3.10 Conversions and Units: 1-hour Pack

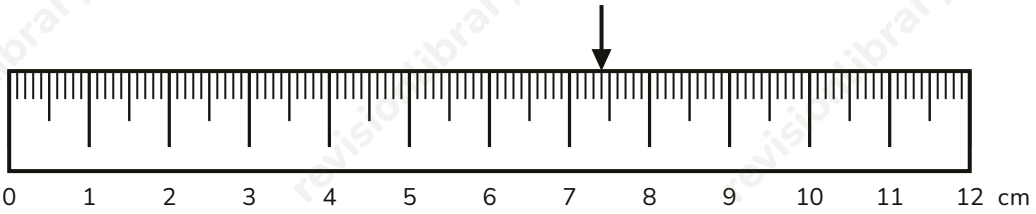
EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The diagram shows part of a ruler.



(a) Write down the length shown by the arrow. Give your answer in centimetres. **(1)**

.....

(b) Give your answer to part (a) in millimetres. **(1)**

(Total for Question 1 is 2 marks)

---

2 Write 5.4 km as a number of metres.

(Total for Question 2 is 1 mark)

---

3 Write 2.4 litres as a number of millilitres.

(Total for Question 3 is 3 marks)

© Revision Library | revisionlibrary.co.uk

4 Work out 3 hours 45 minutes in minutes.

(Total for Question 4 is 2 marks)

---

5 Convert 4.5 km into metres.

(Total for Question 5 is 2 marks)

---

6 Write 1200 ml as a number of litres.

(Total for Question 6 is 2 marks)

---

7 Convert 5 metres into centimetres and into millimetres. Give both answers with units.

(a) Write 5 m in centimetres. **(2)**

.....

(b) Write 5 m in millimetres. **(2)**

.....

(Total for Question 7 is 4 marks)

---

8 Deepak buys three pieces of fencing wire with lengths 2.4 m, 85 cm and 630 mm. He joins them together to make one length of wire. Work out the total length of the wire. Give your answer in metres.

(Total for Question 8 is 3 marks)

© Revision Library | revisionlibrary.co.uk

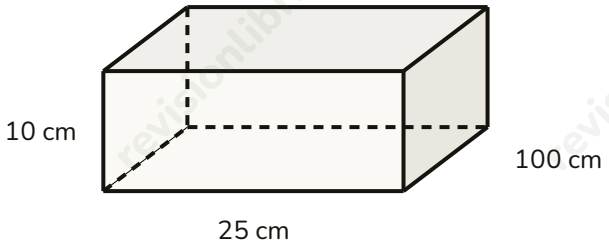
9 A train travels at 14 m/s. Convert this speed to kilometres per hour.

(Total for Question 9 is 3 marks)

---

10 A water tank is a cuboid 25 cm long, 100 cm wide and 10 cm high.
1 litre = 1000 cm^3. How many litres of water does it hold when full?

Diagram NOT accurately drawn



(Total for Question 10 is 3 marks)

---

11 Convert between units of time.

(a) Convert 2.25 hours into hours and minutes. **(2)**

(b) Convert 100 minutes into hours and minutes. **(2)**

(Total for Question 11 is 4 marks)

© Revision Library | revisionlibrary.co.uk

12 A coach timetable shows a coach leaving Sheffield at 08:55 and arriving in Leeds at 11:20 (both times shown using the 24-hour clock).

(a) Write 19:45 using the 12-hour clock. **(1)**

(b) Work out how long the coach journey from Sheffield to Leeds takes. Give your answer in hours and minutes. **(2)**

.....

(Total for Question 12 is 3 marks)

---

13 The exchange rate is £1 sterling (£) = 1.16 euros (EUR).

(a) Nadia changes £250 into euros. Work out how many euros she receives. **(2)**

.....

(b) On the way home Nadia changes 87 euros back into £, using the same exchange rate. Work out how many £ she receives. **(2)**

.....

(Total for Question 13 is 4 marks)

---

14 A recipe for flapjacks that serves 6 people uses 750 g of oats.

(a) Write 750 g in kilograms. **(1)**

(b) Bilal wants to make enough flapjacks to serve 15 people, using the recipe in the same proportions. Work out how many kilograms of oats he needs. **(3)**

.....

(Total for Question 14 is 4 marks)

© Revision Library | revisionlibrary.co.uk

15 Write 0.00042 kilograms in grams and then in milligrams.

(Total for Question 15 is 2 marks)

---

16 An engineer is designing a cylindrical water tank with radius r metres and height h metres. Give an expression for the volume in cubic metres. The engineer needs the volume in litres. Show the algebraic steps to convert the expression for volume in m^3 into litres and state the final expression in terms of r and h.

(Total for Question 16 is 6 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 3.10 Conversions and Units: 1-hour Pack

Question 1

(a) 7.4 cao **B1**

(a) Answer: 7.4 cm

(b) 74 ft from (a) **B1**

(b) Answer: 74 mm

Question 2

5400 m cao **B1**

Answer: 5400 m

Question 3

method, 2.4 x 1000 or move decimal **M1**

2400 cao **A1**

include unit ml: 2400 ml **B1**

Answer: 2400 ml

Question 4

correct method, converting 3 hours to 180 minutes or 45 minutes to 0.75 hours **M1**

225 minutes cao **A1**

Answer: 225 minutes

Question 5

method shown, 4.5 x 1000 or move decimal **M1**

4500 m cao **A1**

Answer: 4500 m

Question 6

method shown, divide 1200 by 1000 or move decimal **M1**

1.2 L cao **A1**

Answer: 1.2 L

Question 7

(a) method, 5 x 100 **M1**

(a) 500 cm cao **A1**

(a) Answer: 500 cm

(b) method, 5 x 1000 **M1**

(b) 5000 mm cao **A1**

(b) Answer: 5000 mm

Question 8

converts all three lengths to metres: 2.4 m, 0.85 m, 0.63 m **M1**

dep, adds the three converted lengths **M1**

3.88 (m) cao **A1**

Answer: 3.88 m

Question 9

14 x 3600 (metres per hour) **M1**

divides by 1000 **M1**

50.4 km/h **A1**

Answer: 50.4 km/h

Question 10

25 x 100 x 10 = 25000 **M1**

divides by 1000 **M1**

25 litres **A1**

Answer: 25 litres

Question 11

(a) 0.25 x 60 (= 15) **M1**

(a) 2 hours 15 minutes oe cao **A1**

(a) Answer: 2 hours 15 minutes

(b) 100 / 60 or equivalent division **M1**

(b) 1 hour 40 minutes oe cao **A1**

(b) Answer: 1 hour 40 minutes

Question 12

(a) 7:45 pm cao (accept 7.45 pm) **B1**

(a) Answer: 7:45 pm

(b) correct method, e.g. 08:55 to 09:00 is 5 minutes, then 09:00 to 11:20 is 2 hours 20 minutes **M1**

(b) 2 hours 25 minutes cao **A1**

(b) Answer: 2 hours 25 minutes

Question 13

(a) 250 x 1.16 **M1**

(a) 290 (euros) cao **A1**

(a) Answer: 290 euros

(b) 87 / 1.16 **M1**

(b) 75 (pounds) cao **A1**

(b) Answer: £75

Question 14

(a) 0.75 cao **B1**

(a) Answer: 0.75 kg

(b) 750 / 6 (= 125), finding the oats needed per person **M1**

(b) their 125 x 15, dep **M1**

(b) 1.875 (kg) oe cao (accept 1875 g) **A1**

(b) Answer: 1.875 kg

Question 15

convert to grams: 0.00042 * 1000 = 0.42 g shown **M1**

420 mg cao (0.42 g = 420 mg) **A1**

Answer: 0.42 g and 420 mg

Question 16

write volume in m^3: $\pi * r^2 * h$ **M1**

state conversion 1 m^3 = 1000 L **M1**

multiply expression by 1000 to convert to litres **M1**

$1000 * \pi * r^2 * h$ litres cao **A1**

show any algebraic rearrangement if needed, e.g. $V_L = 1000 \pi r^2 h$ oe **M1**

final expression $V_L = 1000 \pi r^2 h$ cao **A1**

Answer: Volume in $m^3 = \pi * r^2 * h$. In litres: $V = 1000 * \pi * r^2 * h$ L

© Revision Library | revisionlibrary.co.uk