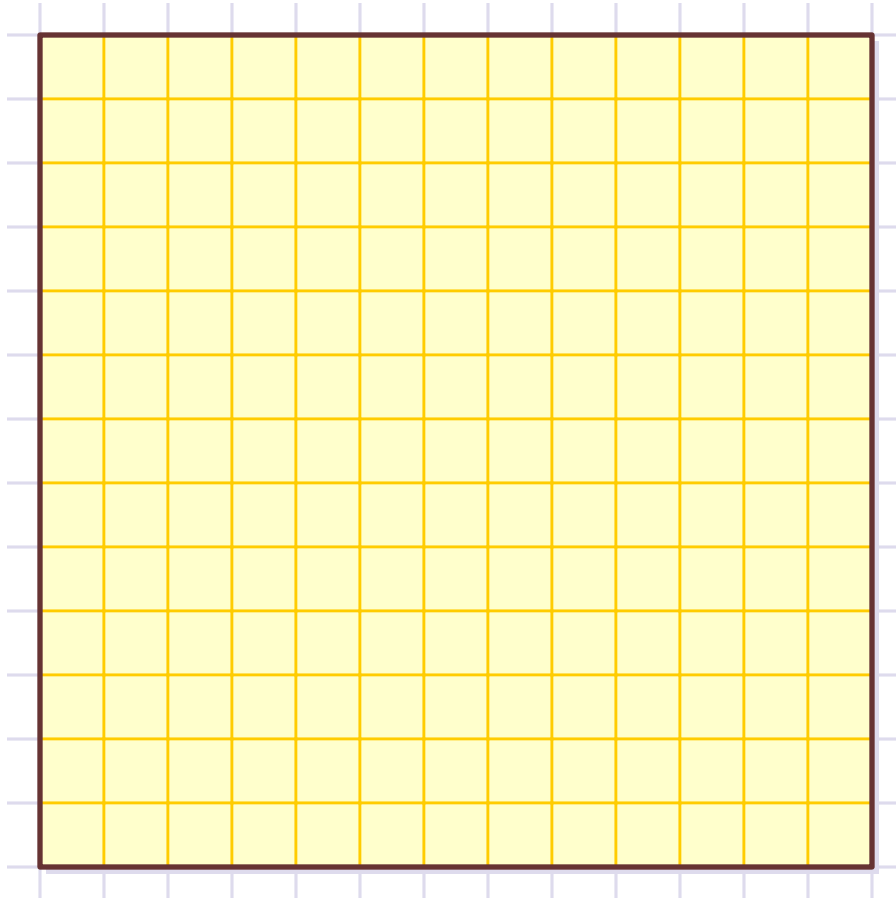


# The Patch Quilt Puzzle

by Sam Loyd

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The big 13x13 square shown in the illustration can be dissected into some number of square pieces (cutting along the lines only).

The question is what is the minimum number of such squares?

Apparently, the largest possible number is 169, where all the pieces are of the same size - exactly one cell.

Another sample of solution can be one square 12x12 plus 25 small squares 1x1 - it makes 26 perfect squares. This is much more better than 169 perfect squares, but it's still more than a desired minimum...

In any case, you **MUST** use all 169 single squares of the 13x13 grid in your set of square pieces - no single square or their combination can be omitted. In other words your set **MUST** fully cover the 13x13 grid without gaps or overlapping.

Last Updated: January 26, 2006

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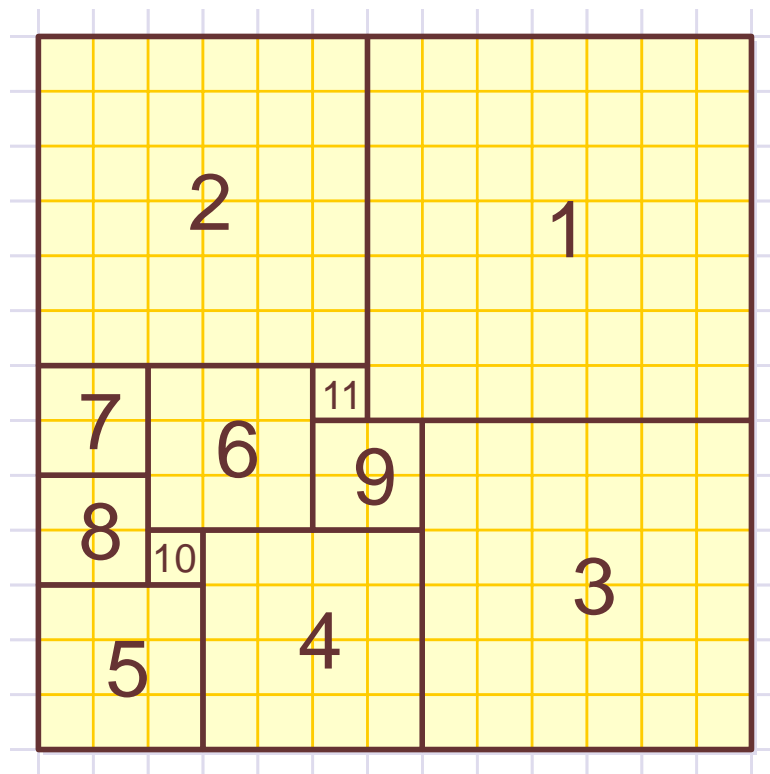


# The Patch Quilt Puzzle

Solution

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The big 13x13 square can be dissected into 11 squares as shown in the illustration above. We can see: 2 squares 1x1, 3 squares 2x2, 2 squares 3x3, 1 square 4x4, 2 squares 6x6, and 1 square 7x7.

This is the only solution with so few single squares, and this is the minimum that can be reached for the 13x13 square.

It's a really hard puzzle nut. If you make a set of the 11 single squares shown above (simply print them and then cut 'em out) and propose to your friends to assemble into a 13x13 square, you'll see that even so this new puzzle will be amazingly hard to do.

We've received many solutions with 12 squares, and some solutions with... 1 square 13x13. Apparently the last one is wrong, as in the description we told that: "The big 13x13 square shown in the illustration can be dissected into some number of square pieces (cutting along the lines only)."

Also one solution contained just 4 squares, but they are overlapped, so their total area is not 169 but 170. This isn't acceptable as the description says: "... your set MUST fully cover the 13x13 grid without gaps or overlapping."

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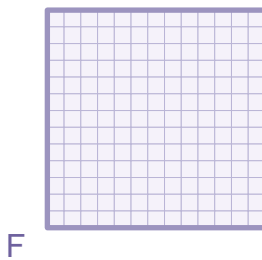
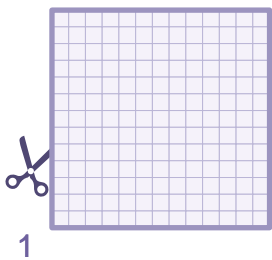
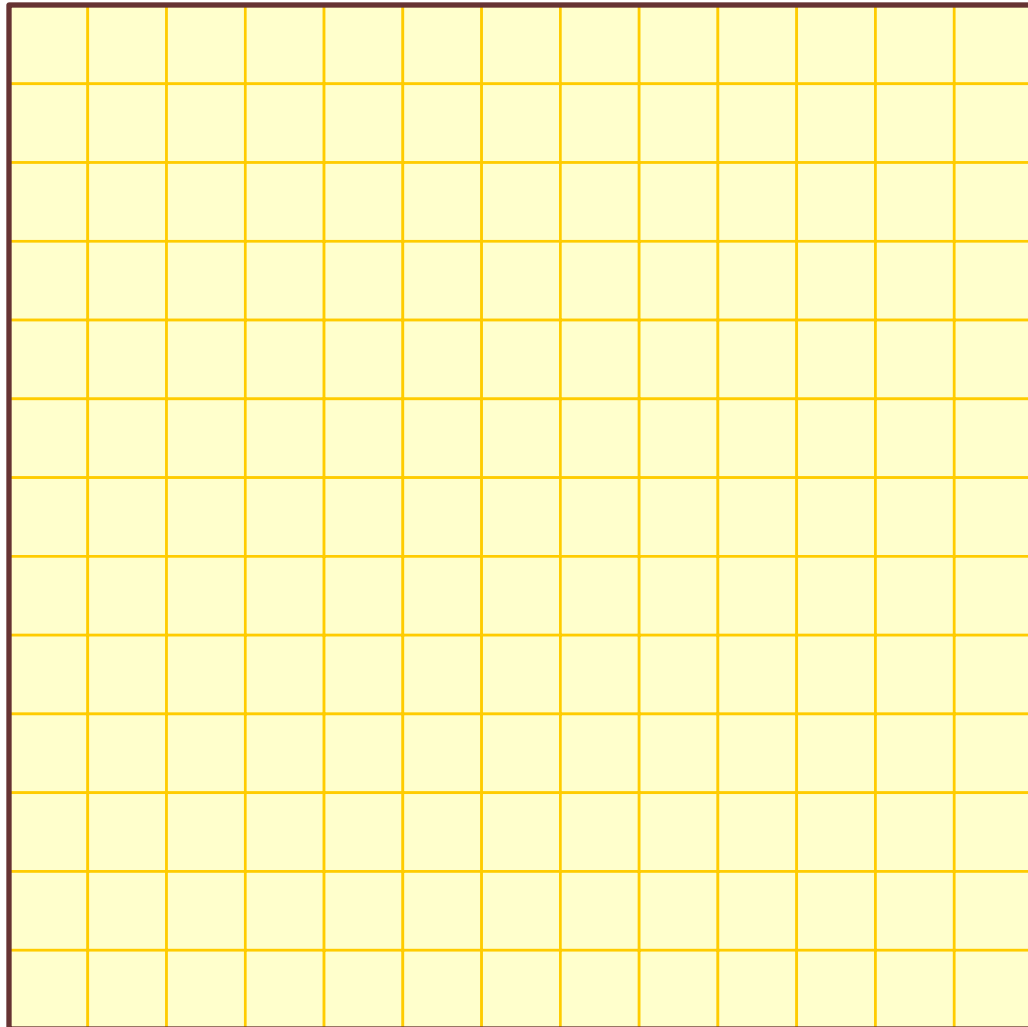


# The Patch Quilt Puzzle

Board

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To produce the board first print it out. Then follow the diagram shown above - from step 1 to step F (finish).

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