

1.2 The Language of Variation: Variables

Name: _____ Class: _____ Date: _____

Total: 10 marks

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

- **A** categorical
 - **B** discrete
 - **C** continuous quantitative
 - **D** binary
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3.3 Classify each variable.

(a) Favourite colour. [1]

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

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

4 Go further

- work through the **1.2 The Language of Variation: Variables** lesson on the **Learn** page;
 - read the **Exploring One-Variable Data** section of the AP Statistics handout on the **Know** page.
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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.