

Converting Compound and Area-Volume Units

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **23**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Change 5 m^3 into cm^3

..... cm^3
(1)

(Total for Question 1 is 1 mark)

2 Change 0.6 m^2 into mm^2

..... mm^2
(2)

(Total for Question 2 is 2 marks)

- 3 (a) Change 0.035 m^3 to cm^3

..... cm^3
(1)

- (b) A garden snail moves at a constant speed of 0.8 cm per second.
Work out the speed of the snail in metres per hour.

..... metres per hour
(3)

(Total for Question 3 is 4 marks)

- 4 The pressure on a surface is 2.5 N/cm^2
Convert this to N/m^2

..... N/m^2
(2)

(Total for Question 4 is 2 marks)

- 5 A box rests on a floor.
The box exerts a pressure of 1500 newtons/m² on the floor.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The area of the base of the box is 800 cm²
Work out the force exerted by the box on the floor.
Give your answer in newtons.

..... newtons
(2)

(Total for Question 5 is 2 marks)

- 6 A pipe delivers water at 150 litres per minute.
Work out the rate in cm³ per second.

..... cm³/s
(2)

(Total for Question 6 is 2 marks)

- 7 A car uses fuel at a rate of 6.5 litres per 100 km.
Convert this to millilitres per kilometre.

..... ml/km
(2)

(Total for Question 7 is 2 marks)

- 8** A fish tank is in the shape of a cuboid.
 The tank is 80 cm long, 35 cm wide and 40 cm high.
 The tank is empty.
 Water is poured into the tank at a rate of 0.2 litres per second, until the water is 5 cm below the top of the tank.
 Work out how long this takes.
 Give your answer in minutes and seconds.
 You must show all your working.

.....

(4)

(Total for Question 8 is 4 marks)

- 9** An office uses an average of 150 litres of drinking water each month.
 There are two ways the office can buy its water.

Option A: water cooler Rent of £24 per month plus £6.50 for each 15-litre bottle of water	Option B: bottled water Packs of 24 bottles Each bottle holds 500 ml £5.40 for each pack
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The office can only buy whole bottles for the cooler and whole packs of bottled water.
 Which option is cheaper for the office each month?
 You must show all your working.

(4)

(Total for Question 9 is 4 marks)