

**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  $\Omega$
- b) The laboratory set  $\Omega$
- c) A subset of the set  $\Omega$
- d) A function from the set  $\Omega$  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)  $2/3$ 

- b)  $1/2$
- c)  $1/3$
- d)  $3/7$

**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)  $1/2$
- b)  $1/3$
- c)  $1/4$
- d) it depends.