Solutions

Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

2.1

- shoe sizes come in separate steps and are counted, not measured

discrete

2.2

- height can take any value within a range

continuous

2.3

- it is a category, not a number

qualitative

2.4

- **discrete**: it can only be a whole number

2.5

- for example its **colour** or its **make** – a description, not a number

3.1

- (a) **discrete quantitative**
- (b) **continuous quantitative**
- (c) **qualitative**

3.2

(a)

- mass is continuous, so a value such as 10.4 g is possible
- 0–10 and 11–20 would leave a gap between them with nowhere for such a value to go; the inequalities leave no gap and no overlap

(b)

- the first class ends with $\leqslant 10$, so it includes exactly 10

$$\mathbf{0 < m \leqslant 10}$$

3.3

- a population is EVERY member of the group being studied
- a sample is the smaller part of it that is actually measured, chosen to represent the whole

3.4

(a)

- a **sample**: only 30 of the 1200 students were asked

(b)

- for example: students at the front of the queue may all be from one year group, and students who do not eat school lunch are left out

(c)

- choose students at **random** from the whole school list (for example, a fixed number from each year group)

3.5

- recording only completed years rounds every age down to a whole number, so the recorded values can only be integers: they are **discrete**
- the exact age within the year (months and days) is lost