

Re: A card game probability

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 - *Date:* 26 Jan 2007 07:15:45 -0800
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On Jan 26, 11:42 am, "Faton Berisha" <fberi...@xxxxxxxxxxxx> wrote:

On Jan 25, 9:25 pm, "jsepp...@xxxxxxxxxxxx" <jsepp...@xxxxxxxxxxxx> wrote:

Take a card deck with 52 cards. Pick cards one by one and compute the cards by ace, two, three, ..., jack, queen, king, ace, ..., king, ace, ..., king, ace, ..., king. What is the probability that at least once you turn a card of the same value as you say aloud?

The probability that you turn the first card of the same value as one of the n cards turned before exactly in your $(n+1)$ -st trial is

$$p_n = \frac{3n}{52-n} \prod_{j=1}^{n-1} (1 - \frac{3j}{52-j}).$$

Hence, the probability that you turn such a card in n trials is

$$\sum_{j=1}^{n-1} p_j.$$

Can you explain what this has to do with the problem posed? What is the value of n supposed to be? What answer do you get from this formula? I would expect the correct answer to be approximately $1 - (12/13)^{52}$. This would be the answer if all the probabilities were independent (which of course they aren't).

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