Justin Moccaldi* (justinmoccaldi@gmail.com) and Roman Wong. An Ancient Chinese Problem and Two Sequences.

In their article that appears in the 2018 May issue of CMJ, Ezra Brown and Matthew Crawford showed that the solution to a generalization to the ancient Chinese problem Five Families Around a Well actually involves the derangement sequence

\[ d(n) = n! \sum_{k=0}^{n} \frac{(-1)^k}{k!} \]

and the sequence \( w(n) = n! + (-1)^n \). They also observed that for all \( n < 10^5 \), \( \gcd(d(n), w(n)) = 1 \) except when \( n = 9 \). We explore this oddity further and use Python to extend the coprime property beyond \( n = 10^5 \). (Received September 24, 2018)