**Lecture 8: Quiz**

Name:  

**Problem 1**

What is an "event"?

a) An element in the set $\Omega$
b) The set $\Omega$
c) A subset of the set $\Omega$
d) A function from the set $\Omega$ to the reals.

**Problem 2**

What is a "random variable"?

a) A function from the set $\Omega$ to the reals
b) A random member of the set $\Omega$
c) The function $P$ which assigns to each set $A$ a probability $P[A]$.
d) The variable $\omega$ used to describe experiments.

**Problem 3**

Which mathematician is credited to have first pondered the Petersburg Casino problem?

a) Bernoulli
b) Kolmogorov
c) Fermat
d) Pascal

**Problem 4**

The Monty-Hall problem has the following origin:

a) Monty Python sketch
b) Monty Hall was the name of a game show host.
c) A lecture hall name, where the question was first raised.
d) Monty is the main character from the movie "With honors" and poses this problem.

**Problem 5**

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 6**

Which theorem tells that a normalized sum of random variables converges to the normal or Bell curve 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 7**

What was the starting point of probability theory?

a) statistical analysis of data
b) statistical mechanics.
c) stock market and finance.
d) gambling

**Problem 8**

The correct answer in Bertrand’s Paradox is:

a) 1/2
b) 1/3
c) 1/4
d) it depends.