

APEC-TSUKUBA International Conference XVI

Online Workshops for Lesson Study 2.0: Artificial Intelligence (AI)
and Data Science for Education in APEC Economies

Probability and Statistics in Russian school

Federal educational standard, didactical units,
textbooks and practice

That's how the Probability and Statistics investigate the Uncertainty

Statistics

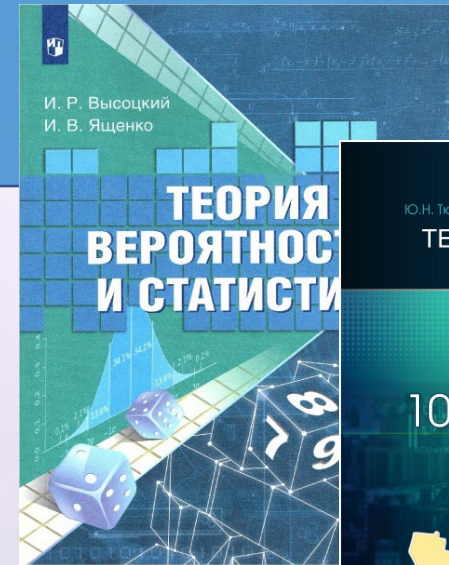
Probability

Our Uncertain World



From the Explanatory Note to the Federal Educational Standard

является обязательным предметом на данном уровне образования. В 5—9 классах учебный предмет «Математика» традиционно изучается в рамках следующих учебных курсов: в 5—6 классах — курса «Математика», в 7—9 классах — курсов «Алгебра» (включая элементы статистики и теории вероятностей) и «Геометрия». Настоящей программой вводится самостоятельный учебный курс «Вероятность и статистика».



This curriculum introduces the independent studying course 'Probability and Statistics'.

Three educational subjects: "Algebra and Calculus", "Geometry" and "Probability".

Claimed Goals

1. Developing of statistical and probabilistic literacy and culture
2. Offering “Soft Mathematical Models” to the School: an alternative to a deterministic understanding of the world;
3. Introducing LLN as a fundamental natural law that has a mathematical expression to the system of school knowledge

Page from the textbook 7

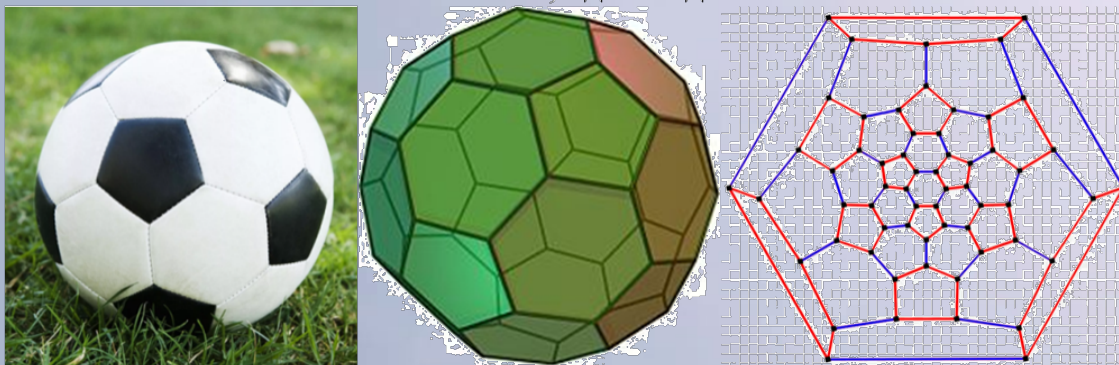


Principles and characteristics of the course

1. Primacy of statistics
2. Understanding Probability Theory as a mathematical basis for describing and analyzing variable data
3. Non-combinatorial approach to the teaching probability
4. Introducing probability as a measure of likelihood
5. Two levels (basic and advanced)

Secondary and High school. New Didactical Units

1. Elements of theory of graphs



Plane and planar graphs;
Euler characteristics and Euler formula

Paths and Euler graphs

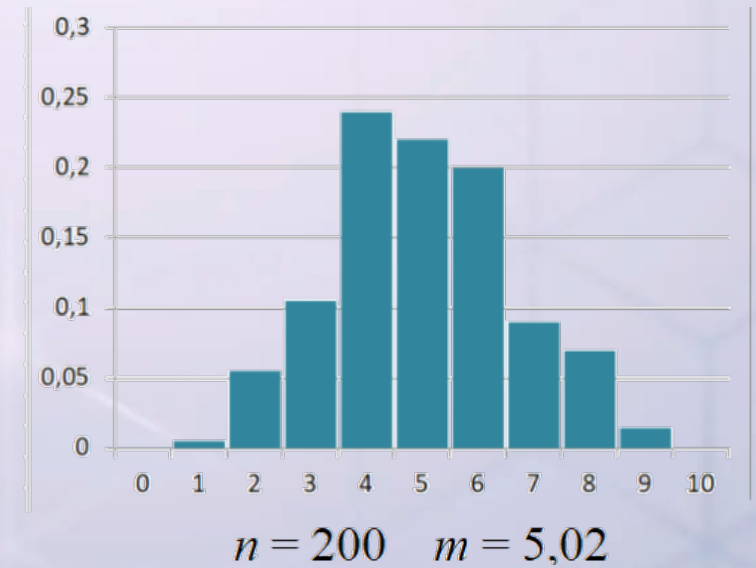
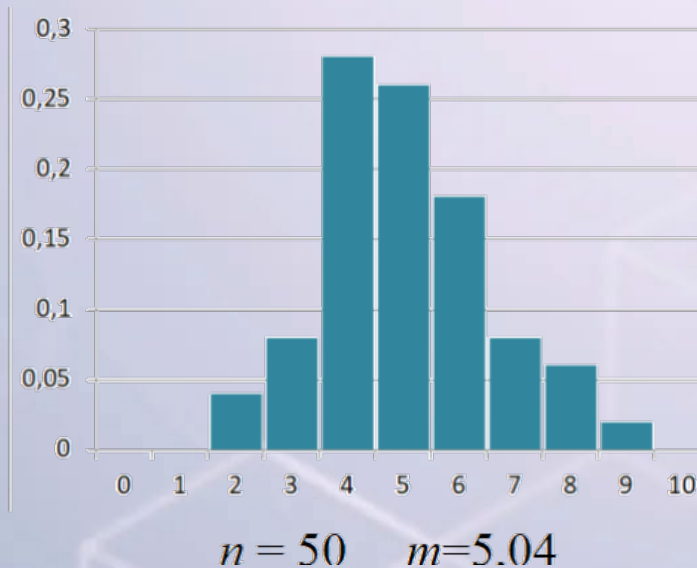
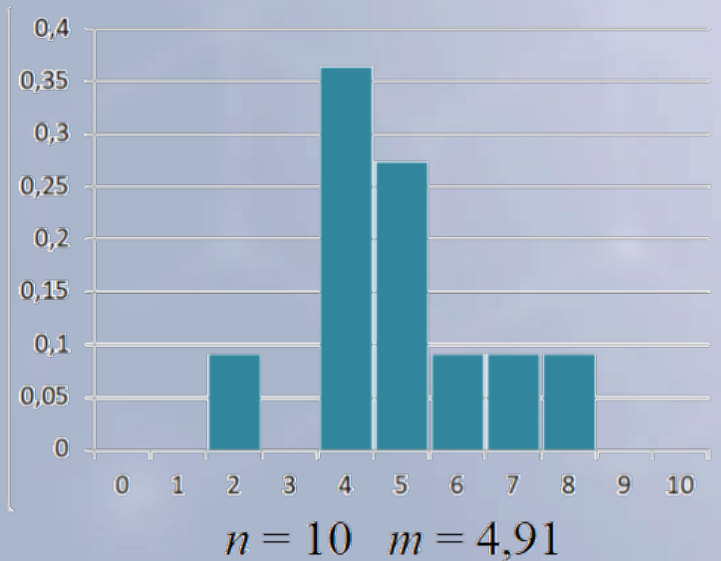


Caucasian Math
Centre. Math park in
Maykop (Republic
Adygea). 2018



Secondary and High school. New Didactical Units

2. Chebyshev theorem



m approaches $5 = EX$ almost for sure

Secondary and High school. New Didactical Units

3. Elements of math statistics

General population and samples

Sample surveys

Consistent and unbiased estimators for the mean and variance of the GP

Interval estimation for unknown probabilities

Verifying simple statistical hypotheses

Secondary and High school. New Didactical Units

4. Simple one-dimensional random walking

Examples and applications

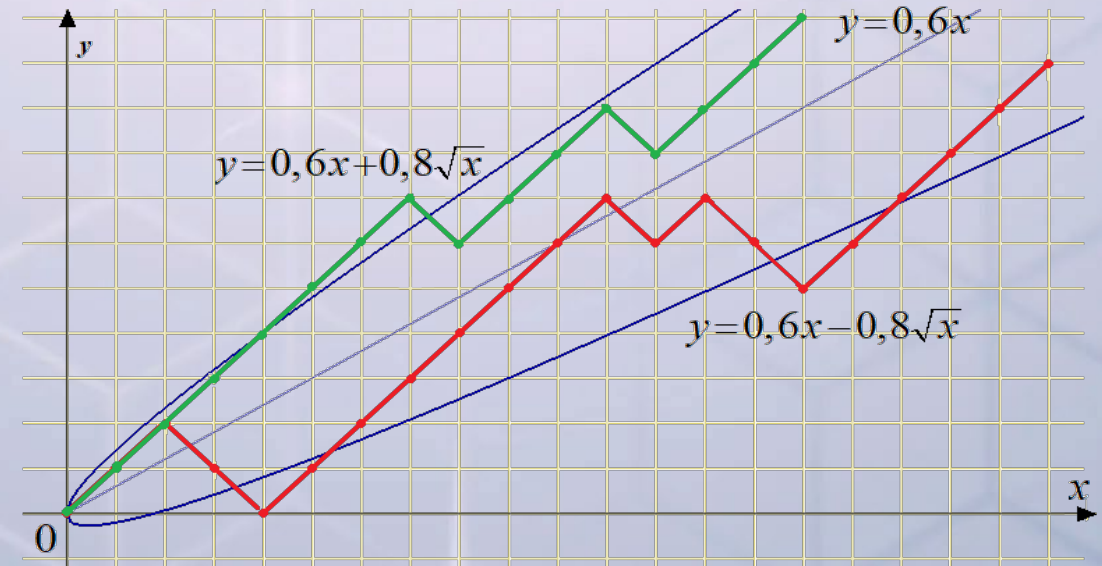
Probabilities of 1-ascent and 1-descent and the corollaries

Mean time required for the 1-ascent and 1-descent

Secondary and High school. New Didactical Units

4. Simple one-dimensional random walking

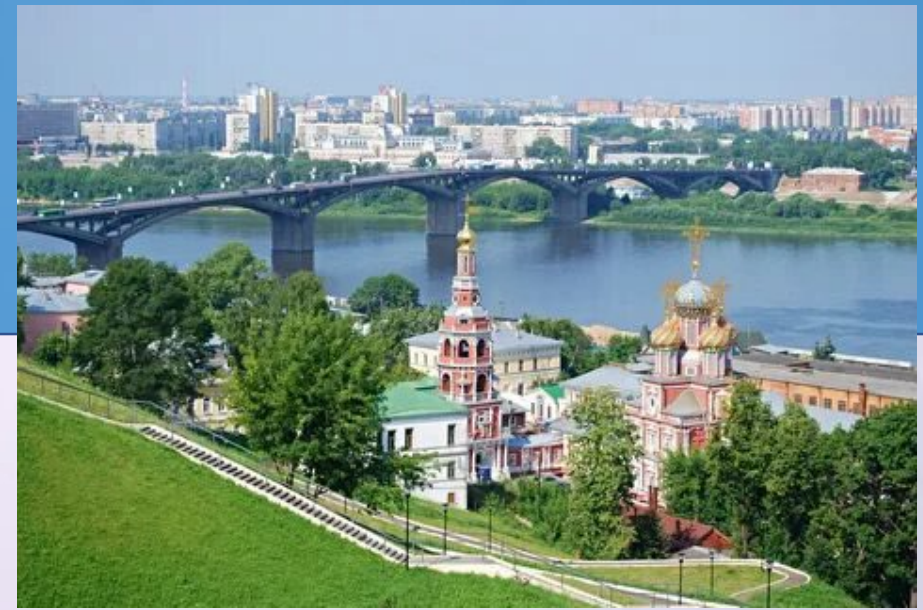
- Examples and applications
- Probabilities of 1-ascent and 1-descent and the corollaries
- Mean time required for the 1-ascent and 1-descent
- Typical divergence of a simple 1-dim random walking



XIV Intl Conference of the Association of Statisticians of Russia. Nizhniy Novgorod. April 12th

First time, the Conference has got school section

- Problems and challenges of statistical education
- Textbooks and didactic books for teachers
- Educational standard
- Some perspectives of collaboration between the associations “Math Teachers of Russia” and “Statisticians of Russia” (NGV, NC organizations)



Textbooks and didactical books





РАЛАХ" • В РАЗДЕЛЕ "НАСЕЛЕНИЕ ГОРОДОВ РОССИИ" ДОБАВЛЕНА ТАБЛИЦА "ГОРОДСКИЕ НАСЕЛЁННЫЕ ПУНКТЫ КОСТРОМ

НОВОСТИ КALENDARЬ УЧ.ПРОГРАММЫ КОНТРОЛЬНЫЕ ЕГЭ и ОГЭ ЗАНЯТИЯ ОЛИМПИАДА ПУБЛИКАЦИИ ЭЛ.РЕСУРСЫ ИНФОРМАЦИЯ

Просмотреть

Редактировать

Клонировать

02.04.2023 Раздел "Население городов России" - Костромская область

Уважаемые подписчики, в разделе

"Население городов России" добавлена таблица на тему "Городские населённые пункты Костромской области".

Новые таблицы в разработке.



КОНСУЛЬТАЦИИ

VYSOTSKY

- Адреса
- ▷ Консультации
- Моя анкета
- Непрочитанные сообщения
- ▷ Создание материала
- ▷ Управлять
- Выйти
- Редактирование задач дня
- Редактирование бегущей строки



Probability in School: <http://ptlab.mccme.ru>

Thank you