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# Logic Masters 2019 Round 2 – Metamorphosis

#### Time: 35 minutes

Tot	al	points
2.6	Galaxies	points
2.5	Pentomino Galaxies	$\operatorname{points}$
2.4	Pentomino Masyu25	points
2.3	Tapasyu	points
2.2	No Islands Tapa	points
2.1	Coral	points

Bonus for every 30 seconds remaining ......2 points

# PUNKTE

# 2.1 Coral

Blacken some cells of the grid to form a coral. A coral consists of connected cells, does not touch itself, not even diagonally, and does not contain 2x2 regions. The outside numbers indicate the lengths of sequences of coral cells within the respective row or column. The numbers are not necessarily in the correct order. Different sequences are separated by at least one empty cell. Numbers can be replaced by question mark. A question mark represents a one-digit or a multi-digit number.



### 2.2 No Islands Tapa

# 45 Punkte

Blacken some cells of the grid to form a coral. A coral consists of connected cells, does not touch itself, not even diagonally, and does not contain 2x2 regions. Numbers determine the size of all groups of connected black cells in the eight adjacent cells. Different groups are separated by at least one white cell. The order of numbers in a cell does not matter.

3							2 1	
				22				
		3						
1/2					4			
								1
			3					
						3		
	23			2				

#### 2.3 Tapasyu

Draw a loop into the grid that connects the centers of horizontally or vertically adjacent cells, passing every cell at most once, but no cells containing numbers. The loop visits every cell with a circle. In cells with white circles the loop keeps straight on but turns in at least one of the adjacent cells (following the loop). In cells with black circles the loop turns but keeps straight on in both adjacent cells. Numbers determine how many of the eight adjacent cells are used by the loop. Each number represents one group of connected cells used by the loop. Such a group cannot be interrupted by empty cells, but does not need to form a contiguous part of the loop. Distinct groups around the same cell must be separated by at least one empty cell. The order of numbers in a cell does not matter.



#### 2.4 Pentomino Masyu

#### 25 Punkte

Place some pentominoes in the grid, such that they do not touch, not even diagonally. No pentomino may apprear twice. Rotated ore mirrored pentominoes are considered equal. Not all pentominoes need to be used and it is not given which pentominoes are used. Draw a loop through all remaining cells that connects the centers of horizontally or vertically adjacent cells. In cells with white circles the loop keeps straight on but bends in at least one of the adjacent cells (following the loop). In cells with black circles the loop bends but keeps straight on in both adjacent cells. The loop passes every cell not covered by a pentomino exactly once.



#### 2.5 Pentomino Galaxies

#### 35 Punkte

Place some pentominoes in the grid, such that they do not touch each other, not even diagonally. No pentomino may apprear twice. Rotated ore mirrored pentominoes are considered equal. Not all pentominoes need to be used and it is not given which pentominoes are used. Dissect the remaining cells into regions such that every region containes exactly one white circle. Every region is point symmetrical with respect to its circle.



# 2.6 Galaxies

# 35 Punkte

Dissect the grid into regions such that every region contains exactly one white circle. Every region is point symmetrical with respect to its circle.

