

SUDOKU TIPS

GETTING STARTED

Look at the ninth column of the example puzzle. There are clues in the puzzle that will tell you where to place a 3 in that column.

The first clue lies in the eighth column of the diagram. There is a 3 in the fifth box. Since numbers can't be repeated in a 3 x 3 grid, we can't put a 3 in the fourth, fifth, or sixth boxes of the ninth column.

We can also eliminate the bottom three boxes in the column because there's a 3 in that grid as well. Therefore, the 3 must be in the top right grid.

The final clue lies in the second row, which already has a 3. Since we can't repeat numbers in a row, there's only one box left for the 3 – the third box of the ninth column. Continue in this manner until the puzzle grid is filled in.

EXAMPLE

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

EXAMPLE SOLUTION

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

SOLVING TIPS

The strategy for solving a puzzle generally comprises a combination of three process: Scanning, Marking up, and Elimination.

Scanning is performed at the outset and periodically throughout the solving process. It is made up of two basic techniques, which may be alternated:

- The first involves counting 1-9 in rows, columns, and 3 x 3 regions to identify missing numbers. Counting based upon the last number discovered my speed up the search. It also can be the case (especially in tougher puzzles) that the value of an individual box can be determined by counting in reverse – that is, scanning its 3 x 3 region, row and column for values it *cannot* be to see which is left.

- The second method, referred to as cross-hatching, involves the scanning of rows (or columns) to identify which line in a particular region may contain a certain number by a process of elimination. This process is then repeated with the columns (or rows). For fastest results, the numbers are scanned in order of their frequency. It is important to perform this process systematically, checking all of the digits 1-9.

Those Sudoku puzzles that can be solved by scanning alone are generally categorized as “easy” puzzles.

However, with more difficult puzzles, basic scanning is usually not enough, as a solver may only be able to narrow down a number’s location with a row, column or 3 x 3 region to two, three, or sometimes more boxes. When this occurs, a method known as Marking Up is often employed.

MARKING UP

Scanning comes to a halt when no further numbers can be discovered. From this point, it is necessary to engage in some logical analysis. Many find it useful at this stage to lightly pencil in possible numbers in the blank boxes. It helps to begin in the 3 x 3 regions that already have the most numbers filled in, as there will be fewer possibilities for the empty boxes. When doing this, it is suggested that your notations be as small and clear as possible to avoid confusion. Some solvers find it helps to create a larger copy of the puzzle while others employ a mechanical pencil. Once all the possibilities have been filled into the boxes, it is necessary to analyze the diagram and start a process of Elimination.

ELIMINATION

In this step, progress is made by eliminating numbers from one or more boxes so that you’re left with just one choice. After a number has been discovered, it generally helps to perform another scan to see the effect this number has on the rest of the puzzle. One of the more popular “elimination” tactics is referred to as the “unmatched number deletion”. Boxes with the same combinations of possible numbers are said to be matched if the amount of penciled-in numbers in each box is equal to the amount of boxes containing them. For instance, boxes within a particular row, column, or 3 x 3 region are said to be matched if two of them contain the same pair of possible numbers (for example, 3 and 5) and no others, or if three boxes contain the same three possibilities (say, 3, 5, and 6) and no others. When this happens, you can automatically delete these numbers (3, 5, 6) that were penciled in elsewhere in the same row, column, or 3 x 3 region as possible choices.

Ideally, you’ll find a combination of techniques that works well for you.