Problem 11.

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Consider an $n \times n$ chess board, with pieces that can move integer distances, but only in diagonal directions—that is, they move like the hypotenuse of a Pythagorean triangle.

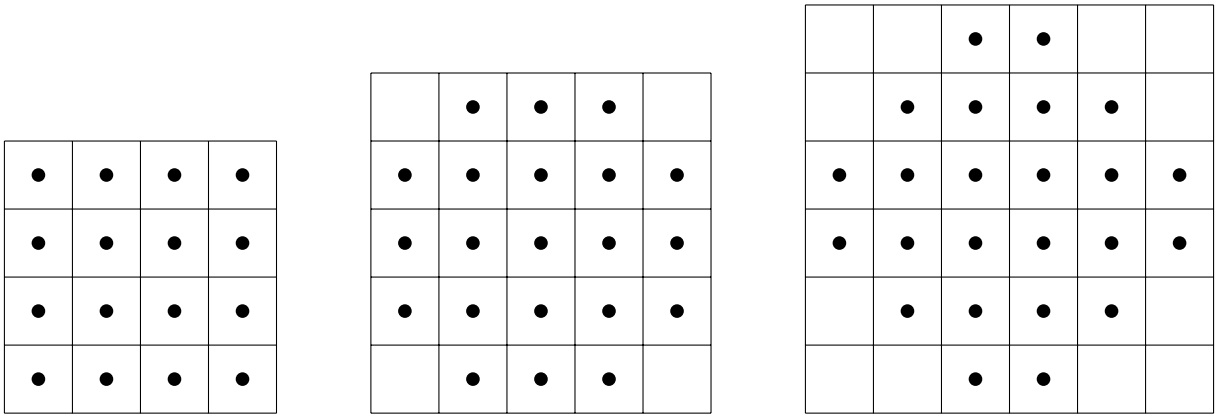

Figure 1: Valid configurations for 4×4, 5×5, and 6×6 grids, proving that $a(4) = 16$, $a(5) \geq 21$, and $a(6) \geq 24$.

Question. What is the greatest number of nonattacking pieces that can be placed on the board?

Related.

1. What is the board is $n \times m$?
2. What if pieces must move like *primitive* Pythagorean triples?
3. What if each piece can move k times?
4. What is the asymptotic growth of a?