

Summary of Week3

Assignment Project Exam Help

<https://powcoder.com>

Add WeChat powcoder

Experiment

Trial

random experiment

outcome

sample space

event

mutually exclusive event

complementary event

independent event

independent trials

Stochastic Simulation

Skeleton

pseudorandom number

rand, randi, randn, randperm, rng

Bernoulli distribution, Binomial distribution

characteristic

different run gives different results

The variability reduces as numReps increases

Key idea: understand probability as long run frequency

Random variable

continuous random variable

discrete random variable

probability mass function

expectation

linear

variance

not linear

standard deviation

independent random variables

Statistics

definition: functions of random variables

properties

accurate

unbiased

precise

examples

sample means

sample proportion

sample variable

speical case

If we know mean, we know variance

confidence interval

central limit theorem

sample means are approximates normal disribution

confidence interval