

# 4X4 SUDOKU

Apply classic Sudoku rules to individual grids: place the digits 1 through 6 into the empty cells in the grid so that each digit appears exactly once in each of the rows, columns, and bold outlined boxes.

Additionally if two grids are shading an edge, the digits along the edges must be same.

(Ignore the circles while solving)

Answer key: Enter the digits in circled cells from left to right.

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## KAKUROH

Place numbers 1-9 into each cell. The sum of all cells in a row is given at the left and the sum of all cells in a column is given at the top. No numbers may repeat in a single sum. Some squares cover a 2x2 area.

Answer key: Enter the digits in circled cells from left to right.



BY TAWAN SUNATHVANICHKUL FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA

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Chada como white					3															
cells and then draw a single closed				21					3											
loop (without intersections or crossings) through			4																	
all remaining white cells. Shaded cells																				
cannot share an edge with each						0		3†	21	1↓		1↓	31		31	0	21			 
numbered arrows						2			3		4†		3			0				
loop. Numbered arrows indicate the						2↓			2↓				31			0				
total number of shaded cells that						3			1				0†			<b>1</b>				
exist in that direction in the grid.				31		21	1	2↓	2		3		2		3†	2	3			
																		1†		
								6†												
														1†						
		3																		41

Answer key 1: For each marked row, enter the lengths of the longest horizontal loop segment. Answer key 2: For each marked column, enter the lengths of the longest vertical loop segment.

## BY RAVI KUMAR MACHERLA FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA





Answer key 1: For each marked row, enter the lengths of the longest shaded quarters group. Answer key 2: For each marked column, enter the lengths of the longest shaded quarters group.





# STATUE PARK

Place each of the shapes from the given bank of shapes exactly once into the grid, with rotations and reflections allowed. No two shapes can overlap or be orthogonally adjacent, and all of the space not occupied by shapes must be connected. Black circles in the grid represent spaces that must be contained in one of the shapes, and white circles represent spaces that must not be contained in a shape.

This puzzle uses 2 sets of standard pentominos.

Answer key: Enter the first **two** pentominos seen from the marked directions. (- if not enough pentominos)



BY PALMER MEBANE FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA



#### **SCRABBLE**

Place all the listed words in the grid across (from left to right) or down (from top to bottom). Each word crosses with at least one other word and all words are interconnected. Words that are not on the list cannot appear anywhere in the grid (not even two-letter words). The grid already contains one letter from each word and that letter can be used for this word only.

Answer key: Enter total number of letters in marked columns from left to right. For two digit numbers, enter only the unit (right) digit.



BY NIKOLA ZIVANOVIC FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA



## ARAF

Divide the grid into some regions formed of adjacent squares. Each region should contain exactly two given numbers. The size of each region should be a value (in unit squares) between the two numbers inside that region.

(Ignore the circles while solving)

Answer key: For each circle from left to right, enter the size of region. <u>Enter only the unit digit (i.e. the right digit)</u> for each circle.





### NANRO

Write numbers in some of the cells. All numbers in a region must be same. The given number in a region denotes how many cells in this region contain a number (at least one). Same numbers must not be orthogonally adjacent across region boundaries. Numbered cells must not cover an area of size 2x2 or larger. All numbered cells must form a single orthogonally continuous area.

(Ignore the circles while solving)

Answer key: Enter the digits in circled cells from left to right. Enter X for blank cells.

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					7														
												3							
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$\left( \begin{array}{c} \\ \end{array} \right)$	$\left( \begin{array}{c} \\ \end{array} \right)$	$\left( \begin{array}{c} \\ \end{array} \right)$	$(\overline{)}$	$\left( \begin{array}{c} \\ \end{array} \right)$	$\left( \begin{array}{c} \\ \end{array} \right)$	$(\hat{})$	$\left( \begin{array}{c} \\ \end{array} \right)$	$\left( \begin{array}{c} \\ \end{array} \right)$	( )	$\left( \begin{array}{c} \\ \end{array} \right)$	()	$\left( \begin{array}{c} \\ \end{array} \right)$	$(\bigcirc$	$(\widehat{})$	$\left( \begin{array}{c} \\ \end{array} \right)$	()	()	$(\widehat{})$	()



## TURNING FENCES

Draw a closed loop by connecting dots horizontally and vertically. The numbers in the grid indicate the amount of turns taken on the four dots around it.

Answer key 1: For each marked row, enter the lengths of the longest horizontal loop segment. Answer key 2: For each marked column, enter the lengths of the longest vertical loop segment.



# HEYAWAKE



Shade in some cells in the grid. The grid is divided up into rooms – if a room has a number in then there should be the corresponding number of shaded cells within the room. Shaded cells must not be horizontally or vertically adjacent, and the remaining white cells should be connected to each other via horizontal or vertical paths. However, the white cells must not exceed 2 rooms in a straight line.

Answer key: Enter the number of shaded cells in the marked columns, from left to right.

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0	3		3		0	3			0		0		3		0	3		

BY TOM COLLYER FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA



# TURNING FENCES (ORIGINAL VERSION)

Draw a closed loop by connecting dots horizontally and vertically. The numbers in the grid indicate the amount of turns taken on the four dots around it.

Answer key 1: For each marked row, enter the lengths of the longest horizontal loop segment. Answer key 2: For each marked column, enter the lengths of the longest vertical loop segment.

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2.1	. 1	3 3 2	1	• •	2.3	2.2	2	0.11
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22	2 1	.2	2	.4.	.2.	• •	3	.2.
21	1 2	23	3	3.3	• •	1	.4.	2
. <sup>3</sup> . <sup>2</sup> . 2	3 2 3 1	• 3 • 4	3	3 3	2 2 4	2 1	3 2	3 32
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2	1 2	1 1	2	2.4	2.2	2.2	2.	2 1
1 1	2	2.3	·	1 3	4	•••• 1	3	2.3

This is the original version of Turning Fence. The puzzle turned out to be too difficult and an easier version was preferred. Both the versions have clues exactly at the same positions.

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### YAJILIN

## (ORIGINAL VERSION)

Shade some white cells and then drav a single closed loop (without intersections or crossings) through all remaining white cells. Shaded cells cannot share an edge with each other. Cells with numbered arrows are not part of the loop. Numbered arrows indicate the total number of shaded cells that exist in that direction in the grid.

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e			2↓		2†	1	2	2		31		2		1†	2	3			
																	1†		
							6†												
													11						
	4																		41

This is the original version of Yajilin. The puzzle turned out to be little difficult and an easier version was preferred. Both the versions have the central LMI theme intact.

#### BY RAVI KUMAR MACHERLA FOR PUZZLE MARATHON AT LOGIC MASTERS INDIA