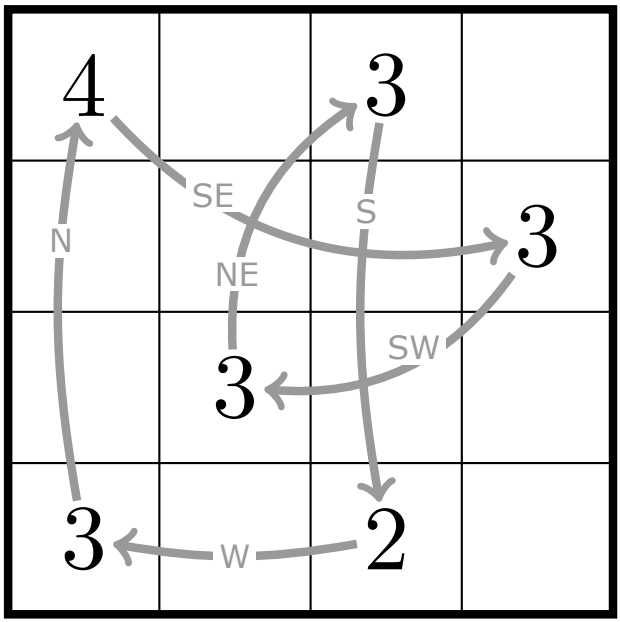
Tricky logic puzzles



Introduction

There are many puzzles where step-by-step logical deduction will get you to the solution easily. Think of (easy) Sudoku puzzles, for example. The challenge is to find out the next small step, filling in one number or ruling out a number in some cell, that will get you closer to the solution.

This booklet contains puzzles where the challenge is slightly different. These puzzles are made so that you have to think ahead a few steps, and by only taking small steps, you won't get to the solution.

You can make your life easier by coming up with a notation system that allows you to think a head a few steps. See if you can come up with something clever.

Enjoy!

Puzzles

1 Squares 1

2 Pointers 9

3 Signsweeper 17

4 Counting Borders 25

5 Flow 33

1 Squares

Rules

- Each cell is filled with a single digit (0–9).
- Each 2×2 square of cells must sum to a particular number (indicated with □).
- Each 3×3 square of cells must sum to a particular number (indicated with ☐).
- No two rows may be identical.
- No two columns may be identical.

Example

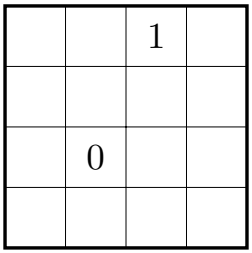
Puzzle:

	7		
		4	5
	5	3	
4			6

□: 12 ☐: 27

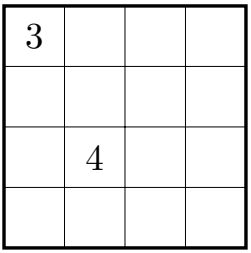
Solution:

0	7	1	2
5	0	4	5
2	5	3	0
4	1	3	6



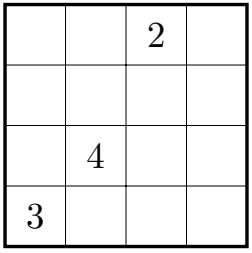
□: 8 ☐: 18

Puzzle 1



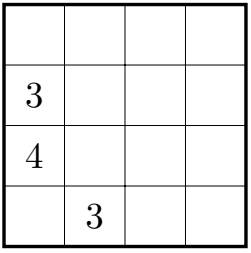
□: 8 ☐: 18

Puzzle 2



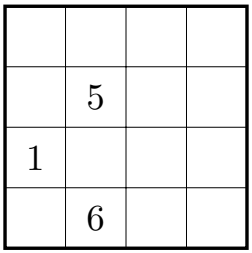
□: 12 ☐: 27

Puzzle 3



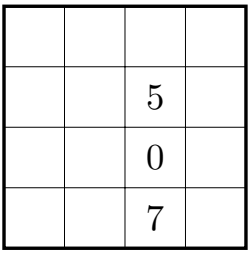
□: 12 ☐: 27

Puzzle 4



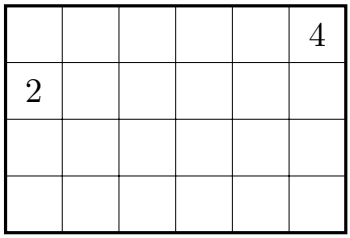
□: 16 ☐: 36

Puzzle 5



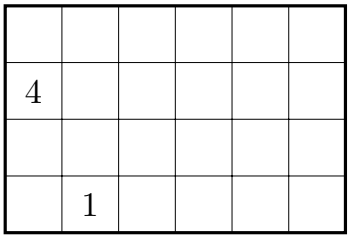
□: 16 ☐: 36

Puzzle 6



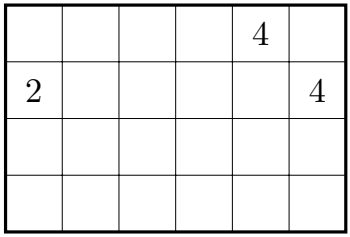
□: 8 ☐: 18

Puzzle 7



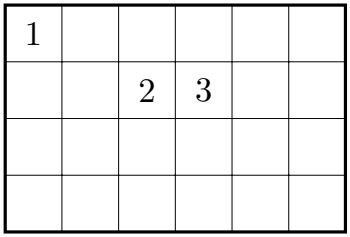
□: 8 ☐: 18

Puzzle 8



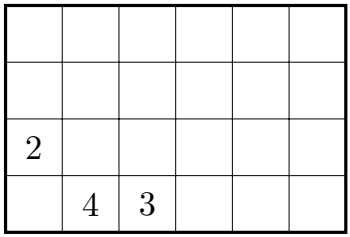
□: 12 ☐: 27

Puzzle 9



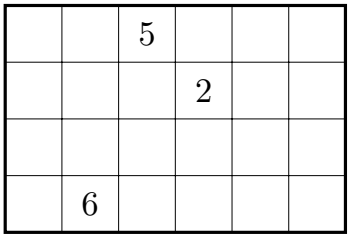
□: 12 ☐: 27

Puzzle 10



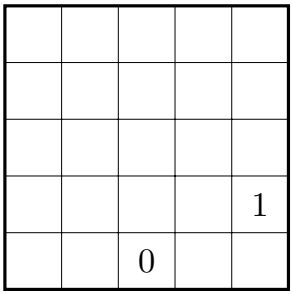
□: 16 ☐: 36

Puzzle 11



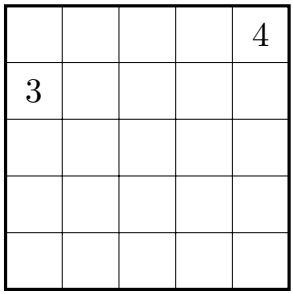
□: 16 ☐: 36

Puzzle 12



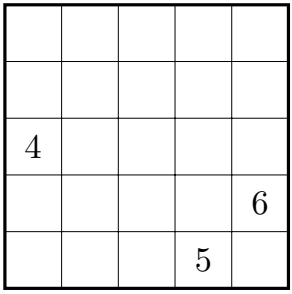
□: 8 ☐: 18

Puzzle 13



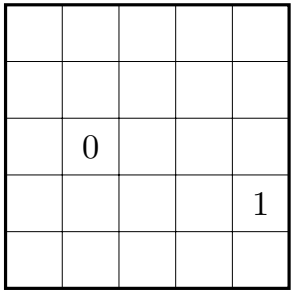
□: 8 ☐: 18

Puzzle 14



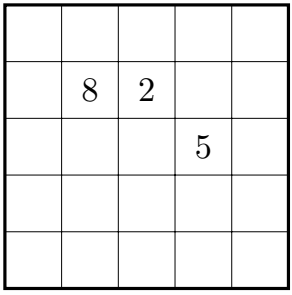
□: 12 ☐: 27

Puzzle 15



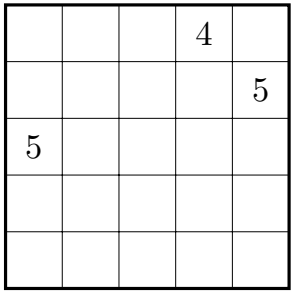
□: 12 ☐: 27

Puzzle 16



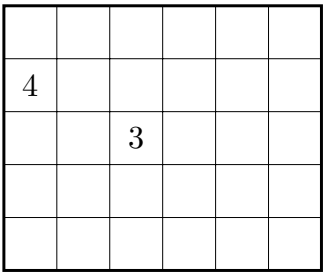
□: 16 ☐: 36

Puzzle 17



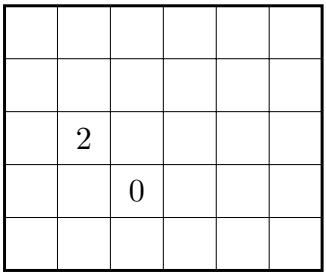
□: 16 ☐: 36

Puzzle 18



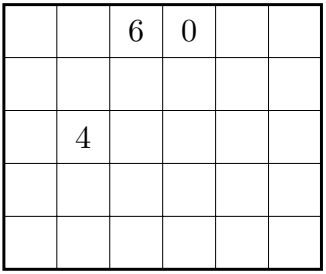
□: 8 ☐: 18

Puzzle 19



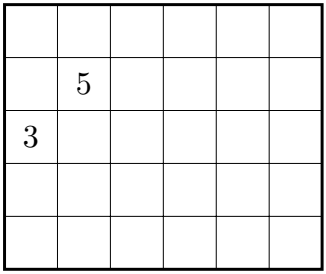
□: 8 ☐: 18

Puzzle 20



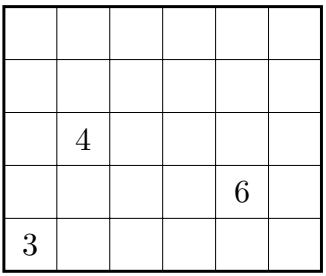
□: 12 ☐: 27

Puzzle 21



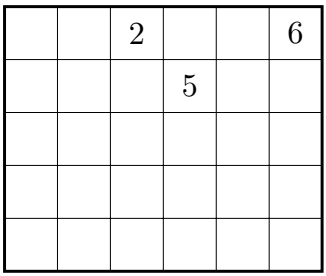
□: 12 ☐: 27

Puzzle 22



□: 16 ☐: 36

Puzzle 23



□: 16 ☐: 36

Puzzle 24

Solutions

2	2	1	4
1	3	2	1
4	0	3	2
0	4	1	2

Solution 1

3	2	2	1
2	1	3	2
1	4	0	3
3	0	4	1

Solution 2

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

Solution 3

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

Solution 4

5	0	8	3
6	5	3	2
1	4	4	7
5	6	2	3

Solution 5

8	0	7	2
4	4	5	2
1	7	0	9
6	2	7	0

Solution 6

1	2	2	3	0	4
2	3	1	2	3	1
3	0	4	1	2	2
1	4	0	3	2	2

Solution 7

1	3	2	1	3	2
4	0	3	2	2	1
0	4	1	2	2	3
3	1	2	3	1	2

Solution 8

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

Solution 9

1	4	2	5	0	6
3	4	2	3	4	2
5	0	6	1	4	2
1	6	0	5	2	4

Solution 10

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

Solution 11

8	0	5	6	2	3
0	8	3	2	6	5
7	1	4	7	1	4
2	6	5	0	8	3

Solution 12

2	3	1	2	3
1	2	2	3	0
3	2	2	1	4
2	1	3	2	1
1	4	0	3	2

Solution 13

2	2	3	0	4
3	1	2	3	1
0	4	1	2	2
4	0	3	2	2
1	3	2	1	3

Solution 14

6	0	4	4	2
1	5	3	1	5
4	2	2	6	0
2	4	4	0	6
5	1	3	5	1

Solution 15

2	5	0	6	1
1	4	3	3	2
7	0	5	1	6
0	5	2	4	1
3	4	1	5	2

Solution 16

6	1	5	6	1
1	8	2	3	6
7	0	6	5	2
2	7	3	2	7
5	2	4	7	0

Solution 17

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

Solution 18

0	3	2	2	1	4
4	1	2	2	3	0
1	2	3	1	2	3
2	3	0	4	1	2
2	1	4	0	3	2

Solution 19

0	3	2	2	1	4
4	1	2	2	3	0
1	2	3	1	2	3
2	3	0	4	1	2
2	1	4	0	3	2

Solution 20

2	2	6	0	4	4
5	3	1	5	3	1
0	4	4	2	2	6
6	2	2	4	4	0
1	3	5	1	3	5

Solution 21

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

Solution 22

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

Solution 23

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

Solution 24

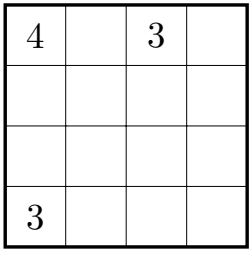
2 Pointers

Rules

- Each cell is filled with a 2, 3 or 4 or remains empty.
- The number of non-empty cells is given (“#”).
- Non-empty cells are not (horizontally or vertically) adjacent.
- Each non-empty cell points to another non-empty cell, forming a single cycle.
  - An arrow from a cell with value n points to a cell that is n (horizontal/vertical) steps away.
- The arrows in the cycle all get a label based on their compass direction (N, NE, E, SE, S, SW, W, NW).
  - For example, a diagonal arrow from the bottom left to the top right gets label NE, and a vertical arrow going up gets label N.
- Subsequent arrows may not have the same label.
- An arrow may not go from a 2 to a 4, or vice versa.

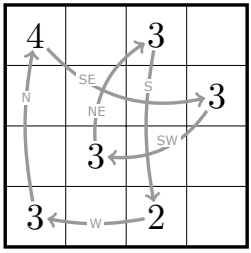
Example

Puzzle:

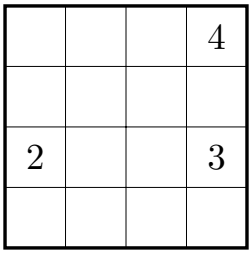


#: 6

Solution:



(We will omit arrows.)



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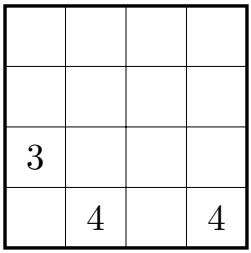
Puzzle 25



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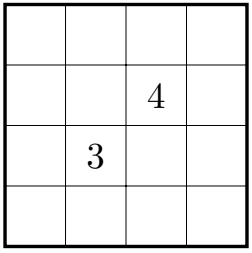
Puzzle 26



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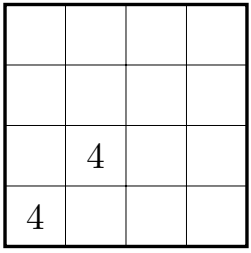
Puzzle 27



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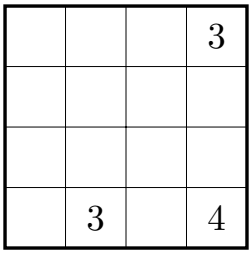
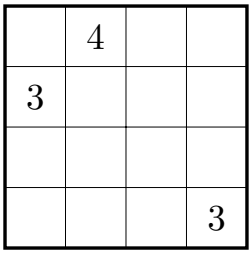
Puzzle 28



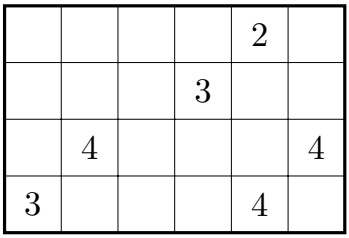
#: 6

Puzzle 29



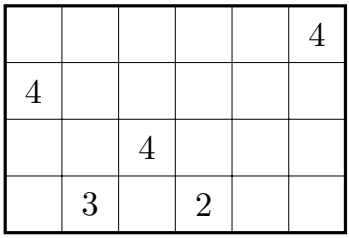
#: 6

Puzzle 30



#: 9

Puzzle 31



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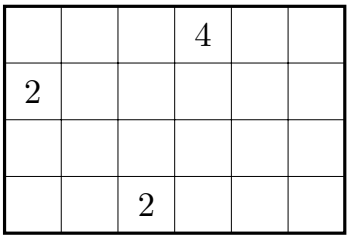
Puzzle 32



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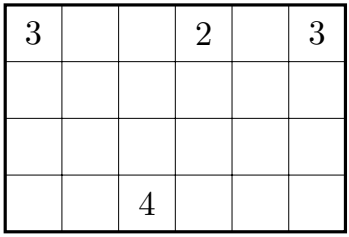
Puzzle 33



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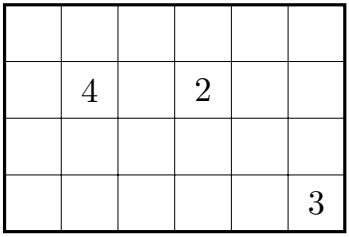
Puzzle 34



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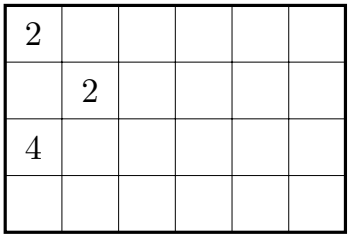
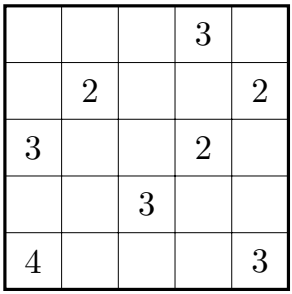
Puzzle 35



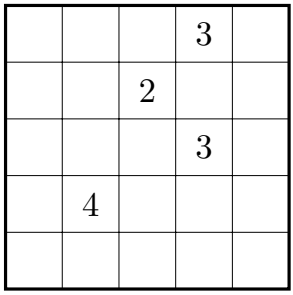
#: 8

Puzzle 36



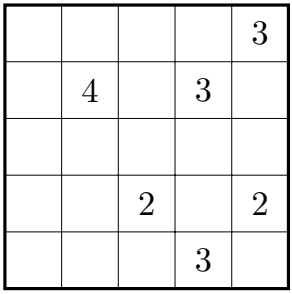
#: 9

Puzzle 37



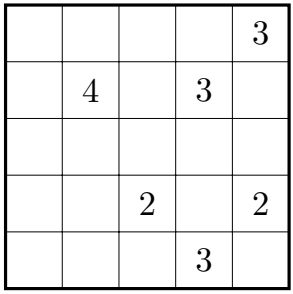
#: 8

Puzzle 38



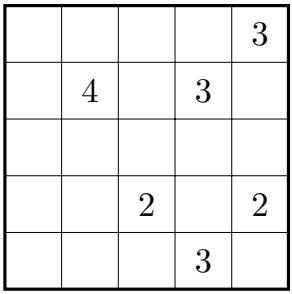
#: 8

Puzzle 39



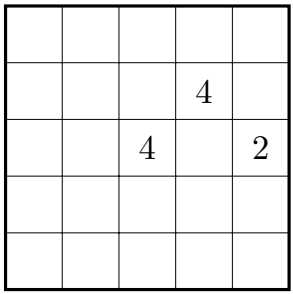
#: 8

Puzzle 40



#: 8

Puzzle 41



#: 9

Puzzle 42

	2		4		
3		2			
			3		4
		2		3	

#: 11

Puzzle 43

				2	
4		4			
		3			
				2	

#: 11

Puzzle 44

	2		4		
3		2			
			3		4
		2		3	

#: 11

Puzzle 45

	2		4		
3		2			
			3		4
		2		3	

#: 11

Puzzle 46

	2		4		
3		2			
			3		4
		2		3	

#: 11

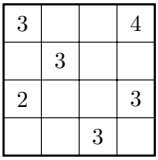
Puzzle 47

	2		4		
3		2			
			3		4
		2		3	

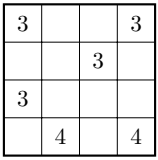
#: 11

Puzzle 48

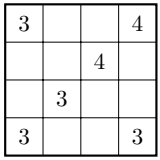
Solutions



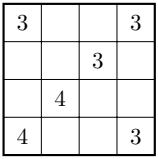
Solution 25



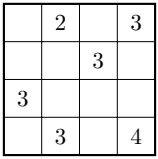
Solution 26



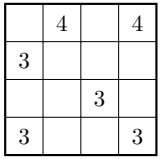
Solution 27



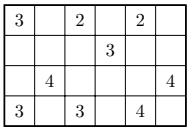
Solution 28



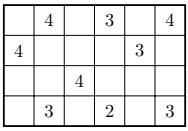
Solution 29



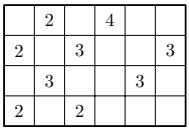
Solution 30



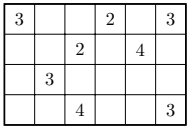
Solution 31



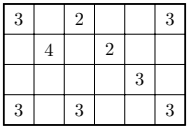
Solution 32



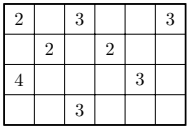
Solution 33



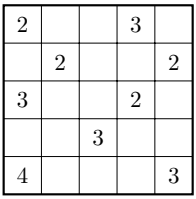
Solution 34



Solution 35

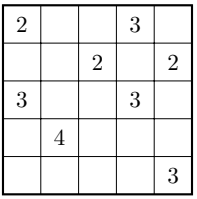


Solution 36



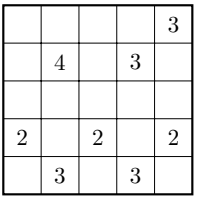
2			3	
	2			2
3			2	
		3		
4				3

Solution 37



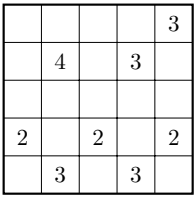
2			3	
		2		2
3			3	
	4			
				3

Solution 38



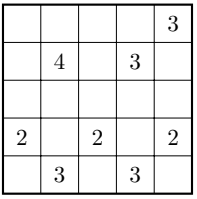
				3
	4		3	
2		2		2
	3		3	

Solution 39



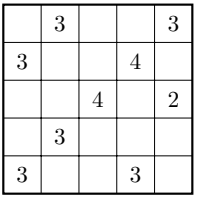
				3
	4		3	
2		2		2
	3		3	

Solution 40



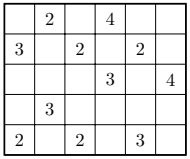
				3
	4		3	
2		2		2
	3		3	

Solution 41



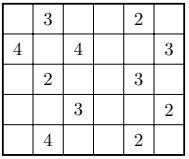
	3			3
3			4	
		4		2
	3			
3			3	

Solution 42



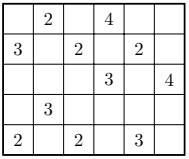
	2		4		
3		2		2	
			3		4
	3				
2		2		3	

Solution 43



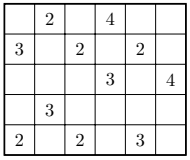
	3			2	
4		4			3
	2			3	
		3			2
	4			2	

Solution 44



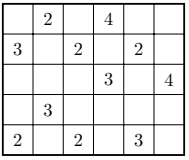
	2		4		
3		2		2	
			3		4
	3				
2		2		3	

Solution 45



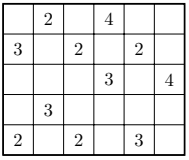
	2		4		
3		2		2	
			3		4
	3				
2		2		3	

Solution 46



	2		4		
3		2		2	
			3		4
	3				
2		2		3	

Solution 47



	2		4		
3		2		2	
			3		4
	3				
2		2		3	

Solution 48

3 Signsweeper

Rules

- Each cell is filled either with a zero, with a positive or negative number, with a positive mine (+), or with a negative mine (−).
- If a cell is filled with a number, this number should be the total number of (horizontally, vertically or diagonally) adjacent positive mines, minus the total number of (horizontally, vertically or diagonally) adjacent negative mines.
- Positive mines may not be diagonally adjacent to each other. Similarly for negative mines.
- A positive mine and a negative mine may not be horizontally or vertically adjacent to each other.
- The difference between the total number of positive mines and the total number of negative mines (or vice versa, if there are more negative mines) must be a particular number (indicated with Δ).

Example

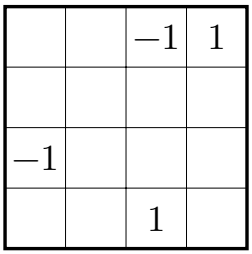
Puzzle:

	−1		
			1
	2		

Δ: 1

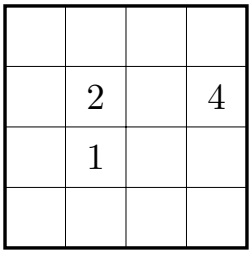
Solution:

−	−1	0	−
−	0	+	1
0	2	+	1
+	2	0	−



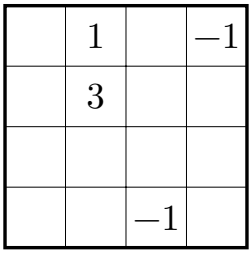
Δ: 1

Puzzle 49



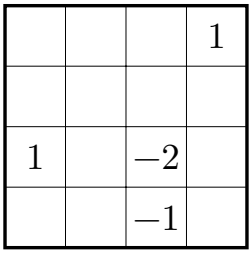
Δ: 3

Puzzle 50



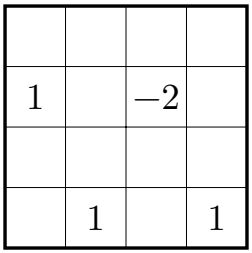
Δ: 1

Puzzle 51



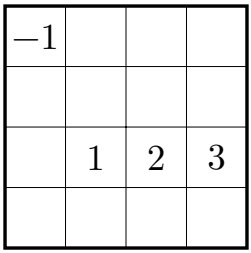
Δ: 1

Puzzle 52



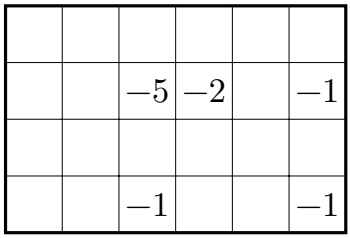
Δ: 1

Puzzle 53



Δ: 2

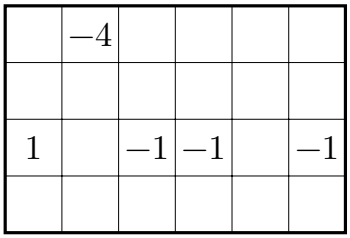
Puzzle 54



		−5	−2		−1
		−1			−1

Δ: 3

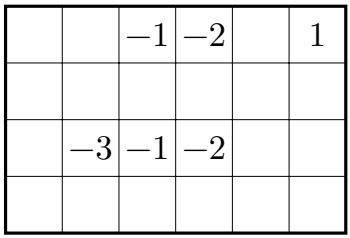
Puzzle 55



	−4				
1		−1	−1		−1

Δ: 3

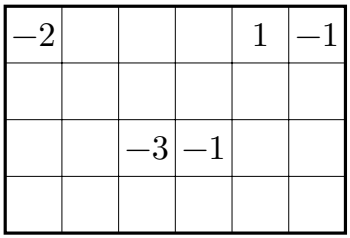
Puzzle 56



		−1	−2		1
	−3	−1	−2		

Δ: 2

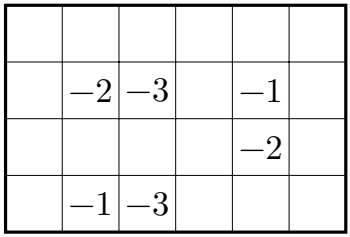
Puzzle 57



−2				1	−1
		−3	−1		

Δ: 2

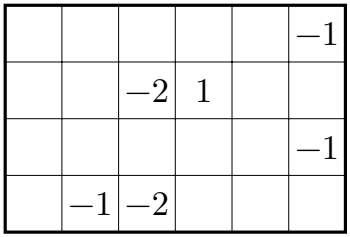
Puzzle 58



	−2	−3		−1	
				−2	
	−1	−3			

Δ: 1

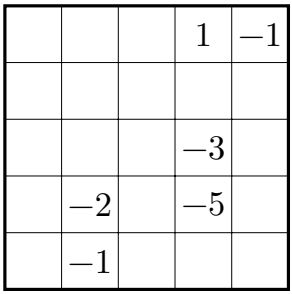
Puzzle 59



					−1
		−2	1		
					−1
	−1	−2			

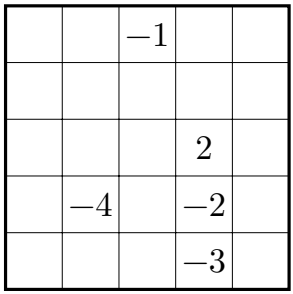
Δ: 1

Puzzle 60



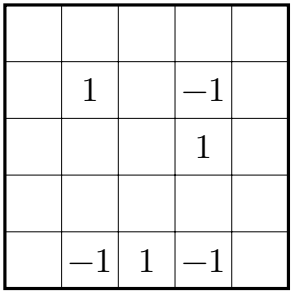
Δ: 3

Puzzle 61



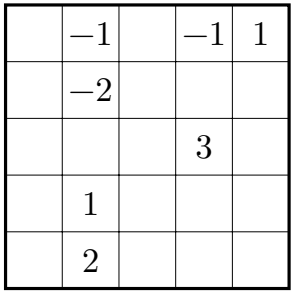
Δ: 3

Puzzle 62



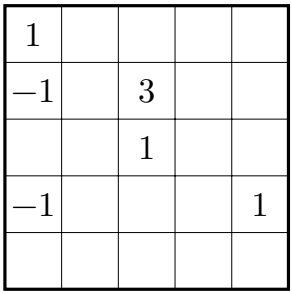
Δ: 2

Puzzle 63



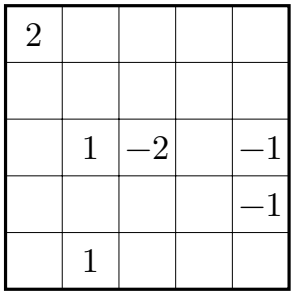
Δ: 2

Puzzle 64



Δ: 1

Puzzle 65



Δ: 1

Puzzle 66

		1	2	−1	−2
1					
1	3		4		

Δ: 3

Puzzle 67

−2					−1
		1			
−1		1			
		4			
				3	1

Δ: 3

Puzzle 68

−1	−3				2
−1		−1	−1	−1	
		−1		−1	

Δ: 2

Puzzle 69

	2	3	2	2	2
		1	3		
−1					

Δ: 2

Puzzle 70

	−3		−1	2	
2			−2		1
1					

Δ: 1

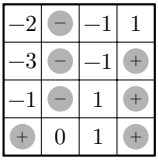
Puzzle 71

				−1	
1		2	5		
		1	3		1

Δ: 1

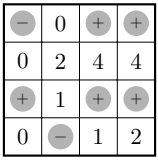
Puzzle 72

Solutions



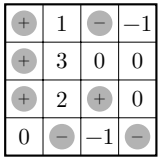
−2	−	−1	1
−3	−	−1	+
−1	−	1	+
+	0	1	+

Solution 49



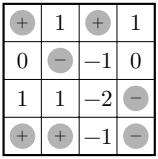
−	0	+	+
0	2	4	4
+	1	+	+
0	−	1	2

Solution 50



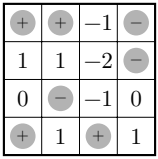
+	1	−	−1
+	3	0	0
+	2	+	0
0	−	−1	−

Solution 51



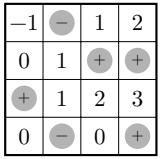
+	1	+	1
0	−	−1	0
1	1	−2	−
+	+	−1	−

Solution 52



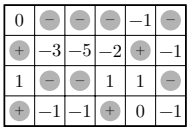
+	+	−1	−
1	1	−2	−
0	−	−1	0
+	1	+	1

Solution 53



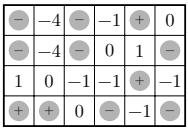
−1	−	1	2
0	1	+	+
+	1	2	3
0	−	0	+

Solution 54



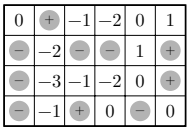
0	−	−	−	−1	−
+	−3	−5	−2	+	−1
1	−	−	1	1	−
+	−1	−1	+	0	−1

Solution 55



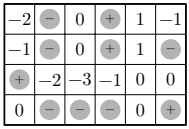
−	−4	−	−1	+	0
−	−4	−	0	1	−
1	0	−1	−1	+	−1
+	+	0	−	−1	−

Solution 56



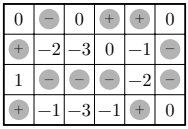
0	+	−1	−2	0	1
−	−2	−	−	1	+
−	−3	−1	−2	0	+
−	−1	+	0	−	0

Solution 57



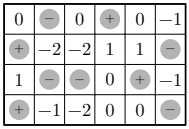
−2	−	0	+	1	−1
−1	−	0	+	1	−
+	−2	−3	−1	0	0
0	−	−	−	0	+

Solution 58



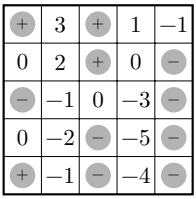
0	−	0	+	+	0
+	−2	−3	0	−1	−
1	−	−	−	−2	−
+	−1	−3	−1	+	0

Solution 59

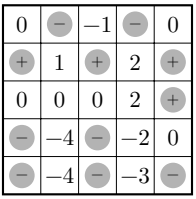


0	−	0	+	0	−1
+	−2	−2	1	1	−
1	−	−	0	+	−1
+	−1	−2	0	0	−

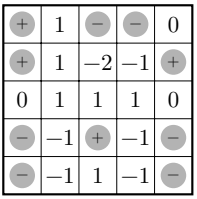
Solution 60



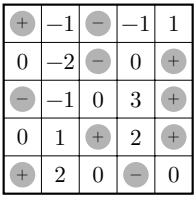
Solution 61



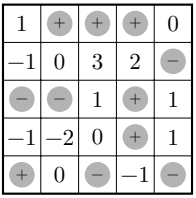
Solution 62



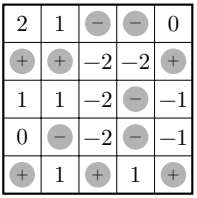
Solution 63



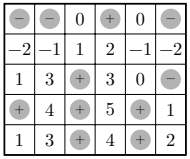
Solution 64



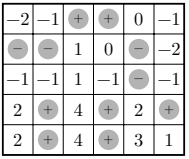
Solution 65



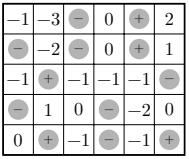
Solution 66



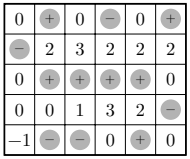
Solution 67



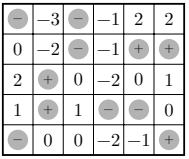
Solution 68



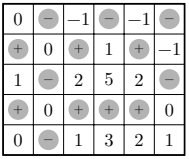
Solution 69



Solution 70



Solution 71



Solution 72

4 Counting Borders

Rules

- Each cell is filled with a single number (1–5).
- Not all numbers have to be used in the puzzle, but whenever a number is used, all smaller numbers must also be used.
- For each two different numbers that are used, the total number of times that these numbers are directly adjacent to each other (horizontally or vertically) must be exactly a particular number (indicated by #).
- Diagonally adjacent cells may not contain the same number.
- A number may not appear in three cells in a row (horizontally or vertically).

Example

Puzzle:

4	2	1	1
	3		
		4	

#: 3

Solution:

1	3	3	2
4	2	1	1
4	3	4	2
1	3	4	2

		3	
	2	4	4

#: 3

Puzzle 73

			2
	4		
			1
2			

#: 3

Puzzle 74

		1	
	2		
1			3

#: 3

Puzzle 75

		5	1
	1	2	1
		4	

#: 2

Puzzle 76

5	1		
4	3		
	1		2

#: 2

Puzzle 77

3	4		
	1		
		4	
2		2	

#: 2

Puzzle 78

		3			
2				1	3
2	1				3
			3		2

#: 5

Puzzle 79

1		1			
	4				
1		1			
	3			1	3

#: 5

Puzzle 80

2	3				
			4		1
			3		3
4		2			

#: 5

Puzzle 81

1		4		1	
		2			
		3	1	4	
3	1	2			

#: 3

Puzzle 82

		3	2		2
	3		2	3	
4	2			1	

#: 3

Puzzle 83

1	3				2
4	4				5
3				2	
				3	1

#: 3

Puzzle 84

1				
3				
1				
2				
		3	1	4

#: 6

Puzzle 85

1				
	2			
	1			
	3	3		
2				2

#: 6

Puzzle 86

				2
3				3
	1		2	4
		3		
		1		

#: 6

Puzzle 87

	3	1		
				2
	2			4
			3	3

#: 5

Puzzle 88

1				
3			1	
			1	
1		2		
			3	

#: 5

Puzzle 89

1		1		
2				1
1	1		3	

#: 5

Puzzle 90

1	1			2	3
					4
2	1		2	2	
3					
			1		

#: 7

Puzzle 91

3		3	1		
	2	2			
3					2
	2	2			
				1	

#: 7

Puzzle 92

	2				
		1			1
3	2	2		3	2
	1				1

#: 7

Puzzle 93

		2	3		3
		1		1	
3	4		3		

#: 6

Puzzle 94

					1
					4
			2		4
1	4	1	1		1

#: 6

Puzzle 95

					1
	2		1		
				2	1
			3		3
	3				

#: 6

Puzzle 96

Solutions

4	1	3	2
3	1	3	2
3	2	4	4
4	1	1	2

Solution 73

2	2	3	2
1	4	4	2
1	3	1	1
2	2	4	3

Solution 74

1	3	1	2
4	2	1	2
4	2	4	3
1	3	4	3

Solution 75

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

Solution 76

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

Solution 77

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

Solution 78

4	4	3	2	4	2
2	1	3	1	1	3
2	1	4	2	4	3
3	3	4	3	1	2

Solution 79

1	2	1	4	4	3
4	4	3	3	2	2
1	2	1	4	4	3
1	3	3	2	1	3

Solution 80

2	3	1	3	2	2
4	3	4	4	1	1
1	1	2	3	2	3
4	4	2	4	2	1

Solution 81

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

Solution 82

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

Solution 83

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

Solution 84

1	2	4	3	4
3	2	1	2	1
1	4	3	4	4
2	4	2	2	3
3	1	3	1	4

Solution 85

1	4	1	2	1
3	2	3	3	4
4	1	4	2	4
4	3	3	1	3
2	1	2	4	2

Solution 86

1	4	3	4	2
3	2	3	1	3
3	1	4	2	4
4	2	3	3	1
1	2	1	2	4

Solution 87

1	3	1	3	2
4	4	1	3	2
1	2	2	4	4
4	4	1	3	3
3	2	1	2	2

Solution 88

1	2	3	4	3
3	2	3	1	2
1	4	4	1	2
1	2	2	3	4
4	4	1	3	4

Solution 89

1	4	1	3	1
2	2	1	3	1
3	3	4	4	2
4	2	2	3	2
1	1	4	3	1

Solution 90

1	1	2	4	2	3
4	4	3	3	1	4
2	1	1	2	2	3
3	4	3	4	4	1
1	2	3	1	2	3

Solution 91

3	4	3	1	3	2
1	2	2	4	3	4
3	4	1	1	2	2
1	2	2	4	3	3
4	3	1	4	1	2

Solution 92

1	2	1	3	2	3
3	4	1	4	1	1
3	2	2	4	3	2
4	4	3	1	3	4
3	1	2	4	2	1

Solution 93

1	2	2	3	1	3
1	4	1	4	1	3
3	4	1	3	2	2
3	2	2	3	4	4
4	4	1	1	2	3

Solution 94

4	3	3	2	1	1
4	2	1	2	4	4
3	3	1	3	3	2
1	4	2	2	4	4
1	4	1	1	3	1

Solution 95

4	2	3	2	2	1
1	2	3	1	4	4
1	4	4	2	2	1
2	3	1	3	4	3
2	3	1	3	4	3

Solution 96

5 Flow

Rules

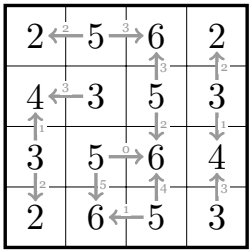
- Each cell is filled with a number between 1 and 6.
- (Horizontally or vertically) adjacent cells may not get the same number.
- Two cells that are a knight's move away from each other may not get the same number.
- There is *flow* from cells with an odd number to (horizontally or vertically) neighboring cells with an even number, so that:
  - The total amount of flow leaving a cell with an odd number adds up to the number in the cell.
  - The total amount of flow entering a cell with an even number adds up to the number in the cell.
  - The flow from any cell to any of its neighbors is an integer between 0 and 4.

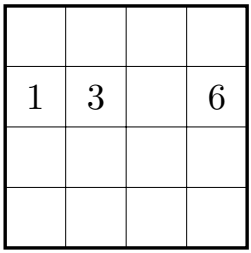
Example

Puzzle:

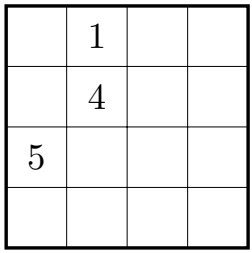
	5		2
4		5	
2	6		3

Solution:

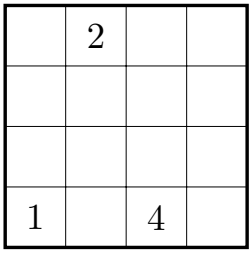




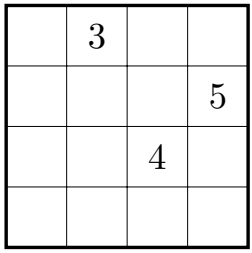
Puzzle 97



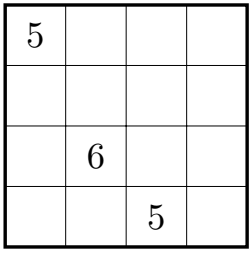
Puzzle 98



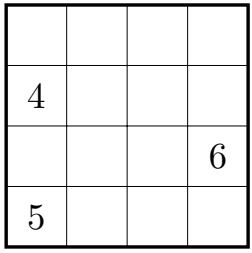
Puzzle 99



Puzzle 100



Puzzle 101



Puzzle 102

				5	2
		3		2	
			1		6
					3

Puzzle 103

			3		6
3			4	1	
			1		

Puzzle 104

	5				
			1		4
		3	6	5	

Puzzle 105

2					
		1		4	
			1	3	
			2	5	

Puzzle 106

			6		
					1
6	5			4	
		1			

Puzzle 107

	4		2		2
				4	
		1			1
			6		

Puzzle 108

		4	3	
				6
	6	2		
1	2	1		

Puzzle 109

2			5	4
	3			
2				
1				
2			3	

Puzzle 110

				2
				4
	2	1	6	
	1	2		

Puzzle 111

		4		
	4	3	4	
	1		1	
			6	

Puzzle 112

	5			
	6	1	4	
				5
			5	

Puzzle 113

				4
		1		
	6		2	
	5	1		

Puzzle 114

		2	4		
6	1		2	1	
3					

Puzzle 115

	2		1		
				1	
					4
2					
3	6				5

Puzzle 116

5		4	5		
			1		1
				1	
		2			

Puzzle 117

6			2		
		2	1		
					5
				6	
		3	1		

Puzzle 118

4		6			
	3	1		1	
4					1

Puzzle 119

		4	1		1
			5		
				3	2
			5		1

Puzzle 120

Solutions

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

Solution 97

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

Solution 98

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

Solution 99

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

Solution 100

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

Solution 101

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

Solution 102

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

Solution 103

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

Solution 104

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

Solution 105

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

Solution 106

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

Solution 107

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

Solution 108

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

Solution 109

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

Solution 110

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

Solution 111

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

Solution 112

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

Solution 113

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

Solution 114

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

Solution 115

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

Solution 116

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

Solution 117

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

Solution 118

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

Solution 119

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

Solution 120

Notes

The puzzles in this booklet were designed using logic programming. Source code freely available at: `https://github.com/rdehaan/puzzle-generator`.

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