

Work of Pak and Redlich

In 2008, Pak and Redlich investigated the probability that an abc -permutation of length n is a single n -cycle in order to answer a question posed by V. I. Arnold.

Theorem (Pak-Redlich, 2008)

Let σ_{abc} be an abc -permutation. Then σ_{abc} is a long cycle if and only if

$$\gcd(a + b, b + c) = 1.$$

Theorem (Pak-Redlich, 2008)

Let $\mathbf{p}(n)$ be the probability that an abc -permutation of length n is a long cycle. Then

$$\lim_{n \rightarrow \infty} \mathbf{p}(n) = \frac{6}{\pi^2}.$$