

Exercise walk-through

The Language of Variation: Variables ■ 1.2

eXercise

You must be able to

- classify a **variable** as **categorical** 分类 (qualitative) or **quantitative** 数量 (numerical)
- distinguish a **discrete** 离散 quantitative variable from a **continuous** 连续 one
- explain that a variable's values **vary** from one individual to another

Method — Categorical vs quantitative

- **Categorical** — puts individuals into groups (eye colour, favourite sport).
- **Quantitative** — a numerical measurement you can do arithmetic with (height, age).

Method — Discrete vs continuous

- **Discrete** — countable values (number of siblings).
- **Continuous** — any value in a range (exact weight).

The whole point of statistics is that these values **vary** between individuals.

Practice 2.1 ■ 2 marks

State the difference between a categorical and a quantitative variable.

Solution 2.1

Method: Categorical vs quantitative

Worked steps

categorical sorts individuals into groups; quantitative is a numerical measurement

B1 **B1**.

Practice 2.2 ■ 2 marks

State the difference between discrete and continuous quantitative variables.

Solution 2.2

Method: Discrete vs continuous

Worked steps

discrete takes countable values; continuous can take any value in a range **B1** **B1**.

Practice 2.3 ■ 1 mark

Classify “eye colour” as categorical or quantitative.

Solution 2.3

Method: Categorical vs quantitative

Worked steps

categorical **B1**.

Exam-style 3.1 ■ 1 mark

The number of siblings is a _____ variable.

- A** categorical
- B** discrete quantitative
- C** continuous quantitative
- D** none of these

Solution 3.1

Method: Discrete vs continuous

- A categorical
- B discrete quantitative** 
- C continuous quantitative
- D none of these

Worked steps

B.

Exam-style 3.2 ■ 1 mark

Height in centimetres is a _____ variable.

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

Solution 3.2

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

Worked steps

C.

Exam-style 3.3 ■ 1 mark

Classify each variable.

- (a) Favourite colour.
- (b) The number of pets counted.
- (c) A person's exact weight.

Solution 3.3

Method: Discrete vs continuous

Worked steps

(a) categorical **B1**. (b) discrete quantitative **B1**. (c) continuous quantitative **B1**.