Q1.

Calculate the volume of the prism.

(Not to scale)
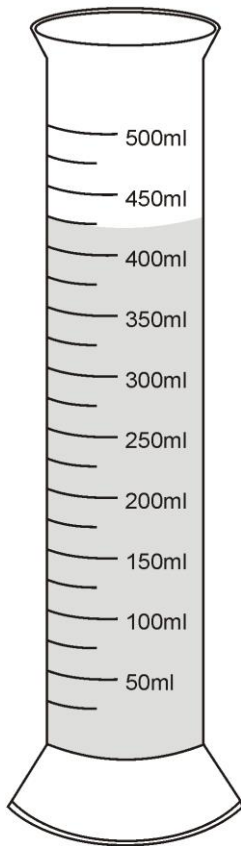

5 cm

3 cm

3 cm

4 cm
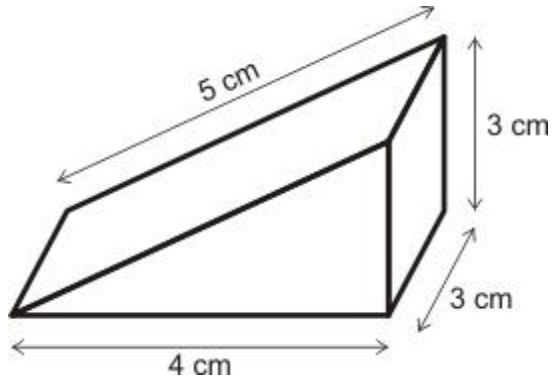
cm³

1 mark

Q2.

How much water is in this container?

┌────────────┐
│   ml │
└────────────┘
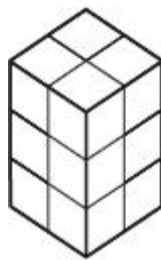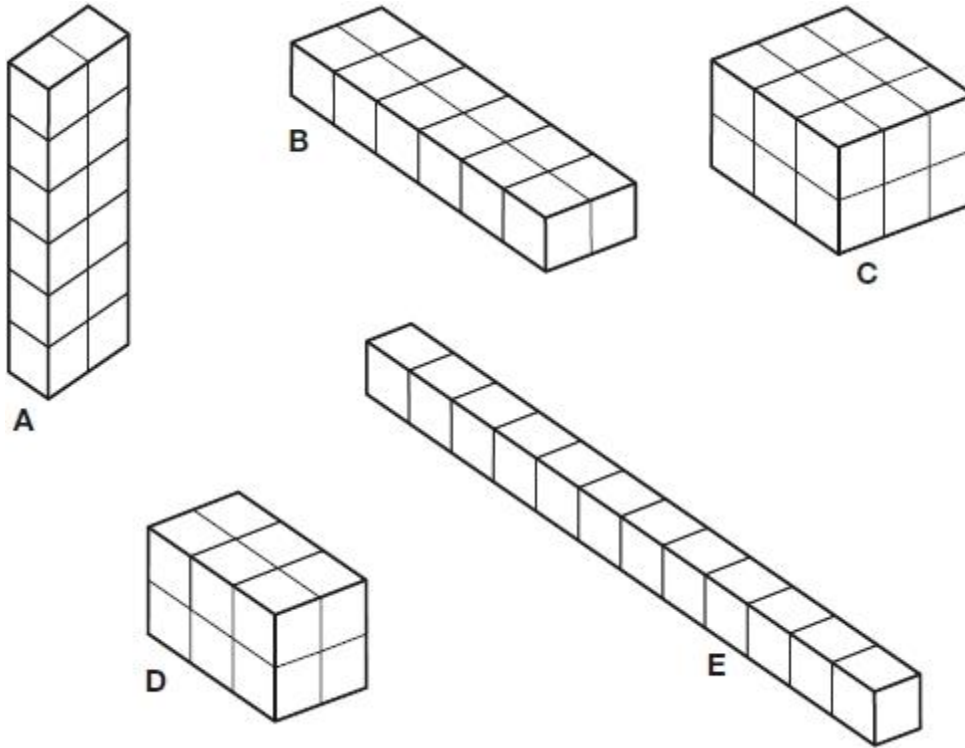
500ml
450ml
400ml
350ml
300ml
250ml
200ml
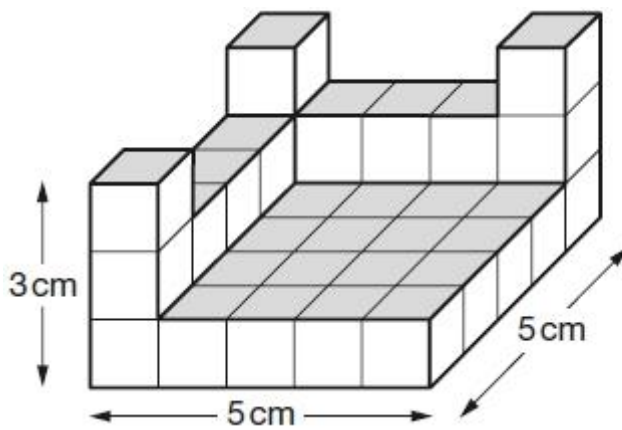150ml
100ml
50ml

1 mark

Q3.

Emma makes a cuboid using 12 cubes.

Write the letter of the cuboid that has a **different** volume from Emma's cuboid.

Q4.

This shape is made of wooden centimetre cubes.

Not actual size
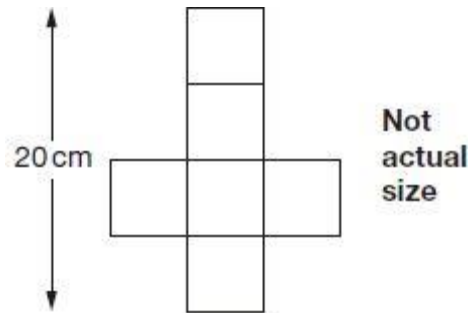
3 cm

5 cm

5 cm

How many **more** centimetre cubes are needed to make it into a solid cuboid 3 cm tall, 5 cm long and 5 cm wide?

Q5.

This is the net of a cube.

20 cm

Not actual size
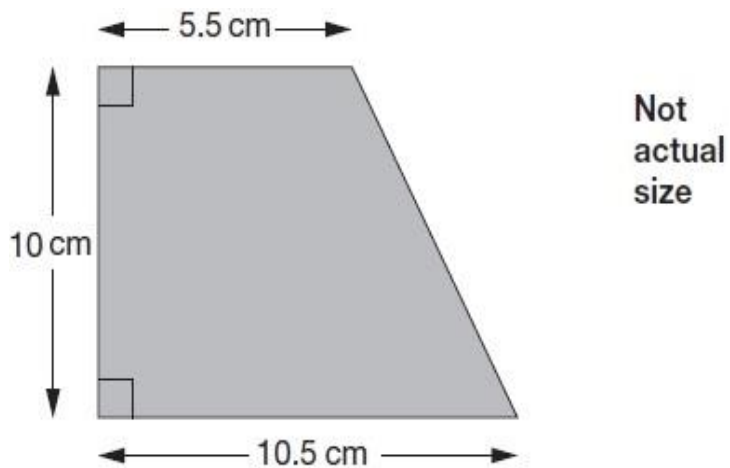
What is the **volume** of the cube?

cm³

1 mark

Q6.

Here is a trapezium with a height of 10 centimetres.

5.5 cm

Not actual size

10 cm

10.5 cm

The parallel sides are 5.5 cm long and 10.5 cm long.

Find the **area** of the trapezium.

cm²
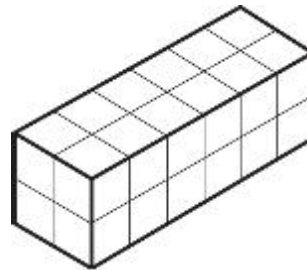
2 marks

Q7.

Cleo has **24** centimetre cubes.

She uses all 24 cubes to make a cuboid with dimensions **6** cm, **2** cm and **2** cm.

Write the dimensions of a **different** cuboid she can make using all 24 cubes.

_____ cm, _____ cm and _____ cm

1 mark

Jon has **20** centimetre cubes.

He wants to make a cube with edges that are **3** cm long.

How many **more** centimetre cubes does he need?

<table>
<tr><td></td><td>more</td></tr>
</table>

1 mark

Q8.

The two cuboids have the same volume.

Calculate the length x.

(Not to scale)

Show
your
method

<table>
<tr><td></td><td>cm</td></tr>
</table>

2 marks

Q9.

This cuboid is made from centimetre cubes.
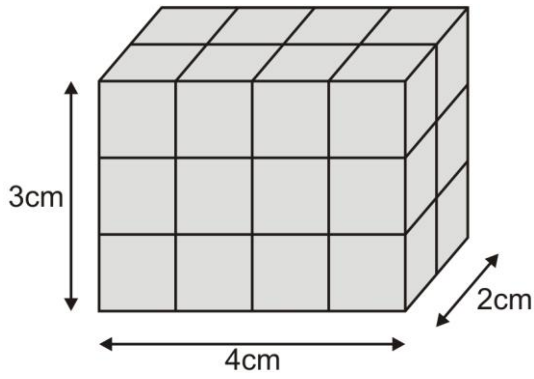
It is 4 centimetres by 3 centimetres by 2 centimetres.

What is the **volume** of the cuboid?

	cm

1 mark

Another cuboid is made from centimere cubes.

It has a volume of **30 cubic centimetres**.

What could the **length**, **height** and **width** be?

length
	cm³

height
	cm³

width
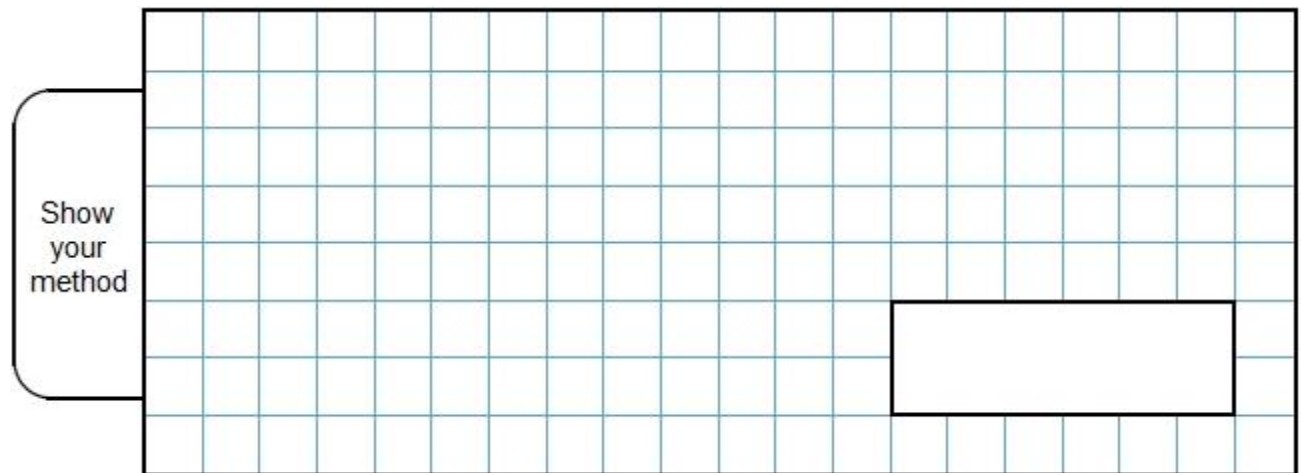|	
	cm³

1 mark

Q10.

Amit has some small cubes.
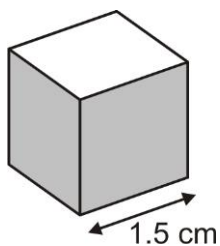
The edge of each cube is **1.5 centimetres.**

He makes a larger cube out of the small cubes.

The **volume** of this larger cube is **216 cm³.**

How many small cubes does he use?
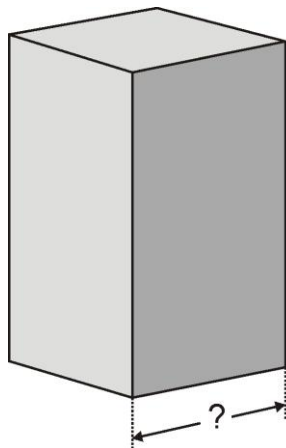
Show your method

2 mark

Q11.

A cuboid has a **square base**.

It is **twice as tall** as it is **wide**.

Its volume is **250 cubic centimetres**.

Not actual size

?

Calculate the **width** of the cuboid.
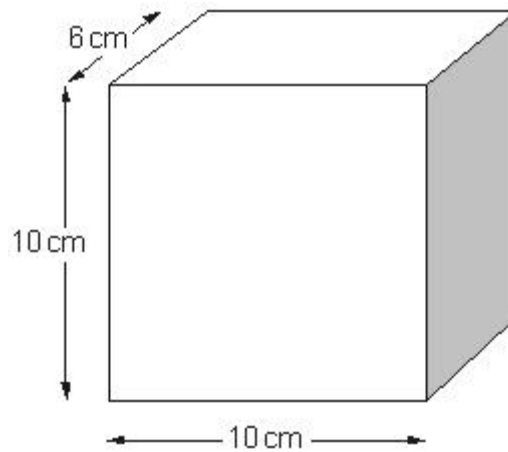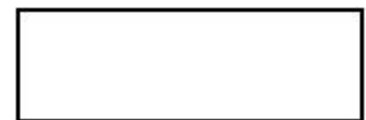
cm
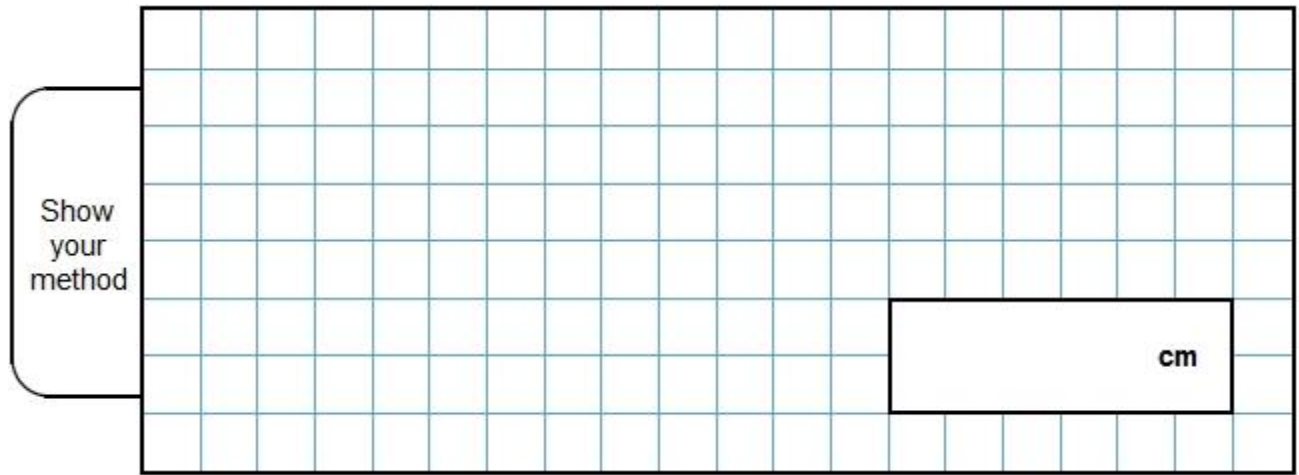
2 mark

Q12.

Volume

(a)   The diagram shows a cuboid.

6 cm

10 cm

10 cm

Not drawn accurately

What is the volume of this cuboid?

2 marks

(b)   The volume of a different cuboid is **half the volume** of the cuboid in part (a).

What could the **dimensions** of this different cuboid be?

_____ cm by _____ cm by _____ cm

1 mark

Mark schemes

Q1.

18 cm^3

[1]

Q2.

425 (ml)

[1]

Q3.

C

Accept 18.

[1]

Q4.

38

[1]

Q5.

125

[1]

Q6.

80

! Measures

2

or

Shows or implies a complete correct method, eg:

• $(10 \times 10.5) - (\frac{1}{2} \times 10 \times 5)$

• $\frac{1}{2}(5.5 + 10.5) \times 10$

• $(10 \times 5.5) + (\frac{1}{2} \times 10 \times 5) = 55 + 22.5$ (*error*)

1

[2]

Q7.

(a)   Gives three integers other than 2, 2, 6 (in any order) whose product is 24, eg:

- 1, 1, 24
- 1, 24, 1
- 1, 2, 12
- 1, 3, 8
- 1, 4, 6
- 2, 3, 4

  ! Non-integer(s) used

  As this shows understanding of volume, condone provided the three values given have a product of 24

  eg, accept
  - *1.5, 2, 8*

1

(b) 7

1

[2]

Q8.

5 cm

2

or

sight of 300(cm^3)
Or
Complete correct method, e.g.

- $5 \times 6 \times 10 \div 12 = 25$

  $\sqrt{25}$ = wrong answer

- $50 \div 2 = 25$

  $x \times x = 25$

  x = wrong answer

1

[2]

Q9.

(a) 24

1

(b) Any three numbers which multiply to make 30 (in any order), eg

length = 3

height = 5

width = 2

Other correct dimensions are:
30, 1, 1
15, 2, 1
10, 3, 1
6, 5, 1
Accept 7½, 2, 2

1

[2]

Q10.

Award **TWO** marks for the correct answer of 64

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

$216 = 6 \times 6 \times 6$
$6 \div 1.5 = 4$
number of cubes $= 4 \times 4 \times 4$
OR $1.5 \times 1.5 \times 1.5 = 3.375$
number of cubes $= 216 \div 3.375$

Calculation need not be completed for the award of the mark.

Up to 2

[2]

Q11.

Award **TWO** marks for the correct answer of 5 cm

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, eg

$2n \times n \times n = 250$

so

$n \times n \times n = 125$

*The calculation need not be completed for the award of the mark, but $n \times n \times n = 125$ **OR** $n^3 = 125$ must be reached.*

Up to 2

[2]

Q12.

(a)   Gives the correct volume, ie 600

1

Gives the correct units
eg

• cm^3

•   Cubic centimetres

!   The value of 600 is shown to the power 3

eg
- *600³*
- *600³cm*

Assume the power refers to the units, ie mark as 1, 0

Accept informal but unambiguous language

eg
- *Centimetres cubed*
- *Cube centimetres*
- *cc*

1

(b)   Gives three values that multiply to 300

eg

- 3 cm by 10 cm by 10 cm

- 6 cm by 5 cm by 10 cm

   Accept follow through as three values that multiply to half their volume for part (a)

   Accept fractions or decimals

1

[3]