

GAS Leak

Genuinely Approachable Sudoku from the CtC Discord
Volume 12: January 15, 2022 - February 3, 2022



Good morning, friends! It's contest season again, and the sudoku world is buzzing with excitement. This season in GAS, we'll be celebrating some of the many interesting variants used in contests - and rewarding you with bonus hats for practicing and competing, too. You'll see the first few of those puzzles in this edition of GAS Leak, along with a whole bunch of old favorites. We're also excited to share another lesson from the GAS 101 series - this time, on using geometry while solving. And as always, the last few pages of this leak are dedicated to a handful of puzzles that we liked, but that didn't quite make the cut for the regular GAS channel. Enjoy!

- *Clover*

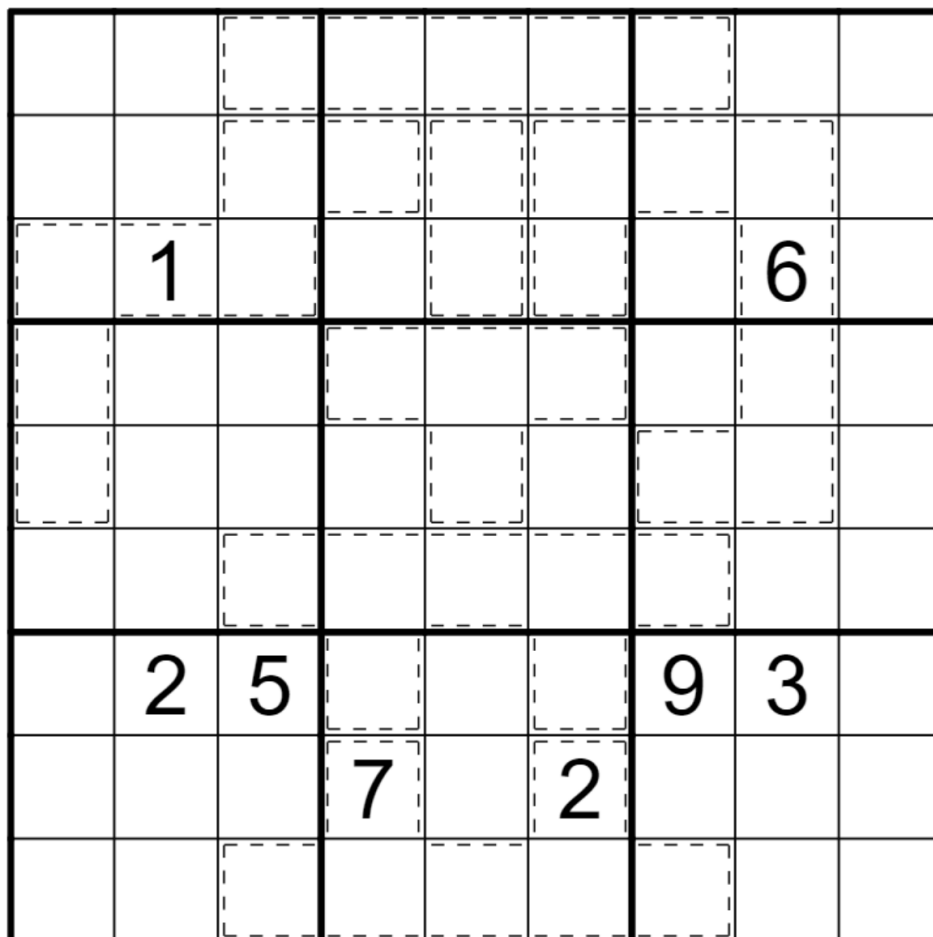
January 15 2022: Counting Cages

Clover

Here at the GAS Complaint Department, we've been carefully reading and filing away the official letters of complaint that get ~~thrown through the front window wrapped around a brick~~ inserted into a self-addressed stamped envelope and mailed to us. It turns out the #1 complaint in GAS is: Killer sudoku has too much gosh darn addition in it.

(You've been using much more creative adjectives than 'gosh darn', even - you must've been reading your thesauruses!) In response to the overwhelming amount of feedback, we've decided to abolish addition from killer sudoku entirely. From here on out, killer sudoku will only require counting ~~ignore the fact that counting is just, uh, adding 1.~~

Let's look forward to a less mathematical future with this **counting cages sudoku!** Each cage of size N contains the digits from 1 through N, exactly one time each, in any order. For instance, a 5-cell cage must contain the digits 1, 2, 3, 4, and 5 in any order.



f-puzzles: <https://f-puzzles.com/?id=y95g2na5>

CtC: <https://tinyurl.com/2vvuzzb2>

January 16 2022: Classic Sudoku

Sam Cappleman-Lynes

Grey squares? Grey circles? Mysterious strangers wearing sunglasses indoors? What a load of nonsense. There's no need for a dichotomy like that. In this puzzle, the odds and the evens coexist in the same grid.

Today's GAS is a Classic Sudoku. Normal Sudoku rules apply, and that's it!

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | | |
| | | 1 | 5 | | | 6 | 7 | |
| 4 | 3 | 8 | | | | | 5 | |
| 1 | | | | | | | 2 | 4 |
| 5 | | | | | | | | 6 |
| 3 | 7 | | | | | | | 1 |
| | 6 | | | | | 3 | 1 | 7 |
| | 2 | 5 | | | 4 | 9 | | |
| | | 3 | 7 | 9 | 6 | | | |

f-puzzles - <https://tinyurl.com/ycknyv5x>

CtC - <https://tinyurl.com/28h6bt64>

Penpa - <https://tinyurl.com/bddd2t8n>

January 17 2022: Echo

Philip Newman

Sam is really killing it lately, yeah? I don't know where he gets his ideas for such creative grid patterns.

Today's GAS is a Killer Sudoku!

Normal sudoku rules apply. Digits in cages cannot repeat and must sum to the total given.

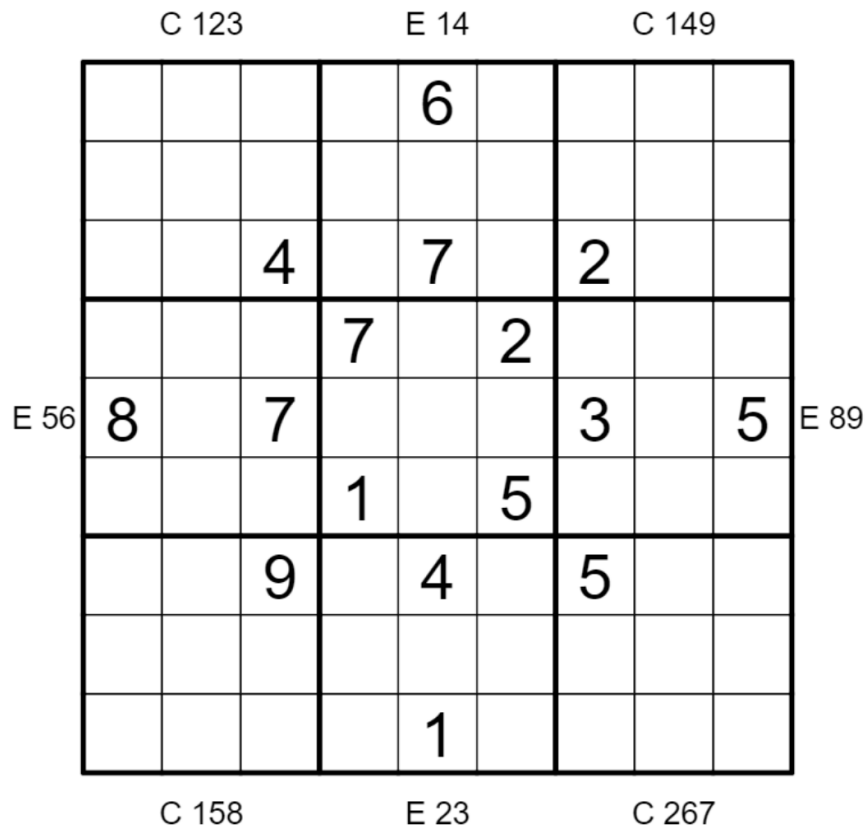
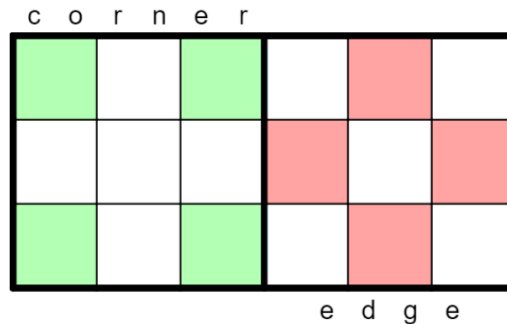
| | | | | | | | | |
|---|----|----|---|----|----|----|---|----|
| | | | 6 | | 7 | | | |
| | | 5 | | | | 9 | | |
| 3 | 4 | | 8 | 5 | | | 8 | |
| | 4 | | 6 | | | | | 10 |
| | | | | 9 | | | | |
| | 17 | | | | 2 | | 3 | 11 |
| | | | | 7 | 1 | 12 | | |
| | 15 | | | | 13 | | | |
| | | 16 | | 14 | | | | |

f-puzzles: <https://f-puzzles.com/?id=ya6adq7u>

CtC: <https://tinyurl.com/4t5fhjy>

January 18 2022: Corner/Edge
Clover

Today's GAS is a **corner/edge sudoku**, a variant that featured in the first round of the 2022 Sudoku Grand Prix! Normal sudoku rules apply. In this variant, digits preceded by "C" or "E" appear near some of the 3x3 regions of the sudoku grid. Digits preceded by "E" must appear somewhere in the four edge cells of their regions. Digits preceded by "C" must appear somewhere in the four corner cells of their regions. (This doesn't necessarily mean they're in the corners or edges of the whole grid, just the corners/edges of their specific region! An example appears below.)



f-puzzles: <https://f-puzzles.com/?id=yc2koy92>
CtC: <https://tinyurl.com/9fx3h93y>

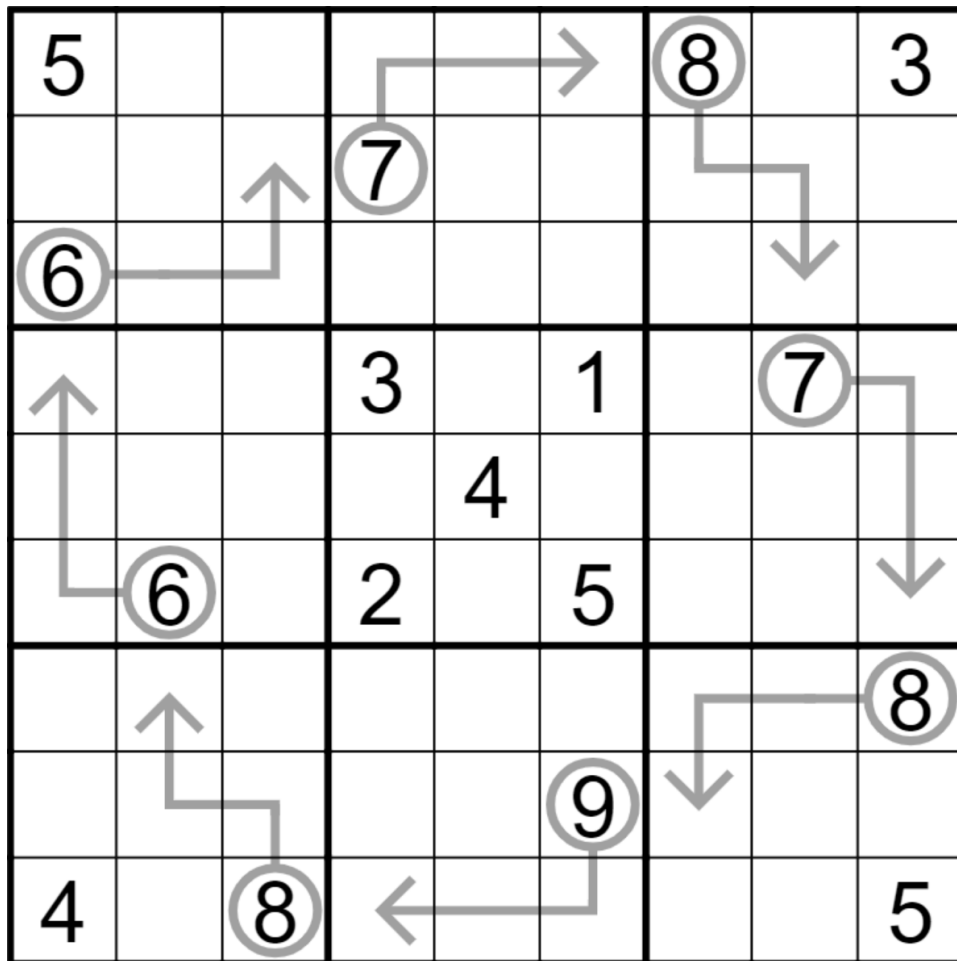
January 19 2022: Arrow Sudoku

Sam Cappleman-Lynes

Oops, I did it again. Something about this shape just inspires me, y'know?

Today's GAS is an Arrow Sudoku. Normal Sudoku rules apply, and in addition, digits along an arrow must add up to the digit in the attached circle.

Editor's note: are you starting to notice something a little suspicious about Sam and Philip's last few puzzles...?



f-puzzles - <https://f-puzzles.com/?id=y9fh28sn>

CtC - <https://tinyurl.com/2p8vww8t>

January 20 2022: Ernst

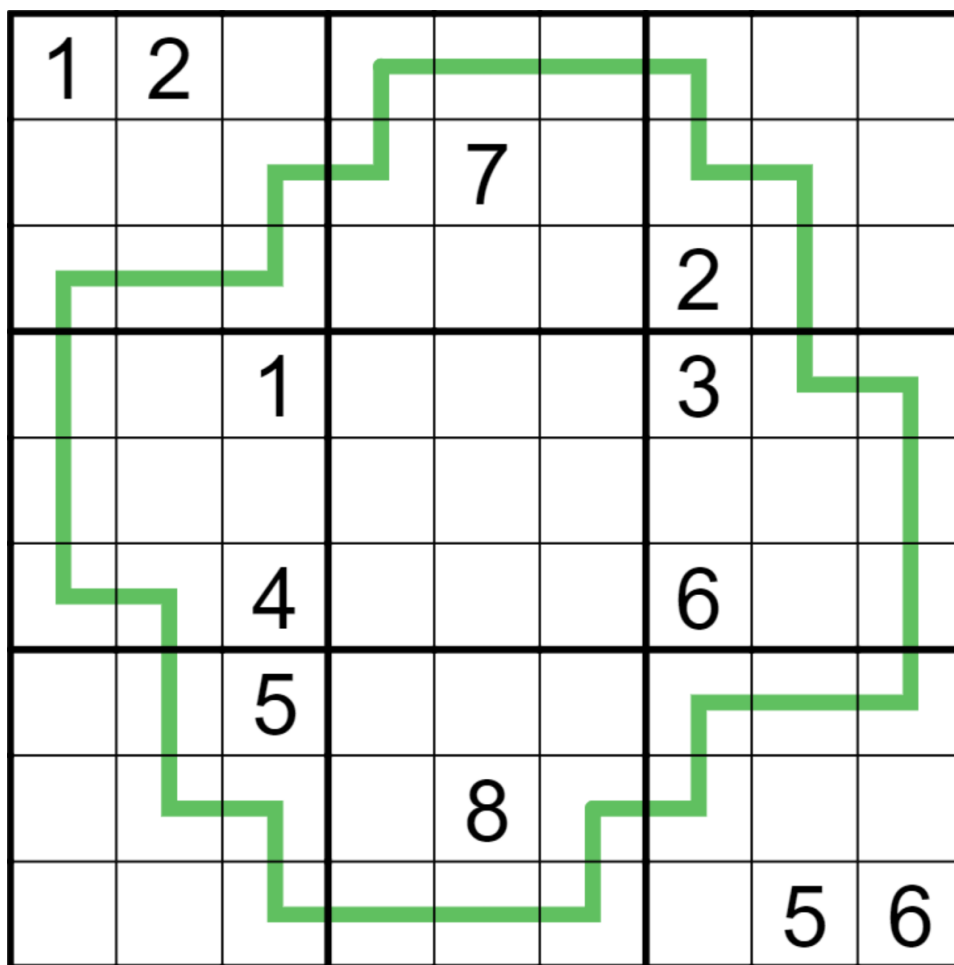
Philip Newman

I know Sam and I have been using this pattern for a while now, but something is still missing...

Oh! We haven't done Sam's *favourite* variant yet!

Today's GAS is a German Whispers Sudoku!

Normal sudoku rules apply. Along green lines, digits must differ by at least 5.



f-puzzles: <https://f-puzzles.com/?id=y9adcw7j>

CtC: <https://tinyurl.com/23cscfwa>

January 21 2022: Bust Sudoku

Clover

Today's GAS is another variant that appears in the 2022 Sudoku Grand Prix: **Bust Sudoku**. Like corner/edge, the rules are easier to use than they are to explain, so take your time reading them and feel free to ask questions!

Normal sudoku rules apply. Also, values appear outside of some of the rows and columns. These values tell you where that row or that column "goes bust."* In other words, if you sum the first N digits in the row or column (starting from the direction of the clue), the clue tells you the first value of N where that sum is greater than 21.

Here's an example: suppose that a row consists of the digits 3 8 4 6 9 2 5 1 7, in order. If you sum the first three digits, the sum is only 15, so the row hasn't "gone bust" yet. If you sum the first four digits, the sum is still only 21 (not greater than 21, be careful!). But if you sum the first five digits, the sum is now greater than 21, so the clue next to this row would be a 5.

Editor's note: "going bust" is a term from the card game blackjack, referring to drawing a hand of cards whose sum is greater than 21.

| | | | | | | | | | |
|---|---|---|---|--|---|--|---|---|---|
| | 7 | | 3 | | 4 | | 6 | | 4 |
| 7 | | | 5 | | 2 | | 8 | | 7 |
| | | 1 | | | | | | | |
| 3 | 6 | | | | 3 | | | | 1 |
| | | | | | | | | | |
| 4 | 3 | | 2 | | | | 7 | | 4 |
| | | | | | | | | | |
| 6 | 9 | | | | 6 | | 5 | 7 | |
| | | | | | | | 9 | | |
| 4 | 7 | | 1 | | 5 | | | | 2 |

f-puzzles: <https://f-puzzles.com/?id=ycp65l9o>

CtC: <https://tinyurl.com/2s3sxcbh>

January 22 2022: Clone Regions

Sam Cappleman-Lynes

Let me take this opportunity to once again remind you that the first round of the Sudoku GP started yesterday and runs through to Monday. I participated yesterday evening and there are some great puzzles in there - something for everyone! If you haven't had a look yet I do recommend it 😊

Editor's note: the first round of the 2022 Sudoku Grand Prix, featuring puzzles written by Japanese authors, ran from January 21 to 24. For information on upcoming rounds, check [this page](#)!

As for today's GAS, it's a Clone Regions Sudoku! Normal Sudoku rules apply. Additionally, each grey region contains the numbers from 1 to 9, and both grey regions contain exactly the same numbers in the same positions.

| | | | | | | | | |
|--|---|---|---|--|---|---|---|--|
| | | | | | | | | |
| | | | | | 4 | 5 | 6 | |
| | | | | | 7 | 8 | 9 | |
| | | | | | 2 | 3 | 1 | |
| | | | | | | | | |
| | 1 | 2 | 3 | | | | | |
| | 4 | 5 | 6 | | | | | |
| | 7 | 8 | 9 | | | | | |
| | | | | | | | | |

f-puzzles - <https://f-puzzles.com/?id=yaqk79ak>

CtC - <https://tinyurl.com/2p892h2x>

January 23 2022: Eternity

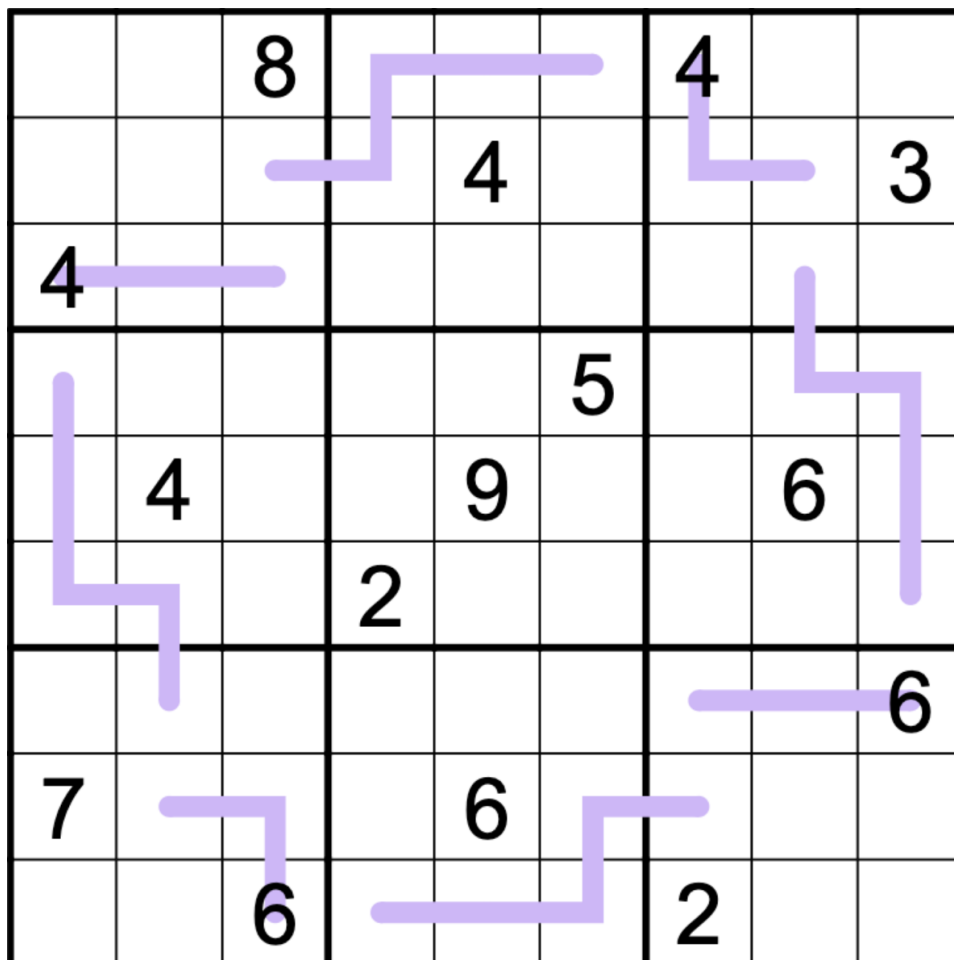
Philip Newman

Editor's note: this puzzle came with a GAS 101 lesson on geometry! Like all GAS 101 puzzles, this one is solvable without the "special trick," but easier if you're already comfortable with it. So, feel free to read the lesson before, during, or after solving - I've reproduced it in full on the pages immediately after this puzzle.

It's the exciting conclusion(?) of "That pattern Philip and Sam keep reusing", a series which needs a better title.

Additionally, it's the return of GAS 101! Below is a doc with some tips and tricks you can use to apply to this particular puzzle (but also may apply to future puzzles in slightly different ways...), which is a Renban Sudoku! HYPE!

Normal sudoku rules apply. Digits along purple renban lines must form a consecutive set, in any order - for example, a 4-cell renban line could be 4352, but not 5679.



f-puzzles: <https://f-puzzles.com/?id=y7zs3spp>

CtC: <https://tinyurl.com/4xdm6b2a>

GAS 101 - Geometry

Reminder: This document has hints for today's GAS puzzle (Jan. 23, 2022)!

Classic Geometry

Geometry is everywhere in sudoku, even classics. Consider the following example:

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

In box 3, we can ask where 1 can go. The given 1s in row 2 and column 8 eliminate 1 from the red cells from their respective houses. That leaves two cells for 1 in box 3, marked in green. Likewise, in box 7, 1 is limited again to two cells.

What about box 1? Here, we have made use of the “pointing pairs” just discovered in boxes 3 and 7. If 1 must be in a green cell in box 3, then we can't have a 1 in the rest of row 1, or there wouldn't be anywhere left in box 3. Similarly, we can't have a 1 in the rest of column 1, or we wouldn't be able to place 1 in box 7. But this leaves only one cell for 1 in box 1!

In classic sudoku, we get to take advantage of two facts:

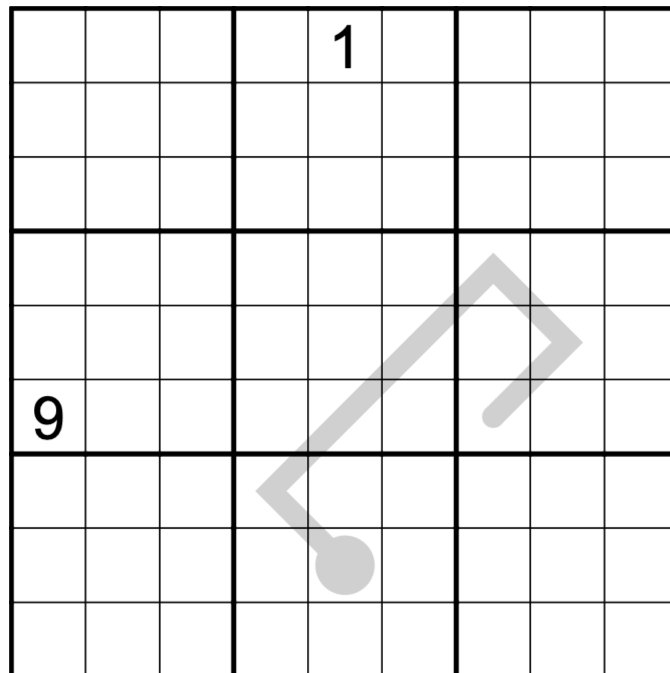
1. A digit cannot repeat in a row, nor in a column, nor in a box.
2. A digit must appear somewhere in a row, in a column, or in a box.

That is, there is exactly one 1 in each row, column, and box, and similarly for the other digits. This is of course obvious if you have solved sudoku before (even if the techniques above are less obvious).

No-Repeats Geometry

In certain variants, the additional constraints provide the “no repeats” condition we are used to in classic sudoku, but without the requirement that each digit must appear. For example, in killer sudoku, digits cannot repeat in a cage - but unless the cage is 9-cells, it is not a guarantee that any particular digit appears.

In such variants, it is often critical to determine which digits cannot be part of the “no repeat” region and which digits must be.



In the above grid, we have a 7-cell thermo. There are nine possible digits for those 7 cells, but the givens actually tell us exactly which seven are present: if the 1 were on the thermo, it would be in the bulb, but the given rules that out; likewise, the 9 would be in at the tip, and the given 9 sees the tip. So neither 1 nor 9 is on the thermo, and we can fill in 2-8 in order!

The Secret of Renban

We can apply this type of logic in a special way with the renban constraint (each line must contain a consecutive set of digits in some order, without repeats). Consider the following grid:

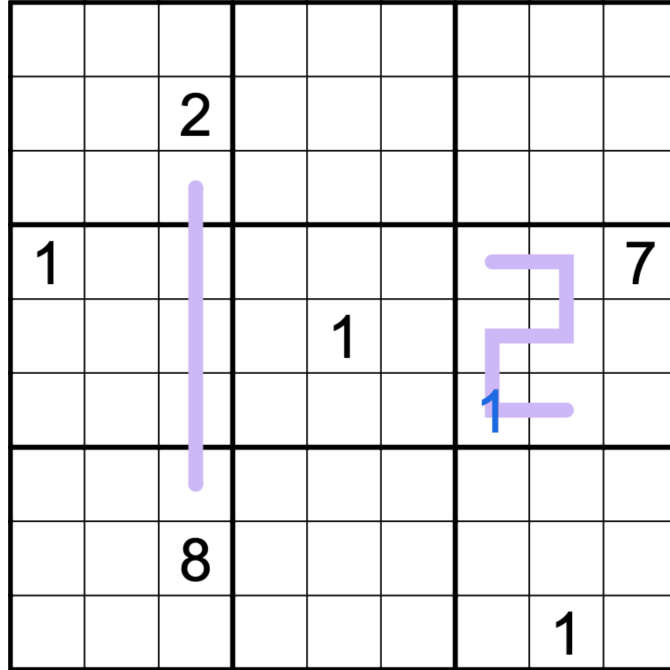
| | | | | | | | | |
|--|--|---|--|--|--|--|--|---|
| | | | | | | | | |
| | | 2 | | | | | | |
| | | | | | | | | |
| | | | | | | | | 7 |
| | | | | | | | | |
| | | | | | | | | |
| | | 8 | | | | | | |
| | | | | | | | | |

In the first example of column 3, we have a 5-cell renban line which sees givens 2 and 8. That would at first seem to leave seven possible digits for the line... but if 1 were on the line, how could we form a consecutive set of digits? In order for 1 to be on the line, the rest of the line must include a 2 (and 345). Likewise, if 9 were on the line, 8 must also be (as well as 765). So the givens in column 3 actually rule four digits off of the line, and we therefore know the line contains the digits 3-7 in some order.

In box 6, we have a single given digit but the logic is similar: If 7 isn't on the 6-cell line, then neither are 8 or 9 - the line must be 1-6 in some order.

(Note that in both cases, even without the givens we know something: a 5-cell renban must always contain a 5, and a 6-cell renban must always contain 4-6. The "extremes" of a 5-cell line are 12345 at the low end and 56789 at the high; for a 6-cell line, it's 123456 and 456789.)

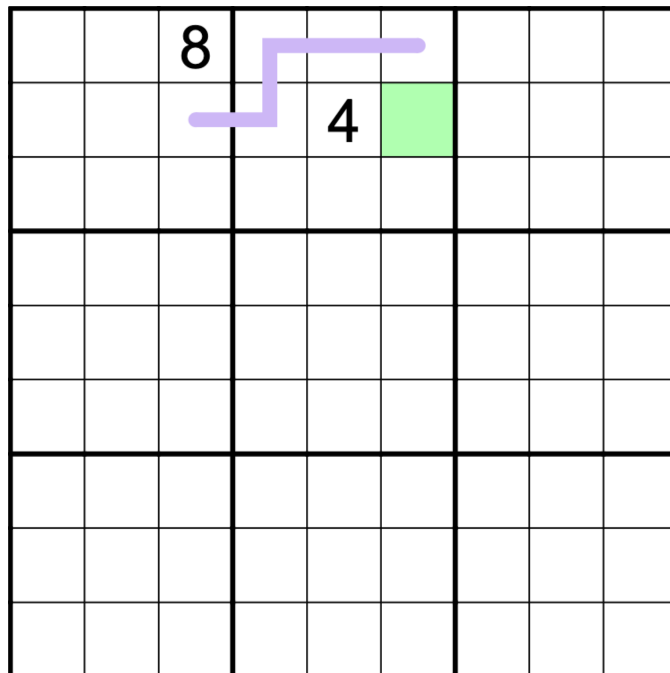
Once we have established precisely which digits are on a renban line - or even just some of the digits which must be on the line - we can make use of them similarly to the previous classic deductions:



Knowing that 1 is somewhere on the box 6 renban line, the additional givens place the 1 in box 6, as all the other cells on the line are seen by at least one given.

Hints for Today's Puzzle

Let's take a quick look at the top of today's grid, and consider how we can apply the previously discussed deductions... along with one more tricky one!



First, let's figure out what goes on the renban line. The given 4 sees all the cells of the renban, either in the box or row, so the line does not contain 4 (in fact, in the actual puzzle all the 4s in the top band are given). If a 5-cell renban line doesn't contain 4, it also doesn't contain 123, since any consecutive set of five digits containing those must include 4. So the line is 56789.

Second, we have a given 8 in a suspicious position - it sees four of the cells on the renban line (in row 1 or box 1/column 3). Since we know 8 is on the line somewhere, it must be in the remaining cell: r2c4.

Finally, a trickier version of this: The green cell, r2c6, sees all of the cells on the renban line, just like the given 4. But if we know the line contains 56789 - without repeats! - the green can't possibly be any of those digits! It also can't be 4, so it must be from 123.

Keep these tricks in mind as you solve the puzzle!

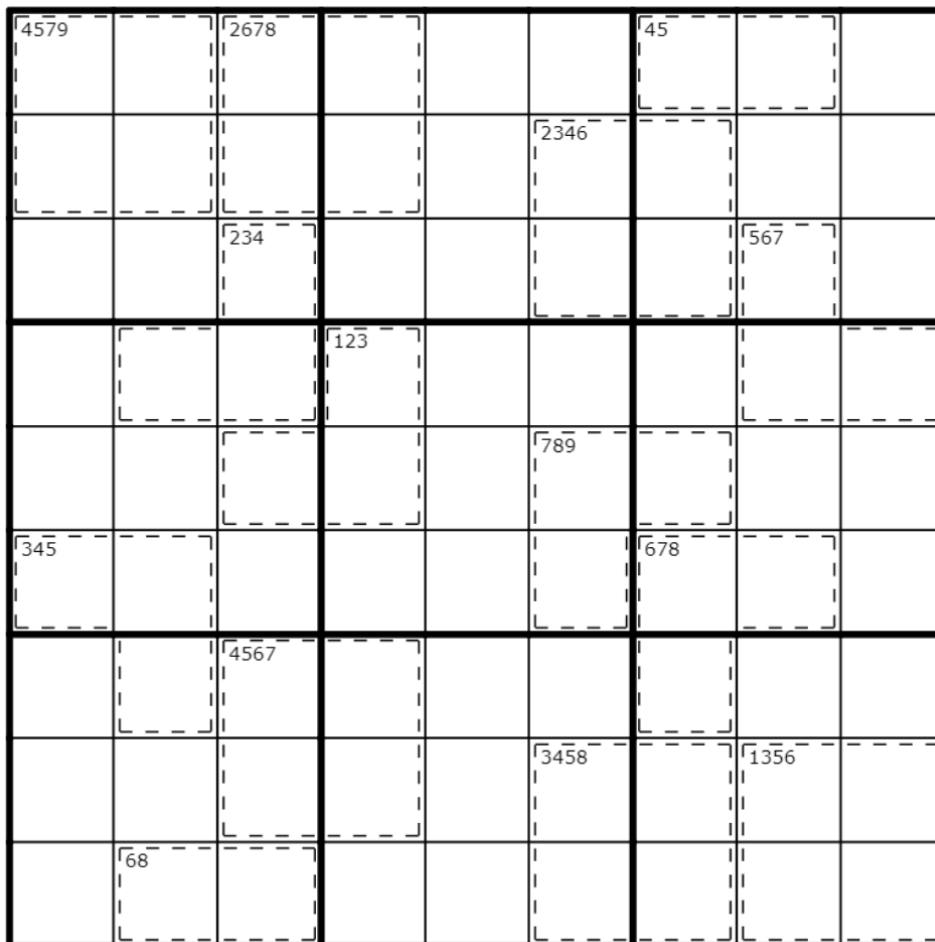
January 24 2022: Zone Sudoku

Clover

I thought I'd share my homework from Philip's GAS101 class yesterday. Could you proofread it for me before I turn it in? It should use the geometry idea that he taught us about, but I hope you'll all help me make sure... my sudoku GPA isn't looking great this semester, and if I don't get an A, I might end up sudoku grounded 😬

Today's GAS is a **zone sudoku**! Normal sudoku rules apply. Also, all of the digits shown in the top left corner of each cage must appear within that cage.

Editor's note: like all GAS101 puzzles, this one is doable without the geometry lesson from yesterday! However, you can use it to resolve the cages in the middle three boxes (boxes 4, 5, and 6) quite quickly, which might help you get a double hat time!



f-puzzles: <https://f-puzzles.com/?id=y7j7ze5x>

CtC: <https://tinyurl.com/a2krbp8z>

January 25 2022: Non-consecutive

Sam Cappleman-Lynes

Like any good studio executive we're going to keep milking this cash cow until we've lined our pockets with more digits than we can carry.

In today's installment (the 8th overall!) of "that one pattern they keep using for GAS" is a Non-consecutive Sudoku!

Normal Sudoku rules apply. In addition, adjacent cells cannot contain consecutive digits.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 9 | 7 | 3 | 5 | | |
| | | 5 | 1 | | | 3 | 7 | |
| 9 | 7 | 3 | | | | | 1 | |
| 1 | | | | | | | 9 | 7 |
| 7 | | | | | | | | 3 |
| 3 | 5 | | | | | | | 1 |
| | 1 | | | | | 7 | 3 | 5 |
| | 3 | 7 | | | 1 | 9 | | |
| | | 9 | 7 | 3 | 5 | | | |

f-puzzles - <https://f-puzzles.com/?id=y78a6baz>

CtC - <https://tinyurl.com/3rjhfmnc>

January 26 2022: Equinox

Philip Newman

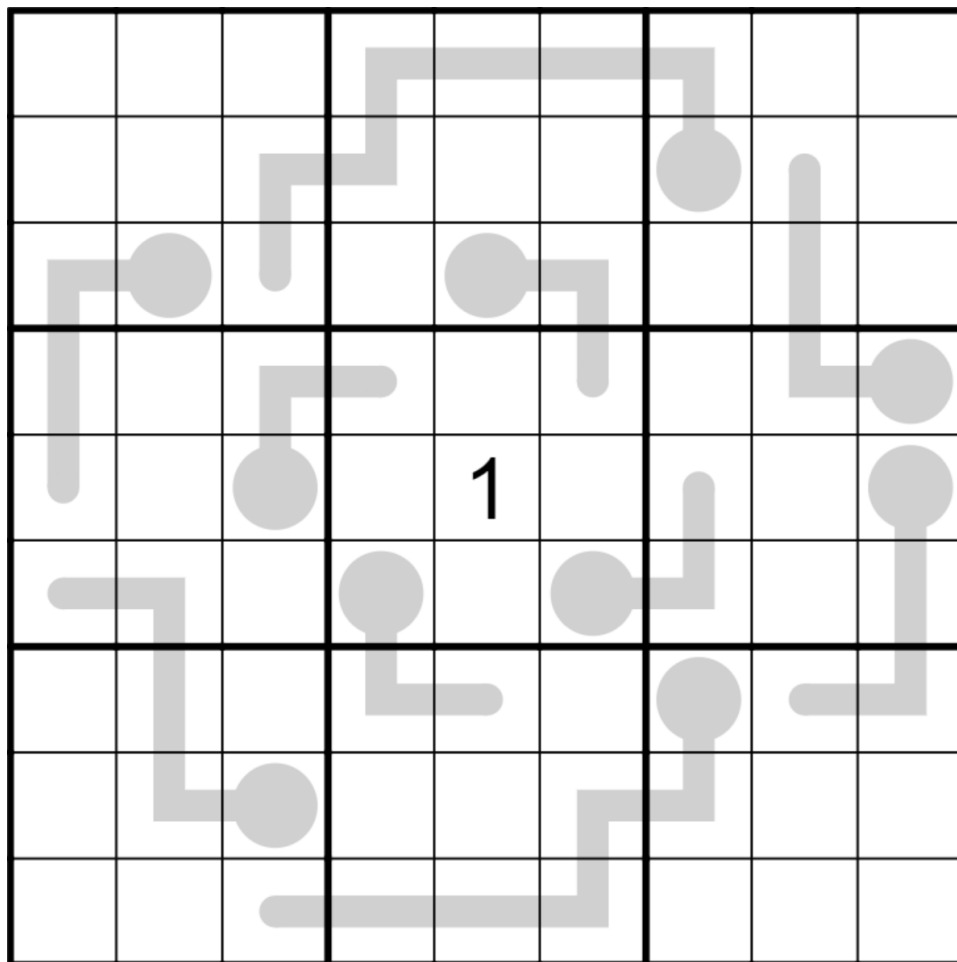
You think we need one more?

You think we need one more.

Alright, we'll get one more.

Today's GAS is a Thermo Sudoku!

Normal sudoku rules apply. Digits along thermometers must strictly increase from bulb to tip.



f-puzzles: <https://f-puzzles.com/?id=y79k5apq>

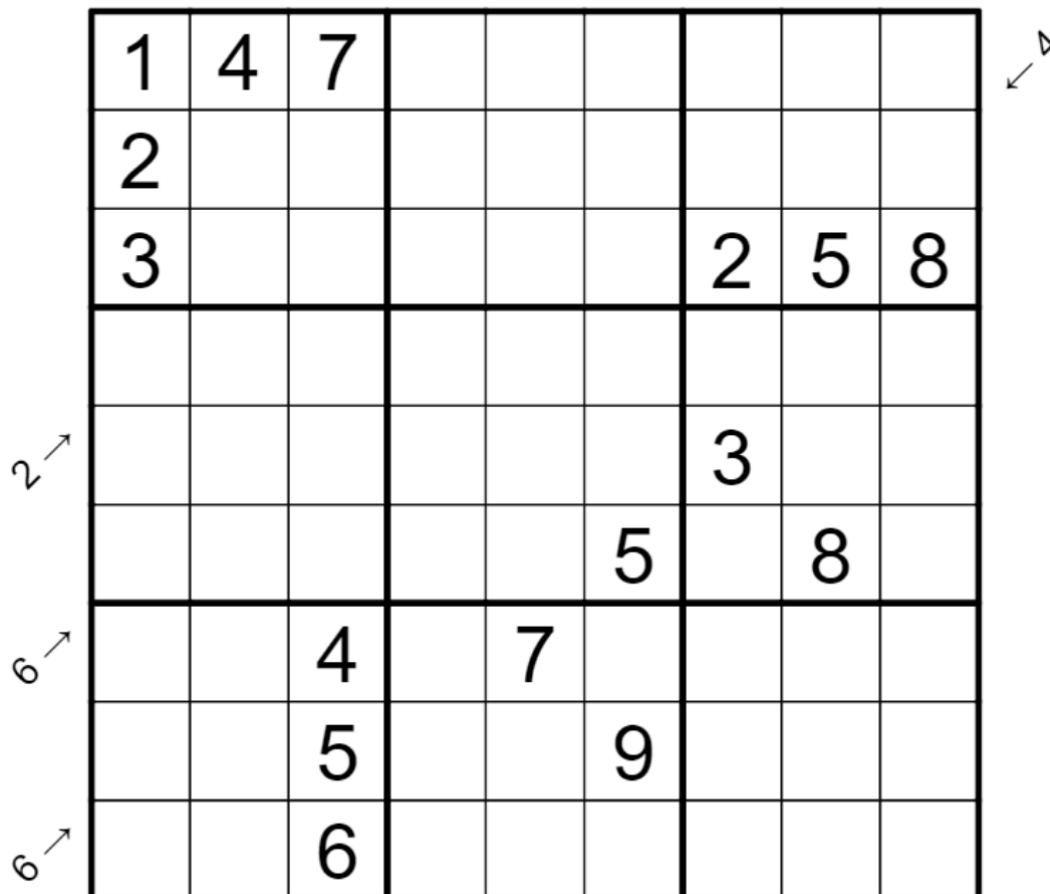
CtC: <https://tinyurl.com/44nbh3nt>

January 27 2022: Pointing Evens

Clover

Do you understand pointing? Then you're in exclusive company, along with most dogs, many primates, a handful of particularly dog-like cats, the GAS testers (thank goodness), a small percentage of introductory computer science students, and the majority of children above the age of 8 months. Now prove it by solving today's GAS: a **pointing evens sudoku!**

Normal sudoku rules apply. Also, some diagonals in the grid are marked with arrows. The value next to an arrow tells you the total number of even digits along that diagonal. Even digits may repeat along a diagonal as long as they don't break any sudoku rules (a digit is counted every time it appears.)



f-puzzles: <https://f-puzzles.com/?id=yajtyjbd>

CtC: <https://bit.ly/33UTju8>

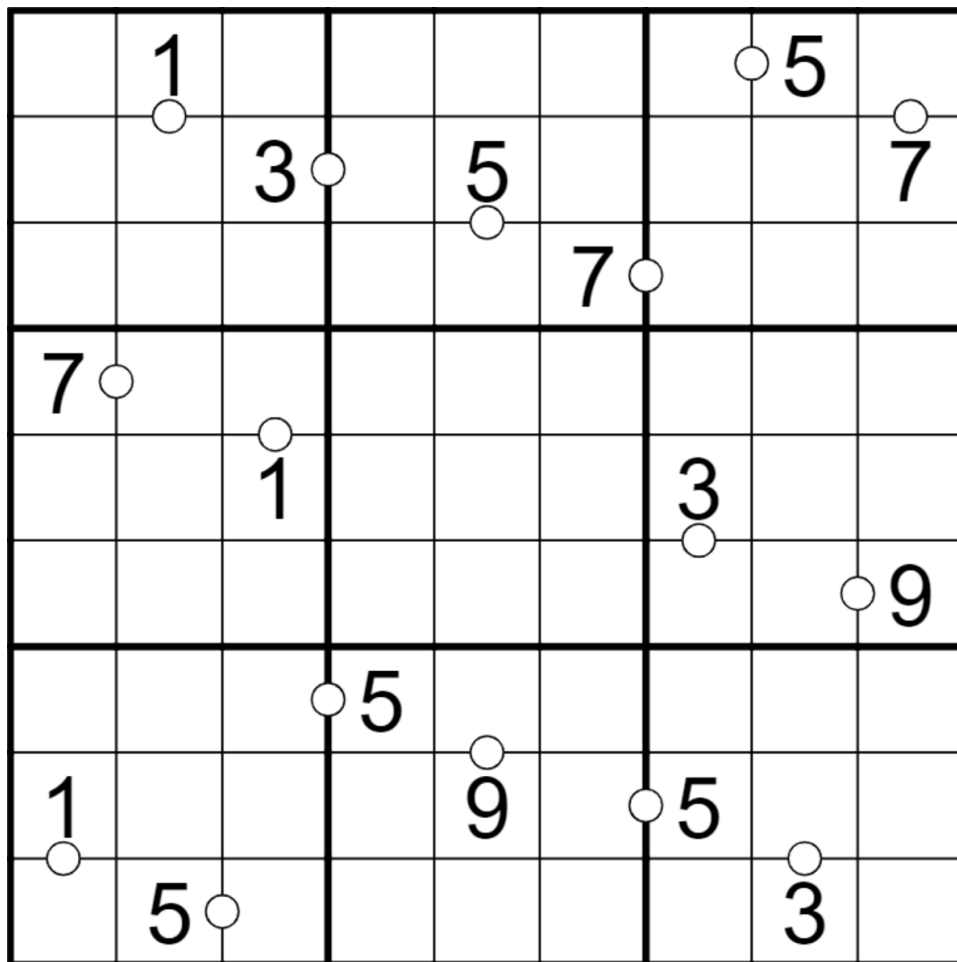
Penpa: <https://bit.ly/3KMZotg>

January 28 2022: Consec Pairs

Sam Cappleman-Lynes

If you think that I've run out of new and creative ways to arrange clues in a conspicuous circular pattern, you're very much mistaken. But I've heard your cries of "Please, no more!" and, luckily for you, the testing times on the puzzle I had planned to stretch your credulity with mean that you'll have to wait for the next GAS Leak 😊

Instead, I found this charming-looking Consecutive Pairs Sudoku lying under a pile of my papers. In this puzzle, normal Sudoku rules apply. In addition, digits separated by a white dot must be consecutive. There is no negative constraint (i.e. if two digits are not separated by a dot, then they may or may not be consecutive).



f-puzzles - <https://f-puzzles.com/?id=ybaefogc>

CtC - <https://tinyurl.com/2p8w9ct5>

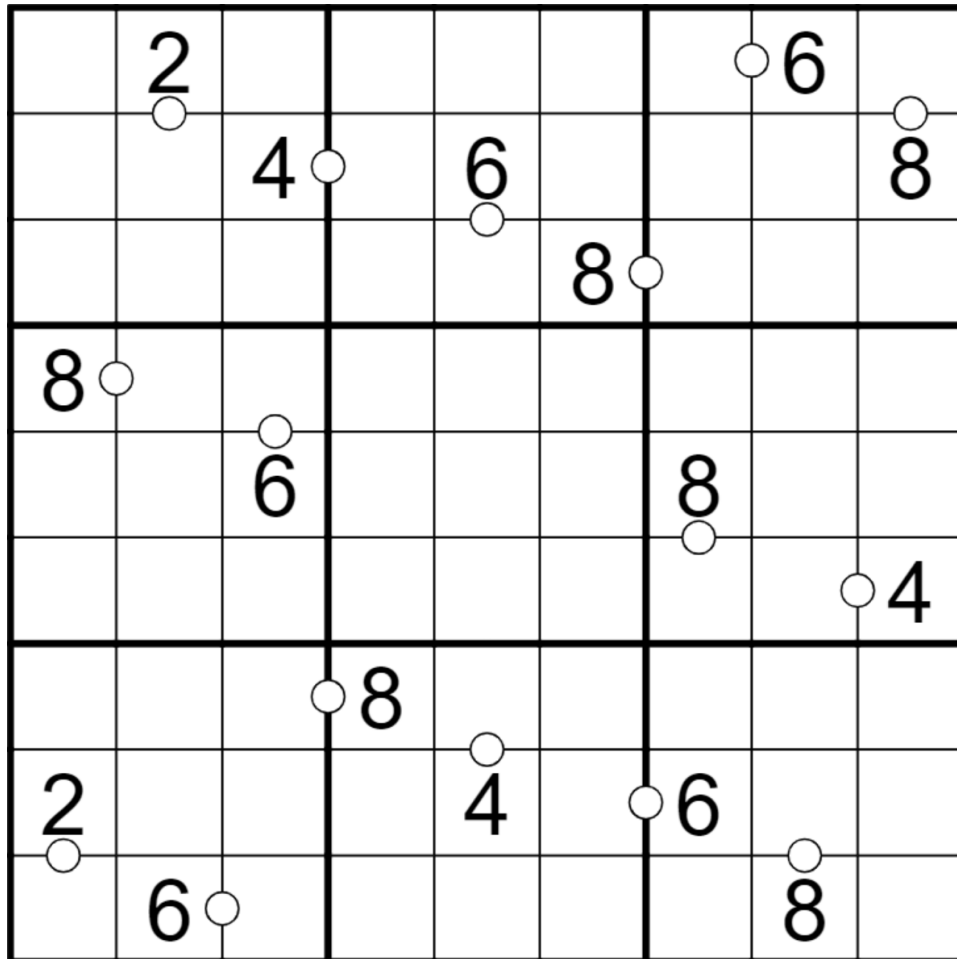
January 29 2022: Morph

Philip Newman

It's a good thing Sam didn't post another puzzle with that "egg" pattern yesterday. (He was kind enough to not mention that it was my testing time that relegated it to leak status. You're welcome!) I didn't have another one ready, and it means I can provide you with something new and original today.

Today's GAS is a Consecutive Pairs Sudoku! We haven't had one of those in a while, so to remind you of the rules:

Normal sudoku rules apply. In addition, digits separated by a white dot must be consecutive. There is no negative constraint (i.e. if two digits are not separated by a dot, then they may or may not be consecutive).



f-puzzles: <https://f-puzzles.com/?id=yb7njzgu>

CtC: <https://tinyurl.com/6kvtbxcr>

January 30 2022: Battenburg

Clover

I spent a long time going down a rabbit hole today trying to figure out why the sudoku variant is called Battenburg and the cake is called Battenberg, and then an even longer time trying to decide how to explain what I'd discovered in order to best avoid the wrath of spelling pedants, which more or less amounts to "the sudoku isn't named for the cake, but actually for the hi-viz checkerboard markings seen on UK ambulances, and admittedly, the markings were named after the cake, and no, nobody seems to know how the berg became a burg somewhere along the way, except that the British really do love adding U to words, so let's just chalk it up to that. And to complicate matters, this is actually a variant on Battenbu/erg sudoku that, as far as I'm aware, has never been seen before, and it doesn't even use checkerboard markings, unless you're solving in Penpa."

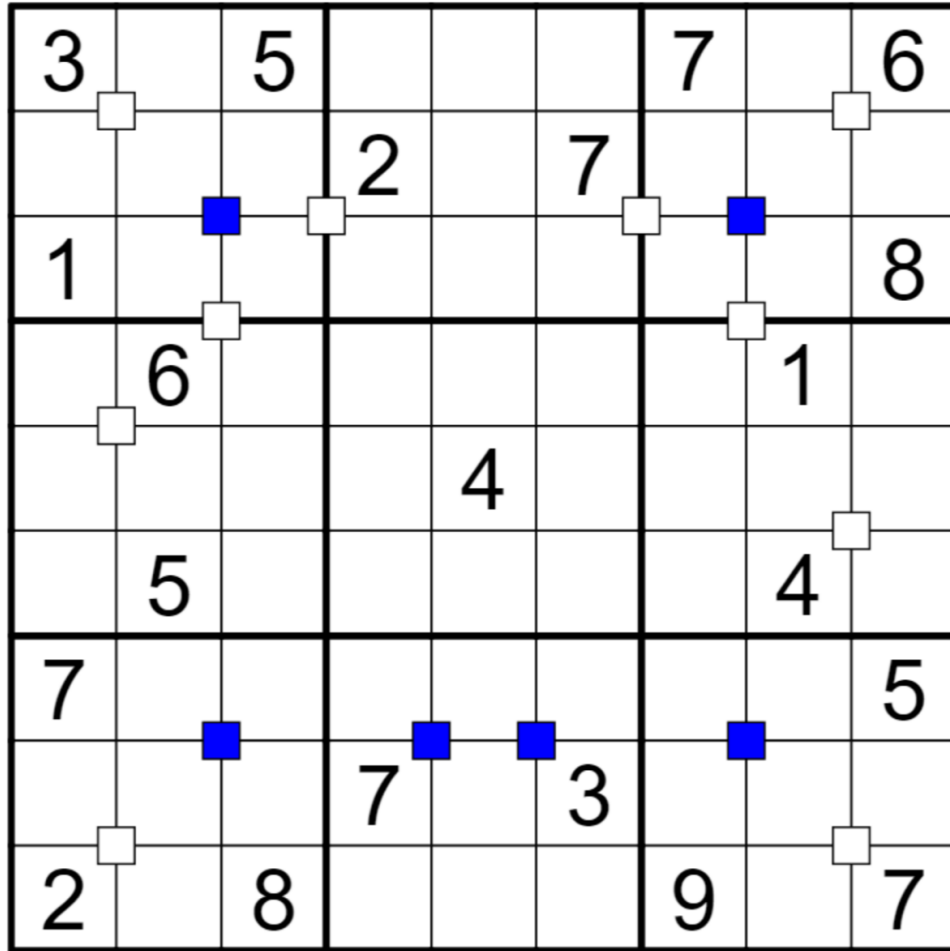
Normal sudoku rules apply.

Every time a blue square appears at the intersection of four cells, those four cells must contain two odd and two even digits in a "checkerboard" pattern (odds diagonally opposite and evens diagonally opposite.) (In the Penpa link, the blue squares are replaced with the more traditional 'checkerboard' marking.)

Every time a white square appears at an intersection, the digits around that square must **not** be in a 2x2 "checkerboard" pattern. This can mean two different things! Either the number of odd and even cells is wrong, or, if there *are* two of each, they appear in the wrong order (next to each other rather than diagonally opposite.)

If an intersection isn't marked, you don't know anything about the digits surrounding it.

Digits around a square may repeat, as long as they don't break any sudoku rules.



f-puzzles: <https://f-puzzles.com/?id=yb9hpb18>

CtC: <https://tinyurl.com/2p8hmym6>

Penpa: <https://tinyurl.com/yac9cvbr>

January 31 2022: Diagonal Sudoku

Sam Cappleman-Lynes

Today's GAS is variously known as Diagonal Sudoku, Sudoku X, Sudoku Dawg (that one was a high school nickname) and Sudoku McSudokuFace (never let the internet name anything).

Normal Sudoku rules apply. In addition, the two marked diagonals also contain the digits from 1-9 exactly once.

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

f-puzzles - <https://f-puzzles.com/?id=ybmovm7h>

CtC - <https://tinyurl.com/2p8v578u>

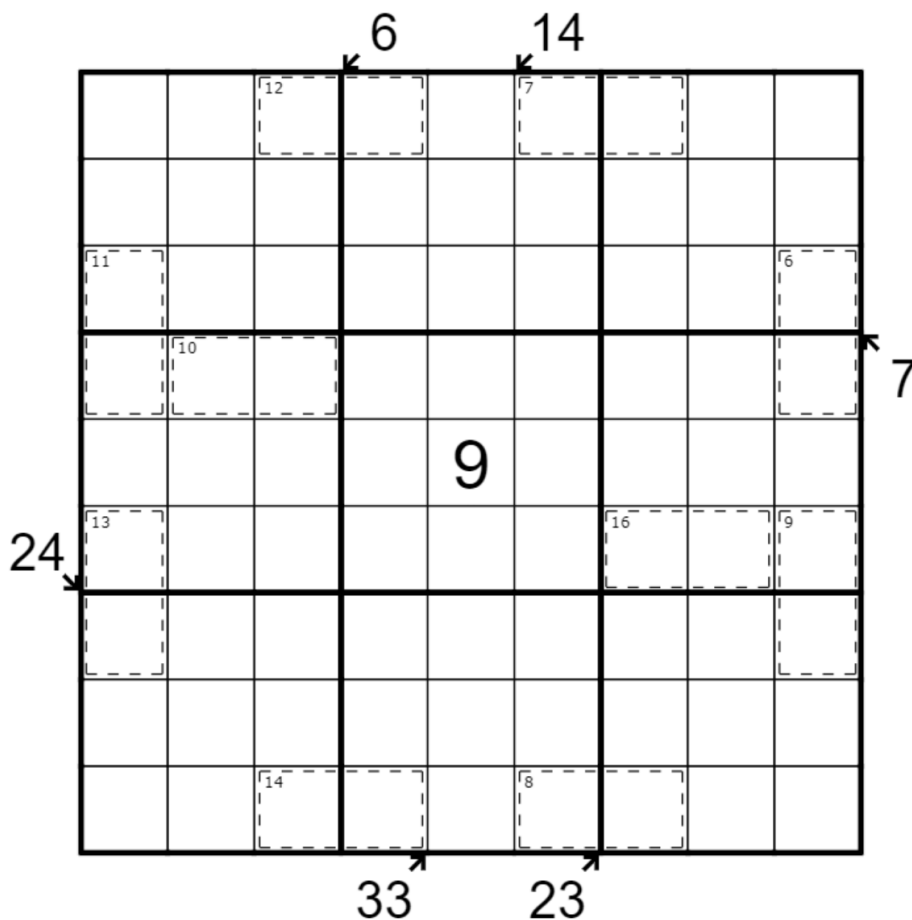
February 1 2022: Punisher

Philip Newman

Frank Castle, the Punisher 🦴, is well known as a violent vigilante... but what most people don't know is that his original vendetta was not against crime. He was driven to violence by people claiming they aren't good at math(s). 😬

Let's keep the Punisher away by doing our daily GAS, a Killer/Little Killer Sudoku!

For those needing a little nudge on the math(s), here's a mini GAS 101: Pay attention to cells which are part of both a killer cage and an LK sum; the short little killer clues are entirely contained in a box, so they can't have repeated digits - how can you make these sums? Once you know that, the overlapping cages will help you determine the digit placements. For the longer LK clues, consider the smallest or largest value each cell can take.



f-puzzles: <https://f-puzzles.com/?id=ydhpytg>

CtC: <https://tinyurl.com/2dzys2mj>

February 2 2022: Pole Position

Clover

Today is 2/2/22, and this pole position sudoku is all about the number...1. After all, you can't make 2 without 1. And they do say that 1 is the loneliest number. Let's solve this sudoku and keep it company!

Normal sudoku rules apply. In each row and each column, the first digit (on the far left or the top) tells you where the digit 1 is located. For instance, if the leftmost digit in a row is a 4, then the 1 is located in the 4th column in that row. If the topmost digit in a column is a 9, then the 1 is located at the bottom of that column.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|--|
| 5 | | | | | | | | |
| | | | | | | | 3 | |
| | | 7 | | 4 | | | | |
| | | | 8 | | 9 | | | |
| | | 2 | | | | 3 | 8 | |
| | | | 7 | | | 2 | | |
| | | | | 5 | 4 | | | |
| | 5 | | | 7 | | | | |
| | | | | | | | | |

f-puzzles: <https://f-puzzles.com/?id=y8wgb7tv>

CtC: <https://tinyurl.com/b8p72yp7>

February 3 2022: Classic Sudoku

Sam Cappleman-Lynes

Today's GAS is a Classic Sudoku! The folk at GAPP are showing that they're just as capable as we are of creating variant puzzles, so we'd better show to them that we can create puzzles using classic rulesets... or something like that 🙄

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

f-puzzles - <https://f-puzzles.com/?id=ybcccwbc>

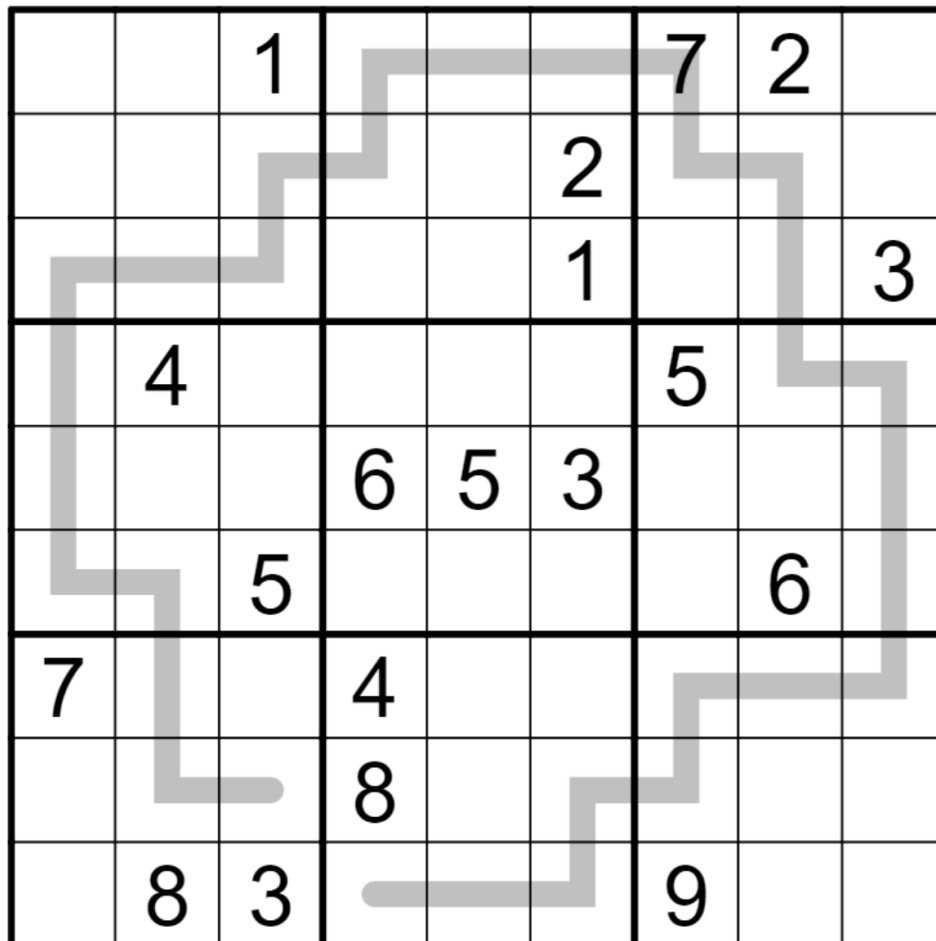
CtC - <https://tinyurl.com/2d4pjspr>

Penpa - <https://tinyurl.com/w5bmcc3x>

Bonus 1: Palindrome Sudoku

Philip Newman

Normal sudoku rules apply. Also, the digits along the gray line form a palindrome (read the same forwards and backwards.)



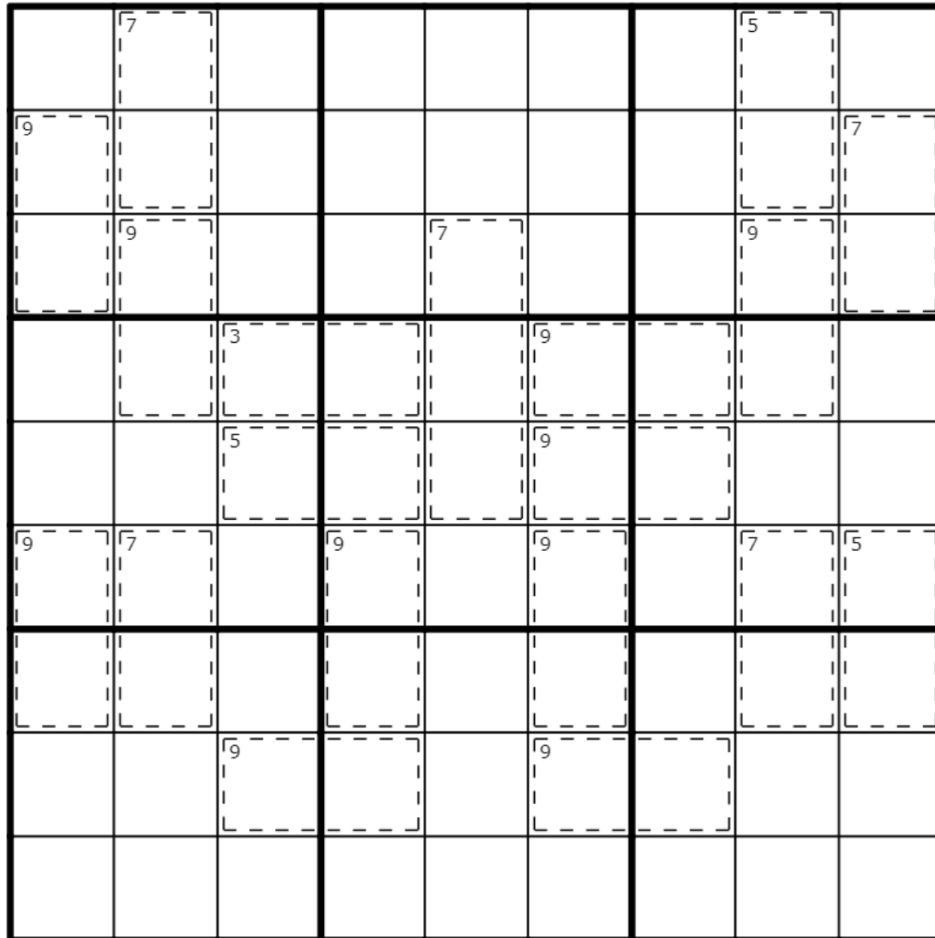
f-puzzles: <https://f-puzzles.com/?id=y7q4dqvb>

CtC: <https://tinyurl.com/3swekn2d>

Bonus 2: 13579

Clover

Normal sudoku rules apply. Also, digits in a cage may not repeat and must sum to the value indicated.



f-puzzles: <https://f-puzzles.com/?id=ya4ovbjj>

CtC: <https://tinyurl.com/5ee2dcbz>

Bonus 3: Fortress

Sam Cappleman-Lynes

Normal sudoku rules apply. Also, a digit in a gray cell must be greater than all of the digits in white cells that are orthogonally adjacent to it.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|--|
| | | | ◁ | ◃ | ◃ | ◃ | ▷ | | |
| 8 | 5 | ◂ | ◃ | 2 | 7 | ◂ | ◂ | 1 | |
| ◂ | ◂ | ◃ | | | | 6 | ◂ | 3 | |
| ◃ | | | | | | | ◂ | ◂ | |
| ◃ | | | | | | | | ◂ | |
| ◃ | ◂ | ◃ | | | | | | ◂ | |
| 2 | ◂ | 5 | | | | ◂ | ◂ | ◃ | |
| 1 | ◂ | ◂ | 8 | 3 | ◂ | ◃ | 6 | 2 | |
| | | ◂ | ◂ | ◂ | ◃ | | | | |

f-puzzles: <https://f-puzzles.com/?id=y9dh6mtm>

CtC: <https://tinyurl.com/7b89hem8>

Time Benchmarks

| | One party hat | Two party hats | Today's dinosaur: |
|----------------------------------|---------------|----------------|-----------------------------|
| January 15 2022: Counting Cages | 14:00 | 8:00 | disgruntled dilophosaurus |
| January 16 2022: Classic Sudoku | 8:00 | 5:00 | unified unenlagia |
| January 17 2022: Echo | 13:00 | 7:00 | killjoy kotasaurus |
| January 18 2022: Corner/Edge | 11:30 | 6:30 | competitive cryolophosaurus |
| January 19 2022: Arrow Sudoku | 11:00 | 6:30 | familiar fruitadens |
| January 20 2022: Ernst | 16:00 | 9:00 | quite quiet qiaowanlong |
| January 21 2022: Bust Sudoku | 16:00 | 9:00 | bustling beipiasaurus |
| January 22 2022: Clone Regions | 9:00 | 5:30 | cloned carnotaurus |
| January 23 2022: Eternity | 18:00 | 9:00 | disorderly dreadnoughtus |
| January 24 2022: Zone Sudoku | 13:00 | 7:00 | studious sauornithoides |
| January 25 2022: Non-consecutive | 8:30 | 5:00 | distanced diplodocus |
| January 26 2022: Equinox | 11:00 | 6:00 | mendozasaurus meteorologist |
| January 27 2022: Pointing Evens | 15:00 | 8:30 | pointing pachycephalosaurus |
| January 28 2022: Consec Pairs | 13:00 | 7:30 | dotty dilophosaurus |
| January 29 2022: Morph | 17:00 | 9:00 | sus sarahsaurus |
| January 30 2022: Battenburg | 15:30 | 8:30 | checkered chindesaurus |
| January 31 2022: Diagonal Sudoku | 14:00 | 8:00 | monikered majungasaurus |
| February 1 2022: Punisher | 17:00 | 9:00 | numerical neuquensaurus |
| February 2 2022: Pole Position | 15:01 | 8:31 | singular segisaurus |
| February 3 2022: Classic Sudoku | 8:00 | 5:00 | unmodified ubirajara |

