



# Puzzle - Instruction Booklet

Duration: 1 hour (30 minutes + 30 minutes)

## Instructions

1. ALL participants must participate in both rounds. Duration of each round is 30 minutes.
2. Each puzzle is assigned certain amount of points, based on the difficulty. Grid sizes vary from 5x5 to 10x10 and are different in different puzzles. Points will be awarded only if it is completely correct. There is no partial marking.
3. You may use pen or/and pencil for solving.
4. External help of any kind is NOT permitted.
5. Read the puzzle instructions carefully before solving the puzzle. Below are the puzzle types of the two rounds. This Instruction Booklet contains examples to help understand the rules.
6. Although the Instruction booklet is the same for U-15s and Open category too, U-15s are eligible for partial points for solving a portion of the puzzle correctly. The partial points will usually be at 50% of the puzzle points, other than exceptional cases.

## Round 1

Puzzle Type		No. of puzzles	Points per puzzle
Rebus		5	3
Dissection		5	6
Math	Kakuro	2	8
	Arithmetic Box	2	4
Loop	Loop Finder	2	5
	Slitherlink	2	6
Assorted	Akari	2	4
<b>Total</b>			<b>99</b>

## Round 2

Puzzle Type		No. of puzzles	Points per Puzzle
Visual		10	3
Shading	Hitori	2	5
	Paint By Number	2	5
Assorted	ABC Connection	1	7
	Easy as ABC	2	6
	Thermometer	1	12
	Star Battle	2	10
<b>Total</b>			<b>101</b>

## Round 1 – Rebus Puzzles

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**Rules** – Write the word or phrase that the image depicts.

Here is sample of what to expect in this type.



1.

**Answer:** Circular Arrangement.

## Round 1 – Dissection Puzzles

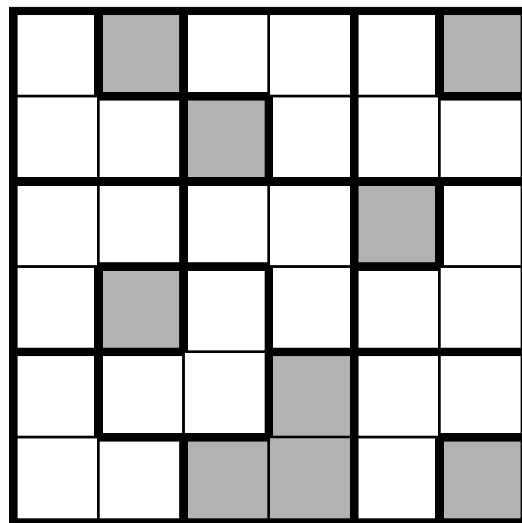
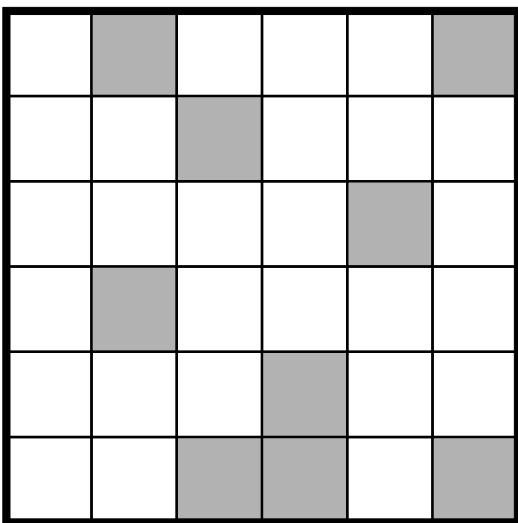
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**Rules** – Divide the grid into many different parts. Each part will consist of the same shape (rotated/reflected will still count as the same shape). Every cell except gray cells must be part of exactly one shape.

### Additional Notes -

For the U-15 category, the grids will need to be divided into shapes of size 4. For the Open category, the grids will need to be divided into shapes of size 5.

Here is a sample, with the grid being divided into shapes of size 3. It is exactly the same shape, as no straight shape exists in the solution.



# Round 1 – Math Puzzles

## Kakuro

Place one digit from 1 to 9 in each empty square so that the sum of the digits in each set of consecutive white squares (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 squares.

	21		3		22		22
19				20			
			11				
		10					23
16			30				
			10				
	4			17			24
	6			3			
10					17		
			11				
12				23			

	21		3		22		22	
19	8	9	2	17	5	6	9	
	4		11	1	8	2	23	5
16	9	7	10	30	9	7	6	8
			10					
	4	1	3	17	8	9	24	
	6			3				
10	3	2	4	1	17	8	9	
	2		11	1	2	8		7
12	1	9	2	23	9	6	8	

## Arithmetic box

Place one digit from 1 to 9 in each empty square so that all 9 digits are used and the arithmetic equations are satisfied. The arithmetic equations are read from left to right or top to bottom, disregarding the BODMAS rules.

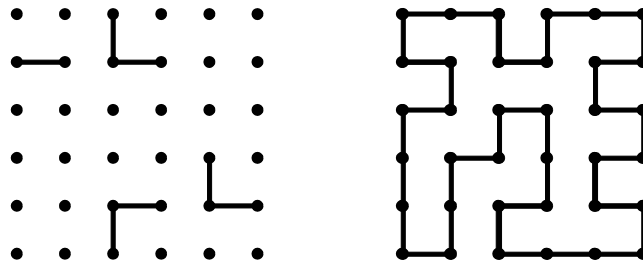
	+		+		=	24
+		X		-		
	-		/		=	2
-		X		-		
	+		/		=	5
=		=		=		
7		84		6		

8	+	7	+	?	=	24
+		X		-		
5	-	3	/	1	=	2
-		X		-		
6	+	4	/	2	=	5
=		=		=		
7		84		6		

# Round 1 – Loop Puzzles

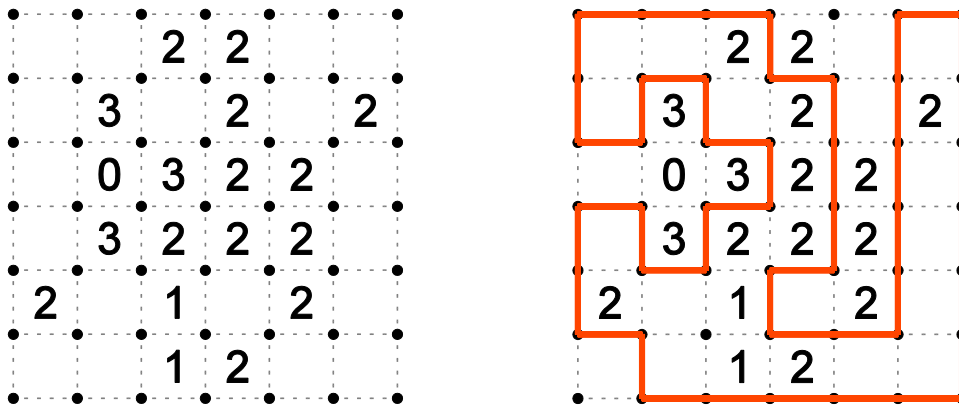
## Loop Finder

Draw a single continuous loop that visits all dots. The loop has only horizontal and vertical line segments. Some line segments are already drawn.



## Fence

Draw a single continuous loop along the dotted vertical or horizontal line segments. Crossovers or branches are not allowed. Digits given inside the cell indicate the count of line segments surrounding that cell.

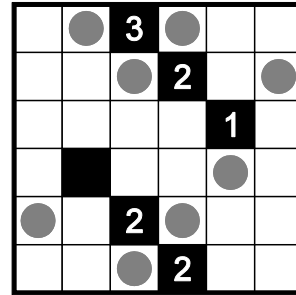
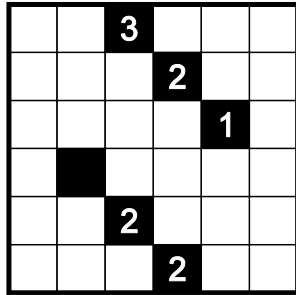


## Round 1 – Assorted Puzzle – Light Bulbs

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### Light Bulbs

Place a number of light bulbs in the grid, so that every cell is lit by at least one light bulb. Light bulbs illuminate all cells it can see horizontally and vertically. Black cells block its view. No two light bulbs are allowed to see each other. The numbers in the grid indicate the amount of light bulbs that touch that cell horizontally and vertically.



## Round 2 – Visual Puzzles

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Visual puzzles typically consist of counting, or comparing aspects of a puzzle. They are built to test visual skill levels.

Some examples of Visual puzzles –

- 1) Counting – Count the number of shapes, or number of different instances of the same shape.
- 2) Comparison – Compare a puzzle to multiple choices of the puzzle's probable solution and pick the right one.
- 3) Transparency – Compare two grids of transparent and opaque components to pick the right resultant grid.
- 4) Tetris – Select the order in which pieces must be pushed so that no space is left blank.
- 5) Perspective – Questions based on rotation/reflection.

## Round 2 – Shading Puzzles

### Hitori

Black out some of the digits in the grid so that each row and each column contains distinct digits. Black cells must not touch each other horizontally or vertically. It must be possible to visit any white cell from another white cell using horizontal or vertical paths.

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

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

### Paint By Number

Some cells within the grid must be shaded. The numbers outside give the sizes of the shaded blocks in that row or column, in the same order. There has to be one white cell at least, between any two shaded blocks.

		2	2	1	2	1	
		1	2	1	2	3	5
2	2						
2	1	1					
	4						
	2	2					
	1	3					
	2						

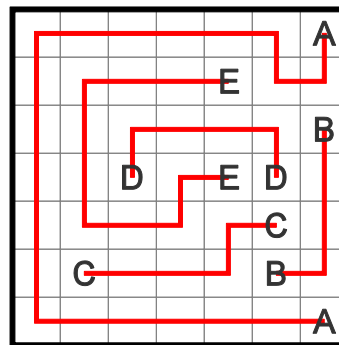
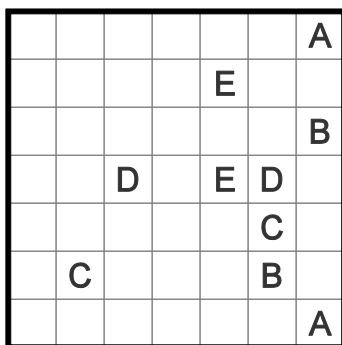
		2	2	1	2	1	
		1	2	1	2	3	5
2	2						
2	1	1					
	4						
	2	2					
	1	3					
	2						

## Round 2 – Assorted Puzzles

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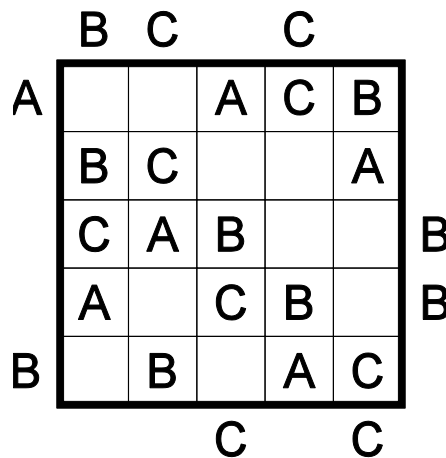
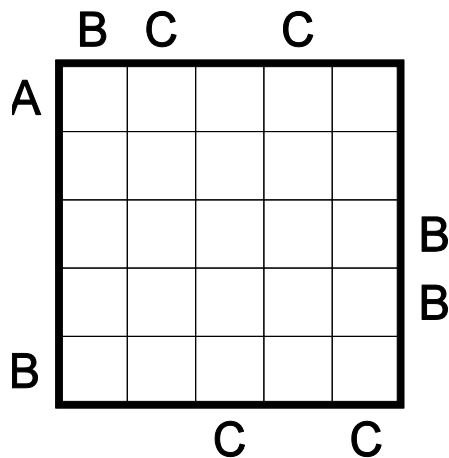
### ABC Connection

Connect each pair of same letters by paths of connected lines. Every cell of the grid must be visited by exactly one path, and paths cannot cross or overlap each other.



### Easy As ABC

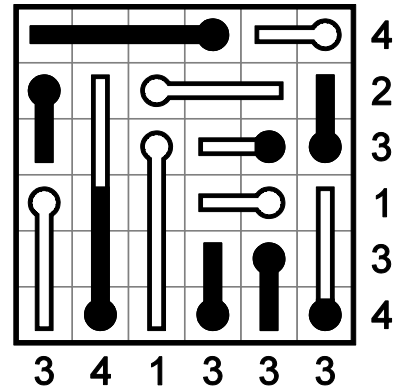
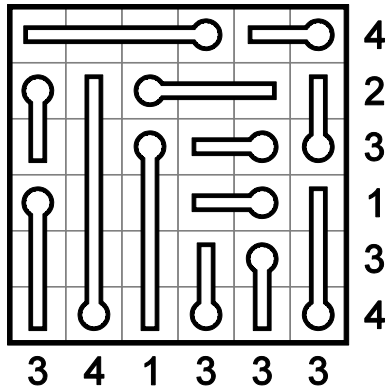
Place the letters in the given range (Example's range is A-C) once in every row and column. Letters on the outside indicate that this letter is seen first in that row or column when looking from that side.





## Thermometers

The thermometers in the grid all have their own level of mercury, which always flows from rounded end towards the other end. Thermometers may be empty, partially or completely full. Numbers around the grid indicate the numbers of cells in the corresponding row / column that contain mercury.



## Star Battle

Place the given number of stars in each row, each column and each region. Stars do not touch each other, even diagonally.

