

**Indian Puzzle
Championship 2009
Instruction Booklet**

4th October 2009

**Logic Masters India
(www.logicmastersindia.com)**

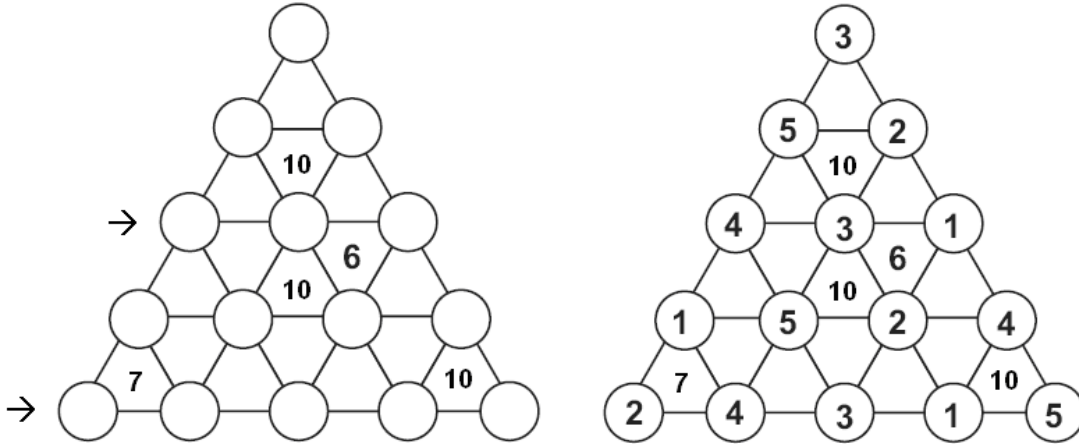
National Puzzle Championship 2009

Points Table

Trid	35
PolyGraph	55
4X4X4 Minesweeper	20
Comet	50
Ikebana	40
Word Search	35
Mirror Image	10
Dominos	35
Magnet	85
Missing digit Kakuro	95
Direct Turn Loop	30
No Four In A Row	35
As Easy As ABCD	15
Ripple Effect	80
Sparse Skyscraper	80
Tiger In The Woods	30
Classic Sudoku	20
Kropki Sudoku	50
Hitori	30
Mastermind	45
Spiral Galaxies	30
Elastic Bands	20
Triangle Count	15
LMI Cut	30
Vista	30
Total	1000

Trid (35 points)

Place digits 1-6 (1-5 in example) in each of the circles so that no digit is repeated within any straight line. Each number in a triangle equals to the sum of digits in the triangle's vertices.



Answer Key: Enter the digits in the row/ diagonal marked by the arrows. For the example the answer is 431, 24315

Polygraph (55 points)

Draw a single continuous loop by connecting the neighboring dots horizontally or vertically. The clues inside the loop indicate the number of its edges used by the loop. The clues outside the loop indicate the number of its edges not used by the loop.



Answer Key: Enter the number of digits outside the loop. For the example the answer is 9.

4X4 Minesweeper (20 points)

Place some mines in each diagram so that the numbers inside the grid indicate the amount of mines in the neighboring cells. When all four grids are solved, single coordinate should exactly contain one mine.

1			
		3	2
	3		
	2	1	1

	2		
			2
		1	
1		2	1

1			☛
	☛	3	2
	3	☛	
☛	2	1	1

☛	2	☛	
			2
		1	☛
1	☛	2	1

1			
		2	
	2		
1	2		1

1			1
	3		
		3	
1	1		

A
B
C
D
E F G H

1	☛		
		2	☛
☛	2		
1	2	☛	1

1			1
☛	3	☛	
	☛	3	
1	1		☛

A
B
C
D
E F G H

Answer Key: Enter the coordinates of the mines in the marked grid going from left to right top to bottom. For the example the answer is BE, BG, CF, DH

Comet (50 points)

Place some stars in the grid so that there is exactly one star in every row, column and outlined region. Stars cannot touch each other not even diagonally. Additionally all remaining cells must be traversed by a single closed loop. There are no stars or loop segments on black cells.

A					
B			■		
C					
D					
E					
F			■		

1 2 3 4 5 6

A						★
B			★		■	
C						★
D		★				
E					★	
F	★					

G H I J K L

Answer Key: Enter the coordinates of the stars going from top to bottom, followed by the number of turns made by the loop. For the example the answer is AL, BI, CK, DH, EJ, FG, 18

Ikebana (40 points)

Put the given figures in the grid so that each row and each column contains each figure exactly once.

A

B

C

D

E

F

→

↓

Answer Key: Enter the alphabets associated with the symbols for the marked row/columns. For the example the answer is ABCECDF, DCAFBE

Word Search (35 points)

18 of the 20 (14 of 16 in the example) words in the list have been placed in the grid. Find the two words in the list which have not been placed in the grid.

T	T	H	O	U	S	E	M	A	I	D	P	A
E	F	N	N	L	C	D	Q	L	B	C	T	U
G	L	O	N	R	M	U	V	D	K	I	N	R
A	H	I	G	O	D	C	F	N	C	T	P	I
R	E	T	B	D	I	A	L	O	G	U	E	F
U	Q	A	N	O	I	T	A	U	C	A	V	E
O	U	R	T	Y	M	I	U	S	X	N	R	R
C	A	U	H	R	S	O	T	A	B	O	P	O
S	T	S	S	S	T	N	T	D	C	R	Y	U
I	I	N	O	I	T	A	L	U	G	E	R	S
D	O	E	J	K	S	P	R	N	A	A	R	D
H	N	M	S	U	O	I	R	A	C	E	R	P
A	U	T	H	O	R	I	Z	E	M	J	S	S
Z	C	C	N	T	R	V	T	R	L	Z	F	R

T	T	H	O	U	S	E	M	A	I	D	P	A
E	F	N	N	L	C	D	Q	L	B	C	T	U
G	L	O	N	R	M	U	V	D	K	I	N	R
A	H	I	G	O	D	C	F	N	C	T	P	I
R	E	T	B	D	I	A	L	O	G	U	E	F
U	Q	A	N	O	I	T	A	U	C	A	V	E
O	U	R	T	Y	M	I	U	S	X	N	R	R
C	A	U	H	R	S	O	T	A	B	O	P	O
S	T	S	S	S	T	N	T	D	C	R	Y	U
I	I	N	O	I	T	A	L	U	G	E	R	S
D	O	E	J	K	S	P	R	N	A	A	R	D
H	N	M	S	U	O	I	R	A	C	E	R	P
A	U	T	H	O	R	I	Z	E	M	J	S	S
Z	C	C	N	T	R	V	T	R	L	Z	F	R

Missing Words AUCTIONED FAVOURITE

AERONAUTIC
AUCTIONED
AURIFEROUS
AUTHORIZE

AUTOMOBILE
DIALOGUE
DISCOURAGE
EDUCATION

EQUATION
EVACUATION
FAVOURITE
HOUSEMAID

MENSURATION
PRECARIOUS
PRECAUTION
REGULATION

Answer Key: Enter the two words which have not been placed in the grid. For the example the answer is AUCTIONED, FAVOURITE.

Mirror Image (15 points)

4 of the 16 mirrored images are incorrect. Identify the incorrect mirror images.

A								
B								
C								
D								
	E	F	G	H				

Answer Key: Enter the coordinates of the image whose mirror image is incorrect. For the example the answer is AG, BF, CF, DE.

Dominos (35 points)

The grid contains a set of 36 dominoes (28 in example), using all combinations of zero through seven (six in the example). The layout is shown with domino edges removed. Reconstruct the missing edges.

2	1	4	6	3	0	2	
5	4	0	5	5	3	4	
5	2	0	3	6	5	6	
0	2	0	1	6	6	2	
	3	1	6	5	3	6	1
	3	4	5	1	6	0	4
	4	4	5	1	0	2	4
	2	3	1	0	2	1	3

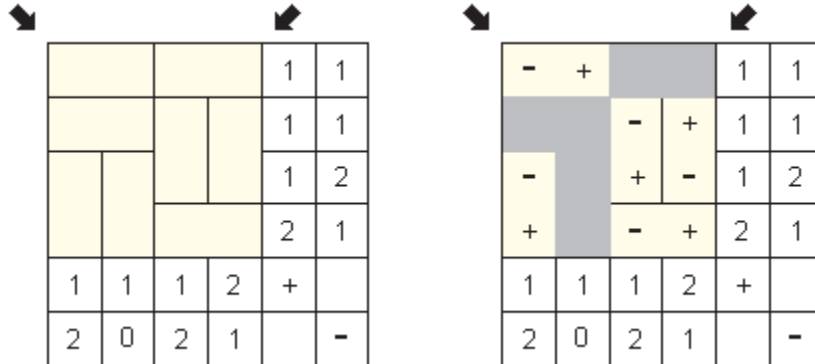
2	1	4	6	3	0	2	
5	4	0	5	5	3	4	
5	2	0	3	6	5	6	
0	2	0	1	6	6	2	
	3	1	6	5	3	6	1
	3	4	5	1	6	0	4
	4	4	5	1	0	2	4
	2	3	1	0	2	1	3

0	0	1	4	3	5
0	1	1	5	3	6
0	2	1	6	4	4
0	3	2	2	4	5
0	4	2	3	4	6
0	5	2	4	5	5
0	6	2	5	5	6
1	1	2	6	6	6
1	2	3	3		
1	3	3	4		

Answer Key: Enter the number of horizontal dominos. For the example the answer is 10.

Magnets (85 points)

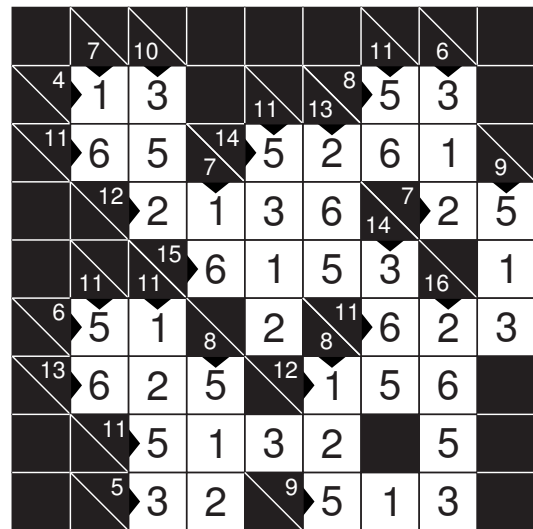
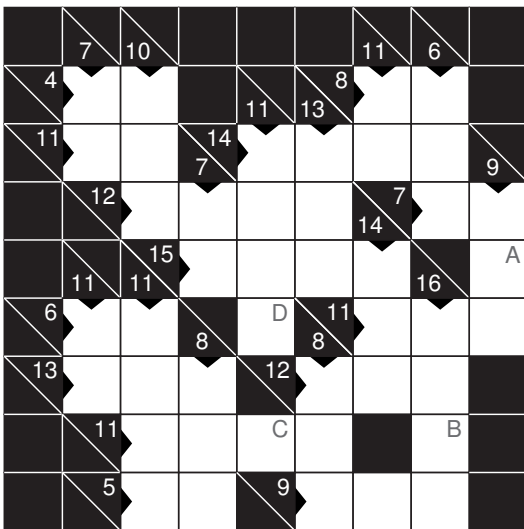
The grid is made up of magnetic and non-magnetic plates. Each magnetic plate has 2 halves: one positive (+) and one negative (-). Halves with the same polarity cannot touch each other vertically or horizontally. The numbers outside the grid indicate the number of magnetic halves with a particular polarity in each row/column.



Answer Key: Enter the number of + signs along the diagonals. For the example the answer is 2, 1.

Missing Digit Kakuro (95 points)

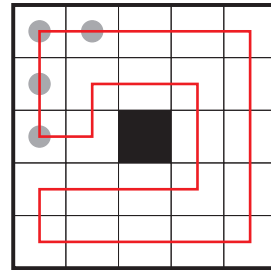
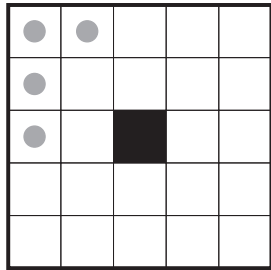
Place one digit from 1 to 9 in each empty box so that the sum of the digits in each set of consecutive white boxes (horizontal or vertical) is the number appearing to the left of a set or above the set. No number may appear more than once in any set of consecutive white boxes. One missing digit has not been used in the entire grid.



Answer Key: Enter the digits in the squares marked with alphabets in alphabetic order. For the example the answer is 1532.

Direct Turn Loop (30 points)

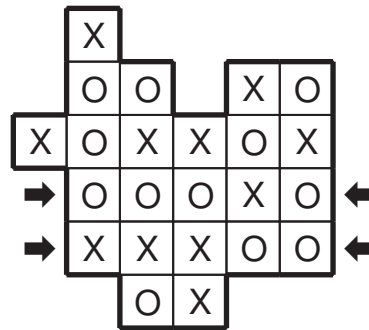
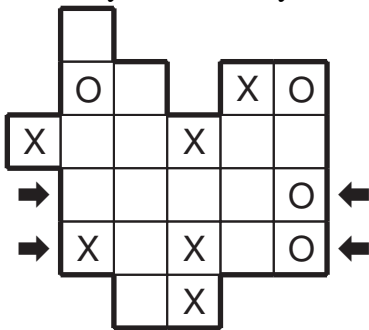
Draw a loop using horizontal and vertical lines. All the cells must be visited once. The loop does not cross itself. The loop takes 90 degrees turn and goes straight at alternate circles



Answer Key: Enter the number of turns in the loop. For the example the answer is 10.

No Four in A Row (35 points)

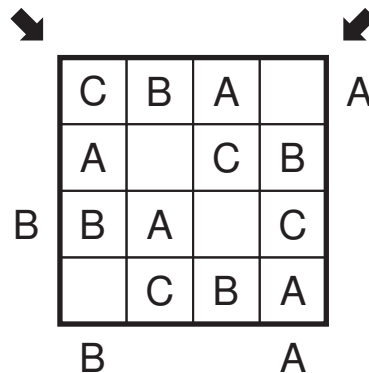
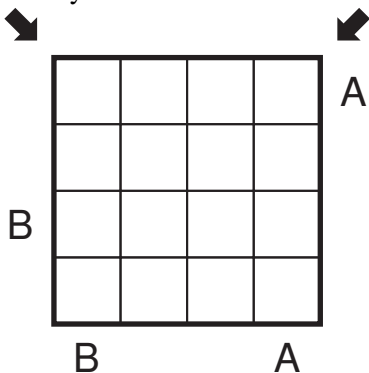
Insert 'O' or 'X' in each cell such that 4 consecutive 'O's or 'X's do not occur either vertically, horizontally or diagonally.



Answer Key: Enter the X's and O's in the marked row. For the example the answer is OOOXO, XXXOO

As Easy As ABCD (15 points)

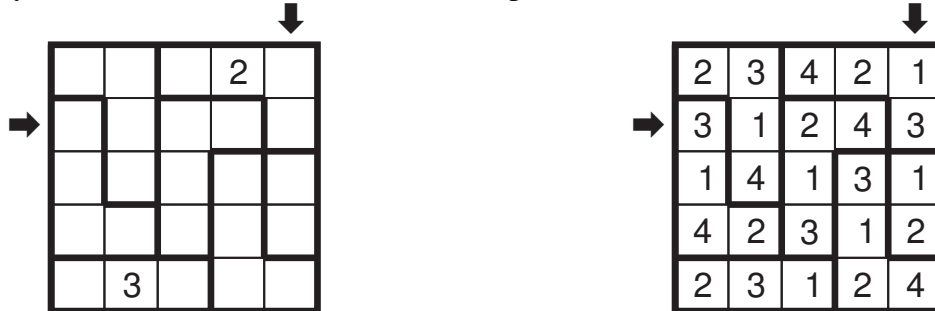
Enter the letters A~E (in example A~C), each letter exactly once, in all of the rows and columns. Two cells will remain empty in each row and column. The letters outside the grid show which letter you come across first from that direction.



Answer Key: Enter the alphabets in the main diagonals. Use X for blank spaces. For the example the answer is CXXA, XCAX.

Ripple Effect (80 points)

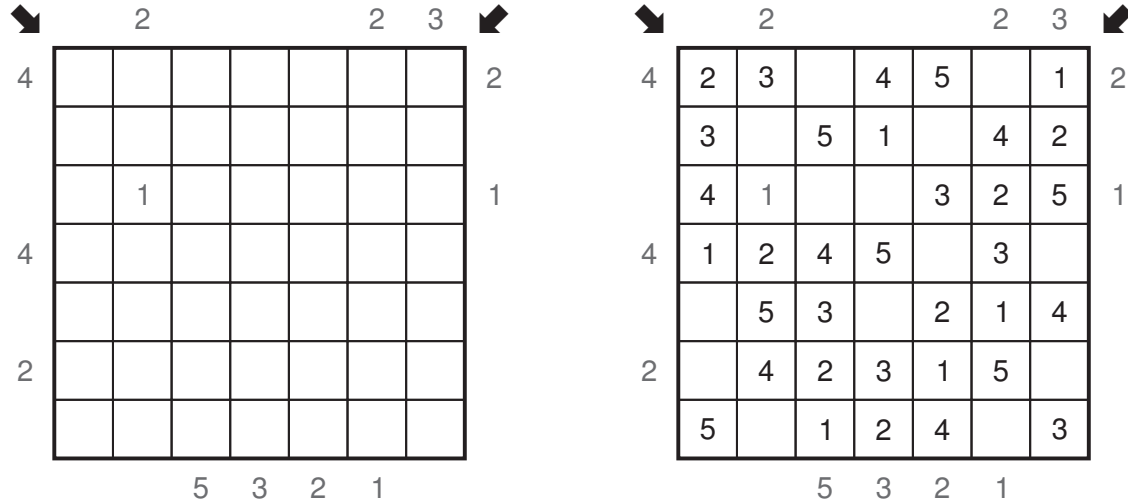
The grid is divided into several shapes marked by thick borders. Fill the grid with a number in each cell such that a shape of size n (having n cells) contains every number in the range 1~n. If two identical numbers 'X' appear in the same row or column, at least that many (X) cells with other numbers must separate them.



Answer Key: Enter the digits in the marked row/columns. 31243, 13124.

Sparse Skyscraper (80 points)

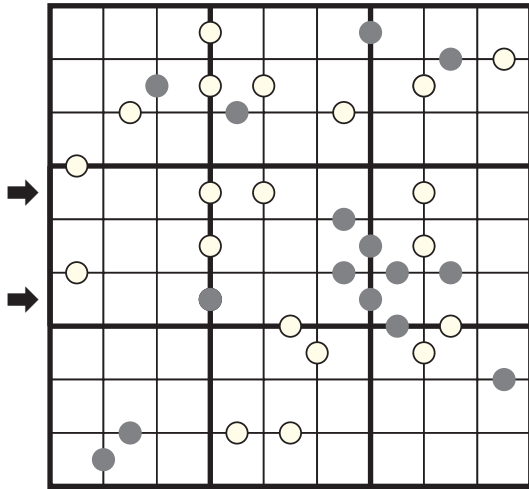
Fill the grid in such a way that every row and every column contains numbers from (1-5) exactly once. Some cells may remain blank. The numbers inside the grid represent the height of the building in corresponding cells. The numbers outside the grid represent the number of buildings visible from that direction.



Answer Key: Enter the digits in the main diagonals. Use X for indicating blank spaces. For the example the answer is 2XX5253, 1435345.

Kropki Sudoku (50)

Place a digit from 1 to 9 into each of the empty squares so that each digit appears exactly once in each of the rows, columns and the nine outlined 3x3 regions. If difference between two digits in neighboring cells equals 1 then they're separated by white dot. If digit in the cell is a half of digit in the neighboring cell then they're separated by black dot. The dot staying between "1" and "2" can have any of these dots



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

Answer Key: Enter the digits in the marked row/columns. For the example the answer is 394562781, 752138469.

Hitori (30 points)

Black out some of the digits in the grid so that each row and each column contains only different digits. Black cells must not touch horizontally or vertically and all non-black cells must remain interconnected.

4	5	9	3	2
1	9	9	2	2
7	2	9	1	4
7	3	2	5	3
2	1	5	4	5

4	5	9	3	2
1	9	9	2	2
7	2	9	1	4
7	3	2	5	3
2	1	5	4	5

Answer Key: Enter the sizes of the groups of diagonally connected black squares in descending order. For the example the answer is 3,1,1,1,1.

Mastermind (45 points)

Try to find out the correct series of numbers with the help of the information given by the black and white markers. Black markers indicate correct numbers in the right position, while the white ones mark correct numbers in the wrong place. Each number can occur only once in the solution.

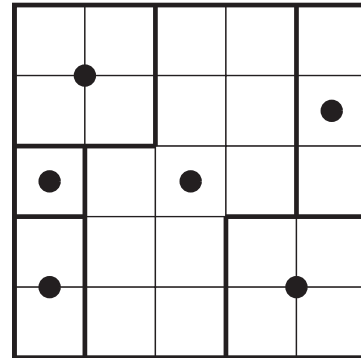
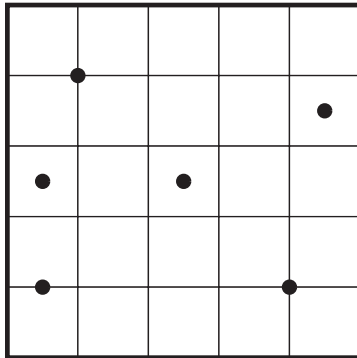
5 2 1 7 4 • ◦ ◦
 2 6 8 1 6 •
 6 5 9 2 7 ◦ ◦ ◦
 3 4 5 8 1 ◦ ◦ ◦
 9 3 4 6 8 • ◦
 ◦ ◦ ◦ ◦ ◦ • • • • •

5 2 1 7 4 • ◦ ◦
 2 6 8 1 6 •
 6 5 9 2 7 ◦ ◦ ◦
 3 4 5 8 1 ◦ ◦ ◦
 9 3 4 6 8 • ◦
 5 3 7 1 9 • • • • •

Answer Key: Enter the correct series of digits. For the example the answer is 53719.

Spiral Galaxies (35 points)

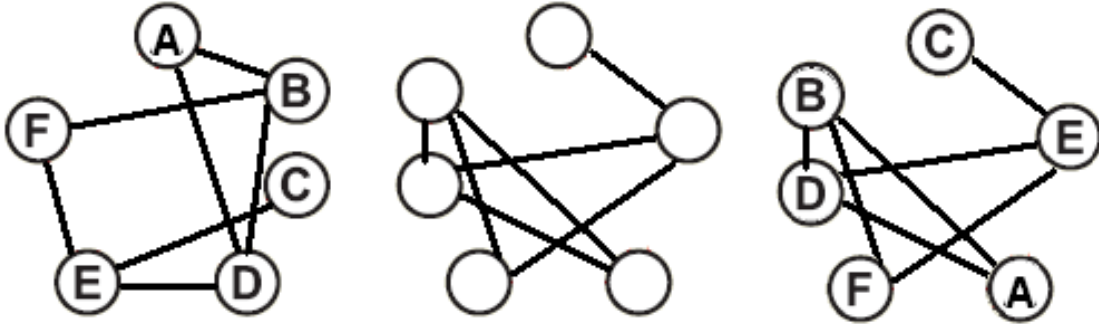
Divide the grid into some regions, where the given circles represents the points of symmetry. All regions should contain a circle and all circles are given.



Answer Key: Enter the size of the largest region followed by the number of regions with size 6. For the example the answer is 11,0.

Elastic Bands (20 points)

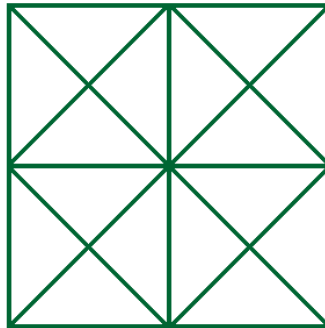
The first figure shows circles connected to each other with elastic bands. The circles have been rearranged in the second figure, retaining the same connections of elastic bands. Identify the alphabets associated with each circle in the second figure.



Answer Key: Enter the alphabets in the circles starting with A and going clockwise. For example the answer is AFDBCE.

Triangle Count (15 points)

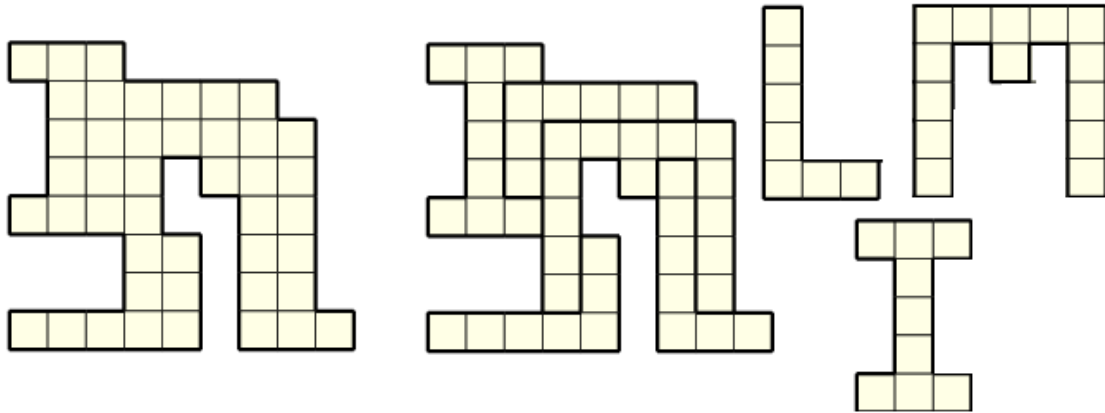
Count the number of triangles in the figure.



Answer Key: Enter the number of triangles in the figure. For example the answer is 44.

LMI Cut (30 points)

The image is made up of three letters L, M and I. Identify the number of L's, M's and I's that the image consists. The letters can be rotated but not mirrored.



Answer Key: Enter the number of L's followed by M's followed by I's. For example the answer is 3,1,1.

Vista (30 points)

The floor is divided in rooms, which are interconnected by doors. Some of these doors are open, while others are closed. The number in each room indicates how many rooms are visible from that room including the room itself. Identify the closed doors.

2	4	3	2
+	+	+	+
5	7	5	4
+	+	+	+
3	5	3	2
+	+	+	+
2	6	4	3

2	4	3	2
+	+	+	+
5	7	5	4
+	+	+	+
3	5	3	2
+	+	+	+
2	6	4	3

Answer Key: Enter the number of horizontal doors, followed by number of vertical doors. For the example the answer is 5,4.