

1.2 The Language of Variation: Variables

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS quantitative 数量 • categorical 分类 • variable 变量 • continuous 连续
• discrete 离散

Objective

Build the skills to answer exam questions on **the language of variation: variables**.

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

1 Worked examples

Study these first. Each one shows the method for a question type used later.

■ Categorical vs quantitative

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

■ 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.

2 Practice

2.1 State the difference between a categorical and a quantitative variable. [2]

2.2 State the difference between discrete and continuous quantitative variables. [2]

2.3 Classify “eye colour” as categorical or quantitative. [1]

3 Exam-style questions

3.1 The number of siblings is a _____ variable. [1]

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

3.2 Height in centimetres is a _____ variable. [1]

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

3.3 Classify each variable.

(a) Favourite colour. [1]

(b) The number of pets counted. [1]

(c) A person's exact weight. [1]

Solutions

2.1 categorical sorts individuals into groups; quantitative is a numerical measurement.

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

2.3 categorical.

3.1 B.

3.2 C.

3.3 (a) categorical. (b) discrete quantitative. (c) continuous quantitative.