Choosing units and instruments

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Choose a sensible unit for a swimming-pool length and explain it. [2 marks]

A pool is normally tens of metres long; millimetres would be unnecessarily small.

Answer: Metres.

2. Choose an instrument to measure 75 mL of liquid to the nearest millilitre. [2 marks]

It measures liquid volume and resolves the required 1 mL.

Answer: A suitable graduated measuring cylinder with 1 mL divisions.

3. A window width must be checked to the nearest millimetre. Is a tape marked only every centimetre sufficient? [2 marks]

A centimetre is 10 mm, so the marks do not directly resolve each millimetre.

Answer: No.

4. A rod spans ruler readings 2.4 cm and 15.9 cm. Find its length. [2 marks]

$15.9 - 2.4 = 13.5$ cm.

Answer: 13.5 cm.

5. A carton is labelled 2 L. Is this mass or capacity? Name a suitable measuring instrument. [2 marks]

Litres measure capacity, not mass.

Answer: Capacity; a graduated liquid-volume measure.

6. Explain why reporting a width as 42.000 mm from a ruler with 1 mm divisions is misleading. [2 marks]

Choose a recorded precision consistent with the scale and reading method.

Answer: The decimal places imply more resolution than the ruler supplies.