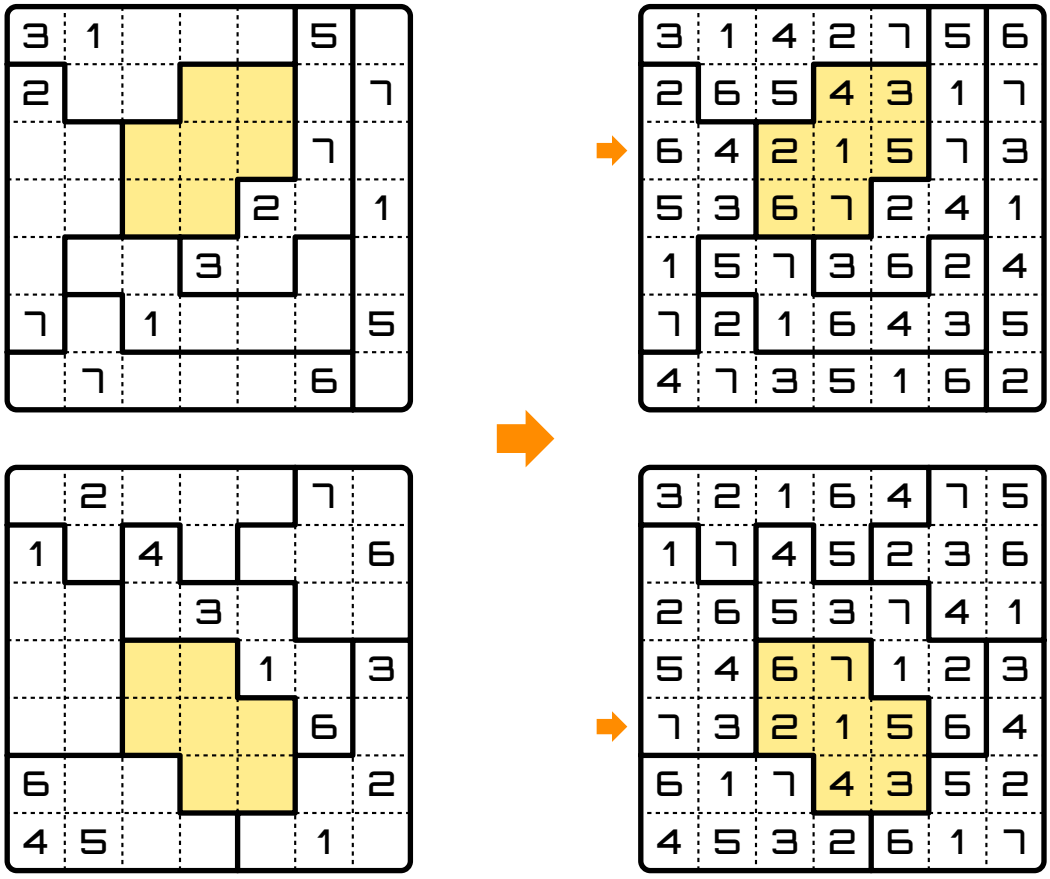
FLIP Shape Sudoku — 50PTS

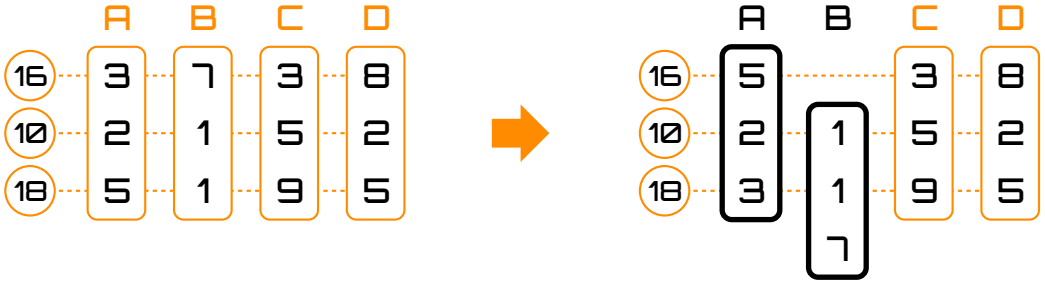
Fill each row, column, and shape with each digit 1 to 7. The orange shape in the two puzzles are flipped mirror images.



List the marked rows left to right.
Example: 6421573, 7321564

FLIP Strips — 45PTS

Flip some of the strips vertically to make the sums. You may move any flipped strip up or down any number of spaces as desired.



List the flipped strip letters. Example: AB

This and FLIP 'n' Fill Sequence were sort of challenges to make non-grid type puzzles that still fit the FLIP theme.,

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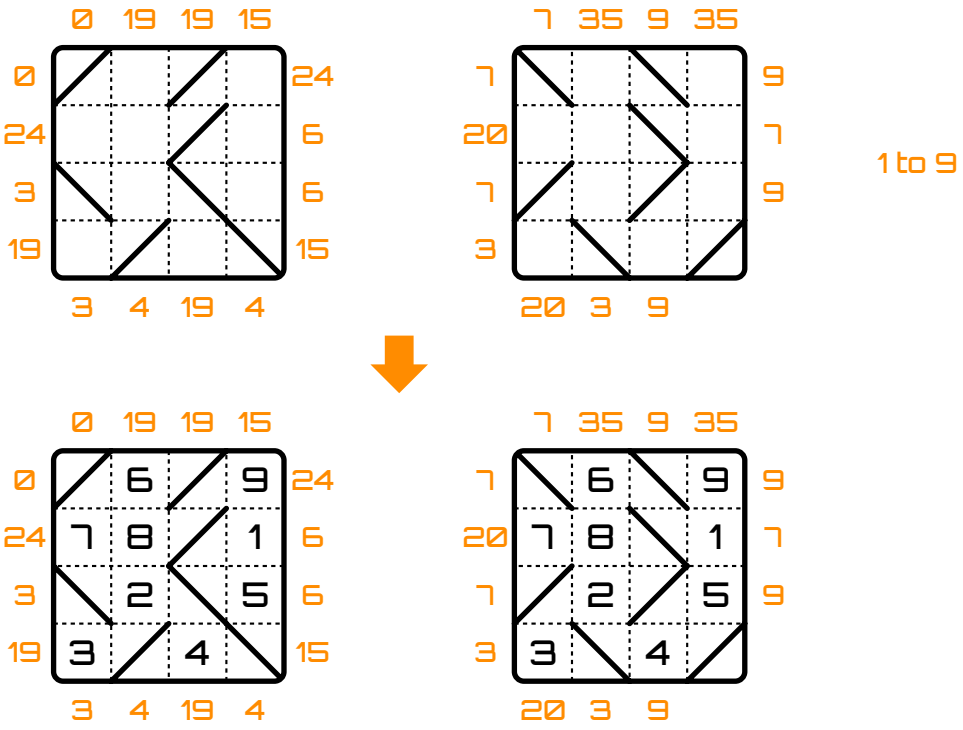
All of the mirror puzzles had all clues given in the first draft of the PB.

As you saw (or will see) there are way fewer clues in the test puzzles than in the samples.

FLIP Mirror Sums — 40PTS

Fill both copies of the grid with one of each number to make the given sums. The mirrors are flipped in the grids, but the numbers must be in the same locations.



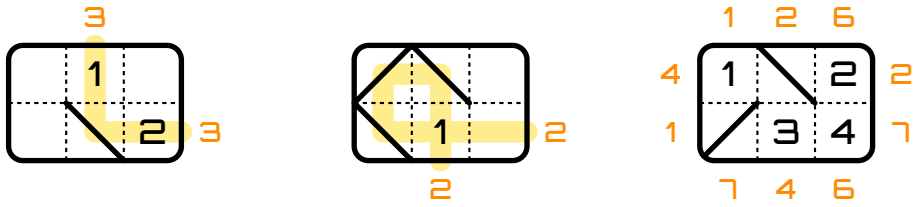
List the numbers in order from left to right, starting at the top row and moving to the bottom row. Example: 697812534

The title of this section makes a reference to the Insane Clown Posse song "Miracles" which features the line "Magnets; how do they work?"

The only person I know of who caught this was Tyler Hinman.

Mirrors: how do they work?

Mirror puzzles use mirrors to change a line of sight through a puzzle. In the mirror puzzles in this test, a sum is given along a side of the puzzle, and the line of sight starts with the number and points into the grid. From there, it continues straight until reaching a mirror or leaivng the grid. Examples are given below:



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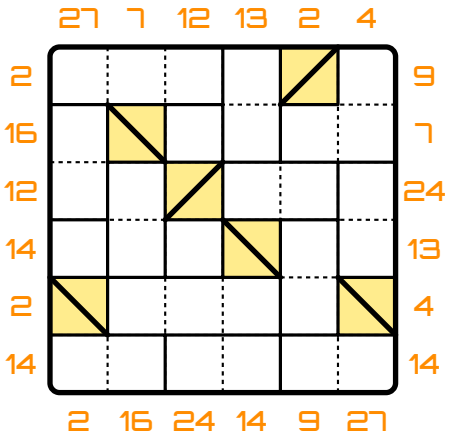
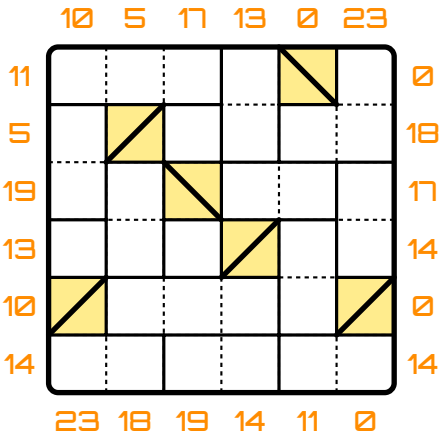
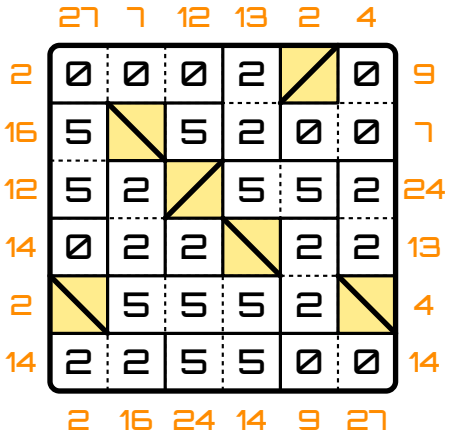
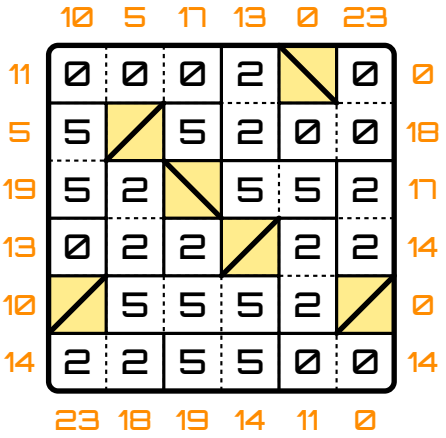
FLIP Mirror 0-2-5 — 35PTS

Solve the same way as FLIP Mirror Sums, but only using the digits 0, 2, and 5. Outlined shapes must contain the same digit throughout.







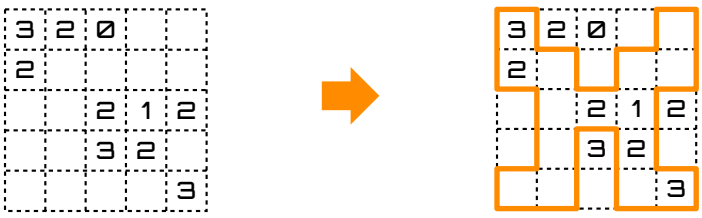


List the number of 2s in each row from top to bottom.
Example: 112412

While we were brainstorming, Deb had a few other slitherlink based ideas: two loops having symmetry about a center point, possibly one having masyu clues. In the end, this seemed the best option.

FLIP Slitherlink — 65PTS

Create a loop through the grid such that each digit tells how many loop pieces surround it. The loop must be symmetric across either the horizontal or vertical axis when complete.



List the number of cells outside the loop per column.
Example: 21412

FLIP

ESB

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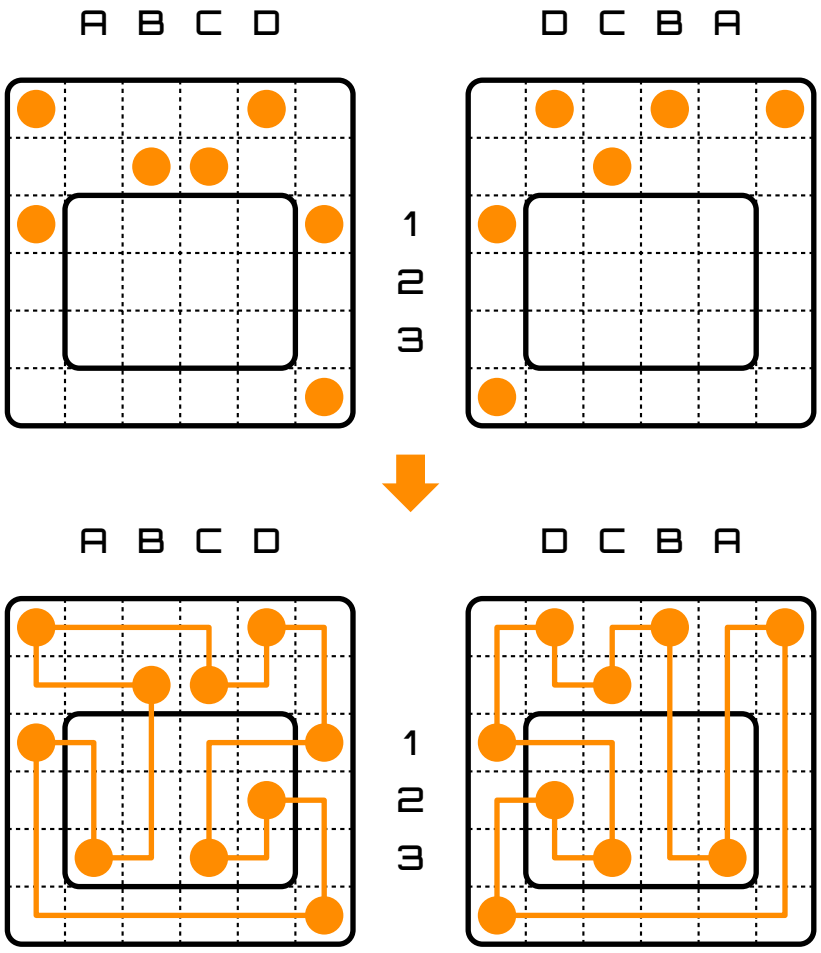
I was very happy that Deb offered to make this puzzle for the test. ESB is a type I have enjoyed solving but haven't tried making yet, so to have an ESB with the FLIP theme was fun just for me to solve myself.

FLIP Every Second Breakpoint — 65PTS

FLIP ESB created by Deb Mohanty

Create a loop through each grid such that every cell contains part of the loop and every other 90 degree turn takes place in a cell with a dark circle. The loop must turn at every dark circle.

The grids are missing some circles from the outlined rectangles. The circles must be found and placed where needed. When complete, the circles in the rectangles will mirror one another.



List the location of the placed circles using the row and column names indicated and ordered alphabetically. Example: A3C3D2

End of Instruction Booklet

Next page starts the puzzle booklet. The answer keys to the puzzles will be featured at the back of the booklet after the bonus materials. (Answer keys for the bonus puzzles can be found back there as well.)

FLIP 'n' Fill Sequence 30PTS

Use the clues to fill the rows with digits. The marked column must contain a consecutive sequence starting with a digit and increasing by 1. (9 increases to 0.) Some of the answers must be flipped (reversed) to make the consecutive string.

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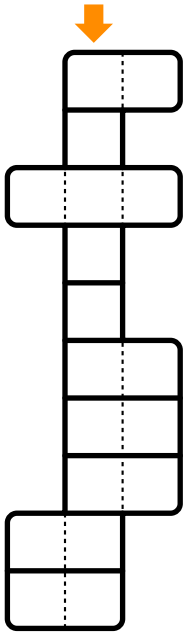
#1

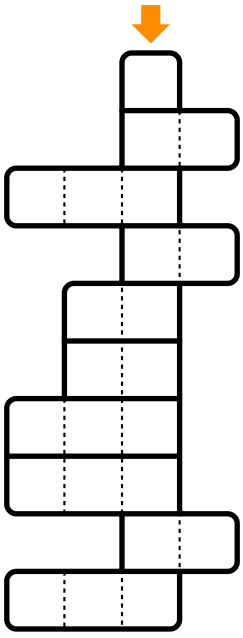
A: a perfect square
B: a perfect square
C: A x E
D: Square root of A
E: K / D
F: D x 3
G: A - E
H: A + B
J: D + E
K: A + D



Wording got tricky here. Originally, the clues that say "a perfect square" read "A square" which may have been interpreted as line A times itself.

#2

A: a perfect square
B: a perfect square
C: E x J
D: A x E
E: One-third of (B + F)
F: A + B
G: C - H
H: A x F
J: A + E
K: F + G



List the last digit of the consecutive string, then the letters of the flipped numbers in order. Do not count numbers that read the same forward and backward as flipped (i.e. 1, 121, etc).

FLIP

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FLIP 'n' Fill Sequence — 30PTS

(Rules on previous page.)

#3

A: E x F

B: a perfect square

C: B + E

D: G - F

E: Square root of B

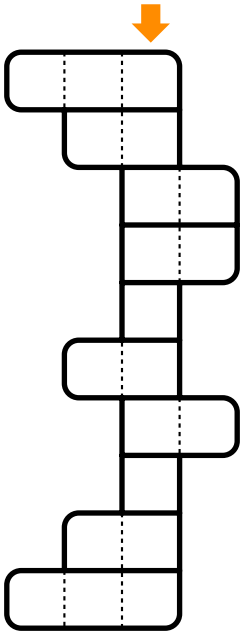
F: One-third of G

G: a perfect square

H: D / E

J: B + D

K: D + G



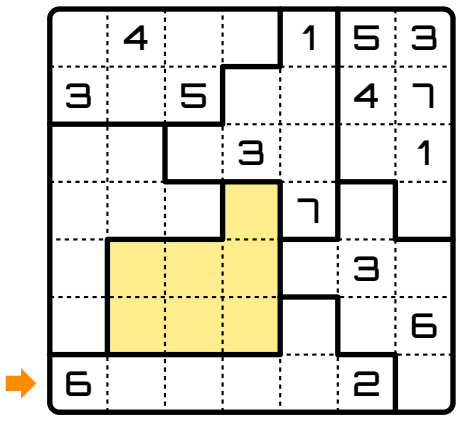
FLIP Shape Sudoku — 50PTS

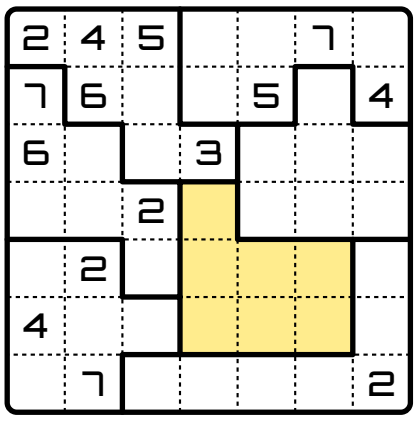
Fill each row, column, and shape with each digit 1 to 7. The orange shape in the two puzzles are flipped mirror images.

Although it was by no means memorable, no test would be complete without a sudoku variant.

I chose shape sudoku to add interest.

#4





List the marked rows left to right.

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FLIP Strips — 45PTS

Flip some of the strips vertically to make the sums. You may move any flipped strip up or down any number of spaces as desired.

	A	B	C	D	E
26	1	2	9	1	2
27	3	8	0	6	3
20	5	7	2	5	9
17	6	3	5	5	9

List the flipped strip letters.

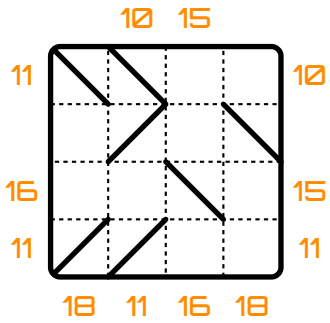
#5

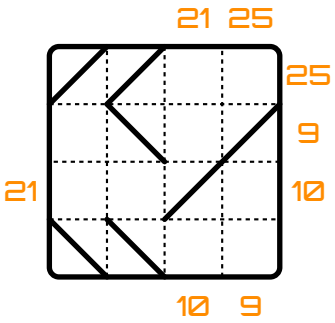
Grant Fikes:
"Least favorite was probably Flip Strips. But even that was more tolerable than expected."

FLIP Mirror Sums — 40PTS

Fill both copies of the grid with one of each number to make the given sums. The mirrors are flipped in the grids, but the numbers must be in the same locations.

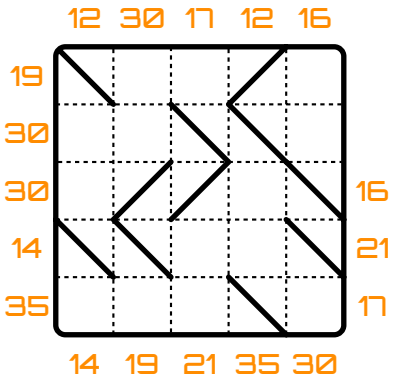
#6

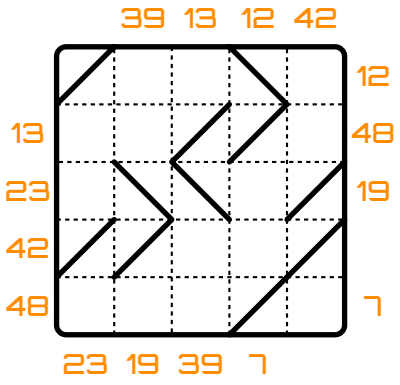




1 to 9

#7





1 to 14

List the numbers in order from left to right, starting at the top row and moving to the bottom row.

FLIP

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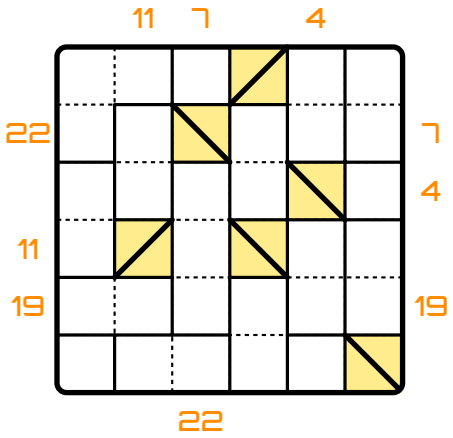
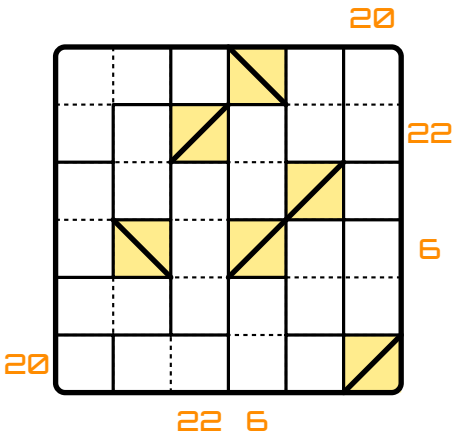
FLIP Mirror 0-2-5 — 35PTS

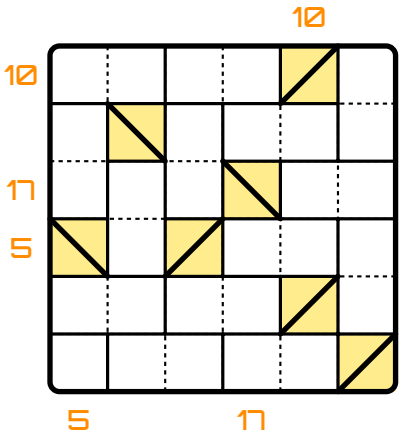
Solve the same way as FLIP Mirror Sums, but only using the digits 0, 2, and 5. Outlined shapes must contain the same digit throughout.

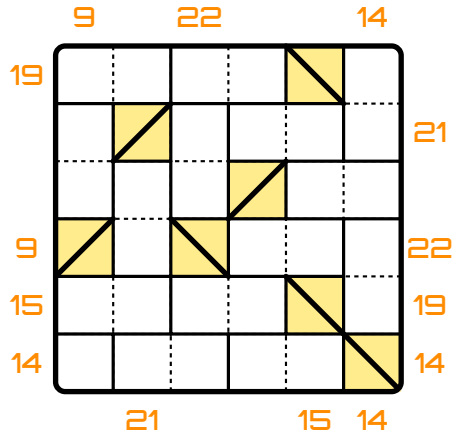
#8



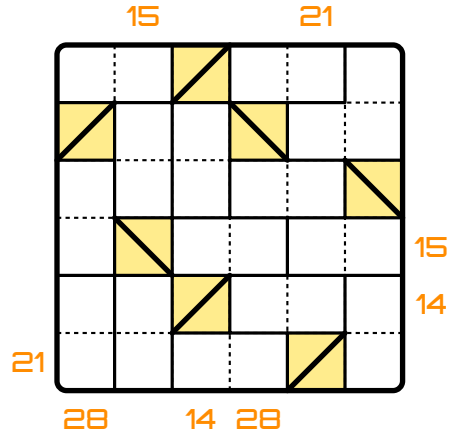


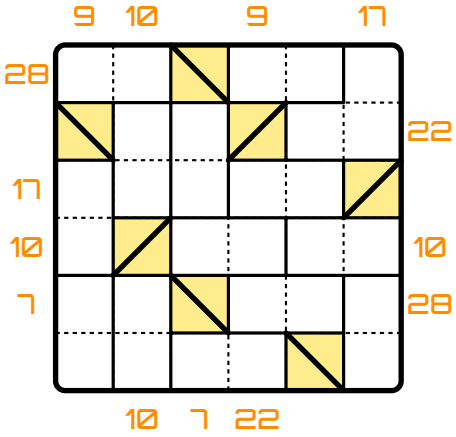
#9





#10





List the number of 2s in each row from top to bottom.

FLIP

ESB

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#11

I thought that this would be a trickier puzzle, but a solver pointed out that a 3 cannot touch the line of symmetry... !

FLIP Slitherlink — 65PTS

Create a loop through the grid such that each digit tells how many loop pieces surround it. The loop must be symmetric across either the horizontal or vertical axis when complete.

2					3		
			3			2	
							2
	1		2		1		
						1	
3		1		1			
					3		
	1	2	2				3

List the number of cells outside the loop per column.

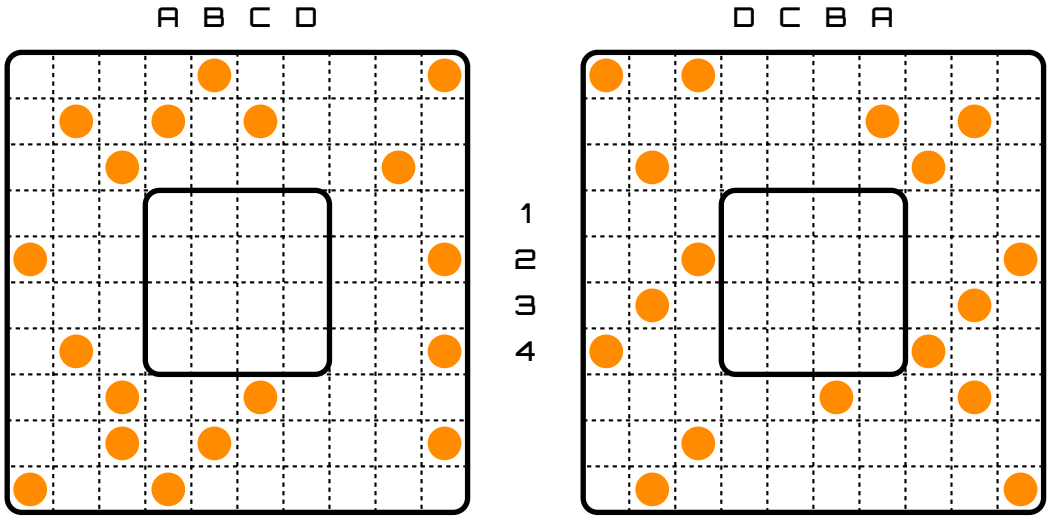
FLIP Every Second Breakpoint — 65PTS

FLIP ESB created by Deb Mohanty

Create a loop through each grid such that every cell contains part of the loop and every other 90 degree turn takes place in a cell with a dark circle. The loop must turn at every dark circle.

The grids are missing some circles from the outlined rectangles. The circles must be found and placed where needed. When complete, the circles in the rectangles will mirror one another.

#12



List the location of the placed circles using the row and column names indicated and ordered alphabetically.

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FLIP Bonus Puzzles

These bonus puzzles include extras from my notebook that didn't make it into the test, plus more puzzles taken from the favorite types of those who took the test.

Enjoy!

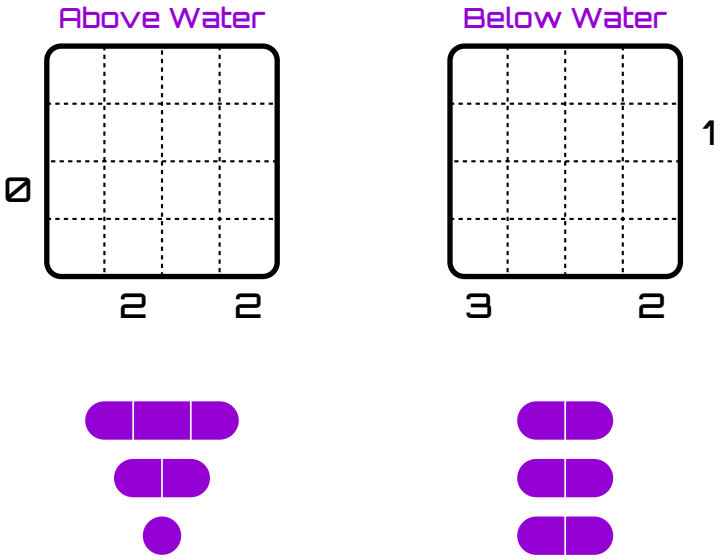
FLIP Battleships 'n' Subs

Find the battleships in the water on the left and the battleships in the water on the right. No two vessels on the same grid can touch - not even diagonally. In addition, a battleship cannot exist in the water above a submarine.

I decided not to go through with this type since I don't make very good battleship puzzles.

One never knows... it may appear in a test in the future - maybe FLIP 2?

#13

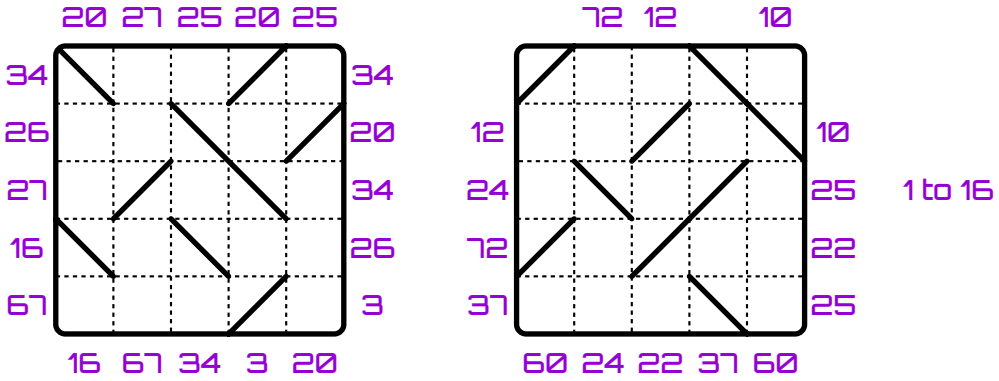


FLIP Mirror Sums

Fill both copies of the grid with one of each number to make the given sums. The mirrors are flipped in the grids, but the numbers must be in the same locations.

Found this extra puzzle in my notebook after the PB was finalized and it was too late to add it.

#14



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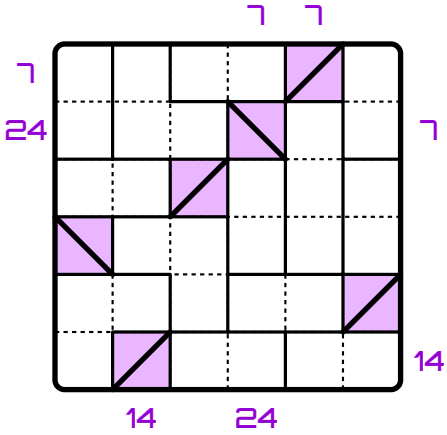
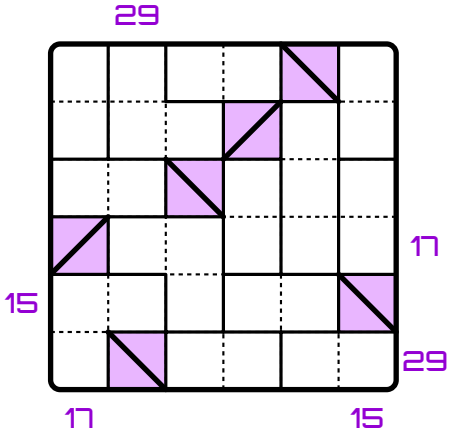
FLIP Mirror 0-2-5

Solve the same way as FLIP Mirror Sums, but only using the digits 0, 2, and 5. Outlined shapes must contain the same digit throughout.

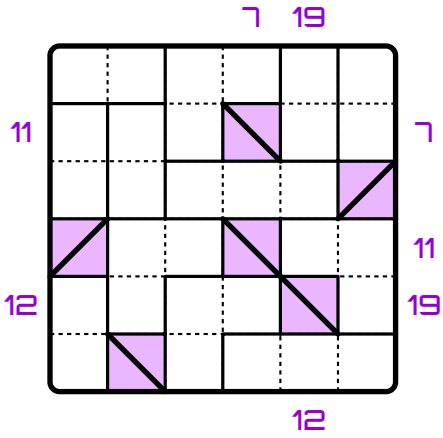
#15

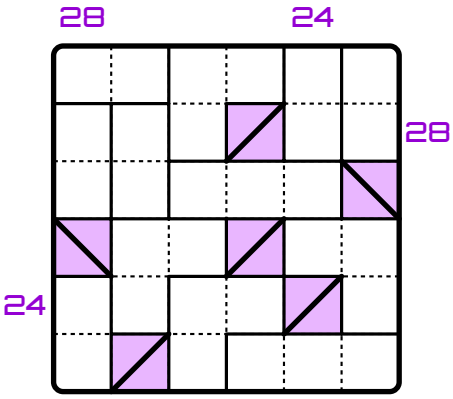
The FLIP Mirror 0-2-5 puzzles were kind of a big hit, so I made a few more for the SB. !



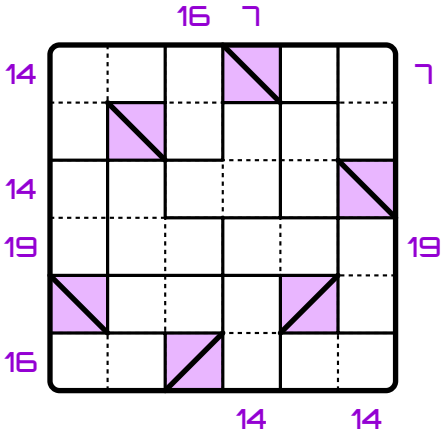


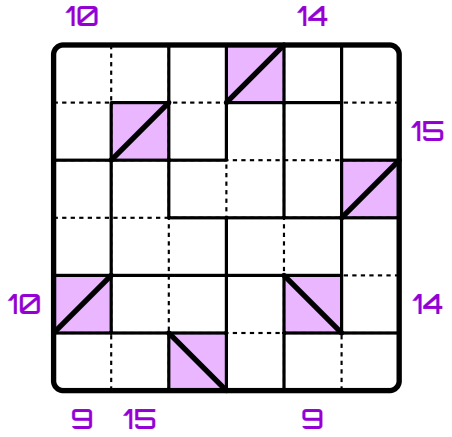
#16





#17





FLIP ESB

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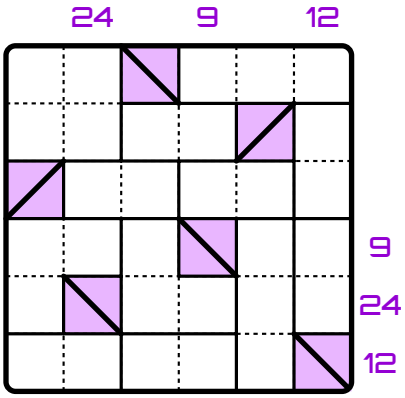
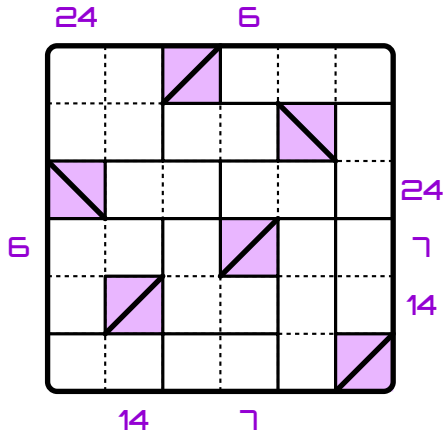
#18

FLIP Mirror 0-2-5





FLIP Facts and Info

Most Attempted	Flip 'n' Fill Sequence #1
Most Solved Correctly	Flip Shape Sudoku
Least Attempted	FLIP Strips
Least Solved Correctly	FLIP ESB
Highest Rated	FLIP ESB
Lowest Rated	Flip 'n' Fill Sequence #1
David's Favorites	Flip 'n' Fill Sequence (All)
Deb's Favorites	FLIP Slitherlink
	FLIP Strips
Grant's Favorites	Flip 'n' Fill Sequence (All)
	FLIP Slitherlink
	FLIP ESB
Puzzles Created (pre SB)	21
Puzzles in PB	12
Puzzles in IB	7
Best Score & Perfect Test	motris & deu
Fastest Time	motris

The insruction booklet, puzzle booklet, and this special booklet were drawn in Inkscape, each page separately, then exported to PDF files and joined using PDFTK builder.

Originally I also wanted to include a FLIP Haunted Mirror Maze (or maybe just a FLIP Vampire Mirror Maze) but I thought that since it's such a nonstandard puzzle with clues based on cultural ideas rather than simple logic, I left that type of puzzle out.

FLIP

ETIB

LMI Puzzle Test
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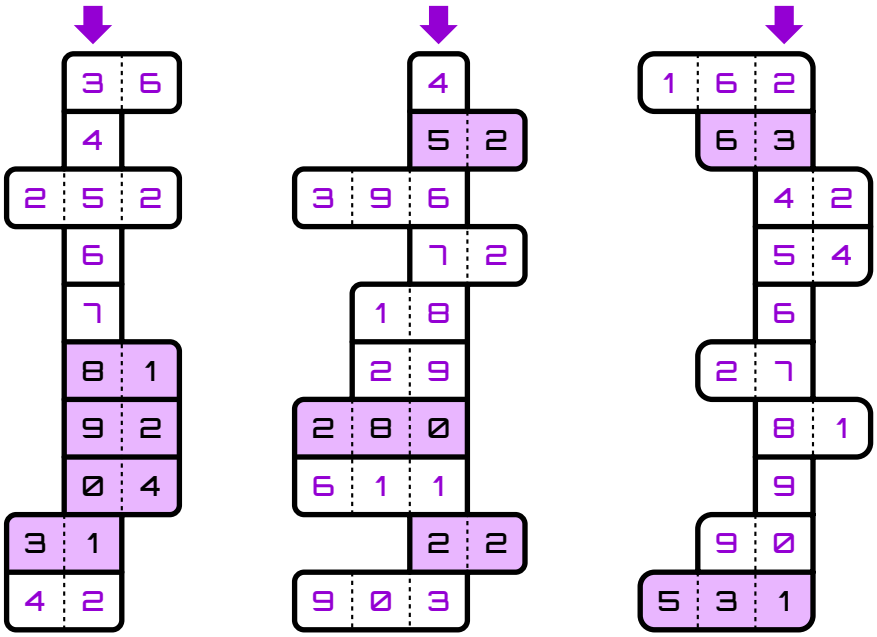
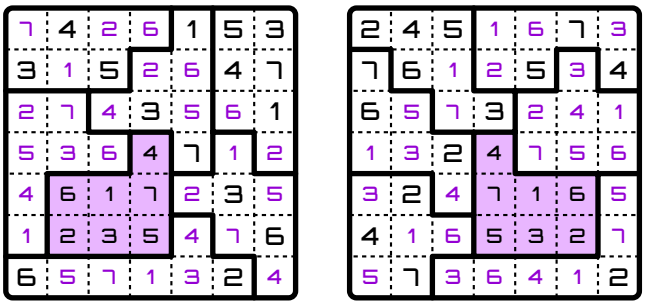
Answer Keys 1-10

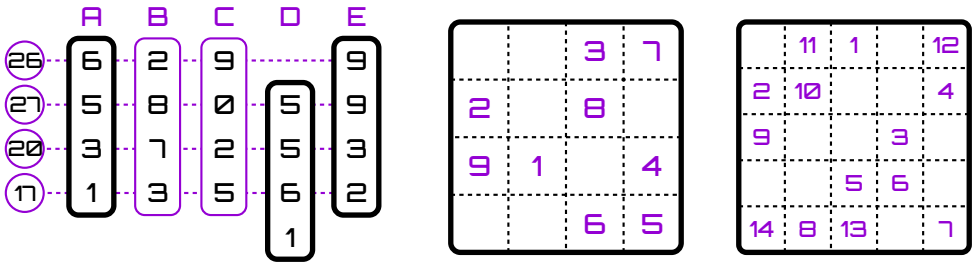
1-3



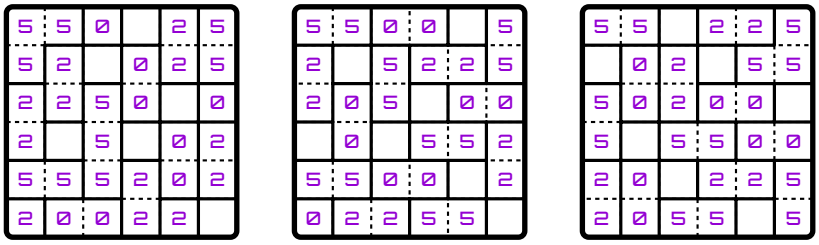
4



5-7



8-10



FLIP

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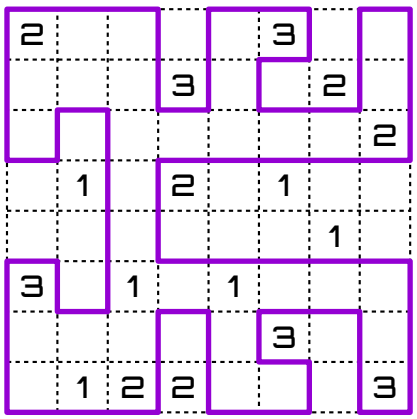
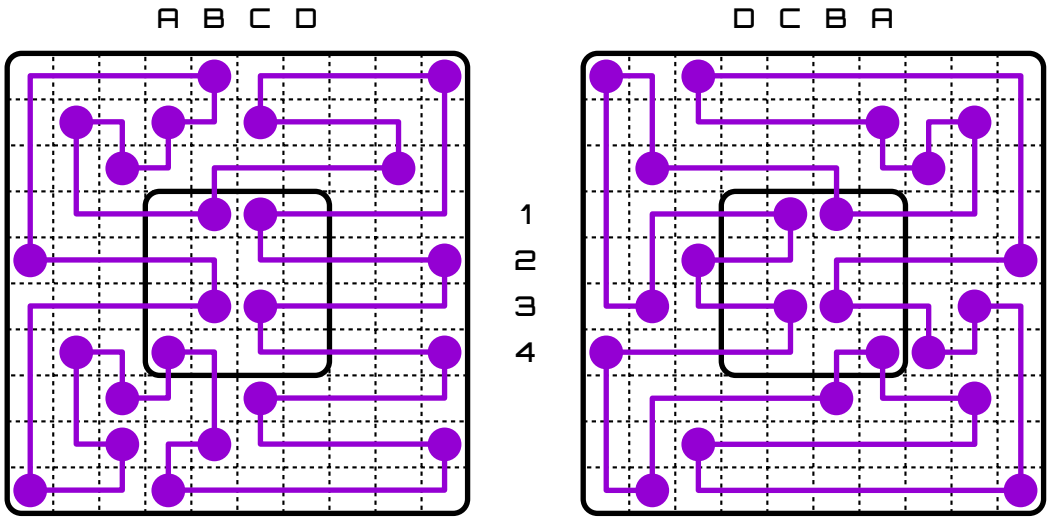
LMI Puzzle Test
November 2010
by David Millar

Answer Keys 11-17

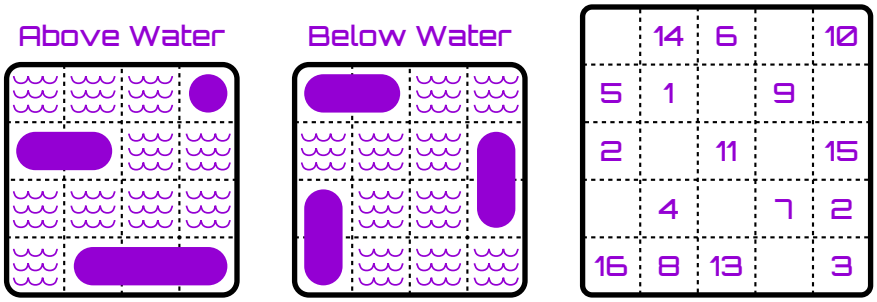
11



12



13-14



15-18