

Top Right Boi – Full Solution Guide

This is a full solution guide to my puzzle *Top Right Boi*, and so spoilers are ahead.

Rules

- Normal sudoku rules apply: Place the digits 1 to 9 once each in every row, column, and 3x3 box
- **Box Ordinal Indicators:** A digit in a grey circle is odd. In addition it indexes the position in that box of the digit corresponding to the box that the circle is in. For example, R1C6 is in box 2. If R1C6 were a 9, this would be saying that the 2 in box 2 needs to go in position 9, which is R3C6. (Boxes and positions are numbered 1 to 9 in normal reading order.)
- **Diagonal:** Digits may not repeat on the marked diagonal going from bottom-left to top-right

Solve Path

- The Box Ordinal Indicator (BOI) in each box is odd, so is from the digits 13579. Additionally, only R1C9 can contain a 3, in all other cases placing a 3 in the circle would indicate that you also need to place the box number in that same cell. Additionally, the box number can't appear in the circle, so 1 can't be in R1C3 because that would be indexing a 1 into R1C1, similarly for boxes 5, 7 and 9. Additionally, by the given 8 in row 9, the positions for 7 and 8 are very limited

		579	2		1579	3		3 13579
	1			2		8	3	
1		1	2		2	3		3
4		1579	5		179	6		1579
	4						6	
4	2	4	5		5	6		6
7		15	8		15	9		157
	7			8			9	
		8				9		2

- Gives a 15 pair, which makes R7C9 a 7, indexing the 9
- The 7 looks back to place 7 in box 7, placing a 5 to index this, and then the 8 and 1 in box 8

		579	2		1579	3		3 13579
	1			2		8	3	
1		1	2		2	3		3
4		1579	5		179	6		1579
	4						6	
4	2	4	5		5	6		6
		5	8		1			7
	7							
		8				9		2

- Chasing restricted cells and indexers around allows us to place all of the indexers other than 3 and 6 which still have two locations

		9			7	3		3 13
						8		
		1	2					
		7			9	6		15
							6	
4	2				5			
		5	8		1			7
	7							
		8				9		2

- And now it is just diagonal sudoku to finish, some key spots:
- 24 pair and 36 pair in column 3
- 8 is placed on the diagonal, then in box 2
- 7 is placed in box 3, then in box 1
- 8 and 9 look into box 4, and create a hidden pair in row 6

8	8	9			7	3		3	13
7		24				8			
		1	2		8		7		
8	8	7			9	6			15
9	9	36	7	8		7	6		
4	2	36		7	5	7	8	9	8
		5	8		1				7
	7	24							
		8	7	7		9			2

- 2 is placed on the diagonal, resolving the 24 pair, and then in box 8
- 4 is placed on the diagonal

8	8	9	4	4	7	3		3	13
7		4				8	2	9	
		1	2		8	4	7	9	
8	8	7			9	6			15
9	9	36	7	8		7	6		
4	2	36	136	7	5	7	137	89	89
		5	8	2	1				7
	7	2							
136		8	7	7		9			2

- 9s in box 3 point to resolve the 89 pair, which places some more 8s
- 2 in box 1 is placed, which places the 8, leaving behind a triple
- 15 pair in row 4

2	8	9	4	4	7	3		3	13
7	356	4				8	2	9	
356	356	1	2		8	4	7	9	569
8	15	7			9	6			15
9	159	9	159	36	7	8	7	6	
4	2	36	136	7	5	7	137	9	8
9	4	9	5	8	2	1			7
	7	2					8		
136	4	8	7	7		9			2

- Only one place for 2 in box 5, then row 4, which places the 6 in box 6, and resolves the 15 pair by BOI
- 5s in box 3 point

2	8	9	4	4	7	3	5	5	3	13
7	356	4				8	2		9	
356	356	1	2		8	4	7		9	69
8	1	7	6	346	6	346	9	2	34	5
9	9	3	7		8	2	7	6		14
4	2	6	13	7		5	7	9		8
9	4	9	5	8	2	1				7
	7	2	9	9			5	8		
136	4	8	7	7			9	5		2

- 13 pair on the diagonal places 6 in R9C1
- Places 6 in box 9, then creates a 69 pair in box 3
- Lots of low hanging fruit at this point

2	8	9	46	46	7	³ 13	5	³ 13
7	⁶ 356	4	¹	¹	36	8	2	⁶ 9
³ 5	⁶ 356	1	2		8	4	7	⁶ 9
8	1	7	⁶ 346	⁶ 346	9	2	³ 4	5
⁹ 59	⁹ 59	3	⁷	8	2	⁷ 17	6	14
4	2	6	¹ 3	⁷	5	⁷ 137	9	8
⁹ 39	⁴ 349	5	8	2	1	6	³ 4	7
1	7	2	⁹ 369	⁹ 369	⁴ 346	5	8	³ 4
6	⁴ 34	8	⁷ 57	⁷ 57	⁴ 34	9	1	2

- Either notice that the 6s line up in box 2 and box 5, limiting 6 in column 6 to just R8C6, or notice that R2C6 is a naked 3
- And then simple sudoku to finish

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