Data 88S

Feb 21, 2024

Chapter 4, Exercise 5

1. Cards are dealt one by one at random without replacement till the fourth ace appears. Let X be the number of cards dealt.

   (a) Find $P(X = 39)$.

   (b) Find $P(X > 20)$.

Chapter 4, Exercise 10

2. Suppose you are running independent success/failure trials with probability 0.7 of success on each trial. Find the chance that you get 10 failures before the 15th success.

Chapter 4, Exercise 6

3. Each time I play the lottery, I have a chance $1/2n$ of winning, independently of other times. Suppose I play n times. For large n, find an approximate numerical value of the chance that I win at least once. Your answer should not involve n.