

Exercise walk-through

Describing the Distribution of a Quantitative Variable ■ 1.6

eXercise

You must be able to

- describe the **shape** 形状 as symmetric, skewed left, or skewed right
- identify the **center** 中心 and the **spread** 离散程度
- locate **clusters**, **gaps**, and possible **outliers** 离群值

Method — Shape, center, spread

Always describe a distribution's **shape**, **center**, and **spread** — and note any distinctive features.

Method — Shape

- **Symmetric** — roughly a mirror image.
- **Skewed right** — a long tail to the **right**.
- **Skewed left** — a long tail to the **left**.

Method — Features

Look for **clusters** (groups), **gaps** (empty regions), and **outliers** (values far from the rest).

Practice 2.1 ■ 2 marks

State the three features you should describe for any distribution.

Solution 2.1

Method: Shape, center, spread

Worked steps

shape, center, spread **B1** **B1** *for any two; for all three.*

Practice 2.2 ■ 1 mark

Describe what “skewed right” means.

Solution 2.2

Method: Shape

Worked steps

it has a long tail extending to the right (higher values) **B1**.

Practice 2.3 ■ 1 mark

Define an outlier.

Solution 2.3

Worked steps

a value that is far from the rest of the data **B1**.

Exam-style 3.1 ■ 1 mark

A distribution with a long tail to the right is

- A** symmetric
- B** skewed left
- C** skewed right
- D** uniform

Solution 3.1

Method: Shape

- A** symmetric
- B** skewed left
- C** skewed right
- D** uniform



Worked steps

C.

Exam-style 3.2 ■ 1 mark

When describing a distribution you should mention shape, center, and

A colour

B spread

C the mean only

D the category

Solution 3.2

Method: Shape, center, spread

A colour

B spread 

C the mean only

D the category

Worked steps

B.

Exam-style 3.3 ■ 1 mark

A histogram has its peak on the left and a long right tail.

- (a) Name the shape.
- (b) Name one other feature you should describe.
- (c) Define an outlier.

Solution 3.3

Method: Shape

Worked steps

(a) skewed right **B1**. (b) center or spread (or clusters/gaps/outliers) **B1**. (c) a value far from the rest of the data **B1**.