eClassroom

GCSE Mathematics

Unit Conversion

Questions

Pearson Edexcel GCSE & iGCSE Mathematics

Section A — Foundation

Worked Examples

[Fluency]

Convert 4.5 km to metres.

1 km = 1000 m → 4.5 × 1000 = **4500 m**

[Reasoning]

Convert 72 km/h to m/s.

Multiply by 1000 (km → m), divide by 3600 (h → s):

$$72 \times \frac{1000}{3600} = 20 \text{ m/s}$$

[Problem Solving]

A field measures 400 m × 250 m. Find the area in hectares (1 ha = 10 000 m²).

Area = 400×250 = 100 000 m²

100 000 ÷ 10 000 = **10 hectares**

[Fluency]

1. Convert 3.5 km to metres.

(1 mark)

[Fluency]

2. Convert 450 cm to metres.

(1 mark)

[Fluency]

3. Convert 2.4 kg to grams.

(1 mark)

[Fluency]

4. Convert 3 hours 25 minutes into minutes.

(1 mark)

[Fluency]

5. Convert 560 mm to centimetres.

(1 mark)

[Reasoning]

6. A marathon is 26.2 miles long. Convert this to kilometres.

Use 1 mile = 1.609 km.

(2 marks)

[Reasoning]

7. Convert 5 gallons to litres.

Use 1 gallon = 4.546 litres.

(2 marks)

[Reasoning]

8. Convert 72 km/h to m/s.

Show each step clearly.

(2 marks)

[Problem Solving]

9. Convert 55 mph to km/h.

Use 1 mile = 1.609 km.

(2 marks)

[Problem Solving]

10. A rectangular field is 400 m by 250 m.

Find the area of the field in hectares (1 hectare = 10 000 m^2).

(2 marks)

Section B — Higher

Worked Examples

[Fluency]

Convert 3.2 m³ to cm³.

1 m = 100 cm, so 1 m³ = 100³ cm³ = 10&sup6; cm³

3.2 × 10&sup6; = **3 200 000 cm³**

[Reasoning]

Convert a density of 8 g/cm³ to kg/m³.

1 g/cm³ = 1000 kg/m³

8 × 1000 = **8000 kg/m³**

[Problem Solving]

A flow rate is 2.4 litres per minute. Convert to m³ per hour.

2.4 L/min × 60 min/h = 144 L/h

144 L ÷ 1000 = 0.144 m³/h

[Fluency]

1. Convert 85 cm² to mm².

(2 marks)

[Fluency]

2. Convert 3.2 m³ to cm³. Give your answer in standard form.

(2 marks)

[Fluency]

3. Convert 108 km/h to m/s.

(2 marks)

[Reasoning]

4. Convert a density of 8 g/cm³ to kg/m³.

Show clearly how the units change.

(3 marks)

[Reasoning]

5. Convert a pressure of 50 000 Pa to N/cm².

Use 1 Pa = 1 N/m² and 1 m = 100 cm.

(3 marks)

[Reasoning]

6. Convert 15 m/s to km/h.

Show your method.

(2 marks)

[Problem Solving]

7. Water flows from a tap at a rate of 2.4 litres per minute.

Convert this flow rate to m^3 per hour.

(3 marks)

[Problem Solving]

8. A sphere has radius 0.5 m.

(a) Find the volume of the sphere in m^3. Give your answer in terms of π. (2)

(b) Convert this volume to cm^3. (1)

(c) Convert to litres (1 litre = 1000 cm^3). (1)

(4 marks)

[Problem Solving]

9. A car achieves 80 miles per gallon fuel consumption.

Convert this to kilometres per litre.

Use 1 mile = 1.609 km and 1 gallon = 4.546 litres.

(3 marks)

[Problem Solving]

10. Paint covers 12 m^2 per litre. A room has 4 walls each measuring 4 m × 2.5 m.

(a) How many litres of paint are needed? (2)

(b) Convert your answer to pints (1 litre = 1.76 pints). Round up to the nearest whole pint. (2)

(4 marks)