



FLIP

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LMI Puzzle Test
November 2010
by David Millar

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.

<http://logicmastersindia.com/lmitests?test=M201011P>

David Millar
<http://thegriddle.net>

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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 receive a bonus if at least 6 puzzles are correct.

6-8 correct
2 PT PER MINUTE

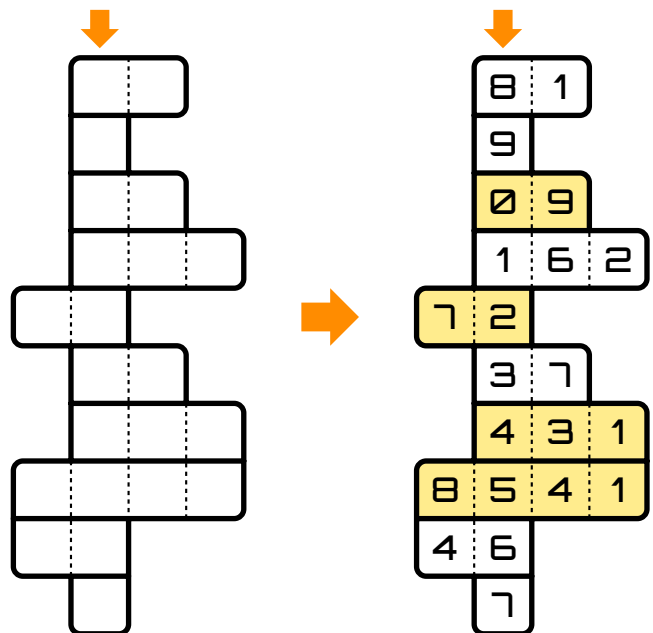
9-11 correct
4 PT PER MINUTE

12 correct
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: $A \times 2$
- E: One-third of A
- F: Digits total 10
- G: $A + J + K$
- H: $B \times D$
- J: $B + F$
- K: Square root of $(J + 3)$



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

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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.

3	1			5	
2					7
				7	
			2		1
		3			
7		1			5
	7			6	



3	1	4	2	7	5	6
2	6	5	4	3	1	7
6	4	2	1	5	7	3
5	3	6	7	2	4	1
1	5	7	3	6	2	4
7	2	1	6	4	3	5
4	7	3	5	1	6	2



	2				7
1		4			6
			3		
				1	3
					6
6					2
4	5				1



3	2	1	6	4	7	5
1	7	4	5	2	3	6
2	6	5	3	7	4	1
5	4	6	7	1	2	3
7	3	2	1	5	6	4
6	1	7	4	3	5	2
4	5	3	2	6	1	7

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.

	A	B	C	D
16	3	7	3	8
10	2	1	5	2
18	5	1	9	5



	A	B	C	D
16	5		3	8
10	2	1	5	2
18	3	1	9	5
		7		

List the flipped strip letters. Example: AB

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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.

Top-left grid sums: Top (0, 19, 19, 15), Right (24, 6, 6, 15), Bottom (3, 4, 19, 4), Left (0, 24, 3, 19).

Top-right grid sums: Top (7, 35, 9, 35), Right (9, 7, 9, 1 to 9), Bottom (20, 3, 9), Left (7, 20, 7, 3).

Bottom-left grid sums: Top (0, 19, 19, 15), Right (24, 6, 6, 15), Bottom (3, 4, 19, 4), Left (0, 24, 3, 19).

Bottom-right grid sums: Top (7, 35, 9, 35), Right (9, 7, 9, 1 to 9), Bottom (20, 3, 9), Left (7, 20, 7, 3).

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

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 leaving the grid. Examples are given below:

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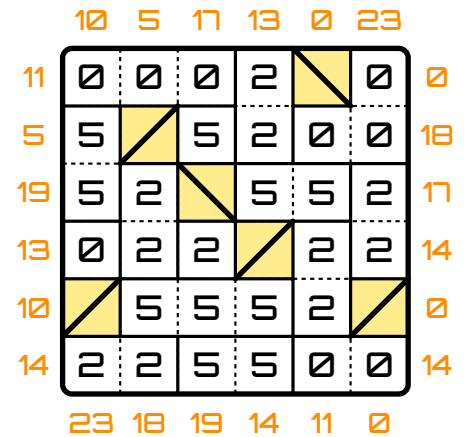
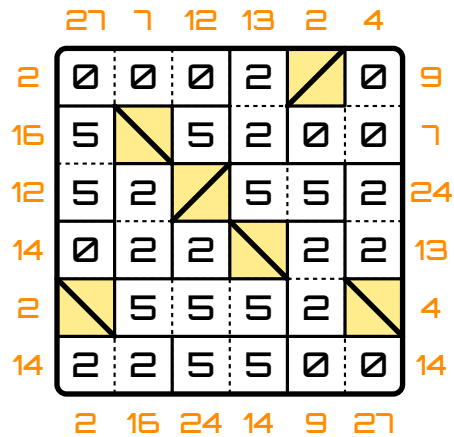
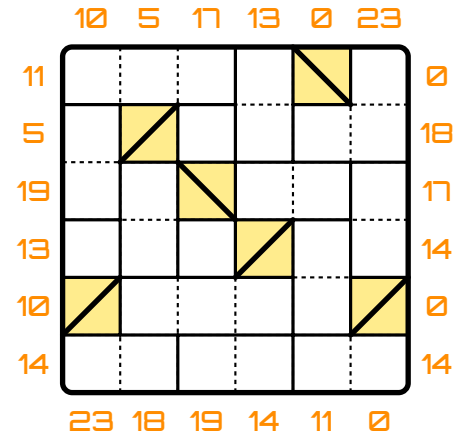
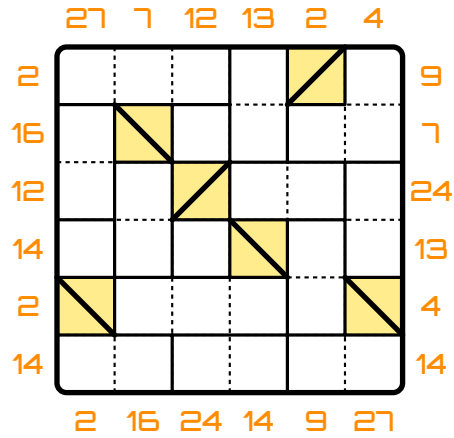
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FLIP Mirror 0-2-5

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.

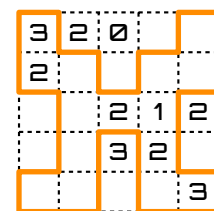
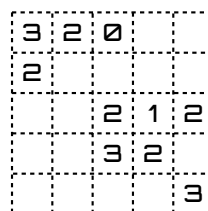


List the number of 2s in each row from top to bottom.
Example: 112412

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

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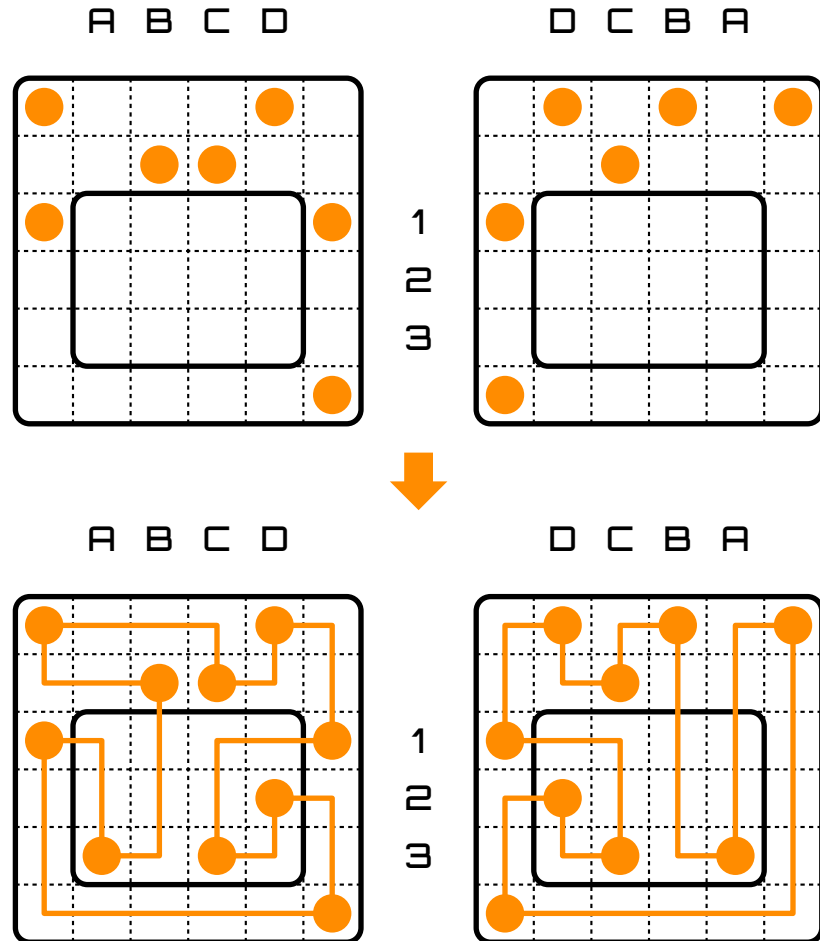
FLIP Every Second Breakpoint

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