

# GAS Leak

Genuinely Approachable Sudoku from the CtC Discord  
Volume 21:  
October 2022



A little GAS story for you, friends: I set the first 10 days of GAS on my own, back in June 2021. Then two other setters - Philip Newman and Sam Cappleman-Lynes - joined the team. While there have been a handful of guest appearances from our friends at GAPP, the three of us have been the only official GAS setters for over a year - until this October, when Bill Murphy joined us as the very first *new* GAS setter, replacing Sam. This has been bittersweet for me: I miss Sam, and I sincerely hope that we haven't seen the last of him in GAS. But Bill has been one of my favorite sudoku setters for as long as I've known him, and I'm excited to see how he and the GAS solving community - now over 3,500 strong - will grow and change together. We're grateful for your kindness and support as we've all navigated this change, and I hope you especially enjoy this month's bonus puzzles, which feature some of Bill's earliest GAS attempts!

*Clover*

## October 1, 2022: Pencilmark Sudoku

Clover

Somebody's gone and solved half of this sudoku already. And they didn't even use Snyder notation! How irresponsible! 😭

In today's pencilmark sudoku, normal sudoku rules apply. Also, some cells have already been marked with candidates. If a cell is already marked, then only those candidates can be considered for that cell. (For instance, in the solution to this puzzle, r2c1 must contain either a 7 or an 8.)

123	123	123				67	78	234
78				67				234
56			36	17	23			234
		12	79		13	13		
	34	78				78	45	
		24	35		57	34		
124			14	36	45			56
124				56				67
124	67	56				134	134	134

f-puzzles: <https://f-puzzles.com/?id=2fzsuqpx>

CtC: <https://tinyurl.com/2rj68935>

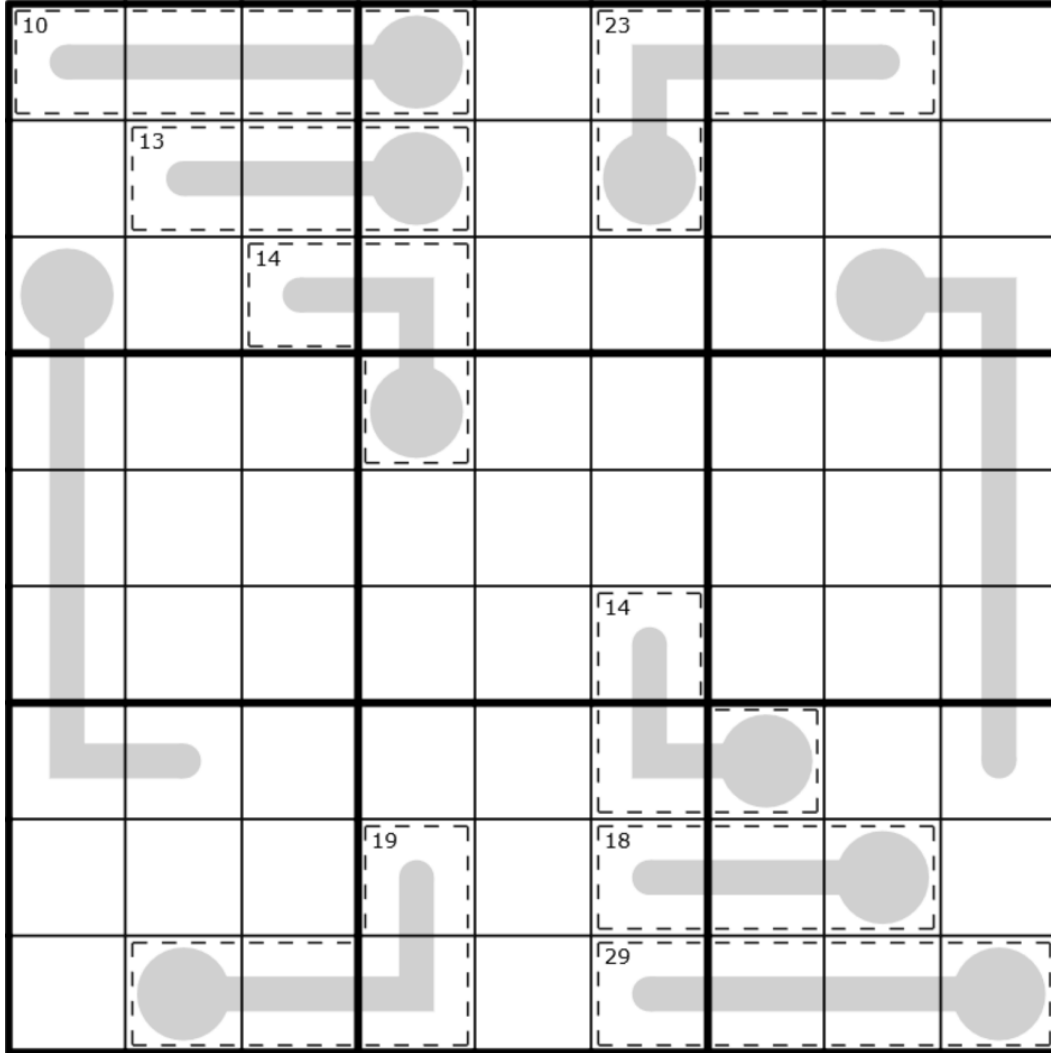
## **October 2, 2022: A Real Humanmade Sudoku**

Bill Murphy

G'day sports fans,

Hello, I am your new GAS setter! My name's Bill Murphy and you may recognise me from other genuinely approachable sudoku that have appeared on the CTC from the last couple of years. I am a legitimate businessperson and I am definitely not four goblins in a trenchcoat. I am also not three goblins in a trenchcoat either, I don't know why you'd ask that. No further comment your honour.

Being a new gas setter feels like putting a goblin in the trenchcoat of sudoku, so today's sudoku is a killer thermos sudoku. Normal sudoku rules apply. Digits in a cage must sum to the given total and may not repeat. Digits along a thermometer must strictly increase from the bulb.



f-puzzles: <https://f-puzzles.com/?id=2h94sjfz>

CTC: <https://tinyurl.com/3v62n4fk>

## October 3, 2022: [SECRET]° Angles

Philip Newman

I'm sure after yesterday a lot of you are wondering why we recruited Bill into the GAS team... I'm also sure a lot of you also guessed that this would be the subject of another list!

- ① Murphy's Law - If anything goes wrong, we can blame Bill.
- ② We are helping him impress Mary Elizabeth Winstead.
- ③ Needed a new time zone - you'll never know if Bill is posting late or really early.
- ④ We thought we were inviting Bill Murray.
- ⑤ Because he is definitely not five goblins in a trenchcoat, don't be silly.
- ⑥ We wanted an Australian and shye's busy with GAPP and Christine Lovatt wasn't returning our calls.
- ⑦ He owns a bunch of cardigans. This doesn't have anything to do with Sudoku.
- ⑧ A vacancy opened up in bakpao's puzzle mines.
- ⑨ I needed someone to write items 6-8 for this list, after all my inspiration was used up on Phistomefel jokes in yesterday's livestream...

Bonus irrelevant fact that I just noticed about the title of today's puzzle: Both Secret and Degree are brands of deodorant in the US. In Australia (and many other countries), Degree is Rexona. I'm sure Bill will use Rexona in a title soon.

Today's GAS is a Diagonal Sudoku!

Normal sudoku rules apply. Digits along the indicated diagonals cannot repeat.

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

Play on f-puzzles: <https://f-puzzles.com/?id=2kkpwfjb>

Play on CTC App: <https://tinyurl.com/3scsaxr2>

## Bonus: Consecutive Pairs

Philip Newman

Watching Mark's most recent GAS video, I was reminded that the September 4 GAS promised a third bonus - this was intended to be in the latest GAS Leak, but I forgot to give it to clover for inclusion. Oops.

Anyway, here it is! A bit harder than GAS, but not wildly difficult.

Consecutive-Pairs Sudoku: Normal sudoku rules apply. Digits in cells separated by a white dot must be consecutive. (No negative constraint.)

1		8			○		○
	2				○		○
4		3		○			7 5
	5		4				
		6		5		4	
					6		5
8					○	7	6
		○		○			8
	○		○		5		9

Play on f-puzzles: <https://f-puzzles.com/?id=2ewxgj8l>

Play on CTC App: <https://tinyurl.com/2my95w4m>

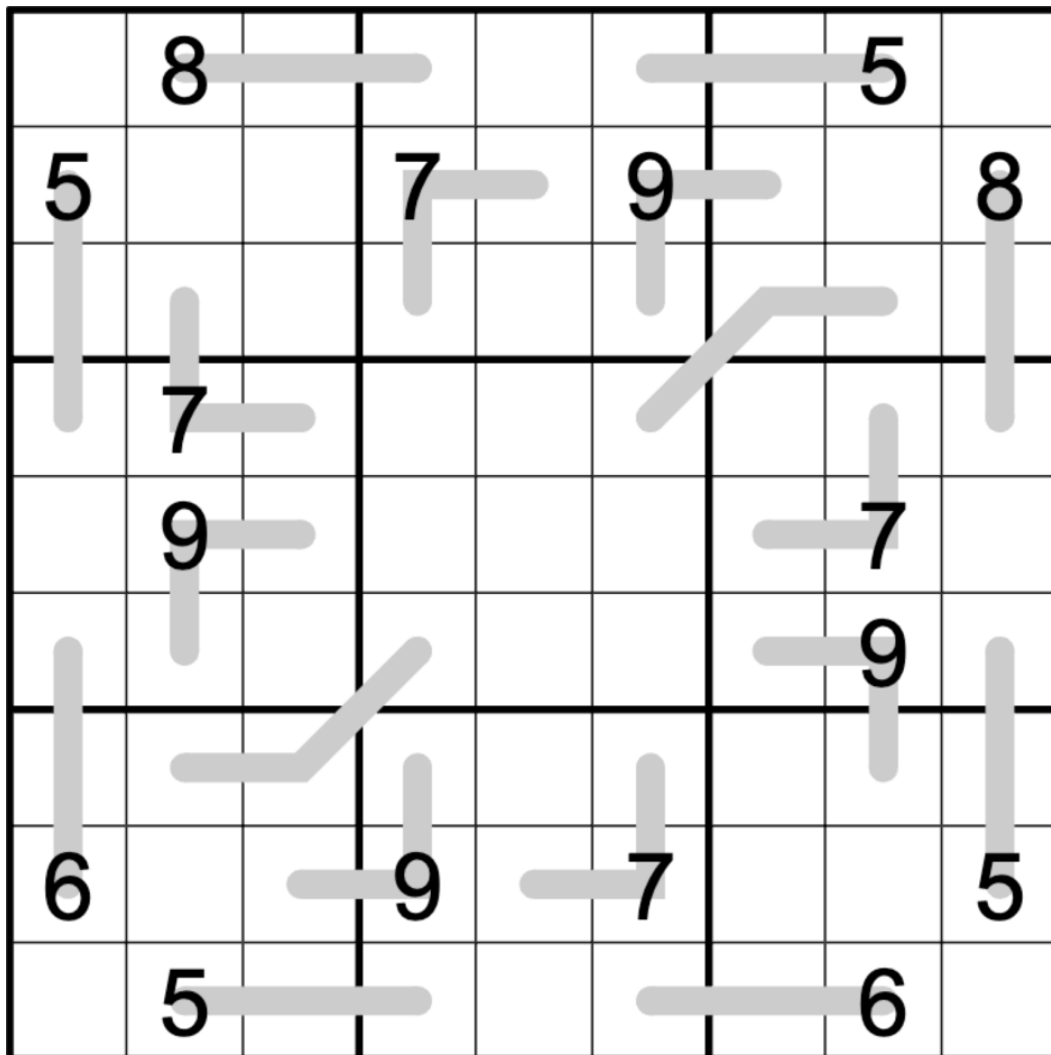


## October 4, 2022: Line Sums

Clover

As of today, I'm twice as old as I would have been ten years ago if I had been born seven years later than I actually was. 🎂 Come celebrate in GAS with a line sums sudoku!

Normal sudoku rules apply. Also, on each line, the digit in the center position is the sum of the other two digits.



f-puzzles: <https://f-puzzles.com/?id=2kb3qfbo>

CtC: <https://tinyurl.com/mryfrp8n>

## **October 5, 2022: Quadruples**

Bill Murphy

G'Day Question Fans,

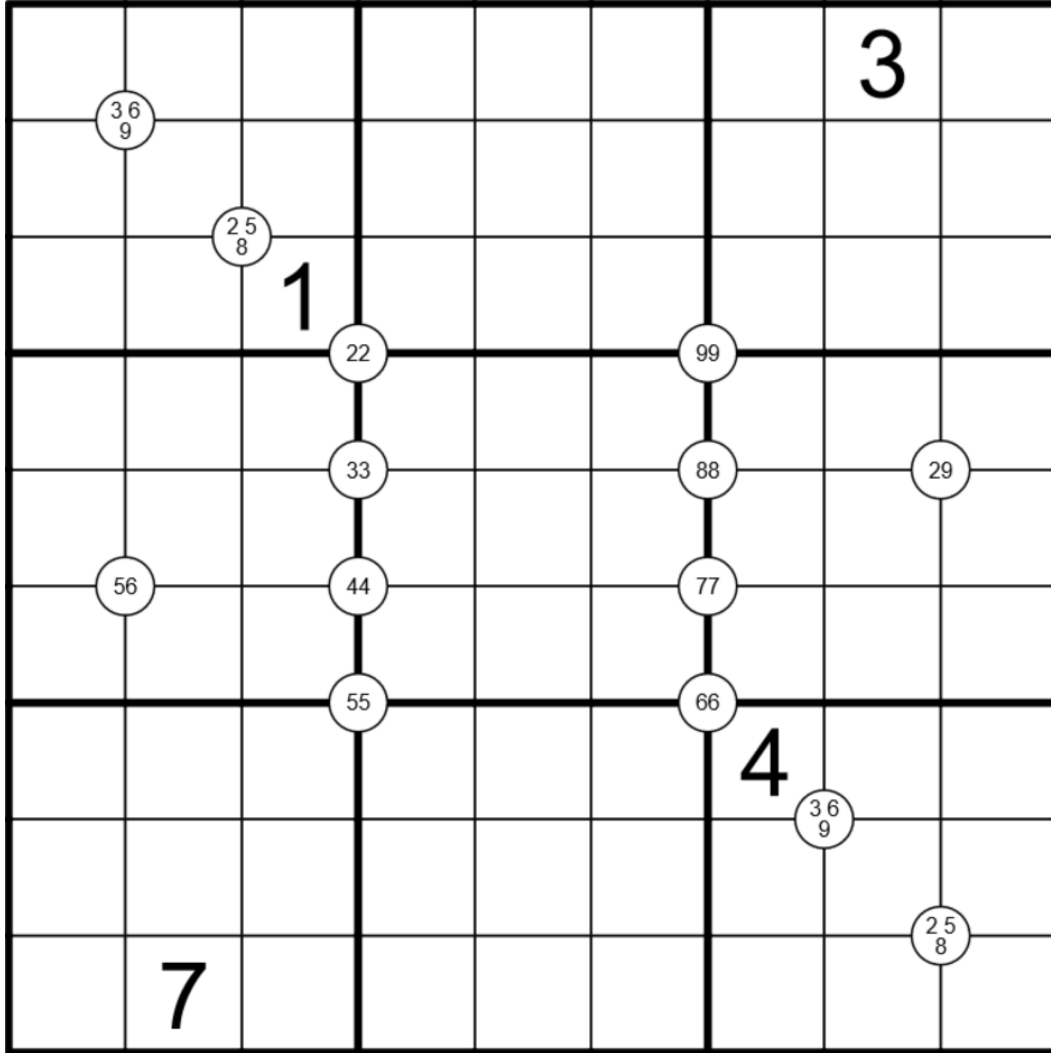
Why is it called a Lunch Box if I can't eat it?

Why is it a cardboard box if I can put other things in it?

Why don't they let a shrimp fry that rice?

Oh you want a sudoku? Well riddle me this: Why is it called Quadruples Sudoku if I don't have to put four digits in those circles?

Normal Sudoku Rules Apply. Digits in white circles must appear in the four cells surrounding it. (11 means there must be two 1s in the surrounding four cells.)



f-puzzles: <https://f-puzzles.com/?id=2paapcp3>

CTC: <https://tinyurl.com/yd7e72n8>

## October 6, 2022: Gomoku

Philip Newman

All good things must come to an end.

All mediocre things must also come to an end. That's right, it's the ninth and final list of nine things, courtesy of voice-chat-1 (mostly):

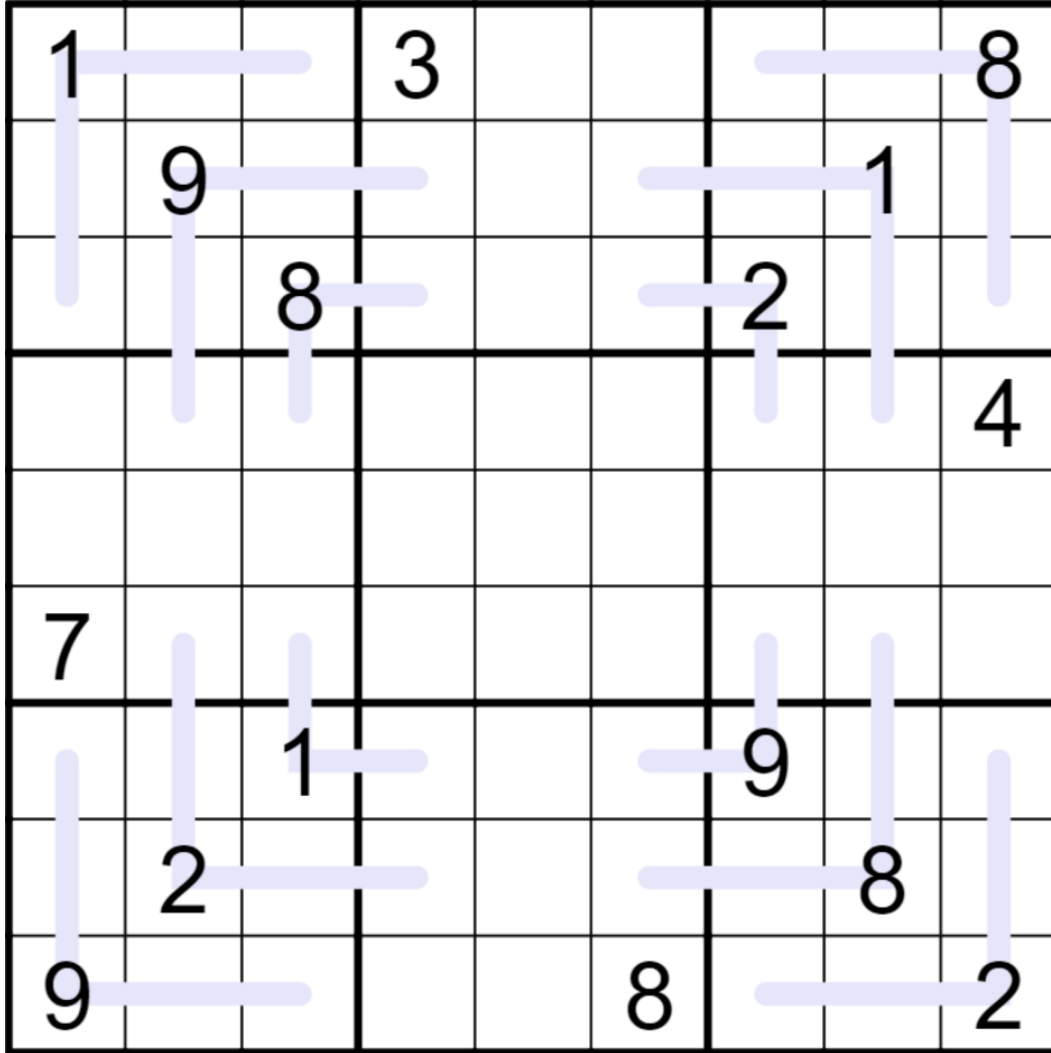
- ① a hat
- ② a phone-a-friend for shye
- ③ a bee queen
- ④ Pythagoras
- ⑤ madeyalook
- ⑥ someone's run out of sugar
- ⑦ leaf mustard
- ⑧ how many are left?
- ⑨ my mind is funny

Will Mark read these spoilers? Find out in a month!

Today's GAS is a Renban Sudoku!

Normal sudoku rules apply. Digits along purple renban lines must form a non-repeating consecutive set, in any order - for example, a 4-cell renban line could be 4352, but not 5679 or 2312.

GAS 101 Hint: The non-repeating part is important! Remember that once a digit is on a line, it can't appear elsewhere on that line, even if it doesn't otherwise see some of the other cells!



Play on f-puzzles: <https://f-puzzles.com/?id=2pf9nr29>

Play on CTC App: <https://tinyurl.com/3fyxr2b9>

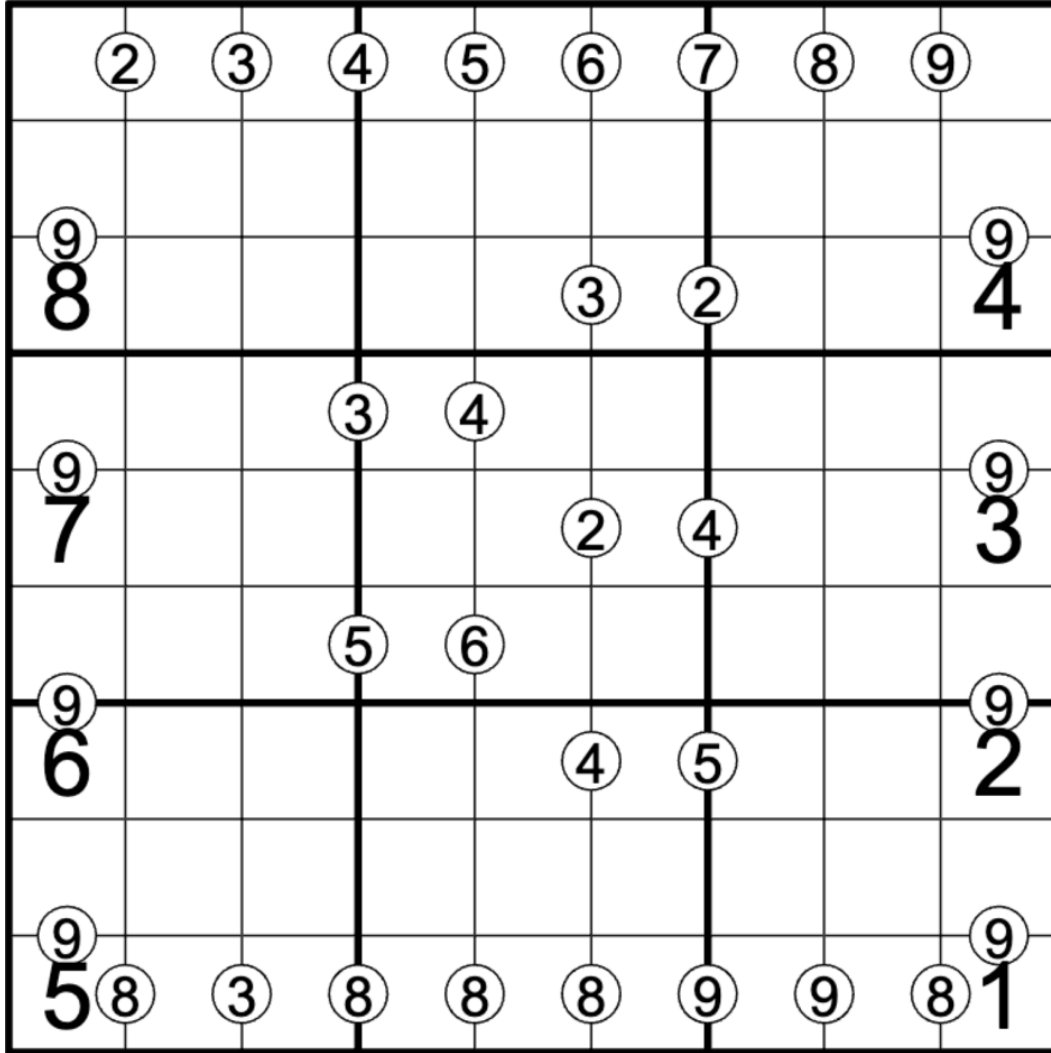
## October 7, 2022: Sum or Greater

Clover

In today's sum or greater sudoku, sum of the cells are great, and sum-thing that's really great is that sum other cells are even greater. :thinkies: (And if you're curious about why the word 'great' has suddenly lost all meaning after reading that sentence, check out this article! [https://en.wikipedia.org/wiki/Semantic\\_satiation](https://en.wikipedia.org/wiki/Semantic_satiation))

Normal sudoku rules apply.

Also, some pairs of cells are separated by a white circle. The value in the circle tells you either the sum of the digits in the two cells, or the greater of the two values in those cells. (For instance, if a "5" appears between two cells, those two cells might be 3/2 or 5/3.) It's up to you to figure out which circles are which.



f-puzzles: <https://f-puzzles.com/?id=2e6an7e4>

CtC: <https://tinyurl.com/mjr838js>

## October 8, 2022: Dot.Com Sudoku

Bill Murphy

G'Day Math Fans

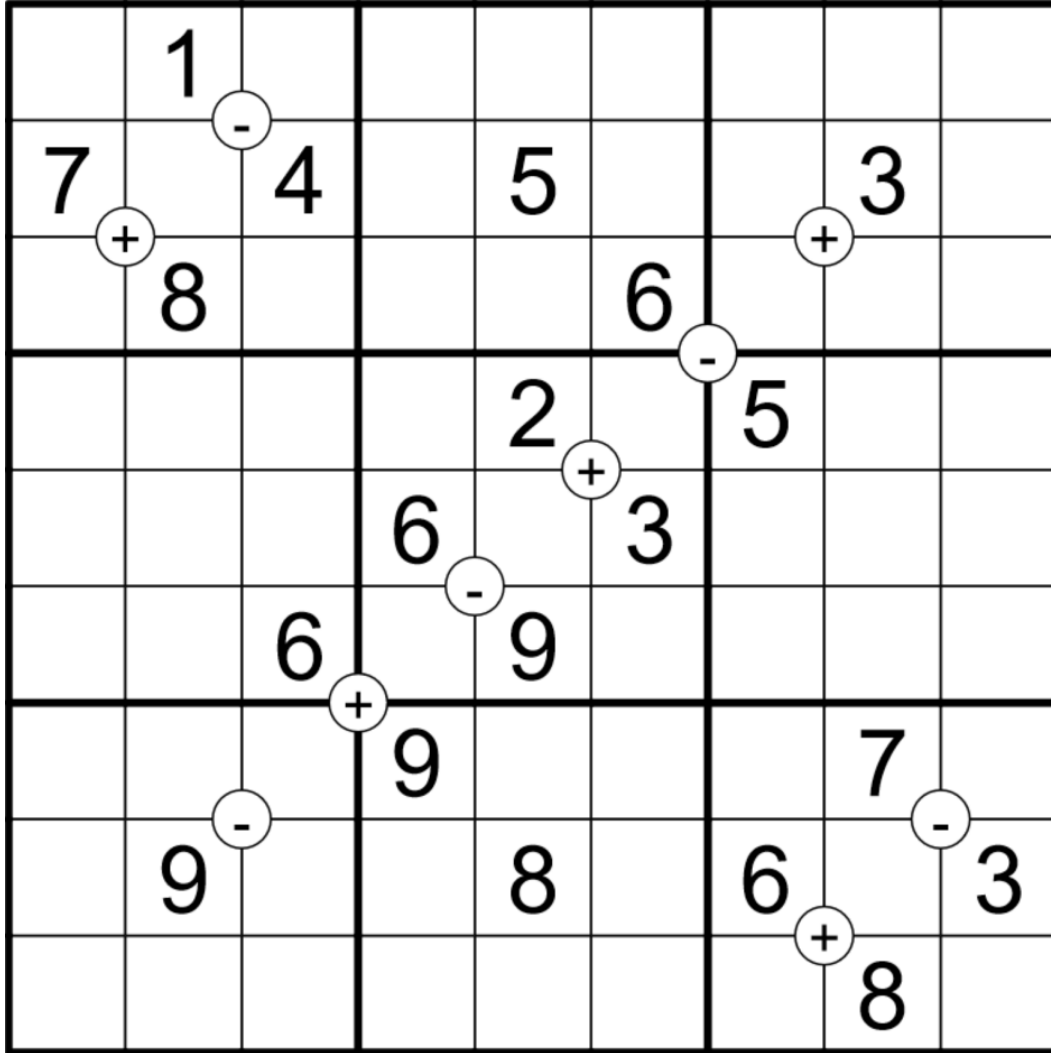
Well y'all really took me to the cleaners with the hats last time. Nothing personal! I love this for you.

I've still got plenty of hats for everyone today. My parents invested in the Dot.Com boom in the late 90's so they set me up with a hat fund. (For all of you youngsters on this discord, the Dot.Com boom is like cryptocurrency of the late 90's but instead of buying the rights to claim that you own a thing that doesn't exist, people just bought digital hats. Interestingly this would precede Team Fortress 2 by nearly a decade.)

Today's GAS is a Dot.Com Sudoku, a funky little Mathrax variant, similar to a GAS from June, but PrimeWeasel gave it this name last year and I like it, so I'm gonna keep it. So, hey! Hat's get right to it.

Normal Sudoku Rules Apply. A plus sign on the intersection of four cells indicates that both pairs of diagonally opposite pairs of digits have the same sum. A minus sign indicates that both pairs have the same difference. Not all pluses or minuses are given.





f-puzzles: <https://f-puzzles.com/?id=2mg5ne9l>

CTC: <https://tinyurl.com/2px3ujhs>

## **October 9, 2022: Cereal Convention**

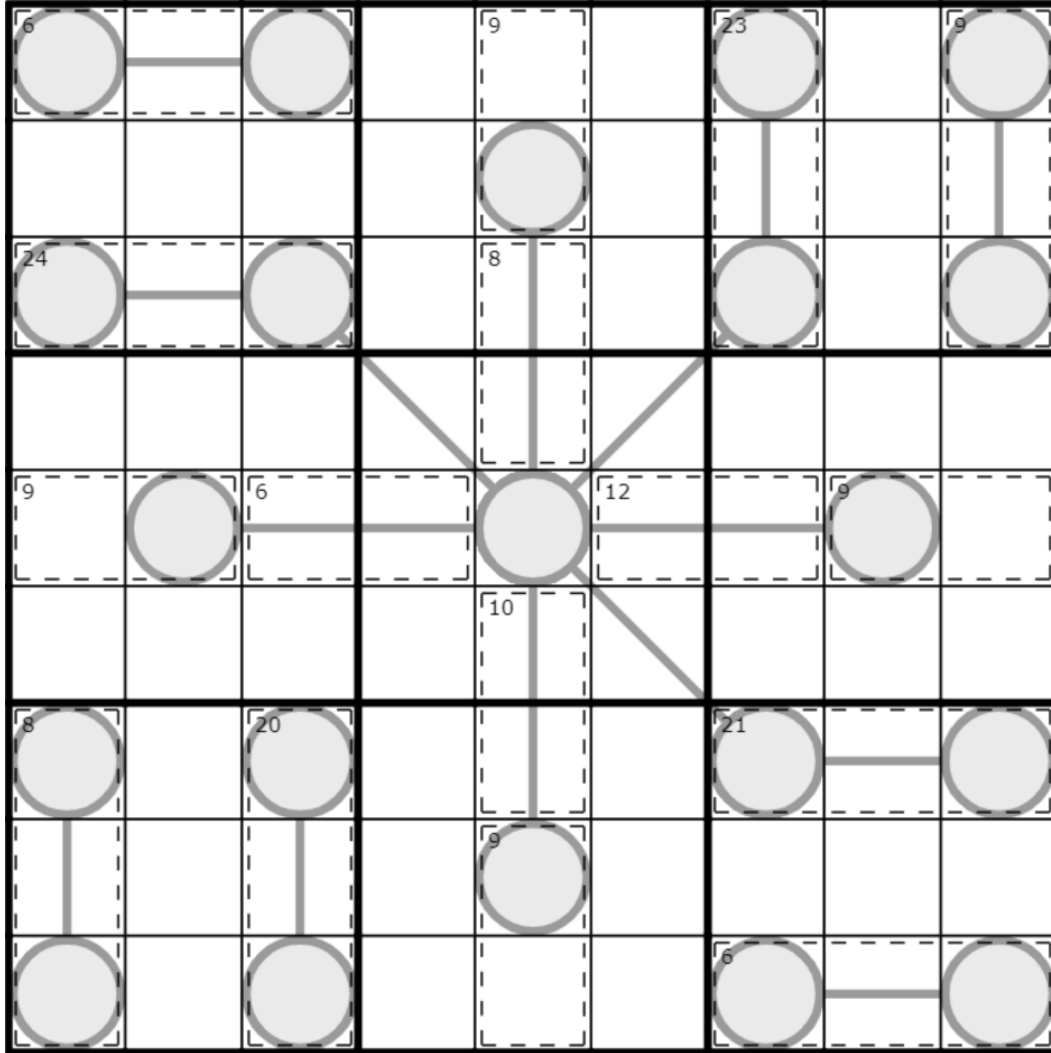
Philip Newman

My daughter, Zoe, turned 4 this weekend. She had a great day yesterday, but I can hear her crying downstairs as I write this. Such is the life of a 4 year old.

Today's GAS combines two of Zoe's favorite constraints (I mean, they could be...) that's right, it's a Killer Between Lines Sudoku!

(This one is a bit on the trickier side - don't blame Zoe, that's all me 😎)

Normal sudoku rules apply. Digits in cages cannot repeat and must sum to the total given. Digits along a line must have values strictly between the values in the circles on the ends of that line.



Play on f-puzzles: <https://f-puzzles.com/?id=2earrh5e>

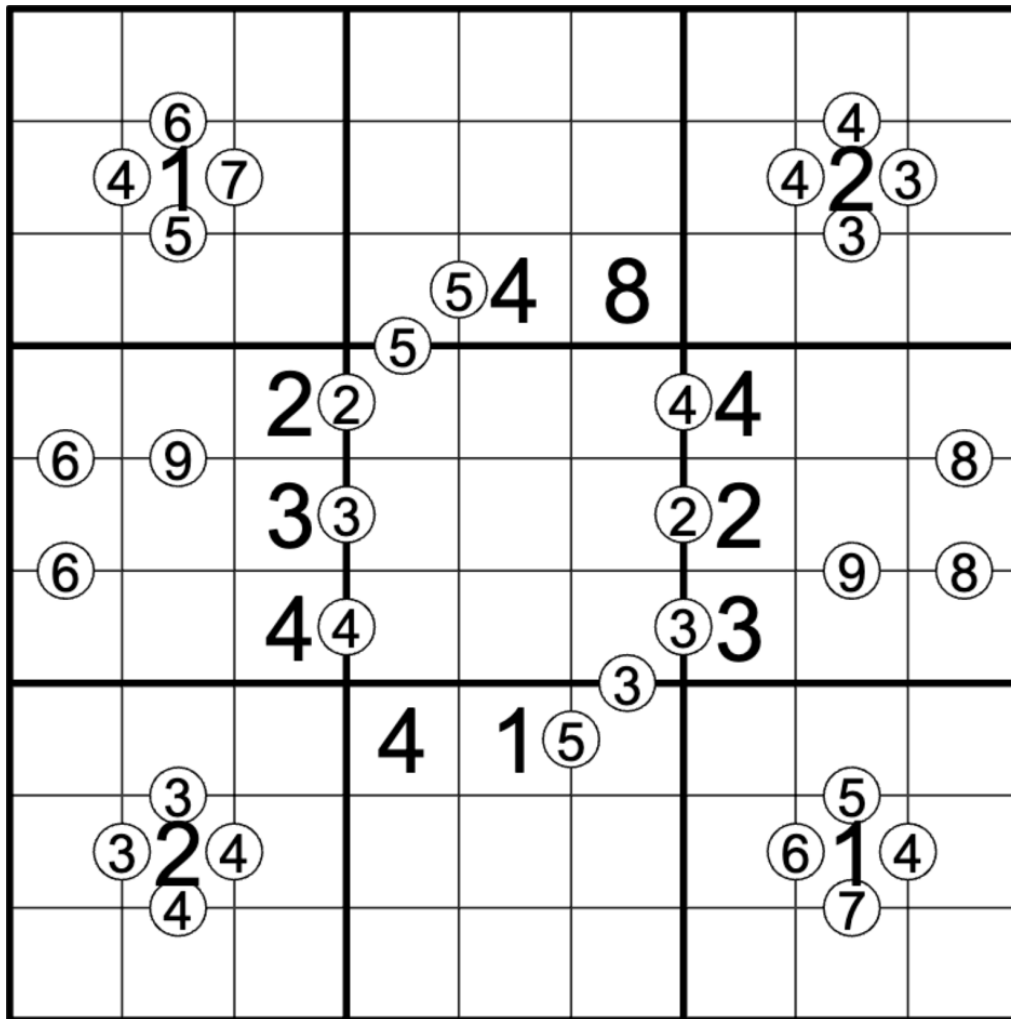
Play on CTC App: <https://tinyurl.com/scw2c723>

# October 10, 2022: Difference or Greater

Clover

Today's GAS might look the same as my last one, but it's actually a *little difference*.

In today's difference or greater sudoku, normal sudoku rules apply. Also, some pairs of cells are separated by a white circle. The value in the circle tells you either the difference of the digits in the two cells, or the greater of the two values in those cells. (For instance, if a "5" appears between two cells, those two cells might be 7/2 or 5/3.) It's up to you to figure out which circles are which.



f-puzzles: <https://f-puzzles.com/?id=2hfjj68q>

CtC: <https://tinyurl.com/34257e39>

## October 11, 2022: Autobots Roll Out

Bill Murphy

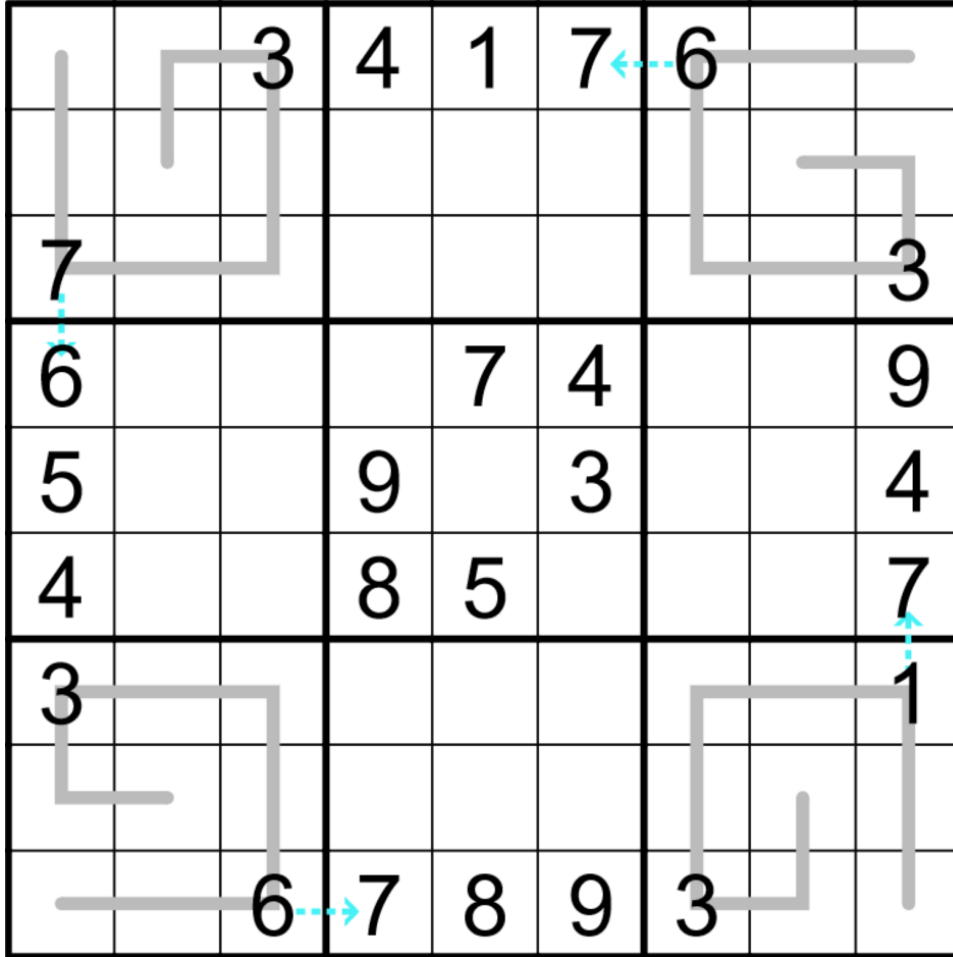
G'Day Brain Fans,

Yesterday was World Mental Health day and I wanted to take a moment to acknowledge it. I've always been pretty open about my mental health and my existence through grief in this discord and the people and friends I've made through this discord and I've also been glad that I could be the person that other people going through struggles with mental health could seek out in times where they needed comfort. I hope that y'all know that you've always got friends on this discord and you never need a particular day to just have a conversation about how you're doing.

That being said, prepare to take two d6 psychic damage, today is Greek Carpets Sudoku! (I've been marking Chemistry exams, join me)

Normal Sudoku Rules Apply. Digits along grey lines will read the same when you roll out the grey line along the row or column indicated by the light blue arrow, eg. the line in box 1 would "unroll" along column 1 and would read the same down column 1 as it does r1c1 to r2c2.

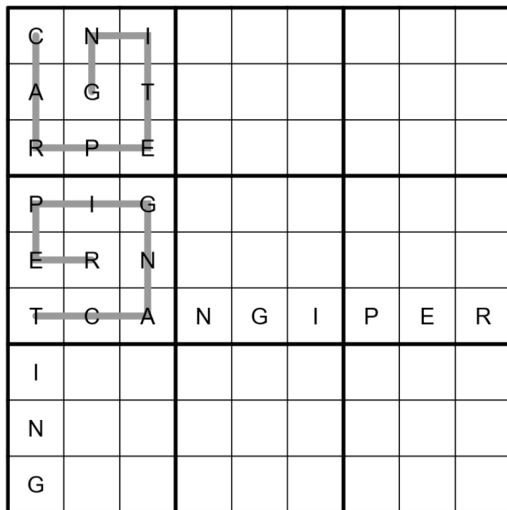
Absolutely take a minute to look at this example of how the ruleset works before you get started and see that you grok it before you get going. If you're a perennial one-hat or dinosaur solver, consider this a formal invite to stare at the puzzle before you start solving it, figure it out and put a couple of digits in in your head before you get going. Your secret's safe with me. Who's gonna know?



f-puzzles: <https://f-puzzles.com/?id=2gdj4tn6>

CTC: <https://tinyurl.com/yc2w9evt>

Example:



## **October 12, 2022: A Little Sum Thing**

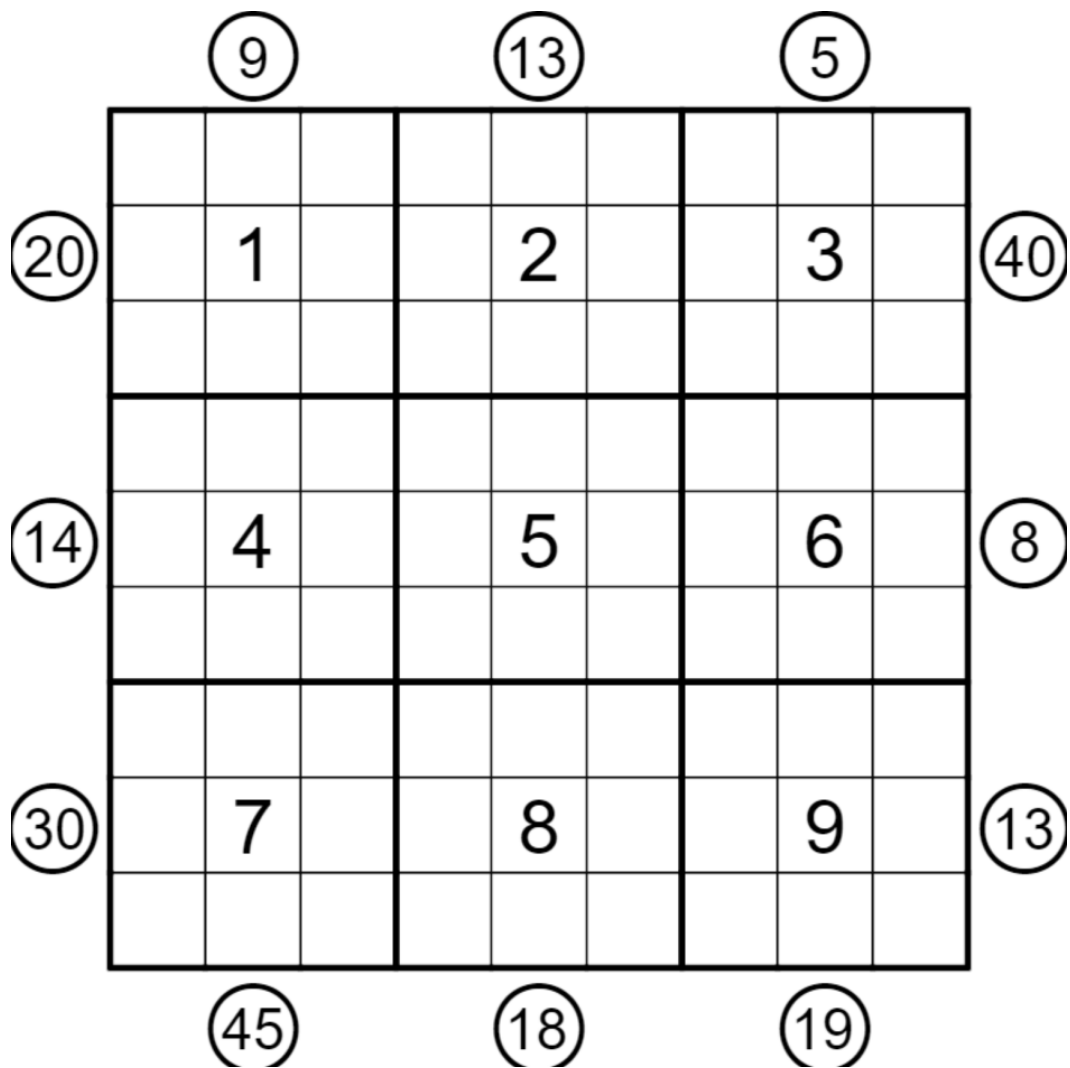
Philip Newman

I have to say, I wasn't sure about the whole Greek Carpet décor Bill has been pushing, but it really brings the space alive.

This is completely unrelated but I have a large number of spare tiles for sale. All the sauropods stomping around have meant we were replacing our grid tiling regularly, but it looks like now we're going to have to invest a small fortune in replacement carpeting instead. Here's a free sample!

Today's GAS is an X-Sums Sudoku!

Normal sudoku rules apply. Clues outside the grid tell you the sum of the first X digits in the corresponding row or column, starting with the digit adjacent to the clue and continuing away from the clue, where X is the adjacent digit. (For example: ?????7534 (19) would be a valid fill for a row where 19 is the sum of the rightmost 4 digits.)



Play on f-puzzles: <https://f-puzzles.com/?id=2p2c9ha3>

Play on CTC App: <https://tinyurl.com/3mbsakym>

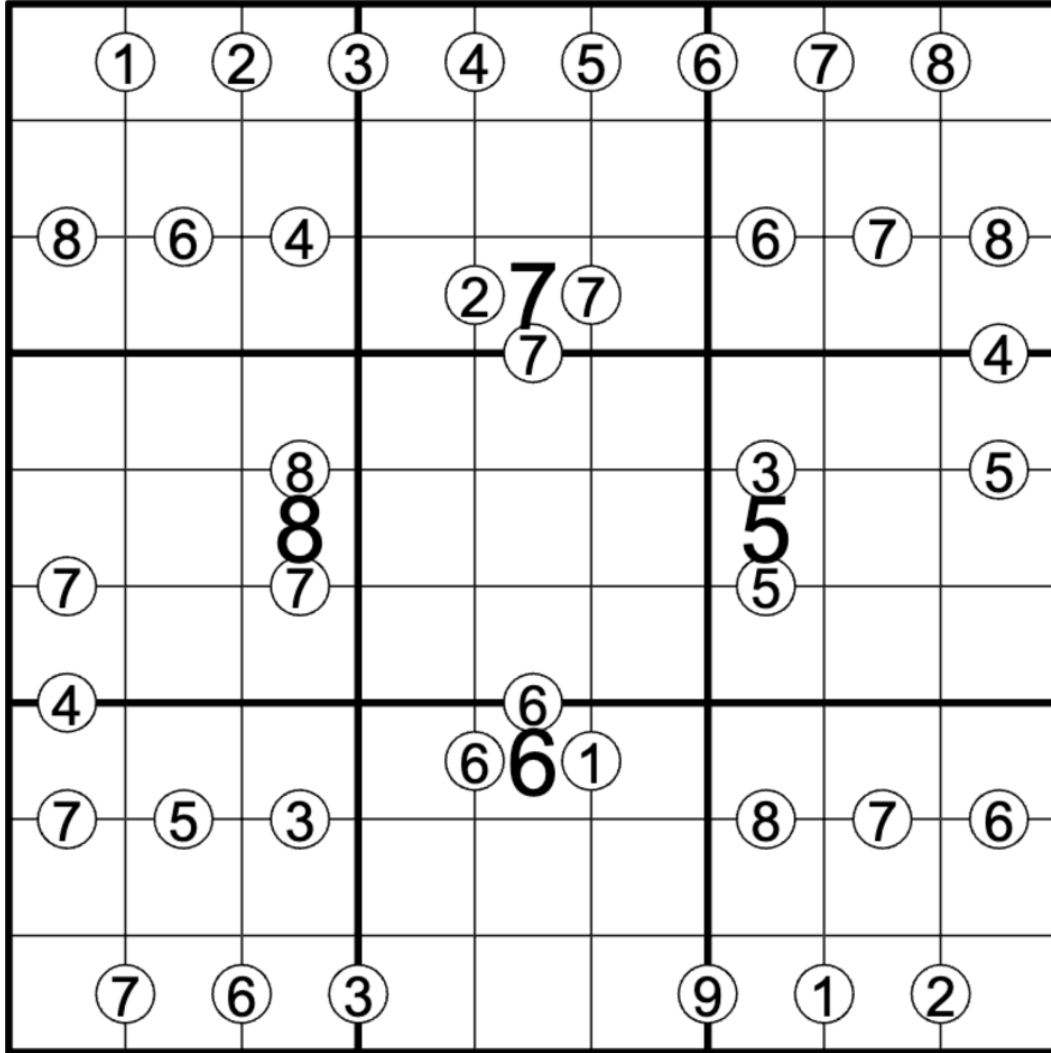


## October 13, 2022: Sum or Less

Clover

I've been informed by the rest of the GAS team that continuing to post puzzles on this theme is considered a terroristic act in no fewer than sixteen countries. But what else am I supposed to do - post sum-thing less interesting? Never! 🤔

In today's sum or less sudoku, normal sudoku rules apply. Also, some pairs of cells are separated by a white circle. The value in the circle tells you either the sum of the digits in the two cells, or the lesser of the two values in those cells. (For instance, if a "5" appears between two cells, those two cells might be 3/2 or 8/5.) It's up to you to figure out which circles are which.



f-puzzles: <https://f-puzzles.com/?id=2enldavu>

CtC: <https://tinyurl.com/55cy9cty>

## October 14, 2022: Offset Sudoku

Bill Murphy

G'Day Typing Fans,

Sum? Greater? Less? Difference? Do these mean anything to you any more?

Me personally, no. Time to take a little break from that cognitive load with a relaxing case of Data Entry. Let's offset that nonsense with the little ASMR of finger pads, brushing against keyboards, clacking of a spacebar. Spreadsheets and Databooks? Don't threaten me with a good time!

Do not @ me with 'All sudoku is data entry', fun killer

Today's GAS is an Offset Sudoku.

Normal Sudoku Rules Apply. A digit in a highlighted cell must be placed in the Nth cell in the next row, where N is the number in the cell immediately to the right of the highlighted cell.

eg. If r4c1 contained 9, and r4c2 contained 8, then r5c8 must be a 9.

1	4							
	2	5						
						7	1	
							8	2
			3	7				
				4	8			
5	7							
	3	9						

f-puzzles: <https://f-puzzles.com/?id=2l2clqry>

CTC: <https://tinyurl.com/yn4cpm2f>

## October 15, 2022: Squeaky Sum Time

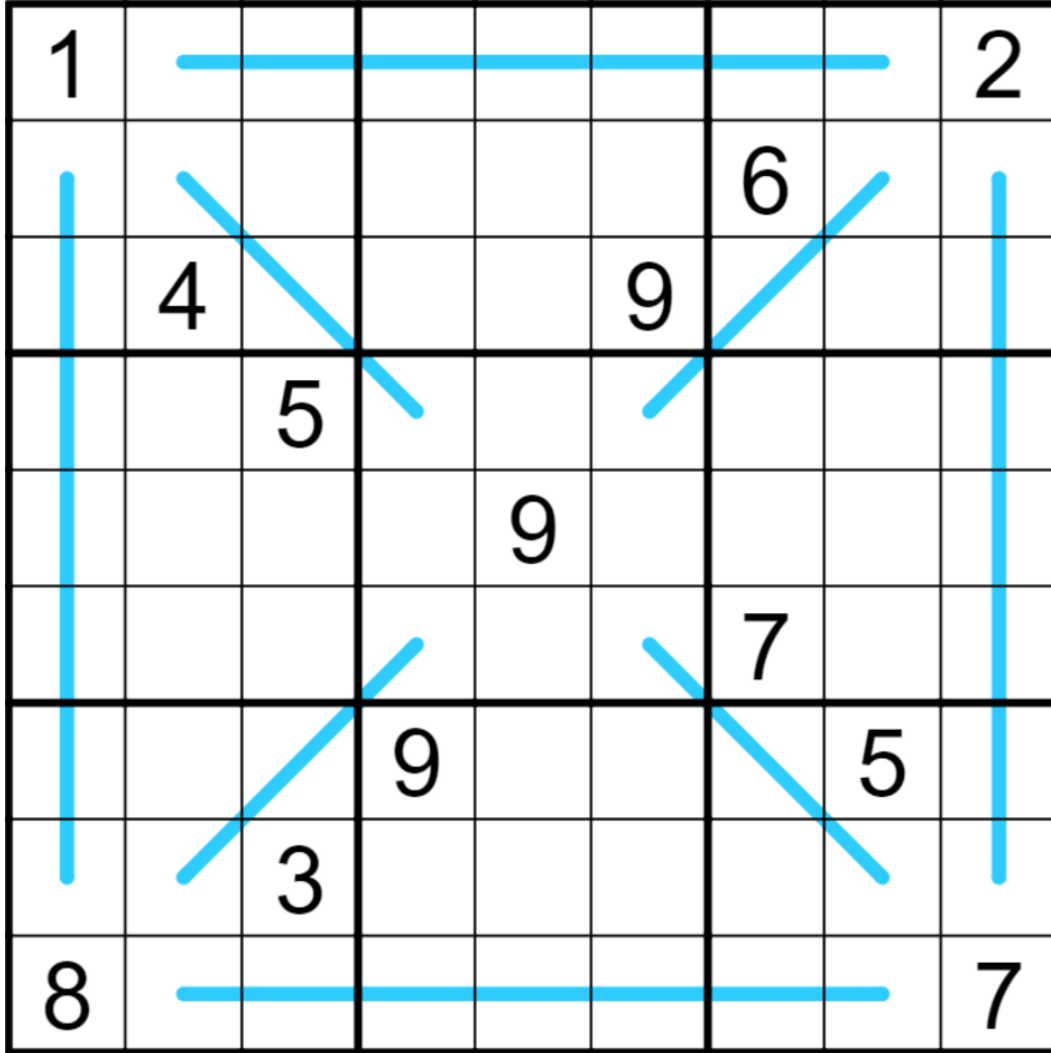
Philip Newman

Oh no. I had hoped my last puzzle was a one time (sum) thing. But two terrible sum pun titles in a row? Sumbody save us. Ack! I did it again!

Today's GAS 101 is a Region Sum Lines Sudoku!

Normal sudoku rules apply. Also, there are some lines in the grid, and each line passes through more than one of the 3x3 regions. Along each line, the digits in every region it passes through have the same sum. (For instance,  $r1c2 + r1c3 = r1c4 + r1c5 + r1c6 = r1c7 + r1c8$ )

GAS 101 Hint! The edges of the grid are entirely filled with givens and lines. Use the SECRET (TM) to determine what the sum on each line must be - they are much more restricted than they might appear at first glance!



Play on f-puzzles: <https://f-puzzles.com/?id=2f9m2s2x>

Play on CTC App: <https://tinyurl.com/3uk3z35n>

## October 16, 2022: 10 Lines

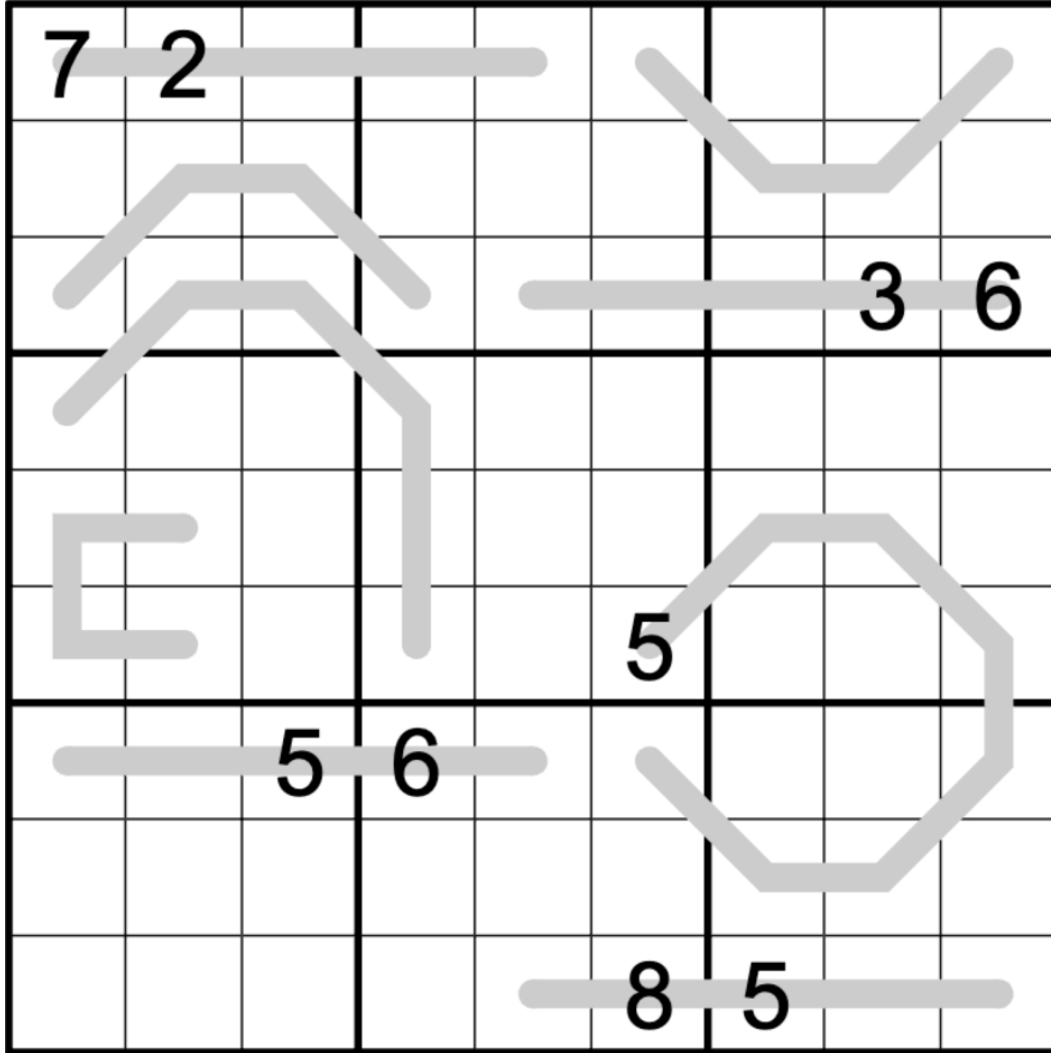
Clover

Today's GAS is a 10 Lines sudoku. Yes, it only has nine lines in it. You'll have to find somewhere to fit in the tenth one yourself.

Normal sudoku rules apply. Also, the cells along each line can be divided into connected groups so that every group sums to exactly 10.

Groups may not overlap, and along a line, every cell must be part of a group. The groups along a line are not necessarily all of the same size. Digits may repeat along lines.

For instance, 4 6 / 4 3 2 1 is a valid line, as is 2 3 5 / 8 2 / 4 5 1.



f-puzzles: <https://f-puzzles.com/?id=2nn987nh>

CtC: <https://tinyurl.com/42t7c2rd>



## October 17, 2022: Second Law of Thermodynamics

Bill Murphy

G'Day Existentialism Fans,

I've written a lot of nonsense so far in my two weeks as a gas setter and I'm a little worried people will take me seriously, so I wanted to take today's intro as an opportunity to post a quote that has stayed with me a lot, a window to my soul if you will:

*I've been taking a lot of comfort in the second law of thermodynamics. Usually I don't, but right now, it's nice to know that all natural processes are irreversible, and things are always moving forward.*

*While I'm not sure it's possible to affect things much, I've got hope we can bump things a little bit. There's a quote that says 'Over time, the moral direction of the universe curves towards justice' but that is not science and a friend brought it up to suggest that she didn't believe in it. If that were true, she said, Henry Kissinger would be in jail. He's still alive, I said. There's still time.*

*Positive Thinking. What else are we supposed to do?*

Joe Pera

Today's Sudoku is a Windoku. Place the digits 1 to 9 in each row, column, box, and shaded region.

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

f-puzzles: <https://f-puzzles.com/?id=2kc5mfzz>

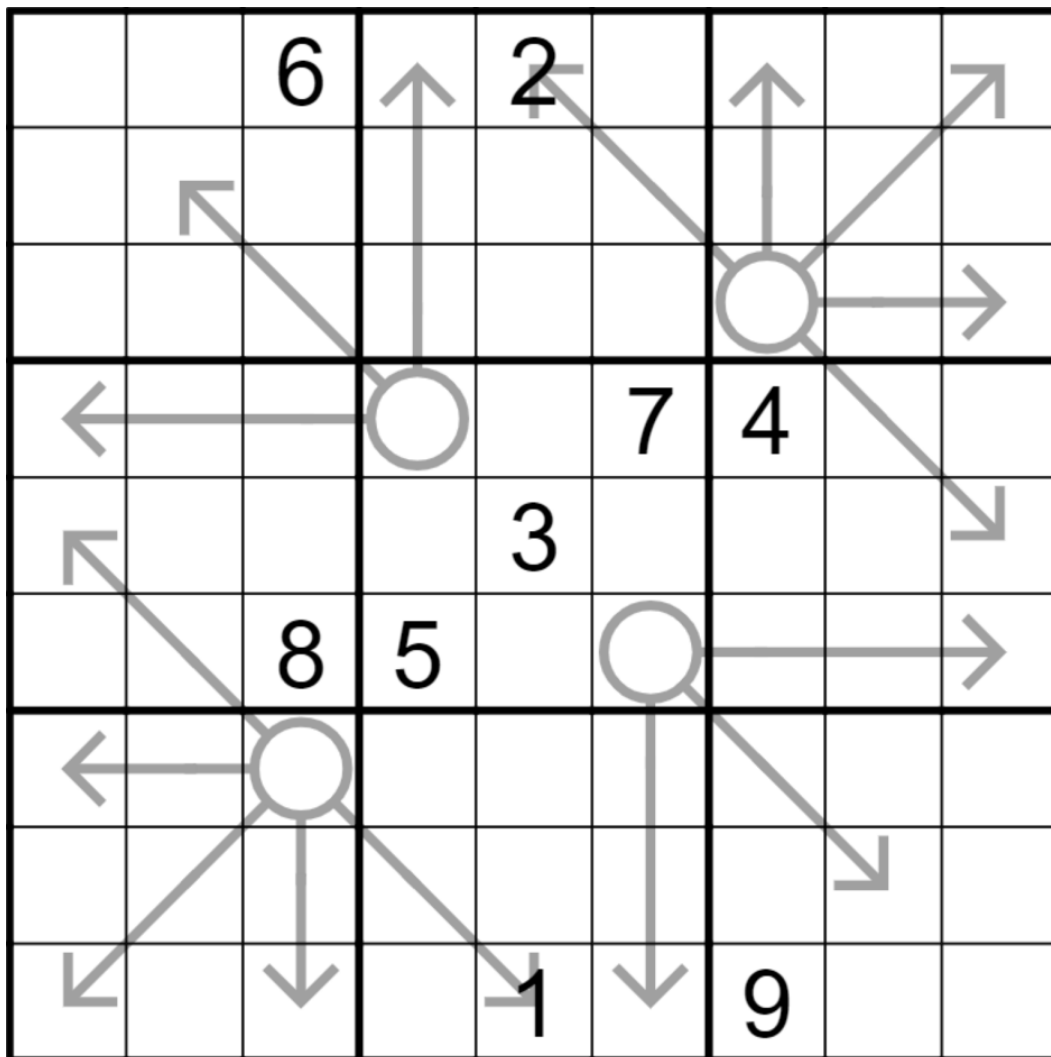
CTC: <https://tinyurl.com/2p94chhr>

## October 18, 2022: Catch Sum Rays

Philip Newman

It's finally moderately cool here in Texas. Today's GAS - an Arrow Sudoku - is in celebration of the sun. As we get less and less of it here in the northern hemisphere, don't forget to get sum sunlight. It's good for your mental health! (Hopefully Bill can figure out a way to send sum our way.)

Normal sudoku rules apply. Digits along arrows must sum to the circled total.



Play on f-puzzles: <https://f-puzzles.com/?id=2fzn4kak>

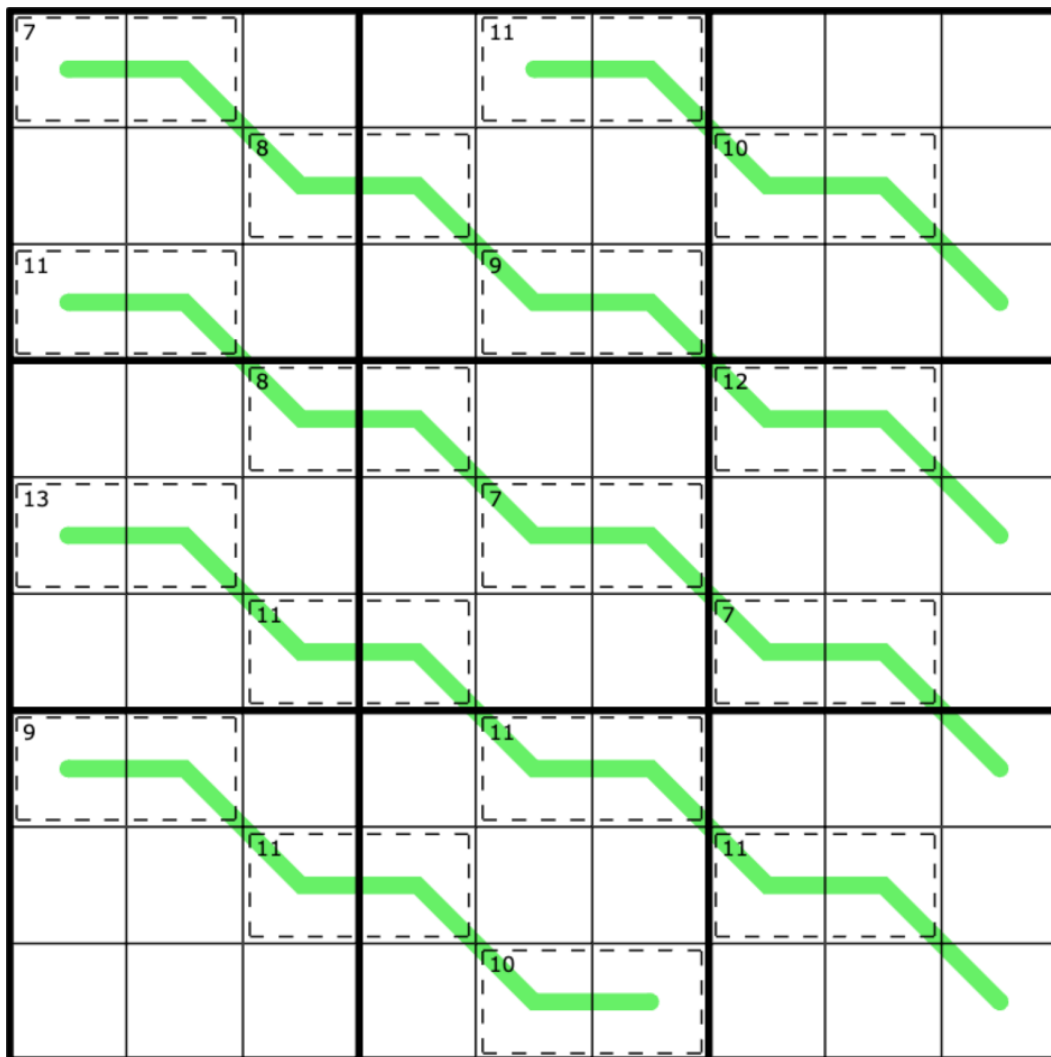
Play on CTC App: <https://tinyurl.com/2p83dzpd>

# October 19, 2022: German Whispers Killer

Clover

Bill picked out some new carpet for the GAS office, so I've chosen this matching wallpaper. It has a lovely pattern of vines - or are those snakes? Do vines have eyes? 🐍🐍

Normal sudoku rules apply. Also, adjacent digits along a green line must differ by at least 5. Digits in a cage may not repeat and must sum to the indicated value.



f-puzzles: unavailable due to graphical issues with this variant!

CtC: <https://tinyurl.com/227tmzww>

## October 20, 2022: All Natural Processes

Bill Murphy

Editor's note: The repeated intro is intentional (per today's variant, clone sudoku)! And just wait until you see what Bill did for the *next* one...

I've written a lot of nonsense so far in my two weeks as a gas setter and I'm a little worried people will take me seriously, so I wanted to take today's intro as an opportunity to post a quote that has stayed with me a lot, a window to my soul if you will:

I've been taking a lot of comfort in the second law of thermodynamics. Usually I don't, but right now, it's nice to know that all natural processes are irreversible, and things are always moving forward.

While I'm not sure it's possible to affect things much, I've got hope we can bump things a little bit. There's a quote that says 'Over time, the moral direction of the universe curves towards justice' but that is not science and a friend brought it up to suggest that she didn't believe in it. If that were true, she said, Henry Kissinger would be in jail. He's still alive, I said. There's still time.

Positive Thinking. What else are we supposed to do?

Joe Pera

Today's Sudoku is a Clone Sudoku. Normal Sudoku Rules Apply. Digits that appear in one part of a coloured region must appear in exactly the same position in the other coloured region. (Note for colorblind solving friends: the top left and bottom right regions have the same color, as well as the top right and bottom left.)

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

f-puzzles: <https://f-puzzles.com/?id=267t3ano>

CTC: <https://tinyurl.com/yactmtx3>

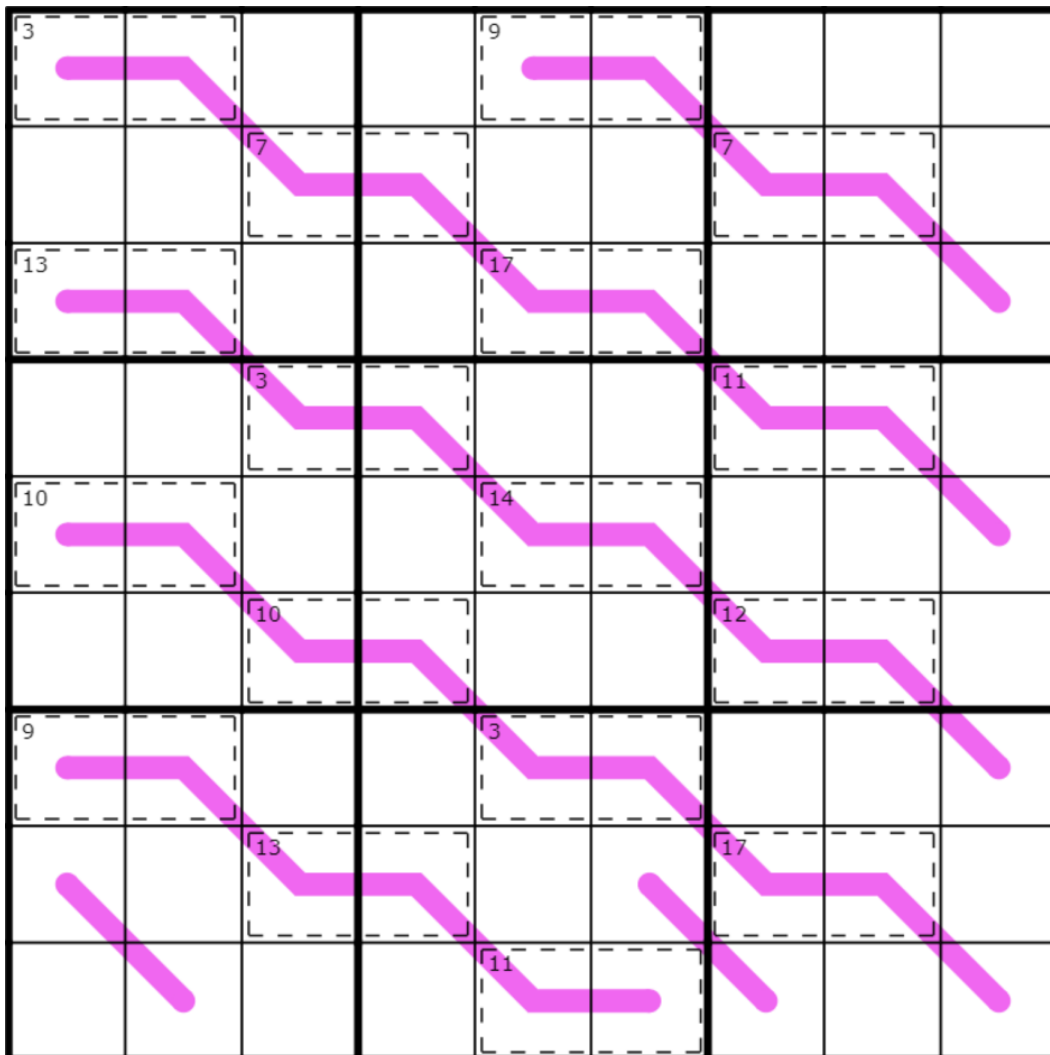
## October 21, 2022: Sum Renban or Other

Philip Newman

I've written a lot of nonsense so far in my seventy weeks as a GAS setter.

/end

Today's GAS is a Killer Renban Sudoku! Normal sudoku rules apply. Digits in cages cannot repeat and must sum to the total given. Digits along purple renban lines must form a non-repeating consecutive set, in any order - for example, a 4-cell renban line could be 4352, but not 5679 or 2312.



Play on f-puzzles: unavailable due to graphical issues with this variant!

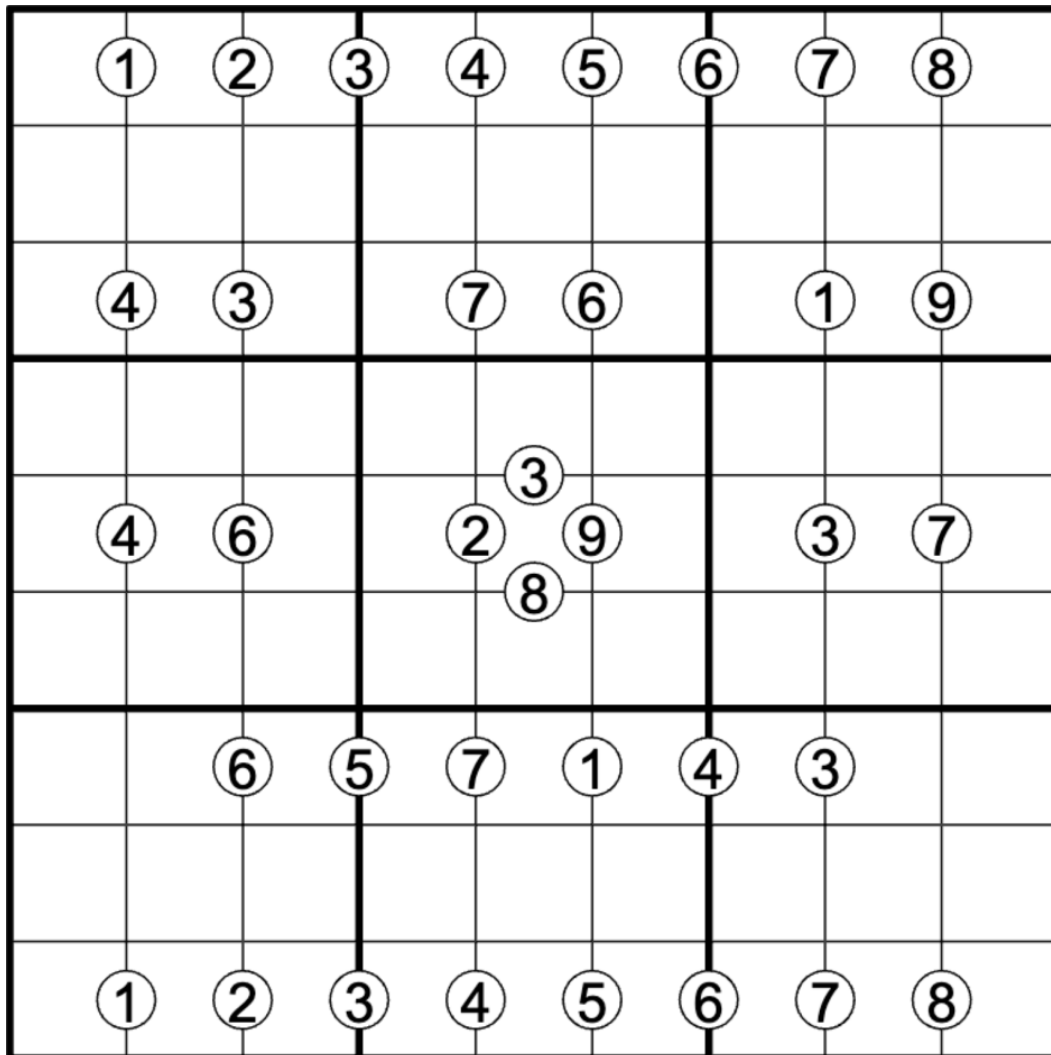
Play on CTC App: <https://tinyurl.com/3m4436pb> (grey lines:

<https://tinyurl.com/5n6uxecy> )

**October 22, 2022: Either/Or**  
Clover

Life is a series of either/or decisions. For instance, you can either solve this either/or sudoku, or print it out, wad it up, and let the dinosaur herd play volleyball with it. 🦖 🏐

In case you've opted to solve, normal sudoku rules apply. Also, if two cells are separated by a white circle, then the digit in the white circle must be contained in one of those two cells.



f-puzzles: <https://f-puzzles.com/?id=242tbxwo>

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



## October 23, 2022: Things Always Move Forward

Bill Murphy

areP eoJ

*?od ot desoppus ew era esle tahW .gniknihT evitisoP*

*.emit llits s'erehT .dias I ,evila llits s'eH .liaj ni eb dluow regnissiK yrneH ,dias ehs ,eurt erew taht fl .ti ni eveileb t'ndid ehs taht tseggus ot pu ti thguorb dneirf a dna ecneics ton si taht tub 'ecitsuj sdrawot sevruc esrevinu eht fo noitcerid larom eht ,emit revO' syas taht etouq a s'erehT .tib elttil a sgniht pmub nac ew eph tog ev'l ,hcum sgniht tceffa ot elbissop s'ti erus ton m'l elihW*

*.drawrof gnivom syawla era sgniht dna ,elbisreverri era sessecorp larutan lla taht wonk ot ecin s'ti ,won thgir tub ,t'nod I yllausU .scimanydomreht fo wal dnoces eht ni trofmoc fo tol a gnikat neeb ev'l*

*:lliw uoy fi luos ym ot wodniw a ,tol a em htiw deyats sah taht etouq a tsop ot ytinutropo na sa ortni s'yadot ekat ot detnaw I os ,ylsuoires em ekat lliw elpoep deirrow elttil a m'l dna rettes sag a sa skeew owt ym ni raf os esnesnon fo tol a nettirw ev'l*

,snaF msilaitnetsixE yaD'G

Today's Sudoku is a Palindrome Sudoku. Normal Sudoku Rules Apply.  
Digits along a grey line must read the same backwards or forwards.

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

f-puzzles: <https://f-puzzles.com/?id=2ya2fbla>

CTC: <https://tinyurl.com/mr4d9r9w>

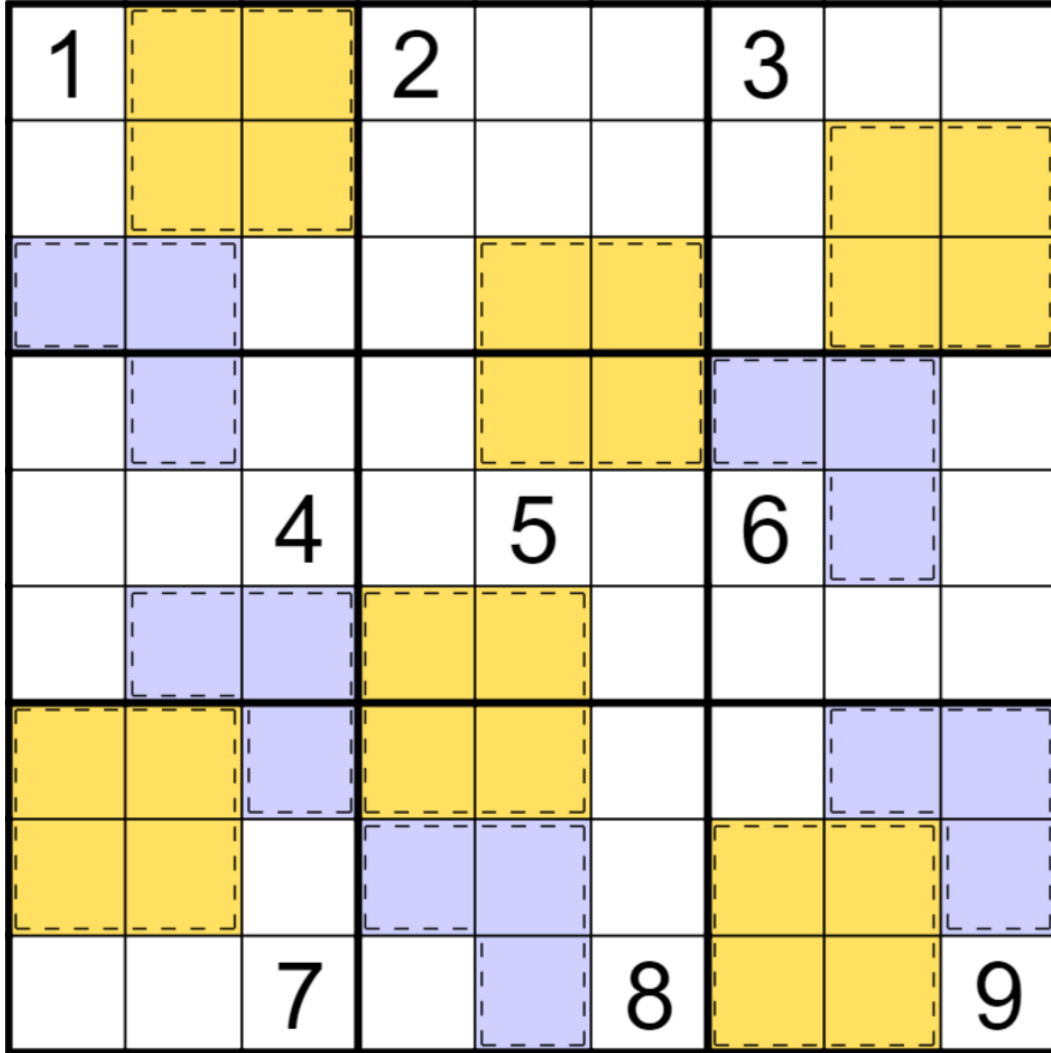
## **October 24, 2022: Jango Plays Jenga**

Philip Newman

Bill gave away some secrets about GAS HQ yesterday, and since you are all clever people and have surely already figured this out I'll go ahead and confirm that yes, if you make a recording of yesterday's intro in a thick Scottish accent and post it on youtube you will be able to access a very special room of the GAS campus. I hope we don't get too many people trying to access it all at once...

Today's GAS is a Clone Sudoku!

Normal sudoku rules apply. Cages of the same shape are clones, and must contain the same digits in the same relative positions.



Play on f-puzzles: <https://f-puzzles.com/?id=26r3ownj>

Play on CTC App: <https://tinyurl.com/24nndkcn>

## October 25, 2022: GAS Who?

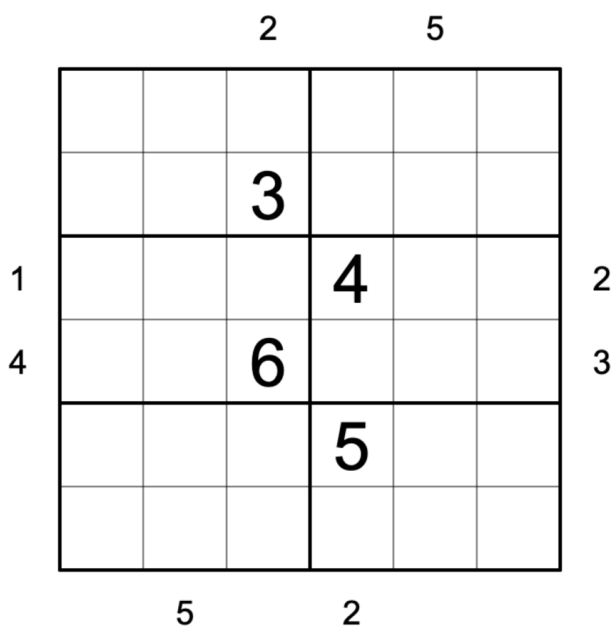
Intro by Clover; puzzles by Clover, Bill and Philip

Today we'll be having a surprise round of GAS's favorite game show: that's right, it's



The rules are simple and the hats are comfy! To play, simply guess which mystery setter (Clover, Philip, Bill) set each puzzle.

### First Seen Odd/Even:



Normal 6x6 sudoku rules apply. A clue outside of a row or column tells you either the first odd digit or the first even digit seen in that row or column, from the direction of the clue. (For instance, when looking at column 4 from below, the first even digit seen is a 2.)

f-puzzles:

<https://f-puzzles.com/?id=27q7zpmt>

CtC: <https://tinyurl.com/mrb57c2t>

### Entropic Cages:

Normal 6x6 sudoku rules apply. Digits in cages may not repeat and must sum to the indicated total. Every cage must contain at least one low digit (12), one medium digit (34) and one high digit (56).

f-puzzles:

<https://f-puzzles.com/?id=28spxy62>

CtC: <https://tinyurl.com/ydnh887s>

9					
		13	15	1	
	6				12

### Lemon:

1					
		3			
					4
	5		2		
		6			

Normal 6x6 sudoku rules apply. The digits along the yellow line of each "lemon" must sum to the value given by the two cells surrounded by the line (read top to bottom or left to right as a 2-digit number).

For instance, if r2c34 contained 1/3, then the digits around the topmost lemon would sum to 13. Digits may repeat on a lemon as long as they follow sudoku rules.

f-puzzles:

<https://f-puzzles.com/?id=29rgp5kw>

CtC: <https://tinyurl.com/2jtb23sy>

**Answers to "GAS Who?" appear on the final page of this document.**

## October 26, 2022: Hard Puzzle

Bill Murphy

G'Day Fun Fans,

Short intro today. What did the english policeman say when he saw the variant sudoku? Arrow, arrow, what's all this then?

Today's sudoku is an XV(-) Sudoku. Normal sudoku rules apply. Digits separated by an X must sum to 10. Digits separated by a V must sum to 5. All possible Xs and Vs are given.

The more astute will have already noticed that there are no Xs and Vs in this puzzle. You're going to need to use the negative constraint of this rule set to solve it, which as far as I can tell, is the third time ever GAS has used a negative constraint for a puzzle.

I feel like that means I can do a little GAS 101 for y'all if you want it, plus I'm terrified of posting a negative constraint puzzle and going to bed: In puzzles with a negative constraint, all the rules you know still apply, just in reverse. In an XV(-) puzzle, the digits 1-4 are very powerful as they can't be used to make 5 or 10 without a letter. Consider what digit must go in r5c5?

		1					3	
	6					2		4
4					6		1	
				3		8		
			2		4			
		6		1				
	3		8					2
2		4					8	
	1					3		

F-puzzles: <https://f-puzzles.com/?id=26488va3>

CTC: <https://tinyurl.com/2p9jw39k>



## October 27, 2022: Methane

Philip Newman

Groovy Attractive Setters, Inc. is committed to doing its part to combat greenhouse GAS. Please do not solve GAS in a greenhouse. Recycle your GAS puzzles after solving. For every GAS you solve, plant a new GAS. Shrink your GAS footprint: solve with a zoom of 75% or less.

Today's GAS is a Classic Sudoku! (Title suggested by @grkles?) Normal sudoku rules apply. And that's it!

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

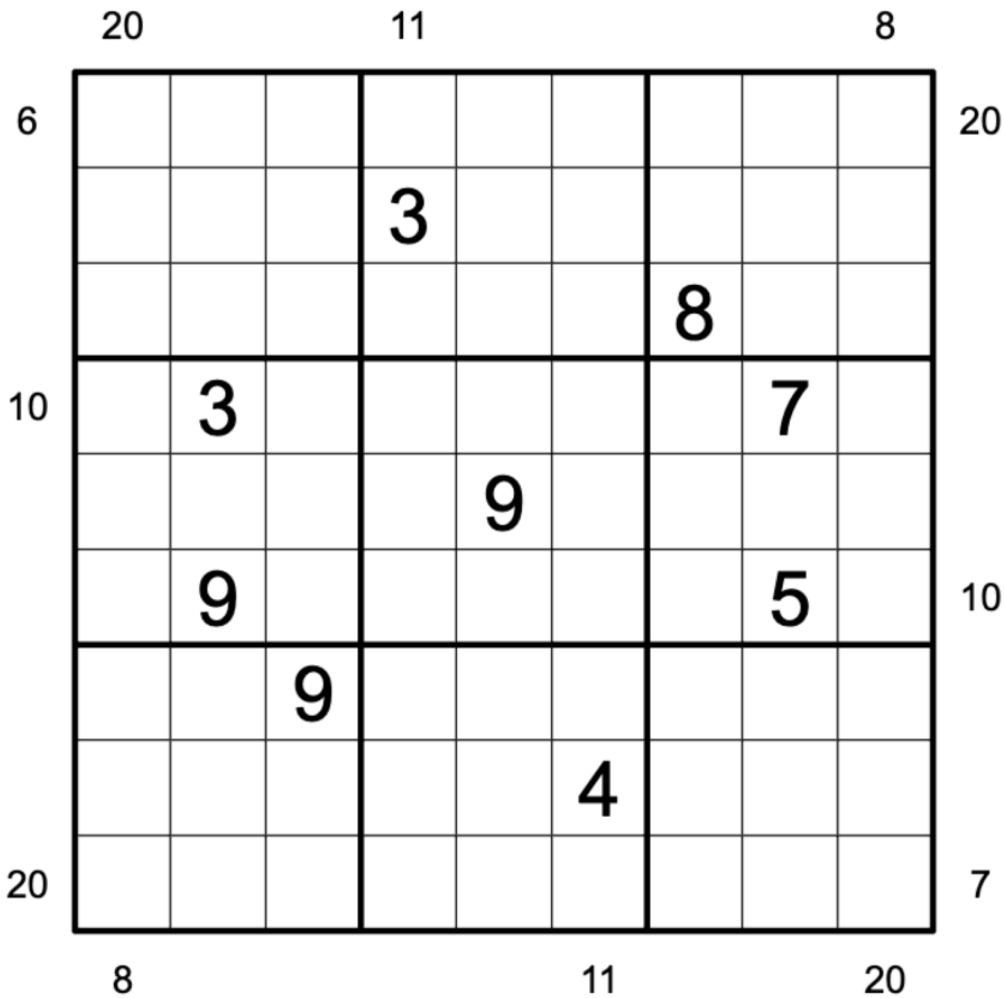
Play on f-puzzles: <https://f-puzzles.com/?id=22asvbz2>

Play on CTC App: <https://tinyurl.com/2bf8z8w8>

**October 28, 2022: Frame**  
Clover

Is today's GAS hurtling through space at millions of miles per hour, or is it standing perfectly still, waiting for you to solve it? It all depends on your frame of reference. 😊

In this frame sudoku, normal sudoku rules apply. Clues outside of the grid give the sum of the first three digits seen in that row or column (starting from the direction of the clue). For instance, the bottom three cells in column 6 must sum to 11.



f-puzzles: <https://f-puzzles.com/?id=24fufvcr>

CtC: <https://tinyurl.com/bdzadvp3>

## October 29, 2022: Stuck in Bakpao's Puzzle Mine

Bill Murphy

G'day fellow workers,

Welcome to Bakpao's Puzzle Mines! Enjoy your stay! We will definitely make sure that you have a comfortable time in this safe and very ethical workplace. Never mind the screams of pain coming from the Yajilin floor, that's a very normal thing. When the screaming stops, that's when we worry.

Like a shoulder being put back in place, today's sudoku is a self-joint sudoku.

Normal Sudoku Rules Apply. Cells highlighted red correctly indicate their position within the box. All possible cells are highlighted.

So, in plain English for the regular solvers, the positions in a box are

1 2 3

4 5 6

7 8 9

If a cell is highlighted in red, it's the number above. If it's not highlighted, it can't be that number. (That's right, negative constraints are back already! A relatively new introduction to Bakpao's Puzzle Mine, they didn't cause any lasting damage to solvers last time, so they got a rollover on their contract.)

				9	7	3	1	
						2		
						4		
		6						
		5						
	9	7	3	1				

F-puzzles: <https://f-puzzles.com/?id=2c248dgf>

CTC: <https://tinyurl.com/yvr2scaa>

## October 30, 2022: Mark-o'-lantern

Philip Newman

It's almost Halloween! Do you have a costume? I'm dressing up as today's GAS, a spooky Classic Sudoku!

Normal sudoku rules apply. And that's it!

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

Play on f-puzzles: <https://f-puzzles.com/?id=22v4qr84> (grey/light orange highlights) / <https://f-puzzles.com/?id=23u69ucc> (no color)

Play on CTC App: <https://tinyurl.com/mvthnenn> (grey/light orange highlights) / <https://tinyurl.com/ufkarnzh> (no color)

## October 31, 2022: Descriptive Pairs

Clover

In celebration of Halloween, I've dredged up the scariest, haunted-est, most dangerous ruleset I could find - then dressed it up in a cute, cuddly outfit to make it friendly enough for everybody. 😊

Today's GAS is a descriptive pairs sudoku! Normal sudoku rules apply. Also, some pairs of numbers, X and Y, are given outside of certain rows and columns. If an X Y clue appears outside of a row or column, then either X appears in the Yth position in that row or column, or Y appears in the Xth position in that row or column (counting from the direction of the clue).

For example, if "3 6" appears to the left of a row, then either 3 appears in the 6th position from the left in that row, or 6 appears in the 3rd position from the left, or both.

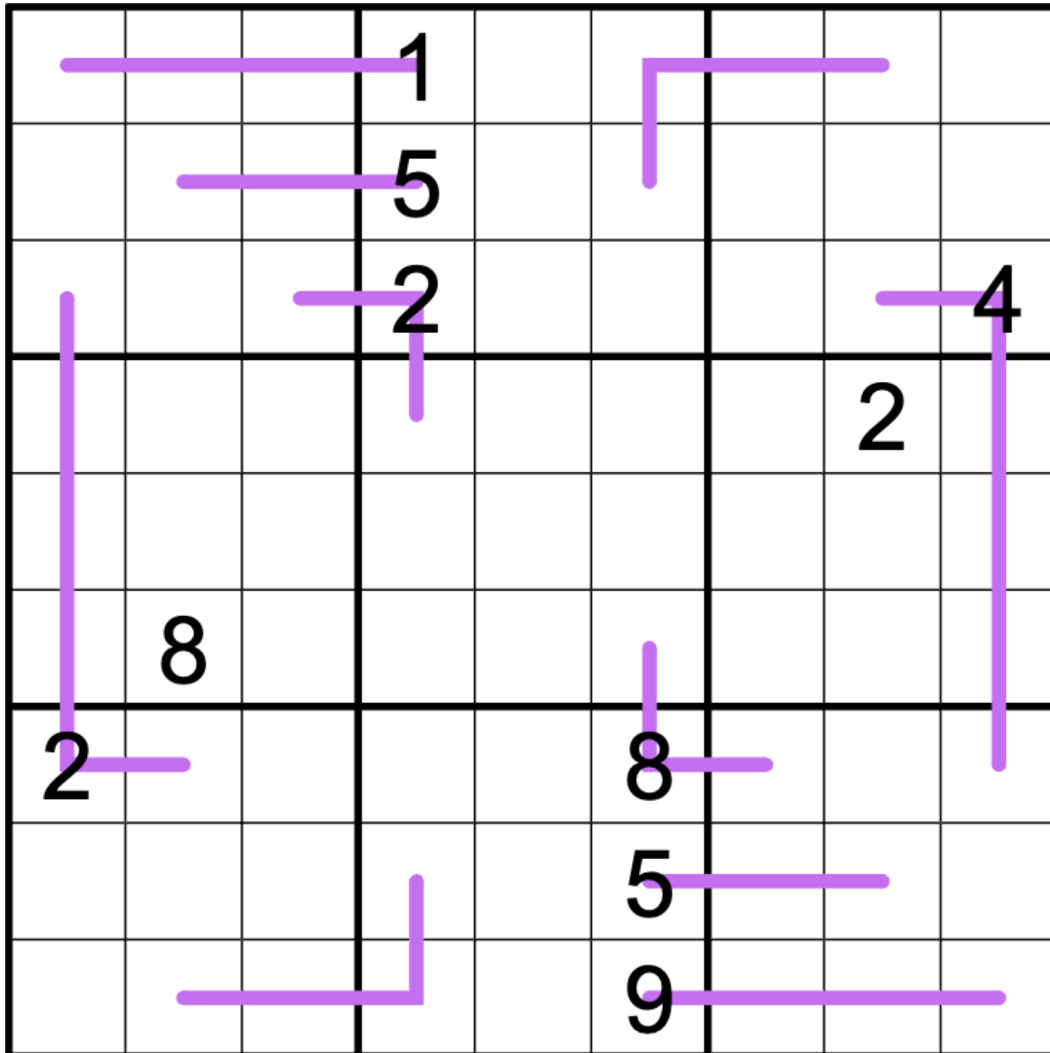
					5			1	
				6			2		
						3			
		1			4				
	2			5			4		
			6			2			
		7							
	8			9					
9			8						

f-puzzles: <https://f-puzzles.com/?id=27cgxe2j>  
 CtC: <https://tinyurl.com/yc6bfvzb>

## Bonus 1: Renban

Bill Murphy

Normal Sudoku Rules Apply. Digits along lines must be consecutive and may not repeat but may be in any order.



<https://f-puzzles.com/?id=2ayscnvt>

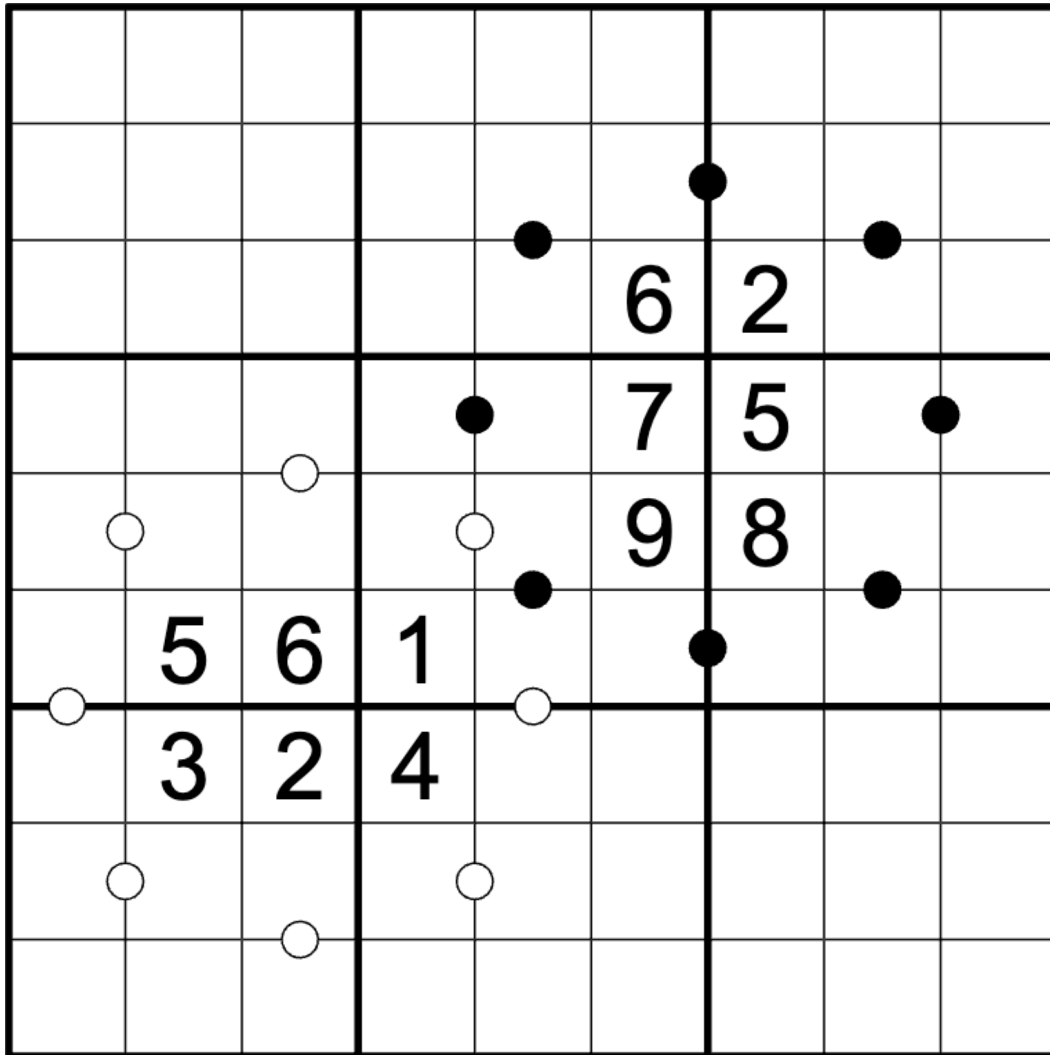
<https://tinyurl.com/2r37vms2>



## Bonus 2: Kropki Pairs

Philip Newman

Normal sudoku rules apply. Digits separated by a white dot must be consecutive. Digits separated by a black dot must be in a 1:2 ratio. Not all dots are necessarily given.



<https://f-puzzles.com/?id=2yycc3x9>

<https://tinyurl.com/44te6jhe>

### Bonus 3: Double Sandwich

Clover

Normal sudoku rules apply. Clues outside of the grid give the sums of the digits sandwiched between each of 1, 5, and 9. Clues are in the correct order from left to right or top to bottom, but the order in which 1, 5, and 9 appear must be determined. For instance, the row 5 2 7 1 4 9 3 8 6 would have a clue of "9 4".

4 7	0 6	7 10	0 8	2 4	3 0				
5 10	<b>1</b>			<b>5</b>			<b>9</b>		
5 10	<b>9</b>			<b>1</b>			<b>5</b>		
5 10		<b>5</b>			<b>9</b>			<b>1</b>	

<https://f-puzzles.com/?id=2y9845vc>

<https://tinyurl.com/22a5hmtD>

### Bonus 4: Harder Puzzle

Normal Sudoku Rules Apply. Digits connected by a white dot must be consecutive. Digits connected by a black dot must be in a 1:2 ratio. **All possible dots are given (that is, this puzzle has a negative constraint).**

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

<https://f-puzzles.com/?id=2yv4gp4l>

<https://tinyurl.com/2cwkyax>

## Bonus 5: Killer

Philip Newman

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

	10							
10	9	2		10		10		
	8	5	10		10			
				8				
	10		7	9	10		10	
		10		10	5			10
	10				10			
					10			

<https://f-puzzles.com/?id=28sh26ho>

<https://tinyurl.com/4tfx8b7b>

## Time Benchmarks

	Two party hats	One party hat	Today's dinosaur:
October 1, 2022	6:00	11:00	annotated anzu
October 2, 2022	9:00	15:00	assembled austrosaurus
October 3, 2022	7:00	13:00	diagonalized duriatitan
October 4, 2022	7:00	13:00	old olorotitan
October 5, 2022	7:00	12:00	thoughtful tsaagan
October 6, 2022	7:56	14:32	hatless haestasaurus
October 7, 2022	8:00	15:00	great gorgosaurus
October 8, 2022	6:39	10:32	calculating caudipteryx
October 9, 2022	10:00	18:00	Zoe-approved zigongosaurus
October 10, 2022	7:00	13:00	differentiable dilong
October 11, 2022	5:00	12:00	rolling raptorex
October 12, 2022	7:00	13:00	dinheirosaurus decorator
October 13, 2022	7:30	13:30	stumbling supersaurus
October 14, 2022	6:30	11:00	clacking condorraptor
October 15, 2022	7:00	13:00	sumptuous smitanosaurus
October 16, 2022	8:00	15:00	linear liaoningosaurus
October 17, 2022	7:00	12:00	beautiful beishanlong
October 18, 2022	8:00	15:00	daylightful dyslocosaurus
October 19, 2022	8:30	16:00	well-decorated wuerhosaurus
October 20, 2022	7:30	13:00	copiable concavenator
October 21, 2022	9:00	18:00	kitschy klamelisaurus
October 22, 2022	7:00	13:00	either an eosinopteryx or an enigmosaurus
October 23, 2022	4:54	8:38	repeatable rugops
October 24, 2022	6:30	13:00	homozygous huangshanlong
October 25, 2022	12:00 (total for all 3 puzzles)	20:00 (total for all 3 puzzles)	triplicate tuojiangosaurus

October 26, 2022	8:30	16:00	negative nedcolbertia
October 27, 2022	5:00	10:00	eucamerotus environmentalist
October 28, 2022	7:00	13:00	theoretical tendaguria
October 29, 2022	5:30	10:00	OSHA-loving oohkotokia
October 30, 2022	5:00	10:00	spooky soriatitan
October 31, 2022	8:00	15:00	costumed chilantaisaurus

GAS Who setters  
First Seen Odd/Even: Clover  
Entropic Cages: Bill  
Lemon: Philip