

Converting Compound and Area-Volume Units

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **25**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

1 Circle the number of cm^2 in 1 m^2

[1 mark]

100

1000

10 000

1 000 000

2 Tick one box for each statement.

[2 marks]

$$1 \text{ m}^2 = 100 \text{ cm}^2$$

$$1 \text{ cm}^3 = 1000 \text{ mm}^3$$

$$1 \text{ m}^3 = 1\,000\,000 \text{ cm}^3$$

$$1 \text{ litre} = 1000 \text{ cm}^3$$

$$1 \text{ km}^2 = 1000 \text{ m}^2$$

True

False

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- 3** (a) Convert 3.5 m^2 to cm^2

[1 mark]

Answer _____ cm^2

- (b) Convert $45\,000 \text{ cm}^3$ to m^3

[1 mark]

Answer _____ m^3

- (c) Convert 2.4 cm^3 to mm^3

[1 mark]

Answer _____ mm^3

- 4** Convert 15 m/s to km/h .

[2 marks]

Answer _____ km/h

- 5** Water flows out of a pipe at a rate of r litres per minute.
Write an expression, in terms of r , for the rate of flow in cm^3 per second.

[2 marks]

Answer _____ cm^3 per second

- 6 The density of a type of plastic is 1350 kg/m^3
Convert this to g/cm^3

[2 marks]

Answer _____ g/cm^3

- 7 A tap drips at 3 ml per minute.
How many litres does it drip in one week?

[2 marks]

Answer _____ litres

- 8 Some oil has
a mass of 684 g
a density of $912\,000 \text{ g/m}^3$
 $1 \text{ m}^3 = 1000 \text{ litres}$
Work out the volume of the oil.
Give your answer in litres.

[2 marks]

Answer _____ litres

- 9 Two delivery drones are tested.
Drone P flies 4.5 km in 6 minutes.
Drone Q flies at a constant speed of 12 metres per second.
Which drone is faster?
You must show your working.

[3 marks]

Answer _____

- 10 A tin of paint says it covers 12 square metres per litre.
Convert this rate into square feet per pint.
Use 1 metre = 3.28 feet
and 1 litre = 1.76 pints
Give your answer to 3 significant figures.

[3 marks]

Answer _____ square feet per pint

- 11 Town A has
a population of 31 200
an area of 5 square miles.
Town B has a population density of 2350 people per square kilometre.
$$\text{population density} = \frac{\text{population}}{\text{area}}$$

Which town has the greater population density?
Use 1 square mile = 2.6 square kilometres
Tick a box.

[3 marks]

☐ Town A

☐ Town B