Sudoku Instructions

How to Play Sudoku

Sudoku requires no calculation or arithmetic skills. It is essentially a game of placing numbers or letters (in our case, Hebrew letters) in squares, using very simple rules of logic and deduction. It can be played by children and adults and the rules are simple to learn.

Sudoku Objective

The objective of the game is to fill all the blank squares in a game with the correct letters. There are three very simple constraints to follow. In a 9 by 9 square Sudoku game:

- Every row of 9 letters must include all letters x through v in any order
- Every column of 9 letters must include all letters x through v in any order
- Every 3 by 3 subsection of the 9 by 9 square must include all letters x through v

Every Sudoku games begins with a number of squares already filled in, and the difficulty of each game is largely a function of how many squares are filled in. The more squares that are known, the easier it is to figure out which letters go in the open squares. As you fill in

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squares correctly, options for the remaining squares are narrowed and it becomes easier to fill them in.

Sudoku Solution Techniques

h			n	٨	1	7	v	7
7	7	v	ב	n		1	λ	ħ
ħ	٨	1				ב	h	N
v	1	h	7	ħ	λ			ב
		٨	×		7	n		7
			1	ב	h	v	ħ	λ
٨	ב	N				ħ	4	h
	h	7		N	n	7	ב	v
	v	n	n	7	ב			1

The first things to do in tackling a Sudoku puzzle is to scan the rows and columns to see where a certain letter might go, given the 3 constraints listed above. For example, the fact that a t is required in the top right corner can be determined by first analyzing its 9 square sub-region. The only letters missing in the region are a n and a t.

However, putting a n in the top right box would conflict with the n already in the top row and the rightmost column. The n, on the other hand, would not conflict with any of the given letters.

Once the t is filled in, deduction requires that only a n can go beneath it as all letters from n through n must be

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represented in the region. From there, one can turn to the two remaining open boxes in the right column - these must include a \mathbf{z} and a $\mathbf{\tau}$ as the column's digits must represent \mathbf{x} through \mathbf{v} . One of these options, placing the $\mathbf{\tau}$ beneath the \mathbf{x} , would lead to a conflict with the $\mathbf{\tau}$ already in that horizontal row, so the only option for this box must be a \mathbf{z} .

However, options for boxes are often not that easy to deduce. Another technique is to "pencil in" possibilities and then follow the possible solutions that emerge until a conflict is found. Often these conflicts appear after 2 or 3 letters are penciled in, and one can return to the start and try the next option until something clicks.

The great thing about Sudoku is that every step makes the next step easier by narrowing possibilities. Every solved box makes filling the next box a little bit easier.

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