

26-Letter Puzzle Contest

A 24HPC round repurposed as LMI test, by Puzzlers Club

26 puzzles • 1000 points • 100 minutes • 10–16 July 2026

Solution Booklet

ANSWER KEYS

Alfa	Alphametics [Two Equations]	106988, ONPFHESLMA
Bravo	Killer	3574612, 4257136
Charlie	Triple Choco	21121212, 11311221, 21111222
Delta	Water Walk [Triangular]	15, 12111
Echo	Dotchi Dotchi Loop	21, 1111
Foxtrot	Masyu [Dance]	212, 312
Golf	Herugolf	33, 2
Hotel	Sum Skyscrapers [Unknown Bank]	37148, 14783
India	Bhai Bahan [Full]	3131, 1132
Juliett	Star Battle	51813592629
Kilo	Balance	572936, 481
Lima	Edamame [Hex]	1111113, 1111111, 113
Mike	(C)YCLOPS	123231, 222211, 2113112311, 231131
November	Remembered Length	15, 131, 31
Oscar	Tron	22223, 1222121, 212222
Papa	Tapa or Pata	2111116, 1313212, 325111
Quebec	K-Back [Irregular Grid]	KFDIECBALGHJ (or JHGLABCEIDFK)
Romeo	Battle Stars	84249182713
Sierra	Mountain	13, 11, 231
Tango	Tango	OOXXOXOXXO, XOXOOXOOXX
Uniform	School Trip	1323241, 11122324
Victor	Rock, Paper, Scissors	11241, 11211111, 11232
Whiskey	Cocktail Lamp	11111131, 112321, 31231
Xray	Akari [X-ray]	4254078302961
Yankee	Turn-and-Run	111, 111, 1222
Zulu	Shakashaka	12421222, 213212121, 222221221

RETROSPECTIVE

Thank you for participating in our contest!

The contest *is* hard. It was supposed to be a round for 24-Hour Puzzle Championships. What we forgot to mention was, 24HPC sets are not supposed to be completed, even by the strongest solvers in the whole world. That means scores in the 500's range or even lower are perfectly normal, and it becomes important to strategize on which puzzles to attempt.

(The main reason for this convention is that they don't have any time bonus, so this is one way to distinguish the top solvers. For comparison, our testsolve times were in the range of 250–500 minutes for the whole set, which would place us at around 200–400 points within the 100-minute contest time — although our testsolvers weren't exactly the top in the world or anything.)

It's unfortunate that we neglected to mention this, which may have caused some solvers to have a mistaken understanding and get confused when the contest was harder than expected. We hope you still enjoyed the puzzles in any case, and you have a lot of fun working out the puzzles even after the contest.

We also found out that answer keys are very difficult to set well, especially for genres that don't look "normal" (e.g. School Trip). In some cases, we have decided to allow alternative answer keys which clearly have also solved the puzzle correctly:

- Delta (Delta Walk): We allow answer keys that count number of cells rather than the segment length. (This gives 26, 23222.)
- Uniform (School Trip): We allow answer keys that include pillars as their own 1-cell regions. (For example, A becomes 131231241; the underlined 1's are the pillars.)

We also apologize that some of the answer keys feel unnatural, e.g. shading puzzles counting segments of unshaded cells. We tried to support a checksum if possible. It turns out LMI does not yet support a different sum for each field of the answer key, which posed a problem for hexagonal grids and puzzles with skipped clues (Uniform (School Trip) and Zulu (Shakashaka)).

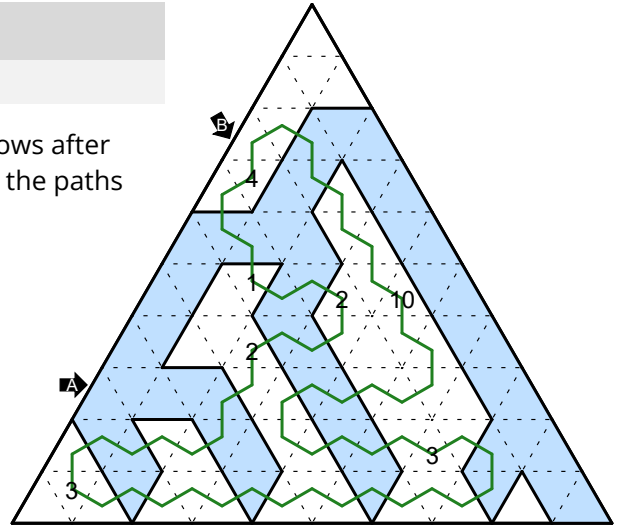
The solution to each puzzle follows, together with some solving tips for each one. In the write-ups, the notation "RxCy" means the cell on row x column y, counting rows as 1 from the top and columns as 1 from the left. (For puzzles on non-square grids, cells in each row are numbered as 1 from the left.)

In addition, while writing the set, we had a number of ideas and puzzles that were written for the set, but got cut. They can be found later in this booklet, after the write-ups.

04. Water Walk [Triangular]

DELTA, by yosh

Nearly all clues only have one way to be satisfied; the 10 follows after the 2 and the 3 nearby are filled in. The rest is to connect up the paths through water.



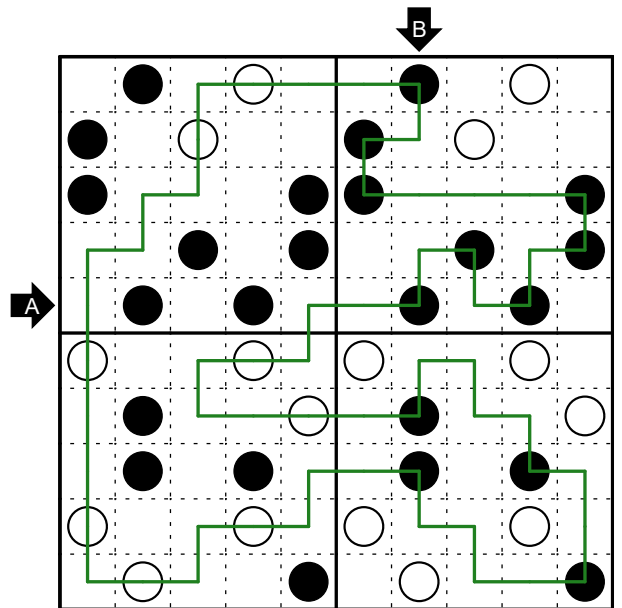
05. Dotchi Dotchi Loop

ECHO, by Gabriel

The top-left region must visit the white circles, otherwise the top-left corner breaks. This causes the top-right region to visit the black circles. Also, one strand in the top-left region exits to the bottom-left region.

To check the bottom-right region visits the black circles, it's easier to see what happens otherwise: its column 6 circles are both vertical, and this encloses a small loop in the center.

In logic puzzles, it is more elegant when a duplicated region like this behaves as differently as possible, so it is possible to guess that one region in each pair visits the white circles, while the other visits the blacks. We think the puzzle is already pretty easy as is, though, so this likely won't save much time.

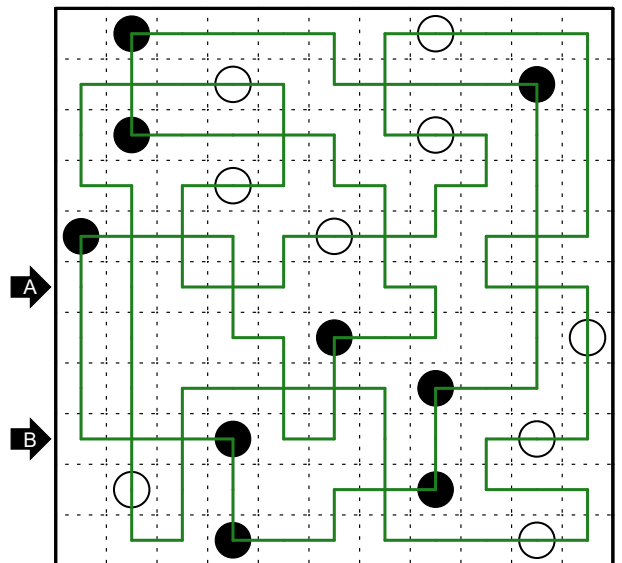


06. Masyu [Dance]

FOXTROT, by Walker

In Dance puzzles, good notation is vital. Remember crossings are allowed, but only between the two loops. Distinguish the two kinds of strands; this genre helpfully tells you that one loop visits all the black circles, the other visits all the white circles, so it's immediately clear which loop each strand belongs to. Strands from different loops cannot collide head-on (as that would merge them), but they can intersect at a right angle forming a crossing. Strands from the same loop can merge, but cannot cross.

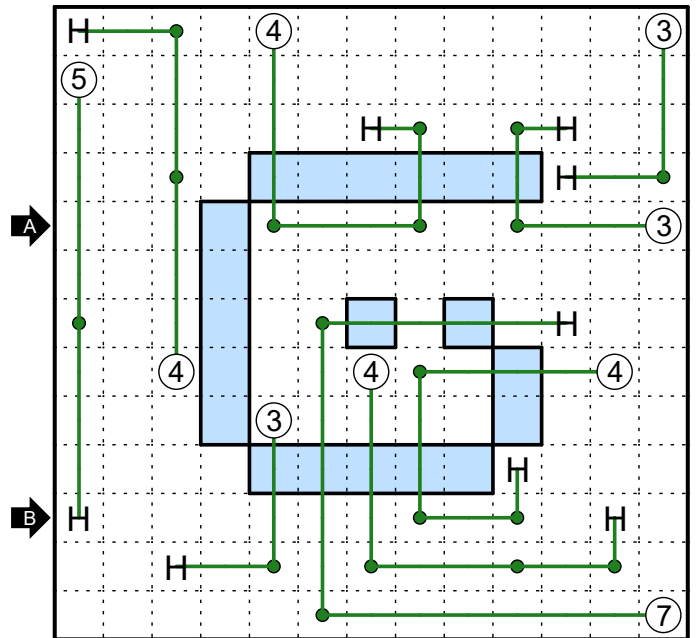
One possible break-in is along the top. The black strand from R1C2 extends all the way to R1C6, and bends to avoid the white strand at R1C7. This forces the white strand on R2C5 to go down and cross the black strand from R3C2 going right.



07. Herugolf

GOLF, by InvalidD

The 7-ball is constrained, although checking this might take a while. If the 7 goes up, it's forced to then go left twice, and then there's no hole it can reach. So the 7 goes left then up. Now each of its three possibilities cuts some section of the grid; only the one going right doesn't lead to a contradiction.



08. Sum Skyscrapers [Unknown Bank]

HOTEL, by ManyPinkHats

Let the numbers be A, B, C, D, E from smallest to largest; it's useful to mark a cell with its letter even if we don't yet know its exact value. The solve is divided into the following major steps:

1. The 13 sees only E (so $E=13$), otherwise the 43 can't see enough.
2. The 25 sees 3 numbers, otherwise $D=12$ is also seen by the 24. Thus the 43 sees all 5 numbers, and $R3C4=D$.
3. The 31 sees $B+D+E$, otherwise the 25 sees too much. Thus the 32 sees $C+D+E$, and $R1C4=B$.
4. The 24 sees 2 numbers, otherwise $A+B+C+E$ is too much. So $R1C5=11$, and we find $D=11$.

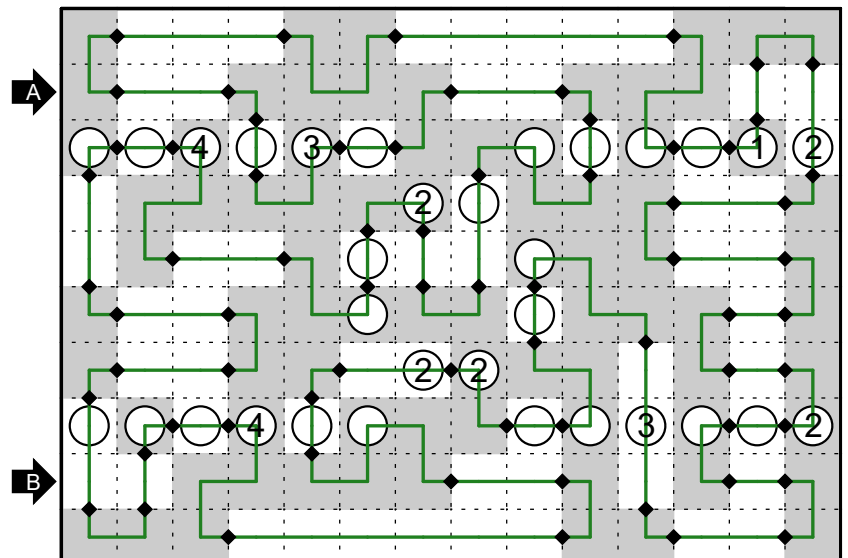
						13		
			8	13	4	7	11	24
			7	11	8	13	4	
25			4	8	13	11	7	31
A			13	7	11	4	8	
B			11	4	7	8	13	
						43	32	

09. Bhai Bahan [Full]

INDIA, by Gabriel

There shouldn't be many tricky steps, the puzzle is just big.

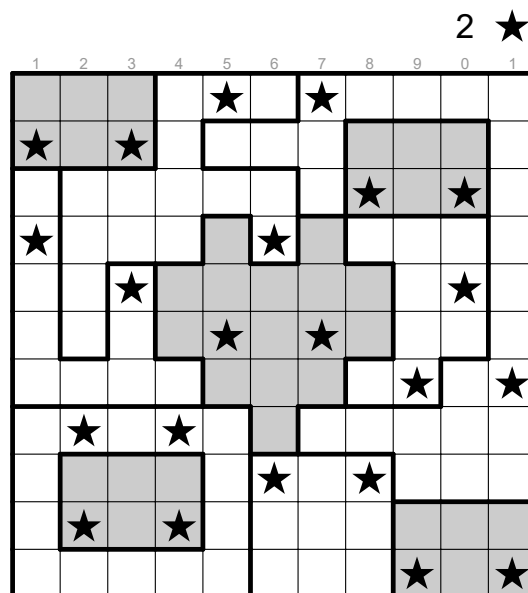
A break-in is on the top-left. Remember the Full variant is in play; the 4 clue in $R3C3$ must turn down then left, otherwise some cells cannot be visited.



10. Star Battle

JULIETT, by Yannick

The main driving force is rows/columns that we know are full. Rows 9–11 fully contain 3 regions, so the ring-shaped region in bottom-left has its stars in row 8, and this forces all the stars in the bottom 3 regions. In turn, the R8–11C5 are empty, so now columns 1–4 fully contain 4 regions. Also, columns 8–10 contain 2 regions plus 2 stars. These are both full. By marking empty cells implied by these, we find there is a star in R1C7.



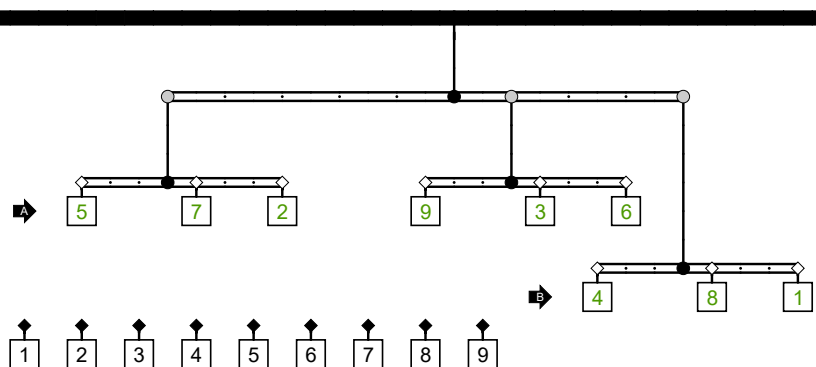
11. Balance

KILO, by Yannick

All three lower rods are identical, so we can enumerate all possibilities to fill one such rod using distinct weights from 1–9. There are 11 configurations.

(Yes, it is intended for you to do this grunt work; part of the puzzle is to do this efficiently.) We need to choose 3 of these 11 configurations that don't share any weight in common, turning it into an instance of [exact cover](#)

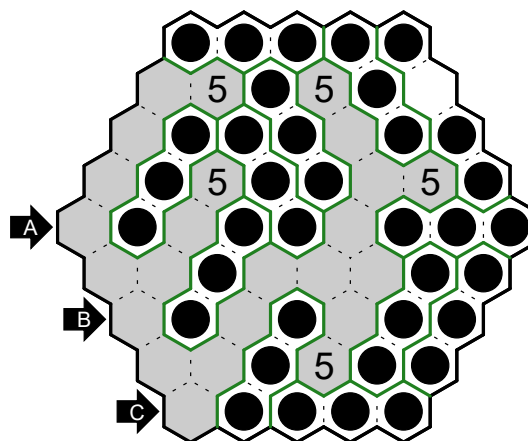
(usually known as "Column Dance" in logic puzzles). It is possible to solve this by hand, whether with clever insights or more grunt work.



12. Edamame [Hex]

LIMA, by Ammar

Each 5-clue only has one non-bean cell, which the clue must escape through. Visualizing the possible ways R2C2 (top-left 5) can escape, we find it can only escape left via R2C1 then R3C1. This forces R2C3 to be a bean, and its edamame must extend down-right. Much of the solve is of a similar nature, figuring out how the edamames must look like in order to support certain beans.

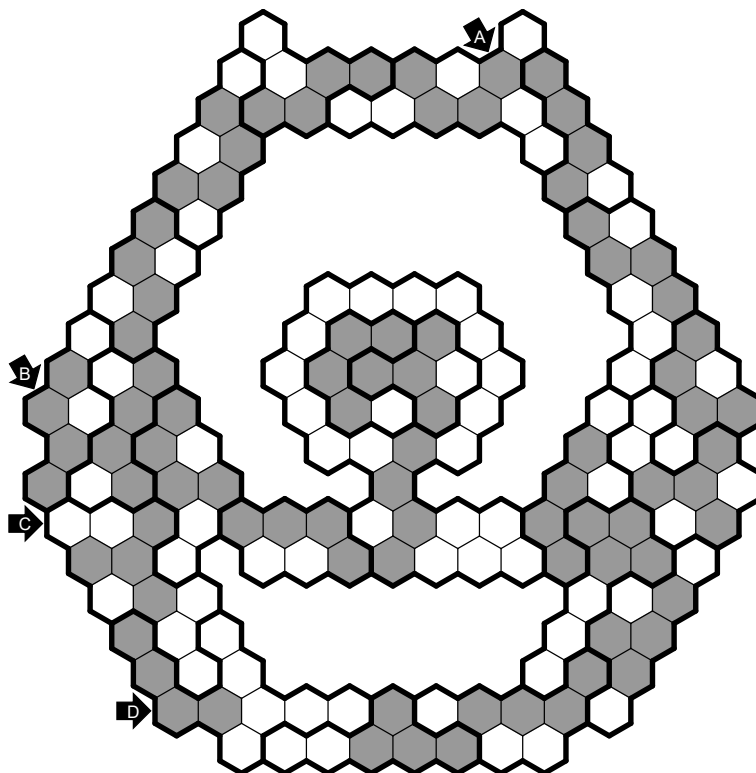


13. (C)YCLOPS

MIKE, by Martin

The puzzle is mainly about figuring out the large-scale connectivity. The break-in is that the "eye" in the center must connect to the left side. Resolving the shaded cells there, we find that it's impossible to connect through the bottom, so it must connect via the top.

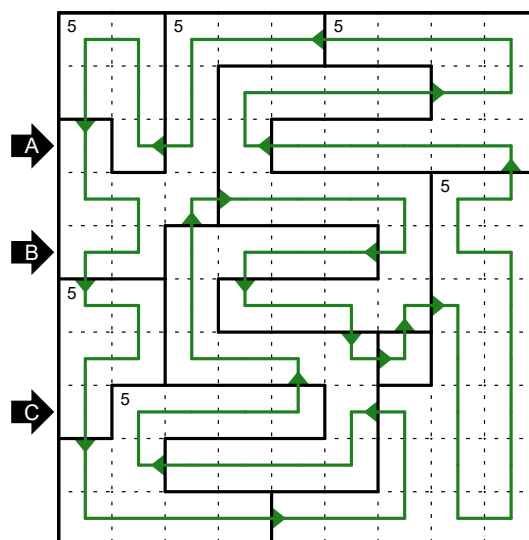
It's also useful to mark X for two adjacent cells that cannot be both shaded, since this helps highlighting connectivity.



14. Remembered Length

NOVEMBER, by boboquack

Consider the leg involving R2C7. How long is this leg? One endpoint (R2C7 itself) goes to a 5-room. If the other endpoint also goes to a 5-room, the leg is clearly of length 5. If not, the leg must find a non-5-room, so it must go all the way to at least R4C4. In either case, the leg is at least 5 cells long, and this forces the top row. The leg ending on R1C6 then cannot be 5 cells long, so the loop is oriented counterclockwise.

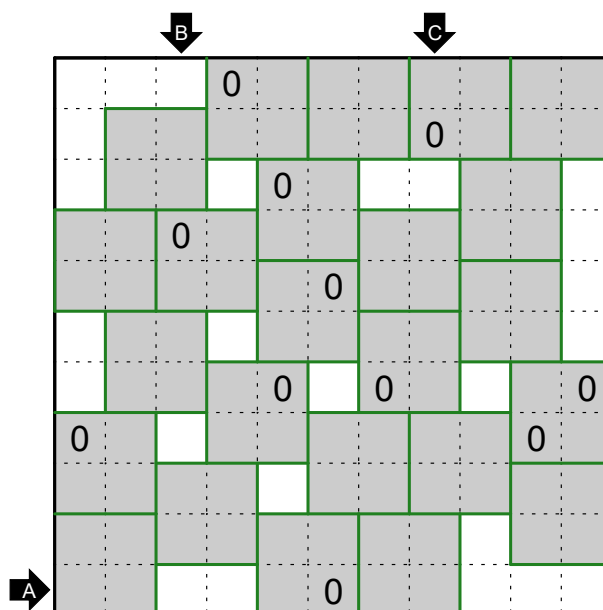


15. Tron

OSCAR, by boboquack

The main observation is, a 0-block can't be 1 cell away from "flat walls", either the edge of the grid or the surface made of two blocks flush side by side. This forces R4C3 to go right (flat wall from left edge) and R3C5 to go down (flat wall from top edge), which causes R3C5 to go right to form a R3-4C5-6 block.

The crux of the puzzle involves R7C6. Suppose R7C5 goes right. Then R11C6 goes right to avoid a flat wall with R7-8C5-6. There's a block on R8-9C7-8 to stop it going up. But this along with R6-7C7-8 makes a flat wall for R7C11. Similarly, R7C7 going left makes a flat wall for R8C1. So R7C6 is unused.

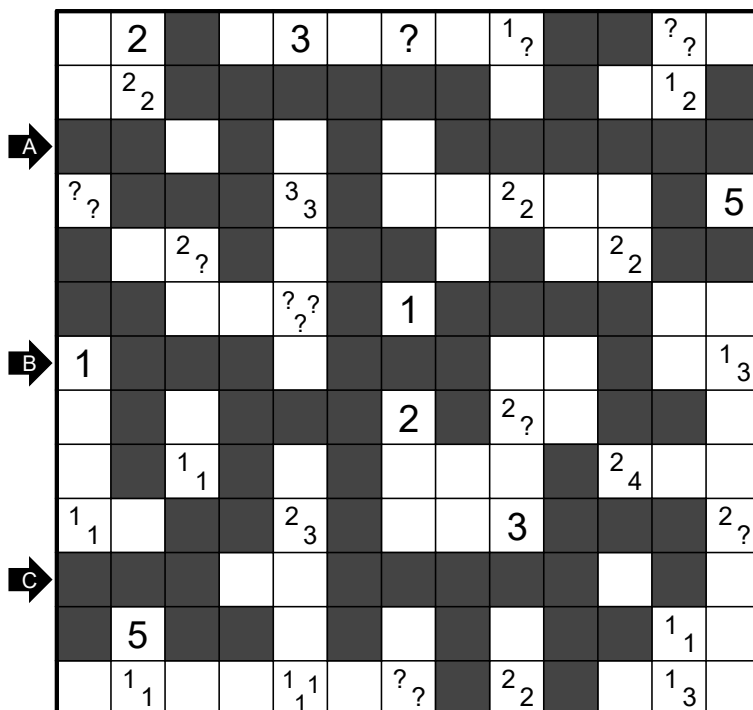


16. Tapa/Pata

PAPA, by Kusane

There shouldn't be many tricky steps, the puzzle is just big. Key to this sort of genre is to identify "commonalities": although a clue can be satisfied in many ways, often there are cells that are fixed in all cases. It is also sometimes useful to identify if a clue refers to black segments or white segments.

One tricky case is on the top-right. If R2C13 is white, there's only one way to satisfy R1C12's "? ?" clue: R2C11 is black, everything else around it is white. This forces a lot, and leads to R5C11's "2 2" being broken. So R2C13 is black, and R2C12 refers to white segments.



17. K-Back

[Irregular Grid]

QUEBEC, by Rever

The key method is entrance counting. A region with clue N must have exactly 2N exits. On the other hand, each cell has 2 exits. So even if a region looks like it has many exits, a lot of them are concentrated on a single cell, only up to 2 of them can be used.

The break-in is to first use this method in the easternmost region (Beauport). The southwestern cell has many exits, but only 2 can be used. The rest of the region only has 3 more exits, for a total of 5. But 4 of these must be used. Now, if the northern cell does *not* go west, the loop gets confined in Beauport.



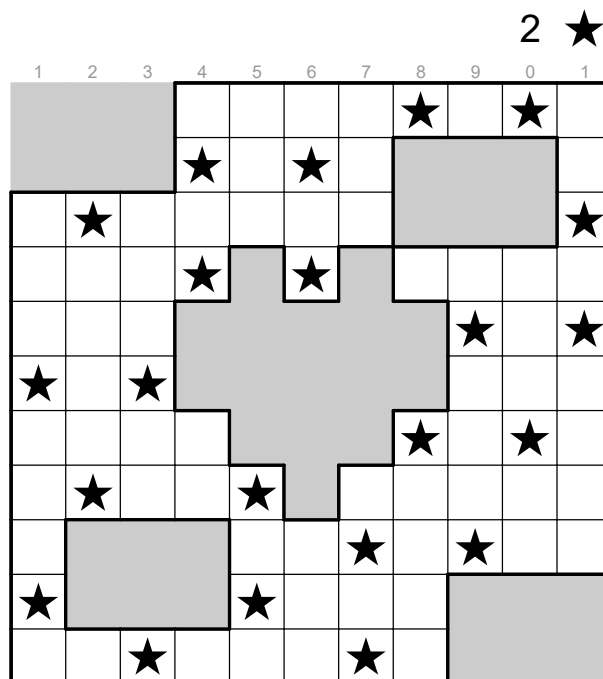
Now we use this method on the northwestern region (La Haute-Saint-Charles). The cell southwestern of Wendake has many exits connected to La Haute-Saint-Charles, but only 2 can be used. But more importantly, the cell northeastern of La Haute-Saint-Charles can only have 1 exit to this region, due to the line we just drew in the previous step. Counting the exits, this region actually has exactly 6 exits left, so all of them must be used. This implies the loop visits A-B-C-E.

18. Star Battle [Regionless]

ROMEO, by Yannick

We don't have a logical path for this puzzle. We tried this pattern (for the couple with Juliett), found out it's unique using a computer, and put it in.

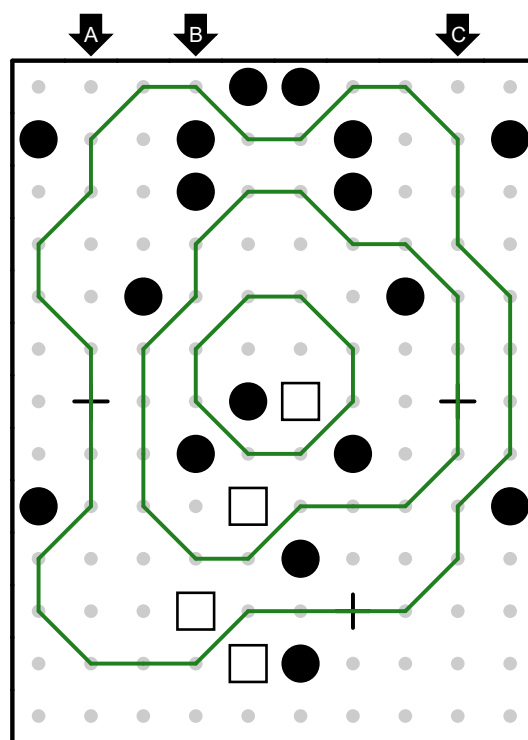
The best approach we found to minimize the amount of bifurcation is to look at R9–10C1. If they are empty, or if there's a star on R9C1, we can derive a contradiction. (The contradiction only happens very late into the solve, but each case is reasonably easy to work out since it's a chain of simple implications.) So R10C1 has a star, causing columns 1 and 3 to be full. Then by looking at rows 2–3, R3C2 has a star, and we can progress from there.



19. Mountain

SIERRA, by ManyPinkHats

There must be a contour line separating any two flags, forcing three contour lines all in the bottom area where the "S" shape is. Knowing this, there must be three contour lines traveling upward on each side of the grid. That is a lot, and it is a tight squeeze to fit everything in.



20. Tango

TANGO, by Ammar

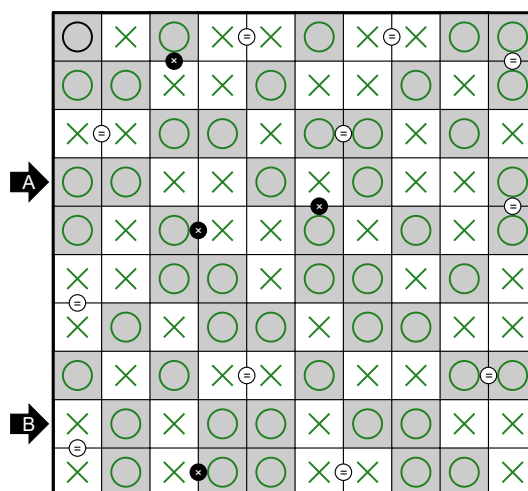
There are two main implications of the rules:

- Any 3 consecutive cells contains at least one of each symbol.
- The 4 cells centered at a white clue must read "ABBA".

In column 1, R2–4C1 has an O, so R5–10C1 can be determined. In turn, looking at R1–3C1 and R3–5C1 gives R3C1=X.

In row 1, while R1C3–9 can't be immediately determined, there is a commonality: R1C2=X. This solves row 1, then column 10.

In row 10, each of R10C3–4/C5–6/C7–8 contains one X each, so R10C9=O. This makes row 9 tight of X, so R9C2/5/8=O.

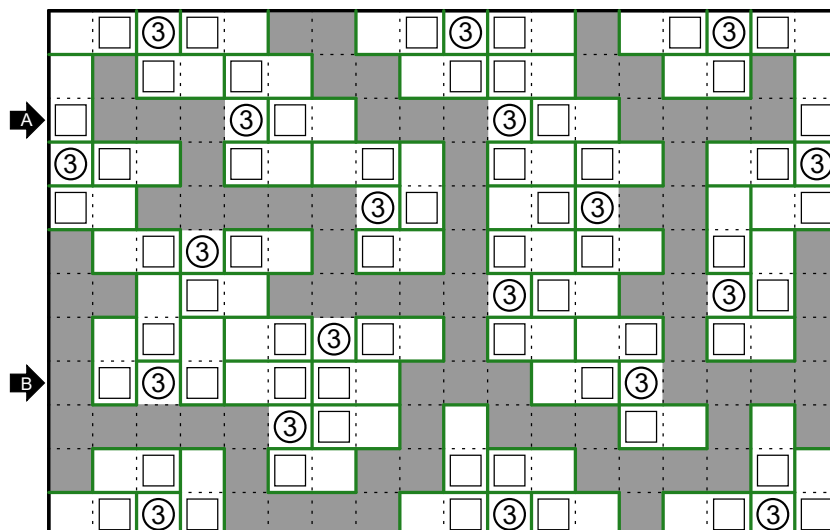


21. School Trip

UNIFORM, by Jovi

There shouldn't be many tricky steps, the puzzle is just big.

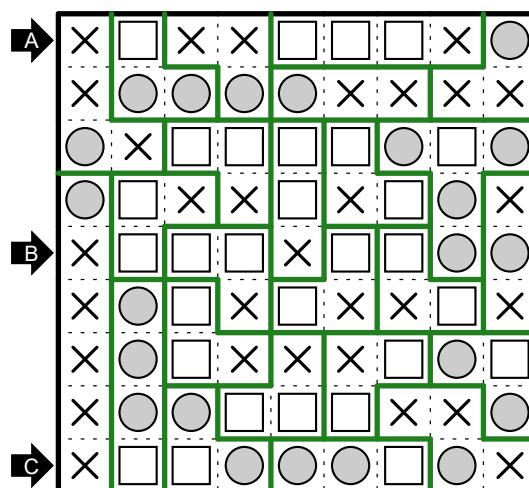
For this puzzle, the clues give a large number of pillows and hence futons, and this causes the corridor to be a very tight fit. The puzzle is thus mainly about keeping the corridor connected.



22. Rock, Paper, Scissors

VICTOR, by Yannick

A large part of the grid in the center consists of only paper and scissors, so each scissors must be winning in its region. There are 10 scissors and 20 papers, so each such region consists of exactly 1 scissors and 2 papers, and this entire part of the grid is sectioned off from the rest.



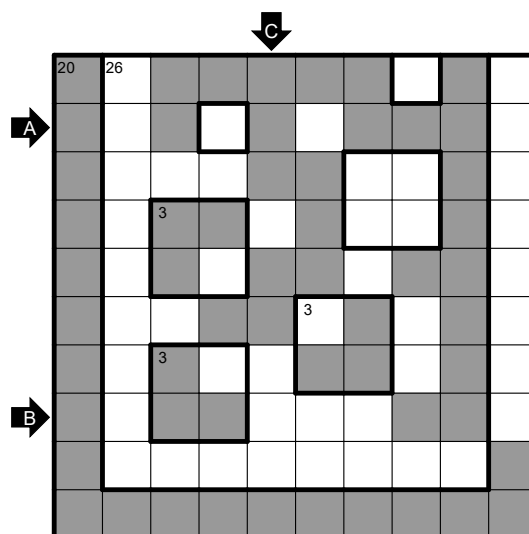
23. Cocktail Lamp

WHISKEY, by dpad

The 26 is maximum, from these observations:

- For each region with a 3 clue, only 2 of its 8 cells can be part of the 26.
- Due to the 20, the 26 can't use row 9 at all, and every cell in column 2 trades with a cell in column 9.
- Each 2x2 area has at most 3 black cells; this puts at least one white cell in R1-3C5-7.

Trying to maximize the 26, we find the largest block we can fit is indeed 26, and its shape is forced.

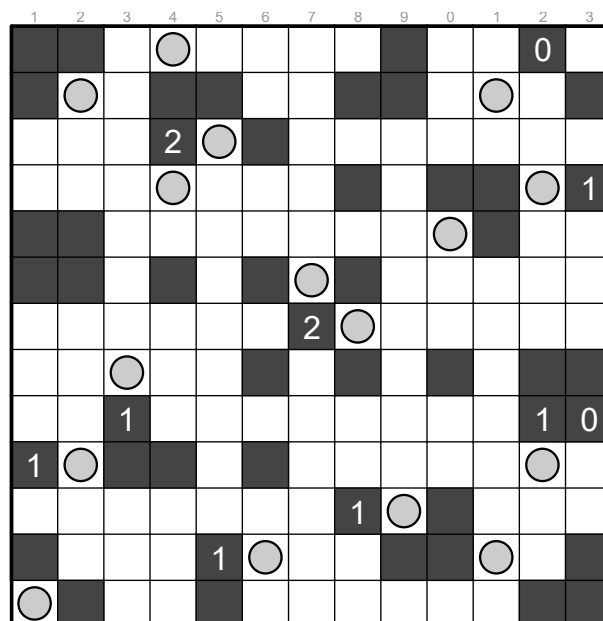


24. Akari [X-ray]

XRAY, by InvalidD

The primary difficulty is from reading lightbulbs. It is pretty unintuitive that a lightbulb can shine through a black cell, so it takes more effort to read the grid. There are also logical implications: a 2-clue has a lightbulb horizontally and a lightbulb vertically.

The break-in is in rows 9–12. Most cells in these rows fall into 4 horizontal lines of sight, which support 4 lightbulbs. But the clues add up to 5. So at least one of R8C3 or R10C2 is a lightbulb, so R9C2 is not.

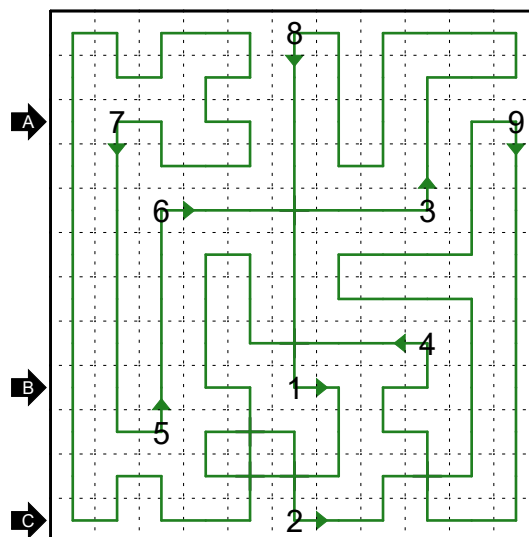


25. Turn-and-Run

YANKEE, by InvalidD

Most of the big clues can be resolved immediately. The 7 goes down then turns right (otherwise top-left area is cut off). The 3 goes up (otherwise this makes an empty 2x2).

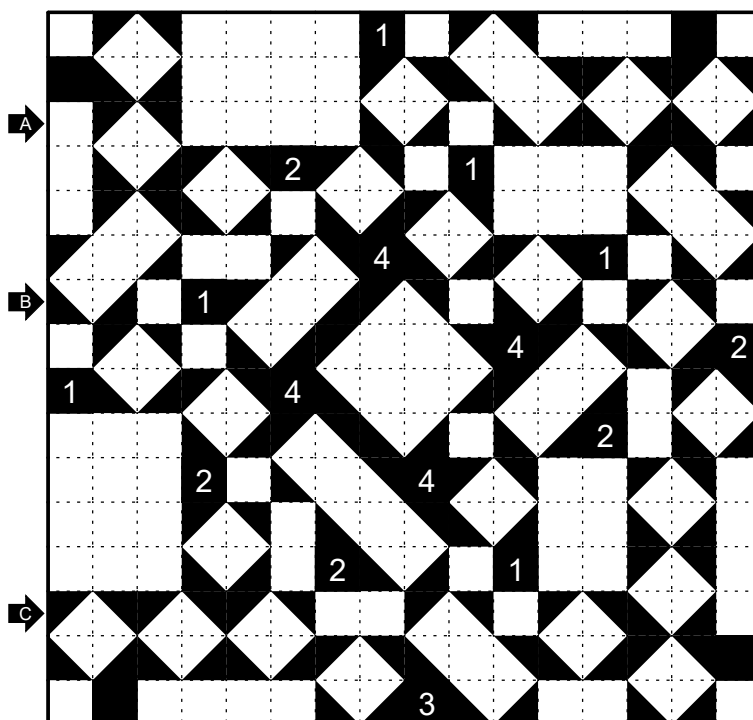
The bottom-right quadrant is somewhat more difficult than the rest. Track the direction of each strand. If two strands join, they must have the correct directions; this helps ruling out various cases (such as the 4 going down).



26. Shakashaka

ZULU, by Jovi

The main break-in is the 4's in the middle. Consider R9C6 (the left 4), and look at the triangle in R8C6 above it. If it faces up-right, it is actually possible to trace out the implications, using only the 4's, to arrive at a contradiction. (It requires a rather deep lookahead, something like 10 triangles placed.) Thus R8C6 faces up-left. This is symmetric: all the other 4's have the same implication.



BONUS PUZZLES

These puzzles did not make it into the test for various reasons. In some cases, we found a better execution of a given theme. In other cases, the author went a tad bit too enthusiastic with the puzzle, and we simplified it. All authors have agreed on releasing these puzzles here, for you to enjoy. Have fun!

Note: Unfortunately there's no online solving for these puzzles. Most rulesets are pretty common genres and so don't have examples. One genre also appeared in the set; two genres were more complicated so we had an example or an off-site link. Solutions are on the very last page of the booklet.

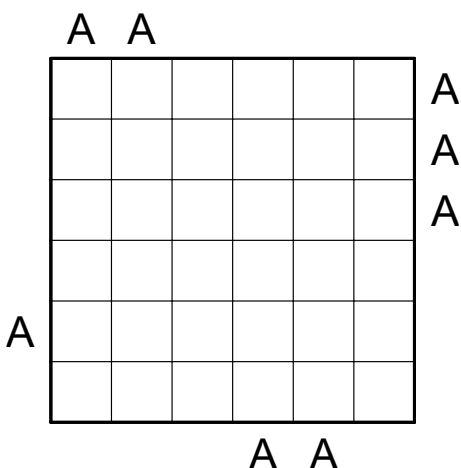
These puzzles did not receive proper testsolving. That means these puzzles might be brutally difficult with no logical path. It is also possible they have multiple solutions, although we believe they don't.

Easy as ABC

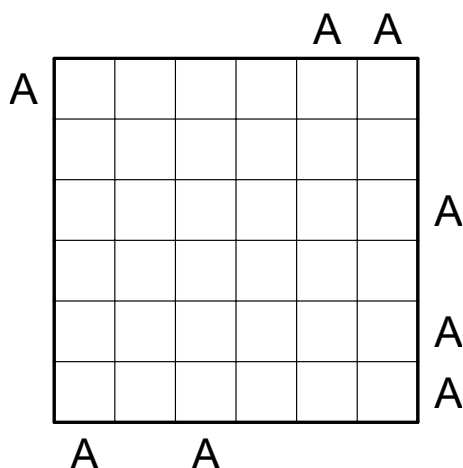
ALFA, by Ammar

Fill in a letter from the given range into some of the cells. Each row/column must have exactly one instance of each letter. *(Some cells will remain empty.)* Each clue outside the grid tells the first letter seen in that row/column looking into the grid, skipping over empty cells.

(A – B)



(A – B)



(These are two independent puzzles.)

Ammar's first attempt was to write a puzzle whose clues are only A's. The natural genre was Easy As ABC, and the range could only have two letters (A–B) since there would be no way to distinguish non-A letters. The first puzzle was a bit too easy, the second one was somewhat more interesting. But then Ammar went in a different direction entirely.

Maxi Loop

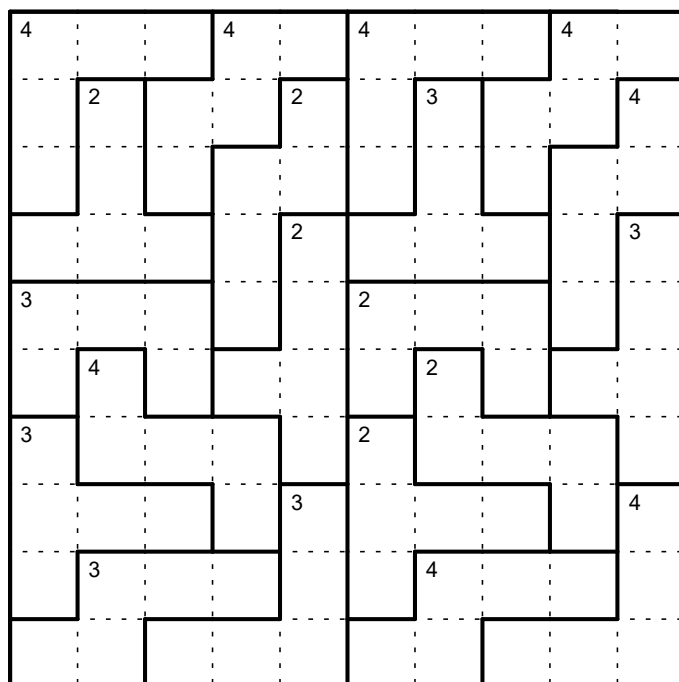
ECHO, by Gabriel

Draw a non-intersecting loop connecting cell centers and traveling orthogonally. The loop must visit **all** cells.

The loop can be divided into "legs", separated by region borders. A clue for a region tells the length of the longest leg in that region.

Similar to the competition puzzle, the two halves of this grid have an identical division, although the clues are not. Gabriel replaced it because of the much stronger theme of the competition puzzle: the regions are completely identical, and the genre name also has a repeated word.

Apologies to Gabriel for the clue placement. As written, the clues were in diagonal lines; for instance, the top-left W-pentomino's clue was on R3C3. But the position of the clue doesn't matter in Maxi Loop, so the clues are moved to the top-left of each region to make it uniform.



Sum Skyscrapers

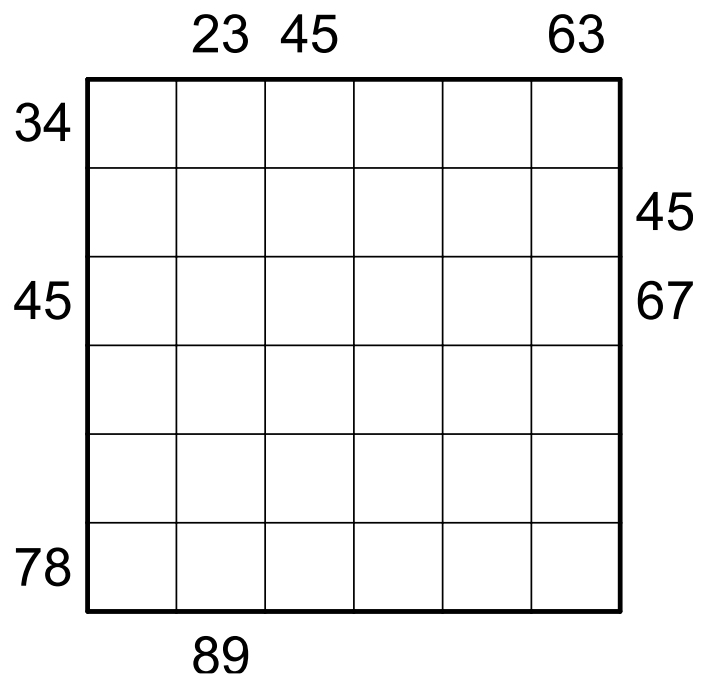
[Unknown Bank]

HOTEL, by ManyPinkHats

Choose a set of N **distinct** positive integers as the bank, where N is the length of a side of the grid. Then fill in a number from that bank into each cell. Each row/column must have exactly one instance of each number from the bank.

Each number inside the grid represents a skyscraper of that height. When looking from the side, taller skyscrapers hide shorter ones behind it. Each number clue outside the grid tells the sum of all numbers that can be seen in that row/column looking into the grid.

In the PB, we said the original version of the Sum Skyscrapers was a 6×6 which nobody tested successfully. Here it is. While preparing this SB, I (Ivan) managed to solve the puzzle. But I'm still not confident it's unique as my solve path involved several huge side branches. Good luck!



Balance [Generalized]

KILO, by Yannick

Example by Ivan

Fill in a number to each weight on the mobile. Each weight in the bank (given below the mobile) must be used exactly once each. (The gray hexagons are to mark the tension of strings. They do not have to be filled for your solution.) The entire system must be balanced, defined as follows.

The "tension" of a string is a **non-negative real number**. Each weight is attached by a string to a rod; the tension of that string is the weight's number. Other strings attach two rods, or a rod with the ceiling; its tension is to be determined. (The tension of a string may be zero, but may not be negative. In the example, the tension of each other string is the red number written in a gray hexagon.)

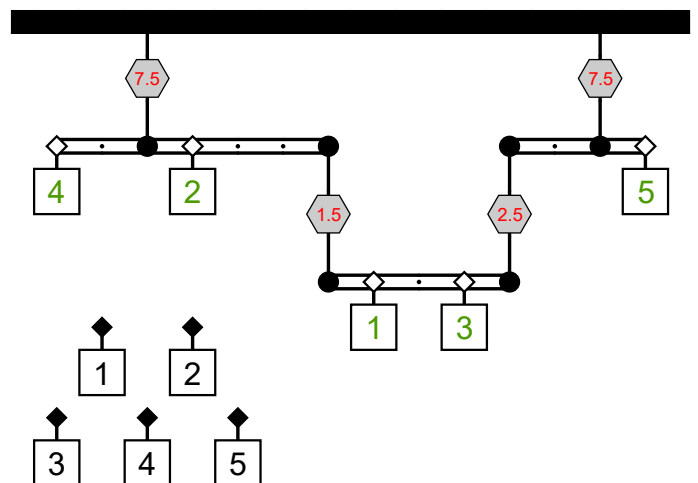
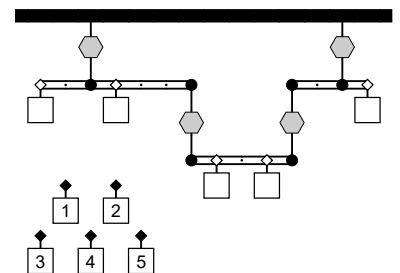
For each rod, take any point on it as the "fulcrum". The "torque" from a string attached to the rod is the tension of the string, multiplied by the distance to the fulcrum, with the correct sign:

- If a string points down from the rod, its tension counts positively. If it points up, it counts negatively.
- If the string is to the right of the fulcrum, its distance counts positively. If to the left, it counts negatively.

The total torque must be 0. This must hold for **any** choice of the fulcrum on the rod. (The rods and the strings themselves no weight and can be ignored.)

Example: Consider the bottom rod. If the fulcrum is the leftmost point, the total torque is $(-1.5 \times 0) + (1 \times 1) + (3 \times 3) + (-2.5 \times 4) = 0$. If it's the rightmost point, the total torque is $(-1.5 \times -4) + (1 \times -3) + (3 \times -1) + (-2.5 \times 0) = 0$. You can test at any other point as the fulcrum — even one where there's nothing on it, or even somewhere at a non-integer distance — and the total torque will still be 0. So the bottom rod is correctly balanced.

(The puzzle is on the next page.)



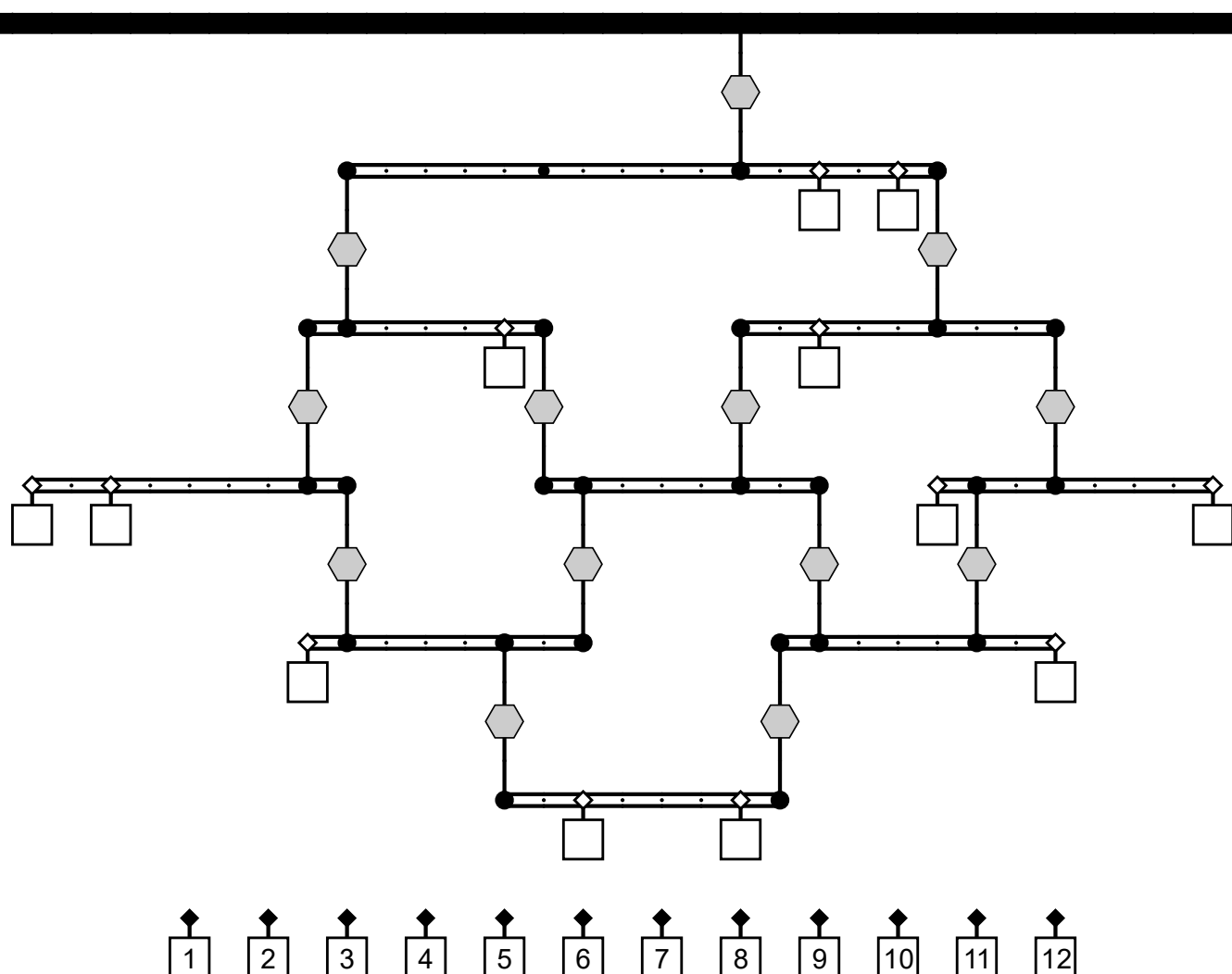
Solving tips: The balanced condition can be simplified into the following two rules:

- The total tension of all strings pointing up from the rod is equal to those pointing down. (*In the example, the bottom rod has $1.5 + 2.5 = 4$ total tension pointing up and $1 + 3 = 4$ total tension pointing down.*)
- The balanced rule condition holds for **any one fulcrum of your choice**. (*Since you may choose your fulcrum, you typically want to choose a fulcrum where there's a string. This makes its distance 0, simplifying your calculations.*)

The initial version of the Balance puzzle (for Kilo) was this puzzle. Strictly speaking, it is still just "the entire system must be balanced"; however, explaining what this exactly means for non-physicists is very difficult. The best way we found was to introduce the tension of strings directly, and phrase the rules in terms of tension. Needless to say, we vetoed this puzzle due to its rules complexity.

To derive the usual Balance rules with only one string supporting each rod, just put the fulcrum at the string. The string's tension is then simply the sum of the weights attached to the rod (and any lower rod attached to it). If this tension matters for a higher rod, we simply phrase it as, these weights directly affect the higher rod.

The example is custom-made for this explanation, and is the only puzzle that wasn't a "reject" in here. It's written specifically to involve non-integer tension.



Palisade

QUEBEC, by Yannick

Divide the grid into regions of orthogonally connected cells. Each region must have the indicated size. If a cell contains a number, it tells how many of the cell's four sides is a region border. (*The entire edge of the grid counts as a region border.*)

This genre is a generalization of Five Cells and Four Cells. The "counting region borders" clue style is later used (with a slight adaptation) in the video game *The Artisan of Glimmith*, a puzzle game filled with a ton of region division puzzles; this clue type is also called "Palisade" in-game.

We initially chose this genre because "Palisade" was a word borrowed from French. While preparing this SB, we found out that it wasn't "native" French, as its roots could be further traced back to Latin. Finding a thematic choice for Quebec was very hard, and we were very lucky to come up with the idea of K-Back on Quebec City.

(72 cells)

3					1			2		
3				2	2		2		2	2
	1	2				2	1		1	
						1		2		2
1		2					1		2	1
	1			1	1	1			1	
		2				2	2	2		2
	2	1		2					1	
2	1		1		2					
		2		2	1				1	2
	1	1		1		1	1			3
			1			2				3

Mountain Climber

SIERRA, by ManyPinkHats

Draw some "contour lines" and a "climbing path".

Each contour line is a loop connecting grid points. The loop travels orthogonally and diagonally, in all eight compass directions. The loop may only turn 45 degrees at a time; in other words, all angles of the loop are obtuse. The loop may only travel **at most 3 units orthogonally, and at most 1 unit diagonally**, before it must turn. Contour lines may not touch or intersect themselves and each other. (*Unlike in Mountain (the competition genre), here contour lines do not have to form a stack.*)

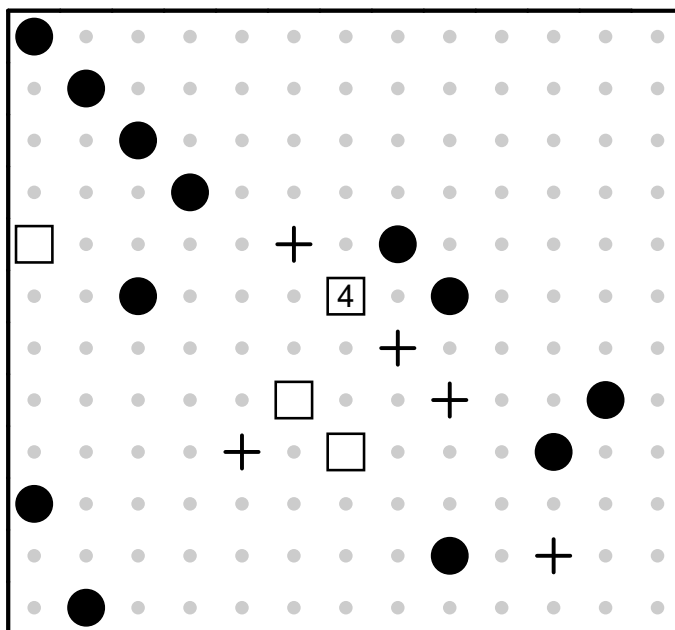
Contour lines may not pass any boulders (black circles) and flags (white squares). Each ladder (plus sign) must be passed by a contour line, which goes straight orthogonally. In addition, contour lines divide the grid into regions. Each region must contain exactly one flag. If a flag has a number, it must be equal to 1 plus the number of contour lines enclosing the flag.

The climbing path is a non-intersecting path connecting grid points. The path **travels only orthogonally**. The path starts from some flag, and ends on the "highest" flag. (*This is the flag enclosed by the most contour lines, i.e. the flag that would have the highest number. There must be a unique highest flag.*)

The climbing path may not pass any boulders, but must visit all flags. The climbing path may intersect a contour line on ladders, but otherwise may not touch or intersect itself or any contour lines outside ladders.

Note: Hempuli's original blog post (with more examples and puzzles) can be found [here](#).

The original genre had a climber in addition to the mountain's contour lines. With rules being half a page long, safe to say it doesn't stay in its current form. We decided we could remove the climber and still have an interesting genre.



SOLUTIONS TO EXTRA PUZZLES

These solutions are presented without any write-ups.

(A - B)

$$(A - B)$$
