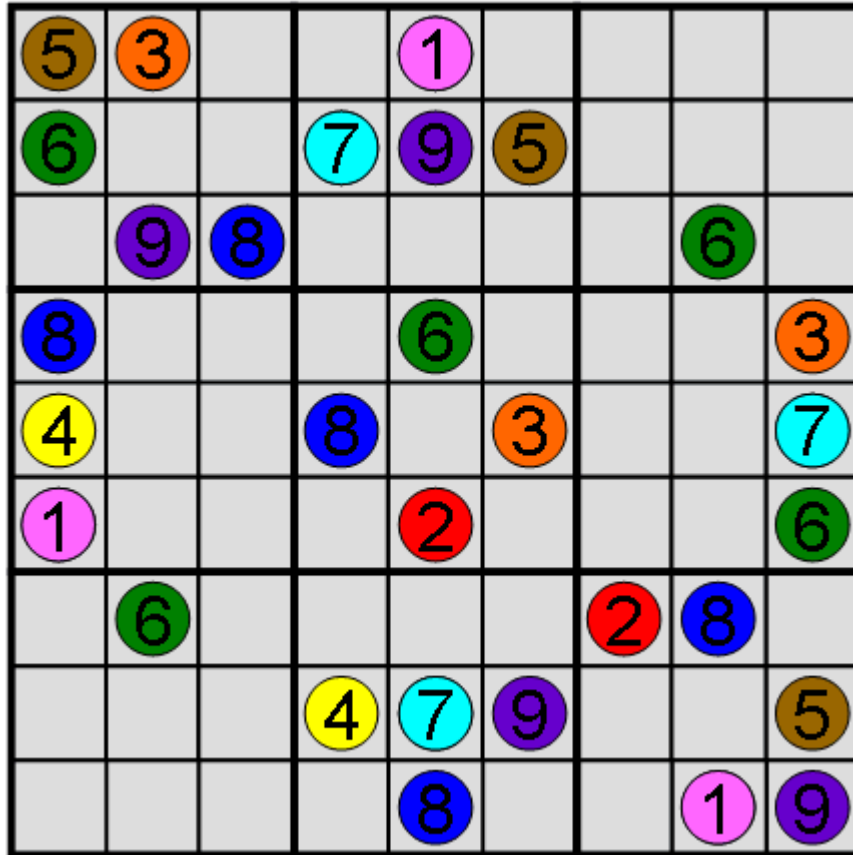


Mini-Sudoku

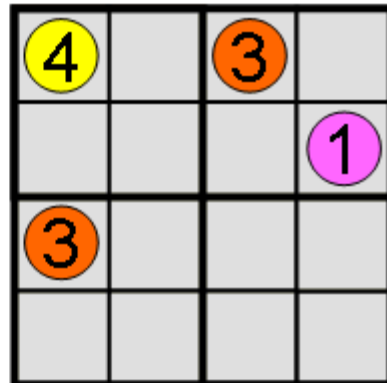
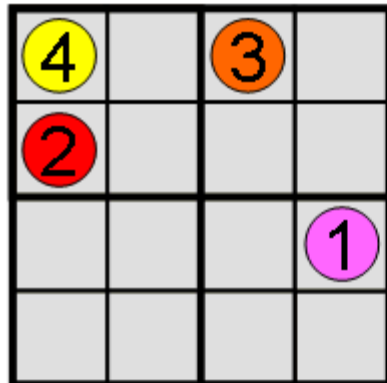
The newest puzzle craze, Sudoku, requires you to add numbers to a grid so that every row and every column and every 3x3 bold square has got one of each number. Here is a sample to solve:

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

How would the solution to the above Sudoku compare with one in which the original position of the 1s and 7s are swapped?



Here are two Mini-Sudoku. How many solutions does each one have?



Extensions:

Create your own mini-Sudoku on a 4 by 4 grid.

What is the minimum number of numbers you can add to the grid in order to guarantee a unique solution?

What is the maximum number of numbers you can add to a grid in order that there are at least two solutions?

The Sudoku below has already been solved. Notice that the numbers are symmetrically distributed so that if you rotated the Sudoku clockwise by 90 degrees, you could replace 1s with 4s, the 4s with 2s, the 2s with 3s and the 3s with 1s. Are there different types of Sudoku symmetries?

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

Credits:

(1,7) swap, Mini-Sudoku and Extensions by Gord! © 2005 Galileo

Much thanks to Wikipedia for their Sudoku example:
<http://en.wikipedia.org/wiki/Sudoku>