

Extreme sudoku 68: XY-chain, 21 clues

Hardest step: XY-chain · 21 clues · one solution

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

Extreme sudoku 68: the key move (XY-chain)

The board just before the hardest step

~~7~~ ³ ₉	³ ₉	³ ₇	4	6	1	5	8	2
2	5	8	3	7	9	1	4	6
1	_{4 6}	_{4 6}	8	2	5	3	7	9
8	2	~~4~~ ³ ₇	1	5	_{4 7}	9	6	3
_{4 3}	_{4 3}	9	2	8	_{4 3}	7	5	1
_{7 3}	1	5	6	9	_{7 3}	8	2	4
_{3 6}	8	_{3 6}	5	1	2	4	9	7
5	7	1	9	4	6	2	3	8
_{4 9}	_{4 9}	2	7	3	8	6	1	5

XY-chain: R1C3 - R7C3 - R7C1 - R6C1. Every cell has two candidates and shares one with the next. If R1C3 is not 7, the chain forces R6C1 to be 7, so 7 comes off the cells that see both ends: R1C1 and R4C3. R4C7 means row 4, column 7.

Violet digits are already solved. Tinted cells form the pattern; pink struck digits are the ones it removes.

Extreme sudoku 68: XY-chain (solution)

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

Hardest step. XY-chain of 4 cells from R1C3 to R6C1; removes 7.
Solve path: 44 singles first; 16 squares still open at the hardest step.