

Quiz

Probability Theory (MATH 235A, Fall 2007). October 5, 2007

1. Coin tossing

A fair coin is tossed until for the first time the same result appears twice in succession. Find the probability that the experiment ends before the sixth toss.

2. Permutations

The letters of the word SAMPLING are rearranged in random order. Find the probability that the word AS appears in the rearrangement (with letters A and S as neighbors, and in this order).

3. Locked door

You have 10 keys, of which only one fits your locked door, but you forgot which. You try all keys successively. Find the probability that the door will open after at most 5 tries.

4. Birthdays

What is the probability that the birthdays of n people will fall in exactly two calendar months?

5. Shooting

The probability of hitting a target is p . If ten shots are fired independently, what is the probability of hitting the target at least once? At least twice?