7.9 Perimeter, Area and Volume: Test Pack

Calculators not allowed · about 60 minutes

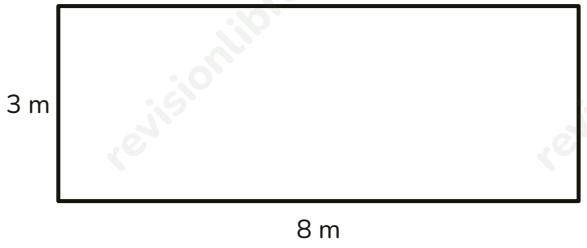
Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A rectangle has length 8 m and width 3 m. Work out its area.

Diagram NOT accurately drawn



(2)

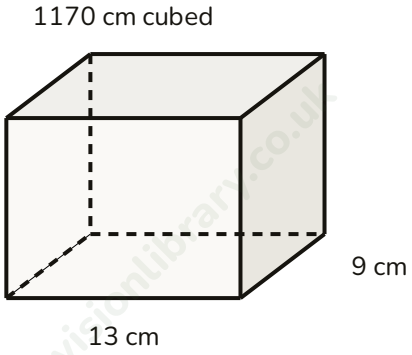
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2 A cuboid has a volume of 1170 cm cubed. Its length is 13 cm and its width is 9 cm.

What is its height?

Answer: ___ cm

Diagram NOT accurately drawn



(2)

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3 A rectangle is 17 m long and 6 m wide.

What is its area in square metres?

Answer: ___

(1)

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4 Sana builds a tower with cubes. The base layer is 6 cubes by 2 cubes. She stacks 4 identical layers. How many cubes are in the tower? Show your working.

(2)

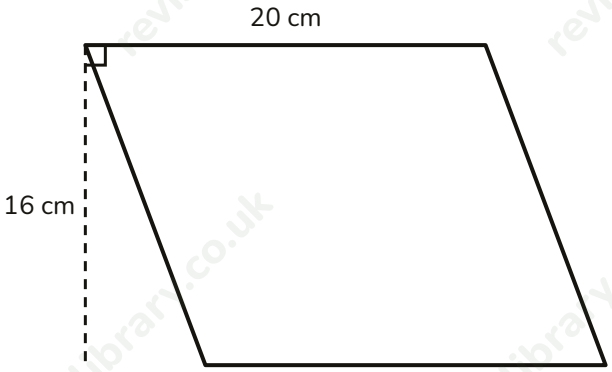
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5 A parallelogram has a base of 20 cm and a perpendicular height of 16 cm.

What is its area in square centimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

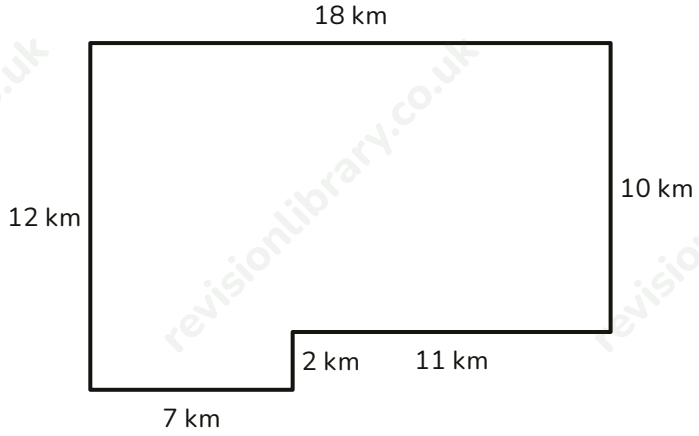
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6 An L-shaped floor has these sides in order around the shape: 18 km, 10 km, 11 km, 2 km, 7 km, 12 km.

What is the perimeter of the floor?

Answer: ___ km

Diagram NOT accurately drawn



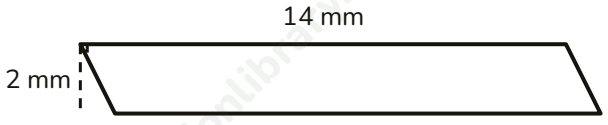
(2)

7 A parallelogram has a base of 14 mm and a perpendicular height of 2 mm.

What is its area in square millimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

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8 Explain why two rectangles with the same area can have different perimeters. Give a short example using whole-number sides.

(1)

9 On a plan, a pond covers about 13 whole grid squares and 6 quarter squares. Each whole square represents 1 cm² on the plan. Estimate the area covered by the pond on the plan in square centimetres.

(1)

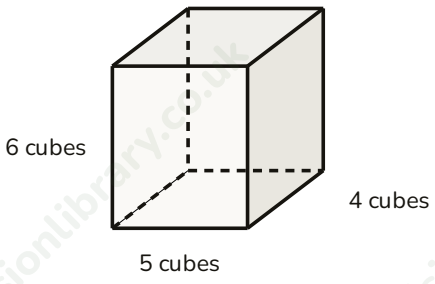
10 A rectangular garden is 10 m long and 6 m wide. One quarter of the garden is paved. The rest of the garden is grass. What is the area of the grass?

(2)

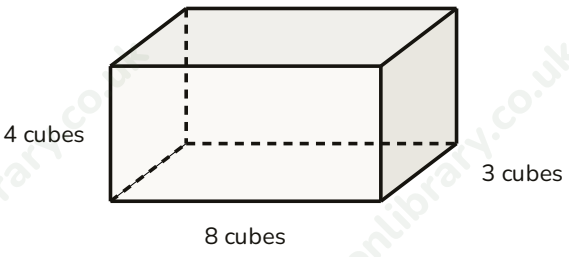
11 Two cuboids are each made from 1 cm cubes. Cuboid A is 5 cubes long, 4 cubes wide and 6 cubes high. Cuboid B is 8 cubes long, 3 cubes wide and 4 cubes high. Which cuboid has the greater volume, and by how many cubic centimetres?

Diagram NOT accurately drawn

Cuboid A



Cuboid B



(3)

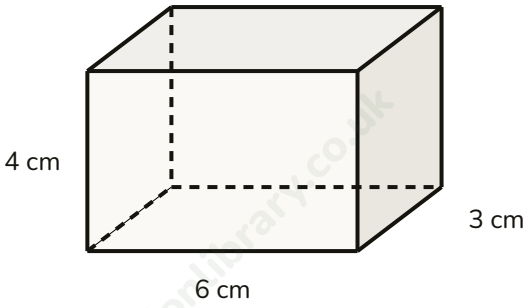
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12 A box is 6 cm long, 3 cm wide and 4 cm high. It is filled with 1 cm cubes.

How many cubes are needed to fill the box?

Answer: ___

Diagram NOT accurately drawn

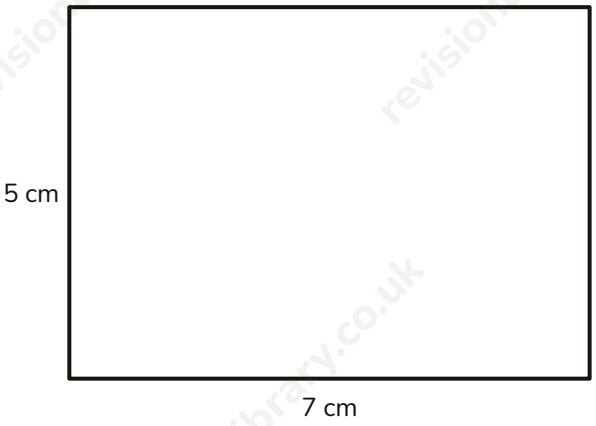


(2)

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13 Write down the perimeter of a rectangle with sides 7 cm and 5 cm.

Diagram NOT accurately drawn



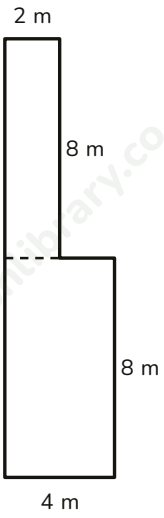
(1)

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14 An L-shape is made from two rectangles joined together. The first rectangle is 4 m by 8 m. The second is 2 m by 8 m.

What is the total area of the L-shape in square metres?

Answer: ___



(2)

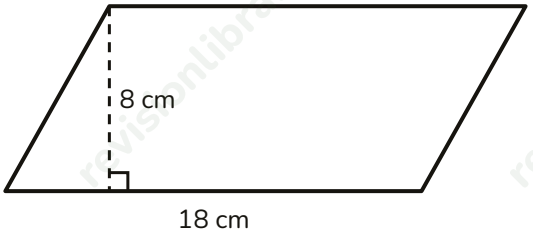
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15 A parallelogram has a base of 18 cm and a perpendicular height of 8 cm.

What is its area in square centimetres?

Answer: ___

Diagram NOT accurately drawn



(2)

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16 A classroom carpet is made from two rectangles joined along their short side. One rectangle is 4 m by 3 m, the other is 4 m by 2 m. Calculate the total area of the carpet.

(2)

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17 A tank is 50 cm long, 20 cm wide and 20 cm high.

How many litres of water does it hold when full? (1 litre = 1,000 cm cubed.)

Answer: ___ litres

(2)

---

18 A bottle holds 250 ml of squash. Freya fills glasses that each hold 125 ml.

How many glasses can be filled?

Answer: ___

(1)

---

19 A rectangle is 11 mm long and 15 mm wide.

What is its perimeter?

Answer: ___ mm

(2)

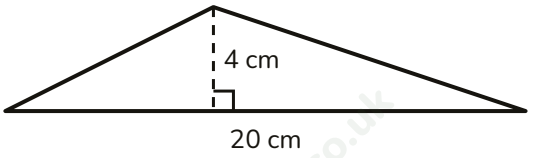
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20 A triangle has a base of 20 cm and a perpendicular height of 4 cm.

What is its area in square centimetres?

Answer: ___

Diagram NOT accurately drawn



(1)

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21 A square has sides of length 27 mm.

What is its perimeter?

Answer: ___ mm

Diagram NOT accurately drawn



(1)

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22 A rectangle is 24 mm long and 16 mm wide.

What is its area in square millimetres?

Answer: ___

(1)

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23 A rectangle has a perimeter of 102 m. Its length is 37 m.

What is its width?

Answer: ___ m

Diagram NOT accurately drawn



37 m

Perimeter = 102 m

(2)

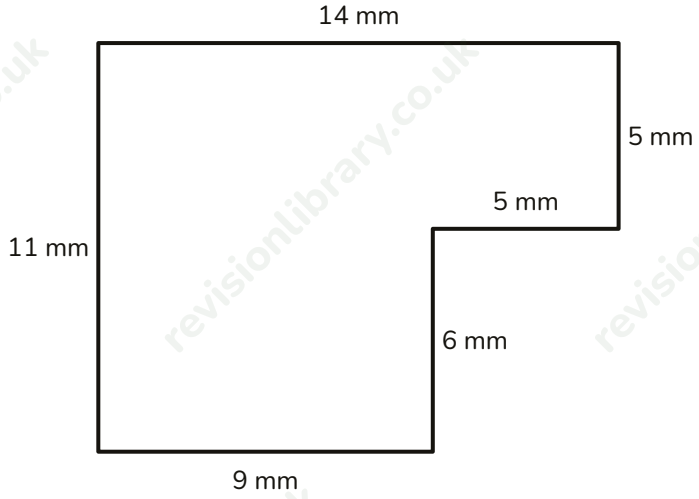
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24 An L-shaped floor has these sides in order around the shape: 14 mm, 5 mm, 5 mm, 6 mm, 9 mm, 11 mm.

What is the perimeter of the floor?

Answer: ___ mm

Diagram NOT accurately drawn

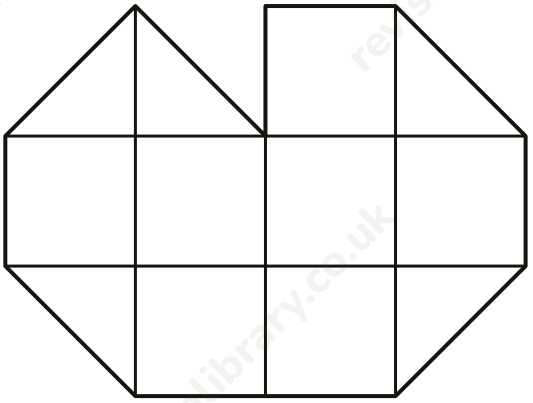


(2)

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25 Estimate the area of this irregular shape by counting full 1 cm by 1 cm squares and sensible halves.

The shape covers 7 full squares and 5 half squares.



(1)

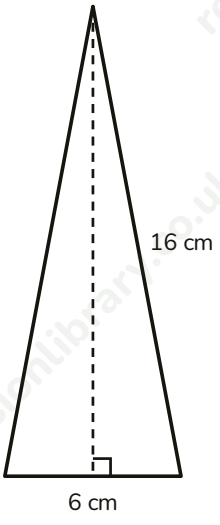
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26 A triangle has a base of 6 cm and a perpendicular height of 16 cm.

What is its area in square centimetres?

Answer: ___

Diagram NOT accurately drawn



(1)

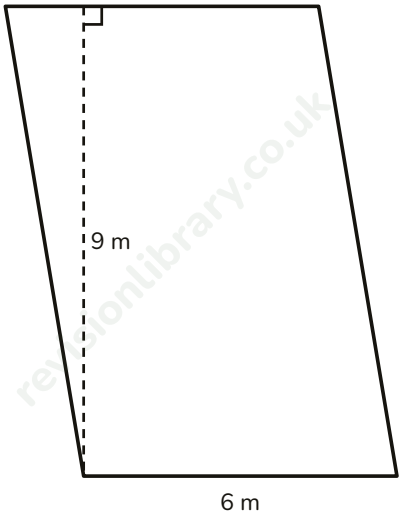
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27 A parallelogram has a base of 6 m and a perpendicular height of 9 m.

What is its area in square metres?

Answer: ___

Diagram NOT accurately drawn



(2)

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Mark scheme · 7.9 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

Multiply length by width or show 8 x 3 — M1
24 m² cao — B1
Answer: **24 m²**

Question 2

13 x 9 = 117 seen — M1
10 cm cao — A1
Answer: **10 cm**

Question 3

102 square metres cao — B1
Answer: **102 square metres**

Question 4

Find layer area 6 x 2 = 12 and multiply by 4 — M1
48 cao — B1
Answer: **48**

Question 5

base x height — M1
320 square centimetres cao — A1
Answer: **320 square centimetres**

Question 6

adds all six sides — M1
60 km cao — A1
Answer: **60 km**

Question 7

base x height — M1
28 square millimetres cao — A1
Answer: **28 square millimetres**

Question 8

Correct explanation and example, e.g. 6x4 and 8x3 both area 24 but perimeters 20 and 22 respectively, showing why perimeters differ — B1
Answer: **Example: 6 and 4 (area 24) and 8 and 3 (area 24); perimeters 20 and 22**

Question 9

14.5 cm² or 14.5 cao — B1
Answer: **14.5 cm²**

Question 10

area of the garden found: 10 x 6 = 60 (m2), or one quarter of 60 = 15 — M1
45 m² cao — A1
Answer: **45 m²**

Question 11

volume of cuboid A found: 5 x 4 x 6 = 120 — M1
volume of cuboid B found: 8 x 3 x 4 = 96 — M1
cuboid A, by 24 cm³ cao — A1
Answer: **Cuboid A, by 24 cm³**

Question 12

volume formula seen — M1
72 cao — A1
Answer: **72**

Question 13

24 cm cao — B1
Answer: **24 cm**

Question 14

finds the area of each rectangle — M1
48 square metres cao — A1
Answer: **48 square metres**

Question 15

base x height — M1
144 square centimetres cao — A1
Answer: **144 square centimetres**

Question 16

Correct area for each rectangle or method shown (4x3 and 4x2) — M1
20 m² cao — B1
Answer: **20 m²**

Question 17

20,000 cm cubed seen — M1
20 litres cao — A1
Answer: **20 litres**

Question 18

2 cao — B1
Answer: **2**

Question 19

adds all four sides or doubles l + w — M1
52 mm cao — A1
Answer: **52 mm**

Question 20

40 square centimetres cao — B1
Answer: **40 square centimetres**

Question 21

108 mm cao — B1
Answer: **108 mm**

Question 22

384 square millimetres cao — B1
Answer: **384 square millimetres**

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Question 23

102 - 74 = 28 seen	M1
14 m cao	A1

Answer: **14 m**

Question 24

adds all six sides	M1
50 mm cao	A1

Answer: **50 mm**

Question 25

9.5 cm² or 9.5 cao	B1

Answer: **9.5 cm²**

Question 26

48 square centimetres cao	B1

Answer: **48 square centimetres**

Question 27

base x height	M1
54 square metres cao	A1

Answer: **54 square metres**

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