Lecture 8: Quiz

Name:

Problem 1

Who did the first investigations in probability?
   a) Bertrand.
   b) Cardano.
   c) Euler.
   d) Kolmogorov

Problem 2

We have seen the movie clips in "21": what was the strategy:
   a) Sum the values of the previous cards.
   b) For small cards add 1, for large cards decrease by 1.
   c) For small cards subtract 1, for large cards, add 1
   d) Count the aces.

Problem 3

What is the Martingale strategy?
   a) Chose randomly.
   b) Always bet on black.
   c) Double the bet when losing, quit after first win.
   d) The card

Problem 3

What is an "event"?
   a) An element in an element from the laboratory Ω
   b) The laboratory set Ω
   c) A subset of the set Ω
   d) A function from the set Ω to the reals.

Problem 4

In how many ways can one permute 5 letters?
   a) \(5(5-1) = 20\)
   b) 5
   c) 5! = 120.
   d) 4! = 24

Problem 5

In the Dave problem, where one boy is born at night. What was the probability the other was a boy?
   a) \(\frac{2}{3}\)
   b) \(\frac{1}{2}\)
   c) \(\frac{1}{3}\)
   d) \(\frac{3}{7}\)

Problem 6

The Monty-Hall problem has the following origin:
   a) A lecture hall name, where the question was first raised.
   b) The Monty Python sketch: on how to irritate people.
   c) Monty Hall was the name of a game show host.
   d) Monty is the main character from the movie "With honors".

Problem 7

The expectation of a random variable \(X\) is
   a) A real number which tells, what values the variable is expected to have.
   b) A random variable which gives the best possible guess for \(X\).
   c) In a finite laboratory, it is the event which occurs most.
   d) It is the expected deviation from the mean.

Problem 8

Which theorem assures that a normalized sum random variables converges to the normal (Bell shaped) distribution:
   a) The weak law of large numbers.
   b) The strong law of large numbers.
   c) The central limit theorem.
   d) The law of iterated logarithm.

Problem 9

What was a fair entrance fee for the Petersburg paradox:
   a) 10 dollars
   b) 1 dollar
   c) there is no finite fair entrance fee
   d) does not matter, you always lose

Problem 10

The correct answer in Bertrand’s Paradox is:
   a) \(\frac{1}{2}\)
   b) \(\frac{1}{3}\)
   c) \(\frac{1}{4}\)
   d) it depends.