

## Maths Planning and Ideas



**Week Commencing: 29.06.20**

**Year Group: Year 6**

**This week, we are going to be revisiting some of the key learning that the children will need as they prepare for their next year of schooling. This may mean that they are consolidating learning that they already understand or are perhaps having another go at some of the trickier topics. The subject areas may also jump around a little but this sequence of lessons has been put together in order to support our oldest children as much as possible before they head to secondary school.**

|                         | Monday   | Tuesday  | Wednesday  | Thursday  | Friday  |
|-------------------------|--|--|--|---|---|
| <b>Area of Learning</b> | <b>Arithmetic</b><br><br>LC: Can you review your arithmetic understanding?   | LC: Can you find the area and perimeter of simple shapes?  | LC: Can you find the area of a triangle?   | LC: Can you find the area of a parallelogram?   | LC: Can you find the volume of a cuboid?  |
|                         | <p>For these lessons, we will be using the Home Learning Section of the White Rose Maths Scheme and website:<br/> <a href="https://whiterosemaths.com/homelearning/year-6/">https://whiterosemaths.com/homelearning/year-6/</a></p> <p>Each day there will be a short video to watch and activities to complete, which will be provided below. The dates of these lessons may not match the date that chn are completing the work so please check to make sure that you have selected the correct lesson, shown in <b>green</b> on this plan.</p> <p><b>Please note that for this week, activities will be from the wb 22.06.20 on the White Rose website, as we are revisiting some key areas of learning.</b></p> <p>Any problems, just let Mrs Shepherd know!</p> |  |  |   |   |
| <b>Activity</b>         | Starter: Complete the 10 mental maths questions for Monday (provided below)  | Starter: Complete the 10 mental maths questions for Tuesday (provided below)<br><br><b>Main Activity</b> | Starter: Complete the 10 mental maths questions for Wednesday (provided below)<br><br><b>Main Activity</b> | Starter: Complete the 10 mental maths questions for Thursday (provided below)<br><br><b>Main Activity</b> | Starter: Complete the 10 mental maths questions for Friday (provided below)<br><br><b>Main Activity</b> |

### Main Activity

How did you all do with last week's challenge? Did you manage to reward yourself for an improved score? I really hope you did, but if not, there is another chance again this week.

Can you predict your score before you complete the test? Set yourself a new reward scheme – if you are within 3 marks of your guess, reward yourself with A. If you are within 5 marks, reward yourself with B. Got the idea? Let's try to make this as fun as we can!

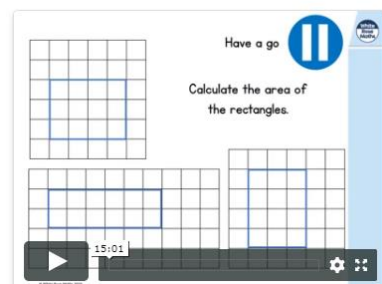
### Independent Activity

Complete the arithmetic test linked below:  
<https://myminimaths.co.uk/year-6-arithmetic-practice-papers/>  
Please complete **Paper 7**.

Watch the video for **Summer Term Week 9 (wb 22.06.20)**

– **Lesson 1** to revise your understanding of area and perimeter:

#### Lesson 1 - Area and perimeter



### Independent Activity

Area and perimeter are two areas that we looked at more recently but that still seem to catch people out – don't forget you measure the outside of the shape to find the perimeter, and multiply 2 sides to find the area inside.

It is also important to remember that you can work in reverse too:

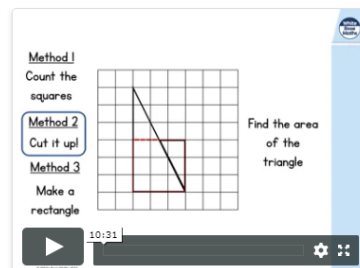
If I know the perimeter by adding, can I use subtraction to find a missing length?

If I used multiplication to find the area, can I use division to find the missing side when I already have the area?

Watch the video for **Summer Term Week 9 (wb 22.06.20)** – **Lesson 2**

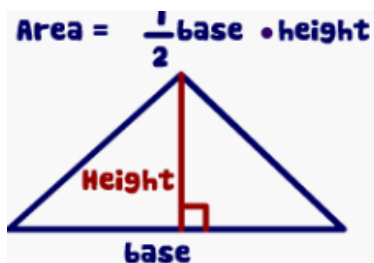
to show you how to use a given formula to find the area of a triangle:

#### Lesson 2 - Area of triangles



### Independent Activity

When we originally studied this in class, we introduced you all to a formula:



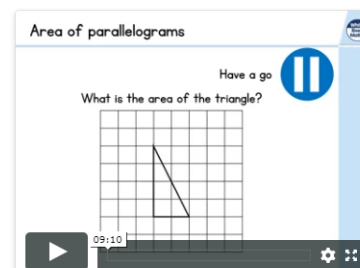
Or, base x height, divided by 2!

The reason for this, is because you are finding half the area of a square or rectangle, which we know we calculate by multiplying base and height.

Watch the video for **Summer Term Week 9 (wb 22.06.20)** – **Lesson 3**

to recap our previous work on finding the area of a parallelogram:

#### Lesson 3 - Area of parallelograms



### Independent Activity

Although this may seem hard on the surface, the solutions are often much simpler than you think!

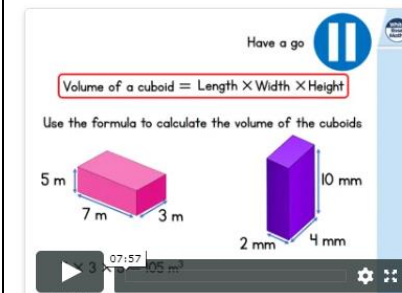
It is often useful here to think about the other shapes that you can make from a parallelogram if you are having a hard time envisioning one – your work on area of triangle will prove useful here too.

Have a go at the questions below – some will be harder than others.

Watch the video for **Summer Term Week 9 (wb 22.06.20)**

– **Lesson 4** to find out about the link between area and volume:

#### Lesson 4 - Volume of cuboids



### Independent Activity

Volume is an area that we have not looked at for a while but have covered in previous years. It requires you to make links with the work you have already completed on area – only this time, you are dealing with 3D, rather than 2D, shapes.

It might be useful to find some 3D objects around the house to help you with this session – seeing it in concrete form can often help you to see the problem more clearly. A cardboard box would be great for this!

Have a go at the questions below – some will be harder than others.

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  | <p>You should aim to give yourself between 35-40mins to complete the paper. The answers are also provided so that you can mark your work...but no sneak peaks beforehand please! 😊</p> | <p>These inverse operations are vital to your understanding, as is your knowledge of times tables facts and number bonds.</p> <p>Have a go at the questions below – some will be harder than others.</p> | <p>Understanding and remembering this formula will be crucial as you move into Year 7 but it can be tricky to apply it to more abstract problems.</p> <p>Have a go at the questions below – some will be harder than others.</p> |  |  |
|--|--|--|--|--|--|

### **Starter Activities**

| <b>Monday</b>   | <b>Tuesday</b>   | <b>Wednesday</b>  | <b>Thursday</b>   | <b>Friday</b>   |
|---|--|---|---|---|
| 1. $8 \times 5 \times 9$                                | 11. $12 \times 3 \times 4$                               | 21. $6 \times 2 \times 7$                                 | 31. $11 \times 5 \times 4$                              | 41. $9 \times 8 \times 7$                                 |
| 2. $14 \times ? = 98$                                   | 12. $22 \times ? = 110$                                  | 22. $52 \times ? = 416$                                   | 32. $67 \times ? = 201$                                 | 42. $44 \times ? = 264$                                   |
| 3. $61.2 \div 100$                                      | 13. $4.7 \div 10$  | 23. $951 \div 100$  | 33. $1658.7 \div 1000$                                  | 43. $0.12 \div 10$  |
| 4. Which is smaller - 0.19 or 1.9%?                     | 14. Which is smaller - 5% or 0.5?                        | 24. Which is smaller - 48% or 0.408?                      | 34. Which is smaller - 0.71 or 7.1%?                    | 44. Which is smaller - 92% or 0.092?                      |
| 5. Write 11/100 as a decimal                            | 15. Write 60/100 as a decimal                            | 25. Write 33/100 as a decimal                             | 35. Write 2/100 as a decimal                            | 45. Write 10/100 as a decimal                             |
| 6. Write 0.35 as a fraction                             | 16. Write 0.07 as a fraction                             | 26. Write 0.29 as a fraction                              | 36. Write 0.80 as a fraction                            | 46. Write 0.623 as a fraction                             |
| 7. $2.13 \div 3$  | 17. $2.8 \div 8$   | 27. $1.68 \div 4$   | 37. $4.83 \div 7$                                       | 47. $3.36 \div 4$   |
| 8. $12^{\circ}\text{C}$ colder than $4^{\circ}\text{C}$ | 18. $15^{\circ}\text{C}$ colder than $2^{\circ}\text{C}$ | 28. $7^{\circ}\text{C}$ colder than $-10^{\circ}\text{C}$ | 38. $5^{\circ}\text{C}$ colder than $1^{\circ}\text{C}$ | 48. $6^{\circ}\text{C}$ colder than $-33^{\circ}\text{C}$ |
| 9. Difference between 84 and 15                         | 19. Difference between 129 and 38                        | 29. Difference between 424 and 189                        | 39. Difference between 887 and 509                      | 49. Difference between 1156 and 789                       |
| 10. $4800 \div 400$                                     | 20. $3200 \div 400$                                      | 30. $1600 \div 400$                                       | 40. $1200 \div 400$                                     | 50. $4400 \div 400$                                       |

**If you cannot print off these questions, please don't worry – simply have a go at writing the calculations and answers in your book or on a piece of paper!**

**Monday 29.06.20**

**Arithmetic Paper available to download using link provided**

**Tuesday 30.06.20**

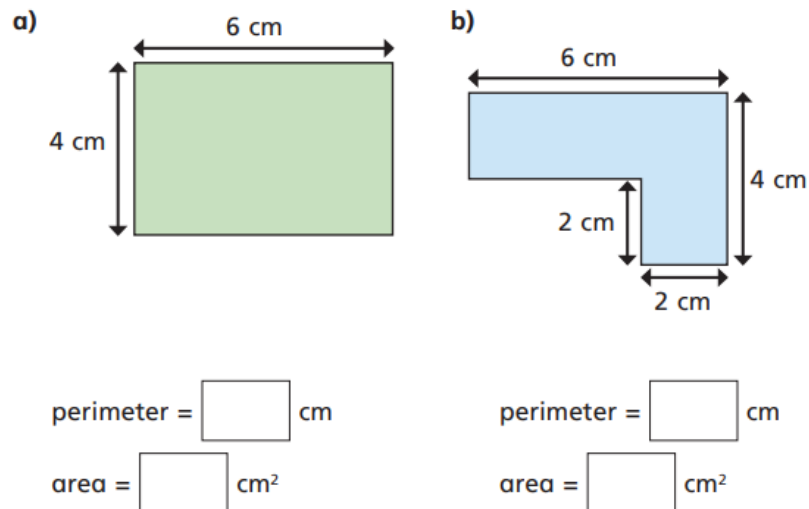
- 1 Use the words to complete the sentences.

perimeter  $\text{cm}^2$  cm m  
area  $\text{m}^2$  inside around

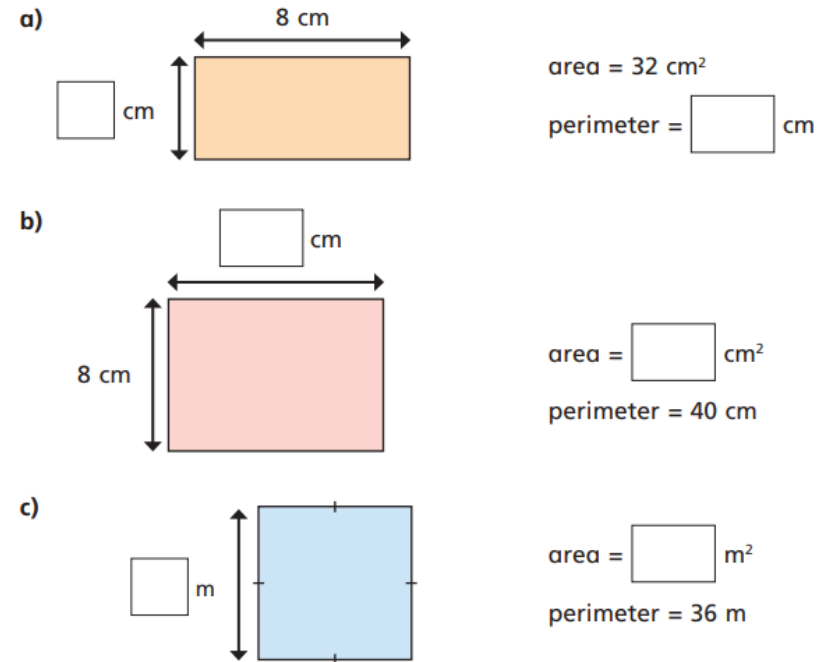
\_\_\_\_\_ is the amount of space \_\_\_\_\_ a two-dimensional shape. It can be measured in units such as \_\_\_\_\_ or \_\_\_\_\_

\_\_\_\_\_ is the distance \_\_\_\_\_ a two-dimensional shape. It can be measured in units such as \_\_\_\_\_ or \_\_\_\_\_

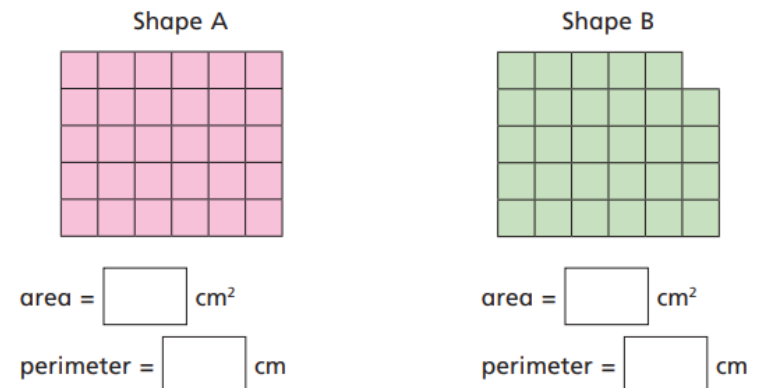
- 2 Work out the areas and perimeters of the shapes.



- 3 Work out the missing values.



- 4 Work out the areas and perimeters of the shapes.



What do you notice?

5



Tommy

If you start with a rectilinear shape, when you increase the area, the perimeter will increase.

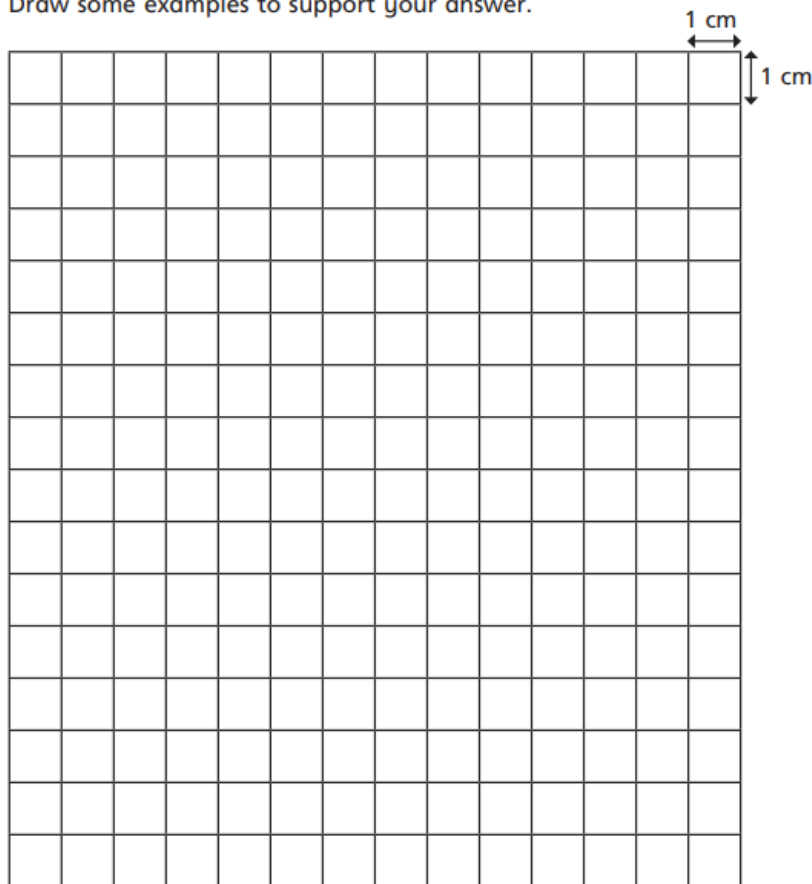
Amir



It depends on the shape.

Who do you agree with? \_\_\_\_\_

Draw some examples to support your answer.

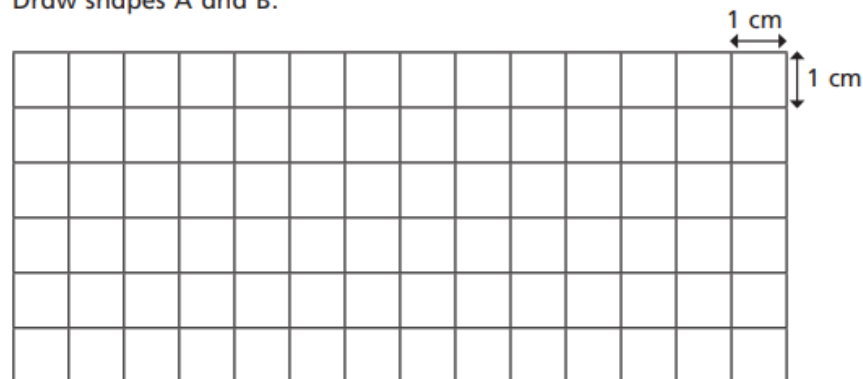


6

Two rectilinear shapes, A and B, each have an area of 12 squares.

- Shape A has the largest perimeter possible.
- Shape B has the smallest perimeter possible.

Draw shapes A and B.



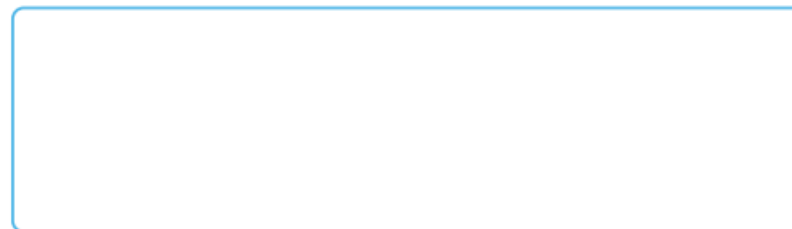
What do you notice?

7

Mr Jones has 50 m of fencing.

He wants to make a rectilinear enclosure using all the fencing.

- a) Draw an example of a shape he could make. Give units on your diagram.



- b) What is the greatest possible area of the enclosure?

- c) What is the smallest possible area of the enclosure?

### Extension Challenges

The area of a rugby pitch is 6,108 square metres.

A football pitch measures 112 metres long and 82 metres wide.

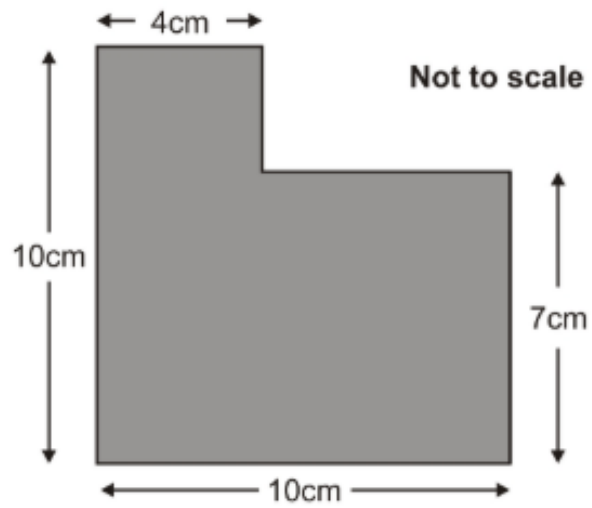
How much larger is the area of the football pitch than the area of the rugby pitch?

Show  
your  
method

square metres

3 marks

What is the **area** of this shape?



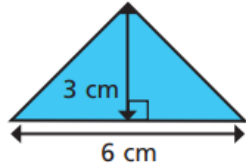
Show your method

$\text{cm}^2$

2 marks

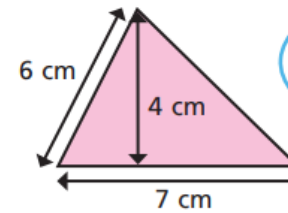
**Wednesday 01.07.20**

- 1 Calculate the area of the triangle.



area =  cm<sup>2</sup>

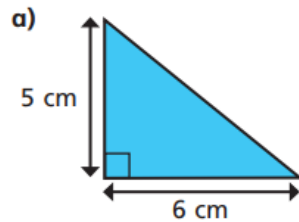
- 3 What mistake has Dora made?



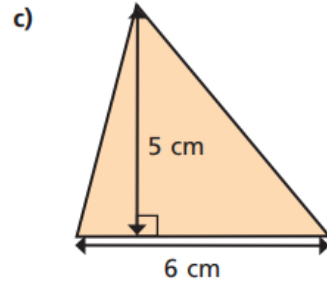
To find the area you do  
 $7 \times 6 \div 2 = 21 \text{ cm}^2$



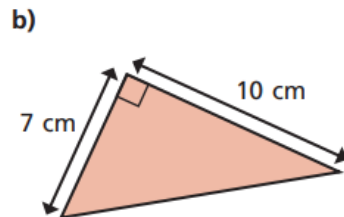
- 2 Calculate the area of the triangles.



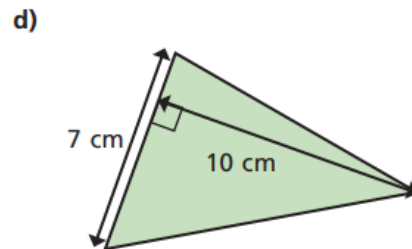
area =  cm<sup>2</sup>



area =  cm<sup>2</sup>

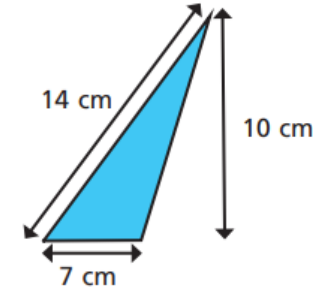
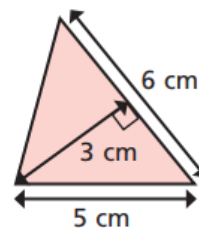
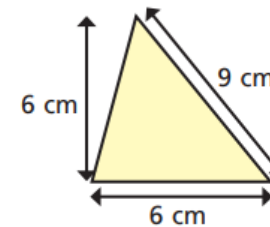
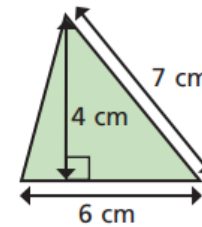


area =  cm<sup>2</sup>



area =  cm<sup>2</sup>

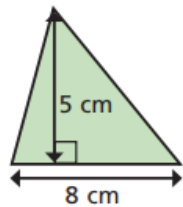
- 4 Label the base of each triangle  $b$ .  
Label the perpendicular height  $h$ .



6

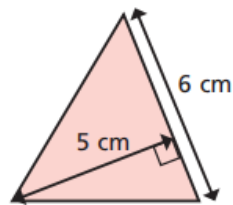
Calculate the area of the triangles.

a)



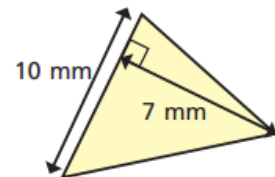
$$\text{area} = \boxed{\phantom{00}} \text{ cm}^2$$

b)



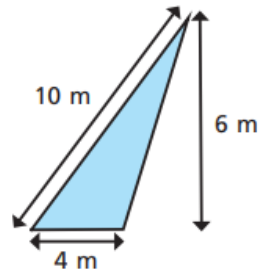
$$\text{area} = \boxed{\phantom{00}} \text{ cm}^2$$

c)



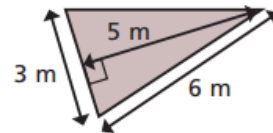
$$\text{area} = \boxed{\phantom{00}} \text{ mm}^2$$

d)



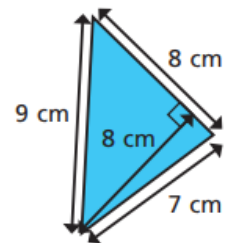
$$\text{area} = \boxed{\phantom{00}} \text{ m}^2$$

e)



$$\text{area} = \boxed{\phantom{00}} \text{ m}^2$$

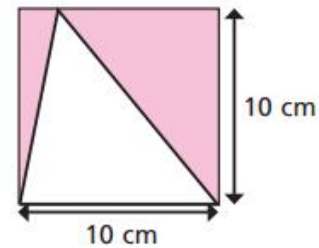
f)



$$\text{area} = \boxed{\phantom{00}} \text{ cm}^2$$

7

Find the area of the shaded region.

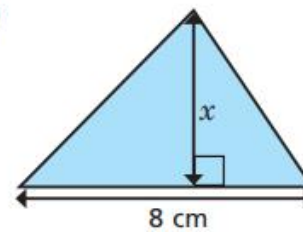


$$\text{area} = \boxed{\phantom{00}} \text{ cm}^2$$

8

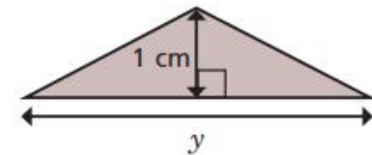
The area of each triangle is  $12 \text{ cm}^2$ . Find the missing lengths.

a)



$$x = \boxed{\phantom{00}} \text{ cm}$$

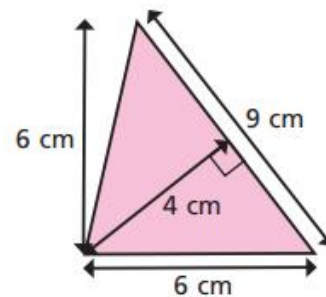
b)



$$y = \boxed{\phantom{00}} \text{ cm}$$

9

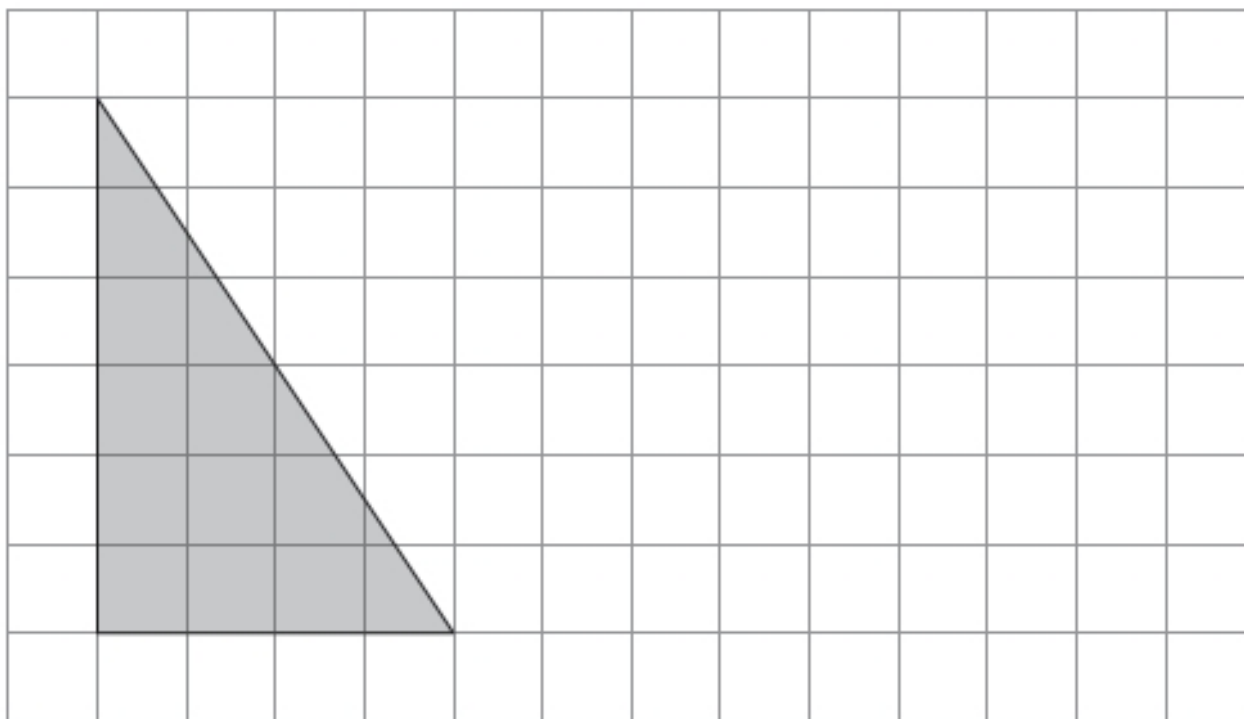
Show two ways you can work out the area of the triangle.



### Extension Challenges

Draw a rectangle on the grid that has **half** the area of the shaded triangle.

Use a ruler.



1 mark

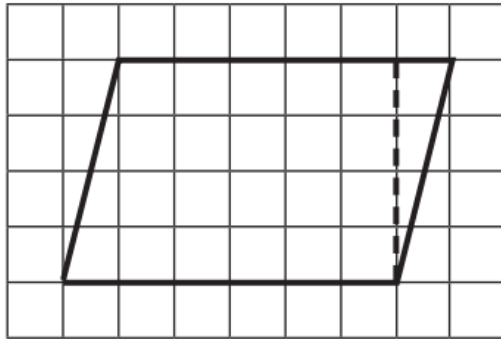
Diagram of a rectangle with a shaded triangle. The rectangle has a width of 10cm and a height of 6cm. A triangle is shaded with its base on the bottom side, extending 4cm from the left corner, and its vertex at the top-right corner. The text "Not actual size" is to the right.

Show your method

$\text{cm}^2$

**Thursday 02.07.20**

- 1 On a piece of squared paper, copy this parallelogram and cut it out.



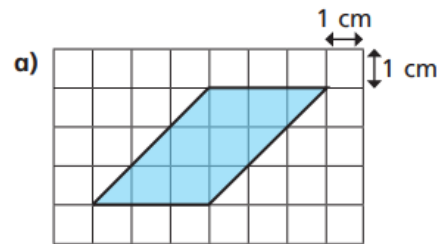
- a) Create a rectangle by cutting off the right-angled triangle and moving it.

- b) Complete the sentences.

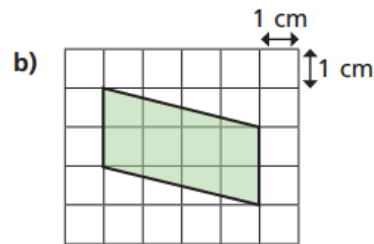
The area of the rectangle is  squares.

The area of the parallelogram is  squares.

- 2 Calculate the areas of the parallelograms.

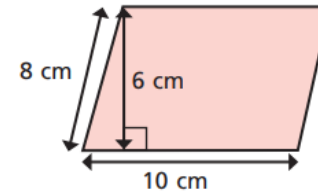


area =  cm<sup>2</sup>



area =  cm<sup>2</sup>

- 3 Huan is finding the area of the parallelogram.



$$10 \times 8 = 80 \text{ cm}^2$$

- a) What mistake has Huan made?

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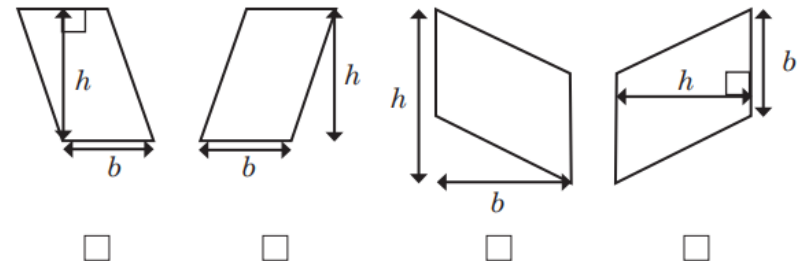
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- b) What is the correct answer?

area =  cm<sup>2</sup>

- 4 Esther has labelled the bases and heights for four parallelograms.

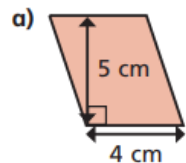
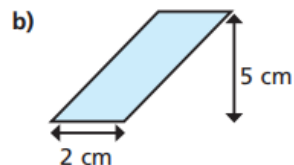
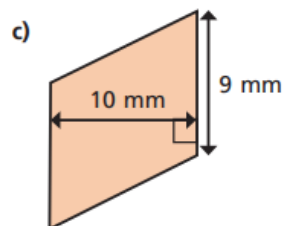
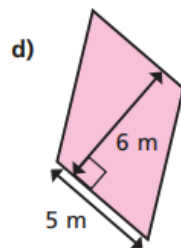
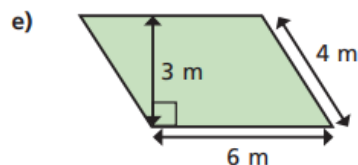
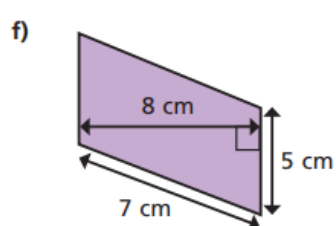
Three are correct; one is incorrect. Tick the shapes that have been correctly labelled.



Explain to a partner why one is incorrect.

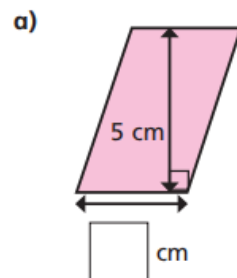
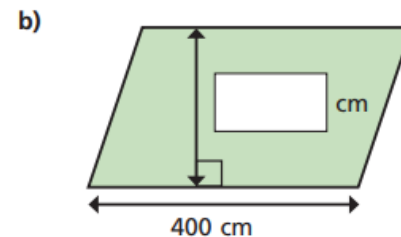
5

Calculate the areas of the parallelograms.

area =  cm<sup>2</sup>area =  cm<sup>2</sup>area =  mm<sup>2</sup>area =  m<sup>2</sup>area =  m<sup>2</sup>area =  cm<sup>2</sup>

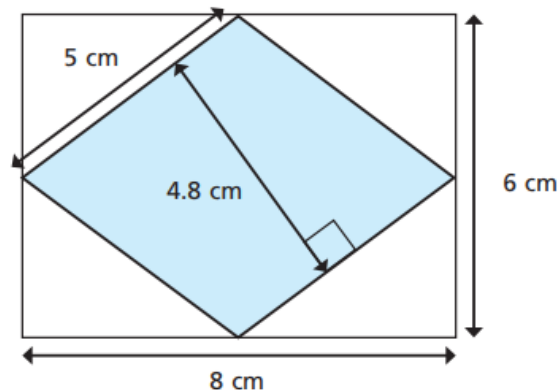
6

Find the missing lengths.

area = 15 cm<sup>2</sup>area = 12 m<sup>2</sup>

7

Here is a rhombus inside a rectangle.



a) Calculate the area of the rhombus.

area =  cm<sup>2</sup>

b)

The area of the rhombus is half the area of the rectangle. This means that it is a special triangle.



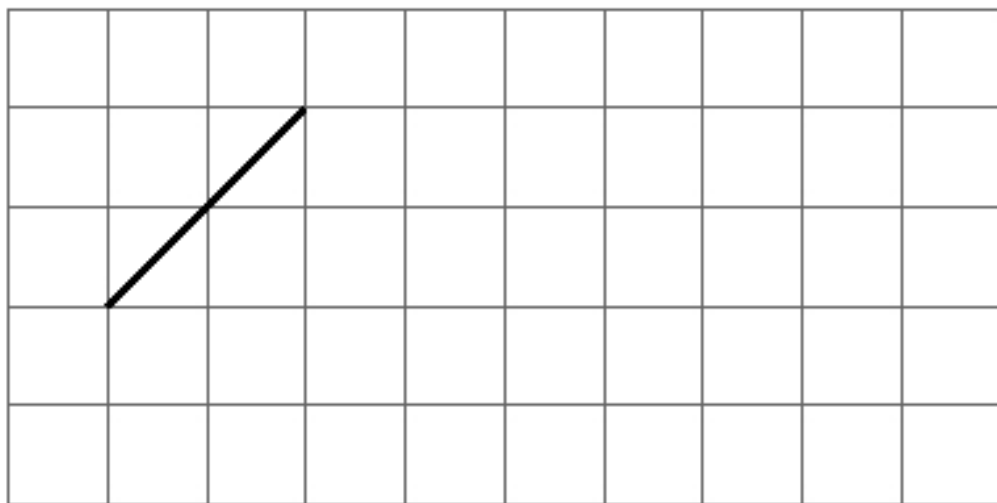
Explain to a partner why Mo is wrong.

### Extension Challenges

This is a centimetre grid.

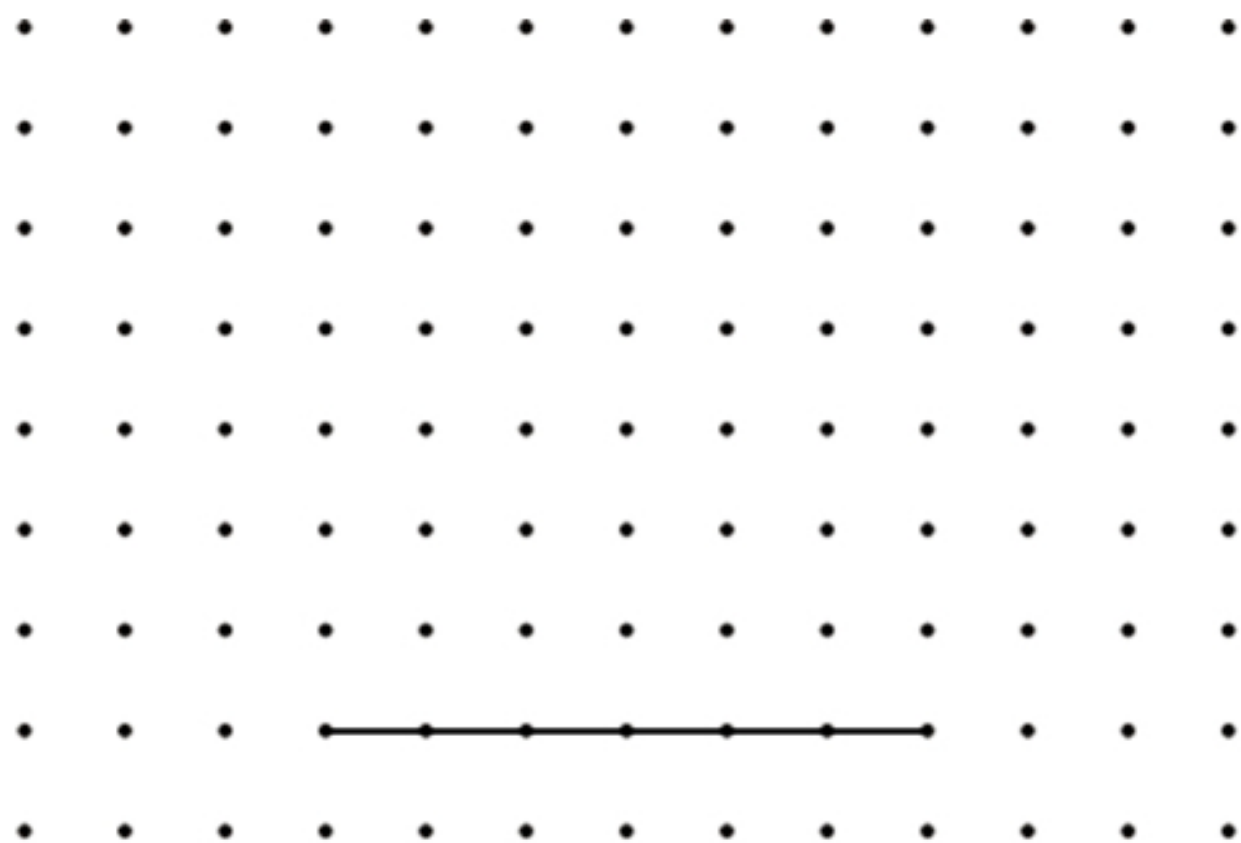
Draw **3 more lines** to make a **parallelogram** with an **area of  $10 \text{ cm}^2$** .

Use a ruler.



1 mark

Draw three more lines to complete the parallelogram with an **area** of  $24\text{ cm}^2$

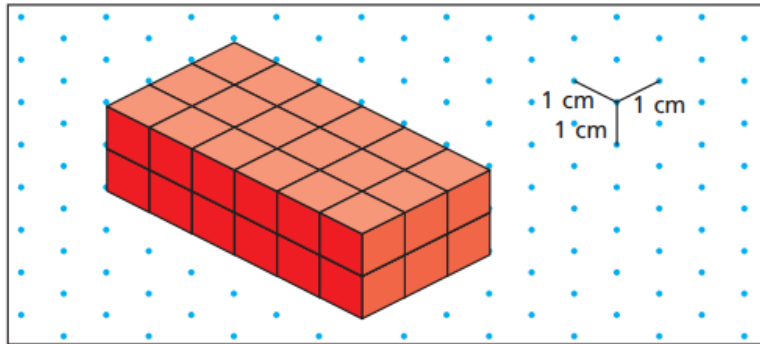


1 mark

(not to scale)

**Friday 03.07.20**

- 1 Here is a cuboid made up of cubes.

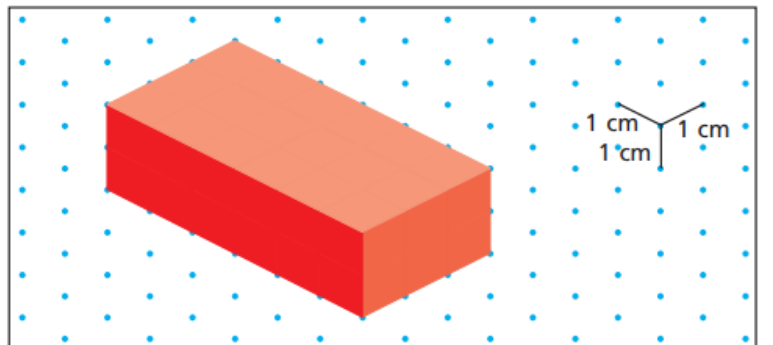


- a) What is the volume of the cuboid?

volume =  cm<sup>3</sup>

- b) Explain your method for finding the volume.

- c) What is the volume of this cuboid?

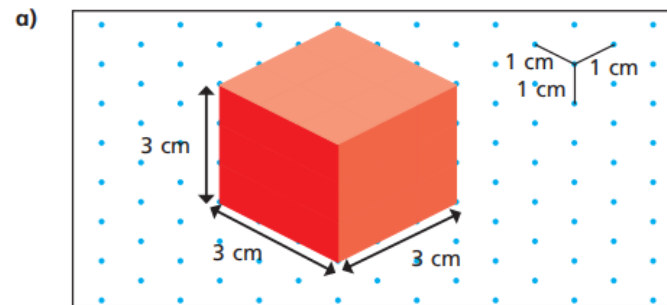


volume =  cm<sup>3</sup>

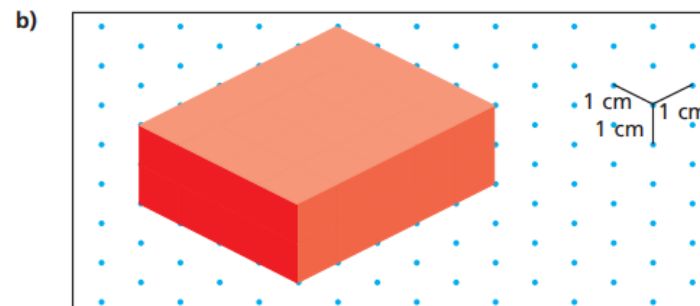
- d) What is the same and what is different about the cuboids?

- 2 Find the volume of the cuboids.

You can make them with cubes if it helps.

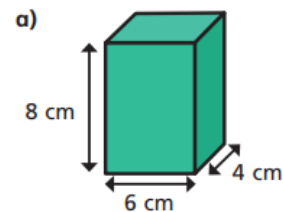


volume =  cm<sup>3</sup>

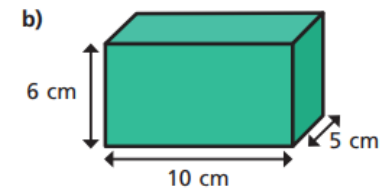


volume =  cm<sup>3</sup>

- 3 Calculate the volumes of the cuboids.



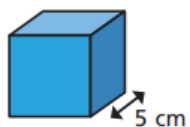
volume =  cm<sup>3</sup>



volume =  cm<sup>3</sup>

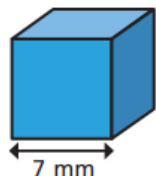
- 4 Calculate the volumes of the cubes.

a)



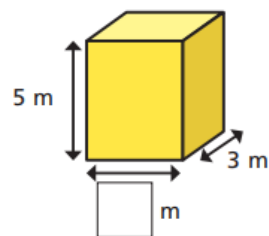
volume =   $\text{cm}^3$

b)

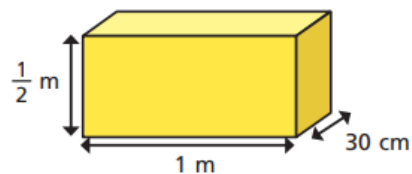


volume =   $\text{mm}^3$

- 5 The volume of the cuboid is  $60 \text{ m}^3$ .  
Find the missing length.

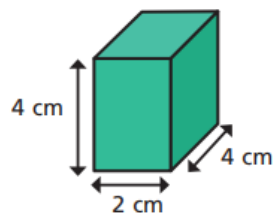


- 6 Calculate the volume of the cuboid.



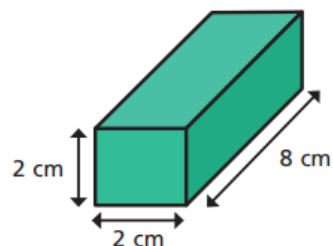
volume =   $\text{cm}^3$

- 7 a) Calculate the volumes of the two cuboids.



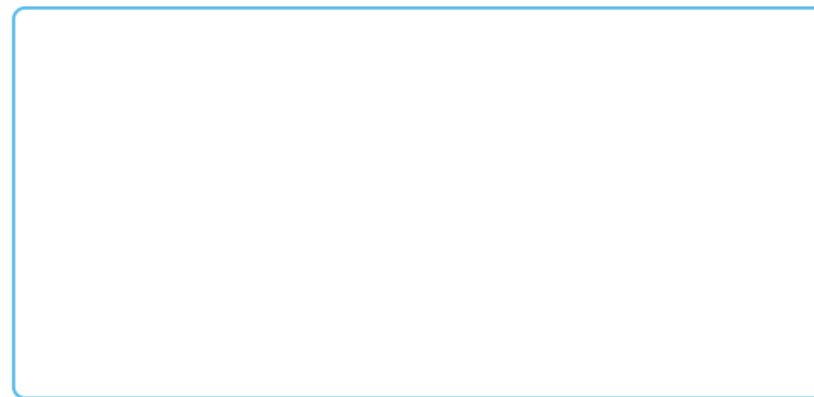
$\text{cm}^3$

What do you notice?

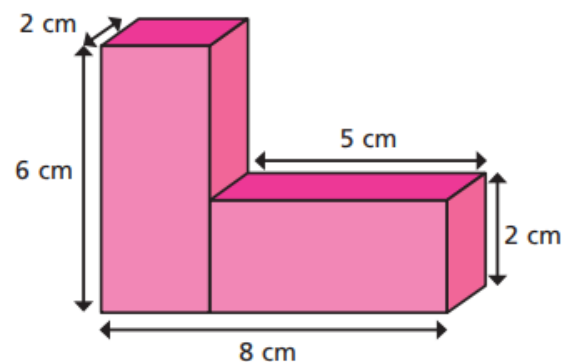


$\text{cm}^3$

- b) Draw two different cuboids that have a volume of  $24 \text{ cm}^3$



- 8 Calculate the total volume of the shape.

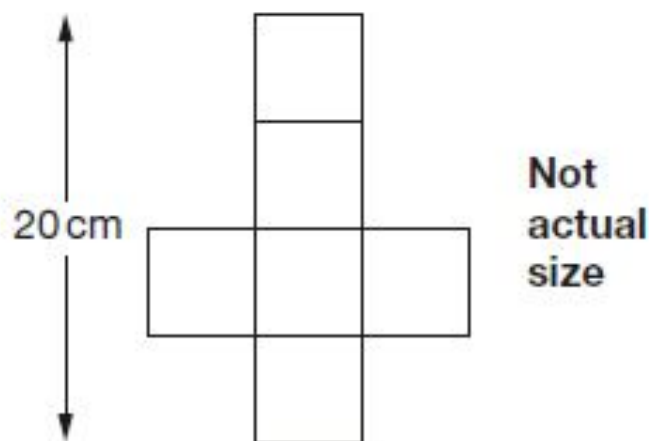


volume =   $\text{cm}^3$

Was there another method you could have used?

Extension Challenges

This is the net of a cube.



What is the **volume** of the cube?

cm<sup>3</sup>

1 mark

Diagram showing two rectangular prisms, A and B.

Prism A is a cube with side length 6 cm.

Prism B has a height of 4 cm and a width of 6 cm. Its length is labeled as unknown (?).

Not to scale

Show your method

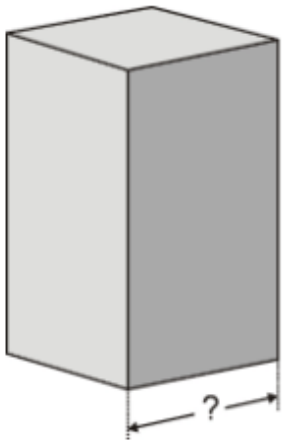
cm

2 marks

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.

Show your method

cm

2 mark

## **Where can I complete further work?**

[Twinkl](#) – Subscription service used by schools is offering a free premium service for teachers, parents and children to use whilst schools are closed. Enter the code **UKTWINKLHELPS** for access to worksheets, powerpoints and interactive games to support all areas of learning.

[Classroom Secrets](#) – Free Maths, Reading and Grammar home learning packs and interactive resources for all ages.

[White Rose Maths](#) – Free Maths home learning resources for all ages. Watch the videos and try the questions.

[Primary Stars](#) – Free Maths home learning packs for Year 1 and 2.

[BBC Bitesize Primary](#) – Free learning resources available for KS1 and KS2 across all subjects.

[I See Maths](#) – Free daily home maths lessons hosted by Gareth Metcalfe. Follow the link for videos, information and resources.

[Top Marks](#) – Free educational resources and games for English and Maths.

[ICT Games](#) – Free educational resources and games for English and Maths.