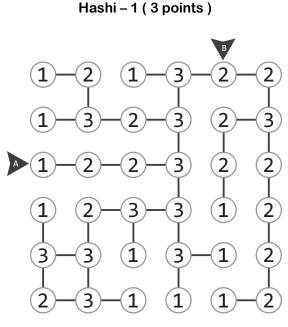
3 + 4 + 5 + 7 points

# Hashi

- Connect each of the numbered islands in the grid via horizontal and vertical bridges.  $\triangleright$
- $\triangleright$ Bridges are not allowed to cross each other.
- $\geq$ Each numbered island has that many bridges leading away from it, and at most two bridges are allowed to connect a pair of islands.
- There must be a sequence of bridges that links one given island to any other.  $\triangleright$

Answer key: Enter contents of marked row/column (use 0 for no bridge, 1 for 1 bridge and 2 for 2 bridges)

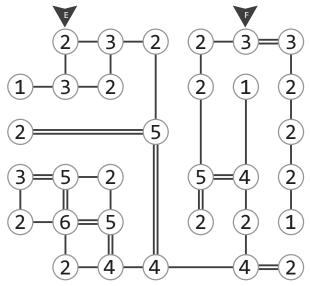


Use the "No islands" rule throughout the grid

#### Hashi – 2 (4 points) 2 2 2 4 2 2 4 2 3 1 2 3 3 3 1 4 4 4 4 4 5 2 3 2 2 3 1 2 3 2 4 1 2 3

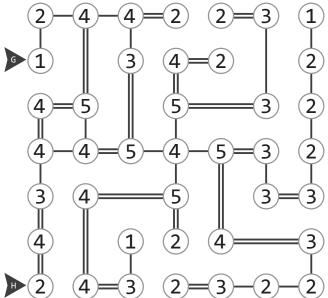
Masyu like chain which goes from top left to bottom right

Hashi – 3 (5 points)

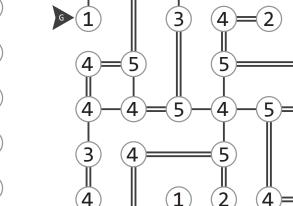


Interaction of two 5's near the center

Hashi – 4 (7 points)



Interaction of the 4 and the 5's at the center. This one was my personal favorite for the entire set





### **Magnets**

- > 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 digits outside the grid indicate the number of magnetic halves with a particular polarity in each row/column.

Answer key: Enter the contents of marked rows/columns (use + for positive plate - for negative plate and X for non-magnetic plate)

	A	-	+					1	1
					-	+	-	1	2
Magnets – 1			+	-	+	-	+	3	2
( 2 points )	В	+			-	+	-	2	2
		-			+		+	2	1
		+					-	1	2
		2	2	0	2	2	2	+	
		2	1	1	2	1	3		-

							D		_	
			+	-		-	+	-	2	3
	-	+		+		+	-	+	4	2
		-		-	+	-	+	-	2	4
Magnets – 2		+	-				_	+	2	2
( 3 points )			+		+		+		3	0
	-	+	-		-		_		1	4
	+	-	+	-	+				3	2
	-	+	-	+	-	+			3	3
	1	4	3	2	3	2	3	2	+	
	 3	2	3	3	2	2	3	2		-

be magnets

# 2 + 3 points

Γ										
	-	+	-		-		-		1	4
	+	-	+	-	+				3	2
	-	+	-	+	-	+			3	3
	1	4	3	2	3	2	3	2	+	
	3	2	3	3	2	2	3	2		
of half the grid	d siz	e (8/2	2 =4)	in one	e of th	ne pol	aritie	s for	ces a	few l

# puzzle racayan

# Magnets

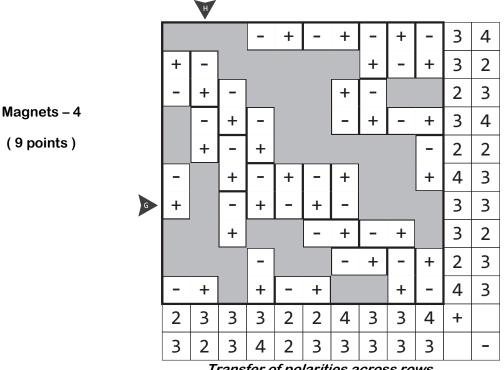
### 8 + 9 points

#### Refer to previous page for instructions

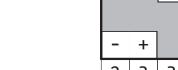
Answer key: Enter the contents of marked rows/columns (use + for positive plate - for negative plate and X for non-magnetic plate)

							F					
	+	-			+	-			+		3	2
		+	-			+	-	+	-		3	3
			+	-	+	-	+	-	+	-	4	4
	+		-	+	-		-	+	-	+	4	4
Magnets – 3	-		+				+	-	+	-	3	3
( 8 points )	+		-	+	-		-	+	-	+	4	4
	-		+		+		+	-	+	-	4	3
			-		-	+	-		-	+	2	4
		-	+	-	+					-	2	3
	-	+					+	-		+	3	2
	3	2	4	2	4	2	4	3	4	4	+	
	3	2	4	2	3	2	4	4	4	4		-

Min max - A less loaded column surrounded by two heavily loaded columns.



Transfer of polarities across rows



puzzle racayan

#### Arrows

- > Draw arrows in the cells around the large grid, one arrow per cell.
- Each arrow points to at least one number.
- > The numbers show the total number of arrows pointing towards them.

Answer key: Enter the number of horizontal arrows, followed by the number of vertical arrows

Arrows – 1 ( 3 points )

	7	$\downarrow$	$\downarrow$	Ľ	
$\rightarrow$	2	4	4	2	
$\overline{}$	0	3	3	3	2
Z	2	1	3	4	2
~	2	3	2	3	K
	7	R	7	1	

	$\downarrow$	7	$\downarrow$		$\downarrow$	
7	2	0	4	0	3	2
$\rightarrow$	5				5	$\downarrow$
$\rightarrow$	4				7	$\downarrow$
$\rightarrow$	3				3	K
$\rightarrow$	4	3	5	3	5	$\leftarrow$
	1	7	1	7	1	

Arrows – 2 (3 points)

Arrows – 3 (5 points)

	$\downarrow$	7	$\downarrow$	7	$\downarrow$	
7	3	2	4	2	4	←
7	3		2		З	R
$\rightarrow$	2	4	3	2	3	K
$\rightarrow$	3				3	$\leftarrow$
$\rightarrow$	3	4	4	4	4	$\leftarrow$
	7	$\uparrow$	1	7	R	

3 in the center gives good starting point

Arrows – 4 (6 points)

	$\downarrow$	7	$\downarrow$	
$\rightarrow$	3	2	4	Ľ
Ľ	3	0	3	R
$\rightarrow$	5	3	2	R
	1	R	R	

Interaction of two large numbers in the corners (4 and 5) along with the smaller numbers int he remaining two corners (2 and 3)

## 3 + 3 + 5 + 6 points

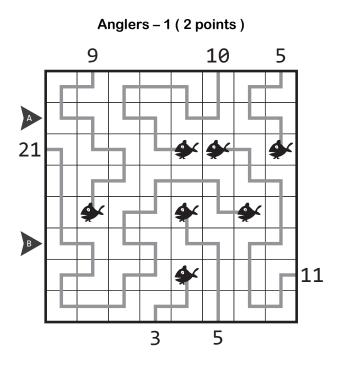


2 + 2 + 2 + 5 points

# Anglers

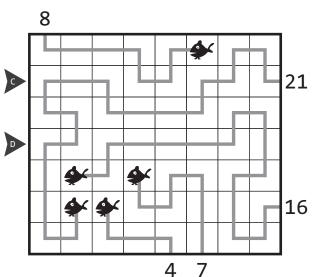
- > The grid represents a lake and the numbers on the periphery represent anglers (fishermen).
- > The fishes shown in the lake are such that every angler gets exactly one fish.
- > The numbers indicate the length of the fishlines which are composed of horizontal and vertical line segments.
- > Draw the fishlines starting from grid border such that no two of them cross or overlap each other.

Answer key: Enter the number of turns in marked rows/columns.

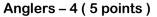


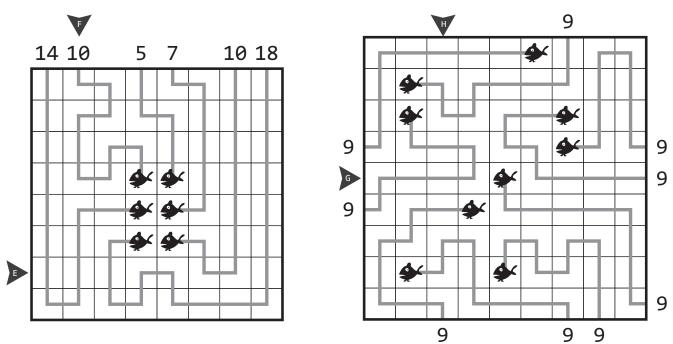
Anglers – 3 (2 points)

Anglers - 2 (2 points)



Parity - Only one angler can reach the fish on bottom left as it has different parity compared to all other fish





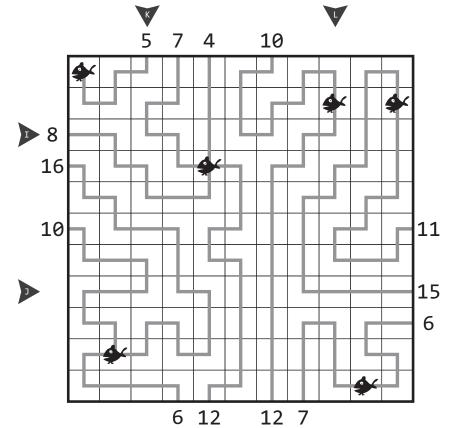
<mark>puzzle</mark> racayan

Reach ability of top left fish to an angler

# **Multi-Anglers**

- Apply rules of Anglers.
- > However, multiple anglers can get the same fish.
- > Each fish is captured by at least one angler

Answer key: Enter the number of turns in marked rows/columns.



Count of total number of anglers and now many anglers can reach each fish.



# 6 points

Page 7

# Dominos

## 3 + 3 + 8 points

- > The grid contains a set of dominos, using all combinations of zero through N.
- > The layout is shown with domino edges removed.

Reconstruct the missing edges.

Answer key: Enter the contents of marked rows/columns (use H for horizontal domino and V for vertical domino)

	2	0	0	2	2	3
	2	0	1	1	0	0
A	1	1	4	4	4	3
В	2	1	3	2	3	3
	1	0	3	4	4	4

0	0	1	1	2	3
0	1	1	2	2	4
0	2	1	3	3	3
0	3	1	4	3	4
0	4	2	2	4	4

#### Dominos – 1 ( 3 points )

Dominos – 1 ( 3 points )

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

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

Dominos – 3 ( 8 points )

		2	0	4	0	1					0		4		2		6
		5	6	3	6	6	2	1		0	0	1	1	2	3	3	6
	6	5	3	4	6	5	0	1	1	0	1	1	2	2	4	4	4
	6	5	1	0	0	5	2	1		0	2	1	3	2	5	4	5
		-								0	3	1	4	2	6	4	6
	5	4	3	2	0	1	2	4		0	4	1	5	3	3	5	5
	2	3	3	4	4	1	4	4		<u> </u>							
	2	6	6	2	0	0	1		•	0	5	1	6	3	4	5	6
I			5	5	3	3	3			0	6	2	2	3	5	6	6
abbara sizzua																	
puzzle radayan																	

6 points

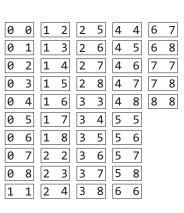
# Dominos

- > The grid contains a set of dominos, using all combinations of zero through N.
- > The layout is shown with domino edges removed.
- Reconstruct the missing edges.

Answer key: Enter the contents of marked rows/columns (use H for horizontal domino and V for vertical domino)

	G											H		
0	1	4	3	2	0	6	5	7	1	2	4	7	1	3
0	0	6	4	2						4	4	8	7	4
1	1	6	1	8						0	6	7	6	6
5	7	0	8	3						3	1	2	2	7
4	3	6	0	3						3	1	1	5	7
4	6	6	2	3						5	8	8	3	7
4	5	5	2	7						5	0	8	6	8
0	0	8	2	5	4	2	1	2	3	7	5	5	8	8

#### Dominos – 4 ( 6 points )



# **Missing Dominos**

### 5 points

- > Apply rules of Dominos.
- A few dominos from the set will be missing in the grid. It is part of the solving process to identify the missing dominos and recreate the rest within the grid.

Answer key: Enter the contents of marked rows/columns (use H for horizontal domino and V for vertical domino)

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

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

End of Test

