

# Mu Alpha Theta Puzzle Hunt

## Intro

The day has finally arrived: you're mere minutes away from landing on Ozizo-916, after two years of near-light-speed travel and many years of training before that. Accompanying you are Fiona and Max, science beasts from a neighboring system who have spent the past few years of their research studying the Ozizan landscape for signs of ancient civilizations. Their early discoveries of fractal roadways were generally dismissed as interesting geologic features, rather than definitive proof of intentional engineering. Now that they had found the symbols in the cave, however, there was little doubt that intelligent life had once been present on Ozizo-916.

After landing the vessel and donning your spacesuit, you step out into the damp, green atmosphere of Ozizo, with Fiona and Max following close behind. The first thing you notice is the planet's gravity: even though its strength is similar to that of your home planet, its direction seems to have a hard time making up its mind, as if it were trying to pull you upward and downward at the exact same time. It seems no matter how many planets you visit, they never quite run out of surprises to throw your way.

Whatever's going on with the gravity on Ozizo, your companions are clearly already accustomed to it, as they're waiting for you at the mouth of the cave when you arrive. They greet you with equipment in hand and broad smiles across both their faces.

"Based on our initial surveys, it looks like the path into the deepest part of the cave forms a maze of sorts," Max tells you with barely-contained excitement. "If the ancient Ozizans had a settlement here, it's almost surely beyond that protective labyrinth."

"We're not sure what kinds of safeguards and traps they've put in place to defend the maze," Fiona chimes in, "but there are symbols carved into the floor that likely indicate the safe path through. Somehow."

They lead you up to an outcropping high above the maze, from which you can see a grid of large, faintly glowing symbols on the ground below. Amazingly, they all resemble numbers and letters from the writing system of your home planet. What a lucky coincidence!

With your first task laid out clearly before you, you pull out your tablet and draw a copy of the grid and its symbols, then get to work charting a safe path through the Ozizan labyrinth.

# Puzzle 1

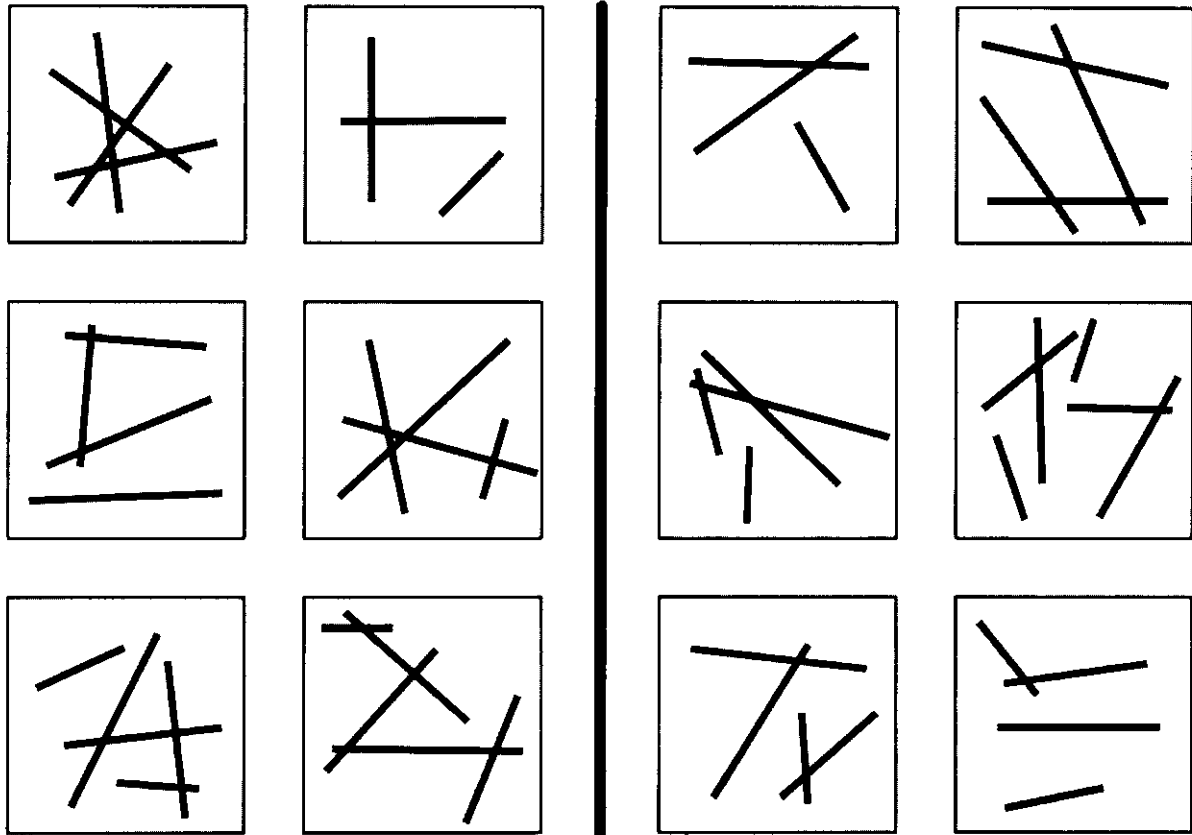
Apparently these ancient aliens not only used the same letters and numbers as your home planet, they also wrote their directions in your native language? It seems that will be a mystery for another day. The directions say:

"Shade some cells so that each number gives the product of the number of cells it can see along its row and the number of cells it can see along its column. A number can see all unshaded cells (including itself) that are not blocked."

2	A		T	6		H	
E	L		2	L		4	
	6	N		R	2	I	E
	E	T	4		S		8
4			X	12			M
L		2		A		6	I
E	6			2		O	S
T			8	S			24

# Puzzle 2

After marking down the solution to the first puzzle, you continue along until you reach a large door. It appears to be locked with an intricate system of rods and boxes. Next to the door, you see the following diagram. The 6 images on the left are separated from the 6 images on the right, but **why**?

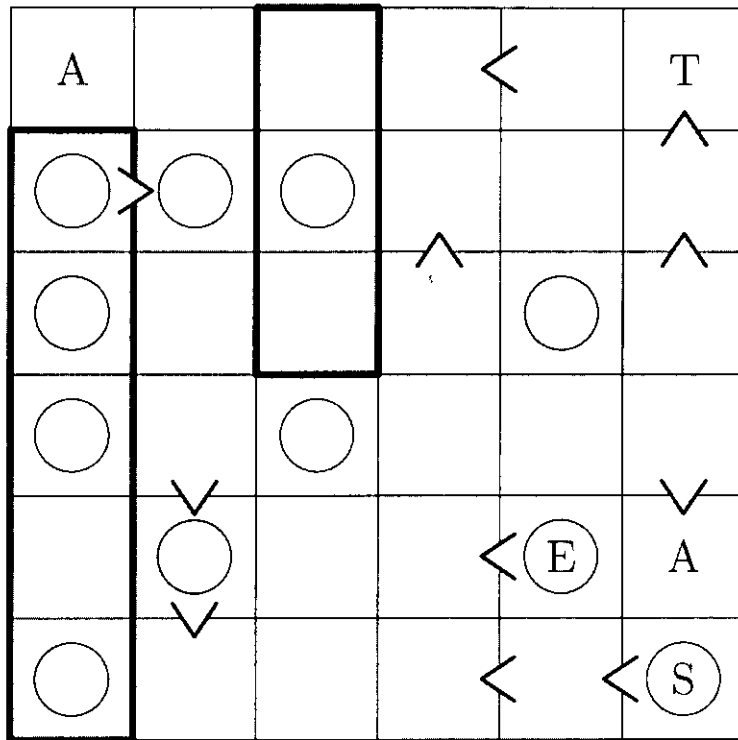




# Puzzle 4

This time, you reach a grid with somewhat cryptic instructions.

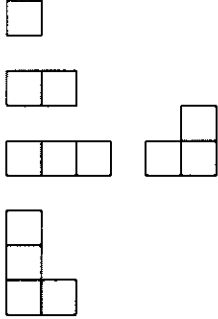
- Anit, Erp, Luis, River, Sage, and Takeru all have different heights. 5
- No one is both taller than Erp and shorter than Takeru.
- No one is both shorter than Erp and taller than Takeru.
- Sage is shorter than at least one of River and Takeru.
- Sage is taller than at least one of Anit and Erp.
- Erp is shorter than either Luis or River, but not both.
- Erp is taller than either Anit or Sage, but not both.



# Puzzle 5

You arrive at a pair of grids! This time, there are instructions. The instructions say:

A "region" is a group of 1–4 cells connected along sides (not corners). Here are examples of valid regions:



Divide the grid on the left into 40 regions, and place a number in each cell, so that:

- Each row and column contains one 1, two 2s, three 3s, and four 4s.
- The number in each cell is the area of the region it is a part of.
- All regions of area 4 are shaped like "L"s, as in the example above, possibly reflected and/or rotated.

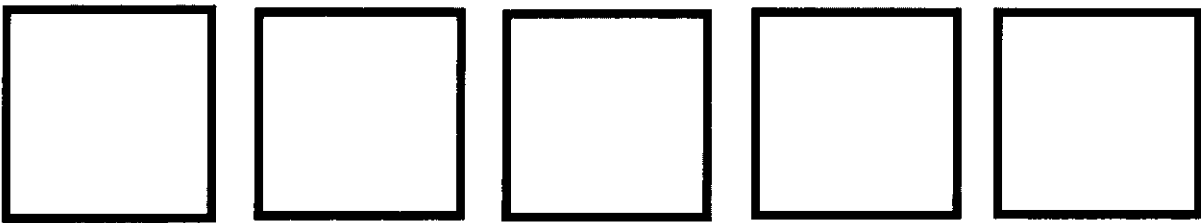
4							4	1	
3				2				4	
			2						3
							2		
	4								
									2
					3				1
	2			3					
2									

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

# Meta

You pace back and forth in front of the symbol-marked corridors, reflecting on the journey you've taken to reach this point. Suddenly — like booming thunder or crashing cymbals — it hits you all at once. You know what belongs in each box, and hence which path is the correct one.

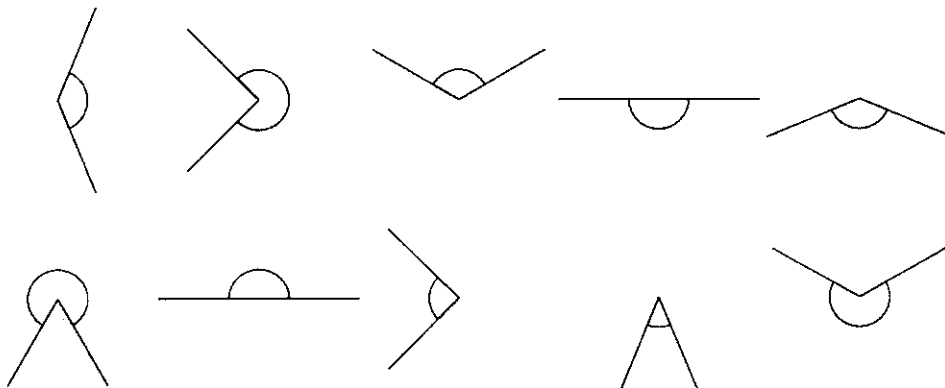
As you squat to write your solution in the centuries-old dust, you glance back at Fiona and Max, who shoot you a puzzled look. You smile and beckon them forward, leading them into the very heart of the lost city of Ozizo.



*There is a normal path forward, but does it overlap with the one you seek? Does it contain every possibility you have hoped for?*

As you step forward to examine the symbols more closely, you notice that the ground before the branching point has five large squares etched into it, along with some sort of riddle.

You shine your light down each passage, but they all look identical and seem to go on for miles. Your suit still has several hours' worth of oxygen left in it, but even that won't be enough to explore every single path. It seems you have no choice but to use reasoning to determine which is the correct one. (Darn!)



You step through the door and let out an involuntary groan: directly ahead, the hallway branches into *ten* different paths, each one marked with a peculiar symbol.