

Killer sudokus

H. Zantema, december 2009 – january 2010.

Just like ordinary sudokus in these puzzles numbers from 1 to 9 have to be filled in such a way that every column, every row and every indicated 3x3 square block contains the numbers 1 to 9, each exactly once.

A group of cells containing a number means that the numbers to be put in this group sum to the given number. It is not required that all numbers in such a group are distinct.

All puzzles have a unique solution; this has been checked by the program yices: yices proves that a formula describing the given rules, the given sums, and a difference with the intended solution, is unsatisfiable. Most of them I solved by hand, and I indicate whether I found them easy, medium, or hard.

1. (easy)

20		9		8		11		7
	9		11		10		15	
	10	5		10		8		14
8		11	14		10		11	
	11		8	13		13		8
16		14					3	
	6		11		10			
6		9		8		10		
	9		16		13		20	

2. (easy)

22		11		10		9		11
	10		10		10		9	
	4	16		7		14		4
8		6	14		14		8	
	14		6	11		8		11
17		7					16	
	10		11		6			
5		14		13		4		
	15		6		11		23	

3. (hard)

21		8		7		10		13
	7		17		9		13	
	17	3		11		9		5
15		12	6		4		10	
	5		14	21		14		10
6		12					5	
	13		9		10			
8		6		12		9		
	10		8		13		23	

4. (easy)

19		11		15		7		12
	10		13		4		14	
	5	5		11		15		5
11		11	10		6		16	
	11		15	14		10		5
15		8					7	
	10		9		12			
6		11		9		6		
	8		14		8		27	

5. (hard)

16		10		6	9		15	
	9	11	16			15		
11				13		8		7
	13				22			
8			23			10	12	
9	19				11			5
	14		21			9	10	
17	5			14				
		9			11		17	

6. (medium)

19		12		8	10		10	
	8	3	19			15		
10				16		12		13
	20				8			
7			20			14	11	
3	21				15			12
	13		14			11	13	
21	4			11				
		11			5		16	

7. (very hard, not solved by hand)

12		10		7	14		15	
	6	12	13			8		
13				20		14		7
	17				15			
5			32			14	11	
13	10				10			9
	9		23			11	9	
15	9			5				
		12			11		14	

8. (medium)

13		5		17	10		17	
	14	13	20			4		
9				8		11		14
	9				14			
13			26			20	4	
11	20				17			7
	9		18			5	13	
15	5			7				
		8			9		20	

9. (medium)

10. (very hard, not solved by hand)

4	15		17		12		6	
	20			9		24		6
9		13			10	7		
		7					23	
21	8		23			6		
		7	4		13		12	
13	12			13	14			
						15		13
17		15		10		7		

17		22		22	6		13	
	13					16		
14		16			25			
							14	
18			18			12		
11		16			25		20	
	20			15				
14					16	8		
		16					18	

11. (medium)

12	8		16		9		13	
	18			11		14		3
16		9			13	12		
		10					19	
14	8		27			10		
		15	11		6		14	
3	19			6	11			
						16		15
11		11		19		6		

12. (medium)

10		8		6		13		10
13	10		10		14		5	
	12	16			11			7
7						11		
	11							16
7		7				14		
	14				12			7
9		9		12		15		
	12		9		10		7	

13. (easy)

3		14		15		9		
	11		9		7		9	
11		8		5		12		
	14		3		13		8	
9		7		12		9		
	12		13		11		7	
6		11		14		12		
	10		14		4		11	
7		16		3		14		

14. (easy)

4		10		10		12		
	11		15		10		7	
13		10		6		8		
	9		16		9		3	
11		9		5		14		
	7		5		9		15	
14		5		10		11		
	12		10		10		8	
8		7		17		9		

15. (easy)

14		11		12		7		7
4	12		5		10		16	
	5	21			10			10
11							11	
	5							13
14		14					3	
	13				18			8
10		5		16		5		
	13		4		11		15	

20. (hard)

	13		5		8		16	
10		10		11		19		
	6		11		21			4
11		17		13			7	
	8		16			10		10
8		15					10	
	20			10				15
12			12		5			
		9		11		6		

21. (hard)

	8		5		11		16	
11		8		13		11		
	9		14		15			11
10		8		15			16	
	8		21			10		9
3		21					3	
	14			8				7
20			8		12			
		11		9		7		

22. (hard)

	7		14		6		17	
3		11		13		8		
	6		5		22			13
13		10		17			14	
	6		10			8		8
10		21					11	
	16			4				7
19			13		13			
		7		10		9		

23. (hard)

	7		10		15		15	
7		11		8		14		
	16		9		22			11
12		9		18			5	
	8		17			6		10
13		18					13	
	11			5				12
14			10		9			
		13		14		4		

24. (medium)

10	11		9		14	8	17	
		8		14			10	
10		17	6		8		8	
4					10			16
12	8		24			9		
	17	9			15	12	8	
9		7		14			6	
		8	14		8			4
14				6		21		

25. (medium)

13	12	14			9	12	7	
		13		7			9	
7		11	11		15		10	14
6					15			
18	11		18			7		
	8	7			13	7	13	
		8		16			11	
13		11	7		9		9	13
7				14				

26. (medium)

15	6	8			16	13	9	
		11		10			10	
9		10	12		9		10	16
12					6			
14	6		23			12		
	15	10			5	10	11	
		7		16			13	
7		16	10		9		10	8
8				13				

27. (medium)

10	11		6		15	15	13	
		9		6			8	
13		12	17		10		14	
8					8			11
7	6		27			12		
	15	12			4	7	3	
13		10		12			13	
		10	7		12			9
13				10		17		