

Exercise walk-through

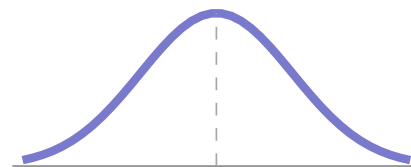
1.1

Introducing Statistics: What Can We Learn from Data?

AP Statistics

What we will cover

- 1 Variables and data
- 2 Displaying categorical data
- 3 Displaying quantitative data
- 4 Describing a distribution
- 5 Summary statistics
- 6 The normal distribution

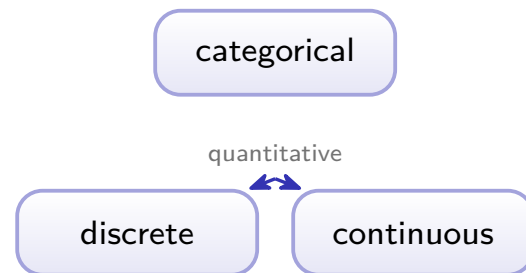


Variables and data

Statistics learns from **data** through **variability**. Each **variable** is one of two types:

- **categorical** : a group (eye colour)
- **quantitative** : a number (height)

Descriptive statistics summarize a sample; **inference** generalizes to a population.



The vocabulary the whole course rests on

statistics

the science of learning from **data**
the real world

– numbers or labels collected from

a parameter

a numerical summary of a whole **population**

a statistic

a numerical summary of a **sample** – and it varies from sample to sample

a variable

a characteristic that can differ between individuals

categorical

places an individual in a group – shown with **bar charts**
charts

and pie

quantitative

a numerical measurement – shown with dotplots, histograms and boxplots

Descriptive statistics summarises the sample; **inferential statistics**
something about the population. The whole course is the second.

uses it to say

Exercises 2.1-2.3

2.1 Define statistics.

[1]

2.2 In a data set of students' heights, state the individuals and the variable.

[2]

2.3 State one feature of a good statistical question.

[1]

Exercises 2.1-2.3

2.1 Define statistics. [1]

2.1

- the science of learning from data that vary
-

2.2 In a data set of students' heights, state the individuals and the variable. [2]

2.2

- individuals: the students; variable: their height
-

2.3 State one feature of a good statistical question. [1]

2.3

- it anticipates variability (its answer is a distribution, not one value)

Exercises 3.1-3.2

3.1 The people or objects described in a data set are the

[1]

☐

- A variables
- B individuals
- C statistics
- D graphs

3.2 A statistical question anticipates

[1]

☐

- A a single fixed answer
- B variability in the data
- C no data at all
- D a graph

Exercises 3.1-3.2

3.1 The people or objects described in a data set are the

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- A variables
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3.1 B

- individuals.

3.2 A statistical question anticipates

[1]

☐

- A a single fixed answer
- B variability in the data
- C no data at all
- D a graph

3.2 B

- variability in the data.

Exercise 3.3 (a)

3.3 A survey records each student's favourite sport.

(a) Name the individuals.

[1]

Exercise 3.3 (a)

3.3 A survey records each student's favourite sport.

(a) Name the individuals.

[1]

(a)

- the students

Exercise 3.3 (b)

3.3 A survey records each student's favourite sport.

(b) Name the variable.

[1]

Exercise 3.3 (b)

3.3 A survey records each student's favourite sport.

(b) Name the variable.

[1]

(b)

- favourite sport

Exercise 3.3 (c)

3.3 A survey records each student's favourite sport.

(c) State whether “What is my friend's height?” is a statistical question.

[1]

Exercise 3.3 (c)

3.3 A survey records each student's favourite sport.

(c) State whether “What is my friend's height?” is a statistical question. [1]

(c)

- no – it has a single answer with no variability