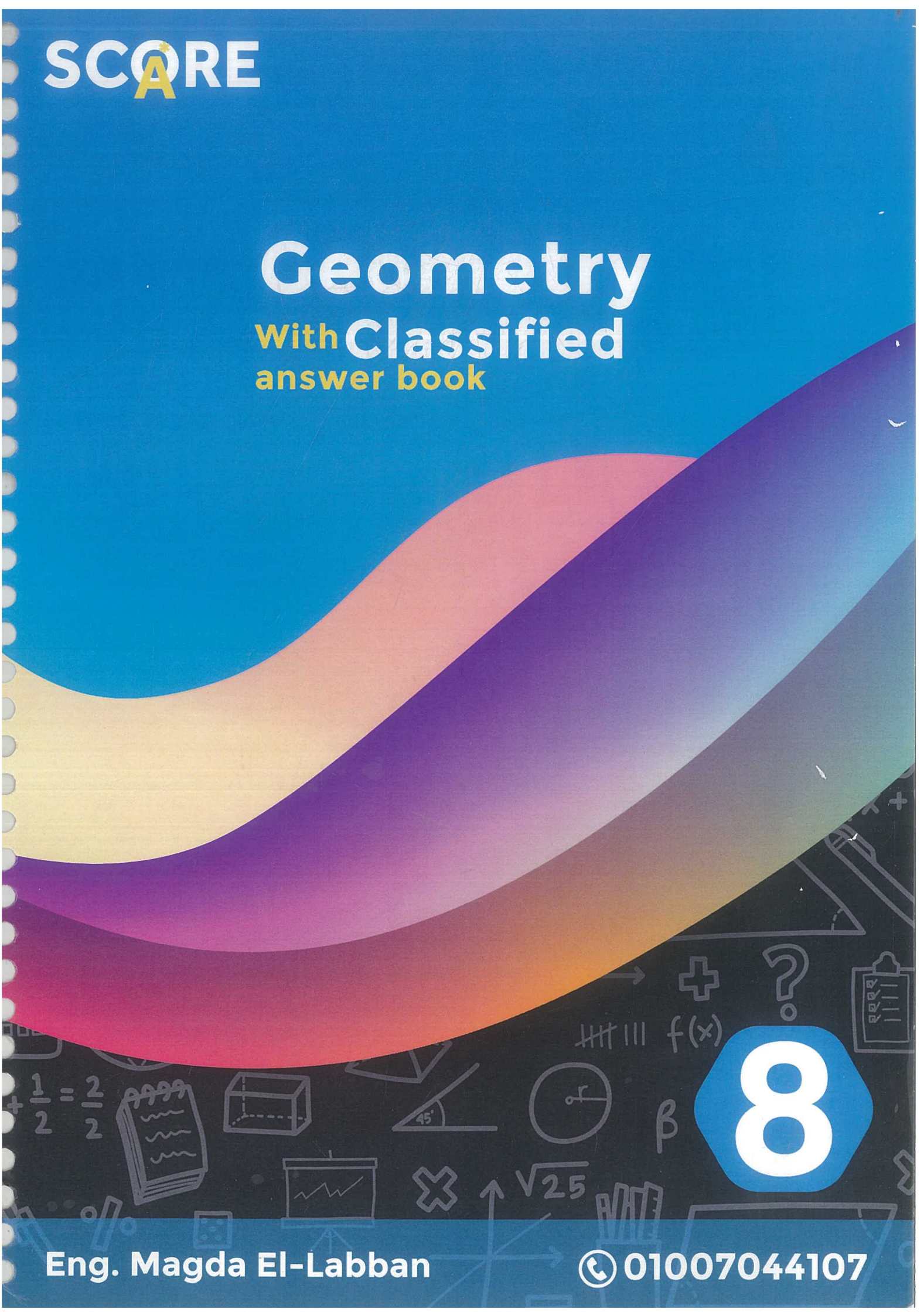
SCORE A

Geometry

With Classified answer book

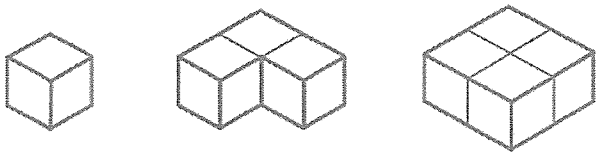


Eng. Magda El-Labban

01007044107

19- Volume

1. (a) Rita has these three shapes.



Volume: $1\,cm^3$

Volume: $3\,cm^3$

Volume: $4\,cm^3$

not drawn to scale

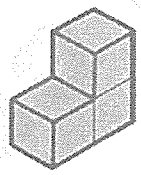
Rita can put her shapes together.

List all the possible volumes that Rita can make with **two** of her shapes. One is done for you.

. . . . . *5* . . . . . cm^3, ... cm^3, ... cm^3

(b) Jasmine has three shapes.

Shape 1

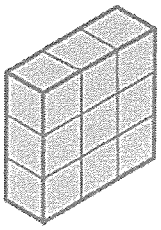


Shape 2

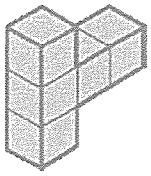
?

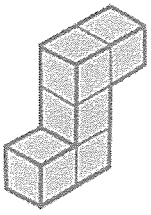
Shape 3

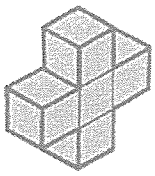
She puts all her shapes together to make this cuboid.

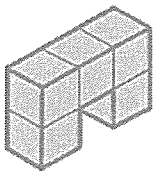


Which one of these shapes could have been Jasmine's third shape?Put a ring around it.









2. Each expression below represents either a length, an area or a volume.

a, b and c all represent lengths.

For each expression, tick (✓) the correct one.

The first one is done for you.

$2a + c$

☑ length ☐ area ☐ volume

$3ab$

☐ length ☐ area ☐ volume

$4a(b + c)$

☐ length ☐ area ☐ volume

a^2b

☐ length ☐ area ☐ volume

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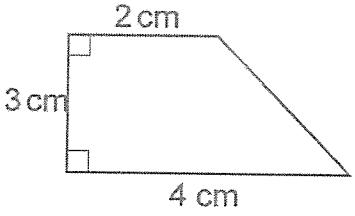
3. The cross-section of a prism is shown in the diagram.



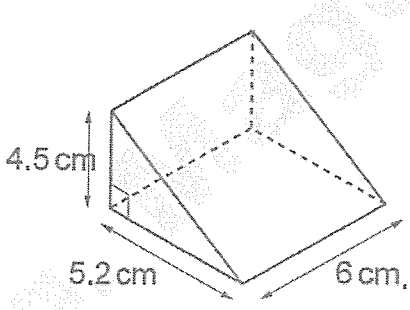
NOT TO SCALE

The prism has a length of 15 cm.

Calculate the volume of the prism.

..... cm^3

4. Here is a right angled triangular prism.



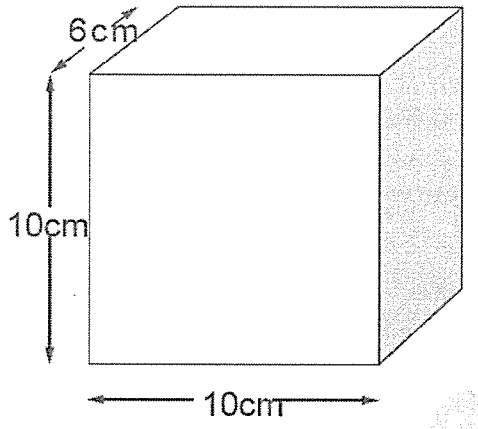
NOT TO SCALE

Put a ring around the correct working for the volume of this prism

$\frac{1}{2}(4.5 + 5.2) \times 6$ $4.5 \times 5.2 \times 6$ $4.5 \times 5.2 \times 6 \div 2$ $\frac{1}{3} \times 4.5 \times 5.2 \times 6$

5. The diagram shows a cuboid.

What is the volume of this cuboid?

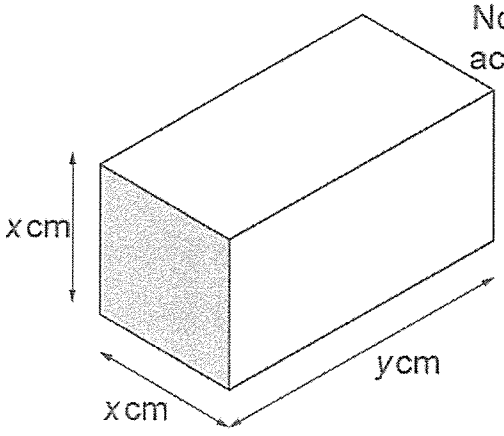


Not drawn accurately

.....

6. Look at the diagram of a cuboid.

The volume of the cuboid is $100cm^3$
What could the values of x and y be?Give two possible pairs of values.



Not drawn accurately

x = _____ y = _____

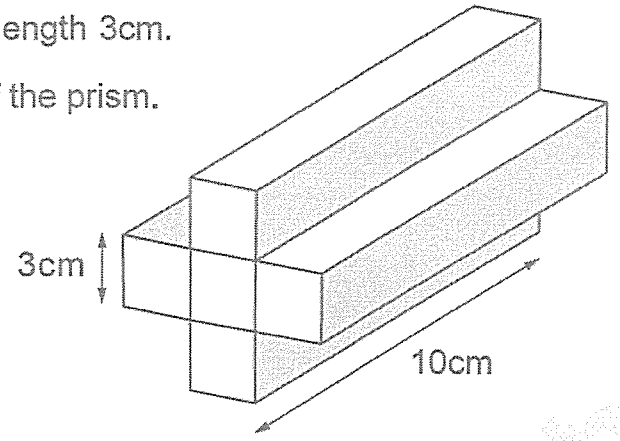
x = _____ y = _____

Emily Wang Tutorial

7. One face of another prism is made from 5 squares.

Each square has side length 3cm.

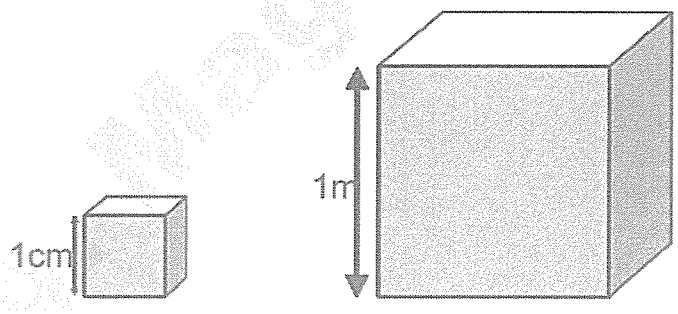
Work out the volume of the prism.



Not drawn accurately

_____ cm3

8. Look at the cubes.



NOT TO SCALE

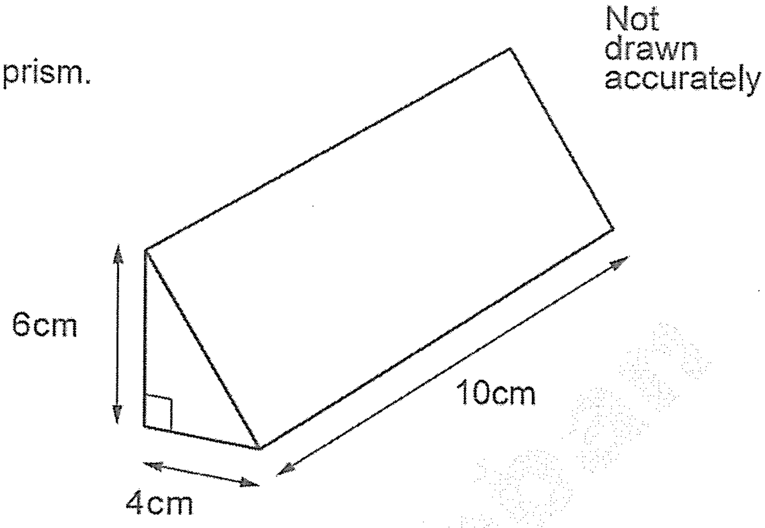
How many centimeter cubes will fit inside a metre cube?

.....

Free Maths Worksheets

9. Look at the triangular prism.

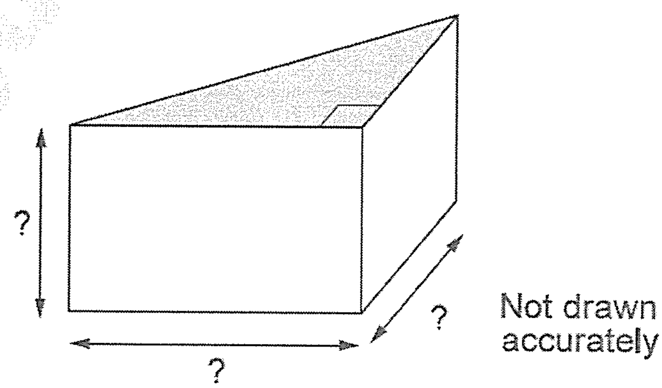
Work out the volume of the prism.



_______ cm3

10. A prism has a cross-section that is a right-angled triangle.

Its volume is **100 cm^3**



What could the dimensions of this prism be?

.... cm by .... cm by .... cm

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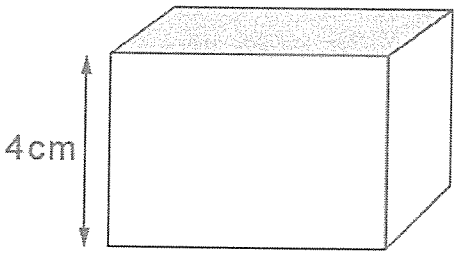
11. (a) The height of a cuboid is **4cm**.

The volume of the cuboid is **100cm^3**

What is the area of the shaded face?



Not drawn accurately

..... cm^2

(b) The volume of another cuboid is **100cm^3**
None of its dimensions is 4cm.

What could the dimensions of this cuboid be?

..... cm by ..... cm by ..... cm

(c) 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?

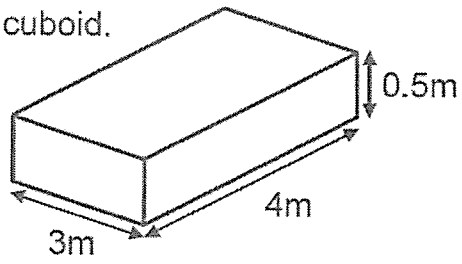
..... cm by ..... cm by ..... cm

12. (a) Jude has a fish pond in the shape of a cuboid.

It is 3m wide, and 4m long.

The water is 0.5m deep.

Calculate the volume of the water in m3



not drawn to scale

. . . . . m^3

(b) 1m3 = 1000 litres

How many litres of water are there in Jude's pond?

. . . . . litres

(c) The water in the pond has turned green.

Jude buys a bottle of Green Water Treatment.

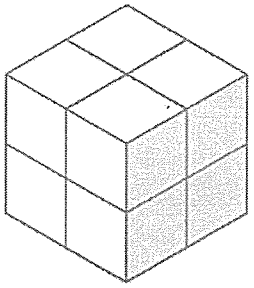
Look at the instructions.

Green Water Treatment
Instructions
Use 10 millilitres of Green Water Treatment for every 300 litres of pond water.

How much Green Water Treatment should Jude use for the pond?Remember to write the units.

. . . . . .

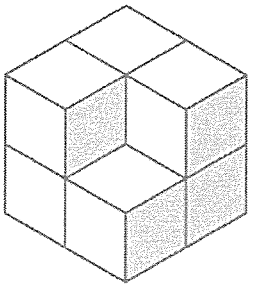
13. (a) Eight small cubes of side length 1cm are used to make a larger cube.



Complete the table to show the information for the larger cube.

Larger cube	
Volume	_____
Surface area	_____
Total length of its edges	_____

(b) One of the small cubes is removed to make this new shape.

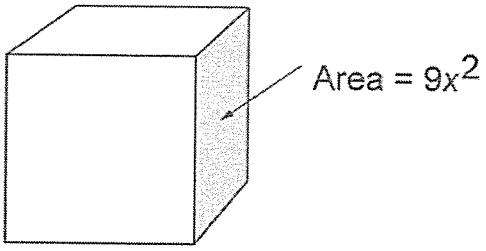


Tick (✓) the correct box in each row below.

	Has increased	Has stayed the same	Has decreased
Volume			
Surface area			
Total length of its edges			

14. Look at the cube.

The area of a **face** of the cube is $9x^2$



(a) Write an expression for the **total surface area** of the cube.
Write your answer as simply as possible.

_____

(b) Write an expression for the **volume** of the cube.
Write your answer as simply as possible.

_____

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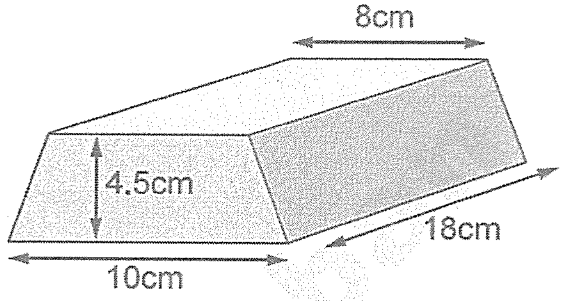
15. The diagram shows a bar of gold.

a Work out the volume of gold in the bar.



b 1 cm^3 of gold has a mass of 19 grams. Work out the mass of the gold bar in grams.

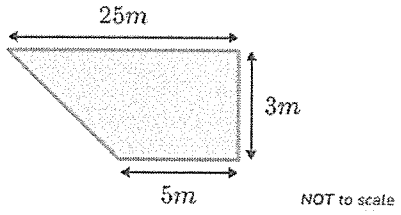
c The value of gold changes with time.
When Alicia bought this bar of gold, the value of gold was$35 per gram. She sold the bar of gold when the value of gold was $42 per gram. How much money did Alicia make?

16. (a) Cube A has a cross sectional area of $64cm^2$.

Calculate the volume of Cube A. .....cm^3

(b) Cube B has a volume of 216 cm^3 .
Calculate the surface area of Cube B.
State the units in your answer. .....

17. (a) Below is a sketch of the cross section of a swimming pool. ..... m^3



If the pool is 10m wide, what volume of water will fill the swimming pool? Write your answer in cubic meters

(b) If 1litres = 0. 001 m^3, how many litres of water are in the swimming pool? .....litres

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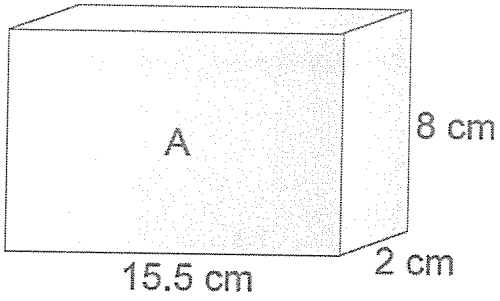
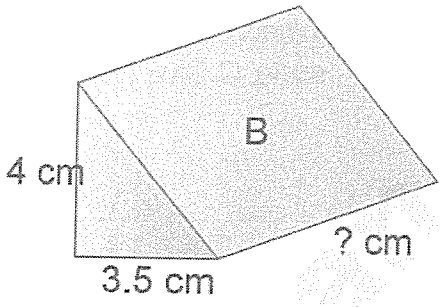
18. San drew these shapes.





a) Find the volume and surface area of shape A.

c) The volume of shape B is 39 cm^3. Find the missing length.

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