Affirmative resolve of Conway’s problem

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Conway’s problem is that shuffle 1 to n number cards, and see top of the card (we represent m), and set reverse m cards. Repeat this process, we reach 1.

Theorem 1.1. Conway’s problem is correct.

proof. We use induction method. ”The number of cards n + 1. (Except the case n + 1th card is n + 1.) For top n cards, we use Conway’s operation. We reach 1 or n + 1.” (We assume 1 or n + 1 as k. k represent n + 1th card.) n + 1th card is n + 1 case. We calculate as 1 to n case. n + 1th card is not n + 1 case. We use induction method. We reach 1 or n + 1. n + 1 case’s next step, we reach 1 to n case.
For all n, Conway’s problem is correct.