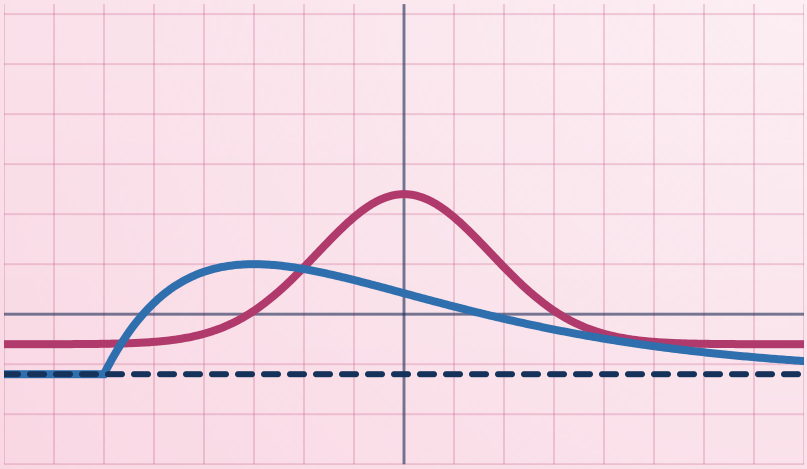
KECUDO

2026 EDITION · COLLEGE MATH SERIES



PROBABILITY & STATISTICS

Class H1

Descriptive Statistics

Turning raw data into a clear picture

PREMIUM EDITION · KECUDO · H1

13 CHAPTERS · 120 SELF-ASSESSMENT QUESTIONS

INTERACTIVE EDITION + PRINT PDF

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FOUNDATION

Chapter 1

Types of Data

Statistics starts with a **data set**: **individuals** (rides, customers, bikes) and **variables** (what we record about each one).

Type	Meaning	Kecudo example
Categorical, nominal	labels with no order	bike type: City, E-bike, Mountain, Kids
Categorical, ordinal	labels with a natural order	rating: poor, fair, good, excellent
Quantitative, discrete	counts	rentals per day: 0, 1, 2, ...
Quantitative, continuous	measurements	ride length: 27.4 minutes

WORKED EXAMPLE **Classify Kecudo's ride log**

1. Station name → categorical (nominal).
2. Number of stops → quantitative (discrete).
3. Distance in km → quantitative (continuous).
4. ZIP code → categorical: averaging ZIP codes means nothing.

✓ **Ask: does arithmetic on it make sense?**

WHY THE TYPE MATTERS

The type decides the summary and the picture: percentages and bar charts for categorical data, means, medians and histograms for quantitative data.

FOUNDATION

Chapter 2

Sampling Methods

The **population** is everyone we want to know about; a **sample** is the part we actually measure. A number describing a population is a **parameter**; one computed from a sample is a **statistic**.

Method	How	Kecudo example
Simple random	every group of n equally likely	random number generator picks 50 members
Stratified	random sample inside each group	20 riders from each of 6 stations
Cluster	pick whole groups at random	survey every rider at 2 random stations
Systematic	every k-th individual	every 10th rental receipt
Convenience	whoever is easy to reach	riders at the shop door (biased!)

WATCH OUT

Bias is a systematic error. Voluntary-response surveys attract angry or delighted customers; convenience samples miss whole groups; leading questions push answers.

WORKED EXAMPLE **Which survey is better?**

1. Plan A: an online link anyone can answer → 900 responses.
2. Plan B: 120 randomly chosen members, phoned until they answer.

✓ **Plan B: a smaller random sample beats a large biased one**

CHECK YOUR UNDERSTANDING

Chapter 1: Types of Data

5 questions · your answer locks when you choose it

1. Bike type (City, E-bike, ...) is:

- **A** a statistic
- **B** quantitative discrete
- **C** categorical
- **D** quantitative continuous

2. Ride length in minutes is:

- **A** quantitative continuous
- **B** nominal
- **C** categorical
- **D** ordinal

3. A 1–5 satisfaction rating is best called:

- **A** nominal
- **B** a parameter
- **C** ordinal
- **D** continuous

4. Rentals per day is:

- **A** discrete
- **B** continuous
- **C** nominal
- **D** ordinal

5. Why is a ZIP code categorical?

- **A** Arithmetic on it is meaningless
- **B** It is long
- **C** It has digits
- **D** It is always odd

FINAL EXAM

25 Questions on the Whole Book

Parts A–E · 5 questions each

Part A · Basics

1. Eye color is:

- **A** discrete
- **B** categorical
- **C** continuous
- **D** quantitative

2. A number computed from a sample is a:

- **A** census
- **B** variable
- **C** parameter
- **D** statistic

3. The median is the:

- **A** middle of the sorted data
- **B** most common value
- **C** average
- **D** largest value

4. IQR measures:

- **A** the spread of the middle 50%
- **B** the whole range
- **C** the center
- **D** the mode

5. A histogram shows:

- **A** two variables
- **B** the distribution of a quantitative variable
- **C** categories only
- **D** percentiles only



KECUDO

Thank you for learning with Kecudo.

NEXT IN THE SERIES

Class H2 · Probability & Random Variables