Discrete versus continuous data

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Classify favourite school subject. [2 marks]

The values are subject names, not numerical measurements.

Answer: Categorical.

2. Classify the number of siblings a student has. [2 marks]

Siblings are counted in whole numbers.

Answer: Discrete numerical.

3. Classify the height of a plant, recorded to the nearest centimetre. [2 marks]

The underlying height can take intermediate values.

Answer: Continuous numerical, recorded with rounding.

4. Give the interval of masses that round to 4.2 kg to the nearest 0.1 kg. [2 marks]

The rounding half-step is 0.05 kg.

Answer: $4.15 \leq m < 4.25$ kg.

5. A survey codes bus as 1, bicycle as 2 and walking as 3. Is its travel-mode variable numerical? Explain. [3 marks]

The codes label categories.

A difference between codes has no numerical meaning.

Answer: No; it is categorical.

6. Choose an appropriate display for 40 recorded journey times grouped into five-minute intervals. Explain. [3 marks]

The variable is numerical and grouped into adjacent time intervals.

Use touching bars with a labelled time axis; use frequency density if widths are unequal.

Answer: A histogram.