7.10 Measurement: Units, Perimeter, Area and Volume: Test Pack

Calculators not allowed · about 55 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Convert the measurements.

(a) Write 4.2 kilometres in metres. **(1)**

(b) Write 3,450 millimetres in metres. **(1)**

---

2 A rectangular plot measures 1500 cm by 90 m. Convert the shorter side to metres then find the perimeter of the plot in metres.

(2)

---

3 A rectangle is 22 cm long and 3 cm wide.

What is its area in square centimetres?

Answer: ___

(1)

---

4 Convert 60.2 litres to ml.

Answer: ___ ml

(1)

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5 Explain whether this statement is always, sometimes or never true. "If two triangles have the same base and the same area, then they must have the same height." Explain your answer.

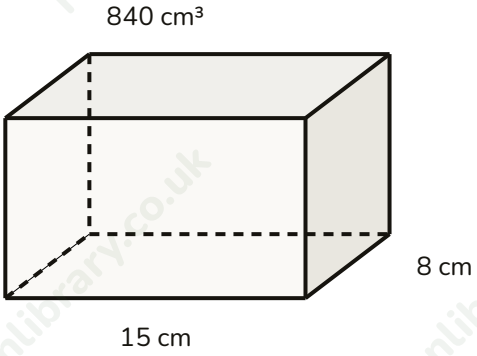
(2)

6 A cuboid has a volume of 840 cm cubed. Its length is 15 cm and its width is 8 cm.

What is its height?

Answer: ___ cm

Diagram NOT accurately drawn

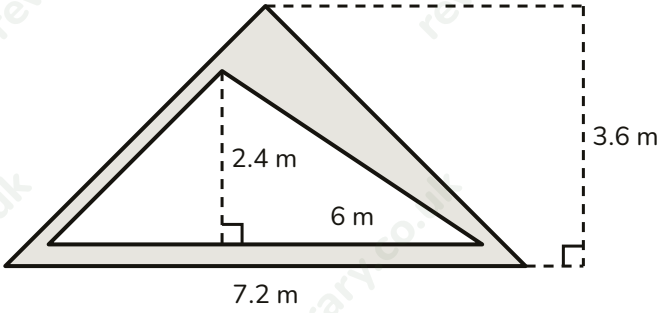


(2)

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7 A triangular flower bed has base 6 m and height 2.4 m. It is surrounded by a border, so that the bed and the border together make a larger triangle with base 7.2 m and height 3.6 m. What is the area of the border to one decimal place in square metres?

Diagram NOT accurately drawn



(3)

---

8 A square has sides of length 7 cm.

What is its perimeter?

Answer: ___ cm

Diagram NOT accurately drawn

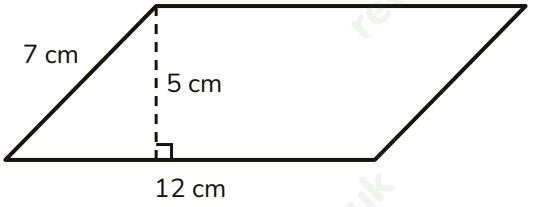


(1)

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9 A metal sheet is a parallelogram with side lengths 12 cm and 7 cm. The perpendicular distance (height) between the 12 cm sides is 5 cm. Calculate the area of the sheet in square centimetres.

Diagram NOT accurately drawn



(2)

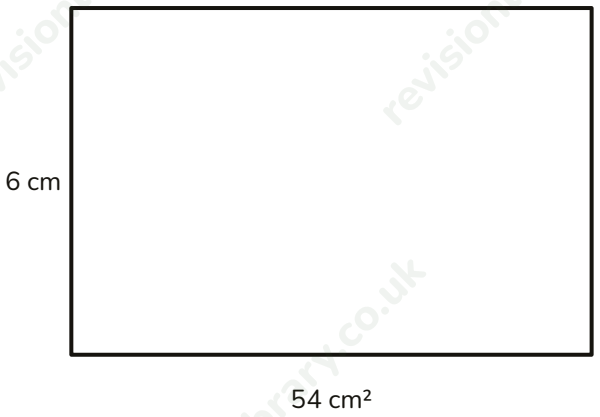
10 A box's external dimensions are 32 cm by 20 cm by 15 cm. The box wall is uniform and 1 cm thick. Estimate the internal volume of the box in cubic centimetres.

(2)

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11 A rectangle has area 54 cm². One side measures 6 cm. Find the length of the other side.

Diagram NOT accurately drawn

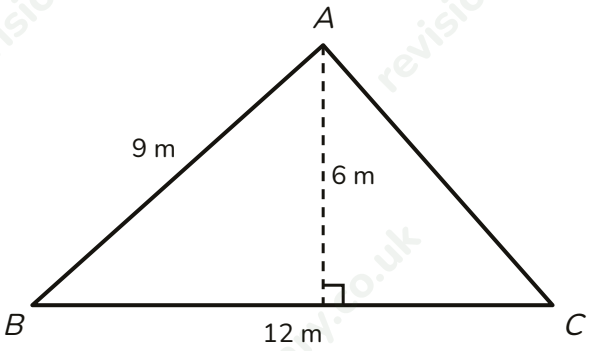


(2)

---

12 A playground has a triangular sand area with vertices A, B and C. BC = 12 m is the base of the triangle and the perpendicular height from BC to vertex A is 6 m. AB = 9 m. Work out the area of the sand in square metres.

Diagram NOT accurately drawn



(2)

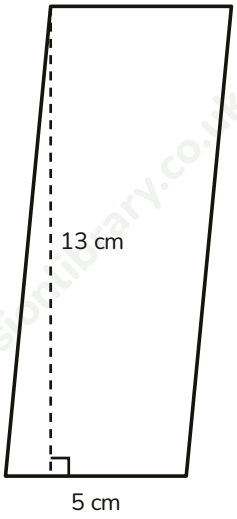
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13 A parallelogram has a base of 5 cm and a perpendicular height of 13 cm.

What is its area in square centimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

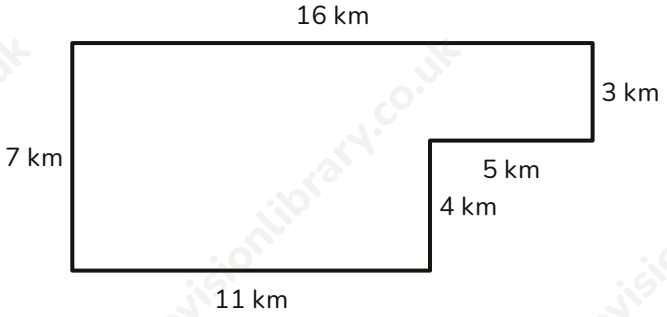
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14 An L-shaped floor has these sides in order around the shape: 16 km, 3 km, 5 km, 4 km, 11 km, 7 km.

What is the perimeter of the floor?

Answer: ___ km

Diagram NOT accurately drawn



(2)

---

15 A rectangle is 18 m long and 15 m wide.

What is its area in square metres?

Answer: ___

(1)

---

16 Write £5.92 in pence.

Answer: ___ p

(1)

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17 The area of a triangle is 48 cm². The base is 12 cm. Work out the height of the triangle.

(3)

---

18 Convert 8,310 m to km.

Answer: ___ km

(1)

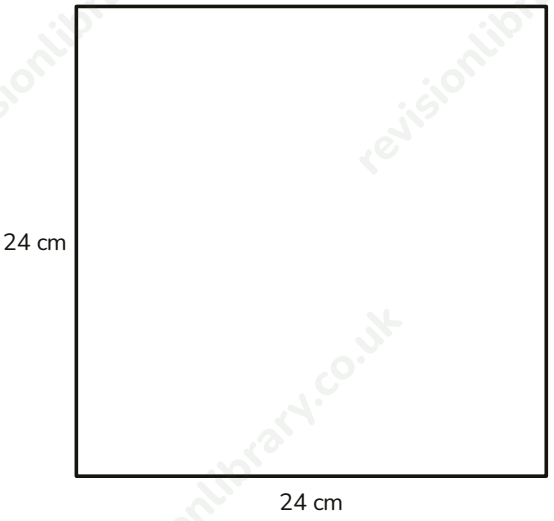
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19 A square has sides of length 24 cm.

What is its perimeter?

Answer: ___ cm

Diagram NOT accurately drawn



(1)

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20 A scale in ml has big marks every 100 ml, with 5 equal small divisions between each big mark. The first big mark is 600. The pointer is 3 small divisions after the second big mark.

What is the reading?

Answer: ___ ml

(2)

---

21 A regular decagon has sides of length 3 cm.

What is its perimeter?

Answer: ___ cm

(2)

---

22 A regular dodecagon has sides of length 10 cm.

What is its perimeter?

Answer: ___ cm

(2)

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23 A square has sides of length 43 cm.

What is its perimeter?

Answer: ___ cm

Diagram NOT accurately drawn



43 cm

(1)

---

24 A rectangular carpet is 3.2 m long and 2.5 m wide. Work out its area in square metres, giving your answer to one decimal place.

(2)

---

25 Use 1 foot = 30 cm.

A strip of card is 2 feet long. How long is it in cm?

Answer: ___ cm

(1)

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Mark scheme · 7.10 Measurement: Units, Perimeter, Area and Volume: Test Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

(a) 4,200 cao — **B1**

(a) Answer: **4,200**

(b) 3.45 cao — **B1**

(b) Answer: **3.45**

Question 2

convert 1500 cm to 15 m then set up perimeter 2(15+90) — **M1**

210 cao — **B1**

Answer: **210**

Question 3

66 square centimetres cao — **B1**

Answer: **66 square centimetres**

Question 4

60,200 ml cao — **B1**

Answer: **60,200 ml**

Question 5

state that area = 1/2 x base x height and use reasoning — **M1**

conclude statement is always true: area = 1/2 x base x height, so the same base and the same area give the same height (height = 2 x area / base) — **B1**

Answer: **always**

Question 6

15 x 8 = 120 seen — **M1**

7 cm cao — **A1**

Answer: **7 cm**

Question 7

uses the outer triangle dimensions given: base 7.2 and height 3.6 — **M1**

calculate outer area 1/2 x 7.2 x 3.6 and inner area 1/2 x 6 x 2.4 and subtract — **M1**

5.8 cao — **B1**

Answer: **5.8**

Question 8

28 cm cao — **B1**

Answer: **28 cm**

Question 9

use area = base x height with base 12 and height 5 — **M1**

60 cao — **B1**

Answer: **60**

Question 10

subtract twice the thickness from each external dimension: internal dims 30 x 18 x 13 — **M1**

7020 cao — **B1**

Answer: **7020**

Question 11

divide area by one side: 54 / 6 — **M1**

9 cm cao — **B1**

Answer: **9 cm**

Question 12

use area = 1/2 x base x height with base 12 and height 6 — **M1**

36 cao — **B1**

Answer: **36**

Question 13

base x height — **M1**

65 square centimetres cao — **A1**

Answer: **65 square centimetres**

Question 14

adds all six sides — **M1**

46 km cao — **A1**

Answer: **46 km**

Question 15

270 square metres cao — **B1**

Answer: **270 square metres**

Question 16

592p cao — **B1**

Answer: **592p**

Question 17

use area = 1/2 x base x height or rearrange to height = (2 x area) / base — **M1**

substitute values: height = (2 x 48) / 12 — **M1**

8 cm cao — **B1**

Answer: **8 cm**

Question 18

8.31 km cao — **B1**

Answer: **8.31 km**

Question 19

96 cm cao — **B1**

Answer: **96 cm**

Question 20

size of a small division found — **M1**

760 ml cao — **A1**

Answer: **760 ml**

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Question 21

10 x 3	**M1**
30 cm cao	**A1**

Answer: **30 cm**

Question 22

12 x 10	**M1**
120 cm cao	**A1**

Answer: **120 cm**

Question 23

172 cm cao	**B1**

Answer: **172 cm**

Question 24

calculate 3.2 x 2.5	**M1**
8.0 cao	**B1**

Answer: **8.0**

Question 25

60 cm cao	**B1**

Answer: **60 cm**

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