Tiling a Skinny Chessboard

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Abstract

It is easy to see, and well known, that the number of ways one can tile a $2 \times n$ chessboard with domino-shaped tiles corresponds to the $n^{th}$ Fibonacci number. This note considers the number of ways to tile this board with combinations of 1x1, 1x2, 2x2 and ‘L’ shaped tiles. Some interesting sequences and formulas arise. Also considered are ways to tile an $m \times n$ board for very small $m$ with variously shaped tiles. This will lead to a sensible problem to consider which has received a bit of attention yet remains unresolved.