An Original Puzzle

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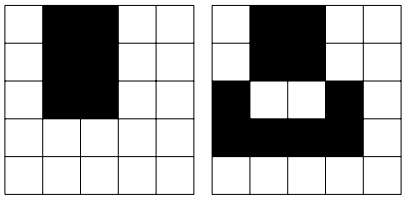
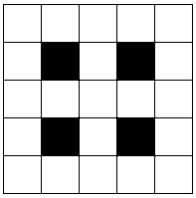
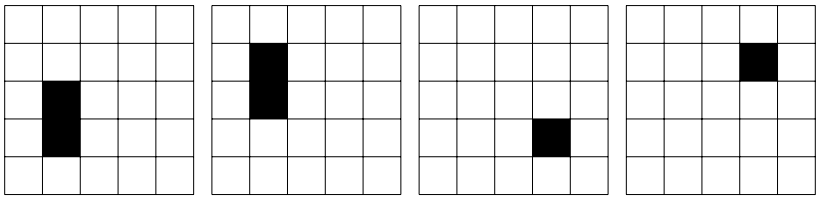
I came up with this math competition-style puzzle recently. Consider a 5×5 grid whose cells may be either white or black. All cells are initially white. We may select a rectangle within this grid and invert the colors of the cells within the rectangle. For example, the result of two such operations in order are below:



The first rectangle inverted is 3 cells tall and 2 cells wide, and the second is 2×4. The puzzle is: How many distinct ways are there to create the pattern below using exactly four of these operations, starting from a fully white board?



For example, these four rectangles constitute one way:



The two rectangles on the left overlap in one square, which "cancels out" and becomes white in the final result.