

Day 2 (July 3, 2012)

Patterns noticed in the # cards/# shuffles table:

- Odd number of cards has the same number of shuffles as the next even
Ex: 23-card deck and 24-card deck both needed 11 shuffles
- 2^n cards in the deck, it needs
Ex: 8-card deck needs 3 shuffles ($8 = 2^3$)
- 2^{n+2} cards in the deck $\implies 2n$ shuffles
Ex: $34 = 2^5 + 2 \implies 2 \cdot 5 = 10$ shuffles
- 2^{n-2} cards in the deck $\implies 2^{n-4}$ shuffles
Ex: $30 = 2^5 - 2 \implies 2^5 - 4 = 28$ shuffles
- Maximum number of shuffles that we see is $n-1$
For even n , seems that $n-2$ is the upper bound
- Repetitions: see "10-10-12-12" two times
(11 through 14 cards, 33 through 36 cards)