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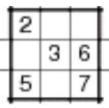
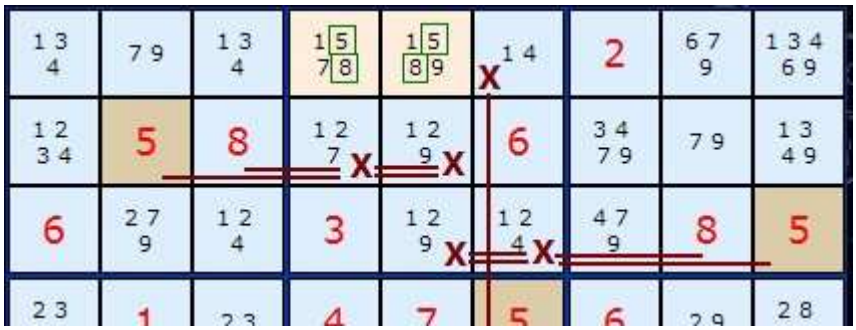
Hidden Candidates

From sudokuwiki.com, the puzzle solver's site



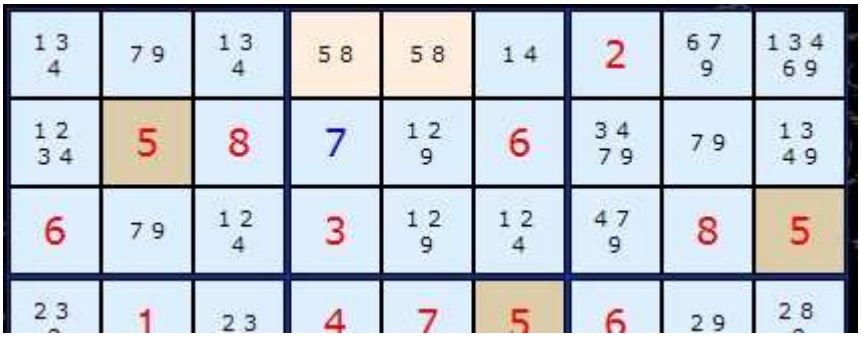
Hidden Pairs

Looking for **Hidden pairs** is a great way to open the board up to the other tests. Consider this top centre box below. There are two 5/8s hidden in in the squares at the top of the 3 x 3 box. They are marked by the green squares. We know these are the only possible positions for 5 and 8 since the rest of the board excludes the other squares in the box.



Since 5 AND 8 must exist in those two squares the two 1s, the 7 and the 9 cannot exist there. So we remove them. This *reveals* the hidden pair.

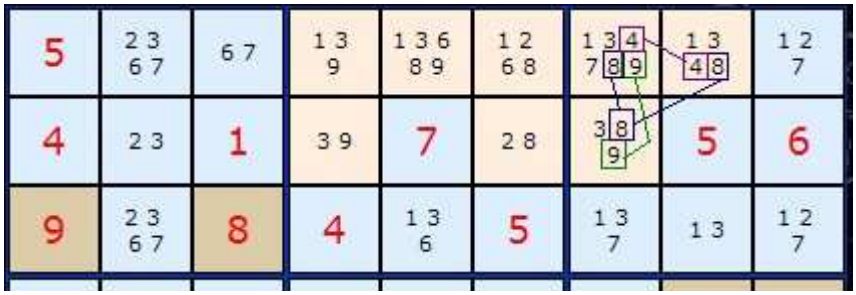
The knock on effect of this is to leave just one 7 in the box. We can make that the solution of that square and probably complete the rest of the board:



Exposing the pairs like this is essential for the **Box/Line Reduction** and the **Remote Pairs** - or at least makes them identifiable as appropriate strategies.

Hidden Triples

We can extend **Hidden Pairs** to **Hidden Triples** or even **Hidden Quads**. A Triple will consist of three pairs of numbers lying in three cells in the same ROW, COLUMN or BOX, Such as 4/8/9, 4/8/9 and 4/8/9. However, we don't need exactly three pairs of numbers in three cells for the rules to apply. In the example below we have 4/8/9, 4/8 and 8/9 in three cells.

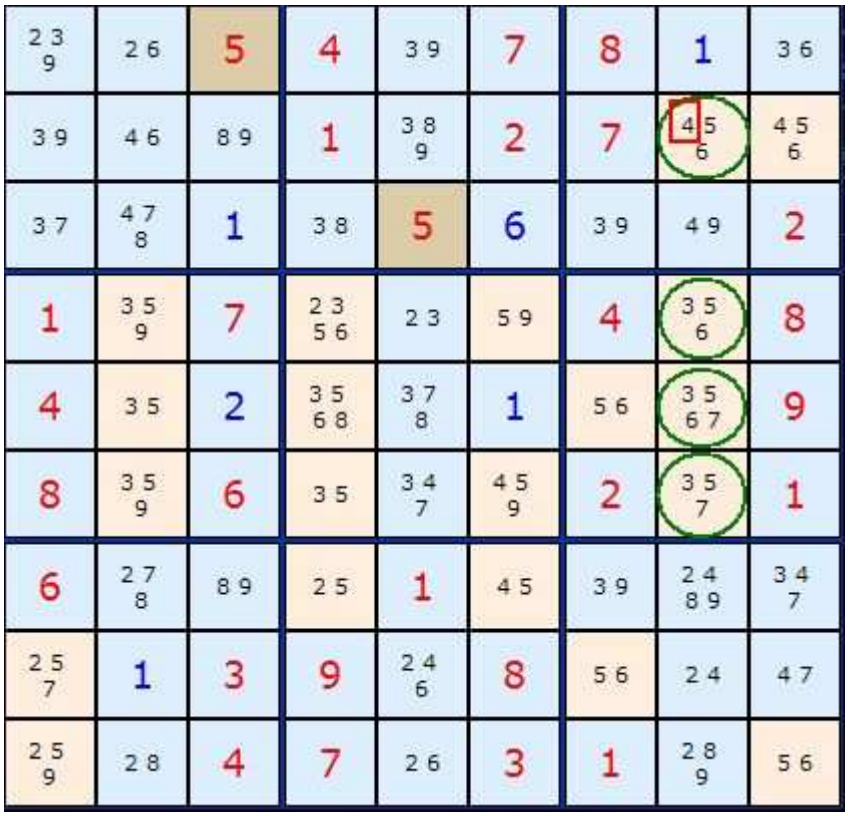


Since 4 AND 8 AND 9 must exist in those three squares the other numbers cannot exist there. So we remove them. This *reveals* the hidden triple:

The minimum number of numbers for **Hidden Triples** will be three pairs of numbers, for example, 4/8, 4/9 and 8/9. It is clear they are bonded together and if they lie on three cells within the same ROW, COLUMN or BOX then any other numbers on those cells can be removed.

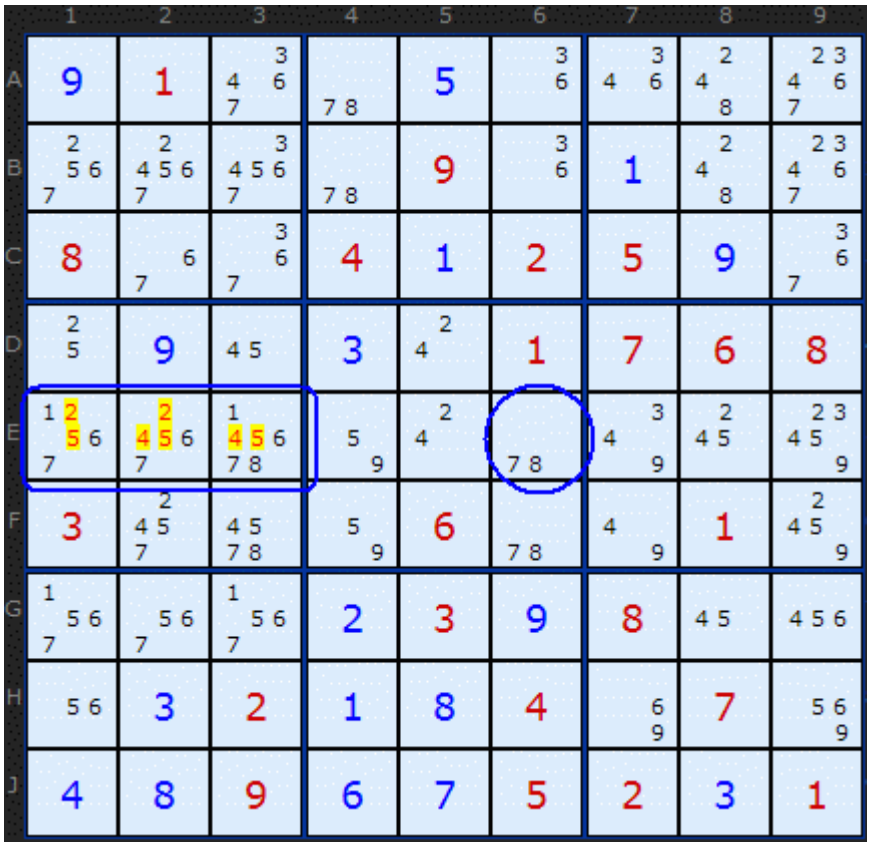
Hidden Quads

Here is the one example of a **Hidden Quad** I found in a set of 18,000 sudoku puzzles. Four numbers 3/5/6/7 on four cells are hidden by all of one number - 4 in R2C8. Barely qualifies as 'hidden' but it is legitimate. Note how none of the cells need to have all four numbers as long as only four cells contain all four numbers and are intermingled.



Hidden Quad: Load Example or : From the Start

Klaus Brenner in Germany has found a number of excellent Hidden Quads, and I include one here to show they do exist.



Hidden Quad: Load Example or : From the Start

Comments...

Saturday 7-Nov-2009

... by: sai

Tuesday 1-Sep-2009

... by: Chuck Bruno

Hello Andrew,

I have written several times but I must repeat "This is a great site". That being said, I have a question:

How do you determine what the difficulty level should be for a given stratagy?

I personally find that Pointing Pairs, Box/Line Reduction, X-Wing, and Unique Rectangles, are much easier to spot than Hidden Triples. When I get stumped on a Sudoku, I import it into your Solver, uncheck stratagies I don't usually look for, and step through it. In most cases, I find that I simply overlooked something silly. In some cases however, the Solver finds a hidden double or triple. Because these can't be turned off like the more difficult stratagies, I can't force the Solver around it to see if one of the other stratagies that I normally use, would allow the puzzle to be solved without using the naked double or triple.

In summary, I would like to be able to selectively turn off the "easier" stratagies just as can be done with the tougher ones.

Thanks for your time,

Chuck Bruno

Andrew Stuart writes:

Sorry for the late reply. All valid points, I might have a go at that - but trying not to over complicate an already complex interface.

Add your comments

A confirmation email will be sent to you after submitting.

Your Name

Email Address - required for confirmation (it will not be displayed here)

Your comment or question

Remember me

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Line breaks and paragraphs are automatically converted — no need to use <p> or
 tags.