

1077-AD-345 **James G. Propp*** (propp@jamespropp.org). *A not-quite-bijective enumeration of domino tilings of Aztec diamonds.*

Back in the 1980s, Noam Elkies, Greg Kuperberg, Michael Larsen, and I proved that the number of domino tilings of an Aztec diamond of order n is $2^{n(n+1)/2}$. One of our proofs used a procedure we called domino shuffling. Although domino shuffling can be turned into a bijection between the set of domino tilings of the Aztec diamond of order n and the set of bit-strings of length $n(n+1)/2$, it is most naturally viewed not as a one-to-one function but as a many-to-many relation, where each set of size k in one set corresponds to a set of size k in the other set. (Received August 24, 2011)